CHAPTER VIII

Field Notes

PURPOSE AND STYLE

8–1. The field notes are the written record of the survey. This record identifies and describes the lines and corners of the survey and the procedures by which they were established or reestablished. The new subdivisions to be platted (or replatted in the case of some resurveys) and the quantity of land in each unit are derived from the field notes. The laws governing surveys of the public lands have required the return of field notes from the beginning.

8–2. The initial notes are kept in pocket field tablets. The final field notes for filing are transcribed from the field tablets and are typewritten upon regulation field-note paper. It is desirable that the final field notes conform to the general arrangement and phraseology set out in the Manual. A large part of the final field notes must be extended from an abbreviated field record. At the same time, much of the minute detail of the initial notes may be summarized into a form of record which refers directly to the completed survey. This distinction in the two stages of the record is carried through the text. The subject in hand is the transcribed field notes, the record that is extended from the field tablets; this record is termed the "field notes."

8–3. All appropriate notes of the method and order of the survey procedures are entered in the field tablets. The tablets should show the dates on which each part of the field work was done. The field tablet record should supply the information needed for a complete preparation of the final record.

8–4. Because of the great variety of survey types, the surveyor must plan carefully how the notes in the field tablet are to be arranged. The chief of field party is responsible for the accuracy and sufficiency of this record.

The work of transcribing the record usually receives the personal attention of the surveyor, but it is important that the arrangement of the notes in the tablets and the use of abbreviations be such as to be readily understood by others who are familiar with the technical processes. Due regard should be given to the Manual requirements and form, though it is intended that set forms of expression be used flexibly and modified when necessary to conform to the survey procedure. The work of the reviewing officers is directed to the fundamental requirements of the Manual and the written special instructions. Comments *as to the form* of the transcribed field notes are based upon broad grounds, but it is necessary that the notes follow a standard form.

Random lines with fallings are shown in the field tablets but are omitted from the transcribed field note record except where some special purpose is served by showing the detail of a triangulation, offset, or traverse.

8–5. The township is considered as the unit in compiling the field notes. Normally the field notes of all classes of lines pertaining to a township when concurrently surveyed and not previously compiled are included in a single book. In the survey of a block of exterior lines only, all of the field notes may be placed in one book.

8–6. The field notes and plat are considered the primary record of any survey and, upon their approval and acceptance, the responsibility for the survey vests in the accepting authority. After the final record has been prepared, accepted, and officially filed, the *field tablets* and related field data are disposed of.

TITLES

8–7. Each book of field notes is included in a regulation cover, with appropriate title setting out general information as follows:

(1) The description of the lines recorded in that book;

(2) The principal meridian to which the survey refers;

(3) The State in which the survey is located;

(4) The name or names of the surveyors by whom the work was executed;

(5) The date of the special instructions, with survey number or serial group number, and date of approval;

(6) The date of the assignment instructions; and,

(7) The dates of the beginning and completion of the work included in that book.

EXAMPLES OF TITLES

Field Notes
Of the Survey of the
Tenth Standard Parallel North,
Along the South Boundary of Township 41 North,
Through Ranges 13, 14, 15, and 16 West;
and the
Fourth Guide Meridian West,
Through Townships 41, 42, 43, and 44 North,
Between Ranges 16 and 17 West

(or)

East and North Boundaries of
Townships 41 and 42 North,
Ranges 15 and 16 West

(or)

Subdivisional and Meander Lines of
Township 41 North, Range 15 West

(or)

West and North Boundaries
and
Subdivisional and Meander Lines of
Township 41 North, Range 13 West
(All)
Of the Sixth Principal Meridian
In the State of Wyoming,
Executed by
Wm. C. Jones, Cadastral Surveyor

(or)

John B. Smith and Fred A. Brown,
Cadastral Surveyors
(All)

Under special instructions dated June 30, 1971, which provided for the surveys included under Group No. 205, approved July 9, 1971; and assignment instructions dated July 15, 1971.

Survey commenced July 26, 1971.

Survey completed October 8, 1971.

8–8. The descriptive portion of the title is appropriately modified if there is a fractional portion of a township included in a survey, and for resurveys and fragmentary surveys, as for example:

Field Notes
Of the Survey of
A portion of Subdivisional Lines
Completing (or continuing) the
Subdivision of
Township 39 South, Range 18 East

(or)

Field Notes
Of a Limited Dependent Resurvey
Of Sections 26 and 27,
Township 63 North, Range 12 West

(or)

Field Notes
Of the Survey of
Fiddlers Island in Venice Bay,
In Section 1,
Township 39 South, Range 18 East

(or)

Field Notes
Of the Dependent Resurvey of the
Exterior and Subdivisional Lines of
Township 18 South, Range 59 West

(or)

Field Notes
Of the Dependent Resurvey of the
Eleventh Standard Parallel North,
Along the South Boundary of Township 45 North,
Through Range 79 West;
The East Boundary of
Township 45 North, Range 80 West;
and the
South Boundary of
Township 46 North, Range 79 West

(or)

Field Notes
Of the Independent Resurvey of the
East Boundary and Subdivisional Lines of
Township 45 North, Range 79 West,
and
Metes-and-Bounds Survey of Private Claims

(or)

Field Notes
Of the Dependent Resurvey of the Boundaries of the
Anastasia Island Lighthouse and Military Reservations
In Sections 21, 22, 27, and 28,
Township 7 South, Range 30 East

(or)

Field Notes
of U.S. Survey No. 9901
at Mile 320, Alaska Highway
and

Establishment of Location Monument No. 9901
at Geodetic Position:
Latitude 53°22′17.63″ N., Longitude 146°58′43.00″ W.

(or)

Field Notes
Of the Dependent Resurvey and Extension Survey,
Subdividing Land Bordering Ferry Lake and James Bayou,
In Sections 9, 10, 15, and 16,
Township 20 North, Range 16 West

(or)

Field Notes
Of the Retracement and Extension Survey
Subdividing Accretion Area Bordering Red River,
Including Riverbed Tracts,
In Sections 4, 5, and 8,
Township 5 South, Range 14 West

(or)

Field Notes
Of the Dependent Resurvey of the Section Boundaries,
The Subdivision of the Sections,
and
The Establishment of Corners of Indian Allotments,
Sections 9, 10, and 15,
Township 143 North, Range 30 West

(or)

Field Notes
Of the Dependent Resurvey of the Section Boundaries,
The Subdivision of the Sections,
and
The Establishment of the Boundary, Block and Lot Corners, and Street Center Lines of the Townsite of Lac du Flambeau,
In Sections 5 and 8,
Township 40 North, Range 5 East

(or)

Field Notes
Of the Dependent Resurvey of the Section Boundaries
And the Metes-and-Bounds Survey of a body of land classified as mineral bearing, included within the Whitmore Quartz and the Monday Quartz Mining Claims, in Section 22,
Township 7 North, Range 12 East

(or)

Field Notes
Of a Traverse of the Workings in the Badger Coal Mine
and
A Dependent Resurvey and Subdivision of Section 15,
Township 36 North, Range 75 West

INDEX

8–9. Each book of field notes has a small-scale index diagram of the lines included, for which there is a form on back of the cover. It is often necessary, however, to construct an additional special diagram to suit the work. For this a sheet of regulation field-note paper, or a sheet of the same size, is employed, and a scale adopted that is suited to the available space. It is usually preferable to orient the diagram with north to the top of the page, though sometimes the outline of the work is such that it is better to orient the diagram with north to the left-hand or binding edge. The diagram should show all of the lines surveyed with the page number on which the record of each begins. Meanders and other irregular lines should be drawn and indexed. The added index sheet is inserted in the book on the inside of the front cover, to appear on the right-hand side, without page number. Field notes will not be written on the index sheet.

HEADINGS

8–10. Each page of the field notes is given a heading. The heading is a short summary of the title of the field notes to be continued on that page. New headings are employed within the body of the field notes where changes are made to a new division of the survey; this will become the heading of the pages that follow. The heading should include the principal meridian and State. Examples may be found in the specimen field notes in the appendix.

New headings inserted in the body of the field notes of a resurvey are accompanied by subheadings which relate the resurvey to the earlier work. For example:

(1) Dependent Resurvey of the W. Bdy.
of T. 2 N., R. 18 W., Prin. Mer., Montana
(Restoring the 1882 survey by
James M. Harvey)

(or)

DEPENDENT RESURVEY OF THE ELEVENTH STANDARD PARALLEL NORTH, SOUTH BOUNDARY OF T. 45 N., R. 79 W., SIXTH PRINCIPAL MERIDIAN, WYOMING

Reestablishment of the survey executed by John B. Smith, Deputy Surveyor, in 1872

(2) METES-AND-BOUNDS SURVEY OF PRIVATE CLAIMS IN T. 45 N., R., 79 W., SIXTH PRINCIPAL MERIDIAN, WYOMING

As originally located in accordance with the survey executed by John B. Smith, Deputy Surveyor, in 1872

(3) Independent Resurvey of the Subd. Lines of T. 45 N., R. 79 W., 6th Prin. Mer., Wyoming (Superseding the 1872 survey by John B. Smith)

ABBREVIATIONS

8–11. The following abbreviations, especially suited to field notes of surveys, are permitted in the final transcript record, and are used where repetitions in the form of the record and the expressions used are such as to make the abbreviations readily understood. These abbreviations are in addition to those shown in chapter II for analytical notation of observations, and those shown in chapter IV for marks upon monuments. Some of these abbreviations, as appropriate, are employed upon the township plat. All abbreviations will be given capital or lower-case letters the same as would be proper if the spelling were to be completed.

TABLE OF ABBREVIATIONS

A.	acres
alt.	altitude
a.m.	forenoon
Am.	amended
app. noon	apparent noon
app. t.	apparent time
asc.	ascend
BM	bench mark
bet.	between
bdy., bdrs.	boundary, boundaries
ch., chs.	chain, chains
cor., cors.	corner, corners
corr.	correction
decl.	declination
dep.	departure
desc.	descend
diam.	diameter
dir.	direct
dist.	distance, or distant
E.	east [2]
e. e.	eastern elongation
elev.	elevation
ft.	foot, feet
frac.	fractional
Gr.	Greenwich
GM	guide meridian
hor.	horizontal
h.	hour, hours
h. a.	hour angle
in., ins.	inch, inches
lat.	latitude
lk., lks.	link, links
l. m. noon	local mean noon
l. m. t.	local mean time
log.	logarithmic function
long.	longitude
l. c.	lower culmination
m.	minute, minutes, (time)
meas.	measurement
mer.	meridian
Mi. Cor.	mile corner
mkd.	marked
MS	mineral survey
N.	north [2]
NE	northeast
NW	northwest
No.	number
obs.	observe
obsn.	observation
orig.	original
p.m.	afternoon
pt.	point
Prin. Mer.	principal meridian
R., Rs.	range, ranges
red.	reduction
rev.	reverse
s.	second, seconds, (time)
sec., secs.	section, sections
S.	south [2]
SE	southeast
SW	southwest
sq.	square
Stan. Par.	standard parallel
sta.	station
temp.	temporary
t.	time
T., Tp., Tps.	township, townships
u. c.	upper culmination
USLM	United States Location Monument
USMM	United States Mineral Monument [1]
vert.	vertical
W.	west [2]
w. e.	western elongation
x	separating dimension values

[1] Discontinued in favor of the preferred term "United States Location Monument (USLM)".

[2] Optional use of period (.)

THE DETAILED FIELD-NOTE RECORD

8–12. The introductory statement includes:

(1) History of prior pertinent surveys.

(2) The surveys encompassed in that book of field notes.

(3) Description of unusual survey situations and special methods used.

(4) A statement that the survey was executed in accordance with specifications set forth in the Manual of Surveying Instructions and the special instructions.

(5) How the directions of lines were determined and that they refer to the true meridian.

(6) In the case of a dependent resurvey, a statement to the effect that "Preliminary to the resurvey the lines of the original survey were retraced and search was made for all corners and other calls of the record. Identified corners were remonumented in their original positions; lost corners were restored and monumented at proportionate positions based on the original record. The retracement data were thoroughly verified and only the true line field notes are given herein."

(7) The geographic position of a corner of the survey—the southeast township corner if practicable—and how it was determined.

(8) The observed magnetic declination.

8–13. The items of information to be included in the field notes are described in section 3–126. The description required for particular subjects is covered by the following list.

- Amended monuments, section 3–36.
- Base line, method of alining, section 3–11.
- Corner descriptions in general, sections 4–3, 4–6, and 8–14.
- Corner descriptions, markings—form to follow
  - Iron posts and brass tablets, sections 4–24—4–46.
  - Stone monuments, sections 4–48—4–62.
  - Tree monuments, sections 4–64, 4–67—4–81.
- Corner descriptions, other references
  - Closing corners, sections 5–41, 8–16 (4)(5)(6).
  - Location monuments, sections 10–32, 10–33, and 10–34.
  - Quarter-section corners, sections 8–16 (7)(8)(10).
  - Sixteenth-section corners, section 8–16 (8)(10).
  - Use of non-standard monuments, section 4–7.
  - Witness corners, sections 4–15 and 4–82.
  - Witness points, sections 4–17 and 4–82.
- Corner accessories
  - Bearing trees, sections 4–85, 4–86, 4–87, 4–96—4–114.
  - Bearing objects, sections 4–85, 4–89, and 4–90.
  - Memorials, section 4–91.
  - Mound of stone, section 4–92.
  - Pits, section 4–95.
  - Reference monuments, section 4–82.
- Dependent resurvey, sections 6–28, 6–29, and 6–30.
- Field examination, sections 6–22 and 6–50.
- Independent resurvey, sections 6–49 (5)(6)(9) and 8–15.
- Magnetic declination, section 2–18 and 3–126 (19).
- Meander lines, sections 3–119, 3–121, 3–122, and 3–123.
- Measurement of standard line, section 3–9.
- Metes-and-bounds surveys, sections 7–16 and 9–82.
- Mineral segregation surveys, sections 7–41 and 7–42.
- Parts of sections, section 3–94.
- Recovered monument, sections 3–32, 4–3, and 6–28.
- Report on swamp and overflowed land, section 7–98.
- Resurveys, section 6–1.
- Resurveys prior to extension, section 3–102.
- Resurveys prior to subdivision of township, section 3–32.
- "Small tract" surveys, section 7–37.
- Soil classification, section 7–100—7–103.
- Subdivision of sections, section 3–75.
- Subdivision of township, sections 3–53 and 3–67.
- Testimony about corner point, section 5–11.
- Township exteriors, section 3–23.
- Townsite surveys, section 7–30.
- Triangulation, section 2–6.
- Unofficial marks at corner, section 5–12.

Examples of application are found in the sample field notes in the appendix.

8–14. A full description of all monuments of the established survey, upon which the new lines are to be initiated or closed, or all monuments of the established survey which is to be resurveyed, is furnished to the surveyor when a field assignment is made. It has been required in previous manuals that such monuments be completely described in the new record only if changes are made in the new survey or if the monument or its accessories do not agree with the record. Since one of these conditions is nearly always the case, *the new requirement is that a redescription be made in every case.* However, it is not required that the markings on the brass cap of a properly marked regulation monument be repeated. If the year date is added, that information may be placed in the field notes without showing a complete corner diagram. The description of an identified corner should follow the order given in section 6–29. Examples of descriptions are shown in the sample field notes in the appendix.

When it is necessary to refer to a reconstructed corner monument described in another book of field notes of concurrent resurveys, a reference is given to the particular field notes in which the description of that monument will be found. For example: "the cor. of secs, 3, 4, 33, and 34, on the N. bdy. of the Tp., previously described in the field notes of the dependent resurvey of the S. bdy. of T. 24 S., R. 3 W,. of this assignment."

The complete description of a monument is entered once only. In subsequent notes the expression "heretofore described" may be employed when referring to a point already occupied in the new survey. All corners recorded in the same book of field notes are referred to by name only, without repeating the description of the monument, as for example: "the cor. of secs. 2, 3, 10, and 11" or "the standard cor. of secs. 33 and 34" or "the cor. of secs. 5, 6, 31, and 32, on the S. bdy. of the Tp."

8–15. In the record of an independent resurvey the field notes of the metes-and-bounds survey of each valid claim are preceded by a copy of the abstract of entry. A brief statement then follows concerning the principal factors controlling the location of the particular tract, and whether or not the claimant was consulted or communicated with, in the matter of the identification of the boundaries of his claim. The statement should be clear as to whether the location of a claim, shown either as a tract segregation or as conforming to the lines of the resurvey, was controlled by collateral evidence, or by one or more identified corners of the original survey, nearby or remotely located, or by its relation to adjoining tracts. In case all of the tract segregations within a township can be covered by one general statement, the same should appear at the beginning of the field notes of the metes-and-bounds surveys. The field notes should be made to account for each tract shown upon the status diagram.

Historical references to the field notes and plats of the earlier surveys, to the lines more recently resurveyed that form a portion or portions of the plat outline, to lines run and marked by the county surveyor and similar surveys found acceptable for the identification of tract boundaries, etc., should be incorporated in the introductory part of the field notes of the independent resurvey.

8–16. It is important to standardize the writing of the field notes of retracements and the subdivision of sections, and to simplify the record so far as possible. In the majority of the work this can be done by adherence to the following rules:

(1) Complete descriptions are given in those cases where the retracement is not followed by resurvey procedure or the subdivision of a section.

(2) No detailed description of the retracement is required in the field notes when the retracement is followed by a resurvey. In that case the procedure is described in the introductory statement, and the corner monumentation and lines (corrected to true lines) are described in the field notes of the dependent resurvey. When the section lines are retraced as a preliminary to subdivision of a section, it is usually necessary to resurvey them in order to establish sixteenth-section corners on the section lines.

(3) The directions and lengths of the true lines; the descriptions of natural objects, stream crossings, principal slopes, and other topographic calls; the descriptions of the physical, collateral, and record evidence or testimony concerning the old monuments and their accessories; and all new monumentation are given in the true-line field notes.

(4) The descriptions of closing corners of the exterior and subdivisional surveys originally placed on the standard parallels or township exteriors where the record calls for two sets of corners, and similarly within partially subdivided townships where there are offsets to be dealt with, will be given in the field notes of closing lines of the exterior or subdivisional survey that is being retraced or resurveyed.

(5) When a closing corner monument is found which marks a line that is not being concurrently resurveyed, a connecting course and distance and a complete description of the monument will be given in the field notes of the retracement or resurvey of the line closed upon.

(6) The new monument for a closing corner, in those cases where required, will always be placed at the true point of intersection, and so stated clearly. An off-line monument will be

marked AM, connected by course and distance, and fully described in the field notes of the closing line.

(7) Intermediate quarter-section corners between closing corners will be recorded in the field notes of the closing section immediately following the description of the closing line which completes the survey of the section. A cross reference will be entered in the field notes of the retracement or resurvey of the line closed upon.

(8) The descriptions of the section, quarter-section, and sixteenth-section corners on the section boundary lines, as required for the subdivision of a section, will be given in the field notes of the retracement or resurvey of the section boundaries.

(9) Random or trial lines that are required for the subdivision of a section are treated in a prefacing statement concerning the type of work to be performed in one or more sections, but no field-note statement of the detail is necessary.

(10) The descriptions of the center quarter-section corner, and of the sixteenth-section corners within the section will be carried in the true-line field notes of the subdivision-of-section lines.

8–17. The character of the land, soil, and forest cover upon the lines surveyed will be summarized at the conclusion of the field notes of each mile. The record of the mile will be closed by a line drawn across the page. A general description of a township as a whole, with regard to topography, soil, forest cover, merchantable timber, native grasses, water supply and drainage, minerals, settlement, and improvements, will be supplied at the conclusion of the subdivisional notes. This general description for resurveys need not be as expansive as that for original surveys.

8–18. Signed statements relating to the positions of lines or corners are placed in the field notes following the general description. The record of the names of the assistants and the certificates of the surveyor and of approval will take the forms given in the specimen field notes in the appendix.

SPECIMEN FIELD NOTES

8–19. In the specimen field notes in the appendix there are shown the several forms of description of the approved types of corner monuments. The types that are employed ordinarily are given prominence, but those that are used in exceptional circumstances are included in order to supply a form of description. The indicated departures from the usual type of monumentation (iron posts) are not to be construed as an authorization to disregard the standard practice.

8–20. Other specimen field notes as needed to show the miscellaneous forms of record relating to a variety of surveys found in the usual work are available in the survey office. A liberal assortment of such field notes and their accompanying plats should be on hand for reference purposes.

8–21. In the case of fragmentary surveys, such as the limited resurvey of a section line, the survey of a connecting line, the survey of an island, or other surveys that require only a brief note record, the field notes may be placed directly upon the plat.