The Public Land Survey Systems of the United States

There are two separate and distinct systems of lands surveys in the United States. (1) The system of Metes and Bounds in which each parcel of land is individually described and bound, and (2) the system of rectangular surveys under which the land is divided basically into equal-sized townships, sections, and fractions therefore.

The irregular system of metes and bounds is used entirely in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Maryland Delaware, Virginia, North Carolina, South Carolina, Georgia, Tennessee, Kentucky, Texas, and parts of Ohio. Each parcel of land varies in size, is described independently, and is not tied in to any system of basic lines.

The system of rectangular surveys was inaugurated in 1784 and the laws governing its establishment have, with various modifications, been applied to all of the United States with the exception of the states listed above. Under this system the lands are divided into townships six miles square, which are related to basic lines established by the federal government. The base lines running north and south are known as Principal Meridians, while the east and west lines are called simply "Base Lines." The township numbers east or west of the Principal Meridians are designated as ranges whereas the numbers north and south of the Base Line are tiers. Thus the description of a township, for example, "Township 14 North, Range 5 West" would mean that the township is situated 14 tiers north of the Base Line for the Principal Meridian and 5 ranges West of that meridian. Guide meridians, at intervals of 24 miles east and or west of the Principal Meridian are extended north and or south from the Base Line; Standard Parallels at 24 mile intervals north and or south of the Base Line, are extended east and or west from the Principal Meridian.
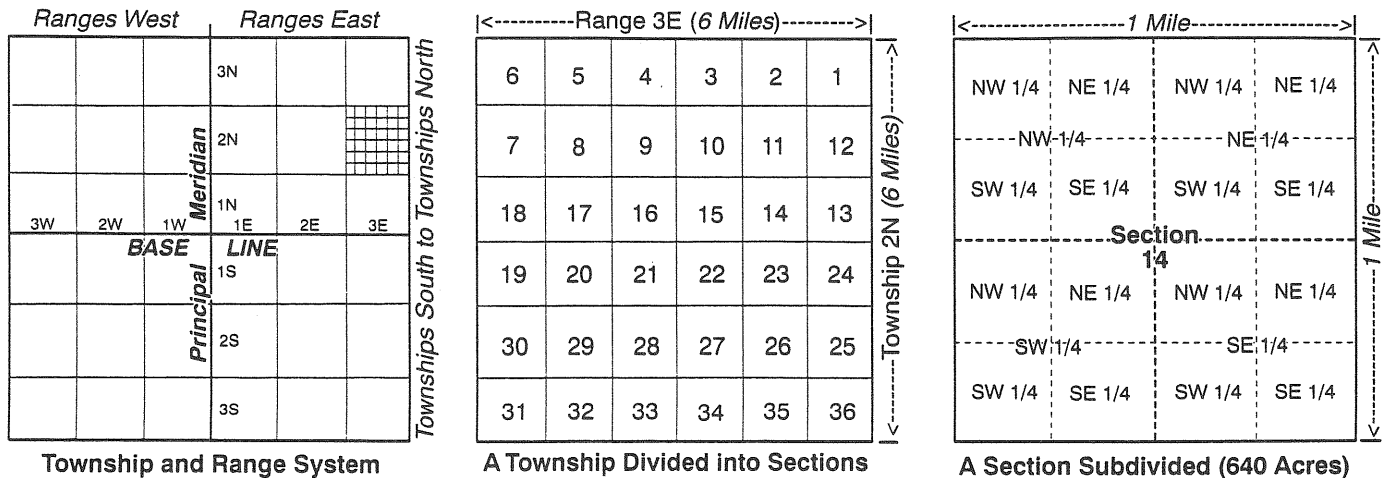
The township is 6 miles square. It is divided into 36 square-mile sections of 640 acres each which may be divided and subdivided as desired. The diagrams herewith show the system of numbering the sections and the usual method of subdividing them.

For Example; A piece of land is described as The NE 1/4 of The SW 1/4 of Section 10, T 4-N, R 5-E, 3rd. Prin. Mer. The translation would be "the Northeast quarter of the Southwest quarter of Section 10 in Township 4 North and Range 5 West of the 3rd. Principal Meridian." By referring to the map the approximate location of this 40 acre tract can easily be determined.

Irregular tracts of land are, of course, also described by metes and bounds within the rectangular survey system. They are, however, tied into the monuments established under the rectangular system.

For detailed information on the public land survey system in the United States see the "Manual of Instruction for the Survey of the Public Lands of the United States" issued by Bureau of Land Management of the Department of the Interior.

Township and Range Survey System

Ranges West	Ranges East
	3N
	2N
Principal Meridian	1N
3W 2W 1W	1E 2E 3E
BASE LINE	1S
	2S
	3S

Township and Range System

Townships South to Townships North

|<----------Range 3E (6 Miles)---------->|

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Township 2N (6 Miles)

A Township Divided into Sections

|<------------------1 Mile------------------>|

NW 1/4	NE 1/4	NW 1/4	NE 1/4
-----NW 1/4-----		-----NE 1/4-----	
SW 1/4	SE 1/4	SW 1/4	SE 1/4
	Section 14		
NW 1/4	NE 1/4	NW 1/4	NE 1/4
-----SW 1/4-----		-----SE 1/4-----	
SW 1/4	SE 1/4	SW 1/4	SE 1/4

1 Mile

A Section Subdivided (640 Acres)
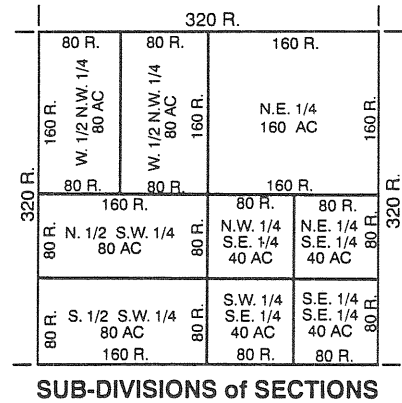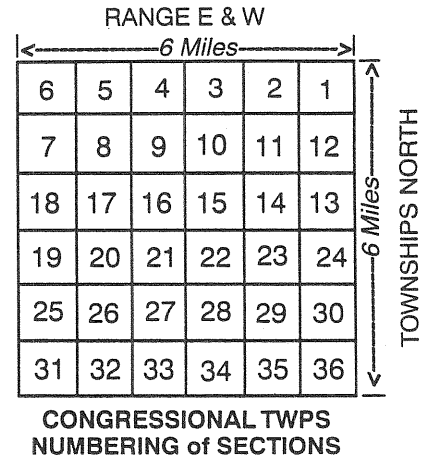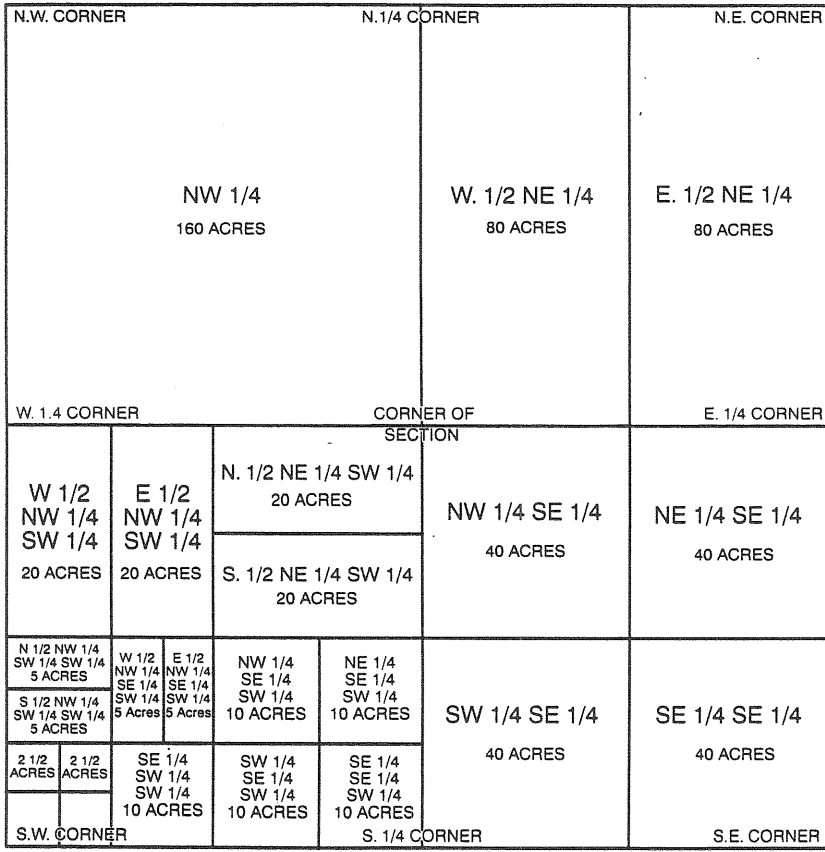
HOW TO LOOK UP A NAME FROM THE INDEX OF OWNERS: The Index Of Owners is separated into four categories; Township(T), Range(R), Section(S) and Name. After finding the name look up the township and range number listed on the top of every map page. The map page is sectioned numerically. The name from the Index Of Owners will be inside the section number listed.

A SECTION OF LAND - 640 ACRES
Quarter Sections and Subdivisions Therefore

N.W. CORNER			N.1/4 CORNER		N.E. CORNER

NW 1/4 — 160 ACRES | **W. 1/2 NE 1/4** — 80 ACRES | **E. 1/2 NE 1/4** — 80 ACRES

W. 1.4 CORNER — CORNER OF SECTION — E. 1/4 CORNER

| W 1/2 NW 1/4 SW 1/4 — 20 ACRES | E 1/2 NW 1/4 SW 1/4 — 20 ACRES | N. 1/2 NE 1/4 SW 1/4 — 20 ACRES / S. 1/2 NE 1/4 SW 1/4 — 20 ACRES | NW 1/4 SE 1/4 — 40 ACRES | NE 1/4 SE 1/4 — 40 ACRES |

N 1/2 NW 1/4 SW 1/4 SW 1/4 — 5 ACRES | S 1/2 NW 1/4 SW 1/4 SW 1/4 — 5 ACRES | W 1/2 NW 1/4 SE 1/4 SW 1/4 — 5 Acres | E 1/2 NW 1/4 SE 1/4 SW 1/4 — 5 Acres | NW 1/4 SE 1/4 SW 1/4 — 10 ACRES | NE 1/4 SE 1/4 SW 1/4 — 10 ACRES

SW 1/4 SE 1/4 — 40 ACRES | SE 1/4 SE 1/4 — 40 ACRES

2 1/2 ACRES | 2 1/2 ACRES | SE 1/4 SW 1/4 SW 1/4 — 10 ACRES | SW 1/4 SE 1/4 SW 1/4 — 10 ACRES | SE 1/4 SE 1/4 SW 1/4 — 10 ACRES

S.W. CORNER — S. 1/4 CORNER — S.E. CORNER

RANGE E & W
6 Miles

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36

TOWNSHIPS NORTH — 6 Miles

CONGRESSIONAL TWPS NUMBERING of SECTIONS

SUB-DIVISIONS of SECTIONS

320 R.

80 R. | 80 R. | 160 R.

160 R. | W. 1/2 N.W. 1/4 80 AC | E. 1/2 N.W. 1/4 80 AC | 160 R. | N.E. 1/4 160 AC | 160 R.

320 R. — 80 R. | 80 R. | 160 R.

80 R. | N. 1/2 S.W. 1/4 80 AC | 80 R. | N.W. 1/4 S.E. 1/4 40 AC | N.E. 1/4 S.E. 1/4 40 AC

80 R. | S. 1/2 S.W. 1/4 80 AC | 80 R. | S.W. 1/4 S.E. 1/4 40 AC | S.E. 1/4 S.E. 1/4 40 AC | 80 R.

160 R. | 80 R. | 80 R.

CONVERSION TABLE

RODS	FEET
1	16.5
2	33.0
3	49.5
4	66.0
5	82.5
6	99.0
7	115.5
8	132.0
9	148.5
10	165.0

1 MILES = 320 RODS = 5280 FEET
1/2 MI =160 R. = 2640 FT.
1/4 MI = 80 R. =1320 FT
1 ACRE = 160 SQ. ROD =43,560 SQ. FT.
LINEAR FEET X 0.0606 = LIN. RODS
AREA IN SQ. FT X 0.000023 = ACRES
AREA IN SQ. RDS X0.00625 = ACRES

IN OLD DESCRIPTIONS

THE CHAIN WAS 4 RODS
THE LINK WAS 0.04 ROD
POLE, PERCH & ROD EACH = 16.5 FT.
A SECTION CONTAINS 640 ACRES
A QUARTER SECTION IS 160 ACRES

EXAMPLE:
137.84 R. =2274.36

RODS	FEET
100	1650.00
30	495.00
7	115.50
0.8	13.20
00.4	0.66

TOTAL =2274.36

THESE DISTANCES ARE PROPORTIONATE TO THE RADIUS OR LENGTH OF LINE

N.30°. W. Good
W. 30°. N. Bad
Radius

NOTE: Those two lines are different

THE CIRCLE IS 360°
THE QUADRANT IS 90°

A PROPER DESCRIPTION:
N.30° 10' - EAST or WEST 32 RODS
or S. 30° 10' - EAST or WEST 32 RODS

ANGLES IN SURVEYS

ALL DESCRIPTIONS MUST GIVE DIRECTION & LENGTH OF ALL LINES - ALL ANGLES MUST BE FROM MERIDIAN- STANDARD SYMBOLS - DEGREE, 30°- MINUTES, 25' - SECONDS, 45" - IN CASE OF DOUBT, CONSULT ANY ENGINEER OR SURVEYOR.