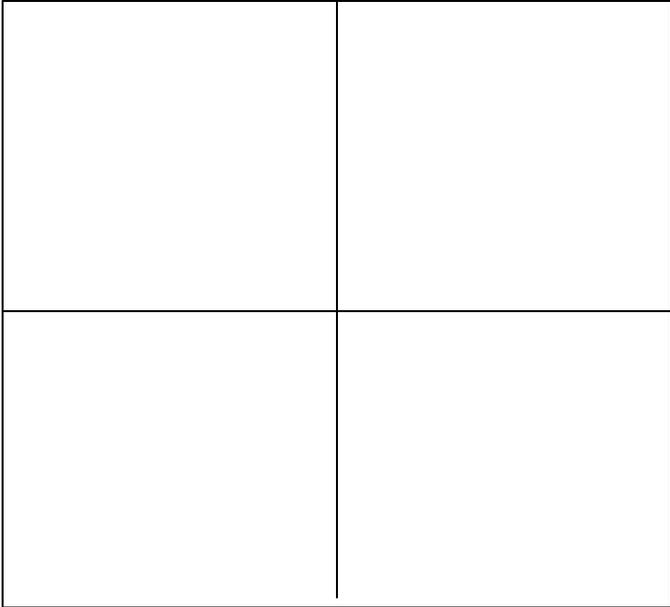


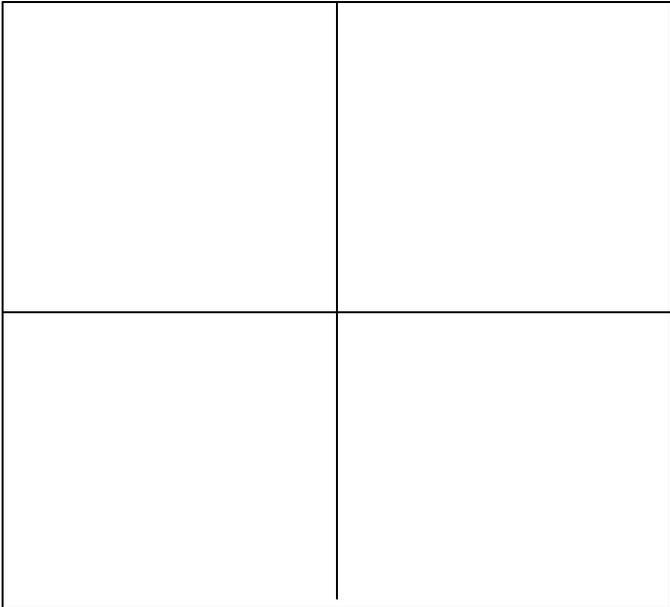
1. The Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



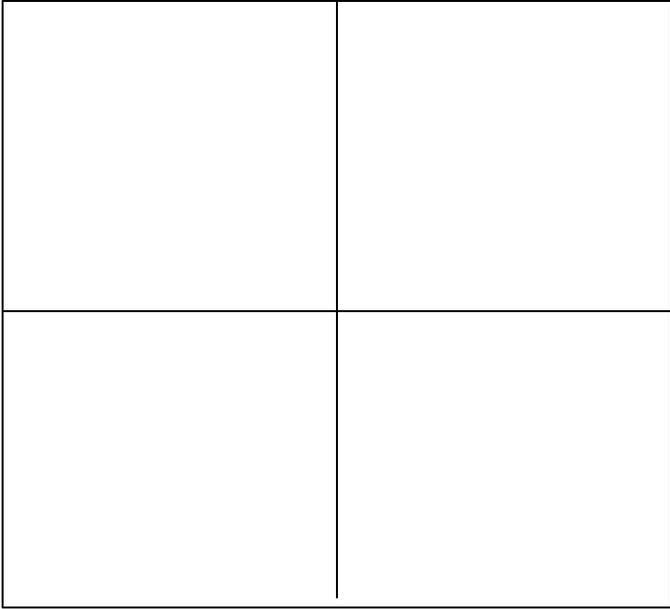
2. Lots 1 and 2 and the South half of the Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



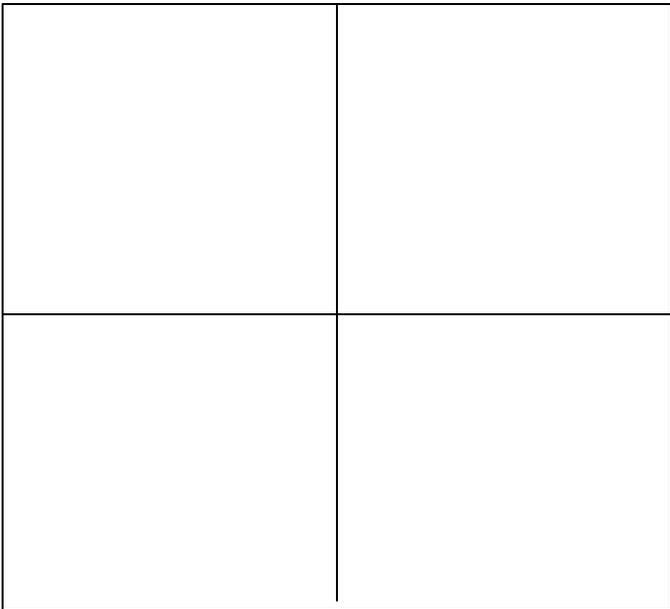
3. The Northeast Quarter of the Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



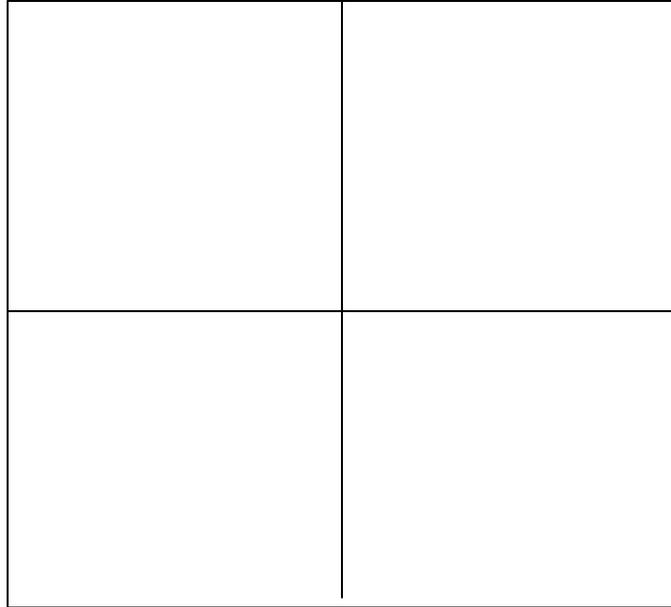
4. Lot 1 of the Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



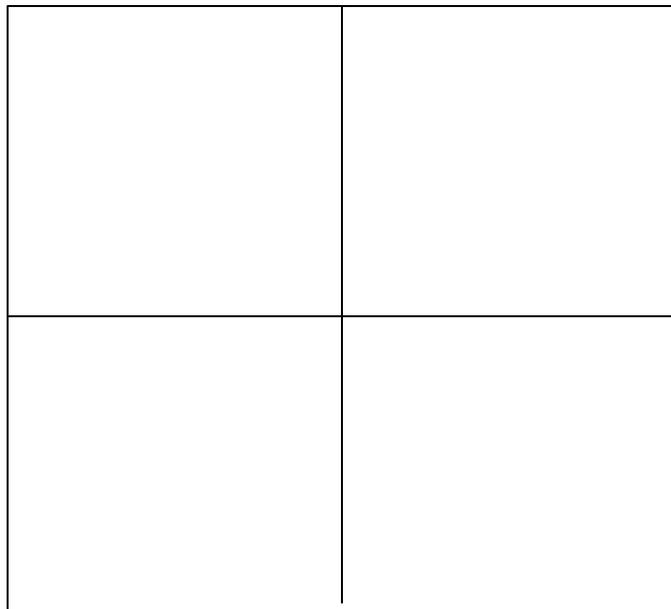
5. The Northeast Quarter of the Northeast Quarter of the Northeast Quarter of the Northeast Quarter of the Section 5, Township 9 North, Range 2 East of the I.M.

Section 5-T8N-R2E



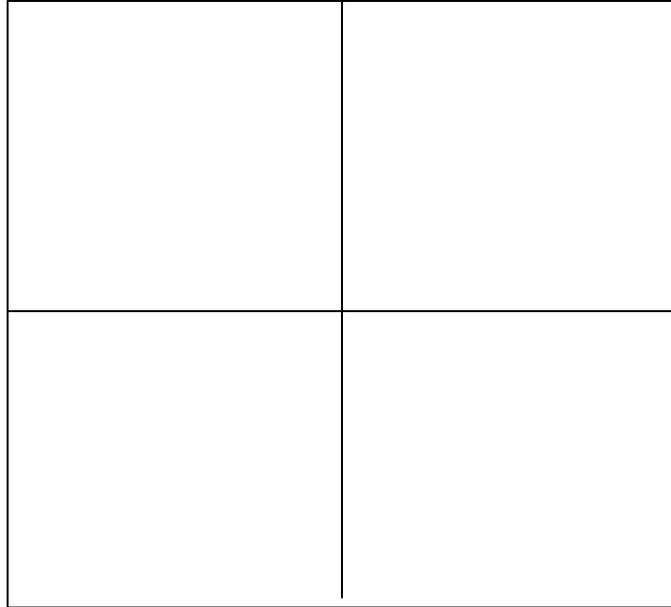
6. The North 52 acres of the Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



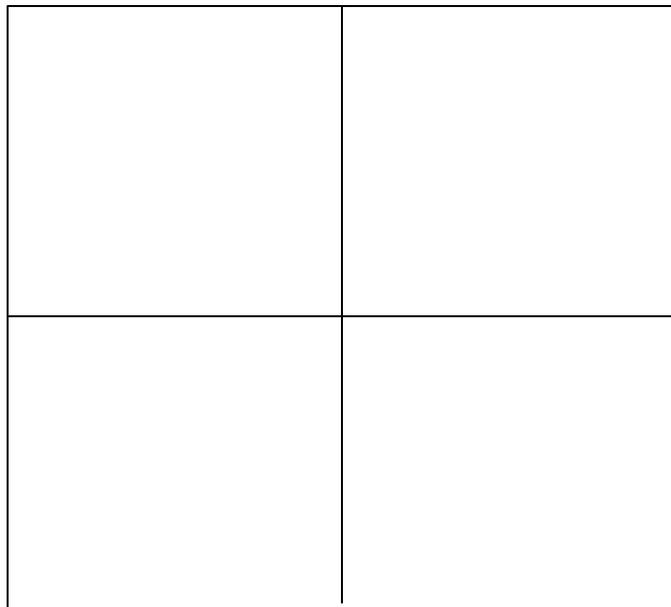
7. The North 10 acres of the South half of Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



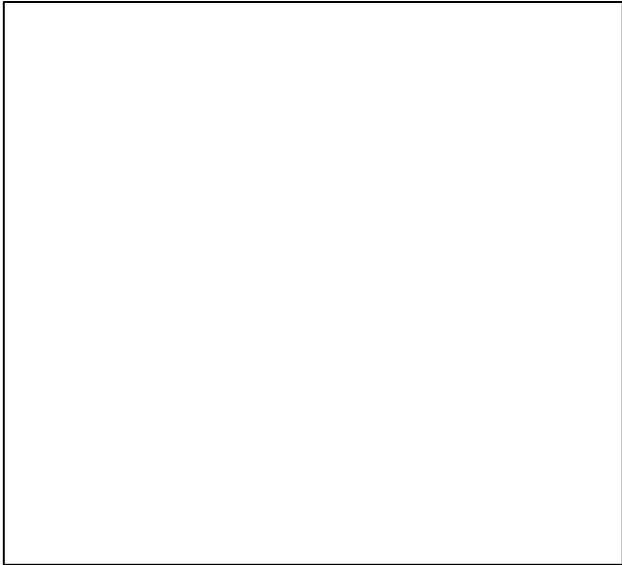
8. The North 10 acres of the South 40 acres of the South half of the Northeast Quarter of Section 5, Township 9 North, Range 2 East of the I.M.

Section 5-T8N-R2E



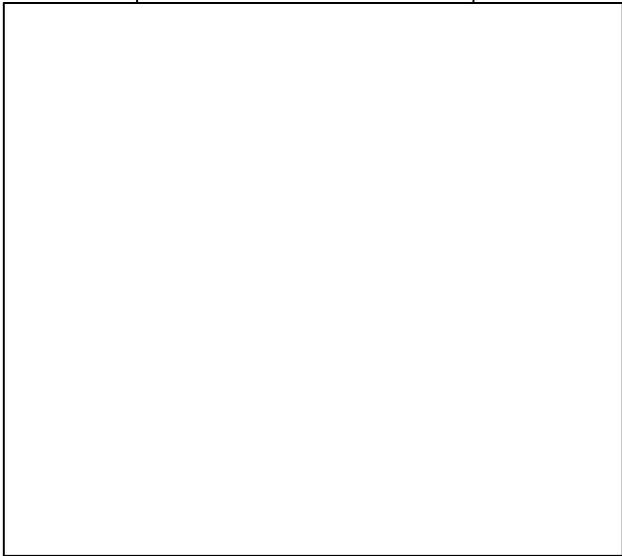
9. The North 208.71 Feet of the East 208.71 Feet of the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

SF/4 of 5-T8N-R2E



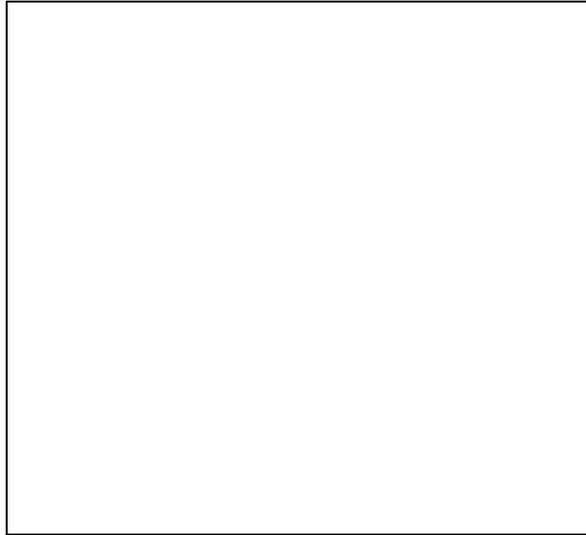
10. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 208.71 Feet, thence West 208.71 Feet, thence North 208.71 Feet, thence back East to the point of beginning.

SE/4 of 5-T8N-R2E



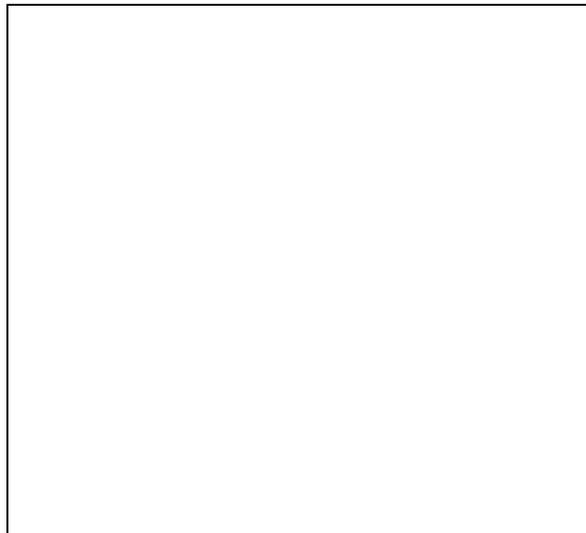
11. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence Southwesterly to a point, thence North 208.71 Feet, thence back East along the quarter-section line to the point of beginning.

SE/4 of 5-T8N-R2E

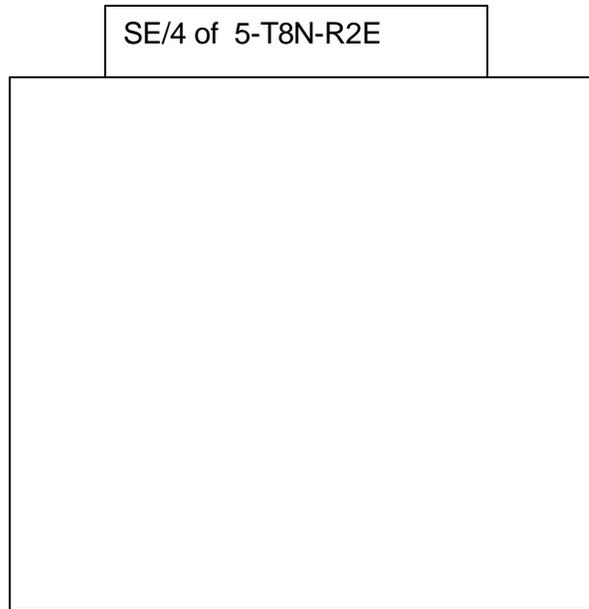


12. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 900 Feet to the true point of beginning, thence West 208.71 Feet, thence North 208.71 Feet, thence back East to the point of beginning.

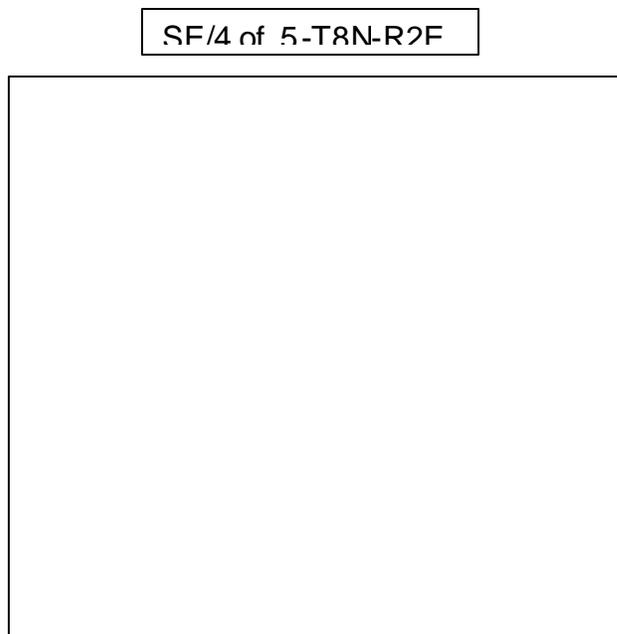
SE/4 of 5-T8N-R2E



13. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 900 Feet to the true point of beginning, thence South 208.71 Feet, thence West 208.71 Feet, thence North 208.71 Feet, thence back East to the point of beginning.



14. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 900 Feet to the true point of beginning, thence South 45 degrees West 295.16 Feet, thence North 208.71 Feet, thence back East to the point of beginning.



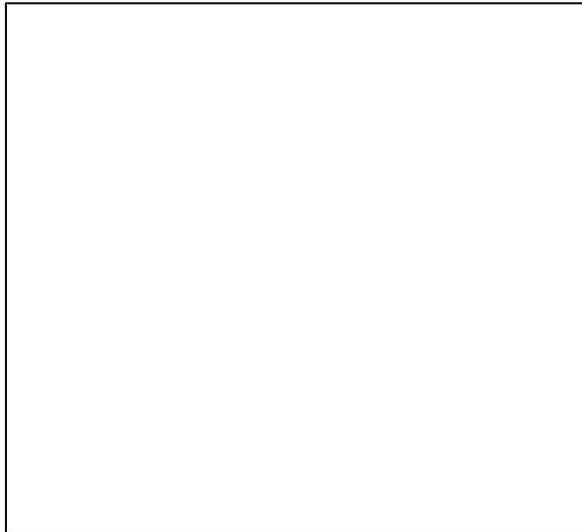
15. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 208.71 Feet, thence West 208.71 Feet, thence on a curve to the right 327.84 Feet with a radius of 208.71 Feet, thence 536.55 Feet East to the point of beginning.

SE/4 of 5-T8N-R2E

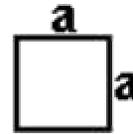


16. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 208.71 Feet, thence West 208.71 Feet, thence on a non-tangent curve to the right with a radius of 500 Feet and a chord length of 295.16 Feet and a chord Bearing of North 45 degrees West, thence 417.42 Feet East to the point of beginning.

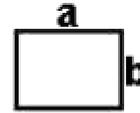
SE/4 of 5-T8N-R2E



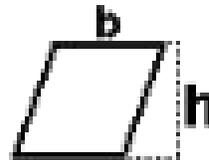
Area of a square: since each side is the same length, just multiple a side by itself



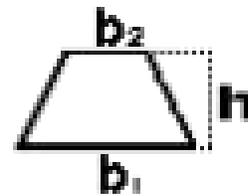
Area of a rectangle: just multiple two adjoining side together



Area of an "unsquare" rectangle the opposing sides are same length: multiple the base length times the height (NOT the side length)



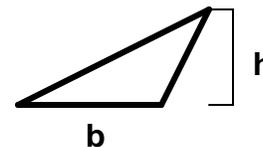
Area of an really "unsquare" rectangle the opposing sides are NOT same length: multiple the average of the two base lengths times the height (NOT the side length)



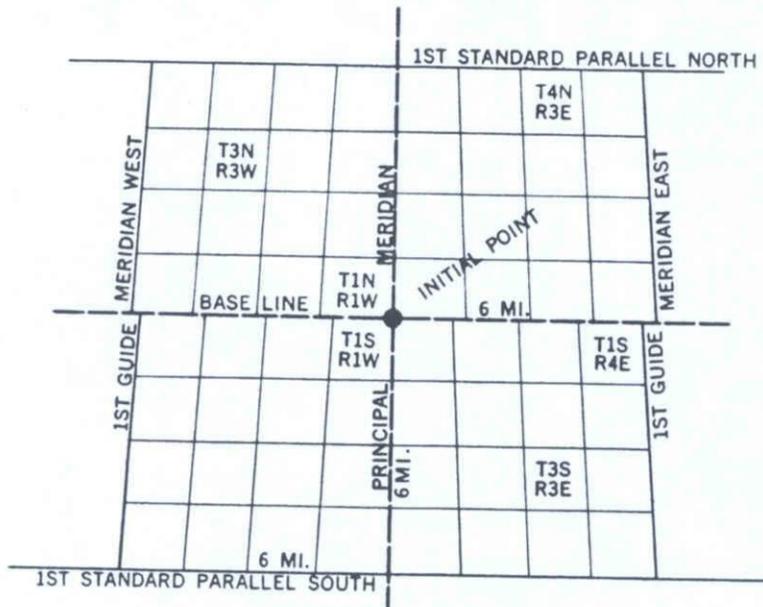
Area of a circle: multiple  $\pi$  (3.1416 etc) times the radius length times the radius length ( $\pi \times r \times r$ )



Area of a triangle: multiple the half the base length times the height



# SECOND DIVISION OF LAND (TOWNSHIPS)



The second division of land divides each quadrangle into sixteen 6-mile square townships as shown in the above diagram.

Each east-and-west row of townships is called a tier and is numbered north or south of the base line as: T3N, or T3S. Each north-and-south row of townships is called a range and is east or west of the principal meridian as: R3W, or R3E. A township is identified by reference to its tier number, range number, and principal meridian, as T1S, R4E, Indian Principal Meridian. The letter T in this designation actually stands for tier, but it has become the custom to refer to it as township instead of tier.

# THIRD DIVISION OF LAND (SECTIONS)

---

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

The third division of land further divides the townships by parallel north-and-south lines and parallel east-and-west lines at one-mile intervals. This is intended to create 36 squares measuring one mile on each side and containing one square mile of 640 acres each. These squares are called sections. They are always numbered in the same pattern, starting in the northeast corner of the township as shown in the above diagram.

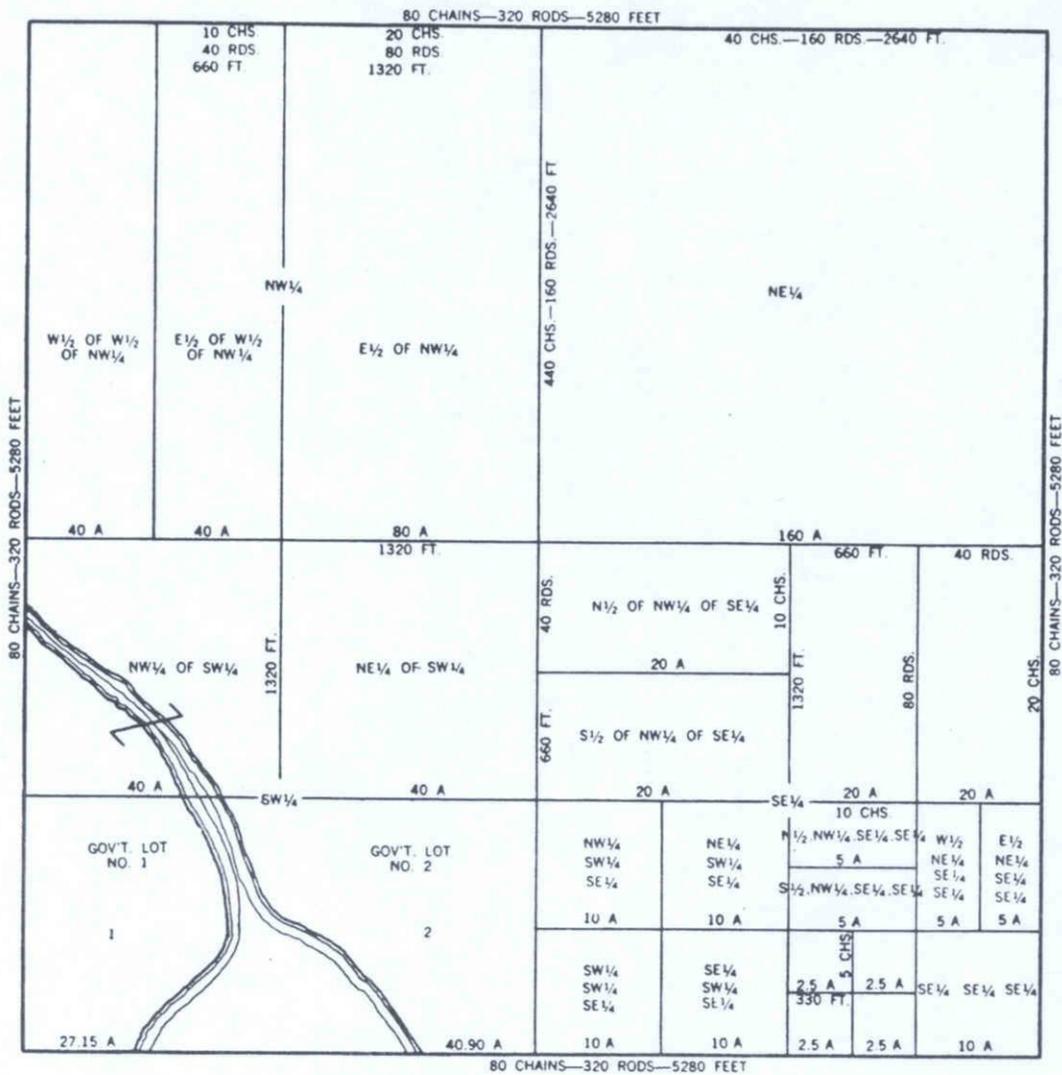
Each section is further divided into half sections, or quarter sections or half-quarter sections and so on as desired. These subdivisions are described by their geographic position within a section as shown in the diagram on the next page.

A typical description of a 20-acre site might read as follows:  $W\frac{1}{2}$ - $NE\frac{1}{4}$ - $SE\frac{1}{4}$ , Section 6, T2N, R3E, Indian Principal Meridian. The best way to read a land description based on this system is to start at the end with the meridian and to work back through, locating in order the township, section, quarter, quarter-quarter, etc.

Parcels of land along the shore of a lake or river not large enough to be considered sections were called government lots and usually identified by number.

An adjustment was necessary because the earth's meridians (north-and-south imaginary lines) are not parallel but converge at the north and south poles. All discrepancy was put into the quarter-quarter sections along the north and west boundaries of a township and these irregular parcels are commonly identified as fractional sections or government lots. A typical description would be Government Lot 3, Section 12, T7N, R9E, Indian Principal Meridian.

# ONE SECTION—1 MILE SQUARE—640 ACRES



The above figure illustrates a section of land 640 acres divided first into quarters of 160 acres each, shown as NE 1/4, SW 1/4, SE 1/4, and then into various other divisions.

# MEASUREMENTS

## LINEAL MEASURE

1 mile	= 5,280	feet
	= 1,760	yards
	= 320	rods
	= 80	chains
1 chain	= 66	feet
	= 100	links
	= 4	rods
1 rod	= 25	links
	= 16.5	feet
	= 1	perch
	= 1	pole
1 link	= 7.92	inches
Millimeter	= 0.001 Meter	
Centimeter	= 0.01 Meter	
Decimeter	= .01 Meter	
Meter	= 39.3685 Inches	
Kilometer	= 1000 Meters	

## ARPENT

The Arpent is a unit of measure common to parts of Canada, mainly Quebec, where land was originally granted under seigniorial tenure. Surveys currently made in these areas now use the English units, but the Arpent may be encountered.

This unit is also in use in parts of the State of Louisiana. The basis of the Arpent is the "Old French Foot" having the following equivalents.

French Foot	= 12.789 English Inches
	= 1.06575 English Feet
English Foot	= 12 English (U.S.) Inches
	= 0.938306 French Feet
Square	
French Foot	= 1.135823 Square English Feet
Lineal Arpent	= 180 French Feet
	= 191.835 English Feet
	= 10 Old French Perches
Square Arpent	= 36800.667 Square English Feet
	= 4088.89 Square English Yards
	= 32,400 Square French Feet
	= 0.845 U.S. Acre

The Old French Perch is equivalent to 18 French Feet or 19.1835 English Feet.

## AREA MEASURE

1 township	= 36	sections
1 full section	= 640	acres
1 sq. mile	= 640	acres
	= 1	full section
1 acre	= 43,560	sq. feet
	= 4,840	sq. yards
	= 160	sq. rods
	= 10	sq. chains
1 sq. chain	= 10,000	sq. links
1 sq. rod	= 30.25	sq. yards
1 sq. yard	= 9	sq. feet
1 sq. foot	= 144	sq. inches
Square Centimeter	= 0.0001 Square Meter	
Square Decimeter	= 0.01 Square Meter	
Area	= 100 Square Meters	
Hectare	= 10,000 Square Meters	
	= 2.471 Acres	
Square Kilometer	= 247.1 Acres	
	= 0.386 Square Mile	

## VARA

The Vara is a unit of measurement originally used by the Spanish and is still in common use throughout Central and South America.

The exact length of the Vara range varies from 32.9931 to 34.1208 inches with each country using a variation within this range.

Within the United States, two areas still make use of this measurement unit.

### California

Vara is equal to 33 inches.

Many lots in San Francisco and other areas were laid out on the basis of multiples of 50 Varas (137'6").

### Texas

Vara is equal to 33.33333 inches.

Early deeds used "Leagues" and "Labors" having the following values:

League	= 4428.4 Acres
	= 5000 Varas Square
	= 25,000,000 Square Varas
Labor	= 177.1 Acres
	= 1000 Varas Squares
	= 1,000,000 Square Varas

Conversion of these two variations of the Vara in standard United States units can be found in the conversion tables.

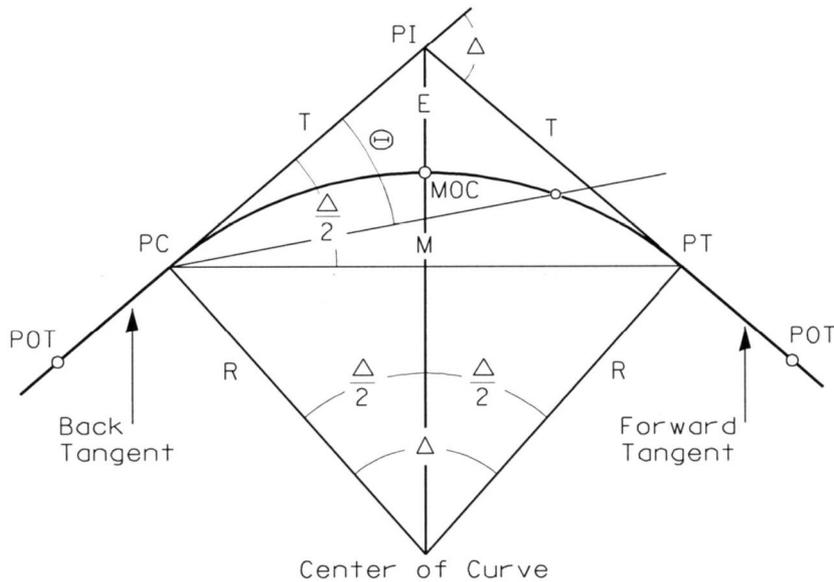
# LINEAL CONVERSION FACTORS

	Inch	Link	Foot	Vara (Calif.)	Vara (Texas)	Yard	Meter	Rod, Pole or Perch	Chain	Furlong	Kilo-meter	Mile (Statute)
Inch	1	0.12626	0.08333	0.03030	0.03	0.02778	0.02540	0.00505	0.00126			
Link	7.92	1	0.66	0.24	0.2376	0.22	0.20117	0.04	0.01	0.001		
Foot	12	1.51515	1	0.36364	0.36	0.33333	0.30480	0.06061	0.01515	0.00152		
Vara (Calif.)	33	4.16667	2.75	1	0.99	0.91667	0.8382	0.16667	0.04167	0.00417		
Vara (Texas)	33.333	4.20875	2.7778	1.01010	1	0.92583	0.84667	0.16835	0.04209	0.0042		
Yard	36	4.54545	3	1.09091	1.08	1	0.9144	0.18182	0.04545	0.00455		
Meter	39.37	4.97096	3.28083	1.19303	1.1811	1.09361	1	0.19884	0.04971	0.00497	0.001	
Rod, Pole, or Perch	198	25	16.5	6	5.94	5.5	5.02921		0.25	0.025	0.00503	0.00313
Chain	792	100	66	24	23.76	22	20.11684	4	1	0.1	0.02012	0.0125
Furlong	7920	1000	660	240	237.6	220	201.168	40	10	1	0.20117	0.125
Kilometer	39370	4970.96	3280.83	1193.03	1181.1	1093.61	1000	198.838	49.7096	4.97096	1	0.62137
Mile (Statute)	63360	8000	5280	1920	1900.8	1760	1609.35	320	80	8	1.60935	1

# AREA CONVERSION FACTORS

	Square Inch	Square Link	Square Foot	Square Vara (Calif.)	Square Vara (Texas)	Square Yard	Square Meter	Sq. Rod., Pole, or Perch	Square Chain	Rood	Acre	Square Kilometer	Square Mile (Statute)
Square Inch	1	0.01594	0.00694										
Square Link	62.7264	1	0.4356	0.0576	0.05645	0.0484	0.04047	0.0016					
Square Foot	144	2.29568	1	0.13223	0.1296	0.11111	0.0929	0.00367					
Square Vara (Calif.)	1089	17.3611	7.5625	1	0.9801	0.84028	0.70258	0.02778	0.00174				
Square Vara (Texas)	1111.11	17.7136	7.71605	1.0203	1	0.85734	0.71685	0.02834	0.00177				
Square Yard	1296	20.6612	9	1.19008	1.1664	1	0.83613	0.03306	0.00207				
Square Meter	1549.80	24.7104	10.7639	1.42332	1.395	1.19599	1	0.03954	0.00247				
Sq. Rod, Pole, Perch		625	272.25	36	35.2836	30.25	25.2930	1	0.0625	0.025	0.00625		
Square Chain		10000	4356	576	564.538	484	404.687	16	1	0.4	0.1		
Rood		25000	10890	1440	1411.34	1210	1011.72	40	2.5	1	0.25	0.00101	
Acre		100000	43560	5760	5645.38	4840	4046.87	160	10	4	1	0.00405	0.00156
Square Kilometer							1000000	39536.7	2471.044	988.418	247.104	1	0.3861
Square Mile (Statute)								102400	6400	2560	640	2.59	1

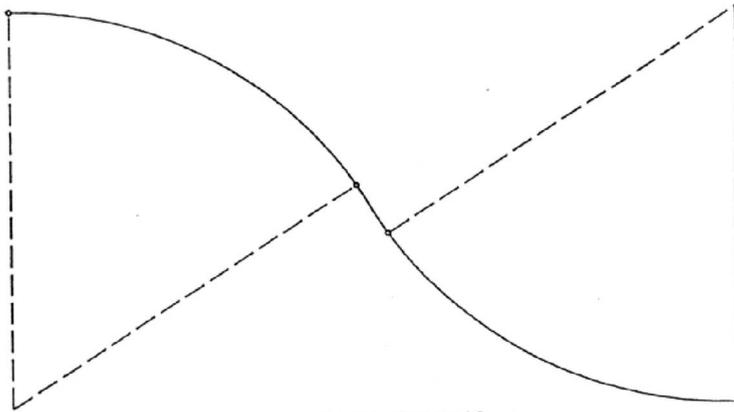
## FORMULAS & EXAMPLES - SIMPLE CIRCULAR CURVE



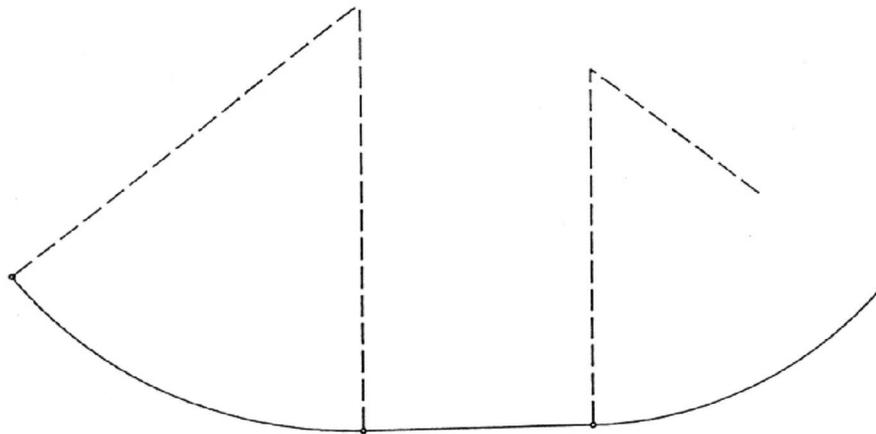
**DEFINITIONS** Be sure the instrument and carrying case are kept dry. If they become wet, allow them to air dry before closing the carrying case. Extend level rod and let air dry overnight.

Back Tangent	=	Tangent from which the curve starts
Forward Tangent	=	Tangent on which the curve ends
POT	=	"Point on Tangent" - Any point on the tangent portion where the curve starts or ends
PC	=	"Point of Curvature" - Station on centerline where the curve starts
T	=	"Tangent" - The distance on a straight line from the PC to the PI or the PT to the PI
MOC	=	"Mid-Point of Curve"
PT	=	"Point of Tangency" - Station on centerline where the curve ends
L	=	"Length of Curve" - The distance <u>along the curved centerline</u> from the PC to the PT
PI	=	"Point of Intersection" - The point where the back tangent and the forward tangent intersect
R	=	"Radius of the Curve"
E	=	"External Distance" - Distance from the MOC to the PI
M	=	"Middle Ordinate" - Distance from the MOC to the mid-point of the straight line between the PC and the PT (the LC)
LC	=	"Long Chord" - Straight line distance from the PC to the PT
$\Delta$	=	The Central Angle of the Curve - The angle between a radial line from the center of the curve to the PC and a radial line from the center of the curve to the PT; also equals the angle of intersection of the forward tangent with the back tangent

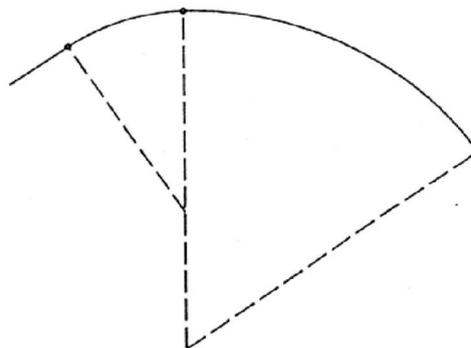
TYPES OF CURVES



REVERSE CURVES



BROKEN-BACK CURVES



COMPOUND CURVES





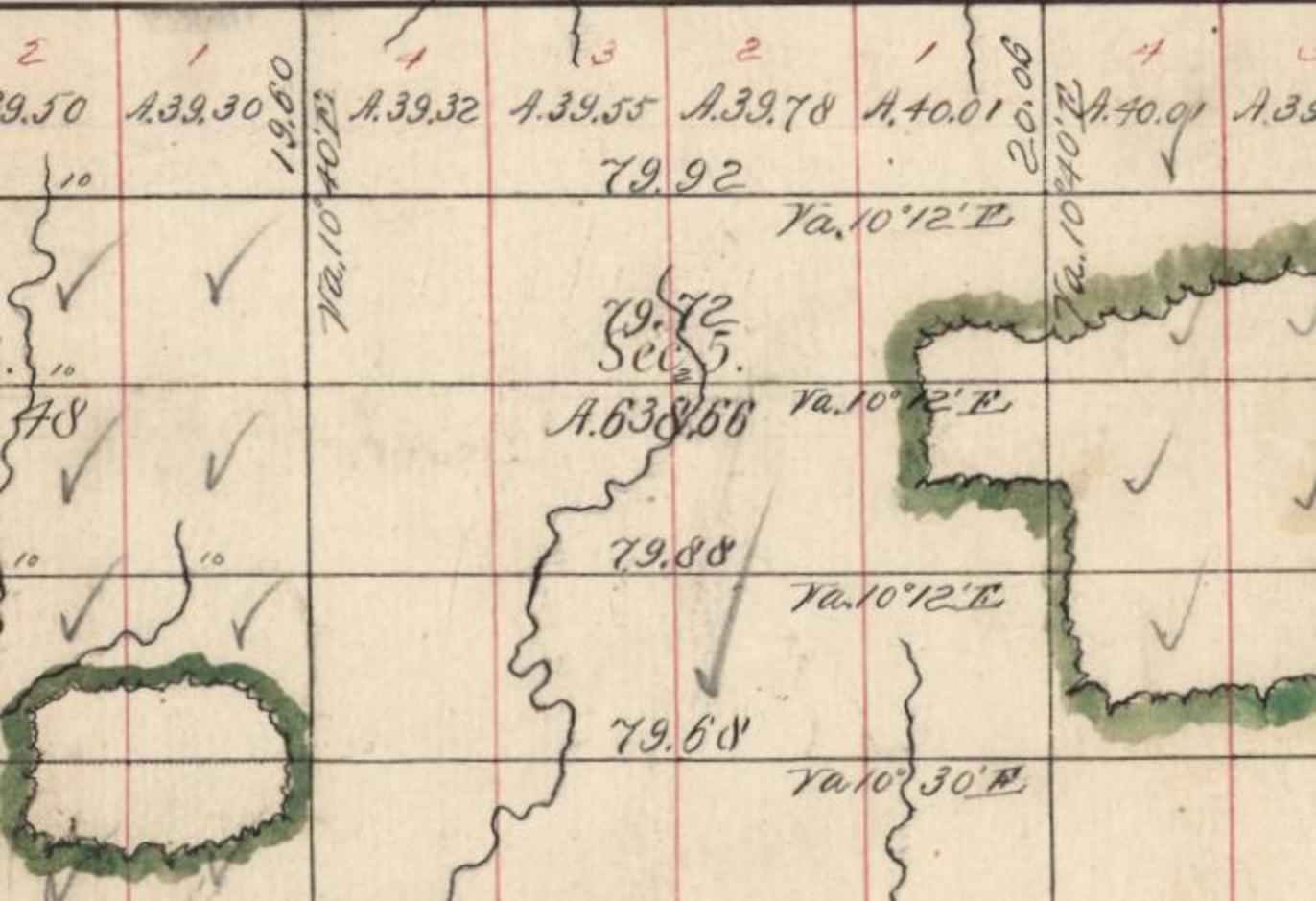
F

e

E

Ya. 11° 30' E

Ya. 11° 27' E

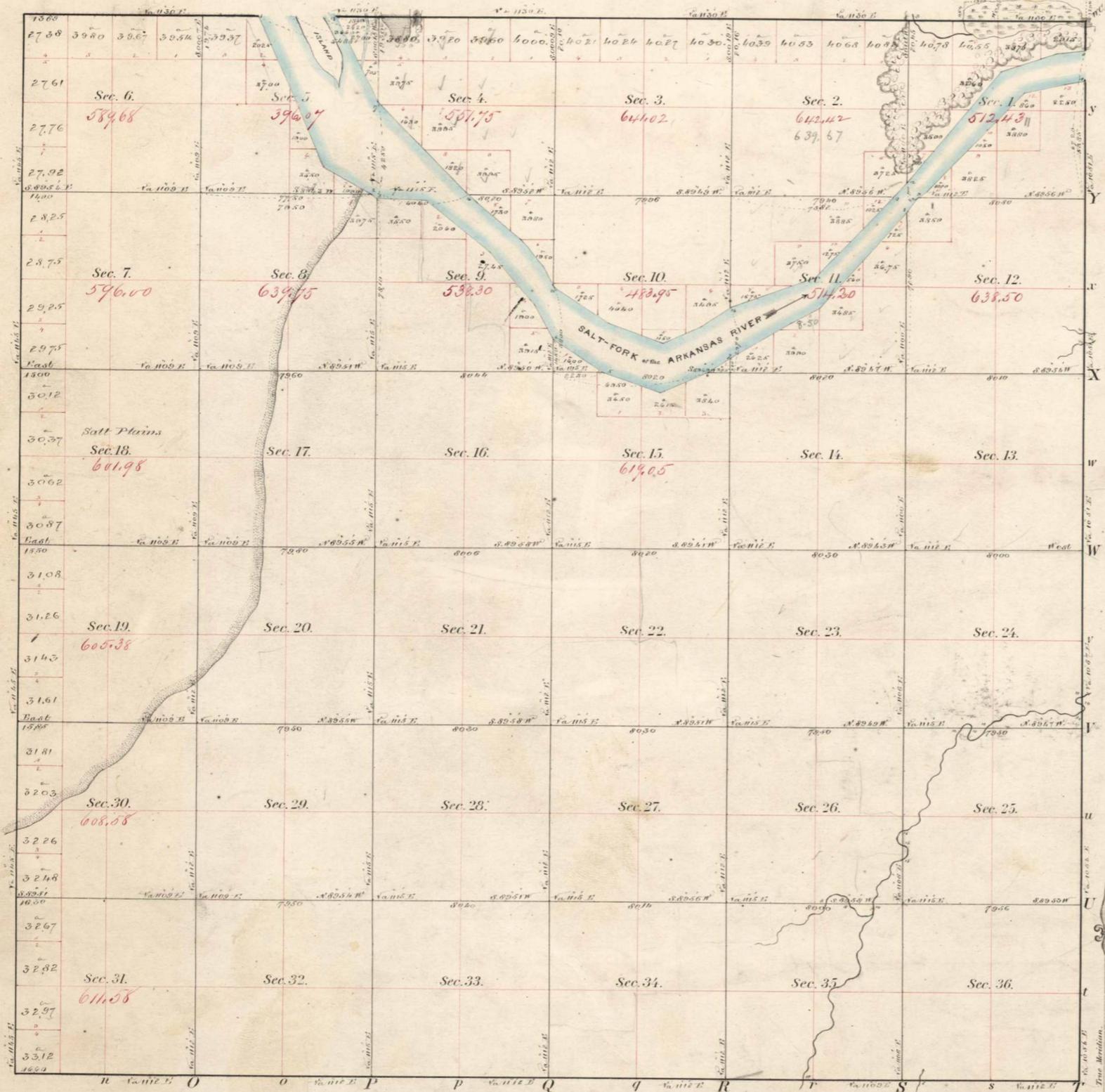


*Recd with P. A. Darling 11th May 24 1873*

TOWNSHIP N°26 NORTH RANGE N°9 WEST of the INDIAN MERIDIAN

G I F e E d D c C b B a A

Course East



Course S 89.58° E. Total number of Acres 21,947.49

Surveys Designated	By Whom Surveyed	Date of Contract	Amount of Surveys	When Surveyed
Township lines	P. A. Darling	Sept 7 1872	M - 65 - 86	Nov 3, Dec 1872
Subdivisions			71 - 65 - 86	Dec 1872 & Jan 1873

*Recd May 29 73*  
Meanders of Salt Fork of the Arkansas River.

Posts	Courses	Ch. & L.	Posts	Courses	Ch. & L.	
<b>Right Bank</b>						
In Sec 5						
1	S 25 1/2° E	37.60				
	S 26° E	36.35				
	S 27° E	28.00				
In Sec 8						
1	S 27° E	37.50				
In Sec 9						
1	S 30° E	21.15				
	S 32 1/2° E	37.45				
	S 41° E	31.92				
	S 33° E	22.35				
In Sec 10						
1	S 27° E	27.00				
	S 27 1/2° E	23.00				
In Sec 11						
1	S 27° E	13.10				
In Sec 12						
1	S 26° E	31.02				
	S 26° E	16.00				
	S 27 1/2° E	6.00				
In Sec 13						
1	S 20 1/2° E	9.10				
In Sec 14						
1	S 26° E	35.00				
	S 15° E	42.00				
	S 76 1/2° E	23.05				
	S 73 1/2° E	2.15				
<b>Left Bank</b>						
In Sec 1						
1	S 27 1/2° W	18.50				
	S 27 1/2° W	26.00				
	S 40 1/2° W	63.25				
In Sec 2						
1	S 42° W	2.35				
In Sec 3						
1	S 43 1/2° W	50.00				
	S 41 1/2° W	42.50				
In Sec 10						
1	S 58° W	20.00				
	S 71 1/2° W	14.65				
	S 71° W	25.60				
	S 27° W	31.60				
In Sec 29						
1	S 33° W	3.50				
	S 41° W	23.85				
	S 42 1/2° W	28.60				
In Sec 31						
1	S 47 1/2° W	5.75				
In Sec 35						
1	S 27° W	41.50				
Total Meanders						
				M - C - L		
				12 - 08 - 09		

The above Map of Township N°26 North of Range N°9 West of the Indian Meridian Indian Territory is strictly conformable to the field notes of the survey thereof on file in this Office, which have been examined and approved.

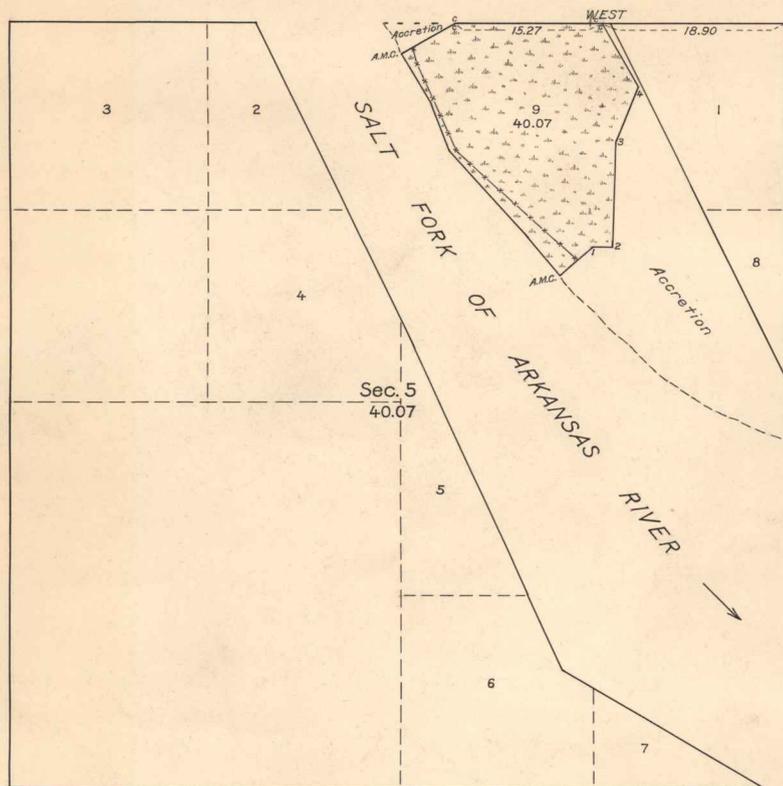
General Land Office  
May 24 1873  
W. W. Courts, Commissioner

*May 9 - 1873  
1873*

*275*



TOWNSHIP No. 26 NORTH, RANGE No. 9 WEST, OF THE INDIAN MERIDIAN, OKLAHOMA  
 PLAT OF AN ISLAND IN SALT FORK OF ARKANSAS RIVER, SECTION 5



MEMORANDUM

THIS PLAT REPRESENTS THE SURVEY OF AN AREA WHICH WAS FORMERLY AN ISLAND IN THE SALT FORK OF THE ARKANSAS RIVER, NOT INCLUDED IN THE ORIGINAL SURVEY OF THE TOWNSHIP AS REPRESENTED BY THE PLAT APPROVED MAY 29, 1873.

THE SURVEY WAS EXECUTED PURSUANT TO AUTHORITY CONTAINED IN GENERAL LAND OFFICE LETTER 1334813 "E", DATED SEPTEMBER 5, 1930, WHICH BEARS DEPARTMENTAL APPROVAL UNDER DATE OF SEPTEMBER 9, 1930.



ORIGINAL  
**DUPLICATE PLAT**  
 The following annotations are not a part of this plat

Received with letter dated .....  
 1334813 March 1, 1932

From  
 Donald B. Clement

Posted in Div. "O" 7/22/32  
 66-38-9-73

Plat filed in local land office  
 Dec 28, 1932-133-813

Miscellaneous

DEPARTMENT OF THE INTERIOR 130277

OFFICE OF U.S. SUPERVISOR OF SURVEYS  
 DENVER, COLORADO, FEBRUARY 27, 1932.

THE ABOVE PLAT OF AN ISLAND IN THE SALT FORK OF THE ARKANSAS RIVER IN SECTION 5, TOWNSHIP NO. 26 NORTH, RANGE NO. 9 WEST, INDIAN MERIDIAN, OKLAHOMA, IS STRICTLY CONFORMABLE TO THE FIELD NOTES OF THE SURVEY THEREOF WHICH HAVE BEEN EXAMINED AND APPROVED.

*Sumner Johnson*  
 U. S. SUPERVISOR OF SURVEYS.

SCALE: 10 CHAINS TO AN INCH. AREA SURVEYED: 40.07 ACRES.

LINES DESIGNATED	BY WHOM SURVEYED	GROUP NO.	DATE	MILEAGE		WHEN SURVEYED	
				MLS.	CHS.	BEGUN	COMPLETED
EXTERIOR	HUGH B. CRAWFORD, U.S. TRANSITMAN.	9	APRIL 21, 1931.	0	34.17	JUNE 25, 1931.	JUNE 29, 1931.
MEANDER				0	28.32		
MISCELLANEOUS				0	37.73		

DEPARTMENT OF THE INTERIOR  
 GENERAL LAND OFFICE  
 WASHINGTON, D. C., MARCH 16, 1932.

THE SURVEY REPRESENTED BY THIS PLAT HAVING BEEN CORRECTLY EXECUTED IN ACCORDANCE WITH THE REQUIREMENTS OF LAW AND THE REGULATIONS OF THIS OFFICE, IS HEREBY ACCEPTED.

*W. C. Stull*  
 ASSISTANT COMMISSIONER.

*sd*  
 1930