

## GLOSSARY OF SURVEY TERMS, ABBREVIATIONS, & SYMBOLS

### TERMS:

**Acre:** A quantity of land containing 43,560 square feet in whatever shape.

**Aiming Off:** Plotting a course to one side or the other of the desired destination point to make use of a feature that will lead into it, in case of error. (also called Deliberate Offset or Offset Course).

**Alidade:** Sighting device in surveying comprised of sights arranged over a straight edge.

**Altimeter:** Instrument used for measuring elevations or altitudes.

**Arc:** Any part of a circumference of a circle or the curve.

**Area Coordinates:** A system of laying out a survey or x axis (east/west) and y axis (north/south).

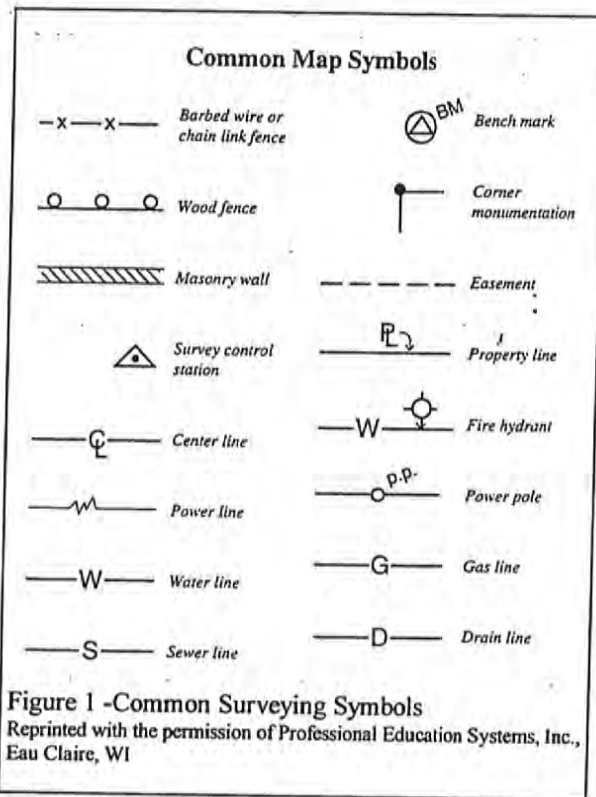
**Azimuth:** Bearing direction, usually in degrees.

**Back Azimuth:** A reciprocal bearing to the Azimuth direction.

**Bearing:** The direction from one point to another as determined with a compass direction or heading.

**Benchmark:** A relatively permanent mark or point used in surveying, from which known point other datum is established.

**Bounds:** The external lines, or limiting lines, of property.



**Boundary:** Every separation, natural, artificial or even invisible on the ground, which marks the lines of division of two adjoining parcels of land.

**Boundary Survey:** A perimeter survey to establish the position of the boundary lines on the ground.

**Cartography:** The science of making maps.

**Chain:** Refers to surveyors chain which is historically 66 feet long (4 rods).

**Chord:** A line segment terminated both ways by the circumference.

**Circle:** A plane figure bounded by a curved line called a circumference, every point of which is equally distant from the point within called the center.

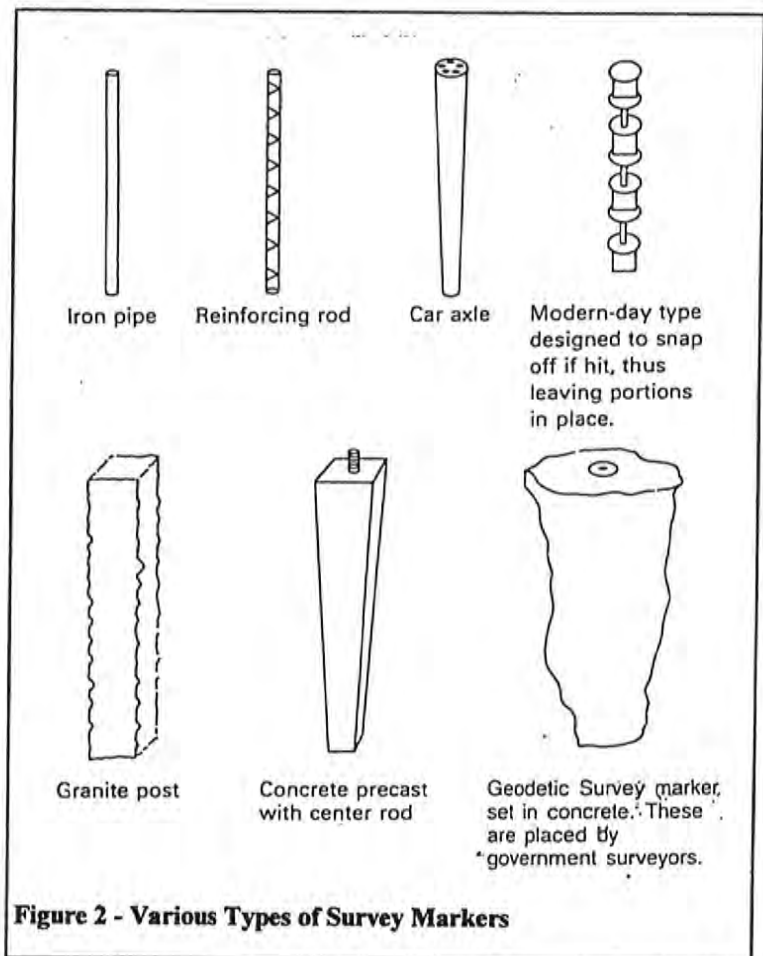
**Circumference:** The bounding line of a circle.  
 $1/360$ th of any circumference is a degree of the circumference.

**Clinometer:** An instrument used for the measuring of percentage of slope.

**Compass Rose:** Drawn compass circle marked in degrees, on a map or plan.

**Contour:** A line on the map showing points at the same elevations.

**Contouring:** Passing through a route at a constant elevation.



**Figure 2 - Various Types of Survey Markers**

Contour Interval:	Difference in elevation between two contour lines.
Control Station:	Point or benchmark on the ground with a known position used as a base in surveying.
Co-ordinates:	The identifying lines on a survey map such as x-y axis.
Course:	The direction of a line with reference to a compass heading.
Closed Traverse:	Traverse that comes back to the starting point.
Datum:	Known reference point.
Declination:	The angular difference between true and magnetic north at a particular point (also called Variation).
Deviation :	Compass error on any particular heading.
Elevation:	Vertical distance of a point above a known datum.
Fix:	Obtaining a position on a map as a result
Flood Plain:	Land adjoining a stream or river that may be flooded during extraordinary storm.
Geodetic Information System:	A network of surveying bench marks located by longitude and latitude, covering the entire country. Originally this system was used to locate federally owned land and has since been extended nationwide.
Gore:	A small parcel of land usually triangular in shape, resulting from the failure of a legal description to join two tracts of land (also called Hiatus).
Graphic Scale:	The scale graphically printed on the face of a survey plan.
Hectare:	A French unit of measurement, equaling 10,000 square meters (92.471 Acres).
Highway Station :	See attached exhibit.

Riparian Rights: The rights of owners of lands on the banks of watercourses relating to its water, its use, ownership of the soil under the stream, accretions, etc.

Secant: The line cutting the circumference of a circle into two parts.

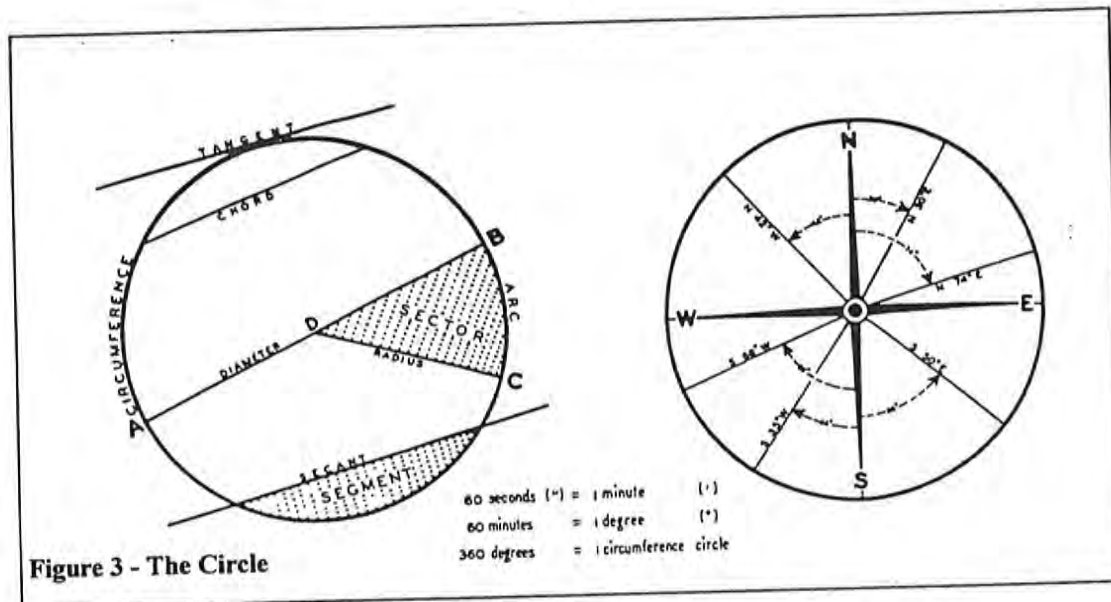


Figure 3 - The Circle

Segments: The parts that a chord or a secant divides a circle.

Sextant: Instrument for measuring angles.

Scale: Relation between a distance on a survey plan and the distance it represents on the ground.

Spot Elevation: Point on a survey where the specific height is noted.

Subsurface Rights: The rights whether by fee or easement to oil, gas or minerals, below a certain depth beneath the surface of the land. The right to surface entry may or may not be excluded, and is important to the value of the surface land for improvement purposes.

Survey: The process of evaluating various field data and land evidence records to measure land for ascertaining its accurate boundaries.

Survey Plan: a cartographic depiction of the results of the surveyor's survey.

Highway Marker:	A stone bound placed by the state highway department denoting the sidelines, curve points, and offsets of highway points.
Hydrographic Survey:	Survey of water area.
Index Contour:	The drawn contour line with a elevation figure shown on it.
Latitude:	The distance of a point on the earth's surface from the equator.
Littoral:	Belonging to the shore, as of seas and great lakes.
Littoral Rights:	Rights concerning properties abutting an ocean, sea, or lake rather than a river or stream. Usually concerned with the use and enjoyment of the shore.
Longitude:	Distance on the earth's surface east or west from the Greenwich meridian point.
Magnetic Azimuth:	The direction towards the magnetic pole.
Meridian:	A circle or semi circle around the earth in a north and south direction, always touching and passing through the poles. Used as a guide in surveying, being placed 24 miles apart and running from a baseline.
Meter:	A metric unit of measurement equal to 39,37 inches.
Metes and Bounds:	The boundary lines of land, with there terminal points and angles. Described by compass headings and distances.
Minute:	The sixtieth part of a degree as of longitude.
Monument:	Point or mark indicating lines and boundaries of a land survey.
Radius:	The line segment from the center to the circumference.
Riparian:	Belonging to or relating to the river bank.

Symbols:	Conventional signs used on a survey plan to depict various features found on the site.
Tangent:	A line that touches the circumference of a circle in but one point however far the line is prolonged.
Theodolite:	Surveying instrument for measuring angles.
Topographic Map:	Map which presents vertical and horizontal positions of features on the earth's surface.
Traverse:	Series of bearings and distances from one point to another.
Triangulation:	Surveying by taking bearings and distances in the form of triangles.
Transit:	A special type of theodolite.
Vertical Datum:	Base from which vertical control stations are measured.
Zygocephalum:	In civil law an inaccurate measure of land. The area of land an yoke of oxen could plow in one day.

#### ABBREVIATIONS:

A:	Area	Delta or	
ac.:	Acres	$\Delta$ :	Central Angle
bdy.;bdys.	Boundary; Boundaries	elev.:	Elevation
B.L.:	Building Line	esmt.	Easement
BM:	Bench Mark	F:	Fill
BS	Backsight	F.G.:	Finish Grade
C:	Cut	F.H.	Fire Hydrant
C.B.:	Catch Basin	F.L.	Fence Line or Flow Line (Inverse)
CC:	Closing Corner	G.C.:	Grade Change
C.F.:	Curb Face	G.I.S.	Geodetic Information System
C.G.:	Center Line of Grade	G.M.:	Guide Meridian
chd.	Chord length	G.P.:	Grade Point
C.I.	Cast Iron	G.P.S.:	Global Positioning System
C.L.	Center Line		
Decl.	Declination		

H.C.:	House Connection Sewer	P.P.:	Power Pole
H&T:	Hub & Tack	pvmt.:	Pavement
I.P.:	Iron Pipe	R:	Radius or Right
lat.:	Latitude	R.P.:	Reference Point
L:	Length	R/W:	Right of Way
L&T:	Lead & Tack	S.D.:	Storm Drain
long.:	Longitude	S.G.:	Sub Grade
mer.	Meridian	sta.:	Station
M.H.:	Man Hole	stk.:	Stake
M.H.W.:	Mean High Water	Std. Trav.	Standard Traverse
M.L.W.:	Mean Low Water	s.s.:	Slope Stake
mkd.:	Marked	T:	Tangent
Mon.	Monument	T.M.B.:	Tempoary Bench Mark
P:	Pipe or Pin		
P.L.	Property Line		

#### CONVERSIONS:

1 Link =	7.92 Inches	1 Acre=	160 sq. Rods or 10 sq. Chains
25 Links=	1 Rod	1 Acre=	43,560 sq.ft. (or 208.71' x 208.71' if sq.)
1 Rod=	16 1/2 Feet	640 Acres=	1 sq. Mile or Section
4 Rods=	1 Chain(Gunther's), 66 Feet, or 100 Links	36 Miles=	1 Township, 480 Chains or about 349 Acres
1 Rood=	1/4 Acre or 10,890 sq.ft.		