GLOSSARY

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Aerial Mapping or Aerial Surveying	A geomatics method of collecting information by using aerial photography, LiDAR or from remote sensing imagery using other bands of the electromagnetic spectrum, such as infrared, gamma, or ultraviolet. It can also refer to the chart or map made by analyzing a region from the air. This is typically done using aero planes, helicopters, UAVs such as the InView Unmanned Aircraft System and in history with balloons. Aerial survey should be distinguished by satellite imagery technologies because of its better resolution, quality and atmospheric conditions.
Aerial Photography	The taking of photographs of the ground from an elevated position. The term usually refers to images in which the camera is not supported by a ground-based structure. Cameras may be hand held or mounted, and photographs may be taken by a photographer, triggered remotely or triggered automatically. Platforms for aerial photography include fixed-wing aircraft, helicopters, balloons, blimps and dirigibles, rockets, kites, poles, parachutes, and vehicle mounted poles.
Angle of Intersection	The angle between two lines.
Atmospheric Pressure	The force per unit area exerted into a surface by the weight of air above that surface in the atmosphere of Earth (or that of another planet).
Azimuth	The angle of horizontal deviation, measured clockwise, of a bearing from a standard direction, as from north or south.
Barometric Pressure	The value of standard or normal atmospheric pressure, equivalent to the pressure exerted by a column of mercury 29.92 in. (760 mm) high, or 1013 millibars (101.3 kilopascals).
Backsight	Point with known coordinates or known azimuth from the instrument point that is used to orientate the instrument during a station setup.
Back Slope	The slope from the back of the ditch to existing ground beyond the ditch.
Base Grade	The layer of material immediately beneath the pavement. It may be composed of crushed stone, crushed or uncrushed sand and gravel, or combinations of these materials known as aggregate base.
Bench Mark	A surveyor's mark on a permanent object of predetermined position and elevation used as a reference point.
Bluetooth	A proprietary open wireless technology standard for exchanging data over short distances (using short-wavelength radio transmissions in the ISM band from 2400–2480 MHz) from fixed and mobile devices, creating personal area networks (PANs) with high levels of security.
Borrow Pit (Quarry)	A quarry is a type of open-pit mine from which rock or minerals are extracted. Quarries are generally used for extracting building materials, such as dimension stone, construction aggregate, riprap, sand, and gravel. They are often co-located with concrete and asphalt plants due to the requirement for large amounts of aggregate in those materials.
Breaklines	A surface feature consisting of a collection of spatial coordinates that have an implied linear relationship.
Calibration	The act of checking or adjusting (by comparison with a standard) the accuracy of a measuring instrument.
Catch Point	The point at which a fill slope intercepts the original surface.
Centerline	A line that bisects something into equal parts. Typically a painted line running along the center of a road or highway.

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Clearing and Grubbing	The stage of construction in which vegetation is cleared from land (clearing) and a root rake or similar device employed to remove roots remaining in the soil (grubbing). The next stage is cutting and filling.
Constellation	An assemblage, collection, or group of usually related persons, qualities, or things.
Contour	Defined line of equal elevation on a map or plat.
Control	A system of points whose relative positions have been determined from survey data.
Control Point	A point whose position (horizontal or vertical) has been determined from survey data, and is used as a base for a dependent survey.
Coordinates	Linear or angular quantities, or both, which designate the position of a point in relation to a given reference frame.
Cross Section	The creation of a DTM from collecting grid elevations in a predetermined area or roadway section.
Cross Slope	A geometric feature of pavement surfaces; the transversal slope [%] with respect to the horizon.
Culvert Pipe	A conduit to convey a stream or runoff through an embankment.
Cut Slope	The cut which is created when a roadway is lower than the surrounding terrain.
Data Collector	Electronic Field Notebook.
Datum	A reference element such as a line or plane, in reference to which the positions of other elements are determined. See: Horizontal Datum and Vertical Datum.
Digital Terrain Model (DTM)	The DTM is considered as a continuous, usually smooth surface which, in addition to height values, also contains other elements that describe a topographic surface: slope, aspect, curvature, gradient, skeleton (pits, thalwegs, saddles, ridges, peaks), and others.
Dilution of Precision (DOP)	An indicator of the quality of a GPS position. DOP takes into account the location of each satellite relative to other satellites in the constellation, as well as their geometry relative to the GPS receiver. A low DOP value indicates a higher probability of accuracy. Standard DOPs for GPS applications are PDOP - Position (three coordinates), RDOP - Relative (Position, averaged over time), HDOP - Horizontal (two horizontal coordinates), VDOP - Vertical (height only), and TDOP-Time (Clock offset only).
Direct Reflex	Enables surveyors to accurately measure remote points without first locating a physical target at each point.
Easement	The right to use the real property of another for a specific purpose. The easement is itself a real property interest, but legal title to the underlying land is retained by the original owner for all other purposes.
Easting	One of the two values indicating the position of a point on a grid system. The easting coordinate is abbreviated: E. A term used in plane surveying that corresponds to the x-position on a Cartesian plane. See: Grid Coordinates.
Electromagnetic Radiation	Energy in the form of electromagnetic waves.
Electromagnetic Spectrum	The range of all possible frequencies of electromagnetic radiation.
Electronic Distance Measurement (EDM)	A surveying instrument that utilizes an infrared or laser beam to measure the distance from the source point to.

Commented [BJE1]: Missing term and definition

Elevation	The distance of any point above or below a reference level (datum).
Elevation Mask	Filters out signals from satellites below a certain angle of elevation above the horizon.
Fast-Static GPS Survey	Similar to static GPS surveys, but with shorter observation periods (approximately 5 to 10 minutes). Fast-static GPS survey procedures require more advanced equipment and data reduction techniques than static GPS methods.
Feature Codes	The abbreviation used to define an object collected during a radial survey.
Fill Slope	The fill which is created when a roadway is higher than the surrounding terrain.
Foreslope	The segment of the ditch between the hinge and the ditch bottom.
Geodetic Coordinates	- Refers to a location on earth defined by its latitude, longitude and elevation.
Geoid	The gravity model set up for the earth that closely approximates mean sea level.
Geoid Model	Separation between the Geoid and the WGS-84 datum.
Geomatic	The discipline of gathering, storing, processing, and delivering geographic information, or spatially referenced information.
Global Positioning Satellite (GPS)	A system of satellites, computers, and receivers that is able to determine the latitude and longitude of a receiver on Earth by calculating the time difference for signals from different satellites to reach the receiver.
Grade	Surface level of ground or rate/degree of slope.
Grid	A network composed of two sets of equidistant parallel lines intersecting at right angles.
Grid Coordinates	The numbers of a coordinate system that designate a point on a grid.
Heat Shimmer	Caused by temperature differences at varying heights in air. The different air layers have a different index of refraction causing light to bend as it passes from one layer to another, causing a shimmer.
Horizontal Alignment	Consists of straight sections of roadway, known as tangents, connected by horizontal curves.
Horizontal Control	Control stations whose grid coordinates are known.
Horizontal Datum	In plane surveying, the grid system of reference used for the horizontal control of an area; defined by the easting and northing of one station in the area, and the azimuth from this selected station to an adjacent station.
Hub	A wooden stake set in the ground, with a tack or other marker to indicate the exact position. A guard stake protects and identifies the hub.
InRoads	Enables you to transfer data from electronic fieldbooks (EFBs) to the MicroStation or AutoCAD environment, reducing time from field to finished drawings with interactive data editing capabilities. It produces plot-ready graphics immediately upon reading the data. Contours can be displayed, surveys adjusted and results visually verified before you leave the site. InRoads Survey's Fieldbook Data Editor helps you interactively edit your raw survey data

Kinematic GPS Surveys	Make use of two or more GPS units. At least one GPS unit is set up over a known (reference) station and remains stationary, while other (rover) GPS units are moved from station to station. All baselines are produced from the GPS unit occupying a reference station to the rover units. Kinematic GPS surveys can be either continuous or "stop and go". Stop and go station observation periods are of short duration, typically under two minutes. Kinematic GPS surveys are employed where third-order or lower accuracy standards are applicable.
Laser	A device that produces an intense, coherent, directional beam of light by stimulating electronic or molecular transitions to lower energy levels.
Latitude	In plane surveying, the amount that one end of a line is north or south of the other end. As the plane coordinates of a point are known as the easting and northing of the point, the latitude is the difference between the northings of the two ends of the line, which may be either plus or minus.
Level Circuit	Using a level and rod to transfer an elevation from one point to another and back to the original.
LoIS	Source for Survey Monument Control Points (LPN Sheets).
Longitude	A measure of relative position east or west on the earth's surface, given in degrees from a certain meridian, usually the prime meridian at Greenwich, England, which has a longitude of 0 degrees.
Magnetic Storm	A disturbance or fluctuation in the earth's magnetic field, associated with solar flares.
MicroStation	A CAD software product for two- and three-dimensional design and drafting, developed and sold by Bentley Systems.
Monument	A permanently placed survey marker such as a stone shaft sunk into the ground.
NGS	National Geodetic Survey
Northing	One of the two values indicating the position of a point on a grid system. The northing coordinate is abbreviated: N. A term used in plane surveying that corresponds to the y-position on a Cartesian plane. See: Grid Coordinates.
Offset	Perpendicular interval; to parallel and continue a preceding course, line or boundary.
PCCP	Portland Cement Concrete Pavement
Perpendicular	A straight line at an angle of 90 degrees to a given line, plane, or surface.
Plantmix Bituminous Surface	Consists of a surface course composed of mineral aggregate and bituminous material mixed in a central mixing plant and placed on a prepared course.
Positional Tolerance	The allowable tolerance of how much something may deviate from its true location.
Prism	A transparent polygonal solid, often having triangular bases, used for dispersing light into a spectrum or for reflecting rays of light.
Prism Constant	A dimension on a prism which is an offset from the back of the glass to the center of the point.
Project Control	A set of known survey monuments for use on a particular contract.
Propagate	To travel through space or a material, using wave energy (as light, sound, or radio waves).

Radial Line	A line passing through the center of a circle or sphere.
Real Time GPS Survey (RTK)	A position location process whereby signals received from a reference device (such as a GPS receiver) can be compared using carrier phase corrections transmitted from a reference or base station to the user's roving receiver.
Reinforced Concrete Box (RCB)	A structure used to convey a stream or runoff through an embankment.
Remote Sensing	The acquisition of information about an object or phenomenon, without making physical contact with the object. In modern usage, the term generally refers to the use of aerial sensor technologies to detect and classify objects on Earth (both on the surface, and in the atmosphere and oceans) by means of propagated signals.
Residuals	The difference between the mean of a set of observations and one particular observation.
Right of Way	A parcel of land, granted by deed or easement, for construction and maintenance according to a designated use. This may include highways, streets, canals, ditches or other uses.
Riprap	Embankment protection adjacent to a stream or lake, the bank is lined with broken concrete or rock to prevent erosion.
Roadway	The portion of a highway, including shoulders, for vehicular use.
Robotic Total Station	A multi-purpose electronic surveying instrument with a built in EDM capable of measuring horizontal distances, slope distances, angles, vertical height differences, and three-dimensional coordinates.
Satellite	A manufactured object or vehicle intended to orbit the earth, the moon, or another celestial body.
Slope Staking	A special form of leveling to determine the point at which the proposed slope intersects the existing ground.
Static GPS Survey	Static GPS survey procedures allow various systematic errors to be resolved when high-accuracy positioning is required. Static procedures are used to produce baselines between stationary GPS units by recording data over an extended period of time during which the satellite geometry changes.
Station	A numerical designation for points on a contract centerline which denote the distance of that point from another point on the same alignment.
Subgrade	A surface of native material upon which a road is laid.
Survey Monuments	A reference point marked by a permanently fixed marker.
Tangent	A straight line or plane that touches a curve or curved surface at a point, but if extended does not cross it at that point.
Terrestrial	The comparison of field survey between two known points to true values.
Theodolite	An optical surveying instrument with a rotating telescope for measuring horizontal and vertical angles.
Tie	A survey connection from a point of known position to a point whose position is desired.
Total Station	A Total Station is an electronic/optical instrument used in modern surveying. The Total Station is an electronic theodolite (transit) integrated with an electronic distance meter (EDM) to read distances from the instrument to a particular point

Traverse	To travel or pass through, over, or across a point.
Tri-Bracket	An instrument attachment plate with three leveling screws used to attach a theodolite or surveyor's level to its tripod, level the instrument, and center it precisely over a point.
Trimble Survey Controller and Trimble Access	Are field software used in Trimble TSC2 and TSC3 data collectors. The older TSC2 uses Trimble Survey Controller and the newer TSC3 uses Trimble Access. Trimble has included on board help documentation in both versions that can be used by crews in the field.
Tripod	An adjustable three-legged stand which is the support for theodolite or level.
Vertical Alignment	A change in elevation along a roadway.
Vertical Curve	A curve on the longitudinal profile of a road to provide for change of gradient.