APPENDIX J

GLOSSARY

Blunders	Mistakes in the collection, processing or interpretation of survey data.
Boundary Survey	Location of the interests and rights to real property.
Bridge Reference Line	The back of a bridge abutment. Bridge Reference Lines are designated by upper case letters beginning with letter “A” at the line of lowest stationing.
Bridge Survey	Required whenever a proposed bridge or the reconstruction of an existing bridge is to be incorporated into the design of a roadway.
Carrier Phase	The difference between the phase of the carrier signal transmitted by the satellite and the phase of the receiver oscillator at the epoch of measurement.
Chi-Square Test	Used to test the sample variance to see if it is in agreement with the population variance.
Collimation	Exists when a line of sight is not truly horizontal when the instrument is leveled.
Control Survey	Survey executed to provide a basic framewirk for subsequent surveys on a site.
Correlation	Exists when two or more observations are jointly involved.
Covariance	Expresses the mutual interrelation between random variables.
Datum	Reference Surface upon which a survey is based.

Deflection of the Vertical	The angle between the plumb line and the line normal to the ellipsoid at the same point.
Digital Terrain Model (DTM)	Discrete representation of the topographic surface by a dense network of x,y,z coordinates. Two common forms are a rectangular grid and a triangulated irregular network (TIN). Also referred to as Digital Elevation Model (DEM).
Dilution of Precision (DOP)	A measure of the quality of available satellite geometry.
Edge of Metal (EOM)	The outer edge of the traveled portion of a paved highway.
Ellipsoid Height	The distance from the ellipsoid to a point on the surface of the earth.
Error Ellipse	Measure of uncertainty derived from the standard deviations.
GPS	The Global Positioning System
Geocentric Coordinate System	Three dimensional Cartesian coordinate system whose point of origin is the center of the earth. Its components are X,Y,Z.
Geodetic Coordinate System	Three dimensional curvilinear system based upon the ellipsoid. Its components are longitude, latitude and height.
Geodetic Surveying	Method of surveying encompassing the size and shape of the earth along with its gravity field.
Geoid	An equipotential surface every point being normal to the force of gravity. Mean sea level.
Geoid Height	The difference between orthometric height and ellipsoid height.
HARN	High Accuracy Reference Network

Hydraulic Survey	Used to capture field data that may be used by a design team for bridge and drainage design.
Integer Ambiguity (N)	The number of whole wavelengths between the satellite and the receiver.
Left Bank	Bank of a watercourse on the observers left as (s)he looks down stream.
Legal Alignment	That line from which easements, rights of way or fee titles are described.
Litigation Survey	Litigation surveys are executed because of either impending or possible legal action in which MDOT may be a party.
Local Space Rectangular Coordinate System	Three dimensional rectangular coordinate system having as its origin a point on or near the surface of the earth. Its components are U,V,W, or E,N,U.
Map Projection	A representation of all or part of the surface of the earth on a flat plane.
NSDI	National Spacial Data Infrastructure.
Orthometric Correction	Used to account for the convergence of level surfaces.
Orthometric Height	The distance from the geoid to a point on the surface of the earth.
Orthophoto	A photograph where relief displacement has been eliminated through rectification.
Plane Surveying	Method of surveying where the surface of the earth is assumed to be a flat plane.

Photogrammetric Survey	Establishing ground control to support the photogrammetric mapping process.
	The actual process of collecting data using photogrammetric instruments.
Pier Reference Line	The centerline of a bridge pier. Pier reference lines are designated by numbers beginning with number 1 at the pier with the lowest stationing.
Plan Alignment	That shown on the bridge plans. It is usually the legal alignment.
Professional Surveyor	An individual licensed as such by the State of Michigan
Pseudo Range	The difference between the time transmitted by a satellite and that generated by a GPS receiver myltiplied by the speed of light in a vacuum.
Random Errors	Error remaining when blunders have been eliminated and systematic errors accounted for.
Reference Ellipsoid	A mathematical reference surface approximating the size and shape of the earth.
Relief Displacement	The apparent displacement of a point because of its position above or below a datum.
Right Bank	Bank of a watercourse on the observers right as (s)he looks downstream.
Route Survey	Surveys undertaken to either layout or locate an existing corridor.
Standard Deviation	As statistic used to measure the dispersion of a distribution. The square root of the variance.

Structure Alignment	That determined from the "as-built" centerline of the bridge.
Systematic Errors	Those errors caused by either instruments, operators or the environment known to exist which can be minimized by adapting the operation itself or by mathematical modeling.
Topographic Survey	Performed to map a site for the depiction of man-made and natural features that are on, above or below the surface which will affect the design of the particular highway system.
t - distribution	Used to compare the mean of a sample with the mean of the population.
Under-clearance	The measured distance from a point on the surface of the ground to the bottom of a bridge.
Variance	An estimate of the difference between what is expected and what occurs