Definitions

As-Applied: **This refers to the state of the map as it reflects current reality. The As-Applied surface should normally progress from being equal to the original surface to being equal to the design surface as a job proceeds. Synonymous with 'As-Built'.**

Baud Rate: **This is a number representing the speed at which messages are sent over a serial connection. A bigger number corresponds to a faster data rate. Both the sending and receiving systems must have the same baud rate in order to communicate.**

Backslope/Batter: **This is the cross sectional slope that leads into a drain from the field surface. The "sides" of a drain.**

Bi-directional error: **A term for the consistent (equal and opposite) vertical error of the cutting edge that is sometimes seen when going in opposite directions. This error can be solved by applying an appropriate look-ahead time setting.**

Benchmark: **Synonymous with "control point". This is a known location (and height) in or out of the field that can be returned to as required.**

Blade Shift: **Blade shifting is used to describe how the blade of the implement moves either automatically or manually.**

Borrow pit: **A pit or depression that is created when dirt is removed from a location for use elsewhere. Is often a channel beside a bank, where the channel was dug in order to provide dirt for the bank.**

Bulking: **The act of making all the largest cuts and fills first before approaching the final stages of the implementation. Generally thought of as being a low accuracy activity.**

Burning: **The act of embedding a certain design element into an existing surface.**

Button push: **Touching/tapping an on-screen button with your finger. Synonymous with button click.**

Com port: **Also known as a 'serial port'. This is a hardware connection used to connect a cable to another device so that data can be transferred. A computer may have 0, 1, or several of these. Sometimes a com port may represent a connection to an internal device (modem or GPS) so may be present even if there is no external connector present. Sometimes a com port will not exist until a device is connected to a USB port.**

CSV: **Comma Separated Values. This is a generic text file format often used to store columns of numeric data. To view the contents of a CSV file, open the file in a text editor such as "Notepad" or "Excel". Users in countries where a comma is used as a decimal place separator should be particularly careful when using this format.**

Cut area: **A cut area is a zone where soil needs to be removed.**

Cut/fill map: **A map using different coloring to show the difference between an original and a design surface.**

Cut/Fill Ratio: **A ratio that is determined by the type of material being moved. It relates to what percentage of it will “settle” or “shrink” once compacted. Example: Using a cut/fill ratio of 1.2 means that you require 1.2 cubic yards of cut soil to create 1.0 cubic yards of compacted fill.**

Design surface: **A surface that has been designed, this model represents the finished/target surface after all earthworks have been completed.**

DEM: **see Digital Elevation Model.**

Detent: **is a term used by John Deere that means to place the iGrade™ system into automatic and allow another system to send control commands.**

Digital Elevation Model: **A digital representation of the topography of an area of land. Allows a user to view the surface of the land in three dimensions with software. Can be manipulated and changed in software and the result can be fed into a machine control system.**

Feather: **To feather something is to soften it or soften the transition between regions so that the interface is gradual.**

Fill area: **A region where dirt must be added in order to meet a target surface design.**

Finishing: **Final passes to achieve design height.**

Geo-referenced: **Data or images that have geographic coordinates (latitudes and longitudes) associated with them can be described as being 'geo-reference'. Normally, data must be geo-referenced in order to be used with a GPS based guidance or mapping system.**

GPS: **Global Positioning System.**

Haul: **The activity of picking up dirt in the bowl of a scraper pan and moving it some distance to a new location.**

Heading: **the heading is the direction a tractor is moving or facing.**

Importing/Exporting dirt: **Importing refers to the action of bringing dirt into a region from outside the field. It may come from a stockpile of dirt, or from some other place where it is not needed, or where removal of dirt is called for. Exporting is the opposite action.**

Land forming: **The process of altering the land surface using non-linear curves and slopes.**

Land leveling: **The process of altering the land surface using large flat planes. These planes are normally graded to drain water in one or more directions.**

NMEA: **National Marine Electronics Association. NMEA messages are data strings that conform to a particular standard established by the National Marine Electronics Association. These are commonly used with GPS data communications.**

Original surface: **A surveyed or imported set of data that forms the shape of an area of land before it is leveled or formed.**

On-grade: **The position of an implement cutting edge when it is considered to be at the correct elevation in order to achieve the desired target design.**

Pixels: **Pixels are the individual cells of a raster structure that makes up an elevation surface. The width and height of a pixel determines the precision of the surface.**

Primary and secondary slope: **The primary slope (sometimes called “row slope”) is the main direction a field or area falls in, the secondary slope (synonymous with cross slope) is 90° (perpendicular) to the primary slope.**

Project file: **This is a proprietary binary file used to store data for T3RRA Cutta, T3RRA Ditch, and T3RRA Plane. It will always end in the ‘.tci’ extension. (You may have to enable 'Show file extensions' in Windows to see this extension).**

Raster: **This is a term for a data structure consisting of a grid of elevation values. It has a set number of rows and columns of grid points. Each grid point is called a ‘cell’, or a ‘pixel’.**

RTK: **Real Time Kinematic. This is a term for a type of GPS position solution that has very high accuracy.**

Settle/Shrink: **Settle or shrink is used when discussing the compaction of soil after it has been moved.**

Slope: **A measure of the steepness, incline, grade/gradient, or constant rate of elevation change, of a surface. A higher slope value indicates a steeper incline. In T3RRA software positive slopes always refer to “downhill” slopes.**

Stockpile: **A pile of dirt/soil/material that has been exported from some other area.**

Surface: **A two- or three-dimensional representation of the topographic form of a field. Is often a systematic grid of elevation points that describe the location and elevation of every point within a field.**

Survey point: **A point measured with a location (x,y) and an elevation (z). Collections of survey points are used to create the surface of the field. The more points the more accurate the surface.**

TCM: **Terrain Compensation Module. A sensor that is part of the John Deere StarFire receivers. Used to measure and control cross slope in iGrade™.**

Time-out: **When an application “times out” it means that whatever it is talking to has taken too long to respond and it does not know what to do.**

Topography: **The physical features of an area of land, especially the shape of its surface.**

Topsoiling: **The action of adding a layer of new soil over the top of an existing surface. Often done in heavy cut areas to ensure there is a layer of more**

organic, fertile soil above the subsoil that has been exposed by the removal of dirt during the leveling process.

Washboarding: **A term used to describe undesirable systematic up and down movement of a scraper blade. The bumpy resulting nature of the soil surface resembles an old fashioned washboard, hence the name.**

Zeroing: **The process by which the elevations in a control map are calibrated against the elevations being measured by the GPS. By ‘zeroing’ we are able to compensate for:**

- **The offset from the GPS to the cutting edge,**
- **differences in a surveyors GPS to the implement GPS,**
- **differences in implement height when surveying verse implementing, and**
- **other factors.**