Earthwork Modeling Step-by-Step
Error-Check and Correct Existing Data Lines

The ***Pine Existing Errors.esw*** file opened on page 86 includes *Data Lines* for every Existing plan contour (including some errors) and inexperienced users may think this data represents a “completed” surface model. In this exercise segment we’ll learn how to “complete” the model by using various error-detection methods to locate and correct **(1)** data-entry errors (corrected by editing and cleanup of the bad entries) and **(2)** surface interpolation errors (corrected by entering more *Data Lines*). These corrections are made until the model’s accuracy is “good enough” for its intended use and we’ll use most of the error-checking methods in the table below for this exercise (to learn about them), but we should keep in mind that using *EVERY* error-check method is not required for *EVERY* surface model. Spending hours finding and fixing every "pimple" and "dimple" on an Existing surface model that will be used only for volume calculations is not a good use of our time; on the other hand, an Existing surface model that will be used onsite to verify a bid topo before work begins deserves more error-checking time and effort—judgment must guide the level of detail and accuracy required for an Existing surface model that’s “good enough”.

Existing Surface Error-Check Method	Applicable to Modeling for Quantity Takeoff	Applicable to Modeling for Field Topo Verification	Comments
2D Plan View Display in Edit Mode	Always	Always	Quickly identify crossing lines and other gross horizontal errors (see page 88)
3D View Display in Edit (or 3D View) Mode	Always	Always	Quickly identify gross vertical errors (see page 92)
Find Elevation Function in Edit Mode	When 3D View Shows Multiple Elevation Spikes Imported from CAD	When 3D View Shows Multiple Elevation Spikes Imported from CAD	Select all objects with elevations above/below specified value (see page 93 and *Day 2 Handbook*)
Show Trimesh Utility in Edit/Entry Mode	Yes	Yes	Evaluate surface TIN for point-to-point interpolation errors like flat areas (see page 96)
Water Flow Utility in Edit/Entry Mode	Yes	Yes	Quickly identify flat areas on surface (see page 98)
Contour Surface Utility in Edit Mode	Yes	Yes	Compare generated and plan contours to identify surface interpolation errors (see page 99)
Display Slope Colors in Edit Mode	Potentially	Potentially	Identify areas of user-specified slope by color (see page 214)