

Earthwork Modeling Step-by-Step Existing and Design Surface Adjustments

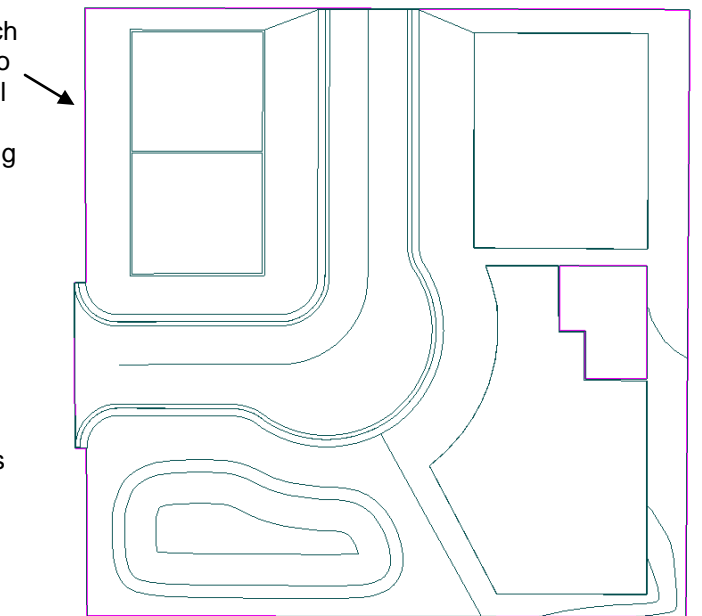
At this point our AGTEK job file contains two completed surface models: **Existing** and **Design**. If these surfaces are used for volume calculations, surface adjustments are typically required for realistic cut/fill volumes (AGTEK's video at www.agtek.com/video.html?id=235 provides a basic intro to the surface adjustments that we'll make using Stripping Areas and Sectional Areas on the following pages) . . .

The **Existing** surface is typically adjusted to model the stripping of topsoil and/or the removal of existing pavements/structures prior to grading. The most practical (although not the only) way to accomplish this adjustment is by entering one or more **Stripping Areas** (as we'll do here, starting on the next page). But there are cases where we would **not** enter Stripping Areas:

- When topsoil stripping and/or removal of existing pavements/structures are not required, there's no need to enter Stripping Areas and we would skip all steps on pages 172-177).
- When **Gradework-Materials Structures** have been *Applied* as Stripping Areas, we would skip all steps on pages 172-175 and use the methods on pages 176-177 and 213 to verify the *Applied Structures* results. See AGTEK's videos at www.agtek.com/video.html?id=261 (@ 5:25 min mark) and www.agtek.com/video.html?id=599 (@ 26:20 min mark) for examples of applying *Gradework-Materials Structures* as Stripping Areas.

If the **Design** surface has been modeled using Data Lines with **finish grade** elevations (top of slab, top of pavement, etc.—which is often the case), the Design surface may need to be adjusted to model subgrade ("dirt" grade after deducting the design sectional thickness of structures, pavements, etc.). The most practical (although not the only) way to make this adjustment is by entering **Sectional Areas** (as we'll do on pages 178-202). But there are cases where we would **not** enter Sectional Areas:

- When the **Design** surface is modeled with **subgrade** elevations (or a subgrade model is not required), there's no need to enter Sectional Areas (but entry of **Report Regions** for cut/fill quantity subtotals may be needed—see page 178).
- If **Gradework-Materials Structures** are *Applied* as Sectional Areas and Report Regions, we would skip the steps on pages 180-193 and use the methods on pages 194-199 and 213 to verify the *Applied Structures* results. See AGTEK's video at www.agtek.com/video.html?id=536 for an example of applying *Gradework-Materials Structures* as Sectional Areas and Report Regions.



Q: Can Existing and Design models surfaced from alignment cross-section data in *Highway 3D/4D* be adjusted with Stripping Areas and Sectional Areas?

A: Yes. For a couple of examples, see AGTEK's training videos at www.agtek.com/video.html?id=317 and www.agtek.com/video.html?id=633.