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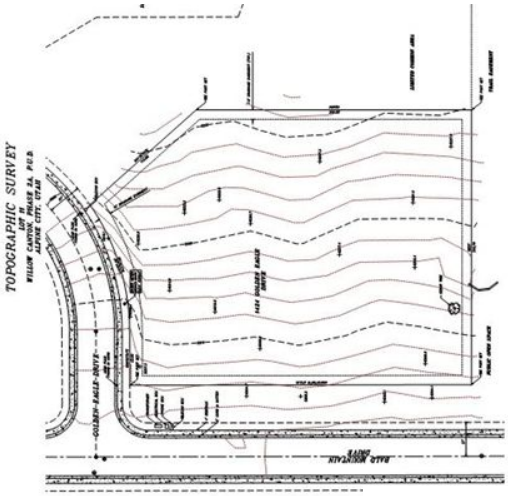
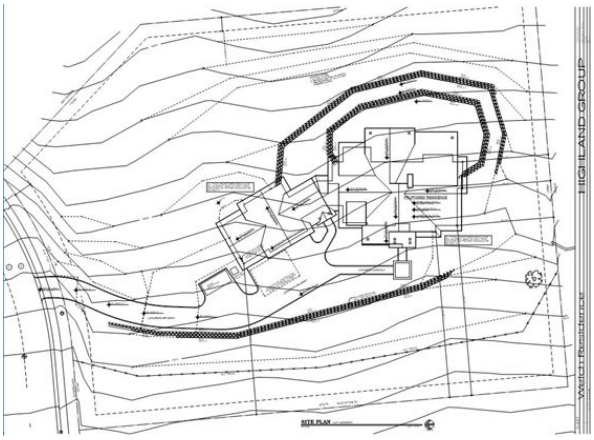
Case Study #1: Site Analysis

Client: Timberidge Custom Homes, Heber City, Utah

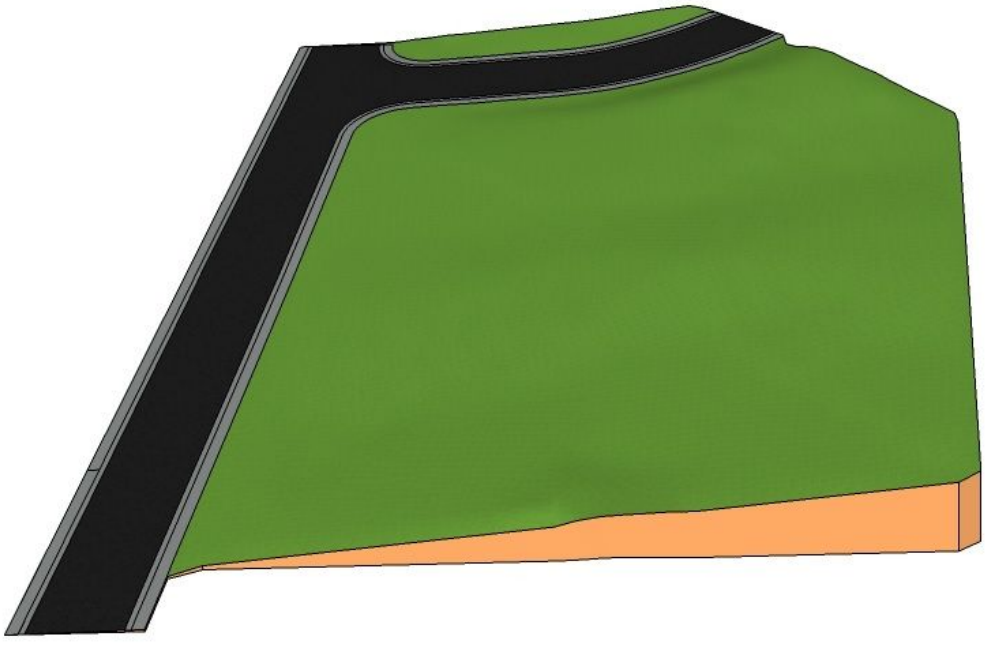
Project: Client was provided site plan with existing topos, house location, driveway and retaining wall layouts, and proposed contours. Concerned about how much excess soils would need to be hauled off-site and allowances for the retaining walls and driveway. The site slopes from back to front AND has a walkout basement.

Drawings Provided: Property with Existing Site Contours - Proposed Site Plan





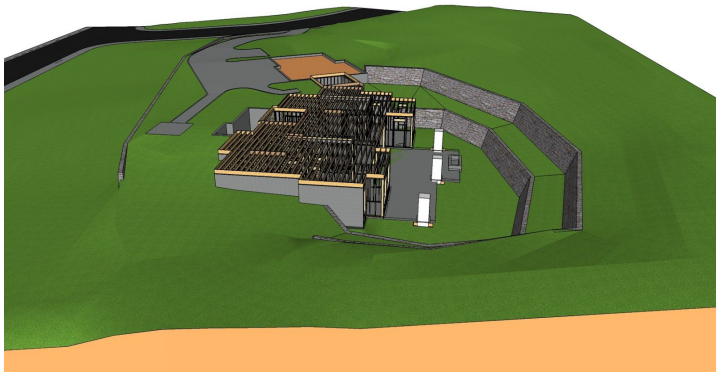
The first step was to create the Existing Site Model using the provided existing contours. The street intersection was modeled as well. A “skirt and bottom” are applied to the surface mesh to create a solid, reportable



volume sample. This volume will be compared to the Proposed Site Model volume for cut/fill analysis. Next, the Proposed Site Model is created. Coinciding with the site analysis, the structure of the house was being modeled. Using the 2D construction documents, the Foundation was modeled, including footings and walkout step-downs per plan. Using the Proposed Site Plan, the Existing Site Model is positioned to fit the house, per the site plan layout and the specified floor elevation per the plan. Once the house is positioned, the topography surface mesh is then edited to delete the surface mesh around the house anywhere that requires backfilling or filling, basically any altered surface. Now that we know the existing conditions, any sub-foundation needs may clearly be seen.

The Proposed Site Model includes the excavation or displacement of soils by the house and foundation, thus providing an accurate sample volume for the Proposed Site. The Proposed Site Volume is then subtracted by the Existing Site Volume, providing the Cut and Fill Analysis.

This image shows the Proposed foundation, the walk-out and “pit” created by the terraced retaining walls per plan, along with the driveway and lower retaining.



This analysis provided the following results:

- Proposed site requires considerable excess soil ~ **2813 CY or about 234 Truck Loads**
- Retaining Walls ~ **3522 SF**
- Driveway Coverage ~ **3379 SF**