

**3.13 Earth Removal Calculations**

**The Residence at Quail Ridge**  
**Cut and Fill Calculations**

Job: SM-3283B

Done by: DTH

Checked by: RJH

Date: 7/16/07

Plan Reference: *The Residence at Quail Ridge Site Development Plan* by Stamski and McNary, Inc. dated 7/18/07.

Site Volume Table: Unadjusted			
Cut Yards	Fill Yards	Net	Method
118543	81188	37355 (C)	Grid
124286	86729	37557 (C)	Composite

Avg. fill =  $(37355+37557) / 2 = 37,456$  c.y. cut

**Cut Adjustment: Due to Construction Materials**

**Proposed Buildings:**

Volume of the proposed buildings with garages, and proposed Lot 2 improvements to the golf course were calculated by Auto-CAD and are reflected in the table above.

**Pavement (Road):**

Average depth of pavement with associated gravel is 21.5".

Total paved area: 282,620.5 s.f.

$282,620.5 \text{ s.f.} \times 21.5" \times (1 \text{ ft./}12") \times (1 \text{ c.y./}27 \text{ c.f.}) = 18,754$  c.y. of mat'l removed as cut.

**Sidewalk:**

Average depth of concrete pavement with associated gravel is 11.5".

Total Sidewalk area: 50,659.5 s.f.

$50,659.5 \text{ s.f.} \times 11.5" \times (1 \text{ ft.} / 12") \times (1 \text{ c.y.} / 27 \text{ c.f.}) = 1,798$  c.y. of mat'l removed as cut.

**Final Adjustment:**

$37,456 \text{ c.y.} + 18,754 \text{ c.y.} + 1,798 \text{ c.y.} = \mathbf{58,008 \text{ c.y. cut}}$

**METHODOLOGY**

**Cut and Fill Calculations:**

The cut and fill calculations were performed with the use of Autocad Release 2000i, Civil Design2i module. The existing contours were used as the base elevations, and the proposed contours for the site were overlaid. Two methods were used to calculate the cut and fill volumes: grid and composite. The average value for these calculations was used. The average cut value was adjusted for the cut necessary for pavement and sidewalk installation.