

APPENDIX 16.5
Earth Cut/Fill Analysis

INSERT TABBED DIVIDER PAGE

JARDIM ESTATES EAST

EARTH CUT/FILL ANALYSIS

VILLAGE OF TARRYTOWN, WESTCHESTER COUNTY

October 10, 2011

Earth Cut/Fill Analysis

The proposed Jardim Estates East Subdivision will consist of twelve single family residential lots (three existing, nine new) gaining access onto newly modified and/or created private roads or common driveways. The proposed roads will generally follow to the greatest extent possible the existing on-site private roads both horizontally and vertically. The existing private roads will be modified as necessary (widened) to accommodate the anticipated traffic and to meet generally accepted road standards.

With the proposed roads generally following the horizontal and vertical alignment of the existing private roads and other travel ways on site to the greatest extent possible, earth cut and fill operations are relatively modest. This results in a considerable portion of the proposed roads being on grade or within a couple feet above or below existing grade.

Grading for the utility installations (water, sewer, and drainage) generally involve trenching to the required depths and backfilling same to original grade. There are no areas requiring significant fill or cut for the utility line installations or the road construction. The following are the proposed cut and fills for both the roadway and utility infrastructures and the individual lot construction estimates:

Conventional subdivision roadway and utility infrastructure

The earth cut and fill analysis for the roadway and utility infrastructure (including the proposed stormwater basins) was calculated from the computer AutoCad drawings. The analysis included the cut and fill required for the individual lots which includes the driveways, stormwater basins and around the houses. A comparison was made from the existing ground surface to the proposed ground surface utilizing the composite method, which is most accurate. The following numbers were generated:

Location	total cut (cu yds)	total fill (cu yds)	net (cu yds)
*Road 0+00 to end	2,144	468	+1,676
**Common driveway lots 3/4	1,530	178	+1,352
***Remainder of site	2,667	2,572	+95
Totals	+6,341	-3,218	+3,123
Totals w/ 25% expansion	+7,926	-4,022	+3,904

* includes stormwater quality basins at the beginning of the reconstructed road and lot 8.

** includes stormwater quality basins alongside the common driveway.

*** the remainder of the site includes the grading required around the individual houses, the driveways and stormwater basins serving the individual homes.

The above numbers are modest in scope and the cut and fill operations for the construction activities for this project will result in an excess of material. It is believed that a majority of the excess material will be utilized on site for use in the individual lot construction, i.e. house grading, rain garden grading and general land grading. Since trucking material off site is costly, utilizing the excess on site is more economical and environmentally friendly.

Conventional subdivision individual house construction

The earth cut and fill analysis is based on estimated average amount on a per house basis and as shown below:

foundation cut for average house:	40' x 75' x 6' deep	= 670 cubic yards
total 9 new lots:	9 x 670	= 6,030 cubic yards excess

The above figures for excess material generated per lot are conservative and are a worst case scenario. The numbers would be expected for a lot that is nearly level, however, most of the lots in the subdivision are sloping and would require approximately half of the cut shown. It is believed that the actual excess amounts will be lower depending on the type of house proposed for each lot and the extent of landscaping done for each individual home site. Much of the foundation excess material would be used for landscaping, decorative retaining walls, lawn areas and for use in grading and shaping the rain gardens located on each lot.

The individual lot estimates also do not account for material generated from trenching for services as this material will generally be used for backfill. Additionally, top soil on each site will be stockpiled and utilized at the time of final grading and landscaping of the lot.

Cluster subdivision roadway and utility infrastructure

The earth cut and fill analysis for the roadway and utility infrastructure (including the proposed stormwater basins) was calculated from the computer AutoCad drawings. The analysis included the cut and fill required for the individual lots which includes the driveways, stormwater basins and around the houses. A comparison was made from the existing ground surface to the proposed ground surface utilizing the composite method, which is most accurate. The following numbers were generated:

Location	total cut (cu yds)*	total fill (cu yds)**	net (cu yds)
*Road 0+00 to end	1,500	328	+1,172
**Common driveway lots 3/4	1,530	178	+1,352
***Remainder of site	1,822	2,984	-1,162
Totals	+4,852	-3,490	+1,362
Totals w/ 25% expansion	+6,065	-4,362	+1,702

* includes stormwater quality basins at the beginning of the reconstructed road and lot 6.

** includes stormwater quality basins alongside the common driveway.

*** the remainder of the site includes the grading required around the individual houses, the driveways and stormwater basins serving the individual homes.

Cluster subdivision individual house construction

The earth cut and fill analysis is based on estimated average amount on a per house (foundation) basis and as shown below. For the cluster, it is assumed that there will be a smaller house footprint due to the smaller lot size.

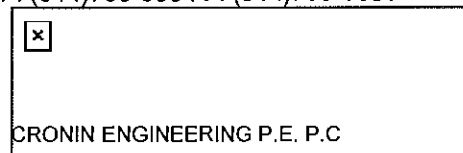
foundation cut for average house:	35' x 65' x 6' deep	= 505 cubic yards
total 9 new lots:	9 x 505	= 4,545 cubic yards excess

All excess material for either the conventional or the cluster subdivision will be trucked off site in accordance with the trucking program outlined in the report prepared by this office entitled "Jardim Estates East – Rock Removal, Blasting and Trucking Program" dated October 10, 2011 or as revised.

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