Paraiso Springs Resort: Preliminary Site Earthwork Report

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The purpose of this memorandum is to provide a preliminary analysis of cuts and fills and mass grading quantities for the proposed Paraiso Springs Resort, based on the conceptual Project Grading Plan prepared by EDSA and delivered in electronic format to CH2M HILL on April 7, 2005. The Grading Plan depicts conceptual contour grading for the site, which includes a 103-room Resort Hotel with Spa and Fitness Center facilities; a Hamlet Day Spa; 17 -for-sale Single Family Home Lots; 60 for-sale condominiums; 310 parking spaces, and approximately 11,100 linear feet of private roadways. The total property area is approximately 240 acres, with approximately 50 of those acres impacted by earthwork operations.

SUMMARY

The conceptual Grading Plan produces the approximate quantities of earthwork cuts and fills shown in the table below:

VOLUMES SUMMARY

Region	Total SF	Raw Cut CY	Raw Fill CY	Fill Factor	Net Cut CY	Net Fill CY	Net Difference
Stripping Resuse	2,083,521	38,584	0		38,584	0	38,584
Earthwork	2,083,521	123,489	109,871	1.150	123,489	126,352	-2,863
Job Total	**2,083,521**	**162,073**	**109,871**	**1.150**	**162,073**	**126,352**	

As indicated, the cuts and fills essentially balance. The 2,863 cubic yards of excess fill is a minor amount of material at only 2-3% of the cut volume. This volume of "import" can easily be avoided by minor adjustments to the site grades.

The earthwork balance does not include disposal of the topsoil strippings, which total approximately 38, 584 cubic yards. These strippings typically contain organic materials such as grass, weeds, shrubs and roots and are therefore not acceptable as engineered fill material

for construction. The stripped material should be stockpiled for possible use in landscape areas, the vineyard, on-site disposal, or sale off-site.

The fill heights range up to a maximum of approximately 14 feet, with the highest fills needed to construct the main Hotel complex and adjacent Hamlet, and the roadway leading to the western-most cluster of condominiums.

The depths of cut generally are less than 10 feet throughout the site. However, deep cuts of up to 25 feet are required for the parking area south of the Hamlet and the adjacent roadway. Significant retaining walls or upper slope benching will likely be required in this area. Input from the Geotechnical Engineer will be required for supplemental grading design of these cut areas and the higher fill areas.

METHODOLOGY

The earthwork volumes noted above were calculated by a computer program specifically designed to compute cuts and fills for land development projects similar to the Paraiso Springs Resort Project. The computer program computes the vertical differences between the existing terrain model developed from the aerial topography for this Project provided by Bestor Engineers, and the finish graded surfaces across the site that are defined by the conceptual Grading Plan provided by EDSA. The vertical differences are computed as cubic yards of cut and fill. The computations were done under CH2M HILL's direction, by EARTHCALC Incorporated, a vendor who specializes in site earthwork quantity calculations.

ASSUMPTIONS

The earthwork computations reported herein are based on the following assumptions:

1) Six (6) inches of topsoil stripping will be required at all construction areas. The actual amount of stripping may vary from this assumed value, and should be determined by the Geotechnical Engineer, based on site conditions at the time of construction .

2) A shrinkage factor of 15% has been applied to the fill quantity to address the potential density differential between soil excavated on-site and subsequently placed as compacted engineered fill. The final shrinkage factor should be recommended by the Geotechnical Engineer, based on actual soil conditions and soil types, and construction methods.

3) All roadway pavement sections were assumed to have a structural section one (1) foot thick. This structural section is assumed to contain the driving surface material(s) and all imported subgrade material (ie; baserock, etc.). As of this date, pavement sections have not yet been designed. Actual pavement sections should be designed by the Geotechnical Engineer, based on subgrade soil "R" values and surface materials selected by the Owner (ie: concrete; asphalt concrete; stone pavers, etc.).

4) All building foundation sections were assumed to be one (1) foot thick concrete slab-on-grade, including concrete slab and sand/gravel subgrade materials. Actual foundations sections will likely vary from this assumption, based on the different building types. No architectural construction details for foundations are available at this time.

5) All recommendations contained in the Geologic and Soils Engineer's Feasibility Report, dated December 2004, and prepared by Landset Engineers, Inc, will be followed during final design and construction.

6) All existing, on-site buildings and related structures will be demolished, prior to earthwork operations.

7) All earthwork operations will be essentially completed in a single construction operation, such that stockpiling/borrowing of soil materials will not be required to support future grading operations. No analysis was done to determine quantities of earthwork materials required for project phasing.

SUPPORTING DATA

Supporting data for this earthwork analysis includes the previously referenced site topographic survey, conceptual Project Grading Plan and Geotechnical Engineer's Report. These documents are not attached to this memorandum, but are available separately.

The earthwork quantity take-off from EARTHCALC, displayed as a cut/fill map, is shown on Sheet CG1.1 – Proposal Excavation and Embankment Plan, bound separately.