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## MEMORANDUM

**To:** Mr. Manuel Valencia **DATE:** November 20, 2007

**Company:** Rancho Paseo De Valencia **W.O. #:** 5166-AX-SC

**Subject:** Slope Stability And Value Engineering, Existing Slope - Non-Grading Option, Tentative Tract No. 34760, City of Corona, Riverside County, California.

### Comments:

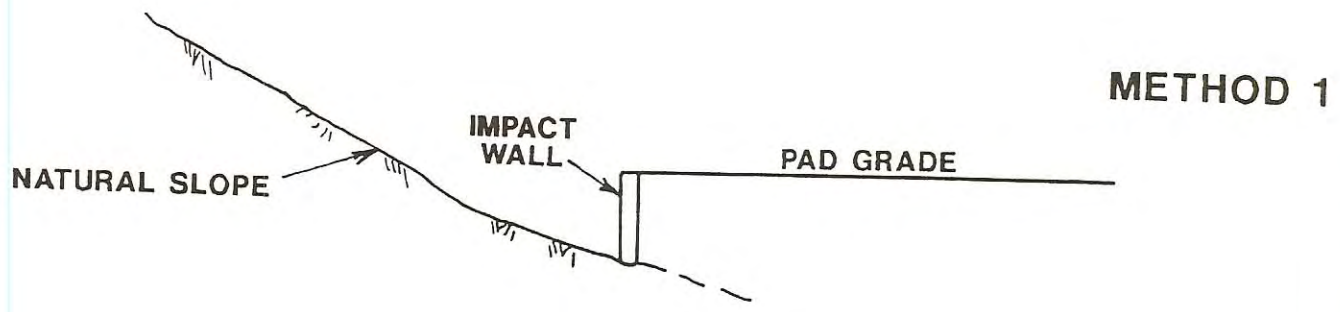
This memorandum is provided as a project update, and clarification of our conclusions and recommendations pertaining to recent work on the project. The scope of our services has included a review of the current plans and analyses of the surficial, seismic, and global stability of the existing slope in the southeast corner of the site. Based on our evaluation and analyses, it appears that the existing slope may be left in it's existing condition, provided the conclusions and recommendations contained herein are properly implemented during planning, design, and construction. Preliminary developmental considerations are provided below for your review.

1. Based on our analyses, an adequate factor of safety ( $FS \geq 1.5$ ) for the natural slope can be achieved if the groundwater level is kept below an elevation of  $\pm 1445$  mean sea level (MSL). Therefore, to facilitate proper slope drainage, we recommend the placement of either hydro-auger drains to be drilled into the slope to an appropriate depth, or construction of a french drain system along the existing access trails located at the bottom and middle of the slope. Further recommendations and locations of drain replacement can be provided if additional fieldwork is performed on the slope to evaluate existing groundwater depth and actual bedding and fracture orientations. This additional fieldwork can be performed concurrently with the City's review of the Tentative Tract Map.
2. Based on our analyses, potentially  $\pm 15,000$  cubic yards of landslide material currently mantles the surface of the natural slope, while the proposed dimensions of the natural drainage below the slope, to be utilized as a debris basin, can currently accommodate  $\pm 10,000$  cubic yards of material. Therefore, we recommend that the proposed pad grades of the lots below the subject slope be raised  $\pm 5$  feet, to approximate

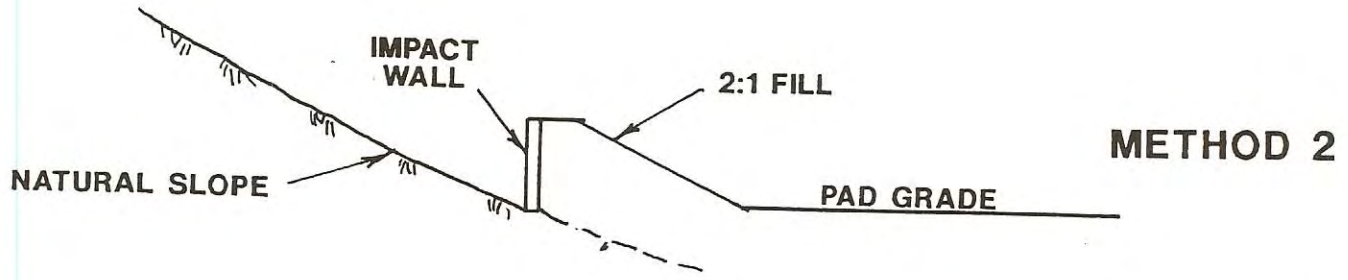
elevations of 1398 and 1410 MSL, respectively, in order to accommodate the potential total volume of landslide material on the slope. In addition, we recommend the construction of a debris wall along the southeast property boundaries for the upper most lots on the street cul-de-sac. Figure 1, Debris/Impact Control Methods, is attached for illustration. We recommend the construction of the impact wall depicted in Method 1 for this application.

3. Based on final review by the controlling authorities, a geotechnical grading plan review will likely be required for the project. In addition, it is our understanding that relatively minor elevation changes are being evaluated to properly balance the project. Based on the above, revised project plans should be reviewed by this office so that proposed construction is in accordance with the conclusions and recommendations of this, and other applicable reports for the site. Based on our review, supplemental recommendations and/or further geotechnical evaluations may be warranted. These evaluations may include this subject slope to remain and can be performed concurrently with the City review of the project civil plans. We recommend review of the preliminary plans by a qualified value engineer.

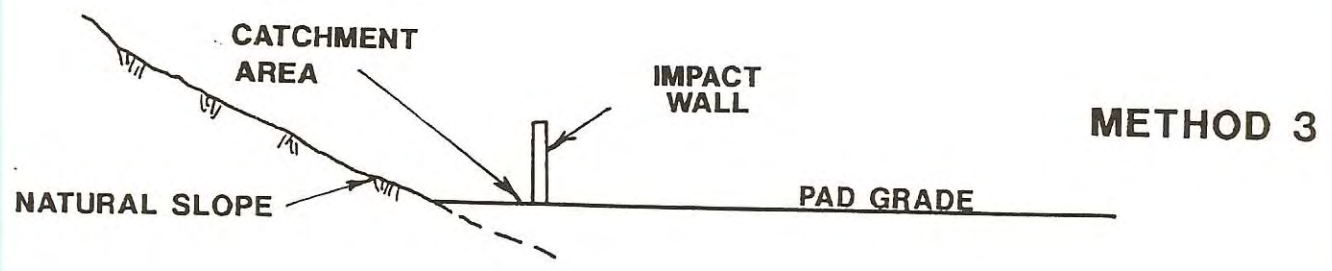




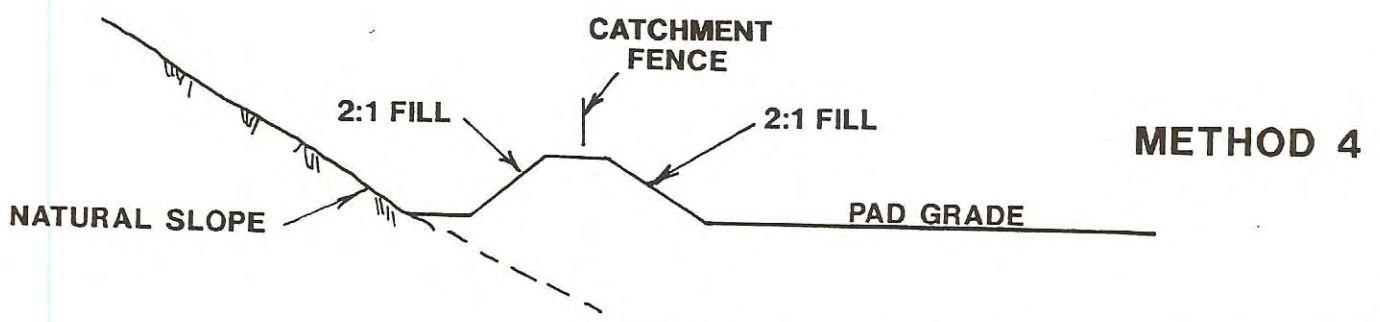
METHOD 1



METHOD 2



METHOD 3



METHOD 4

NOTE: NOT TO SCALE

	W.O. 5166-AX-SC
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**DEBRIS/IMPACT  
CONTROL METHODS**

Figure 1