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Memorandum

**To: Jonathan Pearlman**  
**Elevation Architects**

**From: Geoff Smick**  
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415-306-4003

**Date: July 28, 2017**

**Subject: LIBAO Storm Water Best Management Practices**

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The purpose of this memo is to document conditions at LIBAO following recent vegetation removal activities and to recommend Best Management Practices (BMP's) in order to prevent stormwater and erosion control problems with the onset of fall and winter rains. David Zwick, a Qualified Stormwater Director (QSD # 25679) and Certified Professional in Erosion & Sediment Control (CPESC # 8497) traversed the site on foot on July 25, 2017 and documented the current onsite conditions. Based on field-based mapping of the extent of vegetation removal combined with a GIS-analysis of the slopes on the site, approximately 2.3 acres of vegetation was cleared on slopes greater than 15% slope.

Vegetation was removed via de-mastication on June 24, 2017 in order to allow access and clear line of sight for Surveyors. The dominant vegetation in the area is poison oak and Himalayan blackberry, both trailing vines. These two dominants have grown into an approximately 6 foot tall thicket throughout many areas of the property resulting in an unpenetrable mass preventing access to the site for entitlement studies and project planning. The thicket also blocks out light to the understory resulting in mostly bare ground under the thicket. As a result, when the vegetation was cleared to permit access, a significant amount of bare ground was exposed. While these two species will re-sprout from the remaining stem/root stock, they may not have sufficient time to completely cover the bare ground prior to the onset of fall rains. Due to the steep nature of portions of the site, the bare slopes have the potential to erode during rain events. Therefore, it is WRA's recommendation that BMP's be installed in order to prevent potential erosion and stormwater control problems that may occur during rain events this coming fall and winter. WRA recommends the following BMP's:

- 1) Installation of silt fencing on the downhill (southeastern boundary) extent of the site. In addition, due to the steepness of the slope, the silt fencing will be installed with gravel or straw wattles at its base in order to provide additional filtration capacity.
- 2) Installation of straw wattles on grade every 10 feet for slopes greater than 15% and straw wattles on grade every 15 feet for slopes less than 15% throughout the areas where vegetation was removed. Wattles should not be VFC Style (plastic wrapped). Only burlap wrapped straw wattles will be installed.
- 3) Application of hydroseed throughout the areas where vegetation was removed. A native grass-based erosion control hydroseed mix should be applied. In addition, a soil tackifier should be added to the hydroseed mix. The soil tackifier will protect the bare slopes until natural rainfall can germinate the hydroseed and establish protective plant cover.

All BMP's should follow the guidelines out lined in the CASQA BMP Installation Manual and conform to the County's MCSTOPPP requirements.

If you have any questions, please feel free to give me a call.

Geoff Smick

A handwritten signature in blue ink that reads "Geoff Smick". The signature is written in a cursive style with a long, sweeping tail on the "k".

President