

EXECUTIVE SUMMARY

This report presents the results of our geotechnical investigation for the proposed roadway improvements located in Agoura Hills, California. The purpose of this investigation was to explore and evaluate the subsurface conditions along the project alignment and to provide geotechnical recommendations for design and construction.

The soils encountered in our explorations generally consisted of undocumented fill and native soils. In five of our borings, bedrock was encountered underlying the native and artificial fill soil. Undocumented fill was encountered in several borings to depths up to 5 feet below grade. The fill consisted of medium dense to dense silty sand, sandy gravel, clayey sand, and silty clay with varying amount gravels; deeper and/or poorer quality fill may exist between locations investigated. The native soils generally consist of medium dense to dense clayey to silty sand with gravel and some sandy clay.

Based on the results of our field investigation and laboratory testing, it is our professional opinion that the project is feasible from a geotechnical standpoint, provided that the recommendations contained in this report are incorporated into design and construction. Overexcavation of the undocumented fill and upper native soils is recommended to provide uniform support of pavement sections and retaining wall foundations. The primary geotechnical considerations for the proposed development are summarized below.

- The undocumented fill and upper native soils encountered during our investigation, in their current conditions, are not considered suitable for support of the proposed improvements. To provide better support of the proposed structures, we recommend that the existing soil be overexcavated and recompacted as engineered fill.
- Kleinfelder reviewed the referenced reports by GeoSoils Consultants and Gorian and Associates and the analyses presented are considered acceptable for Slopes 1 through 4. We judge that Slopes 1 through 4 may be designed with a maximum gradient of 2:1, horizontal to vertical (H:V).
- Slopes 5 through 7 were evaluated by Kleinfelder as cut slopes constructed at a 2:1 (H:V). We evaluated a cross section of the maximum slope height. The cross section of the maximum slope height, presented as A-A', is located within Slope 7.

- Kanan Road Slope 8 is an engineered cut slope along the east side of Kanan Road. It is approximately 420 feet in length and a maximum of approximately 52 feet high. Although the slope gradient varies along the length observed, generally the cut maintains an overall approximately 55 degree slope, inclined to the west. The slope comprises andesite-dacite flow breccias and agglomerates of the Miocene-age Conejo Volcanics, a member of the Topanga Group. The deposits are very thickly-bedded (3-10 feet thick) and are uniformly inclined northward toward Agoura Road between 35 and 45 degrees. Although the deposits are in most cases well-indurated, cobble-size clasts (average diameter of 3-inches to 12-inches) and boulder-size clasts (average diameter of 12 inches to 3 feet and locally up to 7 feet) are abundantly present and were observed locally eroding out of the slope, presenting a potential rock fall hazard.
- Based on the geologic mapping, the apparent dip of the bedding of Slope 8 is into the slope. Based on our geologic mapping and estimated shear strengths, we calculated a static factor of safety greater than 1.5 for a 1.5:1 (H:V) slope configuration. A steeper slope configuration may also have a calculated factor of safety greater than 1.5 depending on the overall height of the slope cut. However, based on Federal Highway Administration (FHWA) Catchment Design Guide, rockfall mitigation could require relatively wide catchment areas to provide 90% catchment. Because of the proposed construction of a sidewalk near the base of the cut slope, space is not available for a rockfall catchment area. For rockfall catchment, we modeled a 12-foot high catchment fence installed at the toe of the existing cut slope. Kleinfelder should be provided the opportunity to evaluate the final proposed design when it is available.

The executive summary presented herein briefly summarizes results of our geotechnical investigation for the subject project and should be used only in conjunction with recommendations presented in the attached report. It is subject to the limitations included in Section 6 of this report and the ASFE (Association of Engineering Firms Practicing in the Geosciences) insert.