

INLAND FOUNDATION ENGINEERING, INC.
Consulting Geotechnical Engineers and Geologists
www.inlandfoundation.com
P.O. Box 937, San Jacinto, CA 92581

April 26, 2020

ENGINEERING RESOURCES OF SOUTHERN CALIFORNIA, INC.

1861 West Redlands Boulevard
Redlands, California 92373

Attention: Mr. Matt Brudin, P.E.

Subject: Site Grading Recommendations
Soboba Band of Luiseno Indians
Horseshoe Property Commercial/Retail Development

Dear Mr. Brudin:

All site grading for the subject project should be performed in accordance with applicable provisions of the 2019 California Building Code, the Riverside County grading ordinance, and the following recommendations.

1. Clearing and Grubbing: All building and pavement areas and all surfaces to receive compacted fill should be cleared of vegetation, debris, and other unsuitable materials. All such material should be disposed of off-site.

All undocumented fill and loose alluvial soils encountered during site grading should be completely removed. Such material is suitable for replacement as compacted fill as recommended herein. Although fill material was encountered in our borings and trench excavations to a maximum depth of approximately four feet, deeper undocumented fill is expected as a result of previous grading performed on the site.

In the area of the proposed convenience store/retail building, fuel island/dispensary area, carwash building area, and future building areas, existing fill and native soil should be removed to a depth of at least 10 feet below existing site grades. Existing soil in proposed pavement and street areas should be removed to a depth of at least six (6) feet below existing grades. The limits of removal within building and fuel island/dispensary areas should extend at least five (5) outside of exterior footing lines, at the excavation bottom. Deeper removals may be necessary depending on the conditions exposed during site excavation.

We have recommended that the limits of the recent exploratory trenches on the site be surveyed as well as the projection of the former fault trench backfill. The recent exploratory trenches conducted during this investigation ranged in depth from approximately 6 to 8 feet below the existing ground surface.

The outer edges of the former fault trench backfill associated with historical fault trench "LTF-5" have been staked in three of the recent exploratory trenches for survey purposes. Based on our findings, the minimum depth of removal within the limits of the former fault trench backfill should be 7 feet below the existing ground level.

2. Preparation of Surfaces to Receive Compacted Fill: All surfaces to receive compacted fill should be tested for compaction prior to processing. Testing should indicate a relative compaction of at least 85 percent within the unprocessed native soils. If roots or other deleterious materials are encountered or if the relative compaction fails to meet the acceptance criterion, deeper excavation may be required until satisfactory conditions are encountered. Upon approval, surfaces to receive fill should be scarified, brought to near optimum moisture content, and compacted to a minimum of 90 percent relative compaction.

3. Placement of Compacted Fill: Fill materials consisting of on-site soils or approved imported granular soil should be spread in shallow lifts and compacted at near optimum moisture content to a minimum of 90 percent relative compaction, based on ASTM D1557. All fill placed deeper than 15 feet below finish grade should be compacted to at least 95 percent relative compaction.

4. Preparation of Slab and Paving Areas: During final grading and immediately prior to the placement of concrete or aggregate base, the slab or pavement subgrade should be processed and compacted to a depth of at least of 12 inches. Compaction below concrete slabs should be to a minimum of 90 percent relative compaction. Compaction within pavement areas should be to a minimum of 95 percent relative compaction for both subgrade and aggregate base.

5. Utility Trench Backfill: Utility trench backfill consisting of on-site soils or approved imported granular soil should be mechanically compacted to at least 90 percent relative compaction. This is with the exception of the upper 12 inches under pavement areas where the minimum relative compaction is 95 percent. Jetting of utility trench backfill is not recommended.

6. Testing and Observation: During all grading and backfilling, tests and observations should be performed by a representative of IFE to verify that the exposed

subsurface conditions are as expected and that grading is performed in accordance with the project requirements. Field density testing should be performed in accordance with the current ASTM D1556 or ASTM D6938 test methods.

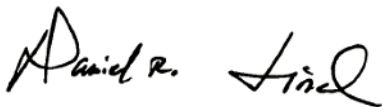
CLOSURE

The above recommendations were developed for the geotechnical investigation this firm is currently conducting for the subject project, and are subject to the same conditions and limitations.

We appreciate the opportunity to submit this proposal and look forward to working with you on this project. If you have any questions concerning this proposal, please contact our office.

Respectfully,

INLAND FOUNDATION ENGINEERING, INC.



Daniel R. Lind, P.G., C.E.G.
Vice President



Allen D. Evans, P.E., G.E.
Principal

DRL:ADE:es
Addressee: (1)