



Project No. E9205-04-02
November 23, 2020

Raney Planning & Management, Inc.
1501 Sports Drive, Suite A
Sacramento, California 95834

Attention: Mr. Nick Pappani

Subject: CLAYTON COMMUNITY CHURCH
1027 PINE HOLLOW COURT
CLAYTON, CALIFORNIA
GEOTECHNICAL PEER REVIEW

References: 1. *Geotechnical Feasibility Investigation, Clayton Community Church II, Pine Hollow Court, Clayton, California*, prepared by Cornerstone Earth Group, dated February 22, 2013 (CEG No. 352-2-1)
2. *Geotechnical Investigation, Clayton Community Church, 1027 Pine Hollow Court, Clayton, California*, prepared by Cornerstone Earth Group, revision dated February 27, 2019 (CEG No. 352-2-2)

Dear Mr. Pappani:

In accordance with your authorization of our proposal dated March 8, 2020, we have prepared this correspondence to present the results of our geotechnical peer review for the subject development in Clayton, California. Our peer review was performed to provide a professional opinion on the appropriateness and adequacy of the referenced geotechnical reports with respect to project conditions, regulatory requirements, and industry standards of practice. We note our review was intended to provide information to support the City of Clayton's planning-level environmental review of the planned project. As such, our review focused on the geotechnical feasibility of the project and specifically major geotechnical constraints to site development. The scope of our geotechnical services consisted of:

- Performing a site visit to observe current site conditions.
- Reviewing the referenced geotechnical reports and published documents, geologic maps and other geological and geotechnical literature pertaining to the site to aid in evaluating soil and geologic conditions.
- Preparing the correspondence.

SITE AND PROJECT DESCRIPTION

The site is an approximately 4 ½-acre parcel (Contra Costa Co. APN 119-050-036-1) on the east side of Pine Hollow Court immediately south of the Mt. Diablo Elementary School campus in Clayton. The site is generally vacant with the exception of an existing single-family residence near the southwestern corner. A prominent southeast-facing slope transects the site and separates the upper tier (between the slope and Pine Hollow Court) from the lower tier adjacent to a creek at the southeastern margin. The slope inclination is on the order of 3:1 (horizontal:vertical) based on web-based mapping and our observations at the site. At the time of our October 2020 site visit, vegetation on the slope face had recently burned in a grassfire.

Web-based mapping indicates the ground surface at the upper tier is relatively flat with existing grades of approximately 450 to 455 feet MSL. Surface elevations at the lower tier appear to be approximately 400 to 410 feet MSL. As noted above, a seasonal creek (Mitchell Creek) runs along the eastern boundary of the site.

The proposed project will construct a new single-story church with high rooflines over large interior spaces. No subterranean levels are proposed. The church will be situated atop the 3:1 slope that descends from the upper tier. Large decks and balconies will be constructed off the southeastern perimeter of the church and will extend over the upper reaches of the descending slope. Surface parking, driveways, landscaping and a new trash enclosure are also expected throughout the balance of the upper tier of the site. New underground utilities are also expected.

No development is planned at the lower tier of the site. We have assumed that project grading will consist of cuts and fills of approximately 2 feet or less to attain design subgrade elevation throughout the upper tier.

GEOLOGIC SETTING

Available United States Geological Survey (USGS) mapping indicates Quaternary age alluvium underlies the site. However, geologic references differ on the specific age of those alluvial deposits. Some references indicate the materials are Holocene age while others indicate the unit is older (Pleistocene to Pliocene age) with younger alluvial fan deposits mapped at the lower tier of the site.

DISCUSSION

We have reviewed the referenced reports and background geologic information and conducted a site reconnaissance. Our observations at the site generally supported the above-described site conditions and those outlined in the referenced report. Based on our observations at the site and report review, it is our opinion the referenced geotechnical investigations adequately identify and evaluate major geotechnical constraints that relate to the feasibility of the proposed project. However, the items noted below should be reviewed and addressed by the applicant's geotechnical engineer.

1. The project proposes to situate the new church building near the top of a 3:1 slope that is mantled by moderately to highly plastic clayey soils. Clayey soils in slopes may be susceptible to slope creep – a natural geologic process where relatively loose/soft weathered materials migrate downslope over time. Slope creep in clayey soils is often exacerbated by seasonal shrink and swell cycles that result in desiccation cracking in dry periods followed by the ready infiltration of runoff and saturation of the slope face during winter rains. The potential for slope creep should be evaluated by the geotechnical engineer and updated recommendations for foundation type, deepened foundations and/or remedial grading should be presented if necessary.
2. Test Pit Nos. TP-2, TP-3 and TP-6 performed for the referenced geotechnical feasibility study (Reference No. 1) extended to depths of 4 to 4 ½ feet below grade in the south-east facing slope area. These test pits did not encounter bedrock and moderately to highly plastic clays were noted to the maximum depth explored. These soils conditions should be reviewed relative to the anticipated deck and balcony foundations. Updated opinions and/or recommendations regarding foundation type and/or remedial grading should be presented.

LIMITATIONS AND CLOSURE

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices used in the site area at this time. No warranty is provided, express or implied.

Should you have any questions regarding this correspondence, or if we may be of further service, please contact the undersigned at your convenience.

Sincerely,

GEOCON CONSULTANTS, INC.

DRAFT

Shane Rodacker, GE
Senior Engineer

(1/e-mail) Addressee