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February 25, 2004
1989-1A

Ms. Katharine L. Hardt-Mason, Esq.
MCPHARLIN SPRINKLES & THOMAS LLP
Ten Almaden Boulevard, Suite 1460
San Jose, California 95113

RE: GEOTECHNICAL FEASIBILITY EVALUATION – FANOE RANCH MIXED-USE DEVELOPMENT GONZALES, CALIFORNIA

Dear Ms. Hardt-Mason:

This letter presents the results of our geotechnical feasibility review of the proposed Fanoe Ranch mixed-use Development project referenced above. The results and recommendations provided in this letter are based on our limited site reconnaissance and field exploration, and review of available project and public agency data in our files.

This investigation will only include a feasibility level evaluation addressing potential geotechnical concerns that may impact the planned mixed-use development. As you know, we completed a Phase I and Preliminary Phase II Environmental Site Assessment for the site and presented results in our December 19, 2003 DRAFT report. Once development plans have been finalized, we recommend that a design level geotechnical investigation be performed.

PROJECT DESCRIPTION

The site is located approximately 20 miles southeast of Salinas in San Benito County. We understand the project is in the early planning stages. However, based on the Concept Site Plan provided, the project consists of a new mixed-use residential development. The approximately 770-acre multiple parcel site is located northeast of Fanoe Road and northwest of Johnson Canyon Road in Gonzales. The development is to include single- and multi-family residences. An approximately 17½-acre middle school site is planned toward the center of the residential development. A lake, associated neighborhood facilities, and new roads also are planned as part of the overall site development.

Based on our experience with similar projects, we anticipate that new single-family structures will be one- to two-story and multi-family units will be two or more stories. Structures are expected to be wood- or steel-frame construction with slab-on-grade floors. We anticipate that site grading will consist of cuts and fills on the order of 2 to 4 feet.

SUMMARY OF GEOTECHNICAL FINDINGS

Generalized Site Reconnaissance

The site is located northeast of Highway 101 and northwest of Johnson Canyon Road in Gonzales. It is bounded by agricultural farmland to the northwest, Iverson Road to the northeast, Fanoe Road to the southwest, and Johnson Canyon Road to the southeast.

At the time of our field exploration, the generally flat site was used primarily for agricultural farming. A dairy farm and duck hunting areas, residences, fuel storage facilities, and areas for bioremediation of contaminated soils are reportedly located throughout the site. The upper one to two feet of soils in existing farming areas are uneven and loose due to recent farming activities. The previously noted Phase I and Preliminary Phase II Environmental Site Assessment draft report dated December 19, 2003 should be referred to for additional information regarding the project site and its current usage.

Subsurface Conditions

Based on our review of available geologic maps for the Monterey and adjacent areas, the site reportedly is located primarily in an area underlain by fan deposits consisting of gravels, sands, silts, and clays of the Chular and Placentia formation. As outlined in our agreement with you, our feasibility level subsurface exploration was limited to surficial soils and hazards associated with these soils. Our limited field exploration consisted of excavating six test pits across the site. For your reference, we included approximate test pit locations on the attached Figure 1. Generally, our test pits encountered approximately 1 to 2 feet of loose surficial soil described as brown silty clay with sand. A Plasticity Index (PI) test performed on a representative sample of the surficial soil resulted in a PI of 9, indicating a low expansion potential. Beneath the surficial soil, our test pits encountered very stiff to hard sandy clay to approximately 5 feet, the maximum depth explored.

As discussed above, localized soil stockpiles were located through out the site. In addition, undocumented fills also should be expected across the site. Therefore, variations in soil types and materials should be anticipated. If stockpile and undocumented fill materials vary greatly than what we anticipated or encountered in our test pits, soil characteristics including expansion potential also will vary greatly.

Based on our review of available data, depth to ground water would be expected to be at a depth of greater than 50 feet below the ground surface.

Geologic Hazards

A brief discussion of the potential geologic hazards and their impact on site development follows and is based on our limited site reconnaissance and research of readily available reports, and maps.

Ground Shaking

Strong ground shaking can be expected at the site during moderate to severe earthquakes in the general region. This is common to virtually all developments in the Monterey Bay Area.

Fault Rupture

The site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone (known formerly as a Special Studies Zones), therefore, fault rupture through the site is not anticipated.

Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. Based on our review of available subsurface data, depth to ground water is expected to be 50 feet, or deeper. Based on the anticipated deep ground water and our engineering judgment, the potential for impacts to the development due to liquefaction are low. We recommend soil liquefaction be further evaluated during a design level geotechnical investigation.

Differential Compaction

Major earthquake shaking can cause non-uniform compaction of soil strata, resulting in movement of the near-surface soils. As discussed above, the surficial soils encountered in our test pits and observed during our site reconnaissance are loose. In addition, localized areas of undocumented fill also are expected throughout the site. Provided the near surface loose soils and any undocumented fill are removed and replaced as engineered fill, in our opinion, the probability of differential compaction at the site is low.

Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "free" face, such as an open body of water, channel, or excavation.

There are no creeks or open bodies of water within an appropriate distance from the site, in our opinion, for lateral spreading to occur on the site. For this reason, the probability of lateral spreading occurring during a seismic event is low. We recommend lateral spreading be further evaluated during a design level geotechnical investigation.

Erosion and Siltation During Grading

The proposed project site is generally flat with no existing slopes on or directly adjacent to the site. For this reason, in our opinion, erosion and siltation occurring at the site during grading may be considered low. However, during periods of heavy rainfall, runoff can occur. A Storm Water Pollution Prevention Plan (SWPPP) should be prepared and implemented during grading operations to reduce the potential for erosion or siltation impacts.

CONCLUSIONS AND DESIGN CONSIDERATIONS

The feasibility level geotechnical information and opinions provided in the following sections are intended for your project forward planning purposes only. The initial conclusions and opinions presented in this letter were based on our review of available information, and limited site reconnaissance and field exploration. The primary geotechnical concerns potentially affecting the proposed development may include the following:

- Loose near surface soils
- Undocumented fill
- Expansive soils

A brief discussion of these concerns is given below. These concerns should be further evaluated and addressed during a design level geotechnical investigation once development plans are finalized.

Loose Surficial Soils

As discussed above, the upper one to two feet of surficial soils in the existing agricultural fields are loose as a result of farming activities. We recommend the upper loose surficial soils be over-excavated and replaced as engineered fill or recompacted in-place depending on the thickness of the loose soils. This concern should be further evaluated and addressed in the design level geotechnical investigation.

Undocumented Fill

Areas of undocumented fill should be anticipated throughout the site. We recommend that undocumented fill be over-excavated down to undisturbed native soil and replaced as engineered fill. The fill limit and thickness should be determined prior to construction. In addition, the geotechnical and environmental characteristics of the fill materials also should be further evaluated as part of the design level investigation.

Expansive Soils

The surficial native soils encountered in our test pits have a low expansion potential. However, as discussed above, localized areas of undocumented fill and other various soil stockpiles reportedly exist on-site. Therefore, the fill, stockpile soils, and native soils not encountered in our test pits potentially may consist of expansive soils. To reduce the potential for damage to new structures and at-grade improvements, we recommend slabs-on-grade have sufficient reinforcement and be supported on a layer of non-expansive fill and that footings extend below the zone of seasonal moisture fluctuation. In addition, if the expansive soil beneath new pavement areas are not mitigated to reduce the expansion potential, additional maintenance and/or reduced pavement life may be possible and therefore should be anticipated. This geotechnical concern should be evaluated further during the design level investigation.

FOUNDATIONS

Spread Footings

Provided any undocumented fill and loose surficial soils are removed and replaced as engineered fill, shallow footings may be feasible for support of one- to five-story structures with wood- or steel-framed construction. Based on our engineering judgment and the anticipated subsurface conditions, allowable bearing pressures on the order of 2,000 to 5,000 pounds per square feet (psf) may be anticipated for combined dead plus live loads. The feasibility of spread footings should be further evaluated during a design level geotechnical investigation.

Mat Foundations

As an alternative to spread footings, the one- to five-story, wood- or steel-framed structures may also be supported on mat foundations. Structures taller than five-story potentially also may be supported on mat foundations. Mats generally are designed to resist the differential settlement (dishing effect and tilt) between the center and edges of slabs. A mat foundation

generally is designed to alleviate the building distress associated with differential settlement by providing a rigid and relatively thick foundation capable of spanning localized irregular settlements and distributing the building loads appropriately. Average allowable mat pressures on the order of 500 to 1,000 psf and localized maximum pressures of up to 3,000 psf may be feasible. The feasibility of mat foundations should be further evaluated during a design level geotechnical investigation.

FINAL GEOTECHNICAL INVESTIGATION

The findings and opinions provided in this letter were based on limited information regarding site development including building types, layout and structural loads. In addition, because subsurface conditions may vary considerably from those predicted by the widely spaced relatively small and shallow test pits, we recommend that we be retained to perform a final geotechnical investigation once site development plans are available. We also recommend that if important business and financial decisions are to be made prior to a final geotechnical investigation that a preliminary investigation including soil test borings to depth of 30 to 40 feet be performed.

CLOSURE

The opinions and information presented in this letter are based on our review of available documents and information contained in our files, a limited field exploration program, and a cursory site reconnaissance. This letter has been prepared for the sole use of McPharlin Sprinkles & Thomas LLP, specifically for the Fanoe Road Development project located in Gonzales, California. The opinions presented in this letter have been formulated in accordance with accepted geotechnical engineering practices that exist in the San Francisco Bay Area at the time this report was written. No other warranty, expressed or implied, is made or should be inferred.

If you have any questions regarding this letter, please call and we will be glad to discuss them with you.

Very truly yours,

LOWNEY ASSOCIATES

Danh T. Tran, P.E.
Senior Project Engineer

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Copies: Addressee (3)

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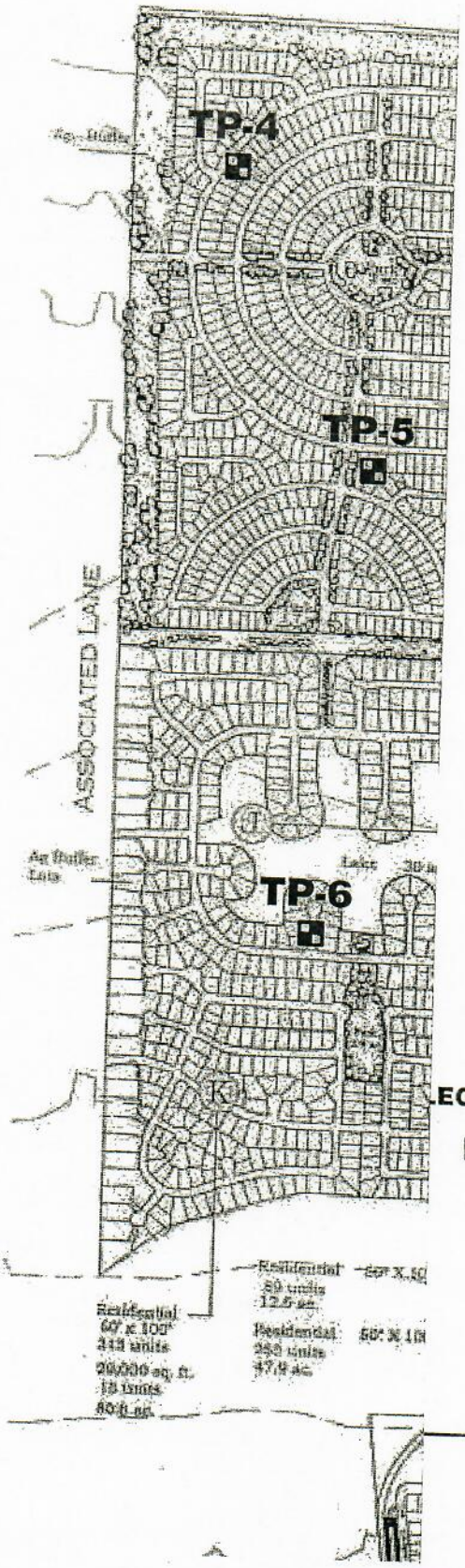

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LEGEND

■ - Approximate location of exploratory test pit

0 1,000

Scale feet

SITE PLAN

FANOE RANCH DEVELOPMENT
Gonzales, California

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FIGURE 1

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