Supplemental Report 1

GeoConcepts, Inc.

Geology • Geotechnical Engineering

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Van Nuys, CA 91401
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www.GeoConceptsInc.com

March 30, 2010 Project 1680
Revised April 22, 2010

Whole Foods
c/o Goldman Firth Rossi Architects
24955 Pacific Coast Highway
Malibu, California 90265

Subject: **SUPPLEMENTAL REPORT No. 1**
23401 Cross Creek Road
Malibu, California

References:

1) Geology and Geotechnical Engineering Review Letter by Fugro West, Inc. for the City of Malibu, dated September 22, 2008.
2) Report of Geotechnical Investigation by Van Beveren & Butelo, Inc. covering the subject site and dated August 7, 2007.

Dear Gentlemen,

Pursuant to your request, presented herein is a response to Reference 1. A copy of the review letter is attached. Items contained in the review letter are responded to below. The current grading plan depicts the subject site raised about four feet above the current elevation. It is our understanding that proposed development will be connected to a future offsite waste treatment plant.

To facilitate the review, the following responses are provided per the review letter:

Review Comments:

Item #1: Attached is an updated map based on the currently proposed development. The plan essentially depicts the site be elevated about (4) feet from the current grade.

Item #2-6: It is our understanding that the proposed project will be connected to a future offsite waste treatment plant.

Item #7: The site is within an area of mapped potentially active faults as related to the definition by the State of California. The main trace of the Malibu Coast fault is regionally mapped within the central portion of the property, (Campbell 1996 - Plate 1). The Malibu Coast fault is mapped along the southern portion of the site near Civic Center Way, (Dibblee 1993 - Plate 2). The fault map by CDMG Treiman (Plate 3) depicts both fault tracts by the US Geologic Survey and the Dibble Geologic Foundation. Regionally, the main trace of Ground rupture is the result of movement from an active fault. As of June 1995, two portions of the Malibu Coast fault zone were reclassified as active fault zones by the State of California. On August 16, 2007, the fault zone near the east side of Malibu Bluff Park was removed from the State of California Earthquake Fault Zone map by the California Geologic Survey. The Malibu Coast fault consists of several subparallel strands in a zone as wide as 0.5 km, with a length of at least 17 miles. It strikes east west and dips (45) to (80) degrees to the north.

No evidence of active faulting was exhibited within the seismic trenches on the subject site. Therefore, no known active fault is anticipated to daylight beneath the l limits of the proposed structure.

The potential for lurching, surface manifestations, and topographic related features from seismic shaking can occur almost anywhere in Southern California. Proper maintenance of properties can mitigate some of the potential for these types of manifestations, but the potential cannot be completely eliminated.

This seismic evaluation is designed to provide the client with current, rational and believable seismic data that could affect the property during the lifetime of the proposed improvements. The minimum design acceleration for a project is listed in the Unified Building Code. It is recommended that the structural design of the proposed project be based on current design acceleration practices of similar projects in the area.

<u>Building Plan Check Stage Review Comments:</u>

Item #1: Acknowledged.

Item #2: Based on the proposed raised grades, import material will be required. Therefore, shear rates in Reference No. 2 above are not critical to the design. It is recommended that shear testing be performed on the proposed import materials at a rate of deformation equal to 0.005 inches per minute.

Item #3: The proposed grading plan indicates raising the elevation about (4) feet. Assuming the proposed compacted fill shear strength parameters are C=200 psf and phi=30 degrees the following foundation design parameters are provided. The compacted fill shear strength should be determined during the compacted fill placement.

Lateral loads may be resisted by friction at the base of the conventional foundations and by passive resistance within the recommended compacted fill. A coefficient of friction of (0.35) may be used between the foundations and the compacted fill. The passive resistance may be assumed to act as a fluid with a density of (300) pounds per cubic foot. A maximum passive earth pressure of (3000) pounds per square foot may be assumed.

Item #4: Surface manifestation not previously discussed and addressed within Reference No. 2 above would be localized failures such as loss of bearing strength.

The reported groundwater levels in Reference No. 2 above were a minimum of (7) feet deep. The historic high groundwater level is reported to be (5) feet below grade. The proposed pad elevation is proposed to be about (4) higher than the existing grade.

In addition, it is recommended that the upper two feet of the natural soils be removed and recompacted. Therefore, the proposed elevation is anticipated to be a minimum of (11) feet above the groundwater level with a minimum of (6) feet of compacted fill.

Based on the absence of the groundwater and recommended compacted fill, the upper (11) feet will not be subject to liquefaction. It is anticipated that the proposed foundations will be relatively shallow (~2 feet deep). Based upon the non-liquefiable layer underlying the proposed foundations.

Based upon the depth to the liquefiable layers, recommended/proposed compacted fill and the recommended design considerations for the proposed liquefaction induced settlement localized failures such as loss of bearing strength should not pose a significant hazard to the proposed development.

Item #5: The site class based on the 2007 CBC is D.

Item #6-8: Acknowledged.

Should you have any questions regarding this report, please do not hesitate to contact the undersigned at your convenience.

Respectfully submitted,
GeoConcepts, Inc.

Scott J. Walter
GE 2476
Exp: 9/30/10
RLS/SJW/RMH: 1680-7A

Robert L. Sousa
CEG 1315
Exp: 5/31/11

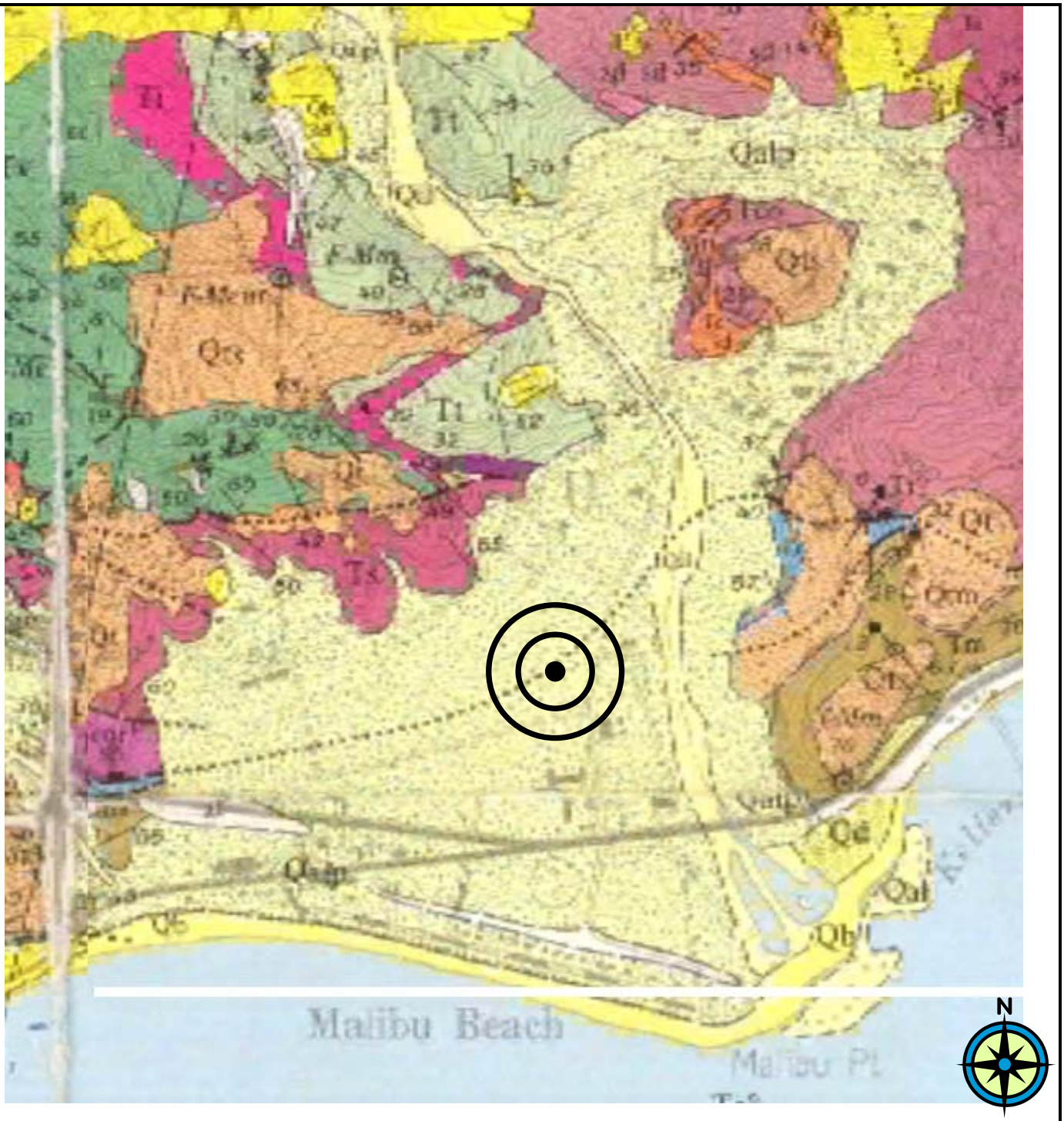
Enclosures:
- Location Map
- Geologic Map by USGS (Plate 1)
- Geologic Map by Dibblee (Plate 2)
- Regional Fault Map by CDMG (Plate 3)
- Geologic Cross Sections A-A' & B-B'
- Revised Geologic Map
- Review Letter by the City of Malibu

Distribution:
- (2) Addressee
- (6) Marny Randall

LOCATION MAP

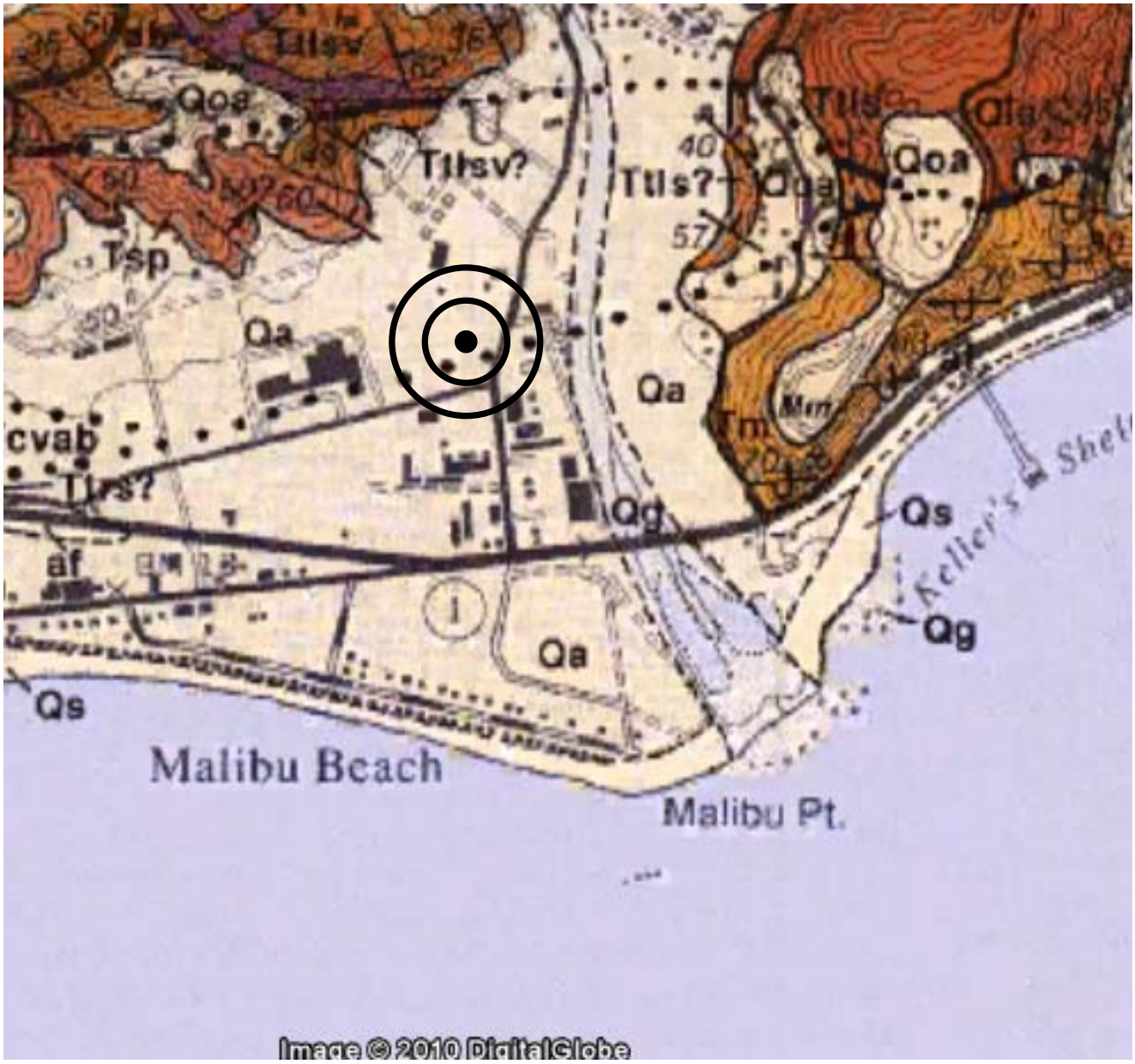
Reference:	Aerial Photographic
Project Address:	23401 Civic Center Way Malibu, California

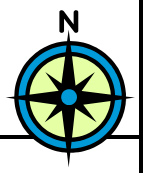
REGIONAL GEOLOGIC MAP



Reference:	US Geological Survey Geologic Map:
Project Address:	23401 Civic Center Way Malibu, California Plate 1

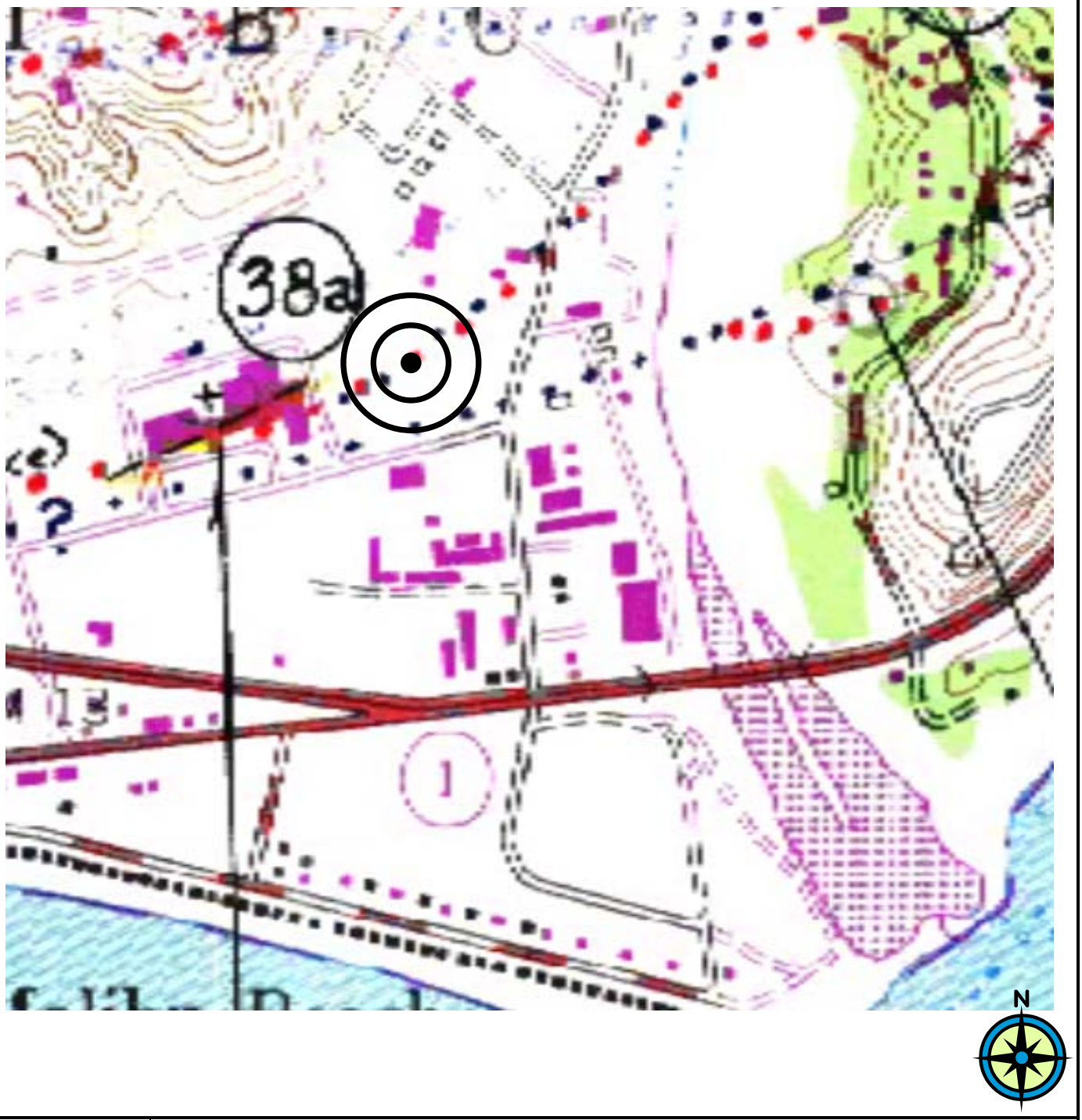
REGIONAL GEOLOGIC MAP





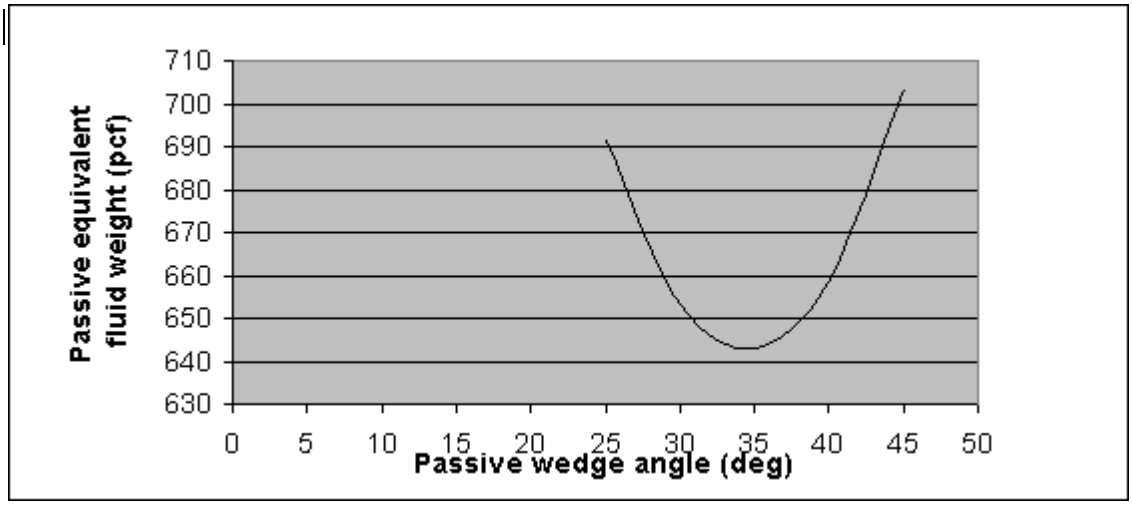
Reference:	Dibblee Geologic Foundation Geologic Map:
Project Address:	23401 Civic Center Way Malibu, California Plate 2

CDMG FAULT MAP

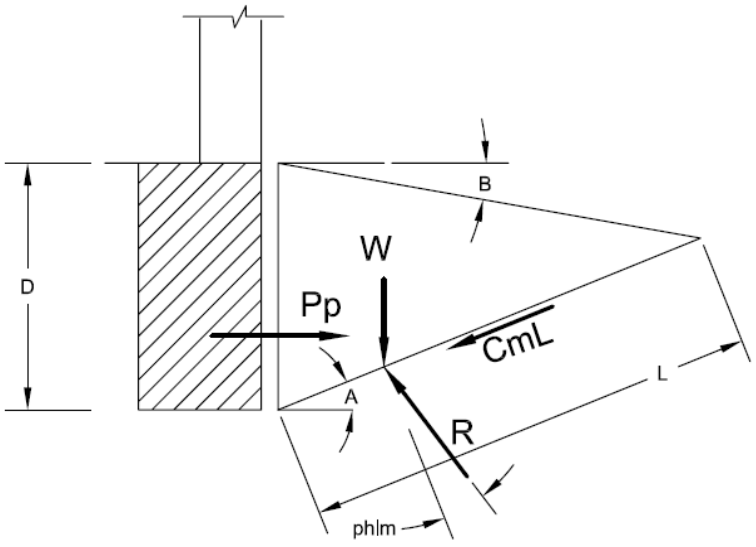


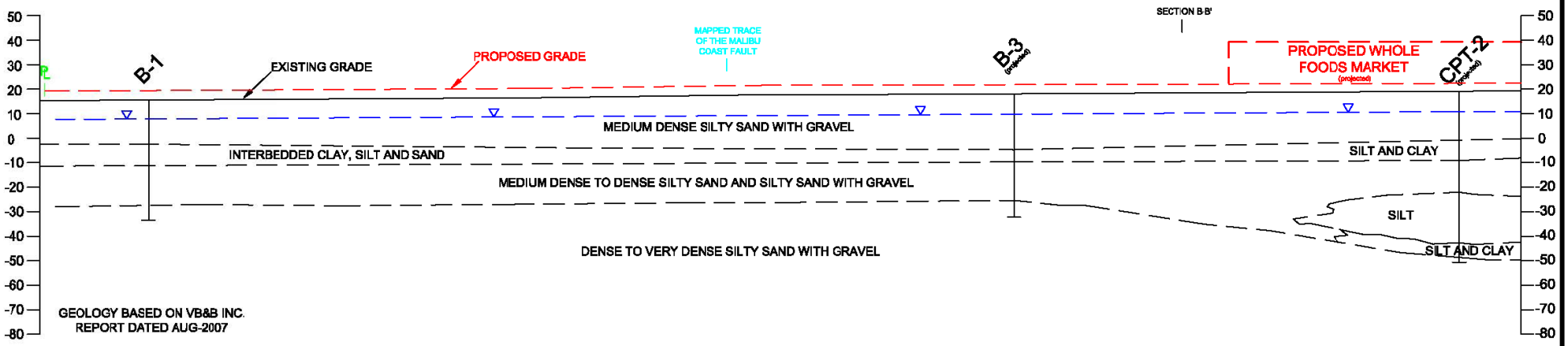
Reference:	CDMG Treiman Fault Map:
Project Address:	23401 Civic Center Way Malibu, California Plate 3

LATERAL DESIGN SLOPING SURFACE- Ref: Navy Design Manual 7.2-62 Figure 2 (NAVFAC) INPUT:		
Depth of Embedment, (D):	2.0	ft.
Soil Phi, (phi):	30	deg.
Soil Cohesion, (c):	200	psf
Soil Density, (g):	120	pcf.
Slope Angle, (B):	0	deg.
Safety Factor Applied:	1.5	FS



Coefficient of Friction = (tan(phi)/FS) =	0.38	
Minimum Passive Pressure=	643	pcf





Issued By:

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Description:
SECTION A-A'

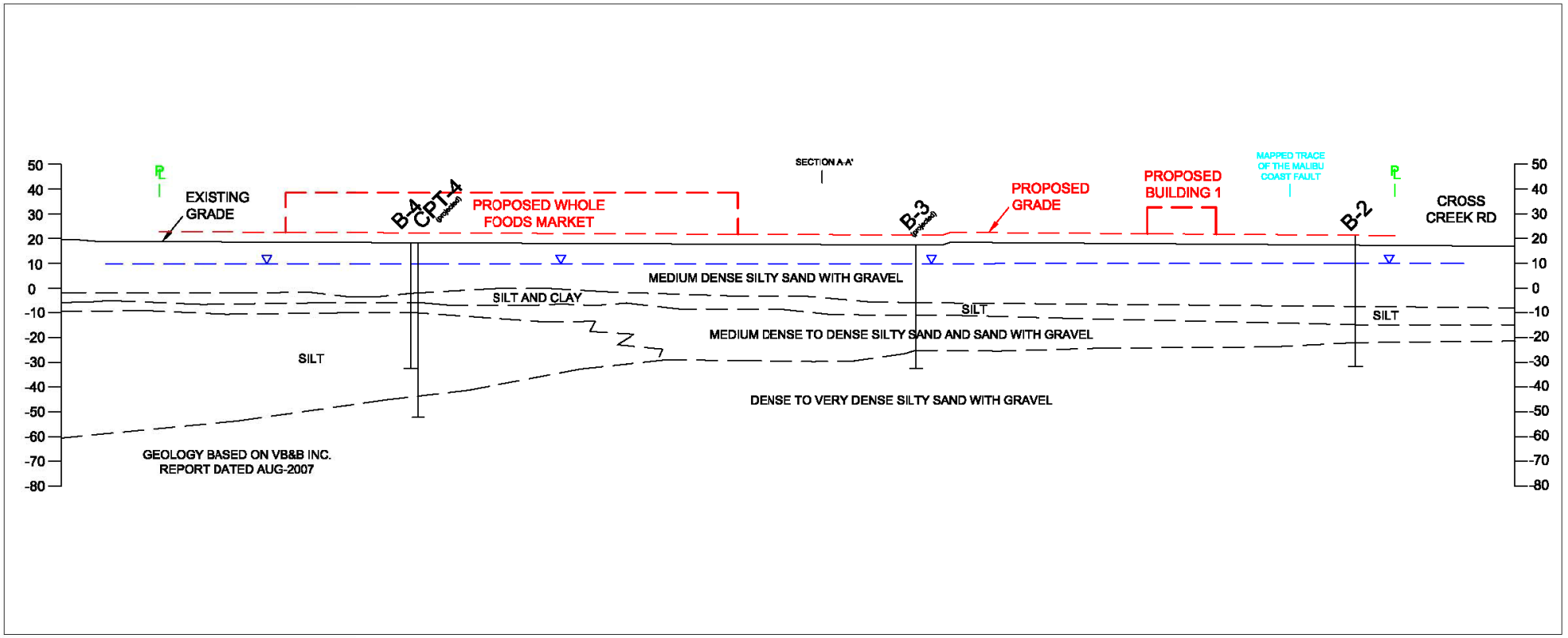
Issued For:
Whole Foods

Project Address:
23401 Cross Creek Rd
Malibu, CA

Date: Revised April 2010

Scale: 1" = 40'

Job No. 1680-7A



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Description:
SECTION B-B'

Issued For:
Whole Foods

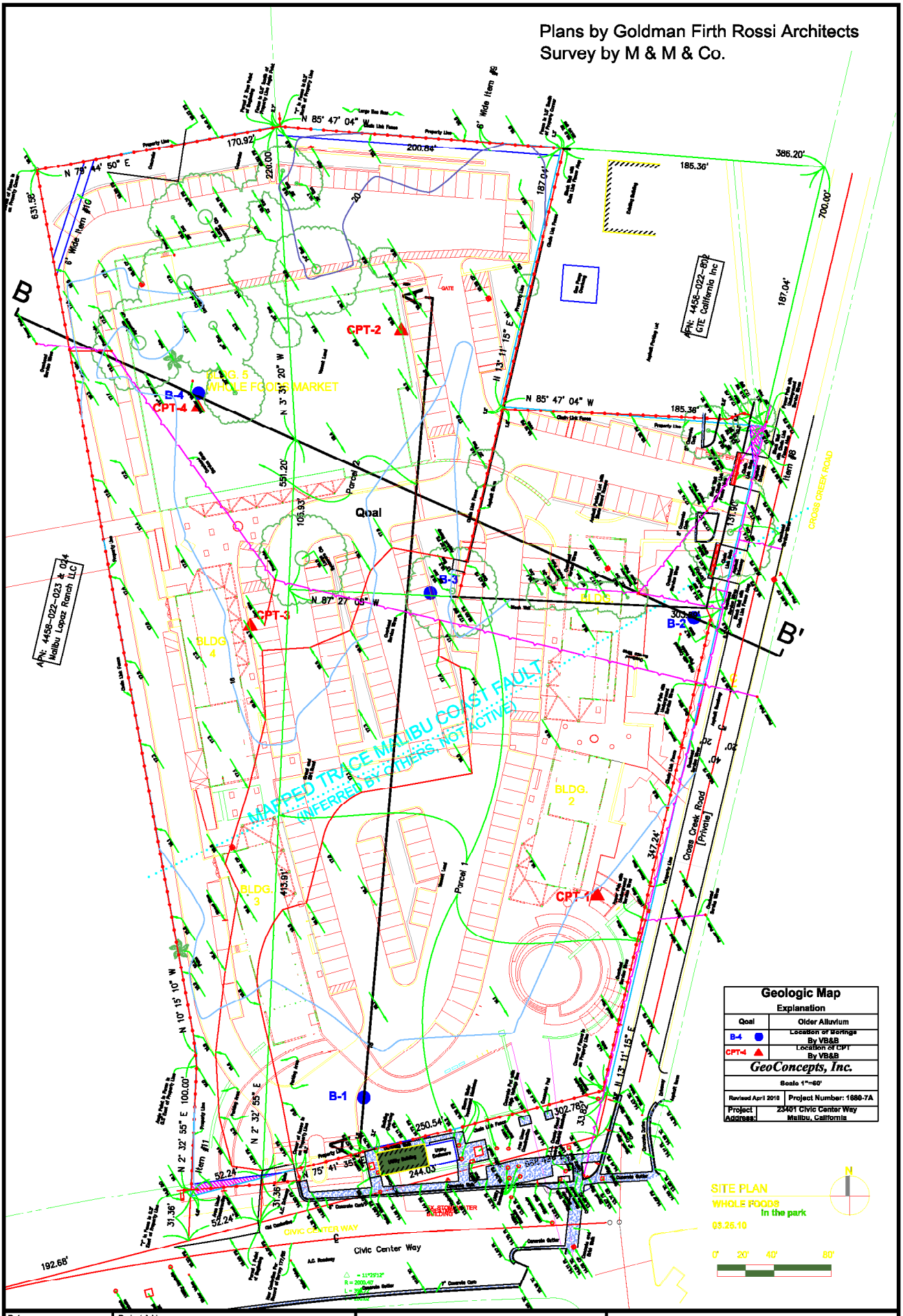
Project Address:
23401 Cross Creek Rd
Malibu, CA

Date: Revised April 2010

Scale: 1" = 40'

Job No. 1680-7A

Plans by Goldman Firth Rossi Architects
Survey by M & M & Co.



Geologic Map

Explanation

Qoal	Older Alluvium
B-4 ●	Location of Borings By VB&B
CPT-4 ▲	Location of CPT By VB&B

GeoConcepts, Inc.

Scale 1"=60'

Revised April 2010 | Project Number: 1680-7A

Project Address: 23401 Civic Center Way Malibu, California

Date: Mar 2010	Project Address: 23401 Cross Creek Rd Malibu, CA	Description: Geologic Map	*GeoConcepts, Inc.* Geology & Geotechnical Engineering
Scale: 1" = 60'		Issued For: Whole Foods	14428 Hamlin Street, Suite 200 Van Nuys, CA 91401 www.GeoConceptsinc.com
Job No. 1680-7			Issued By: GCI

PLANNING REVIEW

City of Malibu

23815 Stuart Ranch Road • Malibu, California 90265-4861
(310) 456-2489 • Fax (310) 456-7650 • www.ci.malibu.ca.us

GEOTECHNICAL REVIEW SHEET

Project Information

Date: September 22, 2008 **Review Log #:** 2994
Site Address: 23401 Civic Center Way
Lot/Tract/PM #: n/a **Planning #:** CDP 08-066, CUP 08-011
Applicant/Contact: Gordon, Gordon@ekstrandenterprises.com **BPC/GPC #:**
Contact Phone #: 323-782-0505 **Fax #:** 323-782-0606 **Planner:** Bonnie Blue
Project Type: Whole Foods Shopping Center

Submittal Information

Consultant(s) / Report Date(s): Van Beveren & Butelo, Inc. (Langhaar, RGE 2647; Butelo, CEG 1150): **8-7-07**
(Current submittal(s) in Bold.) Ref: GeoConcepts, Inc. : 3-27-03, 8-5-99, 6-21-99
Ref: Petra: 9-7-05 (PPC 99-003)

Previous Reviews: Geology Review Referral Sheet dated 10-11-07; Ref: Hydrogeologic Review Sheet dated 3-2-06 (PPC 99-003), 4-29-03, 9-2-99, 7-22-99 (PPC 99-004)

Review Findings

Coastal Development Review

☐ APPROVED from a geotechnical perspective.

☒ NOT APPROVED from a geotechnical perspective. The listed 'Review Comments' shall be addressed prior to approval.

Building Plan-Check Stage

☒ Awaiting Building plan check submittal. Please respond to the listed 'Building Plan-Check Stage Review Comments' AND review and incorporate the attached 'Geotechnical Notes for Building Plan Check' into the plans.

☐ APPROVED from a geotechnical perspective. Please review the attached 'Geotechnical Notes for Building Plan Check' and incorporate into Building Plan-Check submittals.

☐ NOT APPROVED from a geotechnical perspective. The listed 'Building Plan-Check Stage Review Comments' shall be addressed prior to Building Plan-Check Stage approval.

Remarks

The report and plans were reviewed by the City from a geotechnical perspective. Based upon the submitted information, the project comprises a new 50,650 square foot commercial development consisting of a 35,000 square foot Whole Foods Market building and 3 retail buildings totaling 15, 650 square feet, a new 6,000 square foot skate park with restrooms, parking lots, landscaping, and a new onsite wastewater treatment system (OWTS).

Guidelines for geotechnical reports (dated February 2002) are available on the City of Malibu web site:
http://www.ci.malibu.ca.us/index.cfm?fuseaction=nav&navid=30.

Fugro Project #: 3399.001

Grading includes raising the elevations of the proposed development.

The City of Malibu Building and Safety Department implemented the policy of requiring geotechnical consultants to submit electronic geotechnical reports (on CD Rom) for review beginning January 1, 2006. Geotechnical responses shall conform to this policy, which can be viewed on the City's website: http://www.malibu-ca.gov/index.cfm?fuseaction=detail&navid=82&cid=7247.

Review Comments:

1. The report submitted does not appear to address the currently proposed development based on the site and grading plans. Please provide a report that addresses the currently proposed development. Additional recommendations shall be provided as necessary. The Geologic Map and Cross-Sections must be updated to reflect the currently proposed development.
2. Please provide a percolation test report for the proposed OWTS for review. What type of system will be proposed?
3. Please provide two complete sets of OWTS plans to the City for review by City geotechnical and hydrogeologic staff.
4. The Project Geotechnical Consultant/hydrogeologic consultant must demonstrate that the effluent from the proposed private wastewater treatment system (leach fields, seepage pits, or drip irrigation systems) will not adversely affect the stability of the subject site or adjacent properties in accordance with Section 111 of the Malibu Building Code. Geologic cross section(s) shall be provided which depict the proposed development, proposed wastewater treatment system, anticipated paths of effluent, and capping depths of seepage pits (if applicable). The Project Engineering Geologist/hydrogeologist shall provide sufficient geologic and hydro-stratigraphic data to substantiate their conclusions regarding the effects of effluent on groundwater levels under the site, the potential for mounding of groundwater, and the potential for effluent to daylight on slopes. The supporting discussion shall include interpretations of stratigraphy (specifically, lithologic changes across the site that could affect hydraulic conductivities across the site) and variations of stratigraphy across the site, considering the site lies at the mouth of the Malibu Creek watershed.
5. In accordance with Chapter 18.4(D) of the City's Local Coastal Plan-Local Implementation Plan (LCP-LIP), the proposed OWTS shall be evaluated for cumulative impacts on groundwater levels. A cumulative impact analysis shall be submitted and approved by City geotechnical staff and the City Environmental Health Specialist, Andrew Sheldon.
6. The Project Geotechnical Consultant shall review the hydrogeologic report (discussed in Comment # 4 above) and determine if the groundwater level will be raised and incorporate such rises in the groundwater into evaluations of liquefaction potential, surface manifestations, lateral spreading, and seismically induced settlement. Recommendations for mitigation measures shall be provided as appropriate.
7. Please discuss the Malibu Coast Fault on the site. Is there a fault rupture hazard on the site?

Building Plan-Check Stage Review Comments:

1. A letter should be provided by the Project Structural Engineer indicating that: 1) they are aware of the anticipated displacements due to liquefaction related hazards, as determined by the Project Geotechnical Engineer; 2) that they acknowledge the geotechnical recommendations made by the Project Geotechnical Engineer for mitigation of potential seismic and liquefaction hazards; and 3) given the potential displacements, the proposed foundation design is adequate to provide support within the seismic tolerances required by the CBC (e.g., safeguard against major structural failures and loss of life).
2. Section 6.2.1 of the City of Malibu's geotechnical guidelines require that direct shear tests be performed in accordance with ASTM procedures, and, if the rate of deformation exceeds 0.005 inches per minute,

the Project Geotechnical Consultant needs to provide data to demonstrate that the rate is sufficiently slow for drained conditions. Since the rate of deformation was not provided, please provide data to demonstrate that the tests were performed as drained tests.

3. Please clarify whether the recommended passive resistance and coefficient of friction are allowable or ultimate values, and provide supporting calculations. Please refer to Section 7.1.1 of the City's geotechnical guidelines concerning lateral resistance (e.g., amount of cohesion that may be used in computing the passive resistance, having test results at low effective overburden pressures, and the required safety factor when the lateral resistance is increased for short-duration loadings), and revise recommendations as necessary.

4. On page 9, it is stated that surface manifestations are expected to occur. What mitigation measures are proposed?

5. For projects submitted after January 1, 2008, the City of Malibu uses the 2008 County of Los Angeles Building Code (Adopting by reference portions of the 2007 California Building Code). All references to building codes within the report need to be updated to the current code, and the Project Geotechnical Consultant shall provide site class information for seismic design in accordance with the 2008 County of Los Angeles Building Code (Adopting by reference portions of the 2007 California Building Code).

6. Please depict limits and depths of over-excavation and structural fill to be placed on the grading plan, and cross sectional view of the proposed building area. Cut and fill yardages are to be indicated on the cover sheet of the plans.

7. Please depict limits and depths of over-excavation and structural fill to be placed on the grading plan, and cross sectional view of the proposed building area. Cut and fill yardages are to be indicated on the cover sheet of the plans.

8. Two sets of grading, retaining wall, and remodel/addition plans for the residence, garage, and guest house **(APPROVED BY BUILDING AND SAFETY)** incorporating the Project Geotechnical Consultant's recommendations and items in this review sheet must be **reviewed and wet stamped and manually signed by the Project Engineering Geologist and Project Geotechnical Engineer.** City geotechnical staff will review the plans for conformance with the Project Geotechnical Consultants' recommendations and items in this review sheet over the counter at City Hall on Mondays through Thursdays between 8 AM and 10 AM.

Please direct questions regarding this review sheet to City Geotechnical staff listed below.

Engineering Geology Review by: Christopher Dean, C.E.G. #1751, Exp. 9-30-10 — Date: 9/22/08
Engineering Geology Reviewer (x306)

Geotechnical Engineering Review by: Leland M. Kraft, Jr., G.E. # 484, Exp. 6-30-10 — Date: 09-22-08
Geotechnical Engineering Reviewer (805-444-1943)

This review sheet was prepared by City Geotechnical Staff contracted with Fugro as an agent of the City of Malibu.

FUGRO WEST, INC.
4820 McGrath Street, Suite 100
Ventura, California 93003-7778
(805) 650-7000 (*Ventura office*)
(310) 456-2489, x306 (*City of Malibu*)