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GEOLOGY AND SOILS REPORT APPROVAL LETTER

November 27, 2012

 LOG # 71192-01
 SOILS/GEOLOGY FILE - 2
 LAN

 Paul Kunstmann
 7035 Woodley Avenue, # 207
 Van Nuys, CA 91406

 TRACT: 5396
 LOT: 347
 LOCATION: 735 N. Museum Drive

CURRENT REFERENCE	REPORT	DATE(S) OF	
<u>REPORT/LETTER(S)</u>	<u>NO.</u>	<u>DOCUMENT</u>	<u>PREPARED BY</u>
Geology/Soils Report	GS03-926-2r	09/07/2012	GeoSystems, Inc.
PREVIOUS REFERENCE	REPORT	DATE(S) OF	
<u>REPORT/LETTER(S)</u>	<u>NO.</u>	<u>DOCUMENT</u>	<u>PREPARED BY</u>
Geology/Soil Report Update	GS03-926-1	02/22/2010	GeoSystems, Inc.
Geology/Soil Report	GS03-926	06/17/2004	GeoSystems, Inc.
Dept. Correction Letter	71192	08/10/2012	LADBS

The referenced reports concerning the proposed construction of a new 2-story residence stepped into the ascending slope over a tuck under garage nominally at street grade have been reviewed by the Grading Division of the Department of Building and Safety. Slopes above the proposed dwelling vary in gradient from about 1.4H:1V to steeper than 1.2H:1V. The current report locates the rear yard retaining wall as required to provide Code required building clearance from the ascending slope. Analyses in the current report demonstrate that the stabilization of the slope with the proposed cuts is required to provide Code stability, and Plate SP-2 shows that soldier piles in row "B" are proposed to support required slope reinforcing loads.

The site is located in a designated seismically induced landslide hazard zone as shown on the "Seismic Hazard Zones" map issued by the State of California. The above reports include an acceptable seismic slope stability analysis and the Code requirements for evaluation of seismically induced landslide hazards have been satisfied.

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The reports are acceptable, provided the following conditions are complied with during site development:

(Note: Numbers in parenthesis () refer to applicable sections of the 2011 City of LA Building Code. P/BC numbers refer the applicable Information Bulletin. Information Bulletins can be accessed on the internet at LADBS.ORG.)

1. Soldier piles in Row "B" for support of the rear building wall of the residence and stabilization of the slope shall be designed for the minimum loads specified in the subsection titled "Soldier Pile Row 'B'" on page 9 and in Plate SP-2 of current report. The minimum penetration of piles is 34 feet below the garage/basement level. The design height of the soldier pile retaining wall is 36 feet, more or less, to produce the required stabilization force of 45 klf with an EFP of 70 pcf, which is nominally the height of rear basement wall of residence above the garage/basement level.
2. Final plans shall comply with the hillside retaining wall Ordinance No. 176, 445, regarding the number and heights of retaining walls allowed.
3. Approval shall be obtained from the Department of Public Works, Bureau of Engineering, Constituent Service Division for the proposed removal of support and/or retaining of slopes adjoining to public way. (3307.3.2)
201 N. Figueroa Street 3rd Floor, LA (213) 482-7045
4. The geologist and soils engineer shall review and approve the detailed plans prior to issuance of any permits. This approval shall be by signature on the plans which clearly indicates that the geologist and soils engineer have reviewed the plans prepared by the design engineer and that the plans include the recommendations contained in their reports. (7006.1)
5. All recommendations of the reports which are in addition to or more restrictive than the conditions contained herein shall be incorporated into the plans.
6. A copy of the subject and appropriate referenced reports and this approval letter shall be attached to the District Office and field set of plans. Submit one copy of the above reports to the Building Department Plan Checker prior to issuance of the permit. (7006.1)
7. A grading permit shall be obtained for all structural fill and retaining wall backfill. (106.1.2) If grading involves any import or export of more than 1,000 cubic yards of earth material and is in a grading hillside area, a public hearing before the Board of Building and Safety Commissioners is required. (7006.7.4)
8. All new graded slopes shall be no steeper than 2:1 (7010.2 & 7011.2).
9. All man-made fill shall be compacted to a minimum 90 percent of the maximum dry density of the fill material per the latest version of ASTM D 1557. Where cohesionless soil having less than 15 percent finer than 0.005 millimeters is used for fill, it shall be compacted to a minimum of 95 percent relative compaction based on maximum dry density (D1556). Placement of gravel in lieu of compacted fill is allowed only if complying with Section 91.7011.3 of the Code. (7011.3)

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10. Existing uncertified fill shall not be used for support of footings, concrete slabs or new fill. (7011.3 & 1805.1)
11. All graded, brushed or bare slopes shall be planted in conformance with Code Section 7012.
12. Drainage in conformance with the provisions of the Code shall be maintained during and subsequent to construction. (7013.12)
13. Grading shall be scheduled for completion prior to the start of the rainy season, or detailed temporary erosion control plans shall be filed in a manner satisfactory to the Grading Division of the Department and the Department of Public Works, Bureau of Engineering, B-Permit Section, for any grading work in excess of 200 cu yd. (7007.1)
201 N. Figueroa Street Room 770, LA (213) 977-6063
14. All loose foundation excavation material shall be removed prior to commencement of framing. Slopes disturbed by construction activities shall be restored. (7005.3)
15. The applicant is advised that the approval of this report does not waive the requirements for excavations contained in the State Construction Safety Orders enforced by the State Division of Industrial Safety. (3301.1)
16. Construction of trenches or excavations which are 5 feet or deeper and into which a person is required to descend requires a permit from the State Division of Industrial Safety prior to obtaining a grading permit. (3301.1)
17. Where any excavation would remove lateral support (as defined in 3307.3.1) from a public way or adjacent property or structure, unshored excavations are not allowed and the excavation shall be shored as recommended.
18. Prior to the issuance of any permit which authorizes an excavation where the excavation is to be of a greater depth than are the walls or foundation of any adjoining building or structure and located closer to the property line than the depth of the excavation, the owner of the subject site shall provide the Department with evidence that the adjacent property owner has been given a 30-day written notice of such intent to make an excavation. (3307.1)
19. Unsurcharged temporary excavations in bedrock may be cut vertically up to 10 feet. For excavations over 10 feet, the lower 10 feet in bedrock may be cut vertically and the portion of the excavation above 10 feet and all excavation in fill and soil shall be trimmed back at a gradient not exceeding 1:1 (horizontal to vertical) up to a maximum total height of 17.5 feet, as recommended and as supported by calculations.
20. Shoring shall be designed for the minimum lateral earth pressures specified in the subsection titled "Temporary Shoring" starting on page 7 of the current report; all surcharge loads shall be included into the design.
21. The soils engineer shall review and approve the shoring and/or underpinning plans prior to issuance of the permit. (7006.1)

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22. Installation of shoring shall be performed under the inspection and approval of the soils engineer. (7008.2)
23. A shoring monitoring program shall be implemented to the satisfaction of the soils engineer.
24. All foundations shall be supported in competent bedrock, as recommended and approved by the geologist and soils engineer by inspection.
25. Frictional and passive resistance of end bearing foundations may be combined, provided the passive bearing resistance does not exceed two-thirds of the allowable passive bearing.
26. Foundations adjacent to a descending slope steeper than 3:1 in gradient shall be a minimum distance of one-third the vertical height of the slope but need not exceed 40 feet measured horizontally from the foundation bottom to the face of the bedrock slope. (1808.7.2)
27. Buildings adjacent to ascending slopes shall be set back from the toe of the slope a level distance equal to one half the vertical height of the slope, but need not exceed 15 feet in accordance with Code Section 1808.7.1.
28. Pile caisson and/or isolated foundation ties are required by Code Sections 1809.13 and/or 1810.3.13. Exceptions and modification to this requirement are provided in Information Bulletin P/BC 2002-30.
29. Pile and/or caisson shafts shall be designed for a lateral load due to creep of 1000 pounds per linear foot of shaft exposed to uncertified fill, and soil over bedrock. (P/BC2008-050)
30. The Site Class per the 2011 LABC is C. Plan checker shall determine that design spectral response acceleration parameters utilized are determined in conformance with Department requirements.
31. Retaining/basement walls shall be designed for the minimum lateral earth pressures specified in the section titled "Retaining Wall Design" starting on page 10 of the current report. No freestanding retaining wall shall be designed for a lateral load less than that due to the equivalent fluid pressure (EFP) specified in Table 1 of Information Bulletin P/BC 2008-083 for the slope of grade retained. All surcharge loads shall be incorporated into the design.
32. Retaining walls at the base of ascending slopes shall be provided with a minimum freeboard of 3 feet, as recommended.
33. The recommended EFP for the proposed retaining wall shall apply from the top of the freeboard to the bottom of the wall footing.
34. All retaining walls shall be provided with a standard surface backdrain system and all drainage shall be conducted to the street in an acceptable manner and in a non-erosive device. (7013.11)
35. All retaining walls shall be provided with a subdrain system to prevent possible hydrostatic pressure behind the wall, as recommended. Prior to issuance of any permit, the retaining wall subdrain system recommended in the soil report shall be incorporated into the

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- foundation plan which shall be reviewed and approved by the soils engineer of record. (1610.1)
36. Installation of the subdrain system shall be inspected and approved by the soils engineer of record and the City grading/building inspector. (7008.2 & 108.9)
 37. Basement walls and floors shall be waterproofed/dampproofed with an L.A. City approved "Below-grade" waterproofing/dampproofing material with a research report number. (1703)
 38. Where no hydrostatic pressure will occur, basement walls and floor slabs-on-grade shall be dampproofed (1805.2).
 39. Prefabricated drainage composites (Miradrain) (Geotextiles) may be only used in addition to traditionally accepted methods of draining retained earth.
 40. The dwelling shall be connected to the public sewer system. (P/BC 2002-27)
 41. All roof and pad drainage shall be conducted to the street in an acceptable manner. All concentrated drainage shall be conducted in an approved device and disposed of in a manner approved by the LADBS. (7013.10)
 42. Prior to excavation, an initial inspection shall be called with LADBS Inspector at which time sequence of shoring, protection fences and dust and traffic control will be scheduled.
 43. The geologist and soil engineer shall inspect all excavations to determine that conditions anticipated in the report have been encountered and to provide recommendations for the correction of hazards found during grading. (7008.3 & 7008.2)
 44. Any recommendations prepared by the geologist and/or the soils engineer for correction of geological hazards found during grading shall be submitted to the Grading Division of the Department for approval prior to utilization in the field. (7008.3 & 7008.2)
 45. Both the geologist and the soils engineer shall inspect and approve all fill and subdrain placement areas prior to placing fill. (7008.2, 7008.3 and 7011.3)
 46. All friction pile or caisson drilling and installation shall be performed under the inspection and approval of the geologist and soils engineer. The geologist shall indicate the distance that friction piles or caissons penetrate into competent bedrock in a written field memorandum to the City Building Inspector. (1808.2.2)
 47. A registered grading deputy inspector approved by and responsible to the soils engineer shall be required to provide continuous inspection for the proposed shoring and pile installation. (1704.7)
 48. Prior to the pouring of concrete, a representative of the geologist and soils engineer shall inspect and approve the footing excavations. They shall post a notice on the job site for the LADBS Building Inspector and the Contractor stating that the work so inspected meets the conditions of the report, but that no concrete shall be poured until the City Building Inspector has also inspected and approved the footing excavations. A written certification to this effect

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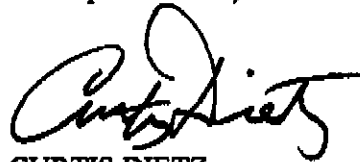
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shall be filed with the Grading Division of the Department upon completion of the work.
(108.9 & 7008.2)

49. Prior to the placing of compacted fill, a representative of the geologist and soils engineer shall inspect and approve the bottom excavations. They shall post a notice on the job site for the City Grading Inspector and the Contractor stating that the earth materials inspected meets the conditions of the report(s), but that no fill shall be placed until the LADBS Grading Inspector has also inspected and approved the bottom excavations. A written certification to this effect shall be included in the final compaction report filed with the Grading Division of the Department. All fill shall be placed under the inspection and approval of the soils engineer. A compaction report together with the approved soil report and Department approval letter shall be submitted to the Grading Division of the Department upon completion of the compaction. In addition, an Engineer's Certificate of Compliance with the legal description as indicated in the grading permit and the permit number shall be included. (7011.3)
50. No foundations or slabs-on-grade supported in new compacted fill shall be poured until the compaction report is submitted and approved by the Grading Division of the Department.
51. The installation and testing of tie-back anchors shall comply with the recommendations included in the report or the standard sheets titled "Requirements For Temporary Tieback Earth Anchors", whatever is more restrictive. (Research Report #23835)



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cc: GeoSystems, Inc.
LA District Office