CITY OF LOS ANGELES
CALIFORNIA

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

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GEOLOGY AND SOILS REPORT APPROVAL LETTER

February 1, 2016

LOG # 89430-02
SOILS/GEOLOGY FILE - 2
LIQ/PFRSA

Sinanian Development
18980 Ventura Boulevard, Suite 200
Tarzana, CA 91356

TRACT: 7803
BLOCK: 15
LOT(S): 20 / 19 / 11
LOCATION: 1749 & 1751 Malcolm Avenue and 1772 Glendon Avenue

CURRENT REFERENCE REPORT/LETTER(S)	REPORT No.	DATE(S) OF DOCUMENT	PREPARED BY
Supplemental Report	15-363-26	01/15/2016	Applied Earth Sciences
Oversized Doc(s).	``	``	``

PREVIOUS REFERENCE REPORT/LETTER(S)	REPORT No.	DATE(S) OF DOCUMENT	PREPARED BY
Dept. Correction Letter	89430-01	12/29/2015	LADBS
Addendum Report No. 1	15-363-26	11/30/2015	Applied Earth Sciences
Dept. Correction Letter	89430	08/19/2015	LADBS
Geology/Soils Report	15-363-26	07/21/2015	Applied Earth Sciences

The Grading Division of the Department of Building and Safety has reviewed the referenced report that provides recommendations for a proposed multi-unit residential development with a partially subterranean parking garage. According to the report, the site is relatively flat and occupied by existing residential structures.

The earth materials at the subsurface exploration locations consist of up to 4 feet of uncertified fill underlain by recent and older alluvium, sag pond and estuarine deposits. The consultants recommend to support the proposed structures on mat foundations bearing in native undisturbed soils.

The site is located within a City of Los Angeles Preliminary Fault Rupture Study Area designated for the Santa Monica fault. The reports include the results of a fault rupture investigation that consisted of two transect of three continuous core borings and 20 cone penetrometer test soundings in Malcolm Avenue on the east side of the property. Active fault splays were identified through the

northeastern corner of the property. The consultants recommend that proposed buildings be setback at least 10 feet from the closest fault splay and that a reinforced (thick mat) foundation be used to support the proposed buildings. A portion of the northeast corner of the northeast building will be cantilevered over the setback area with at least 1 foot separating the bottom of the building with the ground surface.

The site is located in a designated liquefaction hazard zone as shown on the "Seismic Hazard Zones" map issued by the State of California. The Liquefaction study included as a part of the reports demonstrates that the site does not possess a liquefaction potential. This satisfies the requirement of the 2014 Los Angeles City Building Code Section 1802.2.7.

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

(Note: Numbers in parenthesis ( ) refer to applicable sections of the 2014 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. 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 that clearly indicates 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)

2. All recommendations of the reports that are in addition to or more restrictive than the conditions contained herein shall be incorporated into the plans.

3. 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)

4. A grading permit shall be obtained. (106.1.2)

5. The project engineering geologist shall observe all final removal excavations to verify that the conclusions of the current fault investigation are correct and that no fault trace or evidence of ground deformation are exposed in the over-excavation. A supplemental report that summarizes the geologist's observations shall be submitted to the Grading Division of the Department upon completion of the over excavations. If evidence of faulting is observed, the Grading Division shall be notified and a site meeting scheduled.

6. 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)

7. Existing uncertified fill shall not be used for support of footings, concrete slabs or new fill. (1809.2)

8. Drainage in conformance with the provisions of the Code shall be maintained during and subsequent to construction. (7013.12)

9. 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)

10. The soils engineer shall review and approve the shoring and/or underpinning plans prior to issuance of the permit. (3307.3.2)

11. Prior to the issuance of the permits, the soils engineer and/or the structural designer shall evaluate the surcharge loads used in the report calculations for the design of the retaining walls and shoring. If the surcharge loads used in the calculations do not conform to the actual surcharge loads, the soil engineer shall submit a supplementary report with revised recommendations to the Department for approval.

12. Unsurcharged temporary excavation may be cut vertical up to 4 feet. Excavations over 4 feet shall be trimmed back at a uniform gradient not exceeding 3/4:1 (horizontal to vertical), from top to bottom of excavation, as recommended.

13. Shoring shall be designed for a minimum EFP of 30 PCF; all surcharge loads shall be included into the design, as recommended.

14. Shoring shall be designed for a maximum lateral deflection of 1 inch, provided there are no structures within a 1:1 plane projected up from the base of the excavation. Where a structure is within a 1:1 plane projected up from the base of the excavation, shoring shall be designed for a maximum lateral deflection of ½ inch, or to a lower deflection determined by the consultant that does not present any potential hazard to the adjacent structure.

15. A shoring monitoring program shall be implemented to the satisfaction of the soils engineer.

16. All foundations shall derive entire support from native undisturbed soils, as recommended and approved by the geologist and soils engineer by inspection.

17. Footings supported on approved compacted fill or expansive soil shall be reinforced with a minimum of four (4) ½-inch diameter (#4) deformed reinforcing bars. Two (2) bars shall be placed near the bottom and two (2) bars placed near the top.

18. The mat foundations for both proposed new buildings shall be a minimum of two feet thick, as recommended on page 5 of the 11/30/2015 report and page 3 of the 01/15/2016 report.

19. No footings are to be constructed in the "No-Build" area as shown on the Final Geotechnical Site Plan included in the 01/15/2016 report. The southern boundary of the "No-Build" area shall be marked by a licenced surveyor at the start of construction.

20. The foundation/slab design shall satisfy all requirements of the Information Bulletin P/BC 2014-116 "Foundation Design for Expansive Soils" (1803.5.3). Note: Soils with an Expansion Index greater than 20 are considered to be expansive, in accordance with Section 1803.5.3 of the 2014 LABC.

21. Conventional slabs placed on approved compacted fill shall be at least 3½ inches thick and shall be reinforced with ½-inch diameter (#4) reinforcing bars spaced maximum of 16 inches on center each way.

22. Concrete floor slabs placed on expansive soil shall be placed on a 4-inch fill of coarse aggregate or on a moisture barrier membrane. The slabs shall be at least 3½ inches thick and shall be reinforced with ½-inch diameter (#4) reinforcing bars spaced maximum of 16 inches on center each way.

23. The seismic design shall be based on a Site Class D as recommended. All other seismic design parameters shall be reviewed by LADBS building plan check.

24. Retaining walls shall be designed for the lateral earth pressures specified in the section titled "Basement Walls" starting on page 29 of the 07/21/2015 report. All surcharge loads shall be included into the design.

25. Retaining walls higher than 6 feet shall be designed for lateral earth pressure due to earthquake motions as specified on page 29 of the 07/21/2015 report (1803.5.12).

26. 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)

27. With the exception of retaining walls designed for hydrostatic pressure, all retaining walls shall be provided with a subdrain system to prevent possible hydrostatic pressure behind the wall. Prior to issuance of any permit, the retaining wall subdrain system recommended in the soil report shall be incorporated into the foundation plan which shall be reviewed and approved by the soils engineer of record. (1805.4)

28. Installation of the subdrain system shall be inspected and approved by the soils engineer of record and the City grading/building inspector. (108.9)

29. Basement walls and floors shall be waterproofed/damp-proofed with an L.A. City approved "Below-grade" waterproofing/damp-proofing material with a research report number. (104.2.6)

30. Prefabricated drainage composites (Miradrain, Geotextiles) may be only used in addition to traditionally accepted methods of draining retained earth.

31. The structures shall be connected to the public sewer system. (P/BC 2014-027)

32. All roof and pad drainage shall be conducted to the street in an acceptable manner. (7013.10)

33. An on-site storm water infiltration system at the subject site shall not be implemented, as recommended.

34. All concentrated drainage shall be conducted in an approved device and disposed of in a manner approved by the LADBS. (7013.10)

35. 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)

36. The geologist and soils 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 & 1705.6)

37. Prior to the pouring of concrete, a representative of the consulting soils engineer shall inspect and approve the footing excavations. He/She 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 shall be filed with the Grading Division of the Department upon completion of the work. (108.9 & 7008.2)

38. Prior to excavation, an initial inspection shall be called with LADBS Inspector at which time sequence of construction, shoring, protection fences and dust and traffic control will be scheduled. (108.9.1)

39. Installation of shoring shall be performed under the inspection and approval of the soils engineer and deputy grading inspector. (1705.6)

40. Prior to the placing of compacted fill, a representative of the soils engineer shall inspect and approve the bottom excavations. He/She shall post a notice on the job site for the City Grading Inspector and the Contractor stating that the soil inspected meets the conditions of the report, 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)

41. No footing/slab shall be poured until the compaction report is submitted and approved by the Grading Division of the Department.

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cc: Applied Earth Sciences, Project Consultant
WL District Office