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SOILS REPORT APPROVAL LETTER

March 14, 2018

LOG # 102203
SOILS/GEOLOGY FILE - 2

Weingart Center Association
566 S. San Pedro Street
Los Angeles, CA 90013

TRACT: Wolfskill Orchard Tract (MR 30-9/13)
BLOCK: 20
LOT(S): 26 - 29 // 5 - 8
LOCATION: 554 - 562 S. San Pedro St. // 555 - 561 S. Crocker St.

<u>CURRENT REFERENCE</u> <u>REPORT/LETTER(S)</u>	<u>REPORT</u> <u>No.</u>	<u>DATE OF</u> <u>DOCUMENT</u>	<u>PREPARED BY</u>
Soils Report	A9582-06-01	02/15/2018	Geocon West, Inc.

The Grading Division of the Department of Building and Safety has reviewed the referenced report that provides recommendations for the proposed multi-family residential development consisting of adjacent 12 and 18-story towers over 1-level of subterranean parking, as shown on the Site Plan and Cross Sections, Figures 2 & 3, in the 02/15/2018 report.

Three borings were performed to depths ranging from 25.5 to 50.5 feet. The earth materials at the subsurface exploration locations consist of up to 5 feet of uncertified fill underlain by alluvium. Groundwater was not encountered to the maximum depths explored. Historically highest groundwater is at about 85 feet below existing ground per the consultants. The site is relatively level.

According to the consultants, "the adjacent offsite structures do not appear to have subterranean parking ramps; however, the presence of any below-grade levels has not been confirmed". Per verbal information provided to the reviewer by personnel at Weingart Center Association, it is our understanding that the existing 11-story building to the south at 566 S. San Pedro Street, which is under the same ownership as the proposed development, has a 1-level subterranean parking.

Note that on-site storm water infiltration is not part of this approval due to the lack of detailed plans and specific recommendations. In the event that an onsite storm water infiltration system is proposed, a supplemental report addressing all items as required in P/BC 2017-118 shall be submitted to the Department for review and approval.

The consultants recommend to support the proposed structure(s) on conventional and/or mat-type foundations bearing in competent undisturbed alluvial soils.

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

(Note: Numbers in parenthesis () refer to applicable sections of the 2017 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. This letter does not allow the surcharging of adjacent off-site structures, if applicable. In the event the proposed development will surcharge adjacent off-site structures, then a supplemental report shall be submitted to the Grading Division of the Department containing recommendations that demonstrate that the proposed building on the subject lot will not surcharge any off-site structures. Note: It is not known from the review of the referenced report if the potential exists for off-site structures to be surcharged by the proposed development.
2. Approval shall be obtained from the Department of Public Works, Bureau of Engineering, Development Services and Permits Program for the proposed removal of support and/or retaining of slopes adjoining to public way (3307.3.2).

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3. In the event tie-back anchors are utilized for shoring purposes, then provide a notarized letter from all adjoining property owners allowing tie-back anchors on their property. (7006.6)
4. On-site infiltration system was recommended but is not part of this approval due to the lack of detailed plans and specific recommendations. A plan(s) drawn to scale and suitable for reproduction and archiving purposes shall be provided which shows by labeling all property lines, proposed and existing grades and structures, and the location and type of the proposed infiltration system. The plan shall be provided on the soils consultant's stationary or shall be signed and stamped by the soils engineer. (P/BC 2017-118)
5. The soils engineer shall review and approve the detailed plans prior to issuance of any permit. This approval shall be by signature on the plans that clearly indicates the soils engineer has reviewed the plans prepared by the design engineer; and, that the plans included the recommendations contained in their reports (7006.1).
6. All recommendations of the report(s) that are in addition to or more restrictive than the conditions contained herein shall be incorporated into the plans.
7. 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 (7006.1). Submit one copy of the above reports to the Building Department Plan Checker prior to issuance of the permit.
8. A grading permit shall be obtained for all structural fill and retaining wall backfill (106.1.2).
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. Placement of gravel in lieu of compacted fill is only allowed if complying with LAMC Section 91.7011.3.

10. Existing uncertified fill shall not be used for support of footings, concrete slabs or new fill (1809.2, 7011.3).
11. Drainage in conformance with the provisions of the Code shall be maintained during and subsequent to construction (7013.12).
12. 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 cubic yards (7007.1).

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13. All loose foundation excavation material shall be removed prior to commencement of framing (7005.3).
14. Controlled Low Strength Material, CLSM (slurry), if proposed to be used shall satisfy the requirements specified in P/BC 2014-121.
15. The applicant is advised that the approval of this report does not waive the requirements for excavations contained in the General Safety Orders of the California Department of Industrial Relations (3301.1).
16. Temporary excavations that remove lateral support to the public way, adjacent property, or adjacent structures shall be supported by shoring, as recommended. Note: Lateral support shall be considered to be removed when the excavation extends below a plane projected downward at an angle of 45 degrees from the bottom of a footing of an existing structure, from the edge of the public way or an adjacent property. (3307.3.1)
17. Where any excavation, not addressed in the approved reports, would remove lateral support (as defined in 3307.3.1) from a public way, adjacent property or structures, a supplemental report shall be submitted to the Grading Division of the Department containing recommendations for shoring, underpinning, and sequence of construction. Shoring recommendations shall include the maximum allowable lateral deflection of shoring system to prevent damage to adjacent structures, properties and/or public ways. Report shall include a plot plan and cross-section(s) showing the construction type, number of stories, and location of adjacent structures, and analysis incorporating all surcharge loads that demonstrate an acceptable factor of safety against failure. (7006.2 & 3307.3.2)
18. Prior to the issuance of any permit that 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. The soils engineer shall review and approve the shoring and/or underpinning plans prior to issuance of the permit (3307.3.2).

20. 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.
21. Unsurcharged temporary excavation may be cut vertical up to 5 feet. Excavations over 5 feet and to a maximum height of 12 feet shall be trimmed back at a uniform gradient not exceeding 1:1, from top to bottom of excavation, as recommended.
22. Shoring shall be designed for the lateral earth pressures specified in the section titled "Shoring-Soldier Pile Design and Installation" starting on page 26 of the 02/15/2018 report; all surcharge loads shall be included into the design.
23. 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.
24. A shoring monitoring program shall be implemented to the satisfaction of the soils engineer.
25. In the event shoring soldier beams/piles are installed using vibrating/driving in the vicinity of existing structures, the following conditions shall be complied with:
 - a. Ground vibrations shall be monitored during pile shoring installation adjacent to the pile driving operation.
 - b. Peak particle velocities (PPV) for any single axis shall be limited to ½ inch/second.
 - c. A settlement monitoring program shall be implemented until completion of pile installation.
 - d. In the event any PPV is measured above the specified threshold (½ inch/second) or any settlement is measured/detected, pile driving shall be stopped and corrective actions shall be submitted to the Department for review before resuming pile driving.
26. In the event predrilling is needed for shoring pile installation:
 - a. The diameter of the predrilled holes shall not exceed 75 percent of the depth of the web of the I-beam.
 - b. The depth of the predrilled holes shall not exceed the planned excavation depth.
 - c. The auger shall be backspun out of the pilot holes, leaving the soils in place.
27. All foundations shall derive entire support from competent undisturbed alluvial soils, as recommended and approved by the soils engineer by inspection.

28. 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 a maximum of 16 inches on center each way.
29. 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.
30. Retaining walls up to 12 feet in height with a level backfill shall be designed for the lateral earth pressures specified in the section titled "Retaining Wall Design" starting on page 22 of the 02/15/2018 report. All surcharge loads shall be included into the design.
31. Retaining walls higher than 6 feet shall be designed for lateral earth pressure due to earthquake motions as specified on page 23 of the 02/15/2018 report (1803.5.12).

Note: Lateral earth pressure due to earthquake motions shall be in addition to static lateral earth pressures and other surcharge pressures.

32. Basement walls and other walls in which horizontal movement is restricted at the top shall be designed for at-rest pressure as specified on page 22 of the 02/15/2018 report (1610.1). All surcharge loads shall be included into the design.
33. All retaining walls shall be provided with a standard surface backdrain system and all drainage shall be conducted in a non-erosive device to the street in an acceptable manner (7013.11).
34. 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 soils report shall be incorporated into the foundation plan which shall be reviewed and approved by the soils engineer of record (1805.4).
35. Installation of the subdrain system shall be inspected and approved by the soils engineer of record and the City grading/building inspector (108.9).
36. Basement walls and floors shall be waterproofed/damp-proofed with an LA City approved "Below-grade" waterproofing/damp-proofing material with a research report number (104.2.6).
37. Prefabricated drainage composites (Miradrain, Geotextiles) may be only used in addition to traditionally accepted methods of draining retained earth.
38. The structure shall be connected to the public sewer system per P/BC 2014-027.
39. All roof, pad and deck drainage shall be conducted to the street in an acceptable manner in non-erosive devices or other approved location in a manner that is acceptable to the LADBS and the Department of Public Works (7013.10).
40. All concentrated drainage shall be conducted in an approved device and disposed of in a manner approved by the LADBS (7013.10).

41. The 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).
42. Prior to pouring concrete, a representative of the consulting soils engineer shall inspect and approve the footing excavations. The representative shall post a notice on the job site for the LADBS Inspector and the Contractor stating that the work inspected meets the conditions of the report. No concrete shall be poured until the LADBS 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)
43. Prior to excavation an initial inspection shall be called with the LADBS Inspector. During the initial inspection, the sequence of construction; shoring; underpinning; pile installation; protection fences; and, dust and traffic control will be scheduled (108.9.1).
44. Installation of shoring, underpinning, slot cutting excavations and/or pile installation shall be performed under the inspection and approval of the soils engineer and deputy grading inspector (1705.6).
45. The installation and testing of tie-back anchors shall comply with the recommendations included in the report or the standard sheets titled "Requirement for Tie-back Earth Anchors", whichever is more restrictive. [Research Report #23835]
46. Prior to the placing of compacted fill, a representative of the soils engineer shall inspect and approve the bottom excavations. The representative shall post a notice on the job site for the LADBS Inspector and the Contractor stating that the soil inspected meets the conditions of the report. No fill shall be placed until the LADBS 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).
47. No slab shall be poured until the compaction report is submitted and approved by the Grading Division of the Department.



GLEN RAAD
Geotechnical Engineer I

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cc: Chelsea Investment Corporation, Applicant
Geocon West, Inc., Project Consultant
LA District Office