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## GEOLOGY AND SOILS REPORT APPROVAL LETTER

April 2, 2018

LOG # 102409

SOILS/GEOLOGY FILE - 2

Chelsea Investment Corporation  
6339 Paseo Del Lago  
Carlsbad, CA 92011

TRACT: WOLFSKILL ORCHARD TRACT (MR 30-9/13)  
BLOCK: 21  
LOTS: 14-16 & 21-31  
LOCATION: 600 S. San Pedro Street

<u>CURRENT REFERENCE</u> <u>REPORT/LETTER</u>	<u>REPORT</u> <u>No.</u>	<u>DATE OF</u> <u>DOCUMENT</u>	<u>PREPARED BY</u>
Geology/Soils Report	A9724-06-01	03/07/2018	Geocon West, Inc.

The Grading Division of the Department of Building and Safety has reviewed the referenced report that provides recommendations for the proposed 19-story tower with 1-subterranean level and a 4-story founded at-grade parking structure. The earth materials at the subsurface exploration locations consist of up to 3.5 feet of uncertified fill underlain by alluvium. The consultants recommend to support the proposed structures on conventional and/or mat-type foundations bearing on native undisturbed soils and/or properly placed fill.

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. The location of the proposed infiltration was not provided; therefore, this approval does not extend to the use of on-site infiltration systems. If an on-site infiltration system is proposed, a supplemental report shall be submitted to the Department for review and approval with plans drawn to scale and suitable for reproduction and archiving purposes that clearly show the location of the proposed infiltration system, all property lines, proposed and existing grades, and structures.
2. The entire site shall be brought up to the current Code standard (7005.9).
3. Provide a notarized letter from all adjoining property owners allowing tie-back anchors on their property. (7006.6)
4. 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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5. Secure the notarized written consent from all owners upon whose property proposed grading/construction access is to extend, in the event off-site grading and/or access for construction purposes is required (7006.6). The consent shall be included as part of the final plans.
6. Provide a notarized letter from all adjoining property owners allowing tie-back anchors on their property (7006.6).
7. 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).
8. All recommendations of the report that are in addition to or more restrictive than the conditions contained herein shall be incorporated into the plans.
9. 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.
10. A grading permit shall be obtained for all structural fill and retaining wall backfill (106.1.2).
11. 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.
12. If import soils are used, no footings shall be poured until the soils engineer has submitted a compaction report containing in-place shear test data and settlement data to the Grading Division of the Department; and, obtained approval (7008.2).
13. Compacted fill shall extend beyond the footings a minimum distance equal to the depth of the fill below the bottom of footings or a minimum of three feet whichever is greater (7011.3).
14. Existing uncertified fill shall not be used for support of footings, concrete slabs or new fill (1809.2, 7011.3).
15. Drainage in conformance with the provisions of the Code shall be maintained during and subsequent to construction (7013.12).
16. 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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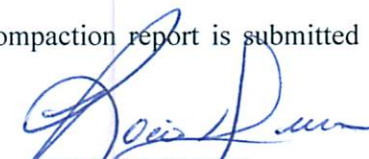
17. All loose foundation excavation material shall be removed prior to commencement of framing. (7005.3).
18. Controlled Low Strength Material, CLSM (slurry) proposed to be used for backfill shall satisfy the requirements specified in P/BC 2014-121.

19. 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).
20. Temporary excavations that remove lateral support to the public way, adjacent property, or adjacent structures shall be supported by shoring or constructed using ABC slot cuts. 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)
21. 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).
22. The soils engineer shall review and approve the shoring plans prior to issuance of the permit (3307.3.2).
23. 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.
24. Shoring shall be designed for the lateral earth pressures specified in the section titled "7.24 Shoring" starting on page 33 of the 03/07/2018 report; all surcharge loads shall be included into the design.
25. Shoring shall be designed for a maximum lateral deflection of less than ½ inch where a structure is within a 1:1 plane projected up from the base of the excavation, and 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, as recommended.
26. A shoring monitoring program shall be implemented to the satisfaction of the soils engineer.
27. In the event shoring soldier beams/piles are installed using vibrating/driving equipment in the vicinity of existing structures, the following conditions shall be complied with:
  - a. Ground vibrations shall be monitored during 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. 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.
28. 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.
29. 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", whatever is more restrictive. (Research Report #23835)
  30. ABC slot-cut method may be used for unsurcharged temporary excavations with each slot not exceeding 6 feet in height and not exceeding 6 feet in width, as recommended and supported by calculations. The soils engineer shall verify in the field if the existing earth materials are stable in the slot-cut excavation. Each slot shall be inspected by the soils engineer and approved in writing prior to any worker access.
  31. All foundations shall derive entire support from native undisturbed soils or properly placed fill, as recommended and approved by the geologist and soils engineer by inspection.
  32. The structural designer and soils engineer shall verify and attest to the adequacy of the existing footings for underpinning by signature and license stamp, on the final plans.
  33. 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 of the footing.
  34. Slabs placed on approved compacted fill shall be at least 4 inches thick, as recommended, and shall be reinforced with ½-inch diameter (#4) reinforcing bars spaced a maximum of 16 inches on center each way.
  35. 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.
  36. Retaining walls shall be designed for the lateral earth pressures specified in the section titled "7.17 Retaining Walls Design" starting on page 27 of the 03/07/2018 report. All surcharge loads shall be included into the design.
  37. 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).
  38. 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).
  39. Installation of the subdrain system shall be inspected and approved by the soils engineer of record and the City grading/building inspector (108.9).
  40. 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).
  41. Prefabricated drainage composites (Miradrain, Geotextiles) may be only used in addition to traditionally accepted methods of draining retained earth.
  42. The structure shall be connected to the public sewer system per P/BC 2014-027.

43. All concentrated drainage shall be conducted in an approved device and disposed of in a manner approved by the LADBS (7013.10).
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 use in the field (7008.2, 7008.3).
45. 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).
46. 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)
47. Prior to excavation an initial inspection shall be called with the LADBS Inspector. During the initial inspection, the sequence of construction; shoring; ABC slot cuts; underpinning; protection fences; and, dust and traffic control will be scheduled (108.9.1).
48. 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).
49. 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]
50. 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).
51. 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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