Appendices

Appendix IS-1

Shading Diagrams

HyperLoop - Solar Shade Diagrams

13 July 2018

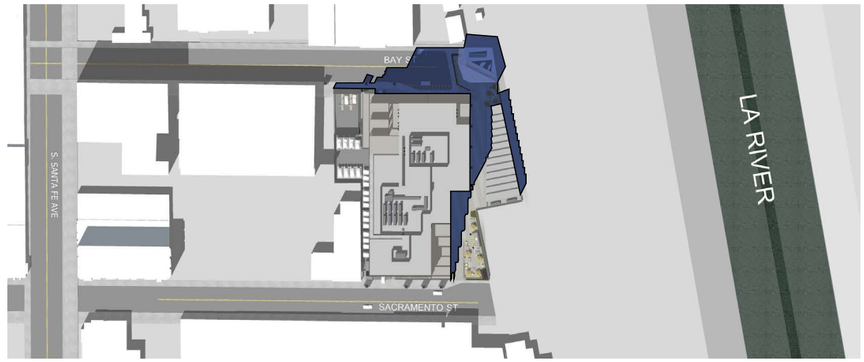
SHIMODA DESIGN GROUP

ARCHITECTURE + INTERIORS

TISHMAN SPEYER

Equinox

9 a.m.



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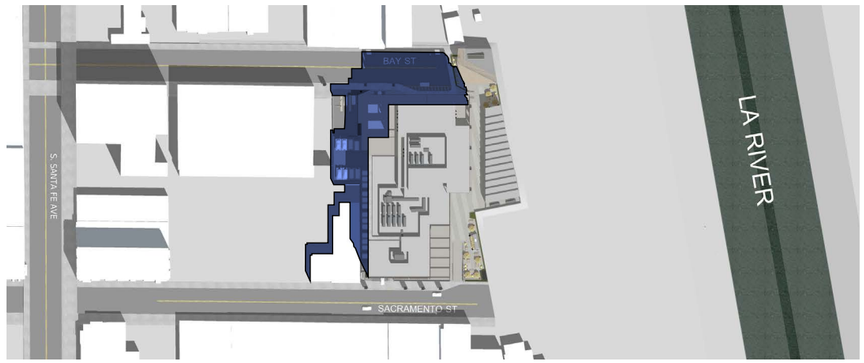

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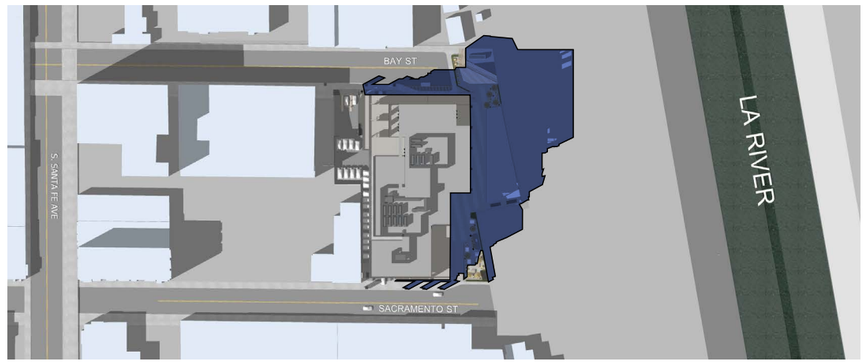

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5 p.m.

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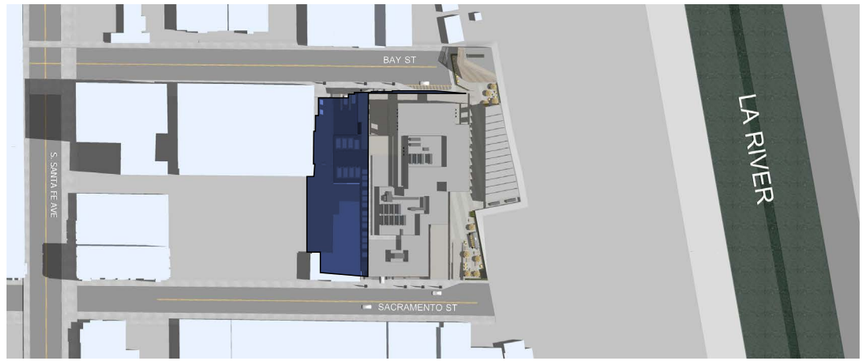

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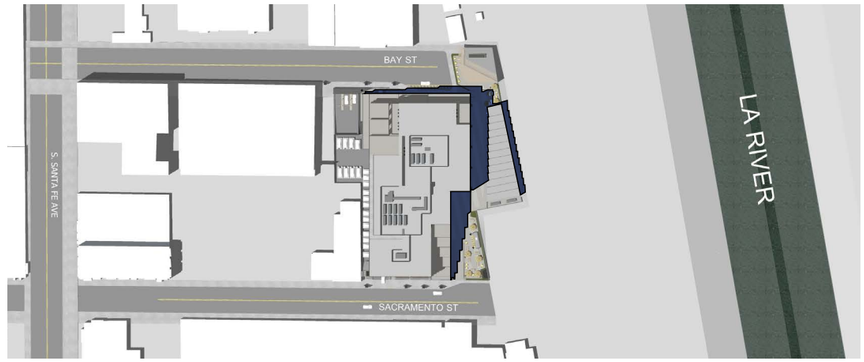

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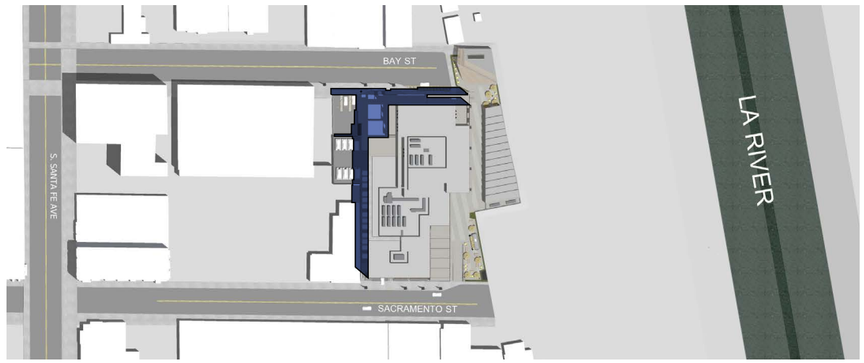

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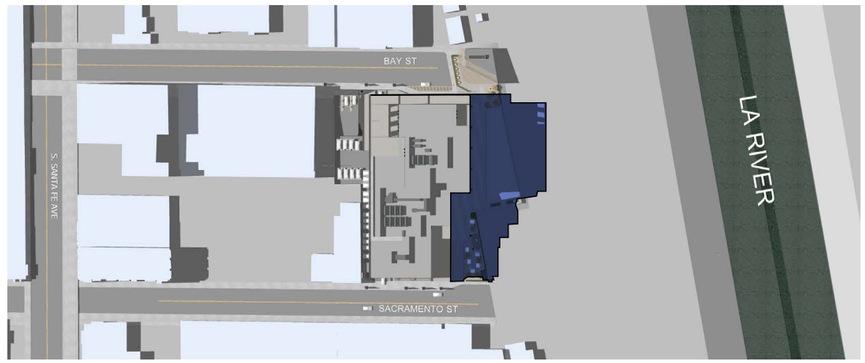

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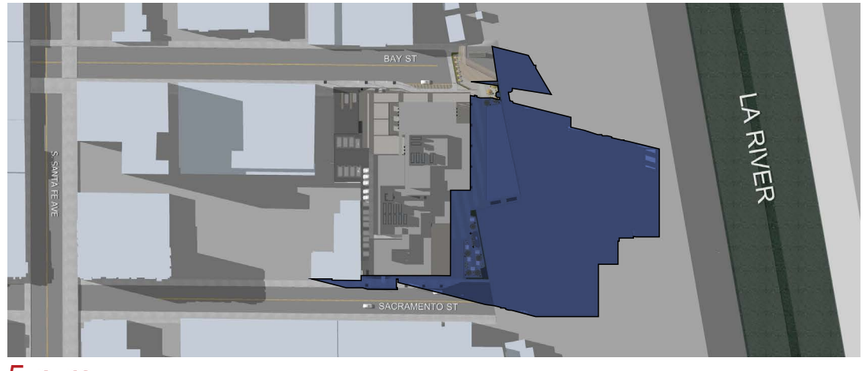

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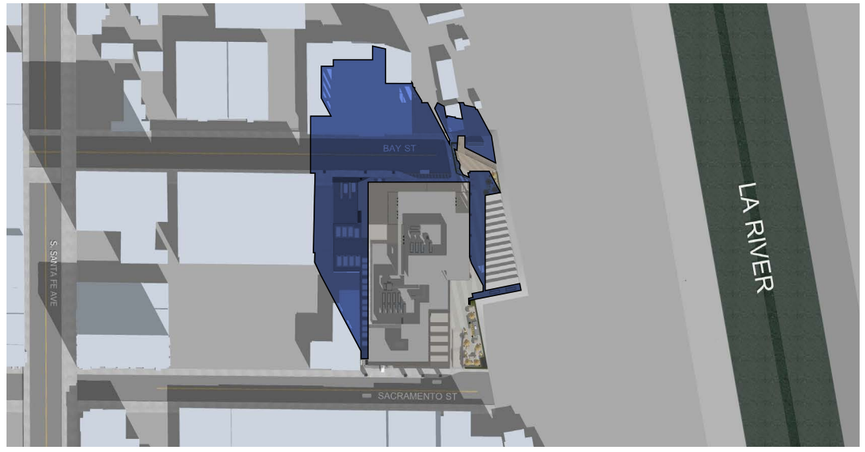
Winter



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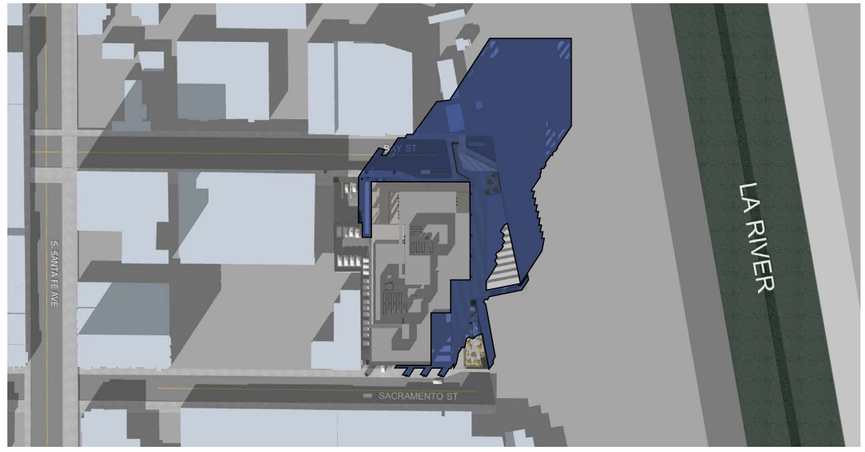

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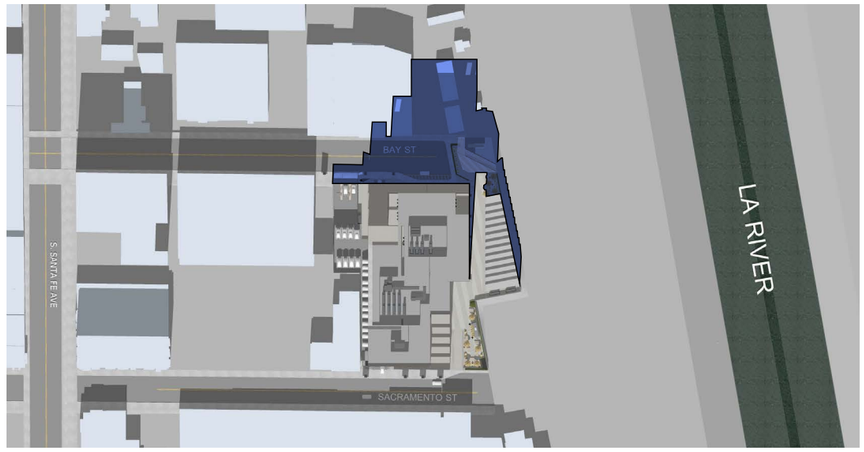

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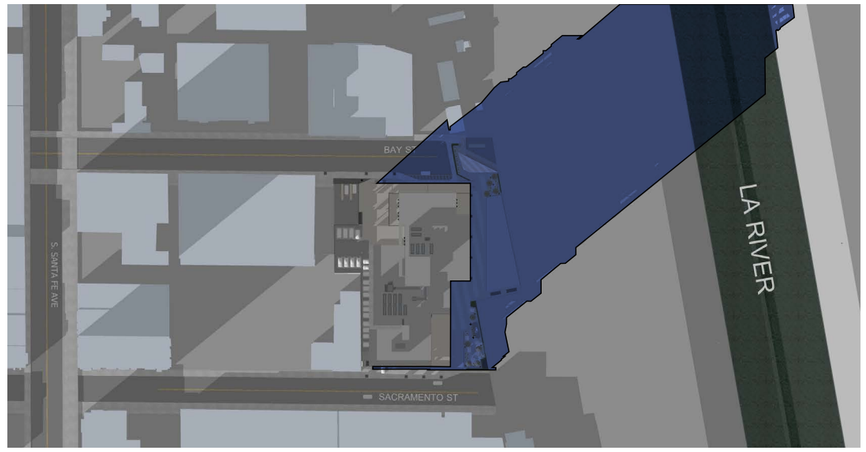

4 p.m.

Appendix IS-2

Tree Report

Tree Report

Date: January 24, 2017
Prepared for: Tishman Speyer
Project: 2159 Bay Street
Property: 2159 Bay Street, Los Angeles, CA
Prepared by: Shimoda Design Group
Ying-Ling Sun Esfandi
Registered California Landscape Architect #5470

This tree report was prepared at the request of Tishman Speyer, in preparation for the proposed 2159 Bay Street project.

This property is under the jurisdiction of the City of Los Angeles and guided by the Native Tree Protection Ordinance No. 177404. Per the ordinance, the following tree species are protected: Oak trees including indigenous Oaks, Southern California Black Walnut, Western Sycamore and California Bay Tree. Any trees of the above species that are larger than 4" caliper at 4.5 feet above the ground level are to be considered protected for the purpose of this ordinance. Trees that are to be retained on the site need to be protected during any grading process to within 5' of the drip line of the tree to preclude potential damage to the tree. Non protected trees of 8" caliper or larger need to be noted too.

The protected trees may be relocated or removed upon prior approval of removal if a) its presence prevents the reasonable development of the property, b) the health of the tree is in decline and its restoration is not advisable or feasible c) It is in danger of falling d) It interferes with proposed utility or roadways within or without property e) It has no apparent aesthetic value that will contribute to the appearance and design of a proposed subdivision.

I have reviewed the subject property and the surrounding properties to determine if any protected trees are present. I observed only shrubs and no trees on site or in the public right of way at and in the vicinity of the property.

Summary: There are NO trees on this property that would be considered protected within the City of Los Angeles Native Tree Protection Ordinance. There are NO trees to be retained or protected in place.

Ying-Ling Sun Esfandi
California Registered Landscape Architect #5470

EXTRA SUPERFINO
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Appendix IS-3

Geotechnical Assessment

Geotechnologies, Inc.
Consulting Geotechnical Engineers

439 Western Avenue
Glendale, California 91201-2837
818.240.9600 • Fax 818.240.9675

November 21, 2017
File No. 21521

Tishman Speyer
400 South Hope Street, Suite 200
Los Angeles, California 90071

Attention: David Lapidus

Subject: Preliminary Geotechnical Assessment
Proposed Commercial Development
2159 Bay Street, Los Angeles, California

Dear Mr. Lapidus:

1.0 INTRODUCTION

This document presents the results of the preliminary geotechnical assessment of the subject property. This preliminary report is intended to evaluate the subsurface conditions anticipated at the site, the potential seismic hazards that could affect the site, and provide an opinion regarding the feasibility of the proposed project from a geotechnical perspective. This preliminary report is based on site observations by a representative of this firm, review of available project files, and review of published geotechnical and geological information.

This report is general in nature and does not present geotechnical design criteria sufficient for use in designing any proposed structure. Similarly, due to the general nature of this assessment, this report is not intended to be submitted for review by the building official for permitting purposes. A comprehensive geotechnical investigation including subsurface exploration and laboratory testing should be prepared for design input, when necessary.

2.0 PROJECT DESCRIPTION

At this time, the proposed project is in the early phases of conception and design. It is assumed that an 8-story structure will be constructed over two levels of subterranean parking. It is proposed that a double-stack mechanical parking system will be implemented within the parking levels. Grading is expected to consist of excavations on the order of 26 to 34 feet for the construction of the proposed subterranean levels and foundation elements. The site location is shown on the enclosed Vicinity Map and the proposed development is shown on the enclosed Site Plan and Cross-Section A-A'.

3.0 SITE CONDITIONS

The subject site is located southeast of the downtown area of the City of Los Angeles between Bay Street and Sacramento Street. It is bounded to the north by Bay Street, to the east by a

paved parking lot followed by train tracks, to the south by Sacramento Street, and to the west by 2-story commercial structures. The site is shown relative to nearby topographic features in the enclosed Vicinity Map and Site Plan.

The surrounding area and subject site descend very gently to the southeast. Total topographic relief across the site is on the order of two feet. The site is currently developed with two to three story commercial structures. It is anticipated that the existing structures will be demolished prior to construction of the proposed development. Vegetation is non-existent due to the developed nature of the site.

4.0 PROJECTS IN THE VICINITY OF THE SITE BY GEOTECHNOLOGIES, INC.

This firm has provided geotechnical services on many projects throughout the City of Los Angeles. Some of those projects are in close proximity to the subject site. A brief summary of a few of these projects is provided below. The locations of these projects are indicated on the enclosed Vicinity Map.

- *Geotechnical Engineering Investigation, Proposed Mixed-Use Structure, 2110 Bay Street, Los Angeles, California, report dated November 24, 2015, File No. 21076.*

  The geotechnical investigation for the project included two excavations to depths of between 50 and 80 feet. The borings encountered local fill overlying natural alluvial soils. Groundwater was not encountered to depths of 80 feet below the ground surface. Analyses presented in the report indicate the site soils would not be subject to liquefaction during a design-level earthquake.

- *Geotechnical Engineering Investigation, Proposed Adaptive Reuse of Existing Building, 1000 South Santa Fe Avenue, Los Angeles, California, dated May 12 2015, File No. 20945.*

  Geotechnical exploration for the proposed project consisted of six excavations to depths between 5 and 50 feet. Groundwater was not encountered during exploration to a maximum depth of 50 feet below the ground surface. The report concluded that the site soils would not be susceptible to liquefaction.

- *Geotechnical Engineering Investigation, Proposed Parking Lot, 2130 Violet Street, Los Angeles, California, dated July 27, 2017, File No. 21474.*

  Exploration for site included four excavations to depths between 40 and 70 feet. Groundwater was not encountered to a maximum explored depth of 70 feet. The report indicates the potential for liquefaction at the site was remote.

5.0 ANTICIPATED SUBSURFACE CONDITIONS

5.1 Geologic Materials

Based on the previous investigations in the vicinity of the site, review of published geologic maps, and the experience of this firm in this area of the City of Los Angeles, it is anticipated the soils underlying the subject site consist of native alluvial soils. These alluvial soils generally consist of mixtures of sand, silt, and clay, with varying amounts of gravels. The alluvium is typically dense or stiff and well consolidated, with expansion characters that range from very low to low.

It is anticipated that some amount of existing fill soils will overlie the alluvium in and around the subject site. Site specific exploration would be required to verify the presence and/or thickness of any existing fill soils.

5.2 Groundwater

Previous investigations in the vicinity of the site did not encounter groundwater to explored depths of approximately 80 feet. A recent environmental site assessment conducted in August, 2016, observed groundwater at 81 feet below ground surface. It is the opinion of this firm that the current groundwater levels at the site are anticipated to be similar to the water levels observed at nearby investigations and recent site investigations conducted by this firm and other firms.

According to groundwater data provided in the Seismic Hazard Zone Report of the Los Angeles 7½-Minute Quadrangle, the historic-high groundwater level for the site is on the order of 170 feet below ground surface. A copy of the historic high water map is enclosed herein.

Fluctuations in the level of groundwater would be expected to occur over time due to variations in rainfall, temperature, and other factors. Moderate fluctuations may also occur within the vicinity of the site.

6.0 REGIONAL GEOLOGY AND FAULTING

6.1 Regional Geology

The subject site is located within the northern portions of the Los Angeles Basin and Peninsular Ranges Geomorphic Province. The Peninsular Ranges are characterized by northwest-trending blocks of mountain ridges and sediment-floored valleys. The dominant geologic structural features are northwest trending fault zones that either die out to the northwest or terminate at east-west trending reverse faults that form the southern margin of the Transverse Ranges.

The Los Angeles Basin is located at the northern end of the Peninsular Ranges Geomorphic Province. The basin is bounded by the east and southeast by the Santa Ana Mountains and San Joaquin Hills, and to the northwest by the Santa Monica Mountains. Over 22 million years ago, the Los Angeles Basin was a deep marine basin formed by tectonic forces between the North American and Pacific plates. Since that time, over 5 miles of marine and non-marine sedimentary rock, as well as intrusive and extrusive igneous rocks, have filled the basin. During the last 2 million years, defined by the Pleistocene and Holocene epochs, the Los Angeles Basin and surrounding mountain ranges have been uplifted to form the present day landscape. Erosion of the surrounding mountains has resulted in deposition of unconsolidated sediments in low-lying areas by rivers such as the Los Angeles River. Areas that have experienced subtle uplift have been eroded with gullies (Yerkes, 1965).

6.2 Regional Faulting

The enclosed Southern California Fault Map shows the location of many mapped faults in the Southern California area. Buried thrust faults are faults without a surface expression but are a significant source of seismic activity. They are typically broadly defined based on the analysis of seismic wave recordings of hundreds of small and large earthquakes in the Southern California area. Due to the buried nature of these thrust faults, their existence is usually not known until they produce an earthquake. The risk for surface rupture potential of these buried thrust faults is inferred to be low (Leighton, 1990). However, the seismic risk of these buried structures in terms of recurrence and maximum potential magnitude is not well established.

The names and distances from the subject site of local and regional faults are provided on the enclosed table titled Seismic Source Summary Table. The locations of the faults are also shown on the enclosed Southern California Fault Map. The fault distances were determined using the United States Geological Survey (USGS) Source Parameters Fault Database, 2008.

Two major buried thrust fault structures in the Los Angeles area are the Elysian Park fold and thrust belt and the Torrance-Wilmington fold and thrust belt. It is postulated that the Elysian Park structure was responsible for the magnitude 5.9, October 1, 1987 Whittier Narrows earthquake, and that the Torrance-Wilmington structure was responsible for the magnitude 5.0, January 19, 1989 Malibu earthquake. The magnitude 6.7, January 17, 1994 Northridge earthquake was caused by a buried thrust fault located beneath the San Fernando Valley.

7.0 LOCAL GEOLOGY

The subject site is located on an alluvial plain to the southeast of the Hollywood Hills. Review of the geologic map by (Dibblee, 1991), indicates the subject site is located in an area underlain by alluvial sediments. This is consistent with the earth materials encountered on projects in the vicinity of the subject site. A copy of the geologic map by (Dibblee, 1991) is enclosed herein.

8.0 SEISMIC AND GEOLOGIC HAZARDS

8.1 Surface Rupture

Review of the earthquake fault zones map within Los Angeles indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone (http://navigatela.lacity.org). The closest Alquist-Priolo Earthquake Fault Zone is the Hollywood Fault / Raymond Fault Zone, which is located approximately 5.7 miles to the north of the subject site. A copy of this map is enclosed herein entitled Earthquake Fault Zone Map.

Ground rupture is defined as surface displacement which occurs along the surface trace of the causative fault during an earthquake. Based on research of available literature, no known active or potentially active faults underlie the subject site. In addition, the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Based on these considerations, the potential for surface ground rupture at the subject site is considered low.

8.2 Nearby Faults

According to the Website NavigateLA, developed by the City of Los Angeles, Bureau of Engineering, Department of Public Works, an east-west trending fault is located approximately 1.2 miles to the northeast of the proposed development. A copy of this map is attached as the Local Quaternary Fault Map. The fault source is listed as the California Geological Survey (CGS) digital database of Fault Activity Map of California. However, after reviewing the CGS website, the Fault Activity Map does not show this unnamed fault.

Geologic maps by Lamar (1970), Dibblee (1989), Yerkes, et al, (1977), and the Department of Water Resources (1961) do not show this fault. The fault does not have a designated Fault rupture Hazard Zone (Bryant, W.A. and Hart, E.W. 2007). The origin of this fault is unknown to this firm.

Based on the research by this firm, the presence of the fault as shown on the NavigateLA Website could not be corroborated or verified with other references. Additionally, surface manifestation of fault activity in that region could not be ascertained by the geologist representing the Los Angeles, Department of Building and Safety. Therefore, in the opinion of this firm, the designated fault need not be considered in the design of the proposed structures.

8.3 Liquefaction

The Seismic Hazards Map of the Los Angeles Quadrangle by the State of California (CDMG, 1999) does not classify the site as part of a liquefiable area. This determination is based on groundwater depth records, soil type and distance to a fault capable of producing a substantial earthquake. A copy of this Seismic Hazard Zones Map is enclosed herein.

Groundwater was not encountered in the vicinity of the site to an explored depth of 80 feet, and the closest historic high water level is reported to have been on the order of 170 feet below the ground surface (CDMG, 1998, Revised 2006). A recent environmental investigation conducted in 2016, however, observed groundwater at 81 feet below ground surface. Based on other liquefaction analyses in the vicinity of the site, the alluvial soils underlying the subject site are typically not considered to be subject to liquefaction. Based on these considerations, it is probable that the potential for liquefaction at the subject site will likely be low. Nonetheless, a site specific liquefaction analysis should be performed as part of a comprehensive, design-level geotechnical investigation.

8.4 Dynamic Dry Settlement

Seismically-induced settlement or compaction of dry or moist, cohesionless soils can be an effect related to earthquake ground motion. Such settlements are typically most damaging when the settlements are differential in nature across the length of structures.

Some seismically-induced dry settlement of the proposed structures could be expected at the subject site as a result of strong ground-shaking. However, based on the typically dense, stiff, and consolidated nature of the alluvial soils expected to underlie the site, the potential dynamic settlements would be expected to be negligible.

8.5 Tsunamis, Seiches, and Flooding

Tsunamis are large ocean waves generated by sudden water displacement caused by a submarine earthquake, landslide, or volcanic eruption. Review of the County of Los Angeles Flood and Inundation Hazards Map (Leighton, 1990) indicates the site does not lie within mapped tsunami inundation boundaries.

Seiches are oscillations generated in enclosed bodies of water which can be caused by ground shaking associated with an earthquake. Review of the County of Los Angeles Flood and Inundation Hazards Map, (Leighton, 1990), indicates the site lies within the mapped inundation boundary of an up-gradient reservoir.

8.6 Landsliding

The probability of seismically-induced landslides affecting the subject development is considered to be remote, due to the lack of significant slopes on the site and surrounding areas.

8.7 Methane Zone

This office has reviewed the City of Los Angeles Methane and Methane Buffer Zones map. Based on this review it appears that the subject property is not located within a Methane Zone or Methane Buffer Zone as designated by the City. A copy of the portion of the map covering the project site is included herein.

9.0 PRELIMINARY CONCLUSIONS

Based on the research of other projects in the site vicinity, and this firm's experience in this area of the City of Los Angeles, it is the opinion of this firm that the proposed development is feasible from a geotechnical engineering standpoint. Once the proposed project proceeds to a more refined design, it is recommended that a comprehensive geotechnical investigation should be prepared in order to provide design parameters and recommendations for the proposed project.

At this time, it is feasible for the development to be supported on conventional spread footings. For shallow foundations and slabs, some remedial grading, including removal and recompaction of existing fill soils, should be expected. Depending on the height of the proposed development, and the anticipated structural loading conditions, it may be necessary to utilize alternative foundation designs if heavy structural loads are anticipated. This may or may not include the use of mat or pile foundations.

The proposed development is expected to be underlain by two basement levels and founded at depths on the order of 26 to 34 feet below the ground surface. Therefore, groundwater is not expected to affect the proposed development, nor would the proposed development be expected to affect the groundwater conditions underlying the site.

Due to the depth of the proposed basement levels, and the proximity of the property lines and existing offsite structures, it should be anticipated that shoring will be required for construction of the basement levels.

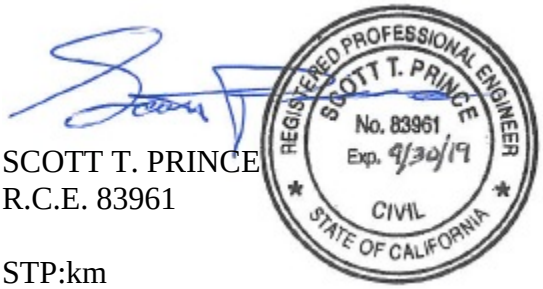
As with all of Southern California, the site is subject to potential strong ground motion should a moderate to strong earthquake occur on a local or regional fault. The proposed project should be completed in accordance with the provisions of the most current applicable building code and requirements of the local building official. Design of the project in accordance with the current building code provisions will be intended to mitigate the potential effects of strong ground shaking.

10.0 CLOSURE

This report is general in nature and does not present geotechnical design criteria sufficient for use in designing any proposed structure. Similarly, due to the general nature of this assessment, this report is not intended to be submitted for review by the building official. A comprehensive geotechnical investigation including subsurface exploration and laboratory testing should be prepared for design input, when necessary.

Geotechnologies, Inc. appreciates the opportunity to provide our services on this project. Should you have any questions, please contact this office.

Respectfully Submitted,
GEOTECHNOLOGIES, INC.



SCOTT T. PRINCE
R.C.E. 83961

STP:km

Distribution (3) Addressee

Email to: [dlapidus@tishmanspeyer.com], Attn: David Lapidus

Enclosures: References
Vicinity Map
Site Plan
Cross Section A-A'
Local Geologic Map
Historically Highest Groundwater Levels Map
Southern California Fault Map
Seismic Source Summary Table
Earthquake Fault Zone Map
Local Quaternary Fault Map
Methane Zone Map
Seismic Hazard Zone Map

REFERENCES

California Department of Conservation, Division of Mines and Geology, 1998, Seismic Hazard Zone Report of the Los Angeles 7½-Minute Quadrangle, Los Angeles County, California, C.D.M.G. Seismic Hazard Zone Report 026, Map scale 1:24,000.

California Department of Conservation, Division of Mines and Geology, 1999, Seismic Hazard Zones Map, Los Angeles 7½-minute Quadrangle.

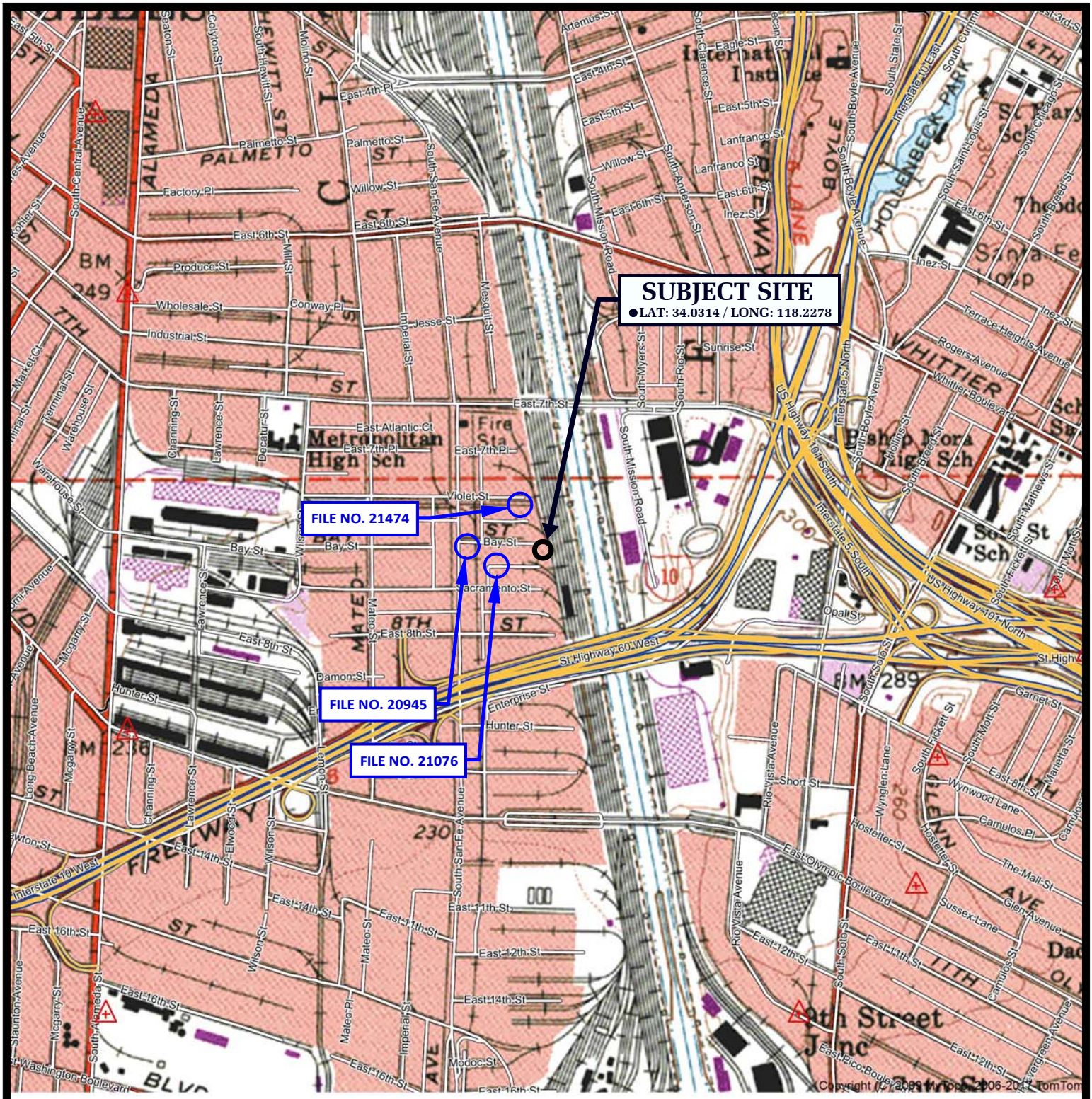
City of Los Angeles Bureau of Engineering Department of Public Works, 2017, website: http://navigatela.lacity.org/navigatela/

Dibblee, T.W., 1989, Geologic Map of the Los Angeles (South ½) 7.5-Minute Quadrangles, Map No DF-22, map scale 1: 24,000.

Hart, E.W. and Bryant, W.A., 1999 (updated 2005), Fault Rupture Zones in California, Division of Mines and Geology, Special Publication 42, 25pp.

Leighton and Associates, Inc. (1990), Technical Appendix to the Safety Element of the Los Angeles County General Plan: Hazard Reduction in Los Angeles County.

Yerkes, R.F., Geology of the Los Angeles Basin, California: An Introduction, U.S. Geologic Survey Prof. Pap., 0420-A, A1-A57, 1965.



SCALE 1:12000

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MILES
0 1000 2000 3000
FFET

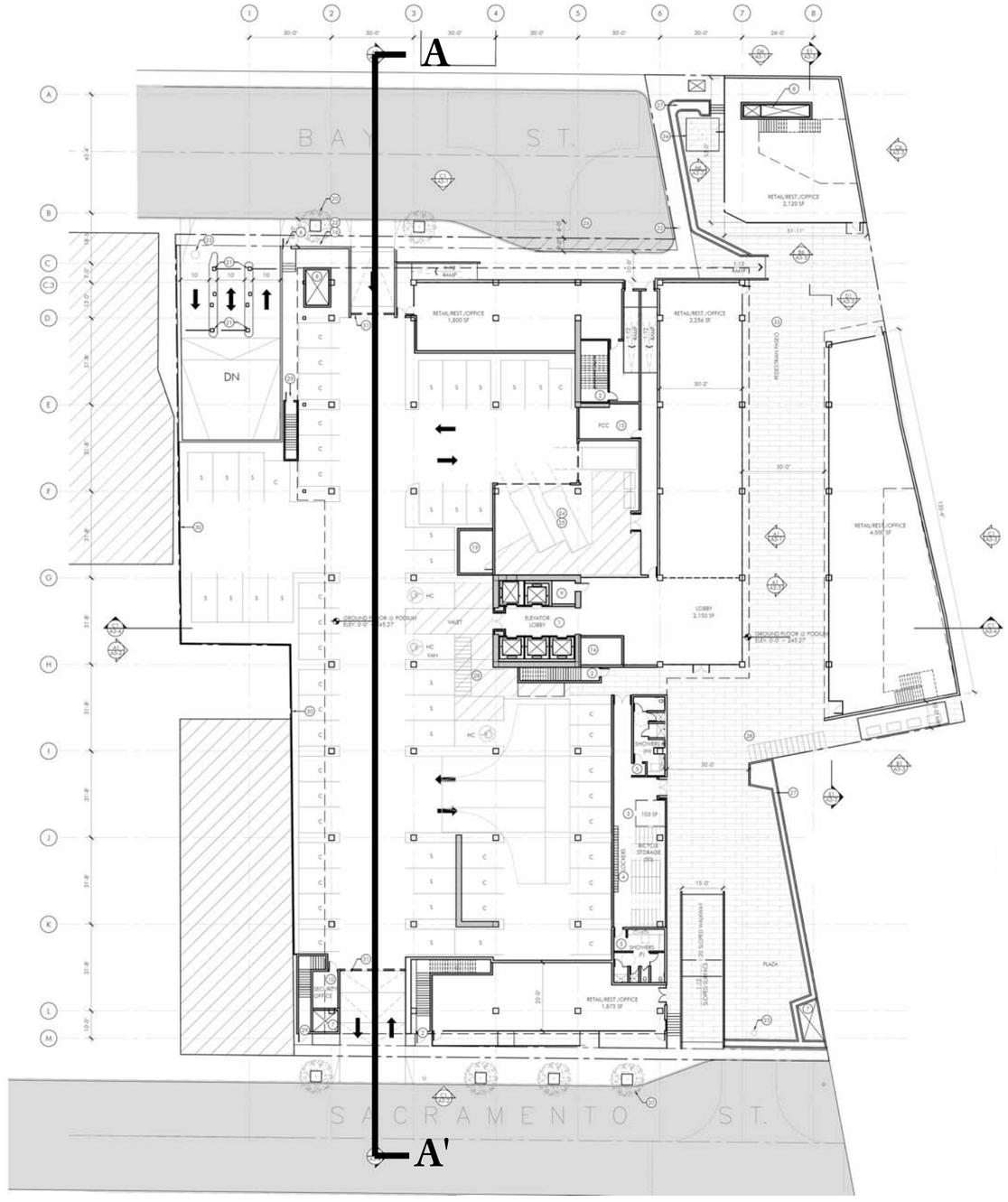
REFERENCE: U.S.G.S. TOPOGRAPHIC MAPS, 7.5 MINUTE SERIES, LOS ANGELES, CA QUADRANGLE

VICINITY MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

TISHMAN SPEYER
2159 BAY ST., LOS ANGELES

FILE NO. 21521



N NE E SE S SW W NW

SCALE IN FEET

0 30 50 100

LEGEND

A — A' **CROSS-SECTION LOCATION**

REFERENCES: GROUND FLOOR PARKING SUMMARY PROVIDED BY SHIMODA DESIGN GROUP DATED FEBRUARY 15, 2017

SITE PLAN

Geotechnologies, Inc.
Consulting Geotechnical Engineers

TISHMAN SPEYER
2159 BAY ST., LOS ANGELES

FILE No. 21521 | **DRAWN BY: TC**

DATE: October 2017

N

SCALE IN FEET

0 30 50 100

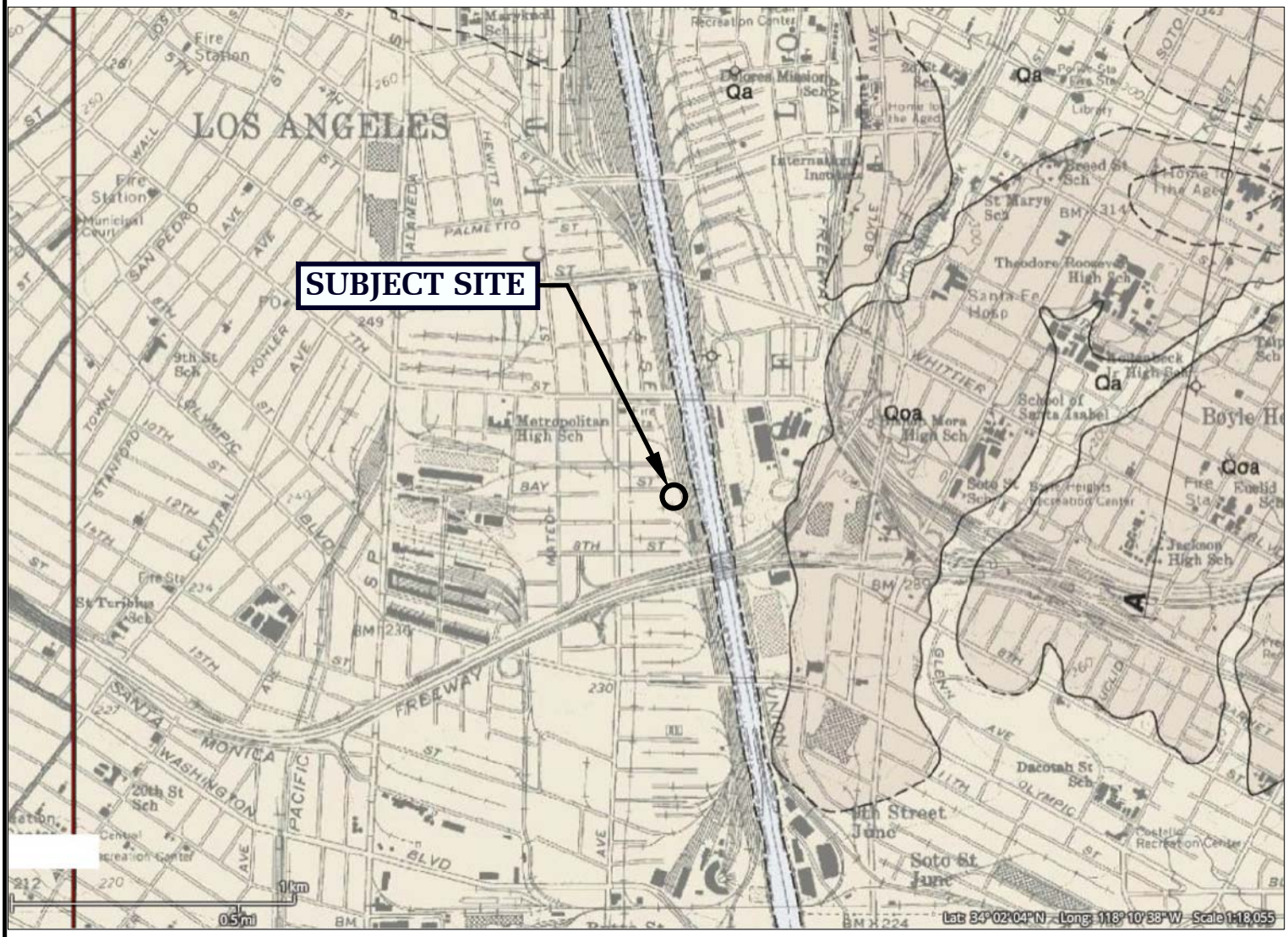
REFERENCE: GROUND FLOOR PARKING SUMMARY PROVIDED BY SHIMODA DESIGN GROUP
DATED FEBRUARY 15, 2017

CROSS-SECTION A-A'

Geotechnologies, Inc.
Consulting Geotechnical Engineers

TISHMAN SPEYER
2159 BAY ST., LOS ANGELES

FILE No. 21521	DRAWN BY: TC
DATE: October 2017	



LEGEND

Qg: Surficial Sediments - alluvial clay and sand of valley areas
Qa: Surficial Sediments - alluvium: unconsolidated floodplain deposits of silt, sand and gravel
Qoa: Older Surficial Sediments - remnants of older weakly consolidated alluvial deposits of gravel, sand and silt

Folds - arrow on axial trace of fold indicates direction of plunge
Fault - dashed where indefinite or inferred, dotted where concealed, queried where existence is doubtful

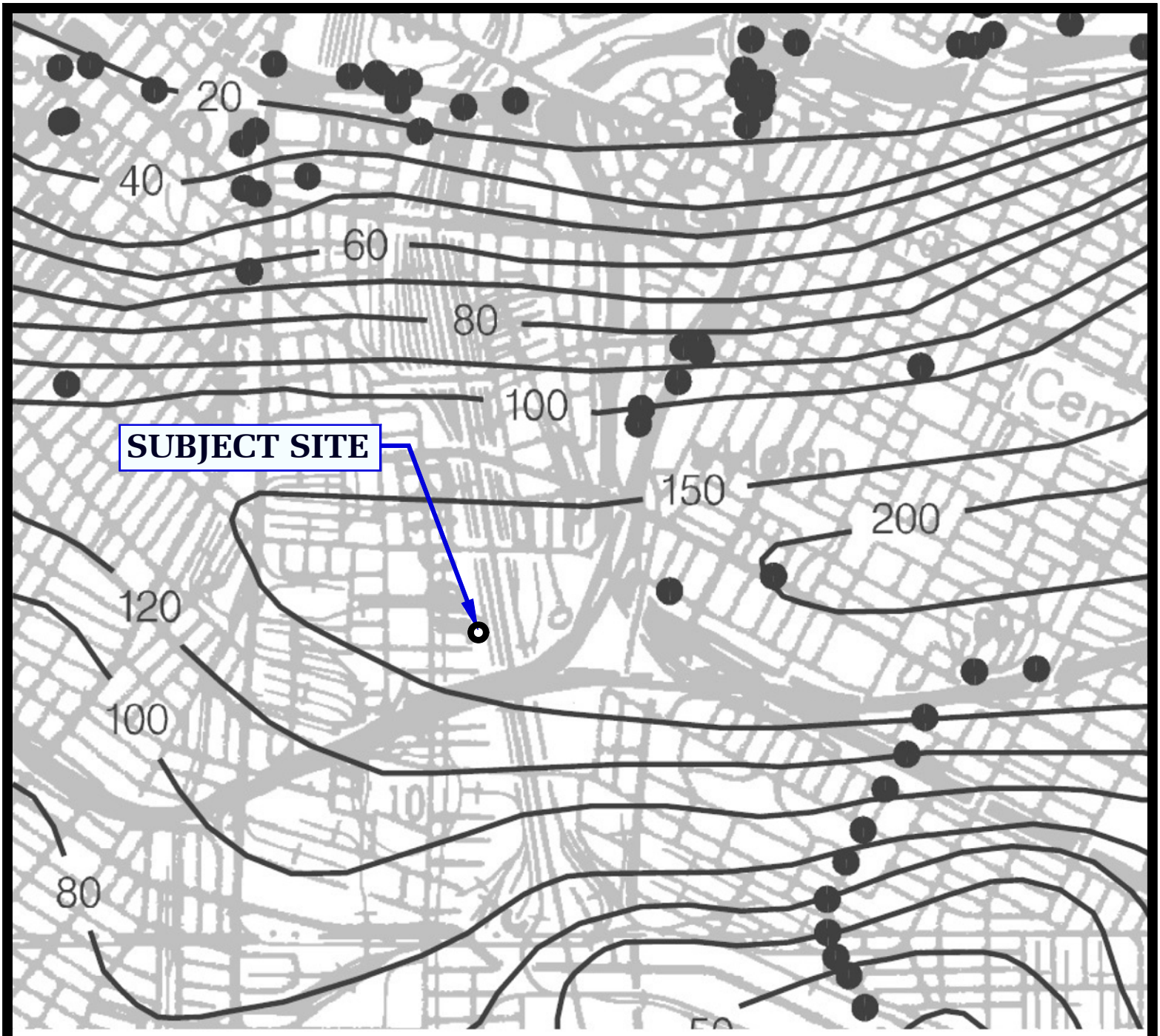
REFERENCE: DIBBLEE, T.W., (1989) GEOLOGIC MAP OF THE LOS ANGELES QUADRANGLE (#DF-22)

LOCAL GEOLOGIC MAP - DIBBLEE

Geotechnologies, Inc.
Consulting Geotechnical Engineers

TISHMAN SPEYER
2159 BAY ST., LOS ANGELES

FILE NO. 21521



ONE MILE

SCALE

N

20 Depth to groundwater in feet

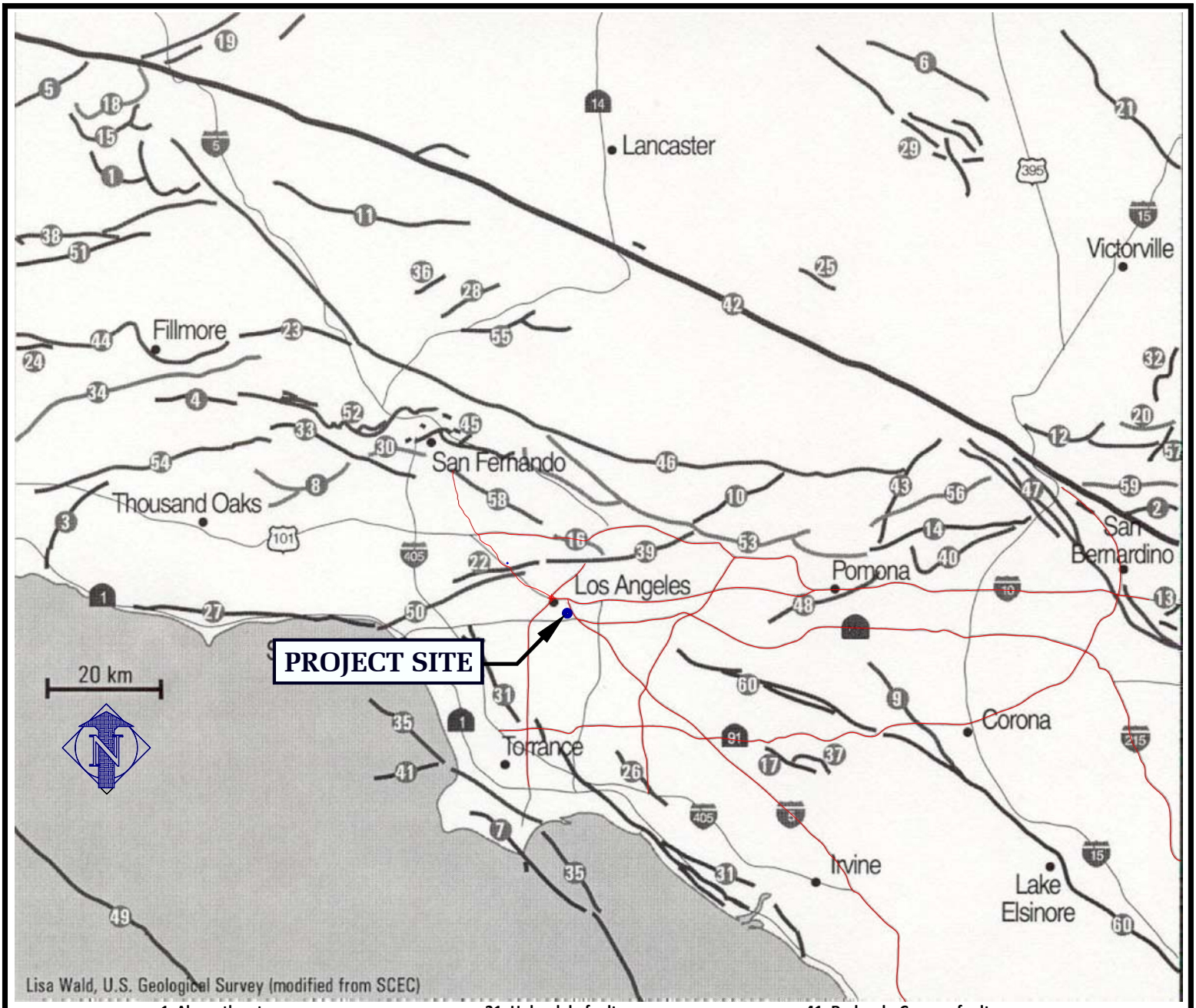
REFERENCE: CDMG, SEISMIC HAZARD ZONE REPORT, 029
LOS ANGELES 7.5 - MINUTE QUADRANGLE, LOS ANGELES COUNTY, CALIFORNIA (1998, REVISED 2006)

HISTORICALLY HIGHEST GROUNDWATER LEVELS

Geotechnologies, Inc.
Consulting Geotechnical Engineers

TISHMAN SPEYER
2159 BAY ST., LOS ANGELES

FILE NO. 21521



1 Alamo thrust
2 Arrowhead fault
3 Bailey fault
4 Big Mountain fault
5 Big Pine fault
6 Blake Ranch fault
7 Cabrillo fault
8 Chatsworth fault
9 Chino fault
10 Clamshell-Sawpit fault
11 Clearwater fault
12 Cleghorn fault
13 Crafton Hills fault zone
14 Cucamonga fault zone
15 Dry Creek fault
16 Eagle Rock fault
17 El Modeno fault
18 Frazier Mountain thrust
19 Garlock fault zone
20 Grass Valley fault
21 Helendale fault
22 Hollywood fault
23 Holser fault
24 Lion Canyon fault
25 Llano fault
26 Los Alamitos fault
27 Malibu Coast fault
28 Mint Canyon fault
29 Mirage Valley fault zone
30 Mission Hills fault
31 Newport Inglewood fault zone
32 North Frontal fault zone
33 Northridge Hills fault
34 Oak Ridge fault
35 Palos Verdes fault zone
36 Pelona fault
37 Peralta Hills fault
38 Pine Mountain fault
39 Raymond fault
40 Red Hill (Etiwanda Ave) fault
41 Redondo Canyon fault
42 San Andreas Fault
43 San Antonio fault
44 San Cayetano fault
45 San Fernando fault zone
46 San Gabriel fault zone
47 San Jacinto fault
48 San Jose fault
49 Santa Cruz-Santa Catalina Ridge f.z.
50 Santa Monica fault
51 Santa Ynez fault
52 Santa Susana fault zone
53 Sierra Madre fault zone
54 Simi fault
55 Soledad Canyon fault
56 Stoddard Canyon fault
57 Tunnel Ridge fault
58 Verdugo fault
59 Waterman Canyon fault
60 Whittier fault

REFERENCE: http://pasadena.wr.usgs.gov/info/images/LA%20Faults.pdf

SOUTHERN CALIFORNIA FAULT MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

TISHMAN SPEYER
2159 BAY ST., LOS ANGELES

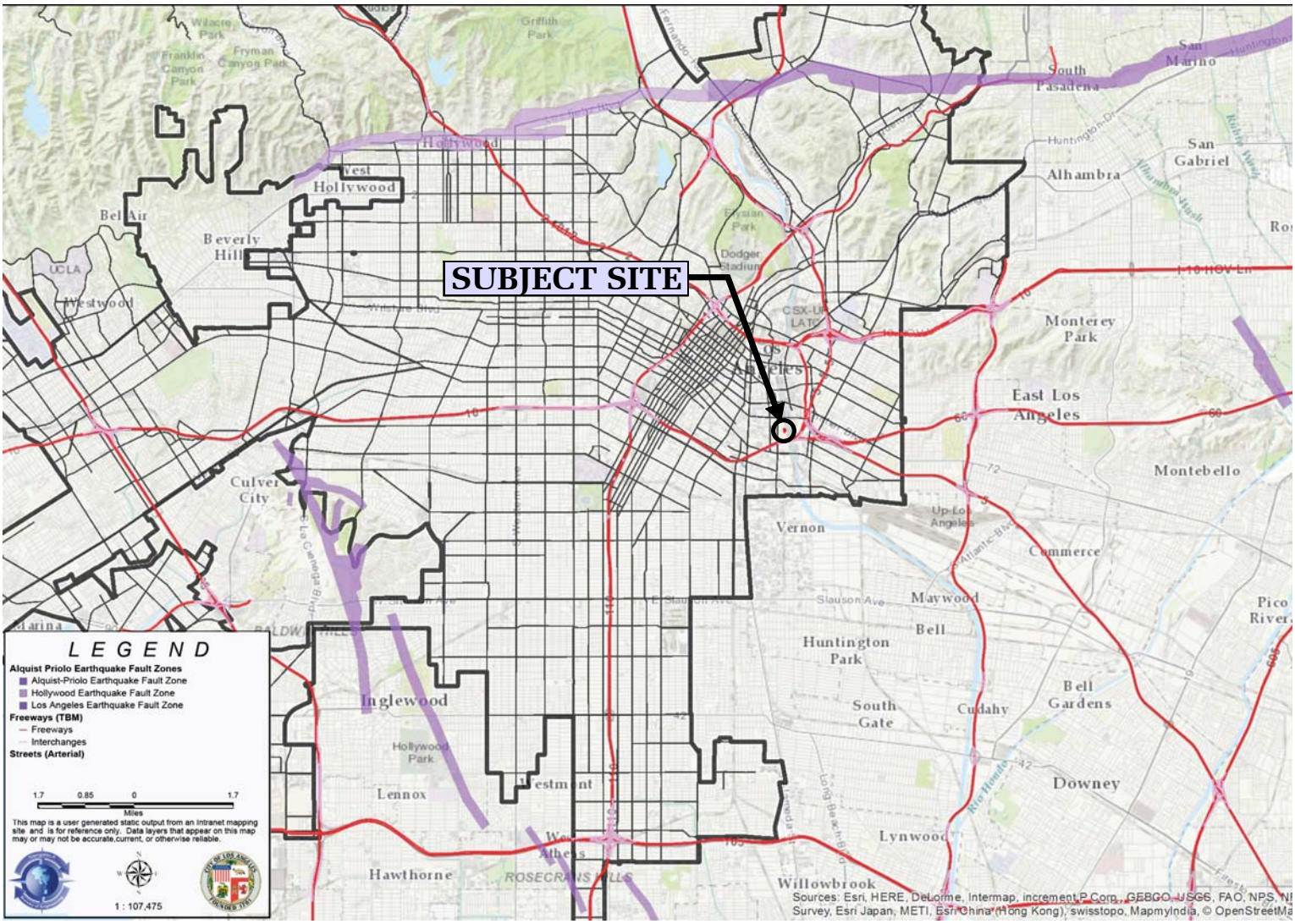
FILE NO. 21521

Seismic Source Summary Table

Tishman Speyer Properties
File No. 21521

Fault Name	Distance in Miles	Pref Slip Rate (mm/yr)	Dip (degrees)	Dip Dir	Slip Sense	Rupture Top(km)	Rupture Bottom (km)	Length (km)
Elysian Park (Upper)	2.45	1.3	50	NE	reverse	3	15	20
Puente Hills (LA)	3.37	0.7	27	N	thrust	2.1	15	22
Hollywood	6.04	1	70	N	strike slip	0	17	17
Raymond	6.23	1.5	79	N	strike slip	0	16	22
Santa Monica Connected	6.29	2.4	44		strike slip	0.8	11	93
Newport Inglewood Connected	7.75	1.3	90	V	strike slip	0	11	208
Verdugo	8.07	0.5	55	NE	reverse	0	15	29
Puente Hills (Santa Fe Springs)	9.96	0.7	29	N	thrust	2.8	15	11
Elsinore	10.57	n/a	84	NE	strike slip	0	16	241
Santa Monica	10.92	1	75	N	strike slip	0	18	14
Sierra Madre	12.54	2	53	N	reverse	0	14	57
Puente Hills (Coyote Hills)	14.21	0.7	26	N	thrust	2.8	15	17
Clamshell-Sawpit	16.5	0.5	50	NW	reverse	0	14	16
Palos Verdes	16.79	3	90	V	strike slip	0	14	99
Malibu Coast	17.11	0.3	75	N	strike slip	0	8	38
Sierra Madre (San Fernando)	17.46	2	45	N	thrust	0	13	18
Anacapa-Dume	18.67	3	41	N	thrust	1.2	12	65
San Gabriel	19.98	1	61	N	strike slip	0	15	71
San Jose	19.98	0.5	74	NW	strike slip	0	15	20
Northridge	21.04	1.5	35	S	thrust	7.4	17	33
Santa Susana	25.37	5	55	N	reverse	0	16	27
Anacapa-Dume	27.07	3	45	N	thrust	0	16	51
Chino	27.63	1	65	SW	strike slip	0	14	29
San Joaquin Hills	28.68	0.5	23	SW	thrust	2	13	27
Cucamonga	29.29	5	45	N	thrust	0	8	28
Holser	32.34	0.4	58	S	reverse	0	19	20
Simi-Santa Rosa	32.79	1	60		strike slip	1	12	39
S. San Andreas	35.02	n/a	86		strike slip	0	14	442
Newport-Inglewood (Offshore)	35.27	1.5	90	V	strike slip	0	10	66
Oak Ridge (Onshore)	38	4	65	S	reverse	1	19	49
San Cayetano	41.43	6	42	N	thrust	0	16	42
San Jacinto	42.01	n/a	90	V	strike slip	0	16	88
Cleghorn	47.75	3	90	V	strike slip	0	16	25
Santa Ynez Connected	54.32	2	70		strike slip	0	11	132
Coronado Bank	54.78	3	90	V	strike slip	0	9	186
Pitas Point Connected	56.61	1	55		reverse	1.2	13	78
Ventura-Pitas Point	56.61	1	64	N	reverse	1	15	44
North Frontal (West)	58.3	1	49	S	reverse	0	16	50
Santa Cruz Island	59.4	1	90	V	strike slip	0	13	69
Channel Islands Thrust	59.46	1.5	20	N	thrust	5	12	59

Reference: Based on USGS National Seismic Hazard Maps - Source Parameters



N

Alquist-Priolo Earthquake Fault Zone

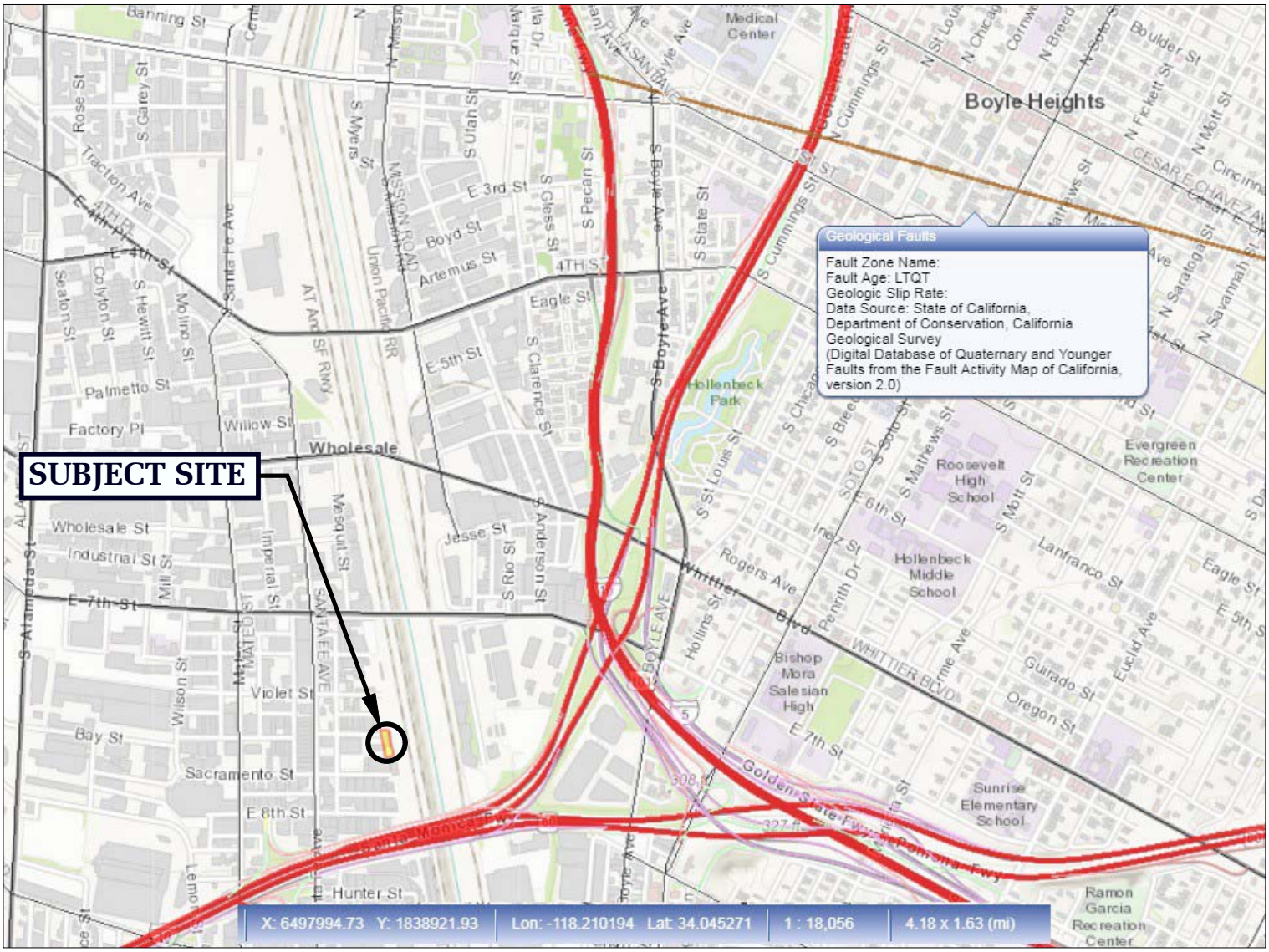
REFERENCE: **EARTHQUAKE FAULT ZONES, CITY OF LOS ANGELES**
http://navigatela.lacity.org/navigatela/

EARTHQUAKE FAULT ZONE

Geotechnologies, Inc.
Consulting Geotechnical Engineers

TISHMAN SPEYER
2159 BAY ST., LOS ANGELES

FILE NO. 21521



REFERENCE: CALIFORNIA GEOLOGIC SURVEY, CITY OF LOS ANGELES (www.navigatela.com)

LOCAL QUATERNARY FAULT MAP

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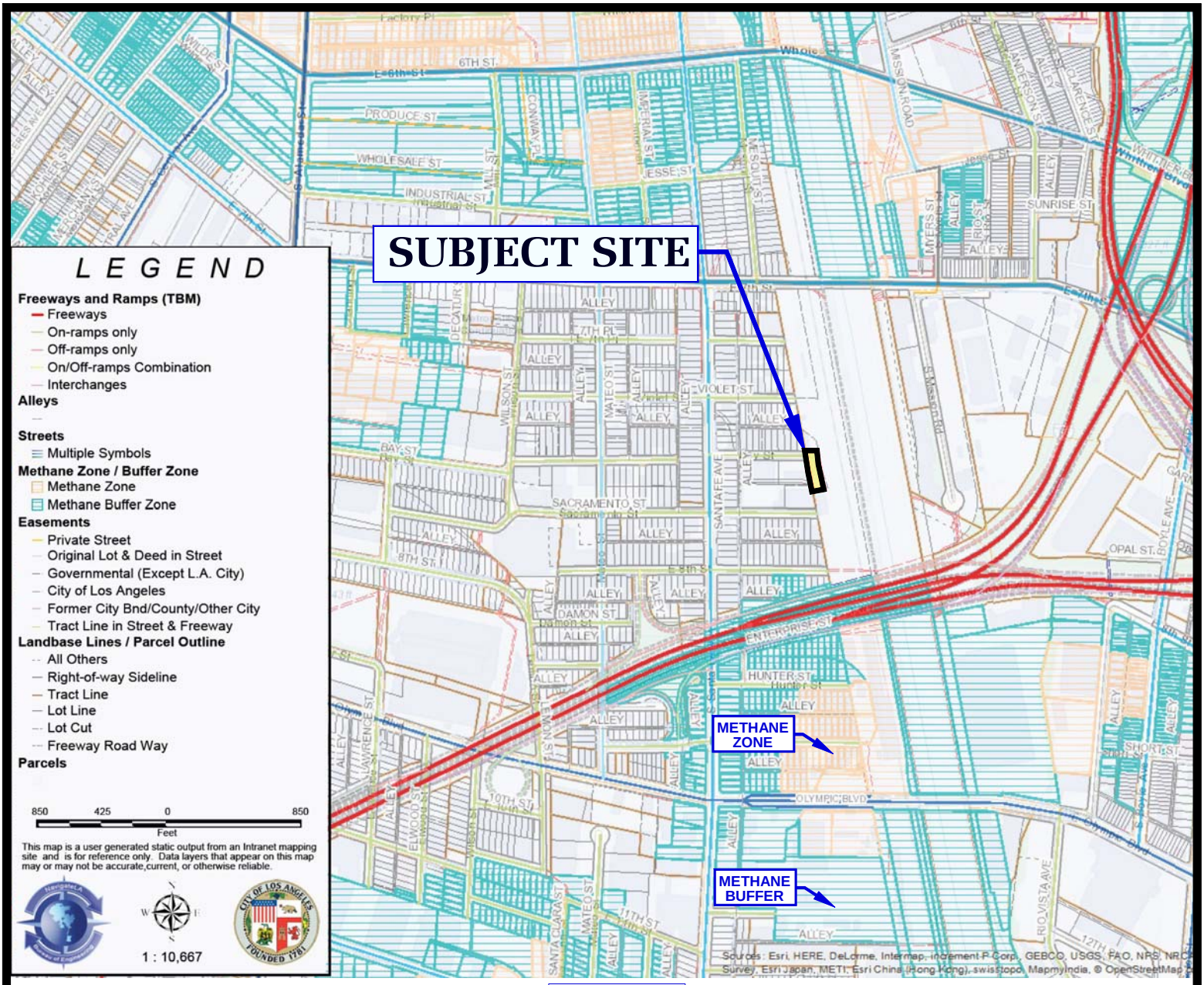
Consulting Geotechnical Engineers

TISHMAN SPEYER
2159 BAY ST., LOS ANGELES

FILE NO. 21521



REFERENCE: http://navigatela.lacity.org/NavigateLA/

METHANE ZONE RISK MAP

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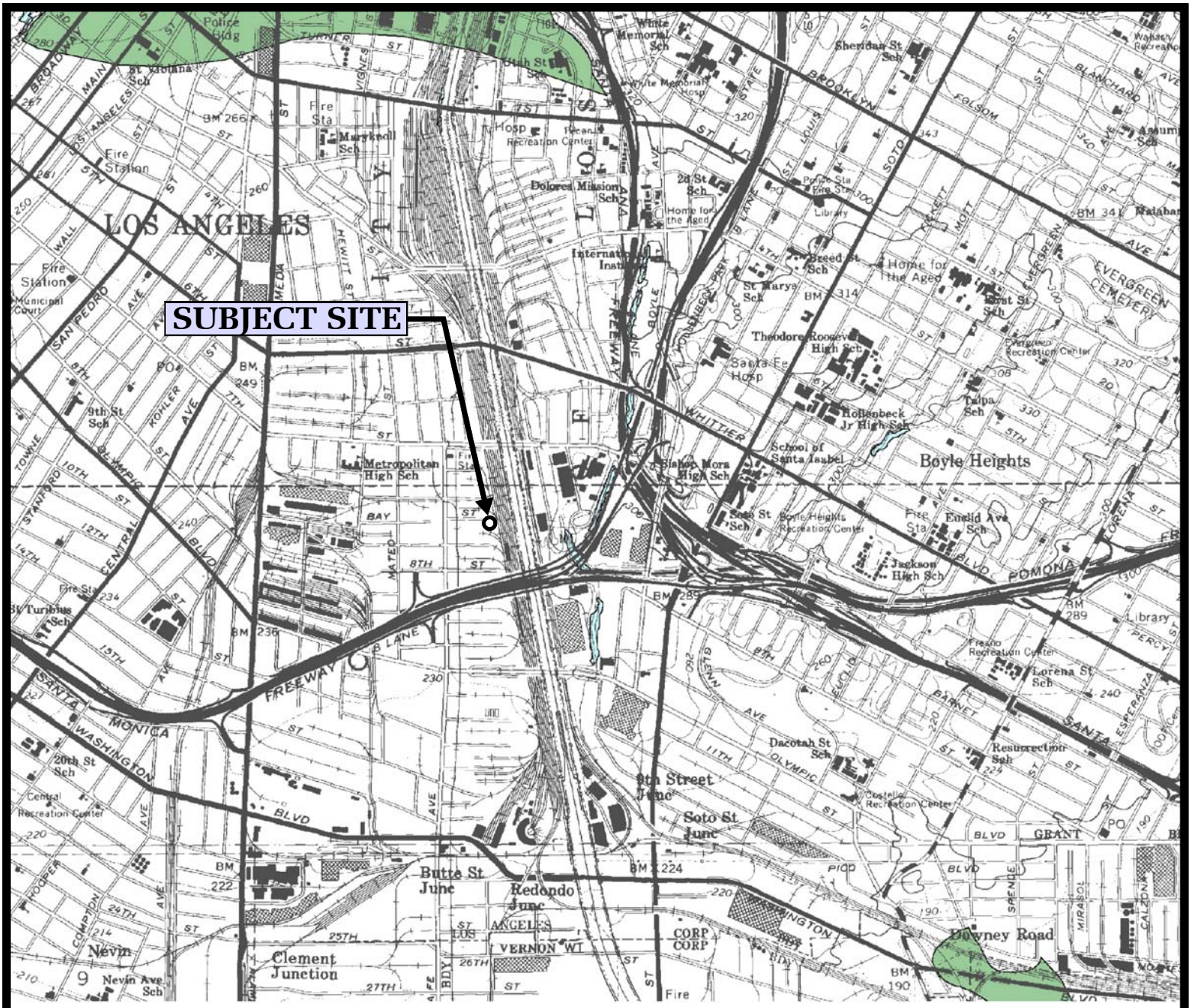
TISHMAN SPEYER
2159 BAY ST., LOS ANGELES

FILE NO. 21521



SCALE 1:24,000

1 .5 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

N

Geotechnologies, Inc

LIQUEFACTION AREA

REFERENCE: **SEISMIC HAZARD ZONES, LOS ANGELES QUADRANGLE OFFICIAL MAP (CDMG, 1999)**

SEISMIC HAZARD ZONE MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

TISHMAN SPEYER
2159 BAY ST., LOS ANGELES

FILE NO. 21521

Appendix IS-4

Utility Infrastructure Technical Report Wastewater

700 South Flower Street, Suite 2100 Los Angeles, CA 90017 213.418.0201 kpff.com

2159 BAY STREET
UTILITY INFRASTRUCTURE TECHNICAL REPORT: WASTEWATER
MARCH 13, 2018

PREPARED BY:

KPFF Consulting Engineers

700 South Flower Street, Suite 2100

Los Angeles, CA 90017

(213) 418-0201

Table of Contents

Appendix

1. INTRODUCTION

1.1. PROJECT DESCRIPTION

The Project includes the demolition of all existing on-site structures, and the construction and development of an eight-story commercial high-rise building with two levels of subterranean parking, and two two-story commercial buildings. The Project would include approximately 204,789 square feet of create office space and 19,235 square feet of retail and restaurant space, in combination operating as a "creative campus". The Project would provide a total of 711 vehicle parking spaces on two levels of subterranean parking levels and one ground floor parking level.

SCOPE OF WORK

As a part of the Environmental Impact Report for the Project, the purpose of this report is to analyze the potential impact of the Project to the City's wastewater infrastructure systems.

2. REGULATORY FRAMEWORK

The City of Los Angeles has one of the largest sewer systems in the world including more than 6,600 miles of sewers serving a population of more than four million. The Los Angeles sewer system is comprised of three smaller systems: Hyperion Sanitary Sewer System, Terminal Island Water Reclamation Plant Sanitary Sewer System, and Regional Sanitary Sewer System.

The Project Site lies within the Hyperion Service Area served by the Hyperion Sanitary Sewer System and the Hyperion Treatment Plant. In February 2015, a Sewer System Management Plan (SSMP) was prepared for the Hyperion Sanitary Sewer System pursuant to the State Water Control Board's (SWRCB) May 2, 2006 Statewide General Waste Discharge Requirements (WDRs)[1].

Sewer permit allocation for projects that discharge into the Hyperion Treatment Plant is regulated by Ordinance No. 166,060 adopted by the City in 1990. This Ordinance established an additional annual allotment of 5.0 million gallons per day, of which 34.5 percent (1.725 million gallons per day) is allocated for priority projects, 8 percent (0.4 million gallons per day) for public benefit projects, and 57.5 percent (2.875 million gallons per day) for non-priority projects (of which 65 percent is for residential projects and 35 percent for non-residential projects).

The City of Los Angeles Municipal Code (LAMC) includes regulations that allow the City to assure available sewer capacity for new projects and require fees for improvements to the infrastructure system. LAMC Section 64.15 requires that the City

[1] City of Los Angeles Department of Public Works, Bureau of Sanitation, Sewer System Management Plan Hyperion Sanitary Sewer System, February 2015.

perform a Sewer Capacity Availability Request (SCAR) analysis when any person seeks a sewer permit to connect a property to the City's sewer collection system, proposes additional discharge through their existing public sewer connection, or proposes a future sewer connection or future development that is anticipated to generate 10,000 gallons or more of sewage per day. A SCAR is an analysis of the existing sewer collection system to determine if there is adequate capacity existing in the sewer collection system to safely convey the newly generated sewage to the appropriate sewage treatment plant.

LAMC Section 64.11.2 requires the payment of fees for new connections to the sewer system to assure the sufficiency of sewer infrastructure. New connections to the sewer system are assessed a Sewerage Facilities Charge. The rate structure for the Sewerage Facilities Charge is based upon wastewater flow strength, as well as volume. The determination of wastewater strength for each applicable project is based on City guidelines for the average wastewater concentrations of two parameters (biological oxygen demand and suspended solids) for each type of land use. Fees paid to the Sewerage Facilities Charge fees are deposited in the City's Sewer Construction and Maintenance Fund for sewer and sewage-related purposes, including but not limited to industrial waste control and water reclamation purposes.

In addition, the City establishes design criteria for sewer systems to assure that new infrastructure provides sewer capacity and operating characteristics to meet City Standards (Bureau of Engineering Special Order No. SO 06-0691). Per this Special Order, laterals sewers, which are sewers 18 inches or less in diameter, must be designed for a planning period of 100 years. The Special Order also requires that sewers be designed so that the peak dry weather flow depth during their planning period shall not exceed one-half the pipe diameter.[2]

In 2006 the City approved the Integrated Resources Plan, which incorporates a Wastewater Facilities Plan.[3] The Integrated Resources Plan was developed to meet future wastewater needs of more than 4.3 million residents expected to live within the City by 2020. In order to meet future demands posed by increased wastewater generation, the City has chosen to expand its current overall treatment capacity, while maximizing the potential to reuse recycled water through irrigation, and other approved uses.

3. EXISTING CONDITIONS

The project site is currently developed with three buildings: an approximately 25,700 square-foot building located in the southern portion of the site, referred to as the Sacramento Building or Building C (2145-2149-2159 Sacramento Street), an approximately 6,600 square-foot building located in the central portion of the site, referred to as Building B (2148 Bay Street), and an approximately 7,100 square-foot

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[2] http://www.environmentla.org/programs/thresholds/M-Public%20Utilities.pdf.

[3] City of Los Angeles, Department of Public Works, LA Sewers Website, Integrated Resources Plan Facilities Plan, Summary Report, December 2006.

building located in the northeast portion of the site, referred to as Building A (2159 Bay Street). Hyperloop One currently occupies or is in the process of building out all tenant spaces at the site, and operates uses including engineering and test development operations, office operations, and fabrication and machining operations. Exterior areas in the central and eastern portions of the site are used for storage, equipment staging, and exterior operations. Other smaller structures at the site consist of shipping containers that have been converted into offices and conference rooms, tents used for welding operations and meetings, and parking stackers. Designated areas for storage of raw materials and hazardous waste are located on the south side of Building B. Sanitary sewer service to the Project Site from the surrounding streets is provided by the Bureau of Sanitation (BOS).

Based on available record data provided by the City, there is an 8-inch vitrified clay pipe (VCP) sewer line in Bay Street flowing west. Based upon the City of Los Angeles Bureau of Engineering's online Navigate LA database, the capacity of this line is 0.71 cubic feet per second (cfs) (458,678 gallons per day (gpd)). Available records indicate that Bay Street has three (3) sewer wyes allocated to the Project Site.

Based on available record data provided by the City, there is an 8-inch vitrified clay pipe (VCP) sewer line in Sacramento Street flowing west. Based upon the Navigate LA database, the capacity of the 8-inch line is 0.71 cubic feet per second (cfs) (458,678 gallons per day (gpd)). Available records indicate the 8-inch main in Sacramento Street has three (3) sewer wyes allocated to the Project Site.

Wastewater generation estimates for the existing Project Site have been prepared based on BOS sewerage generation factors, as summarized in Table 1 below.

Table 1 – Estimated Existing Wastewater Generation

Land Use	Units	Generation Rate (gpd/unit)	Total Sewage Generation (gpd)
Existing			
Office (Bldg. A)	7,106 SF	120/KGSF	853
Light Industrial (Bldg. B & Bldg. C)	16,222 SF	50/KGSF	811
Creative Office (Bldg. C)	16,000 SF	120/KGSF	1,920
		Subtotal Existing	**3,584**

4. SIGNIFICANCE THRESHOLDS

Appendix G of the CEQA Guidelines provides a set of sample questions that address impacts with regard to wastewater. These questions are as follows:

Would the project:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

- Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

In the context of the above questions from the CEQA Guidelines, the *L.A. CEQA Thresholds Guide* states that a project would normally have a significant wastewater impact if:

- The project would cause a measureable increase in wastewater flows at a point where, and a time when, a sewer's capacity is already constrained or that would cause a sewer's capacity to become constrained; or

- The project's additional wastewater flows would substantially or incrementally exceed the future scheduled capacity of any one treatment plant by generating flows greater than those anticipated in the Wastewater Facilities Plan or General Plan and its elements.

These thresholds are applicable to the Project and as such are used to determine if the Project would have significant wastewater impacts.

5. METHODOLOGY

The methodology for determining the significance of a project as it relates to a project's impact on wastewater collection and treatment infrastructure is based on the *L.A. CEQA Thresholds Guide*. This methodology involves a review of the project's environmental setting, project impacts, cumulative impacts, and mitigation measures (if required). The following has been considered as part of the determination for this Project:

Environmental Setting

- Location of the Project and appropriate points of connection to the wastewater collection system on the pertinent Wye Map;

- Description of the existing wastewater system which would serve the Project, including its capacity and current flows.

- Summary of adopted wastewater-related plans and policies that are relevant to the Project area.

Project Impacts

- Evaluate the Project wastewater needs (anticipated daily average wastewater flow), taking into account design or operational features that would reduce or offset service impacts;

- Compare the Project's wastewater needs to the appropriate sewer's capacity and/or the wastewater flows anticipated in the Wastewater Facilities Plan or General Plan.

This report analyzes the potential impacts of the Project on the existing public sewer infrastructure by comparing the estimated Project wastewater generation with the calculated available capacity of the existing facilities.

Pursuant to LAMC Section 64.15, BOS Wastewater Engineering Division made a preliminary analysis of the local and regional sewer conditions to determine if available wastewater conveyance and treatment capacity exists for future development of the Project Site. BOS's approach consisted of the study of a worst-case scenario envisioning peak demands from the relevant facilities occurring simultaneously on the wastewater system. A combination of flow gauging data and computed results from the City's hydrodynamic model were used to project current and future impacts due to additional sewer discharge. The data used in this report are based on the findings of the BOS preliminary analysis. Refer to Exhibit 1 for the SCAR prepared for the Project, which contains the results of the BOS preliminary analysis.

6. PROJECT IMPACTS

6.1. CONSTRUCTION

Construction activities for the Project would result in a temporary increase in wastewater generation as a result of construction activities at the Project Site. Wastewater generation would occur incrementally throughout construction of the Project as a result of construction workers on-site. However, construction workers would utilize portable restrooms, which would not contribute to wastewater flows to the City's wastewater system. Thus wastewater generation from Project construction activities is not anticipated to cause any increase in wastewater flows. Therefore, Project impacts associated with construction-period wastewater generation would be less than significant.

The Project will require construction of new on-site infrastructure to serve the new building, and potential upgrade and/or relocation of existing infrastructure. Construction impacts associated with wastewater infrastructure would primarily be confined to trenching for miscellaneous utility lines and connections to public infrastructure. Installation of wastewater infrastructure will be limited to on-site wastewater distribution, and minor off-site work associated with connections to the public main. Although no upgrades to the public main are anticipated, minor off-site work is required in order to connect to the public main. Therefore, as part of the Project, a construction management plan would be implemented to reduce any temporary pedestrian and traffic impacts during construction, including maintaining two lanes of travel and ensuring safe

pedestrian access and adequate emergency vehicle access. Overall, when considering impacts resulting from the installation of any required wastewater infrastructure, all impacts are of a relatively short-term duration (i.e., months) and would cease to occur once the installation is complete. Therefore, Project impacts on wastewater associated with construction activities would be less than significant.

6.2. OPERATION

In accordance with the *L.A. CEQA Thresholds Guide*, the base estimated sewer flows were based on the sewer generation factors for the Project's uses. Based on the type of use and generation factors, the Project will generate approximately 68,472 gallons per day (gpd) of wastewater. Wastewater generation estimates have been prepared based on the City of LA Bureau of Sanitation sewerage generation factors for residential and commercial categories, and are summarized in Table 2 below.

Table 2 – Estimated Proposed Water Consumption			
Land Use	**Units**	**Consumption Rate (gpd/unit)**	**Total Water Consumption (gpd)**
Existing			
Office (Bldg. A)	7,106 SF	120/KGSF	853
Light Industrial (Bldg. B & Bldg. C)	16,222 SF	50/KGSF	811
Creative Office (Bldg. C)	16,000 SF	120/KGSF	1,920
		Subtotal Existing	**3,584**
Proposed			
Office Building	202,954 SF	120/KGSF	24,354
Auditorium	216 Seats[(a)]	3/Seat	648
Restaurant: Full Services Indoor Seat	1,067 Seats[(a)]	30/Seat	32,010
Restaurant: Full Services Outdoor Seat	382 Seats[(a)]	30/Seat	11,460
		Subtotal Proposed	**68,472**
		Net Increase	**64,888**
[(a)] Assumed 15 SF per person to estimate existing seat count.[4]			

A SCAR was submitted to see whether the existing public infrastructure can accommodate the Project. It was assumed that approximately half of the proposed sewer discharge would go into the existing 8-inch sewer main in Bay Street. The remainder of the proposed sewer discharge would go to the existing 8-inch sewer main in Sacramento Street. The Bureau of Sanitation has analyzed the Project demands in conjunction with existing conditions and forecasted growth, and has approved the Project to discharge up to 68,472 gpd of wastewater to the existing sewer mains in Bay Street and Sacramento Street. Therefore, impacts on wastewater would be less than significant. See Exhibit 1 for the approved SCAR.

BOS operates four water reclamation plants that serve over four million people. They consist of the Hyperion Water Reclamation Plant, the Terminal Island Water Reclamation Plant, the Donald C. Tillman Water Reclamation Plant, Reclamation Plant, and the Los Angeles–Glendale Water Reclamation Plant. Together, they have a combined

[4] International Code Council. (2014). 2015 International Building Code, Section 1004.1.2. Country Club Hills. ICC.

capacity of 580 million gallons of recycled water per day.[5] The Project's proposed wastewater generation of approximately 0.068 mgd will be treated at the Hyperion Water Reclamation Plant. On average 275 million gallons of wastewater enters the Hyperion Water Reclamation Plant on a dry weather day. The plant was designed to accommodate a maximum daily flow of 450 mgd [6], resulting in an available treatment capacity of 175 mgd. This means the project would create 0.039 percent of the available capacity. Consequently, impacts on wastewater treatment capacity are less than significant.

As stated above, the existing capacity of the 8-inch sewer line in Sacramento Street is approximately 0.71 cubic feet per second (cfs) (458,678 gallons per day (gpd)). The Project's net increase in sewage generation is approximately 64,888 gpd. This represents approximately fourteen percent of the pipe's capacity. Due to this fact, and the approved SCAR, impacts on wastewater infrastructure would be less than significant.

6.3. CUMULATIVE IMPACTS

The proposed Project will result in the additional generation of sewer flow. However, as discussed above, BOS has conducted an analysis of existing and planned capacity and determined that adequate capacity exists to serve the Project. Related projects connecting to the same sewer system are required to obtain a sewer connection permit and submit a SCAR to BOS as part of the related project's development review. Impact determination will be provided following the completion of the SCAR analysis for each project. If system upgrades are required as a result of a given project's additional flow, arrangements would be made between the related project and BOS to construct the necessary improvements.

Wastewater generated by the proposed Project would be conveyed via the existing wastewater conveyance systems for treatment at the Hyperion Water Reclamation Plant. As previously stated, based on information from BOS, the existing design capacity of the Hyperion Water Reclamation Plant is approximately 450 million gallons per day (mgd) and the existing average daily flow for the system is approximately 275 mgd.[6] The estimated wastewater generation increase of 64,888 gpd summarized in Table 2 comprises less than 0.044 percent of the available capacity (175 mgd approximately) in the system. It is expected that the related projects would also be required to adhere to the BOS's annual wastewater flow increase allotment.

Based on these forecasts the Project's increase in wastewater generation would be adequately accommodated within the Hyperion Service Area. In addition, the BOS

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[5] City of Los Angeles Department of Public Works, Bureau of Sanitation, Water Reclamation Plants, https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p?_adf.ctrl-state=14ml1auzba_4&_afrLoop=7495087836967533#!

[6] City of Los Angeles Department of Public Works, Bureau of Sanitation, Hyperion Water Reclamation Plant. https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p/s-lsh-wwd-cw-p-hwrp?_adf.ctrl-state=14ml1auzba_4&_afrLoop=7495506219572866#!

analysis confirms that the Hyperion Treatment Plant has sufficient capacity and regulatory allotment for the proposed Project. Thus, operation of the Project would have a less than significant impact on wastewater treatment facilities.

7. LEVEL OF SIGNIFICANCE

Based on the analysis contained in this report no significant impacts have been identified to wastewater infrastructure for this Project.

EXHIBIT 1

City of Los Angeles
Bureau of Engineering

Sewer Capacity Availability Request (SCAR)

To: Bureau of Sanitation
The following request is submitted to you on behalf of the applicant requesting to connect to the public sewer system. Please verify that the capacity exists at the requested location for the proposed developments shown below. The results are good for 180 days from the date the sewer capacity approval from the Bureau of Sanitation.

Job Address:	**2159 BAY STREET**	Sanitation Scar ID:	**62-3978-1217**
Date Submitted	12/11/2017	Request Will Serve Letter?	Yes
BOE District:	Central District		
Applicant:	CHRISTOPHE BORNAND		
Address:	700 S FLOWER ST, SUITE 2100	City :	LOS ANGELES
State:	CA	Zip:	90017
Phone:	213.418.0201	Fax:	
Email:	CHRISTOPHE.BORNAND@KPFF.COM	BPA No.	
S-Map:		Wye Map:	123-A

SIMM Map - Maintenance Hole Locations

No.	Street Name	U/S MH	D/S MH	Diam. (in)	Approved Flow %	Notes
1	BAY STREET	51513080	51513079	8	50.00	
2	SACRAMENTO STREET	51513097	51513096	8	50.00	

Proposed Facility Description

No.	Proposed Use Description	Sewage Generation (GPD)	Unit	Qty	GPD
1	OFFICE BUILDING	120	KGSF	202,954	24,354
2	AUDITORIUM	3	SEAT	216	648
3	RESTAURANT: FULL SERVICE INDOOR SEAT	30	SEAT	1,067	32,010
4	RESTAURANT: FULL SERVICE OUTDOOR SEAT	30	SEAT	382	11,460
			Proposed Total Flow (gpd):		**68,472**

Remarks 1] SCAR approved for requested discharge of 68,472 GPD (47.55 gpm) 2] IWP required

Note: Results are good for 180 days from the date of approval by the Bureau of Sanitation

Date Processed: 12/14/2017 Expires On: 06/12/2018

Processed by: Albert Lew
Bureau of Sanitation
Phone: 323-342-6207
Sanitation Status: Approved
Reviewed by: Airmohammad Jafarnejad
on 12/14/2017

Submitted by: Alfredo Jara
Bureau of Engineering
Central District
Phone: 213-482-7041

Fees Collected Yes SCAR FEE (W:37 / QC:705) $1,996.50

Scar Request Number: 2162

Date Collected	12/11/2017	SCAR Status:	**Completed**

Scar Request Number: 2162

City of Los Angeles
Bureau of Engineering

SEWER CAPACITY AVAILABILITY REVIEW FEE (SCARF) - Frequently Asked Questions

SCAR stands for Sewer Capacity Availability Review that is performed by the Department of Public Works, Bureau of Sanitation. This review evaluates the existing sewer system to determine if there is adequate capacity to safely convey sewage from proposed development projects, proposed construction projects, proposed groundwater dewatering projects and proposed increases of sewage from existing facilities. The SCAR Fee (SCARF) recovers the cost, incurred by the City, in performing the review for any SCAR request that is expected to generate 10,000 gallons per day (gpd) of sewage.

The SCARF is based on the effort required to perform data collection and engineering analysis in completing a SCAR. A brief summary of that effort includes, but is not limited to, the following:

1. Research and trace sewer flow levels upstream and downstream of the point of connection.
2. Conduct field surveys to observe and record flow levels. Coordinate with maintenance staff to inspect sewer maintenance holes and conduct smoke and dye testing if necessary.
3. Review recent gauging data and in some cases closed circuit TV inspection (CCTV) videos.
4. Perform gauging and CCTV inspection if recent data is not available.
5. Research the project location area for other recently approved SCARs to evaluate the cumulated impact of all known SCARs on the sewer system.
6. Calculate the impact of the proposed additional sewage discharge on the existing sewer system as it will be impacted from the approved SCARs from Item 6 above. This includes tracing the cumulative impacts of all known SCARs, along with the subject SCAR, downstream to insure sufficient capacity exist throughout the system.
7. Correspond with the applicant for additional information and project and clarification as necessary.
8. Work with the applicant to find alternative sewer connection points and solutions if sufficient capacity does not exist at the desired point of connection.

Questions and Answers:

1. **When is the SCARF applied, or charged?**
   It applies to all applicants seeking a Sewer Capacity Availability Review (SCAR). SCARs are generally required for Sewer Facility Certificate applications exceeding 10,000 gpd, or request from a property owner seeking to increase their discharge thru their existing connection by 10,000 gpd or more, or any groundwater related project that discharges 10,000 gpd or more, or any proposed or future development for a project that could result in a discharge of 10,000 gpd.
2. **Why is the SCARF being charged now when it has not been in the past?**
   The City has seen a dramatic increase in the number of SCARs over 10,000 gpd in the last few years and has needed to increase its resources, i.e., staff and gauging efforts, to respond to them. The funds collected thru SCARF will help the City pay for these additional resources and will be paid by developers and property owners that receive the benefit from the SCAR effort.
3. **Where does the SCARF get paid?**
   The Department of Public Works, Bureau of Engineering (BOE) collects the fee at its public counters. Once the fee is paid then BOE prepares a SCAR request and forwards it to the BOS where it is reviewed and then returned to BOE. BOE then informs the applicant of the result. In some cases, BOS works directly with the applicant during the review of the SCAR to seek additional information and work out alternative solutions

Scar Request Number: 2162

CITY OF LOS ANGELES

CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

BUREAU OF ENGINEERING

GARY LEE MOORE, PE, ENV SP
CITY ENGINEER

1149 S BROADWAY, SUITE 700
LOS ANGELES, CA 90015-2213

http://eng.lacity.org

12/14/2017

CHRISTOPHE BORNAND
700 S FLOWER ST, SUITE 2100
LOS ANGELES, CA, 90017

Dear CHRISTOPHE BORNAND,

SEWER AVAILABILITY: 2159 BAY STREET

The Bureau of Sanitation has reviewed your request of 12/11/2017 for sewer availability at **2159 BAY STREET**. Based on their analysis, it has been determined on 12/14/2017 that there is capacity available to handle the anticipated discharge from your proposed project(s) as indicated in the attached copy of the Sewer Capacity Availability Request (SCAR) .

This determination is valid for 180 days from the date shown on the Sewer Capacity Availability request (SCAR) approved by the Bureau of Sanitation.

While there is hydraulic capacity available in the local sewer system at this time, availability of sewer treatment capacity will be determined at the Bureau of Engineering Public Counter upon presentation of this letter. A Sewer Connection Permit may also be obtained at the same counter provided treatment capacity is available at the time of application.

A Sewerage Facilities Charge is due on all new buildings constructed within the City. The amount of this charge will be determined when application is made for your building permit and the Bureau of Engineering has the opportunity to review the building plans. To facilitate this determination a preliminary set of plans should be submitted to Bureau of Engineering District Office, Public Counter.

Provision for a clean out structure and/or a sewer trap satisfactory to the Department of Building and Safety may be required as part of the sewer connection permit.

Sincerely,

Alfredo Jara
Student Intern
Central District, Bureau of Engineering

Scar Request Number: 2162

City of Los Angeles
Bureau of Engineering

SEWER CAPACITY AVAILABILITY REVIEW FEE (SCARF) - Frequently Asked Questions

SCAR stands for Sewer Capacity Availability Review that is performed by the Department of Public Works, Bureau of Sanitation. This review evaluates the existing sewer system to determine if there is adequate capacity to safely convey sewage from proposed development projects, proposed construction projects, proposed groundwater dewatering projects and proposed increases of sewage from existing facilities. The SCAR Fee (SCARF) recovers the cost, incurred by the City, in performing the review for any SCAR request that is expected to generate 10,000 gallons per day (gpd) of sewage.

The SCARF is based on the effort required to perform data collection and engineering analysis in completing a SCAR. A brief summary of that effort includes, but is not limited to, the following:

1. Research and trace sewer flow levels upstream and downstream of the point of connection.
2. Conduct field surveys to observe and record flow levels. Coordinate with maintenance staff to inspect sewer maintenance holes and conduct smoke and dye testing if necessary.
3. Review recent gauging data and in some cases closed circuit TV inspection (CCTV) videos.
4. Perform gauging and CCTV inspection if recent data is not available.
5. Research the project location area for other recently approved SCARs to evaluate the cumulated impact of all known SCARs on the sewer system.
6. Calculate the impact of the proposed additional sewage discharge on the existing sewer system as it will be impacted from the approved SCARs from Item 6 above. This includes tracing the cumulative impacts of all known SCARs, along with the subject SCAR, downstream to insure sufficient capacity exist throughout the system.
7. Correspond with the applicant for additional information and project and clarification as necessary.
8. Work with the applicant to find alternative sewer connection points and solutions if sufficient capacity does not exist at the desired point of connection.

Questions and Answers:

1. **When is the SCARF applied, or charged?**
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