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November 26, 2013
Revised December 11, 2013
File No. 20572

MGA North, LLC
16300 Roscoe Boulevard
Van Nuys, California 91406

Attention: Leon Benraimon

Subject: Regional Seismic Evaluation
Proposed Mixed-Use Development
20000 Prairie Street, Chatsworth, California

Reference: Report by Geotechnologies, Inc.:
Geotechnical Engineering Investigation, dated August 27, 2013,
revised October 18, 2013.

Dear Mr. Benraimon:

This letter has been prepared at the request of Jim Brock. It is the understanding of this office that a regional seismic evaluation focusing on faults which might affect the site is necessary. The fault information presented in the referenced geotechnical engineering investigation takes all of the information presented herein into account, however it is tailored to be used in the design of the proposed structures.

REGIONAL FAULTING

Based on criteria established by the California Division of Mines and Geology (CDMG) now called California Geologic Survey (CGS), faults may be categorized as active, potentially active, or inactive. Active faults are those which show evidence of surface displacement within the last 11,000 years (Holocene-age). Potentially-active faults are those that show evidence of most recent surface displacement within the last 1.6 million years (Quaternary-age). Faults showing no evidence of surface displacement within the last 1.6 million years are considered inactive for most purposes, with the exception of design of some critical structures.

FAULT LOCATIONS

The site is not located within any special studies zone (Alquist-Priolo Act, 1972) and no known active fault crosses the site. The locations of significant active and potentially active faults are shown on the Southern California Fault Map included herein. The minimum distances to significant active and potentially active faults in the vicinity of the site are listed in the Seismic Source Summary Table included herein.

ACTIVE FAULTS

San Andreas Fault System

The San Andreas Fault system forms a major plate tectonic boundary along the western portion of North America. The system is predominantly a series of northwest trending faults characterized by a predominant right lateral sense of movement. At its closest point the San Andreas Fault system is located approximately 30 miles to the northeast of the site.

The San Andreas and associated faults have had a long history of inferred and historic earthquakes. Cumulative displacement along the system exceeds 150 miles in the past 25 million years (Jahns, 1973). Large historic earthquakes have occurred at Fort Tejon in 1857, at Point Reyes in 1906, and at Loma Prieta in 1989. Based on single-event rupture length, the maximum Richter magnitude earthquake is expected to be approximately 8.2 (Allen, 1968). The recurrence interval for large earthquakes on the southern portion of the fault system is on the order of 100 to 200 years. It is believed that the Southern Segment of the San Andreas Fault is capable of producing a 7.4 magnitude earthquake.

Sierra Madre Fault Zone

The Sierra Madre fault alone forms the southern tectonic boundary of the San Gabriel Mountains in the northern San Fernando Valley. It consists of a system of faults approximately 75 miles in length. The individual segments of the Sierra Madre fault system range up to 16 miles in length and display a reverse sense of displacement and dip to the north. The most recently active portions of the zone include the Mission Hills, Sylmar and Lakeview segments, which produced an earthquake in 1971 of magnitude 6.4. Tectonic rupture along the Lakeview Segment during the San Fernando Earthquake of 1971 produced displacements of approximately 2-1/2 to 4 feet upward and southwestward.

It is believed that the Sierra Madre fault zone is capable of producing an earthquake of magnitude 7.3. The closest trace of the fault is approximately 7miles northeast of the site.

San Gabriel Fault System

The San Gabriel fault system is located approximately 12 miles northeast of the site. The San Gabriel fault system comprises a series of subparallel, steeply north-dipping faults trending approximately north 40 degrees west with a right-lateral sense of displacement. There is also a small component of vertical dip-slip separation. The fault system exhibits a strong topographic expression and extends approximately 90 miles from San Antonio Canyon on the southeast to Frazier Mountain on the northwest. The estimated right lateral displacement on the fault varies from 34 miles (Crowell, 1982) to 40 miles (Ehlig, 1986), to 10 miles (Weber, 1982). Most scholars accept the larger displacement values and place the majority of activity between the Late Miocene and Late Pliocene Epochs of the Tertiary Era (65 to 1.8 million years before present).

The San Gabriel fault system is considered potentially active by California Geological Survey. However, recent seismic exploration in the Valencia area (Cotton and others, 1983; Cotton, 1985) has established Holocene offset. Radiocarbon data acquired by Cotton (1985) indicate that faulting in the Valencia area occurred between 3,500 and 1,500 years before present.

It is hypothesized by Ehlig (1986) and Stitt (1986) that the Holocene offset on the San Gabriel fault system is due to sympathetic (passive) movement as a result of north-south compression of the upper Santa Susana thrust sheet. Seismic evidence indicates that the San Gabriel fault system is truncated at depth by the younger, north-dipping Santa Susana-Sierra Madre faults (Oakeshott, 1975; Namson and Davis, 1988). It is postulated that the San Gabriel fault system is capable of producing earthquakes of 7.3 magnitudes.

Whittier Fault

The Whittier fault is located approximately 34 miles to the southeast of the site. The Whittier fault together with the Chino fault comprises the northernmost extension of the northwest trending Elsinore fault system. The mapped surface of the Whittier fault extends in a west-northwest direction for a distance of 20 miles from the Santa Ana River to the terminus of the Puente Hills. The Whittier fault is essentially a strike-slip, northeast dipping fault zone which also exhibits evidence of reverse movement along with en echelon[a] fault segments, en echelon folds and anatomizing (braided) fault segments. Right lateral offsets of stream drainages of up to 8800 feet (Durham and Yerkes, 1964) and vertical separation of the basement complex of 6,000 to 12,000 feet (Yerkes, 1972), have been documented. It is believed that the Whittier fault is capable of producing a 7.8 magnitude earthquake.

The Whittier Narrows earthquakes of October 1, 1987, and October 4, 1987, occurred in the area between the westernmost terminus of the mapped trace of the Whittier fault and the frontal fault system. The main 5.9 magnitude shock of October 1, 1987 was not caused by slip on the Whittier fault. The quake ruptured a gently dipping thrust fault with an east-west strike (Haukson, Jones, Davis and others, 1988). In contrast, the earthquake of October 4, 1987, is assumed to have occurred on the Whittier fault as focal mechanisms show mostly strike-slip movement with a small reverse component on a steeply dipping northwest striking plane (Haukson, Jones, Davis and others, 1988).

Newport-Inglewood Fault System

The Newport-Inglewood fault system is located on the order of 17 miles to the southeast of the site. The Newport-Inglewood fault zone is a broad zone of discontinuous north to northwest en echelon faults and northwest to west trending folds. The fault zone extends southeastward from West Los Angeles, across the Los Angeles Basin, to Newport Beach and possibly offshore beyond San Diego (Barrows, 1974; Weber, 1982; Ziony, 1985).

[a] En echelon refers to closely-spaced, parallel or subparallel, overlapping or step-like minor structural features

The onshore segment of the Newport-Inglewood fault zone extends for about 37 miles from the Santa Ana River to the Santa Monica Mountains. Here it is overridden by, or merges with, the east-west trending Santa Monica zone of reverse faults.

The surface expression of the Newport-Inglewood fault zone is made up of a strikingly linear alignment of domal hills and mesas that rise on the order of 400 feet above the surrounding plains. From the northern end to its southernmost onshore expression, the Newport-Inglewood fault zone is made up of: Cheviot Hills, Baldwin Hills, Rosecrans Hills, Dominguez Hills, Signal Hill-Reservoir Hill, Alamitos Heights, Landing Hill, Bolsa Chica Mesa, Huntington Beach Mesa, and Newport Mesa. Several single and multiple fault strands, arranged in a roughly left stepping en echelon arrangement, make up the fault zone and account for the uplifted mesas.

The most significant earthquake associated with the Newport-Inglewood fault system was the Long Beach earthquake of 1933 with a magnitude of 6.3 on the Richter scale. It is believed that the Newport-Inglewood fault zone is capable of producing a 7.5 magnitude earthquake.

Santa Susana Fault Zone

The Santa Susana Fault Zone consists of several individual fault segments which extend from the Santa Susana Mountains across the San Fernando Pass and into the San Gabriel Mountains for a distance of 38 kilometers. Sympathetic movement of the western portion of the fault system is postulated to have occurred during the 1971 Earthquake. The western portion of the fault has been designated an Alquist-Priolo Special Studies zone fault and is zoned active. The fault has been assigned a slip rate of 5 to 7 mm/year and is thought to be capable of producing an earthquake in the 6.5 to 7.3 magnitude range.

POTENTIALLY ACTIVE FAULTS

Raymond Fault

The Raymond fault is located approximately 21 miles to the southeast of the site. The Raymond fault is an effective groundwater barrier which divides the San Gabriel Valley into groundwater sub-basins. Much of the geomorphic evidence for the Raymond fault has been obliterated by urbanization of the San Gabriel Valley; however, a discontinuous escarpment can be traced from Monrovia to the Arroyo Seco in South Pasadena. The very bold, “knife edge” escarpment in Monrovia parallel to Scenic Drive is believed to be a fault scarp of the Raymond fault. Trenching of the Raymond fault is reported to have revealed Holocene movement (Weaver and Dolan, 1997).

The recurrence interval for the Raymond fault is probably slightly less than 3,000 years, with the most recent documented event occurring approximately 1,600 years ago (Crook, et al, 1978). However, historical accounts of an earthquake that occurred in July 1855 as reported by Toppozada and others, 1981, places the epicenter of a Richter Magnitude 6 earthquake within the Raymond fault. It is believed that the Raymond fault is capable of producing a 6.8 magnitude earthquake. The probability of an earthquake occurring on this fault during the expected lifetime of the proposed development is considered remote.

Malibu Coast-Santa Monica-Hollywood Fault

The Malibu Coast fault displays both reverse and left lateral displacement and forms a major tectonic boundary between the Transverse Ranges and the Peninsular Ranges provinces. Late Quaternary movement has been documented in excavations south of Pepperdine University. The Santa Monica fault forms the onshore concealed extension of the Malibu Coast fault. Further to the east, the Santa Monica fault joins the Hollywood fault along the southern foothills of the Santa Monica Mountains. The closest of these is the Santa Monica Fault which is on the order of 10 miles south of the site. The Santa Monica Fault is thought to be capable of producing a 7.4 magnitude earthquake.

Verdugo Fault

The Verdugo Fault is located approximately 9 miles to the east of the site. The Verdugo Fault runs along the southwest edge of the Verdugo Mountains. The fault displays a reverse motion. According to Weber, et. al., (1980) 2 to 3 meter high scarps were identified in alluvial fan deposits in the Burbank and Glendale areas. Further to the northeast, in Sun Valley, faults were reportedly identified at a depth of 40 feet in the in a sand and gravel pit. Although considered active by the County of Los Angeles, Department of Public Works (Leighton, 1990), and the United States Geological Survey, the fault is not designated with an Earthquake Fault Zone by the California Geological Survey. The Verdugo Fault is thought to be capable of producing a magnitude 6.9 earthquake.

Northridge Hills Fault

The Northridge Hills Fault is a 9.3 mile long north-dipping revers fault the exhibits evidence of late Quaternary surface deformation (Baldwin and Lettis, 2000). The Northridge Hills Fault is located along the southern edge of the northwest-southeast trending Northridge Hills and is likely responsible for their uplift. the Northridge Hills fault underwent triggered slip during the 1994 Northridge Earthquake (Baldwin and Lettis, 2000) and is not believed to be the source of the Northridge Earthquake (SCEC, 2002). The Northridge Hills Fault is not mapped by the State Geologist as an Earthquake Fault Hazard Zone. The Northridge Hills fault is located about 1.9 miles north of the site.

<u>Chatsworth Fault</u>

The Chatsworth fault is located 1.4 miles northeast of the site. The fault trends generally northeasterly. The Chatsworth Fault is on the order of 12 miles in length. It is a north dipping fault and possible magnitudes between 6.0 to 6.8 have been attributed to it. The Southern California Earthquake Data Center indicates that the slip rate on the Chatsworth Fault is unknown.

Should you have any questions please contact this office.

Respectfully submitted,
GEOTECHNOLOGIES, INC.

EDWARD F. HILL
G.E. 2126

Enclosures: Southern California Fault Map
Quaternary Geologic Map
Seismic Source Summary Table

Distribution: (5) Addressee

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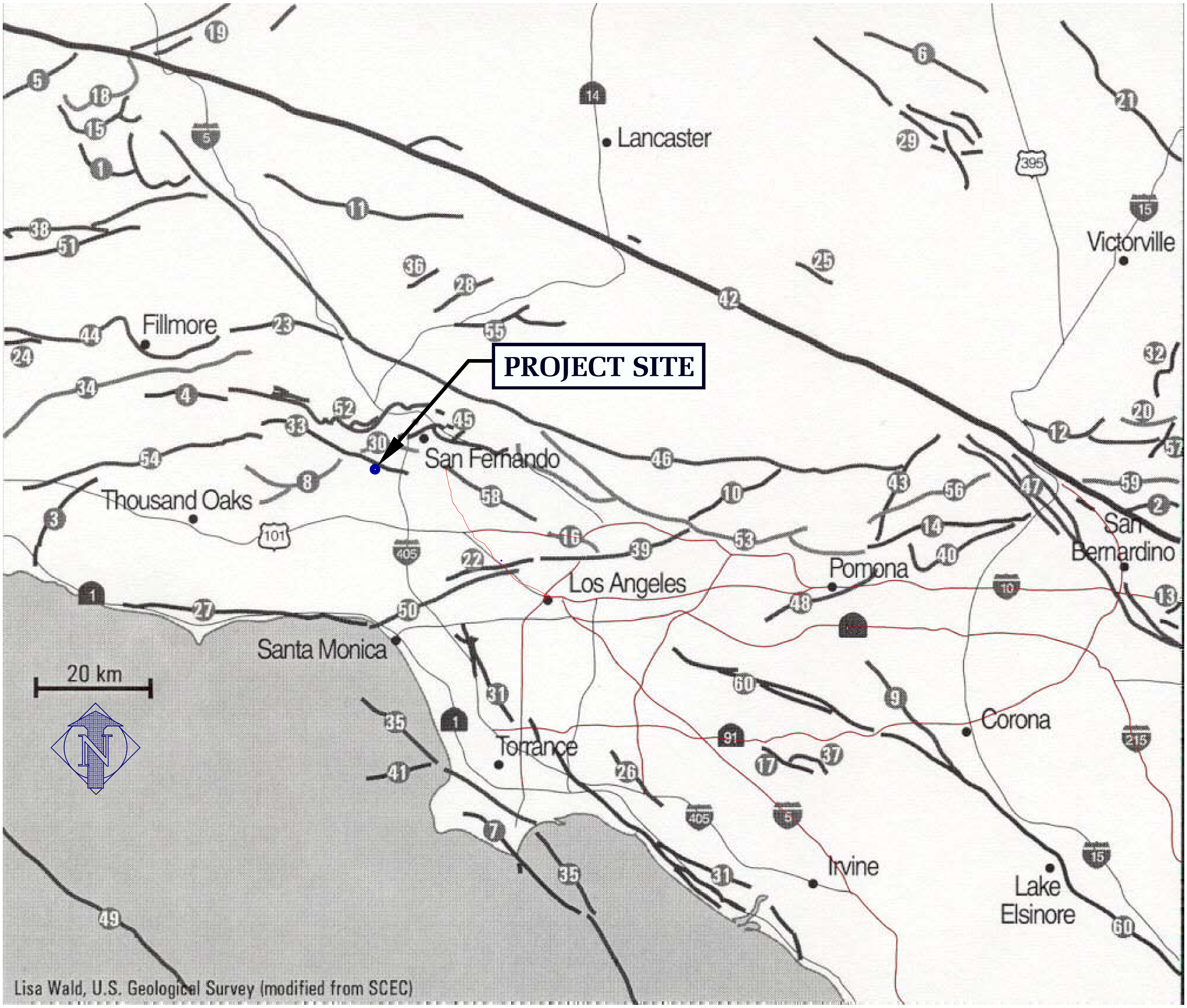

1 Alamo thrust
2 Arrowhead fault
3 Bailey fault
4 Big Mountain fault
5 Big Pine fault
6 Blake Ranch fault
7 Cabrillo fault
8 Chatsworth fault
9 Chino fault
10 Clamshell-Sawpit fault
11 Clearwater fault
12 Cleghorn fault
13 Crafton Hills fault zone
14 Cucamonga fault zone
15 Dry Creek fault
16 Eagle Rock 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

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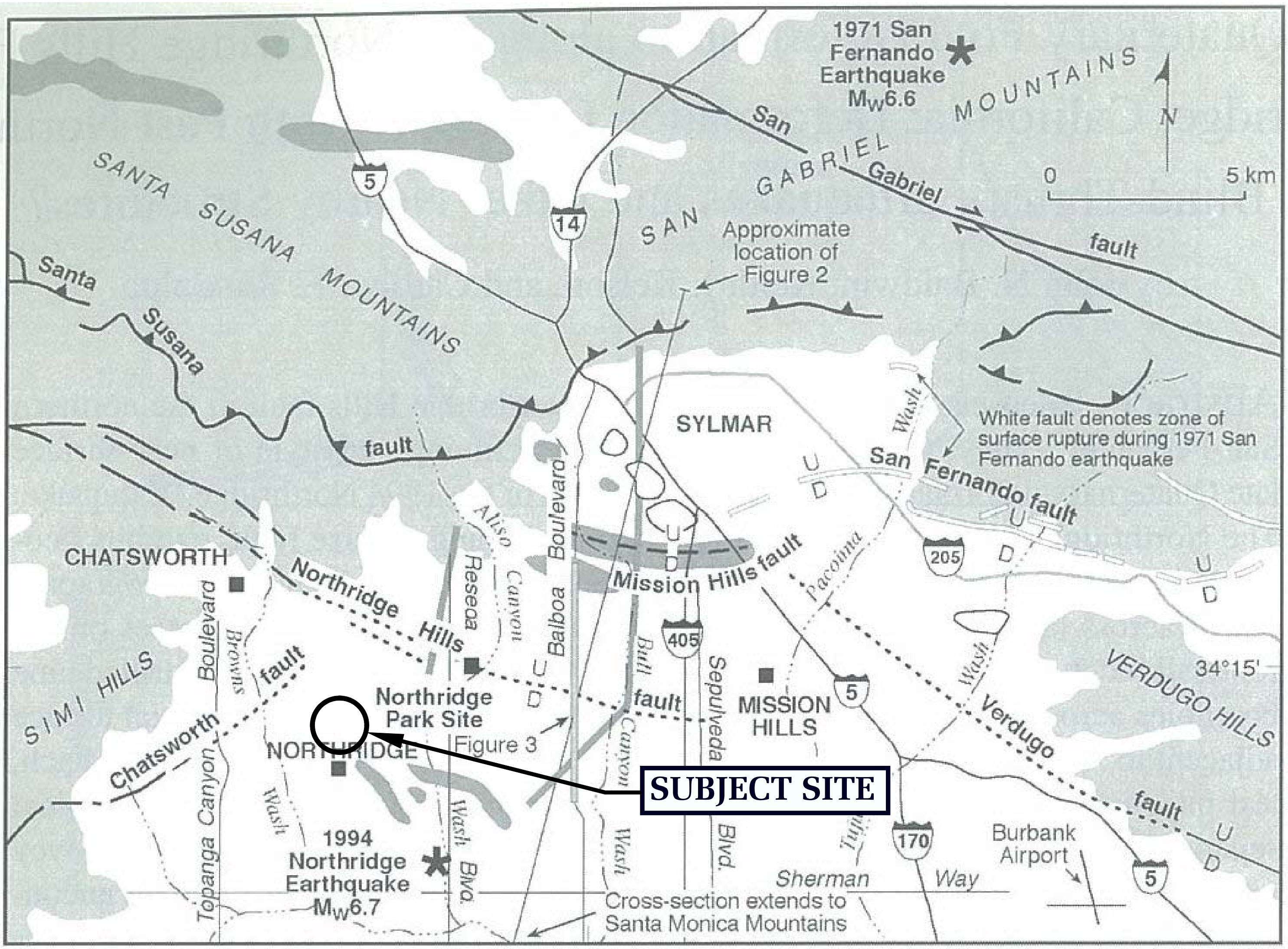

Explanation

Other geologic cross sections - (Tsutsumi and Yeats, 1999).

Geophysical seismic line (Chevron, U.S.A., in Hartzell et al., 1997).

U/D Fault solid where certain, dashed unclear; dotted buried; barbs on upthrown block.

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REFERENCE: LATE QUATERNARY FOLD DEFORMATION REGIONAL MAP MODIFIED FROM EERI (1994), BSSA SEISMOLOGICAL SOCIETY OF AMERICA (JUNE 2000)

QUATERNARY GEOLOGIC MAP

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SEISMIC SOURCE SUMMARY TABLE

Fault Name	Closest Distance* (km)	Site Lies*	Deterministic Magnitude*	Relative Motion*	Activity	Reference
Santa Susana	7.31	South	6.9	Reverse	A	3
Sierra Madre (San Fernando)	11.14	Southwest	7.3	Reverse	A (EFZ)	2
Northridge	13.60	South	6.9	Reverse	A	3
Simi-Santa Rosa	13.75	Southeast	6.9	Strike Slip	A (EFZ)	2
Verdugo	13.98	West	6.9	Reverse	A	1, 3
Santa Monica	16.63	North	7.4	Reverse	PA	3
Holser	17.28	South	6.8	Reverse	-	1
Anacapa-Dume	17.48	North	7.2	Reverse	PA	3
San Gabriel	18.96	Southwest	7.3	Strike Slip	A (EFZ)	2
Oak Ridge	20.60	Southeast	7.4	Reverse	-	1
Hollywood	21.47	Northwest	6.7	Strike Slip	A	3
Malibu Coast	21.74	North	7.0	Strike Slip	A (EFZ)	2
Oak Ridge (onshore)	21.85	Southeast	7.2	Reverse	-	1
Sierra Madre	26.06	West	7.2	Reverse	A	3
Newport-Inglewood	27.24	Northwest	7.5	Strike Slip	A (EFZ)	2
San Cayetano	28.23	Southeast	7.2	Reverse	A (EFZ)	2
Elysian Park (Upper)	28.86	Northwest	6.7	Reverse	-	1
Palos Verdes	29.74	North	7.7	Strike Slip	A	2
Puente Hills (LA)	31.04	Northwest	7.0	Reverse	-	1
Raymond	34.34	West	6.8	Reverse	A (EFZ)	2
Santa Ynez	46.72	Southeast	7.4	Strike Slip	A	2
Clamshell-Sawpit	48.01	West	6.7	Reverse	PA	3
San Andreas	49.02	Southwest	8.2	Strike Slip	A (EFZ)	2
Ventura-Pitas Point	53.75	East	7.3	Reverse	A (EFZ)	2
Elsinore (Whittier Fault)	55.08	Northwest	7.8	Strike Slip	A (EFZ)	2
Mission Ridge-Arroyo Parida	58.62	Southeast	6.9	Reverse	-	1
Oak Ridge (Offshore)	62.29	East	7.0	Reverse	PA	2
San Jose	65.72	West	6.7	Strike Slip	-	1
Channel Islands Thrust	68.11	East	7.3	Reverse	-	1
Red Mountain	68.33	East	7.4	Reverse	A (EFZ)	2
Santa Cruz Island	69.52	Northeast	7.2	Strike Slip	A	2
Garlock	71.22	Southeast	7.7	Strike Slip	A (EFZ)	2
Pleito	72.57	Southeast	7.1	Reverse	A (EFZ)	2
Chino	74.30	West	6.7	Strike Slip	PA	2
Cucamonga	74.88	West	6.7	Reverse	A (EFZ)	2
North Channel	79.05	East	6.8	Reverse	A (EFZ)	2
Pitas Point (lower) - Montalvo	83.74	East	7.3	Reverse	A (EFZ)	2
San Joaquin Hills	84.19	Northwest	7.1	Reverse	-	1
San Jacinto	82.52	West	7.9	Strike Slip	A (EFZ)	2
Newport-Inglewood (Offshore)	93.90	Northwest	7.0	Strike Slip	A	3

Notes:

1 = United States Geological Survey
2 = California Geological Survey
3 = County of Los Angeles, Dept. of Public Works, 1990

A = Active
A (EFZ) = Active (Earthquake Fault Zone)
PA = Potentially Active

*Based on USGS California 2008 database Fault Distances Calculated using EZ-Frisk (Version 7.62)