GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

SOIL AND GEOLOGIC RECONNAISSANCE

SWEETWATER VISTAS
LOTS 1, 2, AND 3
JAMACHA AND SWEETWATER SPRINGS BOULEVARDS
SPRING VALLEY, CALIFORNIA

PREPARED FOR

DOUGLAS WILSON COMPANIES
SAN DIEGO, CALIFORNIA

AUGUST 10, 2015
REVISED APRIL 20, 2017
PROJECT NO. G1869-42-01

Project No. G1869-42-01
August 10, 2015
Revised April 20, 2017

Douglas Wilson Companies
1620 Fifth Avenue, Suite 400
San Diego, California 92101

Attention: Mr. Terry Plowden

Subject: SOIL AND GEOLOGIC RECONNAISSANCE
SWEETWATER VISTAS LOTS 1, 2, AND 3
JAMACHA AND SWEETWATER SPRINGS BOULEVARDS
SPRING VALLEY, CALIFORNIA

Dear Mr. Plowden:

In accordance with your authorization of our proposal LG-15195, dated June 17, 2015, we have performed a soil and geologic reconnaissance of the subject project. The study was conducted to assess the soil and geologic conditions and to identify potential geologic hazards that may impact the property with respect to the proposed project development.

The accompanying report presents the findings of our study with respect to geotechnical aspects of site development.

Should you have questions regarding this report, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON INCORPORATED

Raul R. Garcia
GE 2842

Garry W. Cannon
CEG 2201
RCE 56468

REGISTERED PROFESSIONAL ENGINEER
RAUL R. GARCIA
No. 2842
GEOTECHNICAL
STATE OF CALIFORNIA

PROFESSIONAL GEOLOGIST
GARRY WELLS CANNON
No. 2201
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
GARRY WELLS CANNON
No. C 056468
CIVIL
STATE OF CALIFORNIA

RRG:GWC:ejc

(e-mail) Addressee

TABLE OF CONTENTS

SOIL AND GEOLOGIC RECONNAISSANCE

1. PURPOSE AND SCOPE

The purpose of this soil and geologic reconnaissance was to identify geotechnical conditions and potential geologic hazards (if any) that could impact the development of the property. In accordance with the County of San Diego requirements, additional studies including subsurface exploration will be required prior to approval of development plans. The scope of this study consisted of a review of published geologic literature and in-house geotechnical reports (see List of References) and performing a site reconnaissance.

2. SITE AND PROJECT DESCRIPTION

The property consists of an approximately 43-acre, irregular-shaped, parcel located west of the intersection of Jamacha Boulevard and Sweetwater Springs Boulevard in Spring Valley, California (see *Vicinity Map*, Figure 1). Our review of historic aerial photographs from 1953 indicates that parts of the site was used for agricultural purposes. Subsequently, from the 1980's to early 1990's existing residential subdivisions to the south and west were developed and reportedly spoils from grading operations were placed as stock pile material on Lot 3. Cut operations were performed on Lots 1 and 2 and portions of the materials were placed as end-dump piles at several locations. The locations of these undocumented fills are indicated on the Geologic Map attached as Figure 2. Presently, the site is undeveloped with an access dirt road to Lots 1 and 2 from Point Parkway at the southwest end. Access to Lot 3 is from Sweetwater Springs Boulevard at the northeast end. Topographically, Lots 1 and 2 slope from an elevation of 493 feet Mean Sea Level (MSL) at the northwest end of Lot 1 and 445 feet at the north end of Lot 2 to a canyon drainage bisecting the site. Lot 3 consists of a pad with an elevation varying from 430 to 442 feet MSL with a fill slope descending to the existing canyon drainage at an elevation of 363 feet MSL.

We understand that project development will consist of the construction of a 218-unit residential, condominium complex. Review of Conceptual Grading Plan (Reference No. 3), indicates cut and fill slopes of 25 and 65 feet, respectively, are proposed on Lots 1 and 2. Cut and fill slopes on the order 12 and 25 feet, respectively are proposed on Lot 3. The total estimated volumes for cut and fill is on the order of 129,000 cubic yards, and is balanced. Extensive remedial grading is anticipated to remove and recompact existing undocumented fill soil within areas of proposed improvements.

3. SOIL AND GEOLOGIC CONDITIONS

The site geologic reconnaissance and review of the referenced documents indicates the presence of three surficial soil types and two geologic units at the site. The surficial deposits consist of undocumented fill, topsoil and alluvium. The geologic units consists of Sweetwater Formation and

Mesozoic-age Undivided Metamorphic Rock (formerly identified as Santiago Peak Volcanics). The units encountered are described below in order of increasing age. Their approximate mapped extent based on existing data and our reconnaissance is shown on the *Geologic Map*, and the *Geologic Cross Sections* attached as Figures 2 and 3.

3.1 Undocumented Fill (Qudf)

Undocumented fill underlies all of Lot 3 and parts of Lots 1 and 2. This unit is expected to consist of loose to medium dense, dry to moist, brown, silty, clayey, fine to very coarse sand with gravel, cobble, and extensive amounts of rock. We estimate the undocumented fill soil has a thickness between 3 and 15 feet in Lots 1 and 2 and from 10 to 50 feet in Lot 3. Extensive amounts of piled cobbles and rocks were observed overlying Lots 1, 2, and 3. Similarly, extensive cobbles and rocks were exposed on the face of the fill slopes on Lot 3. Undocumented fill is unsuitable for support of structural improvements and will require remedial grading to remove and replace as structural fill.

3.2 Topsoil (Not mapped)

Topsoil is exposed over the undisturbed areas and is expected to underlie the undocumented fill. The topsoil is expected to consist of loose, dry to damp, brown, silty, clayey, fine to very coarse sand with gravel and cobble. The thickness of the topsoil is estimated to be 1 to 3 feet. Topsoil is typically compressible and generally unsuitable for support of structural improvements. Remedial grading is expected to be required within the topsoil to provide structural fill for support of structural improvements.

3.3 Alluvium (Qal)

Alluvium is exposed at the bottom of the existing canyon drainage. This unit typically consists of loose to medium dense, damp to saturated, dark gray brown, clayey, fine to very coarse sand with varying amounts of gravel and cobble. This unit is unsuitable for support of structural improvements. However, the alluvium is located far away from proposed development and should not have any impact on proposed graded pads.

3.4 Sweetwater Formation (Tsw)

The Sweetwater Formation laps onto the basement rock of the Santiago Peak Volcanics in Lot 3. The Sweetwater Formation consists of claystones, sandstones, and angular conglomerates in this area. Bentonitic clays in the Sweetwater Formation are typically highly expansive and possess a low shear strength. Soil of the Sweetwater Formation is exposed in Lot 3, along Jamacha Boulevard. Where these clays are exposed at finish grade or in cut slopes, remedial grading in the form of undercuts

and/or stabilizing fills will be necessary. Final recommendations will depend upon a completion of a geotechnical investigation.

3.5 Undivided Metamorphic Rock (Mzu)

Mesozoic-age Undifferentiated Metamorphic Rock (formerly identified Santiago Peal Volcanics) underlies the entire site and consists of weakly metamorphosed volcanic and sedimentary rocks. The rock composition varies from rhyolite to basalts, tuffs, basaltic-andesites, and very fine-grained silicified sandstones. The Metamorphic Rock is typically highly fractured near the surface. Blasting may be required to achieve finish grade. Where cut slopes are planned in this rock unit, stability fills may be necessary, depending on the fracture orientation and their frequency. The Metamorphic Rock should provide adequate support for structural fills and/or proposed improvements.

4. GROUNDWATER

Standing and draining water was observed at the bottom of the existing canyon drainage and is associated with local natural springs and irrigation from residential developments located north of the site. The depth of the water at the canyon drainage is estimated on the order of 4 feet. The depth of the standing water at the pond located at the south end is estimated to be approximately 15 to 20 feet. Groundwater is associated with local natural springs and is expected to be encountered during grading of the property. Dewatering and/or construction of subdrains will be required during grading. Nearby development has experienced groundwater issues due to seepage on rock fractures; therefore, properly designed, constructed and located subdrains will be an important aspect of site development. Proper surface drainage of irrigation and rainwater will also be crucial to future performance of the project.

5. GEOLOGIC HAZARDS

5.1 Faulting

Review of geologic literature and observations during previous field investigation indicates no active faults traverse the property. The Newport-Inglewood/Rose Canyon Fault Zone, located approximately 11 miles west of the site, is the closest known active fault. The California Geologic Survey (CGS) considers a fault seismically active when evidence suggests seismic activity within the last 11,000 years. The CGS includes portions of the Newport-Inglewood/Rose Canyon Fault Zone within the State of California Earthquake Fault Zone. Based upon a review of available geologic data and published reports, the site is not located within a State of California Earthquake Fault Zone.

Based on the results of our field investigation and our review of aerial photographs, published geologic maps, and previous geotechnical reports from surrounding sites, it is our opinion that active,

potentially active, or inactive faults do not traverse the site. In addition, the site is not located within a special study zone or State of California Earthquake Fault Zone.

5.2 Seismic Hazard Analysis

According to the computer program *EZ-FRISK (Version 7.62)*, there are 6 known active faults located within a search radius of 50 miles from the property. We used the 2008 USGS fault database, which provides several models and combinations of fault data to evaluate fault information. The nearest active faults are the Newport-Inglewood/Rose Canyon Fault Zone, located approximately 11 miles west of the site, and is the dominant source of seismic ground motion. Earthquakes that might occur on the Newport-Inglewood/Rose Canyon Fault Zone or other faults within the southern California and northern Baja California area, are potential generators of significant ground motion at the site. The estimated maximum earthquake magnitude and peak ground acceleration for the Newport-Inglewood/Rose Canyon Fault Zone are 7.5 and 0.26g, respectively. Table 5.2.1 lists the estimated maximum earthquake magnitude and peak ground acceleration for the most dominant faults in relationship to the site location. We calculated peak ground acceleration (PGA) using *Boore-Atkinson (2008) NGA USGS 2008*, *Campbell-Bozorgnia (2008) NGA USGS 2008*, and *Chiou-Youngs (2007) NGA USGS 2008* acceleration-attenuation relationships.

TABLE 5.2.1
DETERMINISTIC SEISMIC SITE PARAMETERS

Fault Name	Distance from Site (miles)	Maximum Earthquake Magnitude (Mw)	Peak Ground Acceleration		
			Boore-Atkinson, (2008) NGA USGS 2008 (g)	Campbell-Bozorgnia, (2008) NGA USGS 2008 (g)	Chiou-Youngs, (2007) NGA USGS 2008 (g)
Newport-Inglewood/Rose Canyon	11	7.5	0.25	0.20	0.26
Rose Canyon	11	6.9	0.22	0.18	0.20
Coronado Bank	22	7.4	0.18	0.12	0.15
Palos Verdes Connected	22	7.7	0.20	0.13	0.17
Elsinore	34	7.85	0.16	0.11	0.13
Earthquake Valley	38	6.8	0.10	0.07	0.06

We used the computer program *EZ-FRISK* to perform a probabilistic seismic hazard analysis. The computer program *EZ-FRISK* operates under the assumption that the occurrence rate of earthquakes on each mapped Quaternary fault is proportional to the slip rate. The program accounts for earthquake magnitude as a function of fault rupture length, and site acceleration estimates are made

using the earthquake magnitude and distance from the site to the rupture zone. The program also accounts for uncertainty in each of following: (1) earthquake magnitude, (2) rupture length for a given magnitude, (3) location of the rupture zone, (4) maximum possible magnitude of a given earthquake, and (5) acceleration at the site from a given earthquake along each fault. By calculating the expected accelerations from considered earthquake sources, the program calculates the total average annual expected number of occurrences of site acceleration greater than a specified value. We utilized acceleration-attenuation relationships suggested by Boore-Atkinson (2008) NGA USGS 2008, Campbell-Bozorgnia (2008) NGA USGS 2008, and Chiou-Youngs (2007) NGA USGS 2008 in the analysis. Table 5.2.2 presents the site-specific probabilistic seismic hazard parameters including acceleration-attenuation relationships and the probability of exceedence.

TABLE 5.2.2
PROBABILISTIC SEISMIC HAZARD PARAMETERS

Probability of Exceedence	Peak Ground Acceleration		
	Boore-Atkinson, (2008) NGA USGS 2008 (g)	Campbell-Bozorgnia, (2008) NGA USGS 2008 (g)	Chiou-Youngs, (2007) NGA USGS 2008 (g)
2% in a 50 Year Period	0.42	0.35	0.40
5% in a 50 Year Period	0.31	0.26	0.29
10% in a 50 Year Period	0.41	0.21	0.21

The California Geologic Survey (CGS) has a program that calculates the ground motion for a 10 percent of probability of exceedence in a 50-year period based on an average of several attenuation relationships.

While listing peak accelerations is useful for comparison of potential effects of fault activity in a region, other considerations are important in seismic design, including frequency and duration of motion and soil conditions underlying the site. Seismic design of the structures should be evaluated in accordance with the most current adopted guidelines of the California Building Code (CBC).

5.3 Soil Liquefaction Potential

Soil liquefaction occurs within relatively loose, cohesionless sands located below the water table that are subjected to ground accelerations from earthquakes. Due to the expected dense nature of proposed fills, the dense soil of the Sweetwater formation and the hard rock of the Metamorphic Rock and the lack of a permanent near-surface groundwater within proposed development, it is our opinion that the risk associated with liquefaction hazard at the site is low.

5.4 Landslides

No landslides were encountered during the site reconnaissance and none is known to exist on the property or at any location that would impact development of the property. Bentonitic clay layers within the Sweetwater Formation can be a source of slope instability if exposed in cut slopes, and should be evaluated during a geotechnical investigation.

5.5 Tsunamis and Seiches

The site is not located near the ocean or other large bodies of water. The risk associated with flooding hazard due to tsunamis or seiches is low.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 General

6.1.1 Based on our review of published geologic maps, geotechnical reports for nearby developments, and our geologic reconnaissance, the study area is underlain by undocumented fills, topsoil, alluvium, Sweetwater Formation and Undivided Metamorphic Rock (formerly identified as Santiago Peak Volcanics). Removal and recompaction of the undocumented fills and topsoil will be required. The Sweetwater Formation and Undivided Metamorphic Rock are expected to be suitable for support of planned improvements.

6.1.2 Seepage on rock fractures is prevalent in the area. Appropriately placed subdrains and development of project drainage will be very important for project performance.

6.1.3 Other than described above, no other significant soil or geologic conditions were observed or are known to exist that would preclude the development of the site. A geotechnical investigation will be required to provide specific design parameters for the proposed development. The investigation should include subsurface investigation and laboratory testing to aid in the preparation of foundation and retaining wall design criteria, seismic design, and recommendations for remedial grading.

6.1.4 The property is approximately 11 miles from the Newport Inglewood/Rose Canyon Fault. It is our opinion active and potentially active faults do not extend across the site. Risks associated with seismic activity consist of the potential for strong seismic shaking. However, would not preclude proposed development provided the structures are designed in accordance with the 2013 California Building Code (CBC). Building setbacks will not be required for the planned development due to faulting.

6.1.5 The risk associated with liquefaction, tsunamis or seiches hazard is low.

6.1.6 The risk associated with slope instability is a concern to cut slopes in Sweetwater Formation that exposes bentonitic clay layers and in cut slopes on Undivided Metamorphic Rock that exposes adverse jointing and fractures.

6.2 Soil and Excavation Characteristics

6.2.1 We expect the majority of on-site soil to be "expansive" (expansion index [EI] greater than 20) as defined by 2013 California Building Code (CBC) Section 1803.5.3. The majority of soils are expected to have an EI less than 90. Table 6.2 presents soil classifications based on the expansion index.

TABLE 6.2
EXPANSION CLASSIFICATION BASED ON EXPANSION INDEX

Expansion Index (EI)	Expansion Classification	2010 CBC Classification
0 – 20	Very Low	Non-Expansive
21 – 50	Low	Expansive
51 – 90	Medium	Expansive
91 – 130	High	Expansive
Greater Than 130	Very High	Expansive

6.2.2 We expect excavation of the surficial soils and the Sweetwater Formation can be performed with moderate to heavy effort with conventional heavy-duty earthmoving equipment. Extensive amounts of cobble and rock fragments should be expected within the undocumented fills. Hard rock that will require heavy ripping and/or blasting and special techniques for handling and placement should be anticipated in cuts within the Undivided Metamorphic Rock.

6.3 Preliminary Grading Recommendations

6.3.1 The grading recommendations herein are preliminary and intended to provide general criteria to assist in overall planning. Detailed recommendations should be provided in a future geotechnical investigation report based on subsurface explorations and laboratory testing programs.

6.3.2 Site preparation should begin with removal of deleterious material and vegetation. The depth of removal should be such that material exposed in cut areas and soil to be used for fill is relatively free of organic matter. Material generated during stripping and/or site demolition should be exported from the site.

6.3.3 Undocumented fill and topsoil within proposed structural improvement areas should be removed and recompacted.

6.3.4 Proposed fill slopes will have inclinations of 1.5 to 1 and 2 to 1 (horizontal to vertical). Fill slopes with inclinations of 1.5 to 1 will require the use of geotextile reinforcement to obtain a factor of safety of 1.5 or higher. Specific recommendations for cut and fill slopes will be provided as part of a geotechnical investigation to be prepared at a later time.

6.3.5 Reconstruction of fill slopes should be expected in Lot 3 and parts of Lot 2.

6.3.6 The on-site soil is expected to be suitable to be used as fill if relatively free of debris and organic material. The undocumented fill may contain concrete rubble that might require extensive screening and crushing operations to enable use of the rubble as fill soil.

6.3.7 Oversize materials (greater than 12-inch dimension) generated during remedial grading of the undocumented fill may be placed in deeper fill areas. Prior to placement, the materials should be broken down to less than 2-foot dimension to make the material more manageable and to control lift sizes during placement so that the material can be properly compacted. Oversize materials should be placed with sufficient room between rocks to enable soil to fill voids and to allow compaction effort to be applied between the rocks. Oversize materials should be kept at least 5 feet below proposed subgrade elevations or 2 feet below the deepest utility, whichever is greater.

6.3.8 All fill should be compacted to at least 90 percent of laboratory maximum dry density as determined by the latest version of ASTM D1557 at or slightly above optimum moisture content.

6.3.9 Grading should be scheduled such that the material within the upper 4 feet from finish-pad subgrade consists of granular material with an Expansion Index (EI) less than 50.

6.4 Preliminary Foundation Recommendations

6.4.1 Based on our site reconnaissance and review of available soil and geologic literature, we expect the site is suitable for the use of shallow, conventional foundations, post-tensioned foundations, or a rigid mat slab.

6.5 Drainage and Maintenance

6.5.1 Adequate site drainage is critical to reduce the potential for differential soil movement, erosion, and subsurface seepage. Under no circumstances should water be allowed to pond adjacent to footings. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2013 CBC 1804.3 or other applicable

standards. In addition, surface drainage should be directed away from the top of slopes into swales or other controlled drainage devices. Roof and pavement drainage should be directed into conduits that carry runoff away from the proposed structure.

6.5.2 If detention basins, bioswales, retention basins, water infiltration, low impact development (LID), or storm-water management devices are being considered, Geocon Incorporated should be retained to provide recommendations pertaining to the geotechnical aspects of possible impacts and design. We have not performed a hydrogeology study at the site. Downstream properties may be subjected to seeps, springs, slope instability, raised groundwater, movement of foundations and slabs, or other impacts as a result of water infiltration.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon Incorporated should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon Incorporated.

2. This report is issued with the understanding that it is the responsibility of the owner or his representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

LIST OF REFERENCES

1. Boore, D. M., and G. M. Atkinson, *Boore-Atkinson NGA Ground Motion Relations for the Geometric Mean Horizontal Component of Peak and Spectral Ground Motion Parameters*, Report Number PEER 2007/01, 2007.

2. Chiou, B. S. J., and Youngs, R. R., *A NGA Model for the Average Horizontal Component of Peak Ground Motion and Response Spectra*, preprint for article to be published in NGA Special Edition for Earthquake Spectra, 2008.

3. Department of Conservation, Division of Mines and Geology, *Landslide Hazards in the Southern Part of the San Diego Metropolitan Area, San Diego County, California,* Landslide Hazard Identification Map No. 33, 1995.

4. Fuscoe Engineering, *Conceptual Grading Plan for Sweetwater Vistas, Spring Valley, California*, December 15, 2014.

5. Fuscoe Engineering, *Preliminary Grading Plan Sweetwater Vistas*, County of San Diego Tract TM 5608, received via e-mail, April 12, 2017.

6. Geocon Incorporated, *Soil and Geologic Reconnaissance for Hansen's Ranch, San Diego County, California,* January 15, 1981 (Project No. D1687-MO1).

7. Geocon Incorporated, *Revised Geologic Reconnaissance for Point Resort-70 Acre Site, San Diego County, California*, May 17, 1988 (Project No. D-1687-M05).

8. Geocon Incorporated, *Soil and Geologic Investigation for the Pointe, Unit 1, Resort Area, San Diego County, California,* August 3, 1990 (Project No. D1687-03-07).

9. Geocon Incorporated, *Limited Geotechnical Investigation Highlands Ranch Clubhouse, San Diego County, California*, July 20, 2005 (Project No. 06310-22-03).

10. Geocon Incorporated unpublished reports and maps on file.

11. Kennedy, M. P., *Geology of the National City, Imperial Beach, and Otay Mesa Quadrangles, Southern San Diego Metropolitan Area, California,* Bulletin 200, California Division of Mines and Geology, 1977.

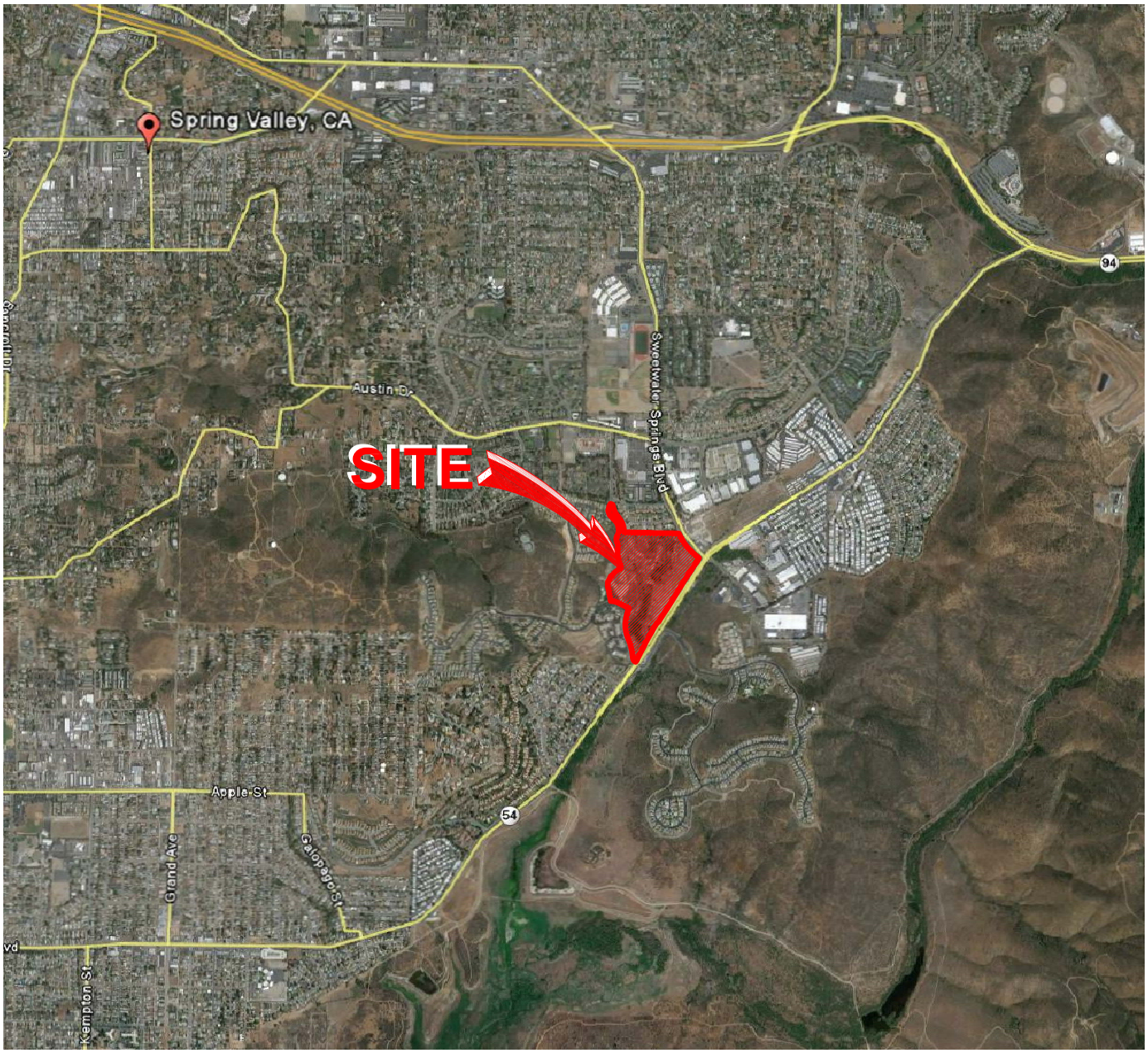
12. Pointe Builders, *Tentative Map No. 4828 The Pointe, Scale 1 inch equals 100 feet,* April 12, 1989.

13. Risk Engineering, *EZ-FRISK, Version 7.65,* 2015.

14. San Diego Association of Geologists, *Geology of Southwestern San Diego County, California and Northwestern Baja California,* 1976, edited by Gregory T. Farrand.

15. United States Geologic Survey, *7.5 Minute Quadrangle Services, Jamul Mountains,* 2002.

16. USDA (1953) Stereoscopic Aerial Photographs (AXN-9M-161 and 162).



THE GEOGRAPHICAL INFORMATION MADE AVAILABLE FOR DISPLAY WAS PROVIDED BY GOOGLE EARTH, SUBJECT TO A LICENSING AGREEMENT. THE INFORMATION IS FOR ILLUSTRATIVE PURPOSES ONLY; IT IS NOT INTENDED FOR CLIENT'S USE OR RELIANCE AND SHALL NOT BE REPRODUCED BY CLIENT. CLIENT SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS GEOCON FROM ANY LIABILITY INCURRED AS A RESULT OF SUCH USE OR RELIANCE BY CLIENT.

N

NO SCALE

VICINITY MAP

GEOCON
INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

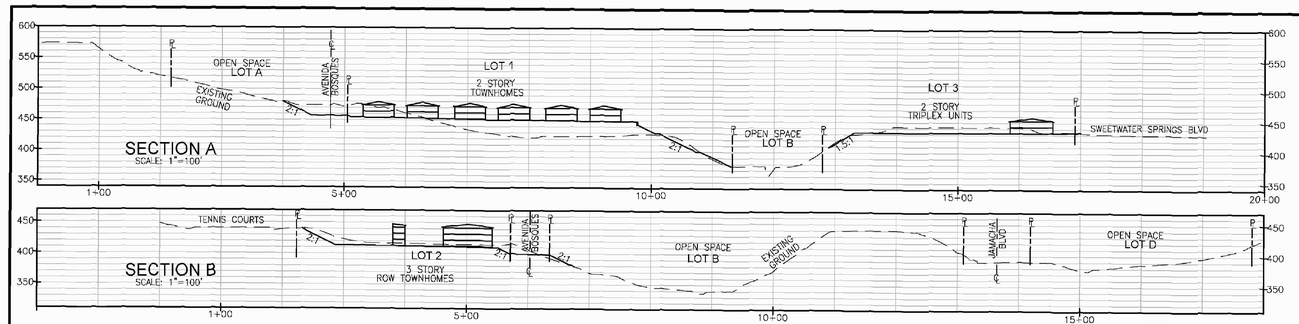
RG / RA		DSK/GTYPD

SWEETWATER VISTAS
SPRING VALLEY, CALIFORNIA

DATE 08 - 10 - 2015 REVISED DATE 04 - 20 - 2017	PROJECT NO. G1869 - 42 - 01	FIG. 1

Plotted:04/20/2017 9:56AM | By:RUBEN AGUILAR | File Location:Y:\PROJECTS\G1869-42-01 Sweetwater Vistas\DETAILS\G1869-42-01 VicinityMap.dwg

COUNTY OF SAN DIEGO TRACT TM 5608
PRELIMINARY GRADING PLAN
SWEETWATER VISTAS



DMA ID	DMA AREAS (AC)	BMP ID	MAINT. CATEGORY	TYPE	SATISFIES HYDROMOD & WATER QUALITY REQ'S	100-YEAR DETENTION	BIOFILTRATION BASIN AREA (SF) REQUIRED	BIOFILTRATION BASIN AREA (SF) PROVIDED	CISTERN VOLUME (CF) REQUIRED	CISTERN VOLUME (CF) PROVIDED
1.1	1.17	1.1-2	2-HOA	BF + CISTERN	YES	YES	804	1,685	9,995	11,160
1.2	2.11	1.1-2	2-HOA	BF + CISTERN	YES	YES	1,410	1,907	15,954	16,065
1.3	1.96	1.3	2-HOA	BF + CISTERN	YES	YES	1,147	1,555	12,980	13,500
2	3.26	2	2-HOA	BF + CISTERN	YES	YES	1,772	2,670	21,069	22,100
3	5.06	3	2-HOA	BF + CISTERN	YES	YES	3,230	6,000	35,104	37,200
4	3.61	4	2-HOA	BF + CISTERN	YES	YES	1,761	4,000	18,600	26,400
5	2.65	N/A	2-HOA	SELF TREATING	YES	NO	N/A	N/A	N/A	N/A
6	1.11	N/A	2-HOA	SELF TREATING	YES	NO	N/A	N/A	N/A	N/A
7	0.66	7	2-HOA	BF	YES	NO	2,229	2,233	N/A	N/A

*BF= BIOFILTRATION BASIN

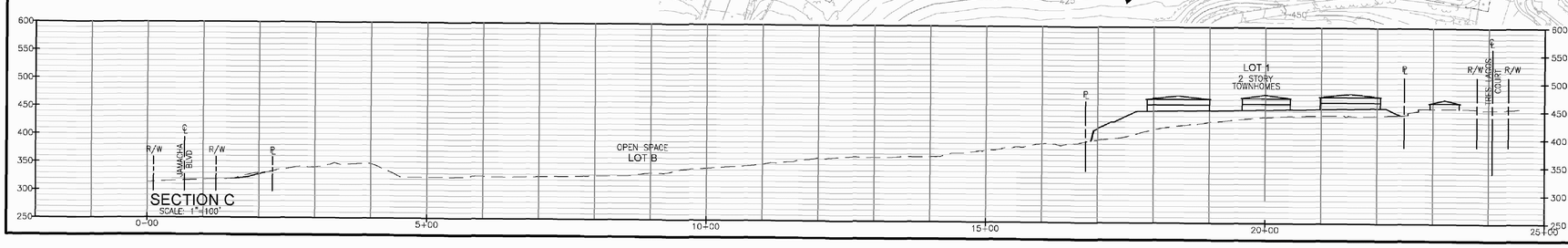
LEGEND

- NON-COMBUSTIBLE VIEW-WALL LOCATIONS
- EXISTING FIRE HYDRANT (FH)
- PROPOSED FIRE HYDRANT FH
- PROPOSED RETAINING WALL
- PROPOSED STORM DRAIN — SD —
- PROPOSED WATER QUALITY BASIN
- PROPOSED GREEN STREET TREE WELL PER COUNTY OF SAN DIEGO GS-1.2
- PROPOSED TRAIL
- PROPOSED PATHWAY
- PROPOSED BIOLOGICAL FENCING AND SIGNAGE
- PROPOSED 5' TUBULAR STEEL FENCE
- PROPOSED 3.5' TUBULAR STEEL FENCE
- PROPOSED 5' WOOD FENCE
- PROPOSED SPLIT RAIL FENCING
- PROPOSED 5' MASONRY SOUND WALL
- PROPOSED 6' GLASS VIEW FENCE

*NOTE: EXISTING STOCKPILE PER EXPIRED PERMIT TO UNDERGO REMOVAL AND RECOMPACTION AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

SCALE: 1"= 100'

100 50 0 100 200 300
GRAPHIC SCALE IN FEET



GEOCON LEGEND

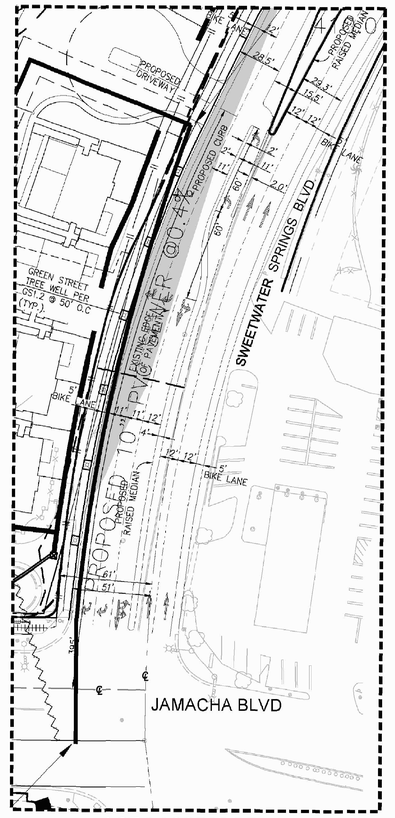
- Qudf .....UNDOCUMENTED FILL
- Qal .....ALLUVIUM (Dotted Where Buried)
- Tsw .....SWEETWATER FORMATION (Dotted Where Buried)
- Mzu .....UNDIVIDED METAMORPHIC ROCK (Dotted Where Buried)
- B B' .....APPROX. LOCATION OF GEOLOGIC CONTACT (Dotted Where Buried)
- .....APPROX. LOCATION OF GEOLOGIC CROSS-SECTION
- 470 .....ORIGINAL GRADE ELEVATION PER THE POINTE SAN DIEGO TENTATIVE MAP NO. 4828, DATED APRIL 12, 1989

GEOLOGIC MAP

SWEETWATER VISTAS
SPRING VALLEY, CALIFORNIA

GEOCON INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
PHONE 858.558.6900 - FAX 858.558.6159

SCALE 1" = 100' | DATE 09 - 10 - 2015 REVISED DATE 04 - 20 - 2017
PROJECT NO. G1869 - 42 - 01 | FIGURE 2
SHEET 1 OF 1



LOT 3 ACCESS DETAIL
SCALE: 1"=40'

SHEET 4 OF 4

NO.	DATE	REVISION

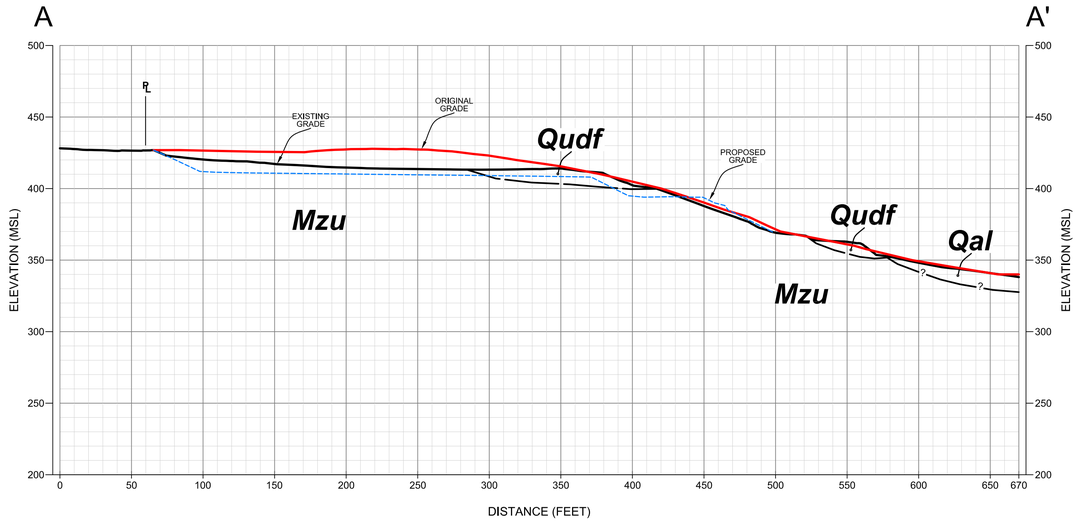
ENGINEER OF WORK

FUSCOE ENGINEERING
5390 GREENWICH DRIVE, STE. 170
SAN DIEGO, CA 92122
(858)554-1500

ROBERT A. CHASE — RCE 41903 — DATE

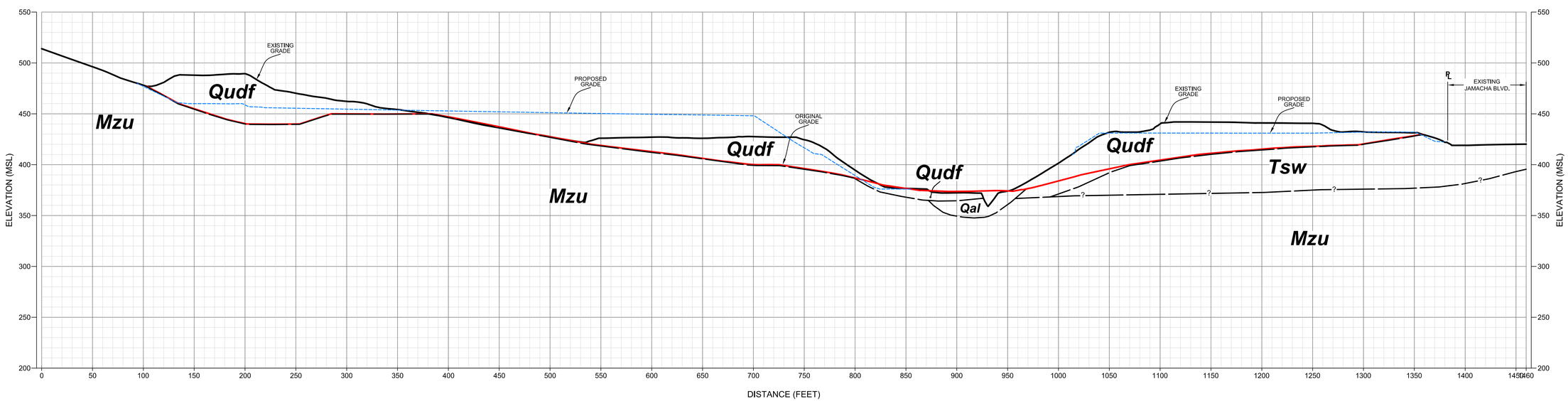
REGISTERED PROFESSIONAL ENGINEER ROBERT A. CHASE No. RCE 41903 EXP. 03-31-18 CIVIL STATE OF CALIFORNIA

FUSCOE ENGINEERING
6390 Greenwich Drive, Suite 170
San Diego, California 92122
tel 858.554.1500 ◦ fax 858.597.0335
www.fuscoe.com



GEOLOGIC CROSS-SECTION A-A'

SCALE: 1" = 50' (Vert. = Horiz.)



GEOLOGIC CROSS-SECTION B-B'

SCALE: 1" = 50' (Vert. = Horiz.)

GEOCON LEGEND

- ***Qudf*** .....UNDOCUMENTED FILL
- ***Qal*** .....ALLUVIUM (Dotted Where Buried)
- ***Tsw*** .....SWEETWATER FORMATION
- ***Mzu*** .....UNDIVIDED METAMORPHIC ROCK
- ?..... APPROX. LOCATION OF GEOLOGIC CONTACT (Queried Where Uncertain)
- ..... EXISTING GRADE ELEVATION
- ..... PROPOSED GRADE ELEVATION
- ..... ORIGINAL GRADE ELEVATION PER THE POINTE SAN DIEGO TENTATIVE MAP NO. 4828, DATED APRIL 12, 1989

GEOLOGIC CROSS - SECTIONS

SWEETWATER VISTAS
SPRING VALLEY, CALIFORNIA

GEOCON INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121- 2974
PHONE 858 558-6900 - FAX 858 558-6159

SCALE	1" = 50'
DATE	08 - 10 - 2015
REVISED DATE	04 - 20 - 2017
PROJECT NO.	G1869 - 42 - 01
FIGURE	3
SHEET	1 OF 1

Plotted:04/20/2017 7:21AM | By:RUBEN AGUILAR | File Location:Y:\PROJECTS\G1869-42\01 Sweetwater Vistas\SHEETS\G1869-42-01 Cross-Sections-Rev_04-21-17.dwg