Project No. G2367-42-01
July 22, 2020

Schmidt Design Group Incorporated
1111 Sixth Avenue, Suite 500
San Diego, California 92101

Attention: Mr. Chris Tiffany

Subject: UPDATE TO PRELIMINARY GEOTECHNICAL INVESTIGATION
SOUTHWESTERN PARK
SAN DIEGO, CALIFORNIA

References:
1. *Preliminary Geotechnical Investigation, Southwestern Park, San Diego, California,* prepared by Geocon Incorporated, dated March 12, 2019 (Project No. G2367-42-01).
2. *Site Development Plans For: Southwest Park, P.T.S. No. 654348, W.B.S. No. P-18010, San Diego, California,* prepared by Schmidt Design Group, dated July 21, 2020.

Dear Mr. Tiffany:

In accordance with your request, we have prepared this update to the preliminary geotechnical investigation (Reference 1). We have updated the Geologic Map using the Concept Grading Plan (Sheet C2 of Reference 2) as the base map (see Figure 1). We are also providing seismic design parameters and additional retaining wall recommendations in accordance with the 2019 California Building Code (CBC).

The site is underlain by alluvium and undocumented fill overlying Old Paralic Deposits. The undocumented fill is present in the southern portion of the site. Alluvium underlines the western and northeast corner of the property. Old Paralic Deposits are exposed at grade in the east-central portion of the site and underlie the alluvium and undocumented fill throughout the property.

Based on our review of the referenced site development plans, plans are to construct an 11.53-acre community park that will include a multipurpose field, half-court basketball courts, a fitness area, prefabricated comfort station, playgrounds, picnic areas with shade structures and tables, an amphitheater, an overlook plaza, and dog enclosures. The new park will also include parking lots, concrete hardscape areas, and BMP basins. Based on the Concept Grading Plan, grading will consist of maximum cuts and fills of approximately 15 feet and 10 feet, respectively.

RECOMMENDATIONS

From a geotechnical engineering standpoint, it is our opinion that the site is suitable for the development as currently proposed provided the recommendations presented herein are implemented in design and construction of the project. The recommendations presented in Reference 1 that are not specifically updated in this letter remain applicable to the design and construction of the project.

1. Seismic Design Criteria

Table 1.1 summarizes site-specific design criteria obtained from the 2019 California Building Code (CBC; Based on the 2018 International Building Code [IBC] and ASCE 7-16), Chapter 16 Structural Design, Section 1613 Earthquake Loads. We used the computer program *Seismic Design Maps*, provided by the Structural Engineers Association (SEA) to calculate the seismic design parameters. The short spectral response uses a period of 0.2 second. We evaluated the Site Class based on the discussion in Section 1613.2.2 of the 2019 CBC and Table 20.3-1 of ASCE 7-16. The values presented herein are for the risk-targeted maximum considered earthquake (MCE_R) for Site Class D.

The project structural engineer and architect should evaluate the appropriate Risk Category and Seismic Design Category for the planned structures. The values presented herein assume a Risk Category of II and resulting in a Seismic Design Category D.

TABLE 1.1
2019 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2019 CBC Reference
Site Class	D	Section 1613.2.2
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	1.114g	Figure 1613.2.1(1)
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.377g	Figure 1613.2.1(2)
Site Coefficient, F_A	1.055	Table 1613.2.3(1)
Site Coefficient, F_V	1.923*	Table 1613.2.3(2)
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	1.174g	Section 1613.2.3 (Eqn 16-36)
Site Class Modified MCE_R Spectral Response Acceleration – (1 sec), S_{M1}	0.725g*	Section 1613.2.3 (Eqn 16-37)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	0.783g	Section 1613.2.4 (Eqn 16-38)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.483g*	Section 1613.2.4 (Eqn 16-39)

***Note:** Using the code-based values presented in this table, in lieu of a performing a ground motion hazard analysis, requires the exceptions outlined in ASCE 7-16 Section 11.4.8 be followed by the project structural engineer. Per Section 11.4.8 of ASCE/SEI 7-16, a ground motion hazard analysis should be performed for projects for Site Class "E" sites with Ss greater than or equal to 1.0g and for Site Class "D" and "E" sites with S1 greater than 0.2g; however, Section 11.4.8 also provides exceptions which indicates that the ground motion hazard analysis may be waived provided the exceptions are followed.

Table 1.2 presents additional seismic design parameters for projects located in Seismic Design Categories of D through F in accordance with ASCE 7-16 for the mapped maximum considered geometric mean (MCE_G).

TABLE 1.2
ASCE 7-16 PEAK GROUND ACCELERATION

Parameter	Value	ASCE 7-16 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.499g	Figure 22-7
Site Coefficient, F_{PGA}	1.101	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	0.549g	Section 11.8.3 (Eqn 11.8-1)

Conformance to the criteria for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a maximum level earthquake occurs. The primary goal of seismic design is to protect life and not to avoid all damage, since such design may be economically prohibitive.

2. LATERAL LOADS FOR RETAINING WALLS

The structural engineer should determine the Seismic Design Category for the project in accordance with Section 1613.3.5 of the 2019 CBC or Section 11.6 of ASCE 7-16. For structures assigned to Seismic Design Category of D, E, or F, retaining walls that support more than 6 feet of backfill should be designed with seismic lateral pressure in accordance with Section 1803.5.12 of the 2019 CBC. The seismic load is dependent on the retained height where H is the height of the wall, in feet, and the calculated loads result in pounds per square foot (psf) exerted at the base of the wall and zero at the top of the wall. A seismic load of 20H should be used for design. We used the peak ground acceleration adjusted for Site Class effects, PGA_M, of 0.549g calculated from ASCE 7-16 Section 11.8.3 and applied a pseudo-static coefficient of 0.33.

3. SITE DRAINAGE AND MOISTURE PROTECTION

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 2019 CBC 1804.4 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.

Underground utilities should be leak free. Utility and irrigation lines should be checked periodically for leaks. Detected leaks should be repaired promptly. Detrimental soil movement could occur if water is allowed to infiltrate the soil for prolonged periods of time.

Landscaping planters adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. We recommend that subdrains to collect excess irrigation water and transmit it to drainage structures or impervious above-grade planter boxes be used. In addition, where landscaping is planned adjacent to the pavement, we recommend construction of a cutoff wall along the edge of the pavement that extends at least 6 inches below the bottom of the base material.

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

Very truly yours,

GEOCON INCORPORATED

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		RCE 56468

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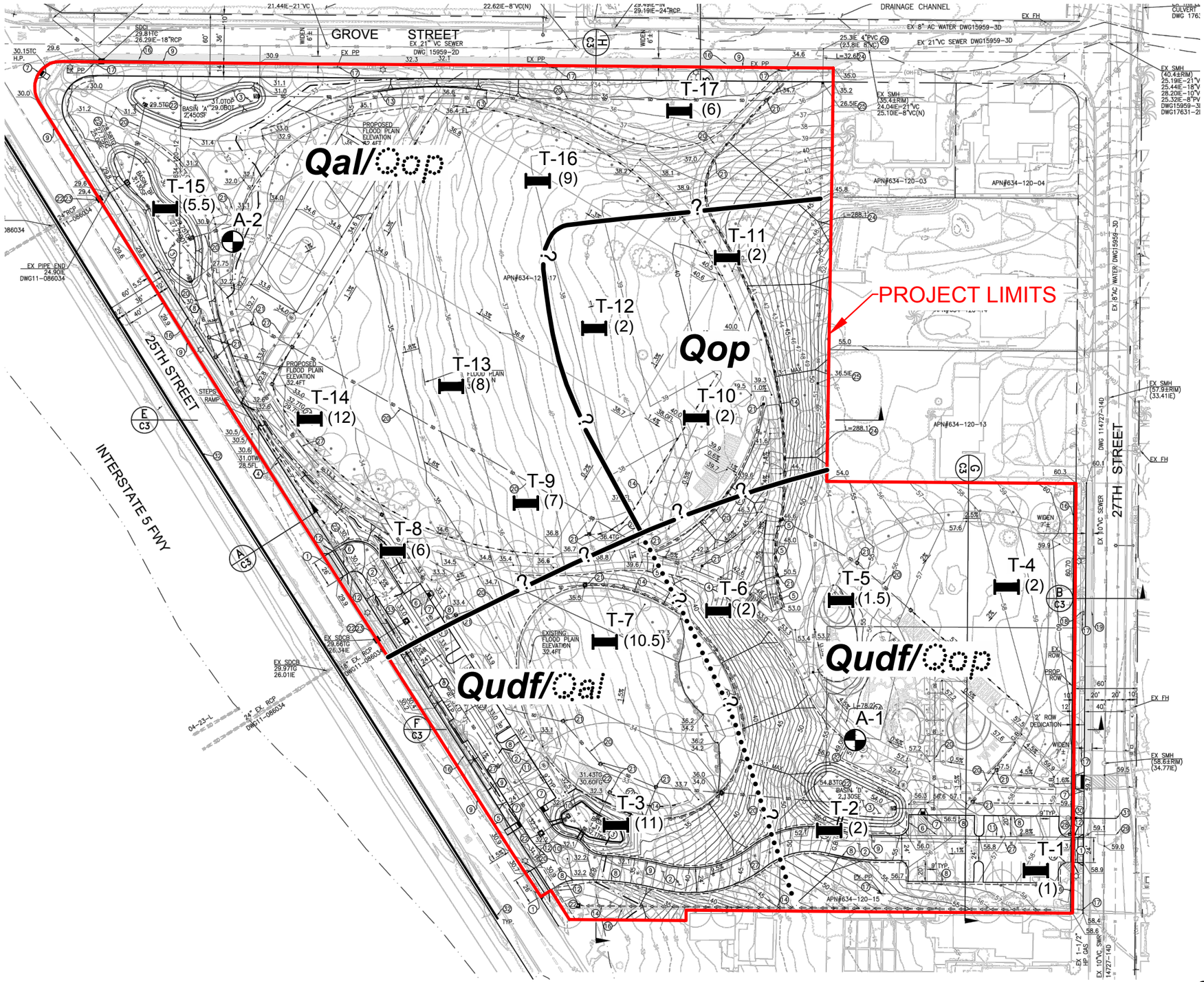
SOUTHWESTERN PARK
SAN DIEGO, CALIFORNIA



0' 100' 200'

SCALE 1"= 100' (On 11x17)

GEOCON LEGEND

- ***Topsoil*** .....UNMAPPED/UNDIFFERENTIATED
- ***Qudf*** .....UNDOCUMENTED FILL
- ***Qal*** .....ALLUVIUM (Dotted Where Buried)
- ***Qop*** .....OLD PARALIC DEPOSITS (Dotted Where Buried)
- T-17 .....APPROX. LOCATION OF EXPLORATORY TRENCH
- A-2 .....APPROX. LOCATION OF INFILTRATION TEST
- (12) .....DEPTH TO OLD PARALIC DEPOSITS
- .....APPROX. LOCATION OF GEOLOGIC CONTACT (Dotted Where Buried, Queried Where Uncertain)

GEOCON INCORPORATED

GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

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PROJECT NO. G2367 - 42 - 01

FIGURE 1

DATE 07 - 22 - 2020

GEOLOGIC MAP

Plotted:07/22/2020 3:07PM | By:RUBEN AGUILAR | File Location:Y:\PROJECTS\G2367-42-01 Southwestern Park\SHEETS\G2367-42-01 GeoMap.dwg