27 August 2015

Ms. Ariel Pasch
Nick Podell Company
22 Battery Street, Suite 404
San Francisco, California 94111

Subject: Supplemental Geotechnical Investigation
2000-2070 Bryant Street
San Francisco, California
Project No.: 750615602

Dear Ms. Pasch:

This letter presents the results of our supplemental field exploration and recommendations for the proposed development at 2000-2070 Bryant Street in San Francisco, California. We previously performed a geotechnical investigation for the site and presented our findings and recommendations in a report titled "Geotechnical Investigation, 2000-2070 Bryant Street, San Francisco, California" dated 28 March 2014. This letter supplements the data and recommendations provided in our report.

PROJECT DESCRIPTION

The project site is rectangular with plan dimensions of about 200 by about 325 feet. It is bound by Bryant Street on the east, Florida Street on the west, 18th Street on the north, and a community garden and two buildings on the south (two-story and three-story structures, both of wood-framed construction). The proposed development consists of a six-story residential building comprised of five levels of light-framed construction over a one-level concrete podium with parking, residential, and retail uses. The new building will encompass the entire footprint of the site and will be constructed at grade to minimize excavation depths.

PROJECT BACKGROUND

The results of our 2014 investigation indicate that the site is underlain by about 10 to 24 feet of fill. At the northern part of the site, the fill is underlain by a compressible marsh deposit. At the southern part of the site, the fill is underlain by medium dense to very dense sand with varying fines content and stiff to very stiff silts and clays. The marsh deposit to the north and medium dense to very dense/stiff to very stiff material to the south are underlain by the Colma formation.

In our 2014 report, we concluded that some of the loose sandy layers in the fill, Marsh and Colma formation were susceptible to liquefaction. On the basis of our liquefaction analyses, we estimated that up to about 3½ inches of liquefaction-induced total and differential settlement may occur at the northern part of the project site. If this portion of the site is not mitigated against liquefaction, there are sufficient zones of liquefiable material present within the fill and marsh deposit to induce lateral spreading. This has the potential to cause significant damage to shallow or deep foundations.

Therefore, we concluded that the soil beneath the northern portion of the site should be improved to mitigate the liquefaction and lateral spread potential. In our report, we provided a figure that illustrated the estimated boundary of the zone of potential lateral spread at the northern portion of the site based on

our exploration points; however, most of the site was not accessible during our original investigation and we recommended further investigation to better define the zone.

Two of the three warehouses at the site were recently vacated, allowing access for additional investigation. We performed our supplemental investigation in the proposed building area to better define the zone of potential lateral spread and the depth to the bearing layer for foundation support. We used the results of the supplemental investigation to perform engineering analyses and supplement our recommendations regarding the geotechnical aspects of the project, as needed.

SUPPLEMENTAL FIELD INVESTIGATION

We supplemented the available subsurface information by advancing four CPTs designated as CPT-8 through CPT-11 on 13 July 2015. CPT-8 and CPT-9 were pushed north of the estimated boundary of the zone of potential lateral spread and CPT-10 and CPT-11 were pushed south of the boundary. The approximate locations of the cone penetration tests are shown on the Site Plan, Figure 1. Prior to performing our field investigation, we obtained drilling permits from the City of San Francisco Department of Public Health (SFDPH). We checked CPT locations for the presence of underground utilities by contracting with a private utility locating service; we also contacted Underground Service Alert (USA), as required by law, before commencing our field exploration. Upon completion, the CPTs were backfilled with cement grout in accordance with SFDPH requirements.

The CPTs were advanced by Gregg Drilling & Testing, Inc. of Martinez, California, by hydraulically pushing a 1.7-inch diameter (15 square centimeters), cone-tipped probe into the ground. The cone on the end of the probe measures tip resistance, and the friction sleeve behind the cone tip measures frictional resistance. Electrical strain gauges within the cone measure soil parameters continuously for the entire depth advanced. Soil data, including tip resistance, was transferred to a computer while conducting each test. Accumulated data was processed by computer to provide engineering information, such as the types and approximate strength characteristics of the soil encountered. The CPT logs showing tip resistance, friction ratio, equivalent SPT N-value, in-situ stress, shear strength, and soil behavior type as a function of depth are presented in Appendix A. A classification chart for the CPTs is included in Appendix A.

We used the subsurface information gathered from the CPTs to evaluate the liquefaction and lateral spread potential at the new exploration points.

SUBSURFACE CONDITIONS AND SEISMIC HAZARDS

In general, the subsurface conditions encountered in our supplemental CPTs are consistent with the subsurface conditions encountered during our previous investigation. The CPTs on the north side of the site encountered continuous, potentially-liquefiable layers that could induce lateral spreading. CPT-10, advanced on the southern side of the previously defined boundary of potential lateral spread, did not encounter potentially-liquefiable layers. However, CPT-11 that was also advanced on the southern side of the previously defined boundary of potential lateral spread, did encounter potentially liquefiable layers.

Groundwater levels were measured during our field investigation at approximate elevations[1] ranging between 10 and 11.5 feet.

[1] Elevations are referenced to San Francisco City Datum.

CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations we presented in our March 2014 report are still appropriate; the soil beneath the northern portion of the site should be improved to mitigate the liquefaction and lateral spread potential. We used the results of the supplemental investigation to better define the area requiring ground improvement, labeled as the zone of potential lateral spread. The updated zone of potential lateral spread is presented on Figure 2, Site Plan. The estimated elevations of the top of the bearing layer at the supplemental CPT locations are shown on the Site Plan.

Once the ground is improved in place, the northern part of the building can be supported on a mat foundation bearing on the improved soil. The southern part of the building can be supported on a mat bearing on engineered fill or improved ground, as recommended in our report.

For more complete recommendations regarding ground improvement, refer to our full geotechnical report.

We appreciate the opportunity to assist you with this project. If you have any questions, please call.

Sincerely,
Langan Treadwell Rollo

Blaire L. Banagan, PE
Project Engineer

Lori A. Simpson, GE
Principal

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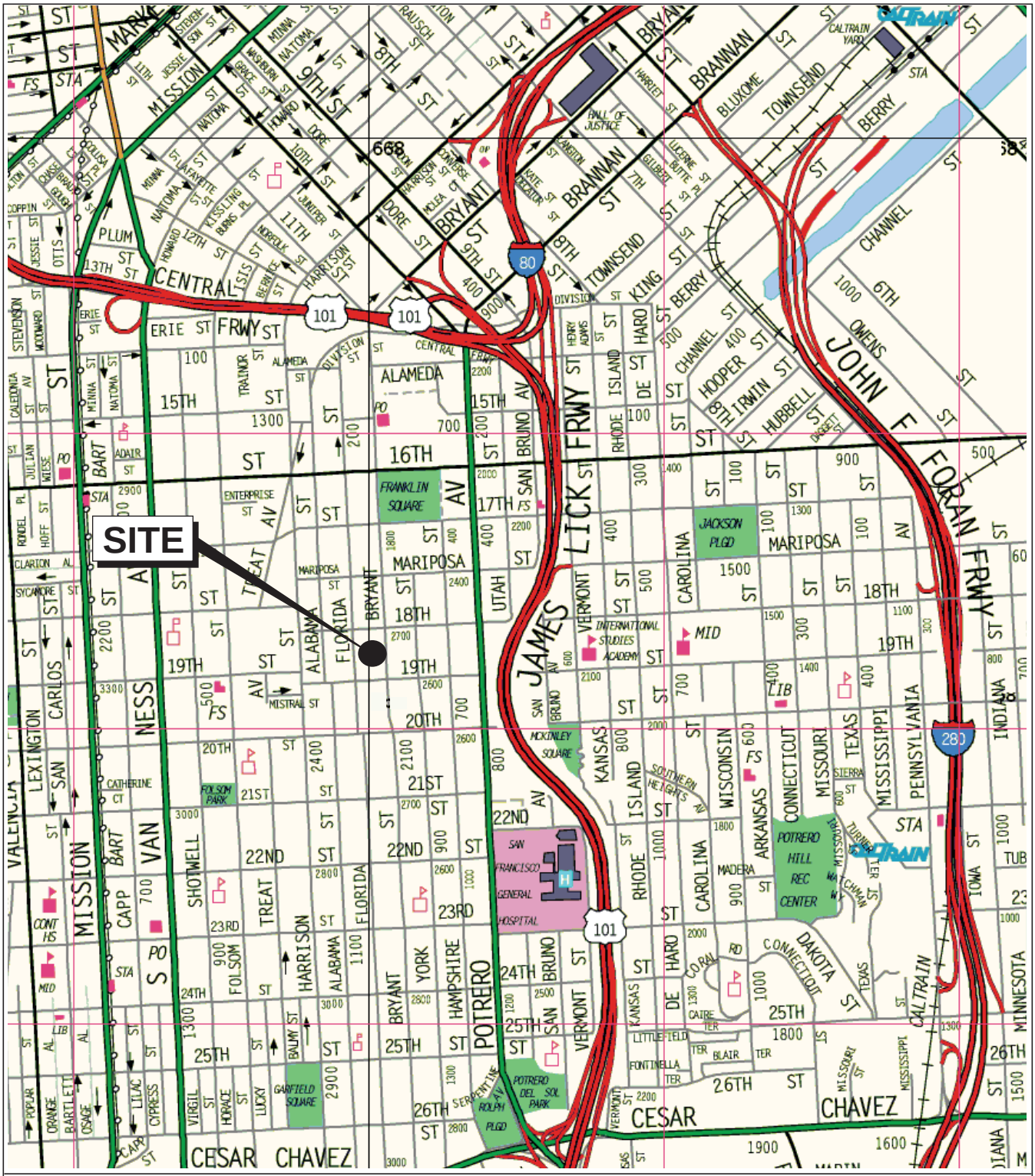
Attachments: Figure 1 – Site Plan
Figure 2 – Site Plan
Appendix A – Logs of Cone Penetration Tests (CPTs)

FIGURES



Base map: The Thomas Guide
San Francisco County
2002

0 1/4 1/2 Mile

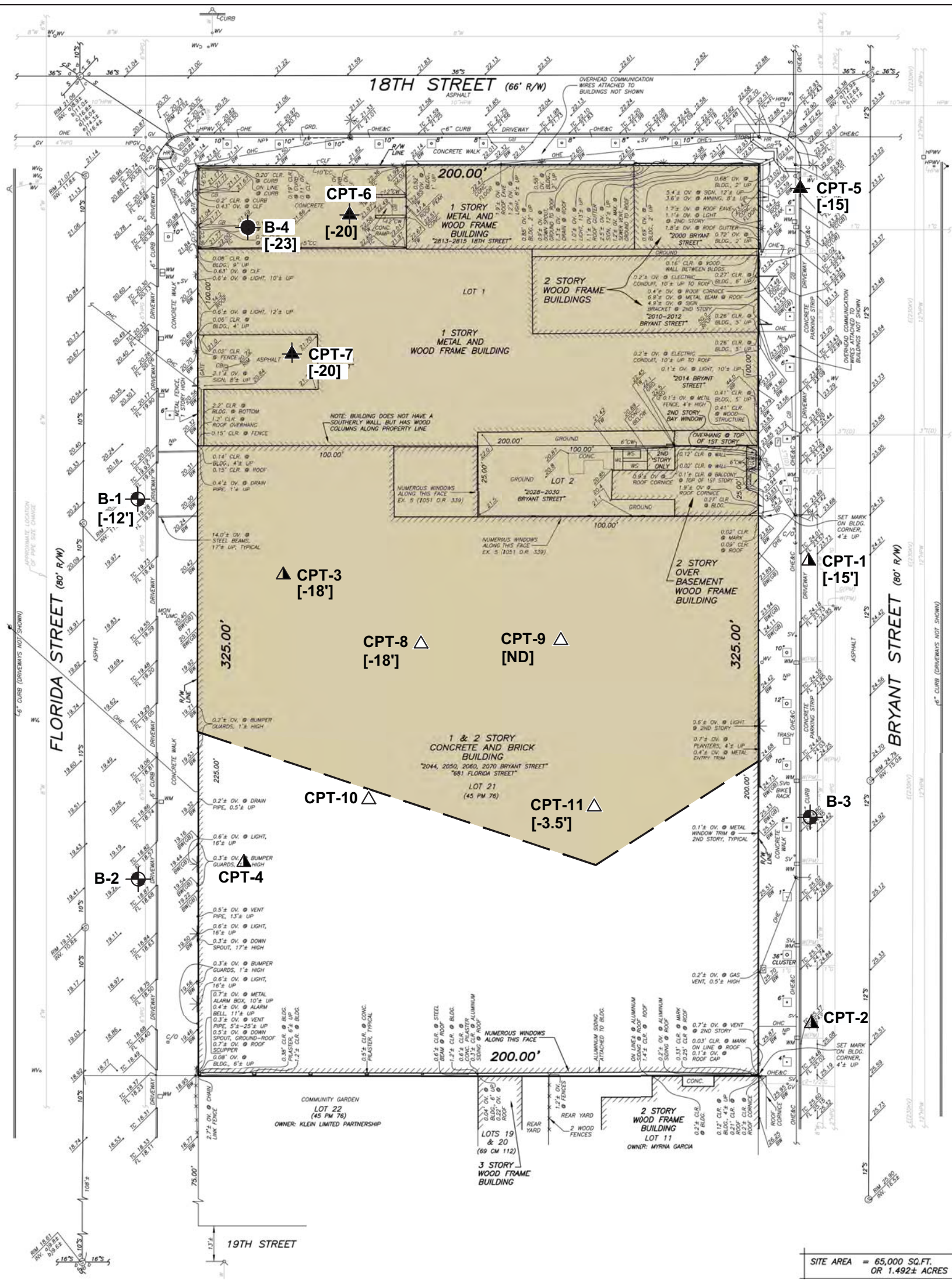
Approximate scale

2000-2070 BRYANT STREET
San Francisco, California

SITE LOCATION MAP

LANGAN TREADWELL ROLLO

Date 03/25/14	Project No. 750615602	Figure 1



EXPLANATION

CPT-8 △	Approximate location of cone penetration test by Langan Treadwell Rollo, July 2015
B-4	Approximate location of boring by Langan Treadwell Rollo, January 2014
CPT-5	Approximate location of cone penetration test by Langan Treadwell Rollo, January and February 2014
B-1	Approximate location of boring by Treadwell & Rollo, April 2013
CPT-1	Approximate location of cone penetration test by Treadwell & Rollo, April 2013
[-14']	Elevation of top of bearing layer
[ND]	Not determined, CPT encountered refusal before reaching planned depth

Site boundary

Zone of potential lateral spread

0 40 Feet

Approximate scale

Reference: Base map from a drawing titled "Site Survey of a Portion of Assessor's Block No. 4022 for Nick Podell Company, by Martin M. Ron Associates, dated 06-28-13.

2000-2070 BRYANT STREET
San Francisco, California

SITE PLAN

Date 08/20/15 | Project No. 750615602 | Figure 2

LANGAN TREADWELL ROLLO

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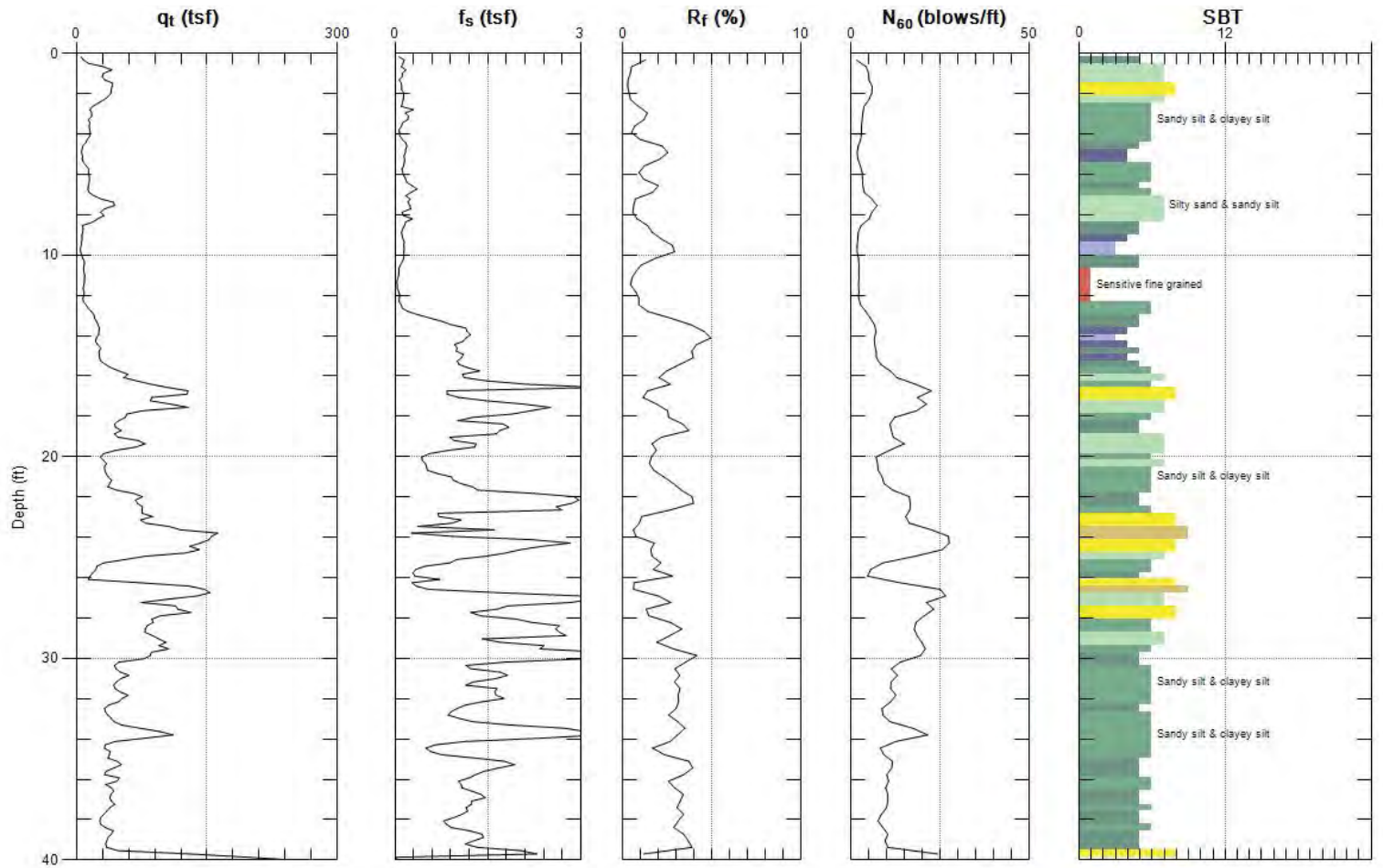
APPENDIX A

LOGS OF CONE PENETRATION TESTS



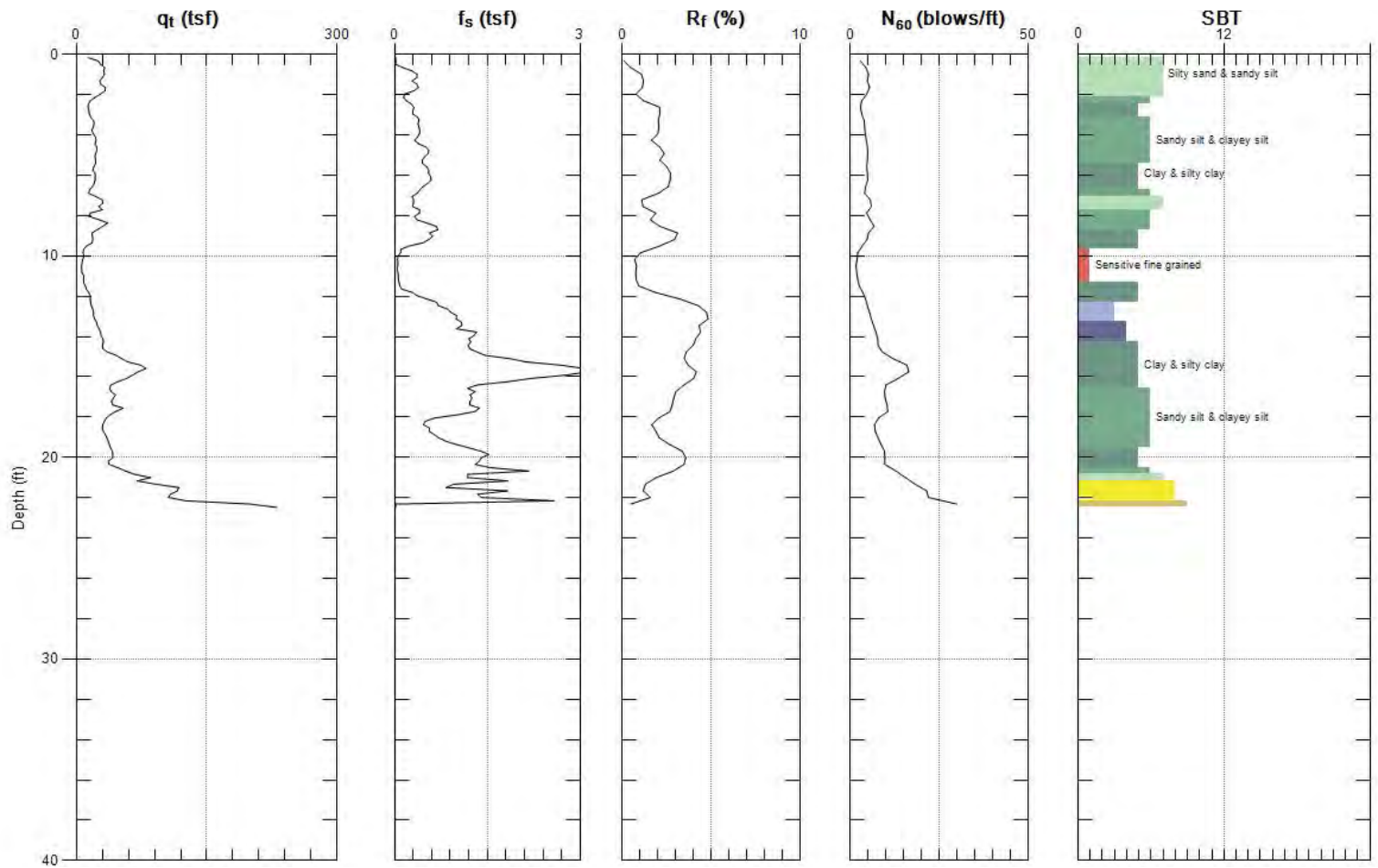
Terminated at 40 feet.
Groundwater encountered at 10 feet bgs.
Date performed 07/13/15.
Approximate ground surface elevation: 21 feet, City of San Francisco Datum.

2000-2070 BRYANT STREET
San Francisco, California

CONE PENETRATION TEST RESULTS
CPT-8

Date 08/20/15	Project No. 750615602	Figure A-1

LANGAN TREADWELL ROLLO



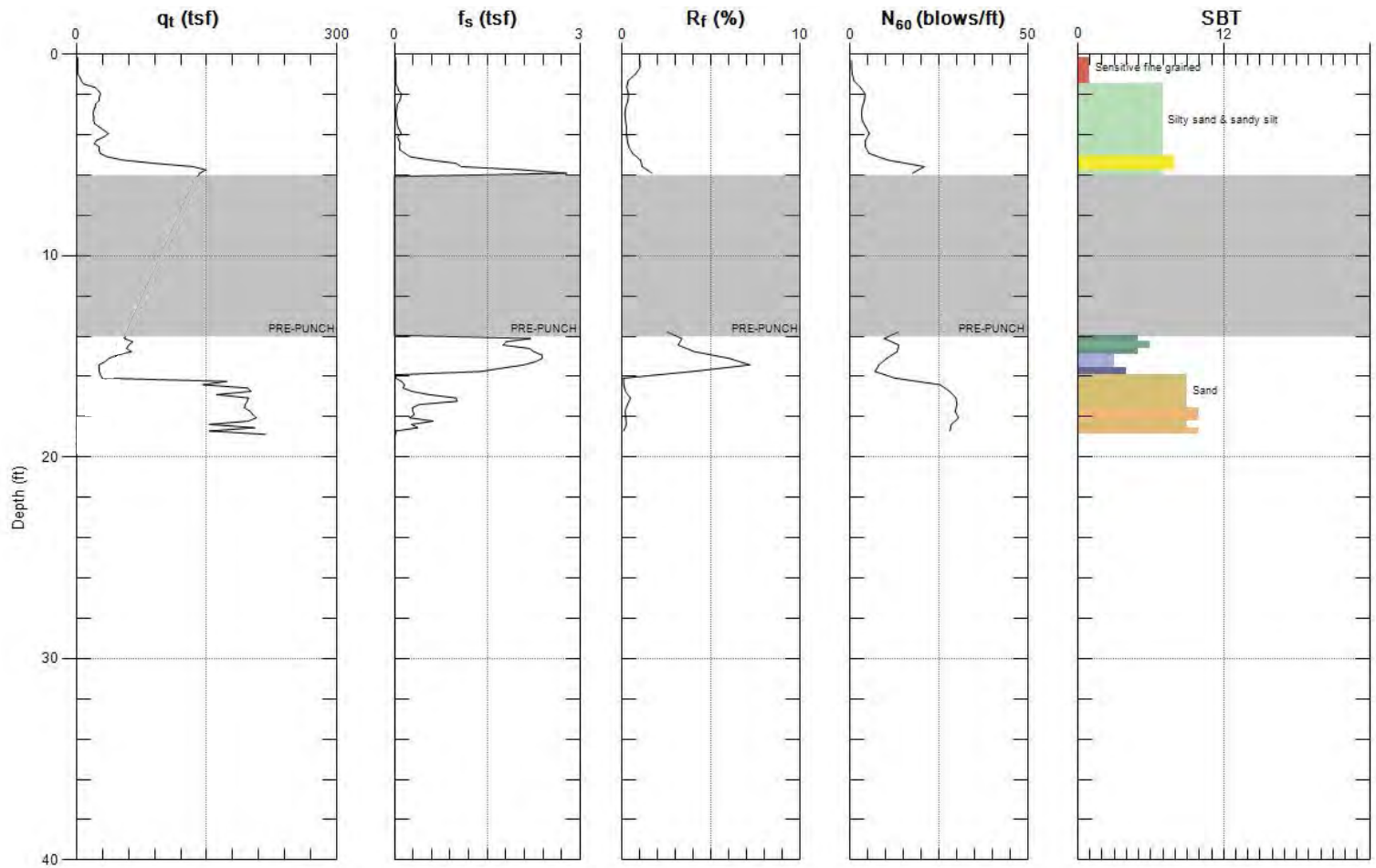
Terminated at 22.5 feet.
Groundwater encountered at 10 feet bgs.
Date performed 07/13/15.
Approximate ground surface elevation: 22 feet, City of San Francisco Datum.

2000-2070 BRYANT STREET
San Francisco, California

CONE PENETRATION TEST RESULTS
CPT-9

Date 08/20/15	Project No. 750615602	Figure A-2

LANGAN TREADWELL ROLLO



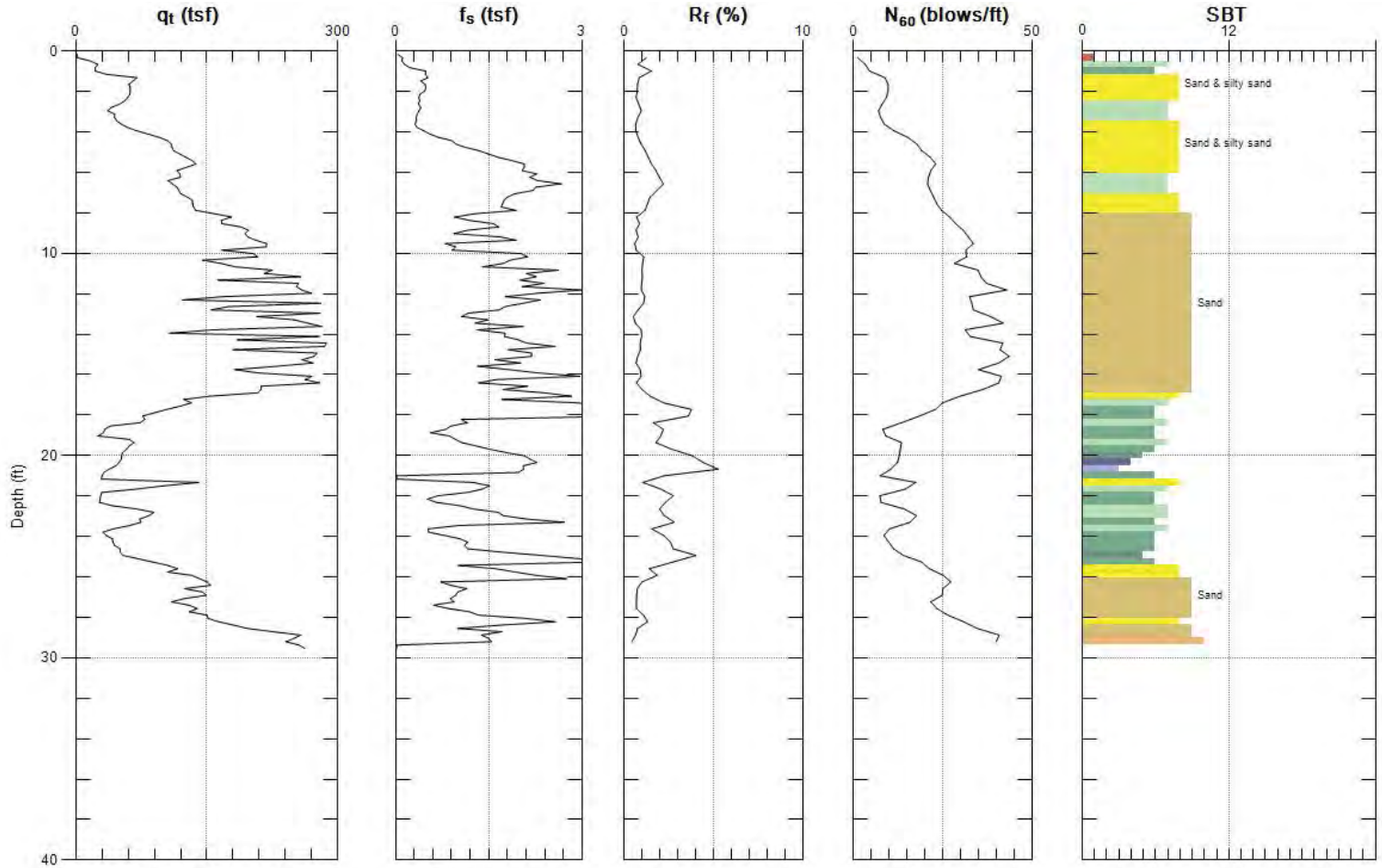
Terminated at 18.9 feet.
Groundwater encountered at 10 feet bgs.
Date performed 07/13/15.
Approximate ground surface elevation: 21 feet, City of San Francisco Datum.

2000-2070 BRYANT STREET
San Francisco, California

CONE PENETRATION TEST RESULTS
CPT-10

Date 08/20/15	Project No. 750615602	Figure A-3

LANGAN TREADWELL ROLLO



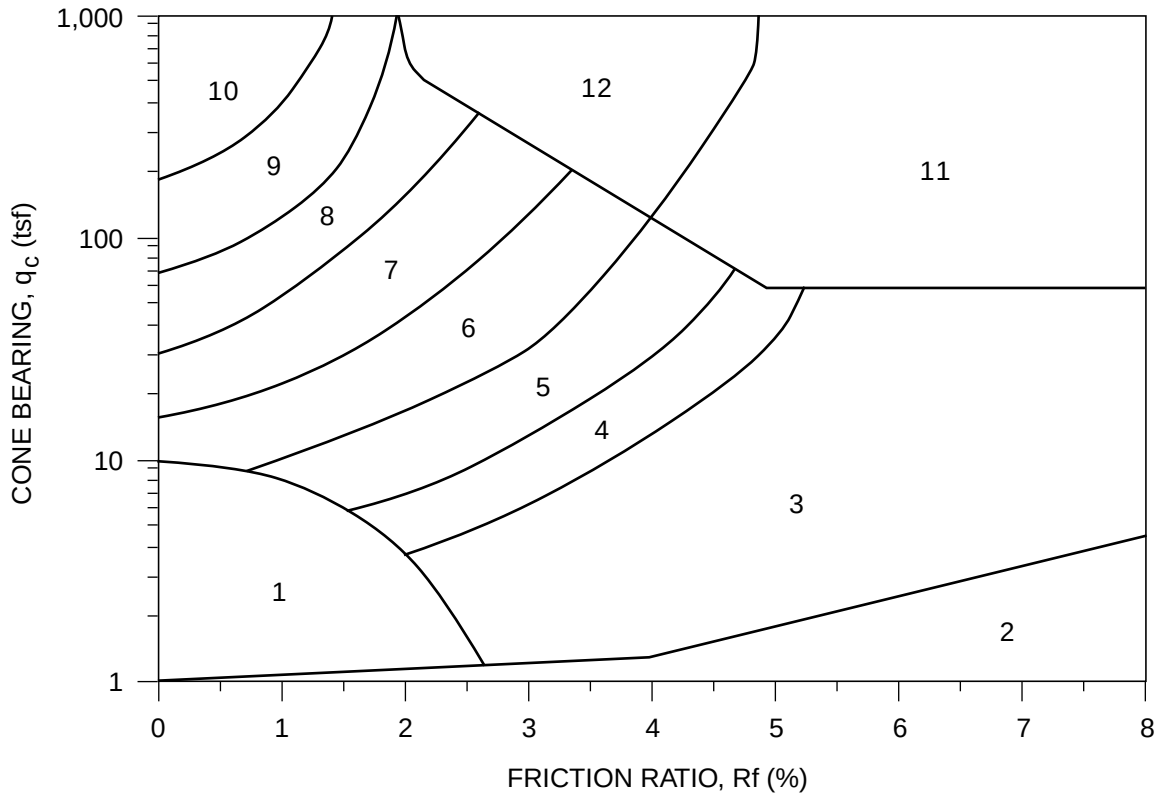
Terminated at 29.5 feet.
Groundwater encountered at 11.5 feet bgs.
Date performed 07/13/15.
Approximate ground surface elevation: 22.5 feet, City of San Francisco Datum.

2000-2070 BRYANT STREET
San Francisco, California

CONE PENETRATION TEST RESULTS
CPT-11

Date 08/20/15	Project No. 750615602	Figure A-4

LANGAN TREADWELL ROLLO



ZONE	q_c/N^1	Su Factor $(Nk)^2$	SOIL BEHAVIOR TYPE[1]
1	2	15 (10 for $q_c \leq 9$ tsf)	Sensitive Fine-Grained
2	1	15 (10 for $q_c \leq 9$ tsf)	Organic Material
3	1	15 (10 for $q_c \leq 9$ tsf)	CLAY
4	1.5	15	SILTY CLAY to CLAY
5	2	15	CLAYEY SILT to SILTY CLAY
6	2.5	15	SANDY SILT to CLAYEY SILT
7	3	---	SILTY SAND to SANDY SILT
8	4	---	SAND to SILTY SAND
9	5	---	SAND
10	6	---	GRAVELLY SAND to SAND
11	1	15	Very Stiff Fine-Grained (*)
12	2	---	SAND to CLAYEY SAND (*)

(*) Overconsolidated or Cemented
q_c = Tip Bearing
f_s = Sleeve Friction
$Rf = f_s/q_c \times 100$ = Friction Ratio

Note: Testing performed in accordance with ASTM D3441.

References: 1. Robertson, 1986, Olsen, 1988.
2. Bonaparte & Mitchell, 1979 (young Bay Mud $q_c \leq 9$).
Estimated from local experience (fine-grained soils $q_c > 9$).

2000-2070 BRYANT STREET
San Francisco, California

CLASSIFICATION CHART FOR CONE PENETRATION TESTS

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Date 08/24/15 | Project No. 750615602 | Figure A-5