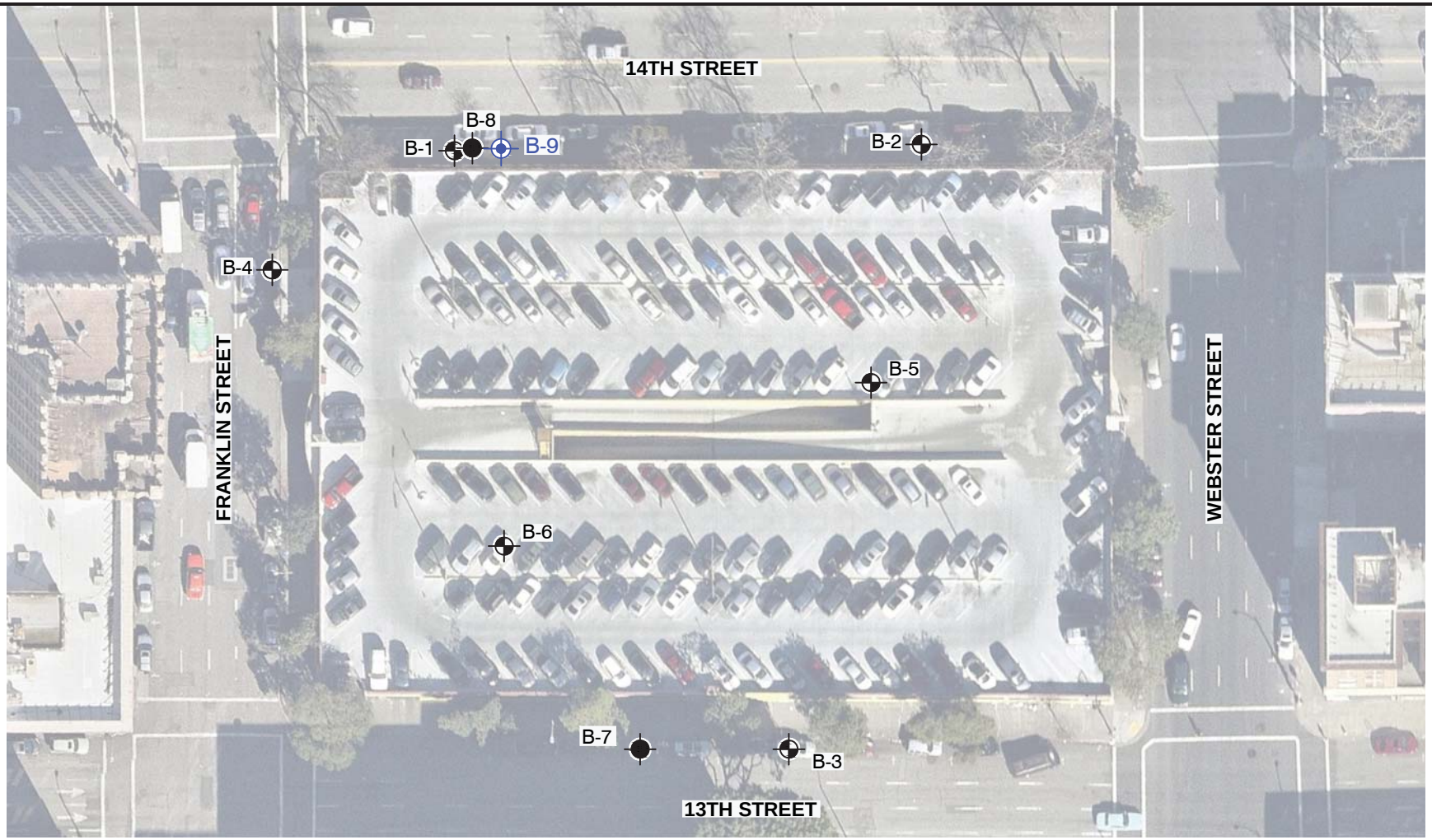

EXPLANATION

B-9 — Approximate location of geotechnical boring by Langan, June 2017

B-7 — Approximate location of geotechnical boring by Langan, January 2017

B-1 — Approximate location of geotechnical boring by Langan Treadwell Rollo, May 2016

Note: Borings B-5 and B-6 were drilled in the basement.

Reference: Base map from nearmap, dated 02/01/2016.

0 60 Feet

Approximate scale

385 14TH STREET
Oakland, California

SITE PLAN

Date 07/12/17	Project No. 750636401	Figure 2

LANGAN

\\langan.com\data\OAK\data4\750636401\Cadd Data - 750636401\2D-DesignFiles\Geotechnical\750636401-B-SP0103.dwg 7/12/17

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-1

Boring location: See Figure 2
Logged by: J. Sanglerat
Date started: 5/4/16 Date finished: 5/4/16
Drilled by: Exploration Geoservices
Drilling method: Hollow Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Downhole
Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION (Ground Surface Elevation: 35.1 feet[2])	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
0						4 inches Concrete						
1					SM	SILTY SAND with GRAVEL (SM) light brown to yellow-brown, moist, medium-grained, coarse subangular gravel						
2	HA											
3						CLAYEY SAND (SC) olive with yellow mottling, moist, fine-grained						
4												
5					SC							
6	SPT		15 19 25	44		dense, with clay inclusions						
7												
8						SAND with CLAY (SP-SC) olive with yellow mottling, very dense, moist, fine-gained, with clay inclusions						
9	SPT		44 25 28	53								
10												
11												
12					SP-SC							
13						yellow, brown mottling, dense						
14	SPT		20 21 23	44								
15												
16												
17						SILTY SAND (SM) yellow-brown, dense, moist, fine-grained						
18												
19	SPT		20 23 26	49								
20												
21												
22					SM							
23												
24	SPT		21 27 30	57		olive-gray, very dense, moist to wet						
25												
26												
27						▽ (5/4/2016, 9:56 a.m.)						
28												
29	SPT		21 30 36	66	SP-SM	SAND with SILT (SP-SM) olive-gray, very dense, wet, fine-grained						
30												

FILL

LANGAN

Project No.: 750636401 Figure: A-1a

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-1

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31						SAND with SILT (SP-SM) (continued)						
32												
33												
34	SPT		32 50/6"	50/6"	SP-SM							
35												
36												
37												
38						light olive-gray, dense, trace clay							
39	SPT		15 19 12	21								
40						SANDY CLAY (CL) olive-gray with yellow-brown and gray mottling, very stiff, wet, fine-grained sand						
41												
42												
43					CL							
44	S&H		10 15 19	20		olive-gray with light olive-gray mottling, fine- to medium-grained sand LL = 38, PI = 25, see Figure C-1					22.5	104
45												
46	ST		150 psi									
47					SC	CLAYEY SAND (SC) light olive-gray, dense, wet, fine- to medium-grained, shell fragments						
48												
49	S&H		21 28 32	36		CLAY (CL) olive-gray with yellow and gray mottling, hard, wet, trace fine- to medium grained sand						
50												
51												
52												
53												
54	S&H		18 27 36	38	CL	fine- to coarse-grained sand					22.8	107
55												
56												
57												
58												
59	S&H		12 17 24	25		olive-gray with yellow and black mottling, very stiff, trace silt						
60												

LANGAN

Project No.: 750636401

Figure: A-1b

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-1

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61						CLAY (CL) (continued)						
62												
63												
64	S&H		16 19 22	25		yellow-brown with gray mottling, fine- to medium-grained sand					27.3	99
65												
66												
67												
68					CL							
69	S&H		16 18 21	23		fine-grained sand						
70												
71												
72												
73												
74	S&H		19 27 36	38		hard, fine- to coarse-grained sand					30.4	94
75												
76												
77												
78												
79												
80												
81												
82												
83												
84												
85												
86												
87												
88												
89												
90												

Boring terminated at a depth of 75 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 27 feet below ground surface during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type

[2] Elevations based on Oakland City Datum. Elevations referenced are from the "ALTA/NSPS Land Title Survey," by Lea & Braze Engineering, Inc., dated 29 April 2016.

LANGAN

Project No.: 750636401

Figure: A-1c

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-2

Boring location: See Figure 2
Logged by: J. Sanglerat
Date started: 5/4/16 Date finished: 5/4/16
Drilled by: Exploration Geoservices
Drilling method: Hollow Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Downhole
Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						Ground Surface Elevation: 33.9 feet[2]						
0						4.5 inches Concrete						
1					SM	2 inches Aggregate Base (AB) FILL						
2						SILTY SAND (SM) yellow-brown, moist, fine-grained						
3	HA					CLAYEY SAND (SC) olive with yellow mottling, moist, fine-grained, clay inclusions						
4												
5					SC							
6	SPT		13 19 22	41		dense, clay inclusions						
7												
8						SAND with CLAY (SP-SC) yellow-brown with trace yellow mottling and black specs, very dense, moist, fine-grained						
9	SPT		19 27 31	58								
10												
11												
12					SP-SC							
13												
14	SPT		11 15 19	34		olive-gray with yellow-brown mottling, dense						
15												
16												
17						SILTY SAND (SM) yellow-brown, dense, moist, fine-grained						
18												
19	SPT		11 16 22	38								
20												
21												
22												
23					SM							
24	SPT		17 22 24	46		olive-gray with yellow-brown inclusions, dense, moist to wet, clay inclusions						
25												
26						▽ (5/4/2016, 2:13 p.m.)						
27												
28												
29	SPT		18 36 40	76		olive-gray, very dense, wet						
30												

LANGAN

Project No.: 750636401 Figure: A-2a

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-2

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31						SILTY SAND (SM) (continued)						
32												
33					SM							
34	SPT		23 25 28	53		clay inclusions						
35												
36												
37						SANDY CLAY (CL) olive-gray with black streaks, hard, wet, fine- to medium-grained sand						
38												
39	SPT		26 28 30	35 90 psi	CL						18.7	113
40						with gravel LL = 36, PI = 24, see Figure C-1						
41	ST			90 psi		Consolidation Test, see Figure C-5					18.4	107
42				300 psi		Triaxial Test, see Figure C-14 increased sand content	TxUU	3,850	1,350		22.1	103
43												
44												
45												
46												
47												
48												
49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												

Boring terminated at a depth of 42.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 26 feet below ground surface during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type

[2] Elevations based on Oakland City Datum. Elevations referenced are from the "ALTA/NSPS Land Title Survey," by Lea & Braze Engineering, Inc., dated 29 April 2016.

LANGAN

Project No.: 750636401

Figure: A-2b

PROJECT:	**385 14TH STREET** Oakland, California	**Log of Boring B-3**
		PAGE 1 OF 3

Boring location:	See Figure 2	Logged by:	J. Sanglerat
Date started:	5/5/16	Date finished: 5/5/16	Drilled by: Exploration Geoservices
Drilling method:	Hollow Stem Auger		
Hammer weight/drop:	140 lbs./30 inches	Hammer type: Downhole	
Samplers:	Sprague & Henwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)		

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						Ground Surface Elevation: 35.5 feet[2]						
0						7 inches Asphalt Concrete (AC)						
1						SILTY SAND (SM) olive-gray, dry, fine- to medium-grained, trace fine subangular gravel						
2	HA				SM							
3						FILL						
4												
5												
6	SPT		14 23 24	47		SAND with CLAY (SP-SC) yellow-brown, dense, dry, fine-grained, trace silt						
7												
8												
9					SP-SC							
10			27 38 41			very dense, yellow mottling						
11	SPT			79								
12												
13												
14						CLAYEY SAND (SC) olive with yellow mottling, dense, moist						
15												
16	SPT		14 16 21	37						27	9.8	
17												
18												
19												
20												
21	SPT		14 21 27	48	SC	increase in clay content						
22												
23												
24												
25						▽ (5/5/2016)						
26	SPT		11 17 24	41		olive-gray with yellow and gray mottling, wet						
27												
28												
29					SM	SILTY SAND (SM) olive-gray, very dense, wet, fine-grained, wet						
30												

LANGAN

Project No.:	Figure:
750636401	A-3a

TEST GEOTECH LOG 750636401 - GEOTECH 385 14TH STREET.GPJ TR.GDT 7/10/17

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-3

DEPTH (feet)	Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						SAMPLES / LABORATORY TEST DATA						
31	SPT		17 23 45	68	SM	SILTY SAND (SM) (continued)						
32												
33												
34												
35												
36	SPT		25 50/4"	75/6"		less silt						
37												
38						CLAYEY SAND (SC) light gray-brown, very dense, wet, fine- to medium-grained						
39												
40												
41	SPT		15 18 34	52	SC							
42												
43												
44												
45						SANDY CLAY (CL) gray-brown, very stiff, wet, fine- to medium-grained sand, trace shell fragments in bottom of samples						
46	SPT		9 10 14	24	CL							
47												
48				20 psi							21.6	100
49	ST			50 psi		SAND with CLAY and GRAVEL (SP-SC) light olive, dense, fine- to coarse-grained, fine subangular gravel, shell fragments						
50				100 spi	SP-SC							
51	SPT		15 12 10	22		CLAY with SAND (CL) olive, very stiff, wet, fine-grained sand, trace fine to coarse subangular gravel inclusions						
52												
53												
54												
55			8									
56	S&H		15 29	26	CL	light olive with black specs LL 47, PI = 25, see Figure C-1					27.8	97
57												
58												
59												
60												

LANGAN

Project No.: 750636401

Figure: A-3b

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-3

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61	S&H		15 23 28	31	CL	SANDY CLAY (CL) light olive-gray with black specs, hard, wet, fine-grained sand					21.7	108
62												
63												
64												
65			28			sand lens						
66	S&H		29 41	42								
67					SC	CLAYEY SAND (SC) yellow-brown, dense, wet, fine-grained						
68												
69												
70			15			light olive-gray						
71	S&H		23 29	31							27.8	98
72					CL	SANDY CLAY (CL) light olive-gray with black specs, hard, wet, fine-grained sand						
73												
74	S&H		14 18 22	24		olive-gray, very stiff						
75												
76												
77												
78												
79												
80												
81												
82												
83												
84												
85												
86												
87												
88												
89												
90												

Boring terminated at a depth of feet 75 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 25 feet below ground surface during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type

[2] Elevations based on Oakland City Datum. Elevations referenced are from the "ALTA/NSPS Land Title Survey," by Lea & Braze Engineering, Inc., dated 29 April 2016.

LANGAN

Project No.: 750636401

Figure: A-3c

TEST GEOTECH LOG 750636401 - GEOTECH 385 14TH STREET.GPJ TR.GDT 7/10/17

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-4

Boring location: See Figure 2
Logged by: J. Sanglerat
Date started: 5/5/16 Date finished: 5/5/16
Drilled by: Exploration Geoservices
Drilling method: Hollow Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Downhole
Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						Ground Surface Elevation: 36.1 feet[2]						
0						6 inches Asphalt Concrete (AC)						
0						4 inches Aggregate Base (AB)						
1–4	HA				SM	SILTY SAND (SM) yellow-brown, moist, fine- to medium-grained, trace fine subangular gravel FILL						
5–8	SPT		14 26 28	54	SP-SC	SAND with CLAY (SP-SC) yellow-brown with yellow mottling, very dense, moist, fine-grained						
9–13	SPT		12 22 30	52								
14–18	SPT		10 12 20	32	SC	CLAYEY SAND (SC) olive-gray with yellow-brown mottling, dense, moist, fine-grained						
19–23	SPT		13 20 25	45	SM	SILTY SAND (SM) light olive-gray, dense, moist, fine-grained						
24–26	SPT		12 20 26	46	SP-SC	SAND with CLAY (SP-SC) olive-gray, dense, moist to wet, fine-grained						
27–30					SM	SILTY SAND (SM) olive-gray, very dense, wet, fine-grained ▽ (5/5/2016, 1:10 p.m.)						

LANGAN

Project No.: 750636401 Figure: A-4a

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-4

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31	SPT		20 25 30	55	SM	SILTY SAND (SM) (continued)						
32												
33												
34												
35			12									
36	SPT		9 13	22	CL	SANDY CLAY (CL) light olive-gray with yellow-brown and black streaks, very stiff, wet, fine-grained sand						
37				10 psi								
38	ST			50 psi	CL	CLAY with SAND (CL) gray-brown, very stiff, wet, fine-grained sand Consolidation Test, see Figure C-6					20.7	106
39			12	50 psi		Triaxial Test, see Figure C-15	TxUU	3,150	2,330		20.7	109
40	S&H		16 24	24								
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												

Boring terminated at a depth of 40.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 29 feet below ground surface during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type

[2] Elevations based on Oakland City Datum. Elevations referenced are from the "ALTA/NSPS Land Title Survey," by Lea & Braze Engineering, Inc., dated 29 April 2016.

LANGAN

Project No.: 750636401

Figure: A-4b

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-5

Boring location: See Figure 2
Logged by: J. Sanglerat
Drilled by: Exploration Geoservices

Date started: 5/6/16 Date finished: 5/6/16

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches Hammer type: Downhole

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1						6 inches Concrete						
						4 inches Aggregate Base (AB)						
2	HA				SM	SILTY SAND with GRAVEL (SM) yellow-brown, moist, fine- to medium-grained, fine subangular gravel FILL						
3												
4												
5			8			CLAYEY SAND (SC) yellow-brown with orange mottling, medium dense, moist, fine-grained						
6	SPT		9 13	26	SC							
7												
8												
9						SAND with SILT (SP-SM) yellow-brown, dense, moist, fine-grained							
10			14									
11	SPT		14 13	32	SP-SM					10.6	11.4	
12												
13						SILTY SAND (SM) brown, dense, moist, fine-grained						
14												
15			13			▽ (5/6/2016, 2:45 p.m.)						
16	SPT		20 21	49		wet						
17					SM							
18												
19												
20			12									
21	SPT		17 28	54		very dense						
22												
23												
24												
25												
26												
27												
28												
29												
30												

Boring terminated at a depth of 21.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 15 feet below ground surface during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type
[2] Elevations based on Oakland City Datum. Elevations referenced are from the "ALTA/NSPS Land Title Survey," by Lea & Braze Engineering, Inc., dated 29 April 2016.

LANGAN

Project No.: 750636401
Figure: A-5

PROJECT:	**385 14TH STREET** Oakland, California	**Log of Boring B-6** PAGE 1 OF 1

Boring location:	See Figure 2		Logged by: J. Sanglerat Drilled by: Exploration Geoservices
Date started:	5/6/16	Date finished: 5/6/16	
Drilling method:	Hollow Stem Auger		
Hammer weight/drop:	140 lbs./30 inches	Hammer type: Downhole	
Samplers:	Sprague & Henwood (S&H), Standard Penetration Test (SPT)		

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1						5 inches Concrete						
						4 inches Aggregate Base (AB)						
					SM	SILTY SAND with GRAVEL (SM) yellow-brown, moist, fine- to medium-grained, fine subangular gravel						
2						FILL						
3	HA											
4						CLAYEY SAND (SC) yellow-brown, moist, medium dense, fine- to medium-grained						
5			8		SC							
6	SPT		8 12	24								
7												
8						SAND with CLAY (SP-SC) yellow-brown to olive-gray, dense, moist, fine-grained						
9												
10			12									
11	SPT		11 14	30	SP-SC							
12												
13												
14						▽ (5/6/2016, 11:00 a.m.)						
15			10			olive-gray, dense						
16	SPT		15 20	42								
17						SILTY SAND (SM) gray-brown, wet, dense, fine-grained						
18												
19					SM							
20			20									
21	SPT		20 22	50		dense to very dense, trace clay						
22												
23												
24												
25												
26												
27												
28												
29												
30												

Boring terminated at a depth of 21.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 14 feet below ground surface during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type
[2] Elevations based on Oakland City Datum. Elevations referenced are from the "ALTA/NSPS Land Title Survey," by Lea & Braze Engineering, Inc., dated 29 April 2016.

LANGAN

Project No.:	Figure:
750636401	A-6

TEST GEOTECH LOG 750636401 - GEOTECH 385 14TH STREET.GPJ TR.GDT 7/10/17

PROJECT:	**385 14TH STREET** Oakland, California	**Log of Boring B-7**	PAGE 1 OF 6

Boring location:	See Figure 2	Logged by:	J. Sanglerat
Date started:	1/9/17	Date finished: 1/11/17	Drilled by: Pitcher Drilling
Drilling method:	Rotary Wash		
Hammer weight/drop:	140 lbs./30 inches	Hammer type: Safety Auto	

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT), Pitcher Barrel (PB), Shelby Tube (ST)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						Ground Surface Elevation: 35.6 feet[2]						
0						2.5 asphalt concrete						
0						6 inches concrete						
1–4	HA				SM	SILTY SAND (SM) yellow-brown, moist, fine-grained and trace organics FILL						
5–7	SPT		8 18 22	48	SC	CLAYEY SAND (SC) yellow-brown, dense, moist, fine grained				24.4	9.8	
8–9												
10–11	S&H		27 50/ 5"	35/ 5"	SM	SILTY SAND (SM) yellow with yellow-brown mottling, very dense, wet, decrease in silt content, no inclusions					5.5	126
12–16	SPT		14 13 16	35		yellow and yellow-brown with trace dark brown inclusions, dense, increase in silt content, with clay						
17–19						SAND with SILT (SP-SM) olive-gray, dense, wet, fine-grained						
20–21	S&H		25 26 24	35		trace clayey sand					17.7	112
22–24					SP-SM							
25–26	SPT		12 14 23	44		trace yellow-brown inclusions, trace clay						
27–30						gravel lense at 27.5 feet						

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Project No.:	Figure:
750636401	A-7a

TEST GEOTECH LOG 750636401 - GEOTECH 385 14TH STREET.GPJ TR.GDT 7/10/17

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-7

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31	SPT		11 16 23	47		SAND with SILT (SP-SM) (continued) no clay				8.6	22.4	
35	S&H		32 50/ 6"	35/ 6"	SP-SM	gray-brown, very dense					19.5	112
37						gravel lense at 37.5 feet						
40	S&H		13 25 42	47	CL	CLAY (CL) gray-brown, stiff, wet, trace fine-grained sand	PP		1,500			
41					SP-SM	SAND with SILT (SP-SM) gray-brown, dense, wet, fine-grained						
43						CLAY with GRAVEL (CL) green-gray with white gravel, very stiff to hard, wet						
45	S&H		11 15 26	29	CL		TV		4,000			
50	S&H		17 19 23	29	SM	SILTY SAND with GRAVEL (SM) olive-gray, medium dense, wet, fine- to coarse-grained sand, fine subrounded gravel, trace shell fragments gravel lense at 52.5 feet LL = NP, PI = NP, see Figure C-1				15.2	19.1	
55	SPT		7 8 9	20	CL	CLAY (CL) light brown to olive with trace black inclusions, very stiff, wet, trace subrounded gravel						
59						gravel lense at 59 feet						
60												

LANGAN

Project No.: 750636401

Figure: A-7b

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-7

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61	ST		75 psi 900 psi		CL	CLAY (CL) (continued) olive-gray, with yellow and black mottling, hard, trace fine- to medium-grained sand Triaxial Test, see Figure C-16	TV TxUU	6,000	>4,500 3,580		20.6	107
62												
63												
64												
65												
66												
67												
68												
69												
70	S&H		14 17 24	29	CL	SANDY CLAY (CL) olive-gray, medium dense, wet, fine-grained, with clay, trace gravel LL = 33, PI = 15, see Figure C-2				53.1	21.9	
71												
72												
73												
74												
75												
76					SC	CLAYEY SAND (SC) olive-gray, wet, fine-grained sand, trace gavel						
77												
78												
79												
80	PB		150 psi 350 psi									
81												
82					GC	CLAYEY GRAVEL with SAND (GC) olive-gray with red-brown mottling, fine subangular to subrounded gravel						
83	S&H		23 25 26	36		LL = 49, PI = 24, see Figure C-2				13.5	20.6	
84												
85												
86												
87												
88												
89												
90					CL							

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Project No.: 750636401

Figure: A-7c

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-7

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
91	PB		150 psi		CL	CLAY (CL) gray, very stiff, wet Consolidation Test, see Figure C-7	TV		3,500			
92						Triaxial Test, see Figure C-17	TxUU	9,000	6,220		29.9 30.4	92 94
93	S&H		13 16 23	27		very stiff to hard	TV		4,000			
94												
95												
96												
97												
98												
99												
100					MH	CLAYEY SILT (MH) gray, very stiff to hard, wet	TV		3,500			
101	PB		150 psi 350 psi			Consolidation Test, see Figrue C-8 Triaxial Test, see Figure C-18	TxUU	10,000	3,910		30.1 29.8	92 96
102												
103	S&H		10 19 23	29		LL = 65, PI = 32, see Figure C-2 Consolidation Test, see Figure C-9	TV		4,000			
104											29.2	93
105												
106												
107					CL	CLAY with SAND (CL) green-gray with light gray mottling, hard, wet, coarse-grained sand, trace fine gravel						
108												
109												
110	S&H		20 29 29	41			PP		>4,500			
111											21.9	108
112												
113												
114												
115												
116												
117												
118					CL	SANDY CLAY (CL) olive-gray to gray, very stiff to hard, wet, fine-grained sand						
119												
120												

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Project No.: 750636401

Figure: A-7d

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-7

DEPTH (feet)	Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
							SAMPLES			LABORATORY TEST DATA		
121	PB		650 psi 950 psi		CL	SANDY CLAY (CL) (continued) Consolidation Test, see Figure C-10	TV		4,000		20.7	103
130	S&H		19 24 33	40		LL = 53, PI = 28, see Figure C-2	TV		>4,500	89.8	28.2 26.0	97
138					CH	CLAY (CH) gray and olive-gray, hard, wet						
140						Consolidation Test, see Figure C-11					30.9	91
141	PB		200 psi			Triaxial Test, see Figure C-19 very stiff, trace fine-grained sand	TxUU	14,000	1,700		29.7	95
142							TV		3,500			
150												

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Project No.: 750636401 | Figure: A-7e

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-7

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
151	S&H		20 23 25	35	CH	CLAY (CH) (continued) hard LL = 78, PI = 51, see Figure C-3	TV		>4,500		28.6	97
152												
153												
154												
155												
156												
157												
158												
159												
160												
161												
162												
163												
164												
165												
166												
167												
168												
169												
170												
171												
172												
173												
174												
175												
176												
177												
178												
179												
180												

Boring terminated at a depth of 151.5 feet below ground surface.
Boring backfilled with cement grout.
Seismic downhole logging performed in boring on 1/11/17, by NorCAl Geophysical.
Groundwater obscured by drilling method.
PP = Pocket penetrometer.
TV = Torvane shear.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type

[2] Elevations based on Oakland City Datum. Elevations referenced are from the "ALTA/NSPS Land Title Survey," by Lea & Braze Engineering, Inc., dated 29 April 2016.

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Project No.: 750636401

Figure: A-7f

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-8

Boring location: See Figure 2
Logged by: J. Sanglerat
Drilled by: Pitcher Drilling
Date started: 1/11/17 Date finished: 1/12/17
Drilling method: Rotary Wash
Hammer weight/drop: 140 lbs./30 inches Hammer type: Safety Auto
Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT), Pitcher Barrel (PB), Shelby Tube (ST)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						Ground Surface Elevation: 35.1 feet[2]						
0						6.5 inches of concrete						
1					SM	SILTY SAND with GRAVEL (SM) yellow-brown, moist, fine- to medium-grained, fine subangular gravel FILL						
2												
3	HA											
4						CLAYEY SAND (SC) yellow-brown, moist, fine- to medium-grained, clay inclusions						
5					SC							
6						No samples were collected between 6 feet and 80 feet						
7						.						
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												

LANGAN

Project No.: 750636401 Figure: A-8a

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-8

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
41												
42						clay in cuttings at 42 feet						
43												
44												
45												
46												
47												
48												
49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												

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Project No.: 750636401

Figure: A-8b

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-8

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61–77						clay in cuttings at 70 feet						
78					CL	CLAY (CL) olive-gray with black and yellow-brown mottling, very stiff, wet, trace fine-grained sand						
80–81	PB		400 psi				TV		3,500		30.5	91
81–82						Consolidation Test, see Figure C-12						
82–83	S&H		13 20 27	33		hard, increase in sand content LL = 38, PI = 20, see Figure C-3	TV		4,250		18.4	
84–87												
87					CL	CLAY (CL) gray-brown with light gray gravel, hard, wet, with silt, trace gravel						
88–90												

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Project No.: 750636401 | Figure: A-8c

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-8

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
91	PB		300 psi 400 psi		CL	CLAY (CL) (continued)						
92												
93	S&H		18 31 41	50		with light gray mottling, no gravel	TV		4,500		24.4	102
94												
95												
96												
97												
98						CLAY (CH) gray, very stiff to hard, wet, fine- to medium-grained sand						
99												
100												
101	PB		250 psi 250 psi			Consolidation Test, see Figure C-12 Triaxial Test, see Figure C-20	TxUU PP	10,000	3,880 >4,500		26.6 31.1	98 92
102												
103	S&H		14 18 25	30		LL = 61, PI = 36, see Figure C-3	TV		4,000		23.5	
104					CH							
105						gravel in cuttings at 105 feet						
106												
107												
108												
109												
110	S&H		18 27 29	39		light gray mottling, hard	TV		>4,500		26.9	98
111						SANDY CLAY (CL) gray, hard, wet, fine-grained sand						
112							PP		>4,500			
113												
114					CL							
115												
116												
117						CLAY (CL) gray, very stiff to hard, wet						
118					CL							
119												
120												

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Project No.: 750636401 | Figure: A-8d

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-8

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
121	PB		450 psi		CL	CLAY (CL) (continued) Triaxial Test, see Figure C-21	TV TxUU	12,000	4,000 2,340		26.6	96
122			450 psi									
123												
124												
125												
126												
127						CLAY (CL) olive-gray, hard, wet, with silt						
128												
129												
130	S&H		17 25 29	38	CL	LL = 41, PI = 18, see Figure C-3	PP		>4,500		22.8	
131												
132												
133												
134												
135												
136												
137						CLAY (CL) gray, wet						
138												
139												
140						Consolidation Test, see Figure C-13					32.6	89
141	PB		450 psi				TV		3,500			
142												
143					CL							
144												
145												
146												
147												
148												
149												
150												

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Project No.: 750636401

Figure: A-8e

TEST GEOTECH LOG 750636401 - GEOTECH 385 14TH STREET.GPJ TR.GDT 7/10/17

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-8

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
151	S&H		20 25 32	40	CL	CLAY (CL) (continued) hard	TV		>4,500			
152												
153												
154												
155												
156												
157												
158												
159												
160												
161												
162												
163												
164												
165												
166												
167												
168												
169												
170												
171												
172												
173												
174												
175												
176												
177												
178												
179												
180												

Boring terminated at a depth of 151.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater obscured by drilling method.
PP = Pocket penetrometer.
TV = Torvane shear.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type

[2] Elevations based on Oakland City Datum. Elevations referenced are from the "ALTA/NSPS Land Title Survey," by Lea & Braze Engineering, Inc., dated 29 April 2016.

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Project No.: 750636401

Figure: A-8f

PROJECT:	385 14TH STREET Oakland, California	**Log of Boring B-9**
		PAGE 1 OF 14

Boring location:	See Figure 2	Logged by:	CSL/ HS
Date started:	6/24/17	Date finished: 6/29/17	Drilled by: Pitcher Drilling
Drilling method:	Rotary Wash		
Hammer weight/drop:	140 lbs./30 inches	Hammer type: Safety Auto	

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT), Pitcher Barrel (PB), Shelby Tube (ST)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						Ground Surface Elevation: 35.1 feet[2]						
1						6-1/2 inches of concrete						
1					SM	SILTY SAND with GRAVEL (SM) yellow-brown, moist, fine- to medium-grained, fine subangular gravel						
2						FILL						
3						CLAY SAND (SC) yellow-brown, moist, fine- to medium-grained						
4												
5					SC							
6												
7												
8						No samples were collected between 0 and 130 feet						
9												
10												
11												
12												
13						sand in cuttings at 13 feet						
14												
15												
16												
17												
18												
19												
20												
21												
22						sand in cuttings at 22 feet						
23												
24												
25												
26												
27												
28												
29												
30												

LANGAN

Project No.:	Figure:
750636401	A-9a

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31						sand in cuttings at 31 feet						
32												
33												
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
60						clay in cuttings at 60 feet						

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Project No.: 750636401

Figure: A-9b

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61												
62												
63												
64												
65												
66												
67												
68												
69												
70												
71												
72												
73												
74												
75												
76												
77												
78												
79												
80												
81												
82												
83												
84												
85												
86												
87												
88												
89												
90												

LANGAN

Project No.: 750636401

Figure: A-9c

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
91						clay in cuttings at 91 feet						
92												
93												
94												
95												
96												
97												
98												
99												
100												
101						clay in cuttings at 100 feet						
102												
103												
104												
105												
106												
107												
108												
109												
110												
111												
112												
113												
114												
115												
116												
117												
118												
119						clay in cuttings at 119 feet						
120												

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Project No.: 750636401

Figure: A-9d

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
121						clay in cuttings at 122 feet						
122												
123												
124												
125												
126												
127												
128												
129						CLAY (CH) gray, hard, wet						
130												
131	PB		200 psi				PP		>4,500			
132												
133												
134												
135												
136												
137												
138												
139					CH							
140												
141												
142												
143												
144												
145												
146												
147												
148												
149												
150												

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Project No.: 750636401

Figure: A-9e

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
151	PB					CLAY (CH) (continued)	PP		>4,500			
152												
153												
154												
155												
156												
157												
158												
159												
160												
161												
162												
163												
164												
165					CH							
166												
167												
168												
169												
170												
171	PB		200 psi				PP		>4,500			
172												
173												
174												
175												
176												
177												
178												
179												
180												

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Figure: A-9f

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
181						CLAY (CH) (continued)						
182												
183												
184												
185												
186												
187												
188												
189												
190												
191												
192												
193												
194												
195					CH							
196	PB					gray	PP		>4,500			
197												
198												
199												
200												
201												
202												
203												
204												
205												
206												
207												
208												
209												
210												

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Figure: A-9g

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
211						CLAY (CH) (continued)						
212												
213												
214												
215												
216												
217												
218												
219												
220												
221	PB		180 psi									
222						gray						
223												
224	PB		180 psi				PP		>4,500			
225					CH							
226												
227												
228												
229												
230												
231												
232												
233												
234												
235												
236												
237												
238												
239												
240												

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Figure: A-9h

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
241					CH	CLAY (CH) (continued)						
242												
243						CLAY with SAND (CL) gray, hard, wet, fine-grained sand, trace silt						
244												
245												
246	PB		190 psi				PP		4,000			
247												
248												
249												
250												
251												
252												
253												
254												
255												
256					CL							
257												
258												
259												
260												
261												
262												
263												
264												
265												
266												
267												
268												
269												
270												

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Figure: A-9i

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
271	PB		250 psi to 185 psi			CLAY with SAND (CL) (continued)	PP		>4,500			
272												
273												
274												
275												
276						coarse-grained sand in cuttings at 270 feet						
277												
278												
279												
280	S&H		50	28/		brown to gray-brown, hard	PP		>4,500			
281			40/ 3-1/2"	3-1/2"								
282												
283												
284												
285					CL							
286												
287												
288												
289												
290												
291												
292												
293												
294												
295						increased sand content						
296	PB		190 psi				PP		>4,500			
297												
298												
299												
300												

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Figure: A-9j

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
301						CLAY with SAND (CL) (continued)						
302												
303												
304												
305	S&H		85/ 6"	60/ 6"		brown, mottled gray-brown to gray, hard, trace silt, fine-grained sand	PP		>4,500			
306												
307												
308												
309												
310					CL							
311												
312												
313												
314												
315												
316												
317												
318												
319						SANDY CLAY (CL) brown to gray-brown, hard, wet, fine-grained, trace silt						
320												
321	PB						PP		>4,500			
322												
323												
324												
325					CL							
326												
327												
328												
329												
330												

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Figure: A-9k

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
331						SANDY CLAY (CL) (continued) thin layer of CLAYEY GRAVEL (GC) observed in cuttings, white, fine, subangular to angular gravel						
332												
333												
334												
335												
336												
337												
338						thin layer of CLAYEY GRAVEL (GC) observed in cuttings, white, fine subangular to angular gravel						
339												
340												
341					CL	fine to coarse-grained sand observed in cuttings						
342												
343												
344												
345	S&H		44	38/ 3"		brown to yellow-brown and gray, hard, wet, fine-grained sand, with trace coarse-grained sand	PP		>4,500			
346			54/ 3"									
347												
348												
349												
350												
351												
352					GC	CLAYEY GRAVEL (GC) light brown, very dense, wet, fine, angular gravel						
353												
354												
355	SPT		50/ 2"	35/ 2"		CLAYEY SAND (SC) yellow-brown, very dense, wet, fine- to coarse-grained						
356												
357												
358					SC							
359												
360												

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Figure: A-9I

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
361						CLAYEY SAND (SC) (continued)						
362												
363												
364												
365												
366												
367												
368												
369												
370												
371	PB					olive-brown, trace fine subangular gravel	PP		>4,500			
372												
373												
374					SC							
375												
376												
377												
378												
379												
380												
381												
382												
383												
384												
385												
386												
387						CLAY (CH)						
388					CH	brown to olive-gray, hard, wet, trace fine- to medium-grained sand						
389												
390												

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Figure: A-9m

PROJECT: **385 14TH STREET**
Oakland, California

Log of Boring B-9

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
391	PB		200 psi		CH	CLAY (CH) (continued)	PP		>4,500			
392												
393												
394												
395												
396												
397												
398												
399												
400												
401												
402												
403												
404												
405												
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413												
414												
415												
416												
417												
418												
419												
420												

Boring terminated at a depth of 392.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater obscured by drilling method.
PP = Pocket penetrometer.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type

[2] Elevations based on Oakland City Datum. Elevations referenced are from the "ALTA/NSPS Land Title Survey," by Lea & Braze Engineering, Inc., dated 29 April 2016.

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Figure: A-9n