Appendix B Geotechnical Test Borings



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 4/11/2019 **DATE FINISHED:** 4/11/2019 **DEPTH OF WATER:** 12'± **LOCATION:** See Plan

GROUND ELEVATION: +17.0'± **GROUND WATER ELEV.:** +5.0'±

BORING NO.: FPA-1

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

DEPTH	SAMPLE	SPT BLOW COUNTS			
FEET	DEPTH	(PER 6")	STRATA		DESCRIPTION OF SOIL
	S-1	1-2-2-2		S-1	Black mf SAND , little ⁺ Silt, little- f Gravel.
	0-2'				
	S-2	1 - 1 - 1 - 1		S-2	Black & Tan-Brown mf SAND , little Silt, little ⁻ mf
	2-4'				Gravel.
5'	S-3	1 - 1 - 3 - 4		S-3	TOP 12: Same as S-2 .
	4-6'				BOT 12": Tan-Brown mf SAND , little ⁺ Silt.
	S-4	4 - 6 - 7 - 4		S-4	TOP 12": Black mf SAND , and Silt, trace f Gravel.
	6-8'				BOT 12":Orange-Brown mf SAND , little ⁻ Clayey
	S-5	5-6-6-5			Silt.
10'	8-10'			S-5	Orange & Tan-Brown SAND , some ⁻ Clayey Silt,
	S-6	2 - 1 - 2 - 1			little- mf Gravel.
	10-12'			S-6	Tan-Brown CLAY & SILT , little⁺ f Sand.
15'	S-7	5 - 11 - 10 - 11		S-7	Tan-Brown cmf SAND , trace ⁻ Silt, trace ⁻ f Gravel.
	15-17'				
20'	S-8	WOH – WOH – WOH – WOH		S-8	Grey SILT & CLAY, trace f Sand.
20	20-22'	Well Well Well Well		50	
	20 22				
25'	S-9	3 - 4 - 6 - 6		S-9	Tan-Brown cmf SAND , trace⁺ f Gravel, trace- Silt.
	25-27'				
201	6.40			6.40	
30'	S-10	8-12-14-14		S-10	Light Brown SILT & CLAY, little ⁺ mf Sand, little mf
	30-32'				Gravel. (Low Recovery)
35'	S-11	12 - 13 - 14 - 13		S-11	Red-Brown cmf SAND & SILT , some mf Gravel,
	35-37'				little Silt.
SOILS ENG	SOILS ENGINEER: R. SWABSIN, PE			CONTRA	ACTOR: BORING BROTHERS, INC.
	NSPECTOR: S.			DRILLER	R: M. PANSEL
				•	ring location on the date(s) of drilling. Subsurface conditions are
likely to vary	across the proje	ect site. Interpretation of the subsurface d	ata shall be at th	e discretio	n of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-1 SHEET 2 OF 2

DATE STARTED: 4/11/2019 **DATE FINISHED:** 4/11/2019 **DEPTH OF WATER:** 12'± **LOCATION:** See Plan **GROUND ELEVATION:** +17.0'± **GROUND WATER ELEV.:** +5.0'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL		
40'	S-12 40-42'	8-12-13-11		S-12 Red-Brown cm ⁺ f SAND , some ⁺ mf Gravel, some ⁻ Silt.		
4 5'	S-13 45-47'	7 - 10 - 14 - 14		S-13 Same as S-12 .		
50'	S-14 50-52'	12 - 10 - 8 - 11		S-14 Same as S-12 . END OF BORING @ 52'		
55'						
60'						
65'						
70'						
75'						
	NEER: R. SWAE			CONTRACTOR: BORING BROTHERS, INC.		
	ISPECTOR: S. K		one one	DRILLER: M. PANSEL		
		n indicates the subsurface conditi ct site. Interpretation of the subsi		d at the specific boring location on the date(s) of drilling. Subsurface conditions are be at the discretion of the user.		



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 4/11/2019 **DATE FINISHED:** 4/11/2019 **DEPTH OF WATER:** 12'± **LOCATION:** See Plan

GROUND ELEVATION: +16.5'± **GROUND WATER ELEV.:** +4.5'±

BORING NO.: FPA-2

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u>	<u>SAMPLE</u>	SPT BLOW COUNTS	STRATA		DESCRIPTION OF SOIL			
FEET	DEPTH	(PER 6")						
	S-1	1 - 3 - 4 - 6		S-1	Black & Tan-Brown SILT , little mf Sand, little f			
	0-2'				Gravel. (Fill w/ pieces of wood)			
	S-2	6 - 14 - 8 - 8		S-2	Black & Tan-Brown mf SAND , little ⁺ mf Gravel.			
	2-4'				(Low Recovery)			
5'	S-3	4 - 5 - 4 - 11		S-3	Red-Brown cmf SAND, little+ mf Gravel.			
	4-6'							
	S-4	4 - 4 - 3 - 4		S-4	TOP 6": Red-Brown mf GRAVEL , little mf Sand.			
	6-8′				BOT 18": Dark Tan-Brown Clayey SILT , little ⁺ mf			
	S-5	9 - 8 - 7 - 5			Sand, trace f Gravel.			
10'	8-10'			S-5	TOP 3': Black Silt, little f SAND.			
	S-6	4 - 5 - 3 - 2			MID 9": Tan-Brown f SAND , little Clayey Silt.			
	10-12'				BOT 12": Tan-Brown mf SAND .			
				S-6	TOP 3" Black SILT, little mf Sand, little- f Gravel.			
					BOT 21": Grey & Tan mf SAND , little⁺ Silt & Clay.			
15'	S-7	2-6-5-6		S-7	Tan-Brown cmf SAND , little ⁺ f Gravel, trace Silty			
	15-17'				Clay.			
20'	S-8	1 - 1 - 1 - 1		S-8	Grey SILT & CLAY , little⁺ mf Sand, trace f Gravel.			
	20-22'							
25'	S-9	1 - 1 - 1 - 1		S-9	Grey SILT & CLAY , little⁺ f Sand trace⁻ f Gravel.			
	25-27'							
20/	6.40			6.40				
30'	S-10	8-9-9-9		S-10	Tan-Brown cmf SAND , some⁺ Silt.			
	30-32'							
251	C 11	10 16 24 22		C 11	Over a 2 Ded Duesus and CAND 8 CUT the set ref			
35'	S-11	19 - 16 - 24 - 22		S-11	Orange & Red-Brown cmf SAND & SILT, trace ⁺ mf			
	35-37'				Gravel.			
	NEER: R. SWA	RSIN PF		CONTRA				
	NSPECTOR: S.			CONTRACTOR: BORING BROTHERS, INC. DRILLER: M. PANSEL				
			countered at the					
likely to vary	The information shown hereon indicates the subsurface conditions encountered at the specific boring location on the date(s) of drilling. Subsurface conditions are likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.							



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-2 SHEET 2 OF 2

DATE STARTED: 4/11/2019 **DATE FINISHED:** 4/11/2019 **DEPTH OF WATER:** 12'± **LOCATION:** See Plan

GROUND ELEVATION: +16.5'± **GROUND WATER ELEV.:** +4.5'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL				
40'	S-12 40-42'	12 - 21 - 21 - 17		S-12 TOP 3": Red-Brown mf SAND , little ⁺ Silt. BOT 21": Red-Brown cmf SAND & GRAVEL , little ⁺ Silt.				
4 5'	S-13 45-47'	17 – 14 – 16 – 14		S-13 Red-Brown cmf SAND , some ⁺ mf Gravel, some Silt. (w/ ¼" Clay Lenses)				
50'	S-14	3 - 10 - 11 - 11		S-14 Grey SILT & CLAY, trace f Sand.				
	50-52'			END OF BORING @ 52'				
55'								
60'								
65'								
70'								
75'								
	NEER: R. SWA		-	CONTRACTOR: BORING BROTHERS, INC.				
	ISPECTOR: S. H		· · · · · ·	DRILLER: M. PANSEL				
		n indicates the subsurface conditi ct site. Interpretation of the subsu		ed at the specific boring location on the date(s) of drilling. Subsurface conditions are I be at the discretion of the user.				



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 3/27/2019 **DATE FINISHED:** 3/27/2019 **DEPTH OF WATER:** 5.5'± **LOCATION:** See Plan **GROUND ELEVATION:** +7.5'± **GROUND WATER ELEV.:** +2'±

BORING NO.: FPA-3

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

DEPTH	SAMPLE	SPT BLOW COUNTS	STRATA		DESCRIPTION OF SOIL
FEET	DEPTH	(PER 6")	SIRATA		DESCRIPTION OF SOIL
	S-1	3-8-8-8		S-1	TOP 5": Light Brown mf SAND , little ⁻ Silt. (Fill)
	0-2'				BOT 19": Brown & Dark Brown mf ⁺ SAND,
	S-2	8-6-7-5			some ⁺ Silt, little m ⁺ f Gravel. (Fill w/ many pieces
	2-4'				of concrete & wood)
5'	S-3	4 - 4 - 4 - 3		S-2	TOP 8": Same as S-1 BOT 19" .
	4-6'				BOT 16": Light Tan-Brown f SAND , and ⁻ Silt. (w/
	S-4	1 - 1 - 1 - 1			lenses of grey silt & clay)
	6-8′			S-3	Tan-Brown & Orange-Brown mf ⁺ SAND,
	S-5	1 - 0 - 0 - 1			some ⁺ Silt, trace ⁺ mf ⁺ Gravel.
10'	8-10'			S-4	Tan-Brown & Grey-Brown mf SAND , some ⁺ Silt,
	S-6	3 - 0 - 1 - 1			trace f Gravel. (w/ few lenses of grey clayey silt)
	10-12'			S-5	Tan-Brown mf ⁺ SAND , some ⁻ Silt, trace ⁺ f Gravel.
					(w/ few lenses of grey clayey silt)
				S-6	TOP 12": Tan-Brown mf ⁺ SAND, some ⁻ Silt, trace ⁺
15'	S-7	WOH – WOH – WOH – WOH			f Gravel. (w/ few lenses of grey clayey silt)
	15-17'				BOT 12": Dark Grey-Brown SILT & CLAY,
					some ⁺ mf Sand.
				S-7	Grey-Brown SILT & CLAY, some f Sand.
20'	S-8	WOR – WOR – WOR – 1		S-8	Grey-Brown SILT & CLAY, some f Sand.
	20-22'				, ,
25'	S-9	6 - 11 - 26 - 30		S-9	Red-Brown cmf SAND , Some ⁺ Silt, little f Gravel.
	25-27'				(lenses of Clayey Silt)
30'	S-10	16 - 23 - 21 - 14		S-10	Red-Brown c⁺mf SAND, and f Gravel, trace Silt.
	30-32'	10 - 25 - 21 - 14		3-10	Red-blown c fill SAND, and i Gravel, trace sit.
	30-32				
35'	S-11	7-9-10-8		S-11	Red-Brown c ⁺ mf SAND, and mf ⁺ Gravel
	35-37'				
	-				
	NEER: R. SWA			CONTRA	ACTOR: BORING BROTHERS, INC.
_	NSPECTOR: P.				R: S. HEADLY
				•	ring location on the date(s) of drilling. Subsurface conditions are
likely to vary	across the proje	ect site. Interpretation of the subsurface d	ald shall be at th	ie discretio	



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-3 SHEET 2 OF 2

DATE STARTED: 3/26/2019 **DATE FINISHED:** 3/26/2019 **DEPTH OF WATER:** 5.5'± **LOCATION:** See Plan

GROUND ELEVATION: +7.5'± GROUND WATER ELEV.: +2'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
40'	S-12 40-42'	8-8-9-15		S-12	Red Brown c⁺mf SAND, some⁺ mf⁺ gravel, little–Silt.
45'	S-13 45-47′	4 - 5 - 9 - 8		S-13	Grey SILT & CLAY, trace ⁻ f Sand. (micaceous)
					END OF BORING @ 47'
50'					
55'					
60'					
65'					
70/					
70'					
75'					
75'					
	NEER: R. SWAE				ACTOR: BORING BROTHERS, INC.
	ISPECTOR: P.K ion shown hereo		ions encountere		R: S. HEADLY ecific boring location on the date(s) of drilling. Subsurface conditions are
		ct site. Interpretation of the subs			



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 11/28/2018 DATE FINISHED: 11/28/2018 **DEPTH OF WATER:** 15'± **LOCATION:** See Plan

GROUND ELEVATION: +15.0'± GROUND WATER ELEV.: 0.0'±

BORING NO.: FPA-4

SHEET 1 OF 3

DEPTH	SAMPLE	SPT BLOW COUNTS	STRATA		DESCRIPTION OF SOIL		
FEET	DEPTH	(PER 6")	•				
	S-1	2 - 3 - 2 - 1		S-1	TOP 6": Dark Grey SILT , little mf Gravel, little ⁻ cmf		
	0-2'				Sand.		
	S-2	1 - 4 - 10 - 10			BOT 18": Light Brown & Tan mf SAND, trace Silt,		
	2-4'				trace ⁻ mf Gravel. (Fill)		
5'	S-3	9-8-5-4		S-2	Red-Brown & Light Grey cmf GRAVEL , some ⁻ cmf		
	4-6'				Sand, trace Silt. (Fill w/ pieces of brick &		
	S-4	3-3-4-5			concrete)		
	6-8'			S-3	Light Brown mf SAND , trace Silt, trace mf Gravel.		
10/	S-5	6-4-3-3		C A	(Fill w/ brick fragments)		
10'	8-10'			S-4	Tan-Brown mf SAND , little mf ⁺ Gravel, trace ⁺ Silt.		
	S-6	6-4-4-5		сг	(Fill)		
	10-12'			S-5	Dark Tan-Brown cm⁺f SAND , little⁻ Silt, trace⁻ cf Gravel. (Fill)		
				S-6	Grey & Tan-Brown Clayey SILT, little f Sand, trace ⁻		
15'	S-7	7 - 16 - 7 - 5			mf Gravel. (Fill w/ pieces of brick & timber)		
	15-17'			S-7	Grey-Brown SILT , little ⁻ mf Sand, trace cf Gravel.		
					(Low Recovery)		
20'	S-8	2-2-6-8		S-8	Timber Pile Fragments with Grey cm ⁺ f SAND ,		
	20-22'				trace mf Gravel, trace Silt.		
254	6.0						
25'	S-9 25-27'	WOH – WOH – WOH – WOH		S-9	Grey f SAND , and Clay & Silt, trace f Gravel.		
	25-27 S-10			C 10	TOP 12": Same as S-9 .		
	27-29'	WOH – 4 – 4 – 5		S-10	BOT 12": Grey cm ⁺ f SAND , little ⁻ mf Gravel, trace ⁺		
	21-29				Silt.		
30'	S-11	3 - 2 - 5 - 10		S-11	Light Grey-Tan SILT & CLAY , some f Sand, trace ⁻ f		
	30-32'				Gravel.		
	.						
35'	S-12	10 - 18 - 19 - 17		S-12	Red-Brown mf ⁺ GRAVEL , and cmf ⁻ Sand, little ⁻ Silt.		
	35-37'						
SOILS ENG	INEER: R. SWA	BSIN, PE		CONTRA	ACTOR: BORING BROTHERS, INC.		
-	NSPECTOR: C.				R. DOLLAR		
				•	ring location on the date(s) of drilling. Subsurface conditions are		
likely to vary	across the proje	ect site. Interpretation of the subsurface de	ata shall be at th	e discretior	n of the user.		



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-4 SHEET 2 OF 3

DATE STARTED: 11/28/2018 DATE FINISHED: 11/28/2018 **DEPTH OF WATER:** 15'± **LOCATION:** See Plan **GROUND ELEVATION:** +15.0'± **GROUND WATER ELEV.:** 0.0'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL		
40'	S-13 40-42'	12 - 13 - 26 - 27		S-13	Red-Brown cmf ⁺ GRAVEL , some ⁺ cm ⁺ f Sand, little ⁻ Clayey Silt.		
4 5'	S-14 45-47'	8 - 16 - 18 - 16		S-14	No Recovery.		
50'	S-15 50-52'	11 - 10 - 8 - 10		S-15	Red-Brown cm ⁺ f GRAVEL , little ⁺ cm ⁺ f Sand, little- Silt.		
55'	S-16 55-57'	4-4-8-4		S-16	Dark Grey SILT & CLAY , trace f Sand. (micaceous)		
60'	S-17 60-62'	25 – 7 – 10 – 16		S-17	TOP 18": Same as S-16 . BOT 6": Grey CLAY & SILT . (micaceous)		
	UD-1 63-65'	PUSH: 24" REC: 24"		UD-1	Grey CLAY & SILT, trace f Sand. (micaceous)		
65'	S-8 17-19'	21 - 6 - 9 - 11		S-18	Grey CLAY & SILT , trace ⁻ f Sand. (micaceous)		
70'	S-19 70-72'	6 - 8 - 13 - 14		S-19	Light Grey CLAY & SILT , trace ⁻ f Sand. (with Lignite fragments)		
75'	S-20 75-77'	6 - 9 - 16 - 16		S-20	Grey CLAY & SILT , trace ⁻ f Sand. (micaceous)		
	NEER: R. SWAR NSPECTOR: C. I		<u> </u>	CONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR			
The informat	ion shown hereo	n indicates the subsurface condition		d at the sp	ecific boring location on the date(s) of drilling. Subsurface conditions are		
	likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.						



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-4 SHEET 3 OF 3

DATE STARTED: 11/28/2018 **DATE FINISHED:** 11/28/2018 **DEPTH OF WATER:** 15' **LOCATION:** See Plan **GROUND ELEVATION:** +15.0'± **GROUND WATER ELEV.:** 0.0'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
80'	S-21 80-82'	15 - 17 - 19 - 22		S-21 Light Grey SILT. (micaceous)
85'	S-22 85-87'	13 – 17 – 27 – 27		S-22 Grey CLAY & SILT, trace ⁻ f Sand.
90'	S-23 90-92'	14 - 16 - 23 - 24		S-23 Same as S-22 .
95'	S-24 95-97'	20 - 25 - 23 - 24		S-24 Same as S-22 .
100'	S-25 100-102'	19 - 23 - 26 - 27		S-25 Same as S-22 . END OF BORING @ 102'
105'				
100'				
115'				
SOILS ENGIN	EER: R. SWABS	SIN, PE	<u> </u>	CONTRACTOR: BORING BROTHERS, INC.
DRILLING INS	SPECTOR: C. PU	JLASKI	one oneter	DRILLER: R. DOLLAR
				d at the specific boring location on the date(s) of drilling. Subsurface conditions are be at the discretion of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 4/10/2019 **DATE FINISHED:** 4/10/2019 **DEPTH OF WATER:** 6'± **LOCATION:** See Plan **GROUND ELEVATION:** +7.5'± **GROUND WATER ELEV.:** +1.5'±

BORING NO.: FPA-5

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

DEPTH	SAMPLE	SPT BLOW COUNTS			
FEET	DEPTH	(PER 6")	STRATA		DESCRIPTION OF SOIL
	S-1	3 - 4 - 3 - 4		S-1	TOP 6": Dark Brown SILT, trace mf Gravel.
	0-2'				BOT 18": Orange-Brown mf SAND , trace Silt,
	S-2	3 - 3 - 1 - 1			trace f Gravel.
	2-4'			S-2	Orange-Brown cmf SAND , little⁺ Silt, trace⁻ f
5'	S-3	2 - 2 - 2 - 3			Gravel.
	4-6'			S-3	Orange-Brown cmf SAND , little Silt, trace ⁻ f
	S-4	3 - 5 - 7 - 6			Gravel.
	6-8'			S-4	Tan-Brown cmf SAND , little⁺ mf Gravel, trace-
	S-5	6-7-11-13			Silt.
10'	8-10'			S-5	Orange & Tan-Brown cmf SAND , little ⁻ f Gravel.
	S-6	11 - 7 - 7 - 10		S-6	Grey & Tan-Brown cmf SAND , little ⁻ Clayey Silt,
	10-12'				trace mf Gravel.
15'	S-7	3-1-1-1		S-7	Grey Silty CLAY , little ⁻ mf Sand, trace f Gravel.
15	15-17'	5 1 1 1		5-7	(Low Recovery)
20'	S-8	2-1-1-2		S-8	Grey cmf SAND , little⁺ Silt, little mf Gravel.
20	20-22'				
25'	S-9	11 - 11 - 18 - 18		S-9	TOP 18" Orange & Red CLAY & SILT, trace mf
	25-27'				Gravel.:
					BOT 6" Grey & Red-Brown mf SAND , little ⁺ Silt.
30'	S-10	12 - 18 - 21 - 22		S-10	Red-Brown cmf SAND , some⁻ mf Gravel, little⁺
	30-32′				Silt.
35'	S-11 35-37′	5 – 9 – 12 – 9		S-11	Red-Brown mf GRAVEL, some cmf Sand, little ⁻ Silt.
					ACTOR: BORING BROTHERS, INC.
	SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: S. KEARNEY				R: SAM H.
			countered at the		ring location on the date(s) of drilling. Subsurface conditions are
likely to vary	v across the proje	ct site. Interpretation of the subsurface of	data shall be at th	e discretio	n of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-5 SHEET 2 OF 2

 DATE STARTED: 4/10/2019
 DEPTH OF WATER: 6'±

 DATE FINISHED: 4/10/2019
 LOCATION: See Plan

GROUND ELEVATION: +7.5'± **GROUND WATER ELEV.:** +1.5'±

40'		(PER 6")		DESCRIPTION OF SOIL
	S-12 40-42'	2 - 7 - 7 - 7		S-12 Same as S-11. (Low Recovery)
4 5'	S-13 45-47'	5 - 7 - 9 - 13		S-13 Grey SILT & CLAY, trace- f Sand.
50'	S-14 50-52'	4 - 8 - 10 - 12		S-14 Same as S-13 .
55'	S-15 52-57'	5-9-9-11		S-15 Same as S-13 .
60'				END OF BORING @ 57'
65'				
70'				
75'				
SOILS ENGI	NEER: R. SWAE	SSIN, PE	<u> </u>	CONTRACTOR: BORING BROTHERS, INC.
DRILLING IN	ISPECTOR: S. K	(EARNEY		DRILLER: SAM H.
		n indicates the subsurface condit t site. Interpretation of the subs		at the specific boring location on the date(s) of drilling. Subsurface conditions are be at the discretion of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 4/10/2019 **DATE FINISHED:** 4/10/2019 **DEPTH OF WATER:** 6'± **LOCATION:** See Plan

GROUND ELEVATION: +7.5'± **GROUND WATER ELEV.:** +1.5'±

BORING NO.: FPA-6

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

DEPTH	SAMPLE	SPT BLOW COUNTS	STRATA		
FEET	DEPTH	(PER 6")	SIRATA		DESCRIPTION OF SOIL
	S-1	1 - 9 - 8 - 6		S-1	Black & Tan-Brown cmf SAND , little ⁻ Silt, little mf
	0-2′				Gravel.
	S-2	4-5-4-7		S-2	TOP 6": Orange-Brown mf SAND, little Silty Clay.
	2-4'				MID 6": Tan-Brown Clayey SILT, trace f Sand.
5'	S-3	3 - 3 - 1 - 2			Bot 12": Orange-Brown cmf SAND , little ⁺ Silt.
	4-6'			S-3	TOP 6": Orange & Tan-Brown Clayey SILT , some ⁺ f
	S-4	WOH – WOH – WOH – WOH			Sand.
	6-8'				BOT 18": Orange & Tan-Brown m ⁺ f SAND , some ⁺
	S-5	4 - 7 - 11 - 9			Silt.
10'	8-10′			S-4	Orange& Tan-Brown f SAND, and Silt.
	S-6	5-6-8-8		S-5	TOP 6": Orange & Tan-Brown mf SAND , some ⁺
	10-12'				Silt.
					BOT 18" Black & Tan cmf SAND , some ⁺ Silt, trace
					f Gravel.:
15'	S-7	WOH – WOH – WOH – WOH		S-6	Grey & Tan-Brown cmf SAND , little ⁻ Silt.
	15-17′			S-7	Grey SILT & CLAY, some f Sand.
20'	S-8 20-22'	4 - 4 - 5 - 3		S-8	Grey cmf SAND , little mf Gravel, trace Silt.
25'	S-9 25-27'	3 - 3 - 3 - 4		S-9	Tan-Brown f SAND , little⁺ Clay & Silt.
30'	S-10 30-32'	10 - 12 - 12 - 13		S-10	Orange & Red-Brown cmf SAND , some⁺ Silt, trace f Gravel.
35'	S-11 35-37'	7 - 13 - 15 - 12		S-11	Red-Brown mf GRAVEL , some cmf Sand, little ⁺ Silt & Clay.
	SOILS ENGINEER: R. SWABSIN, PE				ACTOR: BORING BROTHERS, INC.
	DRILLING INSPECTOR: S. KEARNEY				R: SAM H.
			countered at the		ring location on the date(s) of drilling. Subsurface conditions are
		ect site. Interpretation of the subsurface d		•	



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-6 SHEET 2 OF 2

DATE STARTED: 4/10/2019 **DATE FINISHED:** 4/10/2019 **DEPTH OF WATER:** 6'± **LOCATION:** See Plan

GROUND ELEVATION: +7.5'± **GROUND WATER ELEV.:** +1.5'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL		
40'	S-12 40-42'	7 - 9 - 9 - 4		S-12 Red-Brown cmf SAND , some mf Gravel, little ⁻ Silt.		
4 5'	S-13 45-47'	3 - 10 - 9 - 10		S-13 Grey SILT & CLAY, trace ⁻ f Sand		
50'	S-14 50-52'	4-8-9-14		S-14 Same as S-13 .		
				END OF BORING @ 52'		
55'						
60'						
65′						
70'						
75'						
	SOILS ENGINEER: R. SWABSIN, PE			CONTRACTOR: BORING BROTHERS, INC.		
	ISPECTOR: S. K		ione oncountary	DRILLER: SAM H.		
		n indicates the subsurface condit ct site. Interpretation of the subs		d at the specific boring location on the date(s) of drilling. Subsurface conditions are be at the discretion of the user.		
		station of the subs				



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING **CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY** (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-7 SHEET 1 OF 2

DATE STARTED: 11/26/2018 DATE FINISHED: 11/26/2018 **DEPTH OF WATER:** 4'± LOCATION: See Plan

GROUND ELEVATION: +6.5'± **GROUND WATER ELEV.:** +2.5'±

DEPTH	SAMPLE	SPT BLOW COUNTS						
FEET	DEPTH	(PER 6")	STRATA		DESCRIPTION OF SOIL			
	S-1	7 - 10 - 8 - 5		S-1	Dark Grey SILT , some ⁻ mf ⁺ Sand, trace f Gravel. (w/ few			
	0-2'				roots)			
	S-2	4 - 3 - 3 - 2		S-2	No Recovery.			
	2-4'							
5'	S-3	2 - 1 - 1 - 1		S-3	Tan-Brown mf ⁺ SAND , little mf Gravel, little ⁻ Clayey Silt.			
	4-6'							
	S-4	WOH – 3 – 4 – 5		S-4	Grey-Brown cm+f SAND , some ⁻ Clayey Silt, little mf ⁺			
	6-8'				Gravel.			
	S-5	4 - 3 - 4 - 5		S-5	Grey-Brown cm ⁺ f SAND, some mf ⁺ Gravel, little Silt.			
10'	8-10'							
	S-6	6-7-7-6		S-6	Grey-Brown cm ⁺ f SAND , little m ⁻ f Gravel, little ⁻ Silt.			
	10-12'							
4.57								
15'	S-7	1-2-1-2		S-7	Grey-c ⁺ mf SAND , some ⁺ f Gravel, little Silt.			
	15-17'							
	S-8	1 - 2 - 2 - 1		S-8	Grey cmf SAND , little Silt, trace m ⁻ f Gravel. (w/ very few			
	17-19'				lenses of Clay.			
20'	S-9	1 – WOH – WOH – WOH		5.0	Grey cmf ⁺ SAN D, some Clayey Silt, trace f Gravel.			
20	20-22'			S-9	Grey chir SAND, some Clayey silt, trace i Gravel.			
	S-10	WOH – WOH – 2 – 1		S-10	TOP 16": Same as S-9 .			
	22-24'	won - won - 2 - 1		3-10	BOT 8": Dark Grey CLAY & SILT, trace ⁻ f Sand, trace ⁻ mf			
	22-24				Gravel. (w/ many fibers)			
25'	S-11	3-2-4-3		S-11	Dark Grey PEAT , little Organic Silt.			
25	25-27'	5275		5 11	burk ofcy i EAT, ittle ofganic sit.			
	25 27							
30'	S-12	4-9-6-13		S-12	Dark Grey-Brown cmf GRAVEL , and- cmf ⁺ Sand, little ⁻ Silt.			
	30-32'				(Low Recovery)			
35'	S-13	10 - 14 - 15 - 9		S-13	Dark Tan-Brown c ⁺ mf SAND , and- cmf ⁺ Gravel, little Silt.			
	35-37'							
	INEER: R. SWA				ACTOR: BORING BROTHERS, INC.			
	NSPECTOR: C.		· · · · · ·	DRILLER: R. DOLLAR				
				•	ecific boring location on the date(s) of drilling. Subsurface conditions are discretion of the user			
likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.								



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-7 SHEET 2 OF 2

DATE STARTED: 11/28/2018 **DATE FINISHED:** 11/29/2018 **DEPTH OF WATER:** 4' **LOCATION:** See Plan **GROUND ELEVATION:** +6.5'± **GROUND WATER ELEV.:** +2.5'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL		
40'	S-14 40-42'	11-10-8-8		S-14	Brown f SAND , little mf ⁺ Gravel, trace Silt.		
45'	S-15 45-47'	6-7-8-10		S-15	Light Grey CLAY & SILT . (Low Recovery, micaceous)		
50'	S-16 50-52'	5 – 7 – 13 – 15		S-16	Grey CLAY & SILT . (micaceous)		
55'	S-17 55-57′	7 - 12 - 20 - 19		S-17	Same as S-16 .		
60'	S-18 60-62	9 - 14 - 21 - 29		S-18	Same as S-16 .		
65'	S-19 65-67'	8 - 12 - 19 - 23		S-19	Same as S-16 .		
70'	S-20 70-72'	7 - 12 - 19 - 20		S-20	Grey & Dark Grey Clayey SILT . (micaceous)		
75'	S-21 75-77'	8 - 12 - 22 - 21		S-21	Same as S-20 .		
					END OF BORING @ 77'		
	NEER: R. SWAE		<u> </u>	CONTRACTOR: BORING BROTHERS, INC.			
The informat		n indicates the subsurface condit		DRILLER: R. DOLLAR ed at the specific boring location on the date(s) of drilling. Subsurface conditions are			
		t site. Interpretation of the subs					



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 11/29/2018 **DATE FINISHED:** 11/29/2018 **DEPTH OF WATER:** 4'± **LOCATION:** See Plan

GROUND ELEVATION: +7.0'± **GROUND WATER ELEV.:** +3.0'±

BORING NO.: FPA-8

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL		
	S-1	10 - 5 - 3 - 30		S-1	Dark Grey mf ⁺ SAND , some Clayey Silt, trace ⁻ f Gravel.		
	0-2'						
	S-2	2-4-2-2		S-2	Dark Grey Clayey SILT , some mf ⁺ Sand.		
_,	2-4'						
5'	S-3	3-4-5-3		S-3	Dark Grey-Brown mf SAND , some Clayey Silt, little ⁻ mf Gravel.		
	4-6' S-4	2-1-3-3		S-4	Dark Grey mf SAND , some ⁺ Silt, trace ⁺ mf Gravel.		
	6-8'	2 - 1 - 5 - 5		5-4	Dark Grey in SAND, some Sit, trace in Gravel.		
	S-5	4-5-4-3		S-5	Same as S-4 .		
10'	8-10'						
	S-6	2 – 1 – WH – 1		S-6	Dark Grey mf ⁺ SAN D, some Silt, trace ⁻ f Gravel.		
	10-12′						
	S-7	2 - 6 - 4 - 4		S-7	Dark Grey mf ⁺ SAND, some+ Silt & Clay, little mf ⁺		
	12-14'				Gravel.		
15'	S-8	WOH – WOH – WOH – WOH		S-8	Dark Grey CLAY, trace ⁻ f Sand (w/ shell fragments).		
	15-17'						
	S-9	WOH – WOH – WOH – WOH		S-9	Same as S-8 .		
	17-19'						
20'	S-10	WOH – WOH – WOH – WOH		S-10	Dark Grey Silty CLAY.		
20	20-22'			0 10			
	S-11	WOH – WOH – WOH – WOH		S-11	Same as S-10 .		
	22-24'						
	UD-1	PUSH: 24"		UD-1	Dark Grey Brown CLAY , trace ⁻ f Sand.		
25'	24-26'	REC: 24"					
	S-12	WOH – WOH – 2 – WOH		S-12	Dark Grey Silty CLAY.		
	26-28'						
30'	S-13	7 – 12 – 14 – 15		S-13	Tan-Brown cm⁺f SAND , little⁺ cmf⁺ Gravel, little⁻ Silt.		
30	30-32'	7 - 12 - 14 - 15		5-15			
	50 52						
35'	S-14	7 - 8 - 9 - 9		S-14	Same as S-13.		
	35-37						
SOILS ENG	INEER: R. SWA	I ABSIN, PE	I	CONTR/	ACTOR: BORING BROTHERS, INC.		
	NSPECTOR: C			DRILLER: R. DOLLAR			
					fic boring location on the date(s) of drilling. Subsurface conditions are		
likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.							



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-8 SHEET 2 OF 2

DATE STARTED: 11/29/2018 DATE FINISHED: 11/29/2018 **DEPTH OF WATER:** 4' **LOCATION:** See Plan **GROUND ELEVATION:** +7.0'± **GROUND WATER ELEV.:** +3.0'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
40'	S-15 40-42'	6 - 11 - 12 - 12		S-15	Tan-Brown cm ⁺ f SAND , some ⁻ c ⁻ mf Gravel, trace ⁺ Silt.
45'	S-16 45-47'	8 - 10 - 11 - 11		S-16	Tan-Brown cm⁺f GRAVEL , trace ⁻ cmf Sand, trace Silt. (Low Recovery)
					END OF BORING @ 47'
50'					
55'					
60'					
65'					
70'					
75′					
SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI					ACTOR: BORING BROTHERS, INC. R: R. DOLLAR



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

 DATE STARTED: 11/26/2018
 DEPTH OF WATER: 5'±

 DATE FINISHED: 11/26/2018
 LOCATION: See Plan

GROUND ELEVATION: +7.2'± **GROUND WATER ELEV.:** +2.2'±

BORING NO.: FPA-9

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

0-2' $S-2$ $2-4'$ $4-7-6-6$ cinders) (Fill) $5'$ $S-2$ $3-3$ $4-7-6-6$ $5-2$ $7-3-5-3$ $5'$ $S-3$ $4-6'$ $7-3-5-3$ $5-3$ $3-5-3$ $10'$ $S-3$ $5-5$ $1-2-3-2$ $5-3$ $5-5$ $1-2-3-2$ $5-4$ $5-5$ $1-2-3-2$ $10'$ $8-10'$ $5-6$ $10-12'$ $5-5$ $5-6$ $6-10-18-18$ $5-5$ $5-6$ $15'$ $8-10'$ $5-6$ $6-10-18-18$ $5-7$ $5-8$ $7-1-WOH-1-1$ $5-7$ $5-8$ $7-2-2-6-8$ $5-7$ $5-8$ $7-2-2-6-8$ $15'$ $5-7$ $5-8$ $7-2-2-6-8$ $5-7$ $7-1-WOH-1-1$ $5-7$ $5-8$ $7-2-2-6-8$ $15'$ $5-7$ $7-1-WOH-1-1-15-85-77-1-WOH-1-1-15-815'5-77-1-WOH-1-1-15-85-77-75-87-77-1-WOH-1-1-15-815'5-77-77-77-1-WOH-1-1-15-85-77-77-1-WOH-1-1-15-815'5-77-77-77-1-WOH-1-1-15-85-77-77-77-8-87-77-77-8-87-77-8-87-8-87-97-2-8-87-8-87-8-97-8-915'7'20-22'5-1010-12-18-205-107-97-108-107-1025'7'5-1020-22'10-12-18-2022-20-25-155-117-107-107-1030'7'5-1130-32'22-20-25-155-117-107-107-1030'7'5-1130-32'$	<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL		
2-4' S-3 $7-3-5-3$ S-3 Grey-Brown cm'f SAND, trace Silt, trace mf' Gravel. ($4-6'$ S-4 $2-2-3-4$ S-4 Grey-Brown cm'f SAND. Trace Silt, trace cmf' Gravel. ($6-8'$ $5-5$ $1-2-3-2$ S-5 Grey-Brown cm'f SAND. Trace Silt, trace cmf' Gravel. ($8-10'$ S-5 $1-2-3-2$ S-5 Grey-Brown cm'f SAND. Trace Silt, trace cmf Gravel. (Possible Fill) $8-10'$ S-6 $6-10-18-18$ S-7 Dark Grey Brown CLAY & SILT, little mf' Sand, trace' f $15'$ S-7 $1-WOH - 1 - 1$ S-7 Dark Grey Brown CLAY & SILT, little mf' Sand, trace' f $5-8$ $2-2-6-8$ S-7 Dark Grey Brown CLAY & SILT, little mf' Sand, trace' f $7-15'-7'$ S-7 $1-WOH - 1 - 1$ S-7 Dark Grey Brown CLAY & SILT, little mf' Sand, trace' f $5-8$ $2-2-6-8$ S-7 Dark Grey Brown CLAY & SILT, little mf' Gravel. Grey Cm'f SAND, trace' Silt, trace mf' Gravel. $20'$ S-9 WOH $-6-6-7$ S-9 Grey-Brown cmf' SAND, trace' Silt, trace mf Gravel. (Recovery) $25'$ S-10 $10-12-18-20$ S-10 Brown cm'f SAND, some' mf' Gravel, little Silt. $30'$ S-11 S			9 - 12 - 6 - 10		S-1	Dark Grey SILT , little ⁻ mf Sand, trace f Gravel. (Fly ash w/ cinders) (Fill)		
5' $5 \cdot 3$ $7 - 3 - 5 - 3$ S-3 Grey-Brown cm'f SAND, trace Silt, trace mf' Gravel. (5' $5 \cdot 3$ $2 - 2 - 3 - 4$ S-4 $Grey-Brown cm'f SAND, Trace Silt, trace cmf' Gravel. (10' 8 \cdot 10' S-5 1 - 2 - 3 - 2 S-6 Grey-Brown cm'f SAND, Trace Silt, trace cmf' Gravel. (10' 8 \cdot 10' S-5 1 - 2 - 3 - 2 S-6 Grey-Brown cm'f SAND, Ittle Silt, trace cmf Gravel. (Possible Fill) 10' 8 \cdot 10' 6 - 10 - 18 - 18 S-6 Same as S-5. 15' S-7 1 - WOH - 1 - 1 S-7 Dark Grey Brown CLAY & SILT, Ittle mf' Sand, trace 'f Gravel. (Possible Fill) 15' S-7 1 - WOH - 1 - 1 S-7 Dark Grey Brown CLAY & SILT, Ittle mf' Sand, trace 'f Gravel. (Possible Fill) 15' S-7 1 - WOH - 1 - 1 S-7 Dark Grey Brown CLAY & SILT, Ittle mf' Sand, trace 'f Gravel. (Possible Fill) 20' S-8 2 - 2 - 6 - 8 S-7 Dark Grey Brown cm'f SAND, trace' Silt, trace mf Gravel. (Recovery) 20' S-9 9 - 20 - 22' I0 - 12 - 18 - 20 S-10 Brown cm'f SAND, some mf' Gravel, little Silt. 20' $			4 - 7 - 6 - 6		S-2	Tan-Brown mf ⁺ SAND , little ⁻ Silt, trace ⁻ f Gravel. (Fill)		
S-4 $2-2-3-4$ S-4 Grey-Brown cm*f SAND. Trace Silt. trace cmf* Gravel. lenses of Clay & Silt) (Possible Fill) 10' S-5 $1-2-3-2$ S-6 8-10' S-6 $6-10-18-18$ S-5 15' S-7 $1-WOH-1-1$ S-6 15-17' S-7 $1-WOH-1-1$ S-6 S-8 $2-2-6-8$ S-7 Dark Grey Brown CLAY & SILT, little mf* Sand, trace f 20' S-9 WOH- $6-6-7$ S-8 Grey cm*f SAND, trace* Silt, trace mf* Gravel. 20' S-9 WOH- $6-6-7$ S-9 Grey-Brown cm*f SAND, trace* Silt, trace mf Gravel. 20' S-10 10-12-18-20 S-10 Brown cm*f SAND, some* mf* Gravel, little Silt. 30' S-11 $22-20-25-15$ S-11 Dark Tan-Brown cmf GRAVEL, some* cmf Sand, little Silt. 30' S-12 15-14-16-14 S-12 Dark Tan-Brown cmf SAND, and* cmf Gravel, little Silt	5'	S-3	7 - 3 - 5 - 3		S-3	Grey-Brown cm ⁺ f SAND , trace Silt, trace mf ⁺ Gravel. (Fill)		
10' $S-5$ $1-2-3-2$ S-5 Grey-Brown mf' SAND, little Silt, trace mf Gravel. 10' $S-6$ $6-10-18-18$ S-6 Same as S-5. 15' $S-7$ $1-WOH-1-1-1$ S-7 Dark Grey Brown CLAY & SILT, little mf' Sand, trace f Gravel. 15' $S-7$ $1-WOH-1-1-1$ S-7 Dark Grey Brown CLAY & SILT, little mf' Sand, trace f Gravel. 15' $S-7$ $1-WOH-1-1-1$ S-7 Dark Grey Brown CLAY & SILT, little mf' Sand, trace f Gravel. 15' $S-7$ $1-WOH-1-1-1$ S-7 Dark Grey Brown CLAY & SILT, little mf' Sand, trace f Gravel. 15' $S-7$ $1-WOH-1-1-1$ S-7 Dark Grey Brown CLAY & SILT, little mf' Sand, trace f Gravel. 20' $S-9$ $0-2-2-6-8$ S-9 Grey Cm'f SAND, trace' Silt, trace mf Gravel. 20' $S-9$ $0-2-2'$ $10-12-18-20$ S-10 Brown cm'f SAND, some mf' Gravel, little Silt. 30' $S-11$ $22-20-25-15$ S-11 Dark Tan-Brown cmf GRAVEL, some cmf Sand, little Silt. 30' $S-12$ $15-14-16-14$ S-12 Dark Tan-Brown cmf SAND, and* cmf Gravel, little Silt.		S-4	2 - 2 - 3 - 4		S-4	Grey-Brown cm ⁺ f SAND . Trace Silt. trace cmf ⁺ Gravel. (w		
S-6 10-12' S-6 Same as S-5. 15' S-7 1 - WOH - 1 - 1 S-7 Dark Grey Brown CLAY & SILT, little mf* Sand, trace' f 15-17' S-8 2 - 2 - 6 - 8 S-8 Grey cm*f SAND, trace* Silt, trace mf* Gravel. 20' S-9 WOH - 6 - 6 - 7 S-9 Grey-Brown cmf* SAND, trace* Silt, trace mf Gravel. 20' S-9 Q-22' WOH - 6 - 6 - 7 S-9 Grey-Brown cmf* SAND, trace* Silt, trace mf Gravel. 25' S-10 10 - 12 - 18 - 20 S-10 Brown cm*f SAND, some* mf* Gravel, little Silt. 30' S-11 30-32' 22 - 20 - 25 - 15 S-11 Dark Tan-Brown cmf GRAVEL, some* cmf Sand, little Silt. 35' S-12 15 - 14 - 16 - 14 S-12 Dark Tan-Brown cmf SAND, and* cmf Gravel, little Silt	10'	S-5	1-2-3-2		S-5	Grey-Brown mf ⁺ SAND, little ⁻ Silt, trace ⁻ mf Gravel.		
15-17' $5-8$ $2-2-6-8$ Gravel. $17-19'$ $2-2-6-8$ S-8 Grey cm ⁺ f SAND, trace ⁺ Silt, trace mf ⁺ Gravel. $20'$ S-9 WOH $-6-6-7$ S-9 Grey cm ⁺ f SAND, trace ⁺ Silt, trace mf Gravel. $25'$ S-10 $10-12-18-20$ S-10 Brown cm ⁺ f SAND, some ⁻ mf ⁺ Gravel, little Silt. $30'$ S-11 $22-20-25-15$ S-11 Dark Tan-Brown cmf GRAVEL, some ⁻ cmf Gravel, little Silt. $35'$ S-12 $15-14-16-14$ S-12 Dark Tan-Brown cmf SAND, and ⁺ c ⁻ mf Gravel, little Silt.	10	S-6	6 - 10 - 18 - 18		S-6			
S-8 17-19' $2-2-6-8$ S-8 Grey cm ⁺ f SAND, trace ⁺ Silt, trace mf ⁺ Gravel. Grey cm ⁺ f SAND, trace ⁺ Silt, trace mf ⁺ Gravel. 20' S-9 $20-22'$ WOH - 6 - 6 - 7 S-9 Grey-Brown cmf ⁺ SAND, trace ⁺ Silt, trace mf Gravel. (Recovery) 25' S-10 $25-27'$ 10 - 12 - 18 - 20 S-10 Brown cm ⁺ f SAND, some ⁻ mf ⁺ Gravel, little Silt. 30' S-11 $30-32'$ 22 - 20 - 25 - 15 S-11 Dark Tan-Brown cmf GRAVEL, some ⁻ cmf Gravel, little Silt. 35' S-12 15 - 14 - 16 - 14 S-12 Dark Tan-Brown cmf SAND, and ⁺ cmf Gravel, little Silt.	15'		1 – WOH – 1 – 1		S-7	Dark Grey Brown CLAY & SILT , little mf ⁺ Sand, trace ⁻ f Gravel		
20-22' Recovery) 25' \$-10 10 - 12 - 18 - 20 \$-10 Brown cm ⁺ f SAND , some ⁻ mf ⁺ Gravel, little Silt. 30' \$-11 22 - 20 - 25 - 15 \$-11 Dark Tan-Brown cmf GRAVEL , some ⁻ cmf Sand, little Silt. 35' \$-12 15 - 14 - 16 - 14 \$-12 Dark Tan-Brown cmf SAND , and ⁺ c ⁻ mf Gravel, little Silt.		S-8	2 - 2 - 6 - 8		S-8	Grey cm ⁺ f SAND , trace ⁺ Silt, trace mf ⁺ Gravel.		
25-27' 30' S-11 30-32' 22 - 20 - 25 - 15 S-11 Dark Tan-Brown cmf GRAVEL , some ⁻ cmf Sand, little S 35' S-12 15 - 14 - 16 - 14 S-12 Dark Tan-Brown cmf SAND , and ⁺ c ⁻ mf Gravel, little ⁻ Si	20'		WOH – 6 – 6 – 7		S-9	Grey-Brown cmf ⁺ SAND , trace ⁺ Silt, trace mf Gravel. (Low Recovery)		
35' S-12 15 – 14 – 16 – 14 S-12 Dark Tan-Brown cmf SAND , and ⁺ c ⁻ mf Gravel, little ⁻ Si	25'		10 - 12 - 18 - 20		S-10	Brown cm⁺f SAND , some ⁻ mf⁺ Gravel, little Silt.		
	30'		22 – 20 – 25 – 15		S-11	Dark Tan-Brown cmf GRAVEL , some ⁻ cmf Sand, little Silt.		
	35'		15 – 14 – 16 – 14		S-12	Dark Tan-Brown cmf SAND , and ⁺ c ⁻ mf Gravel, little ⁻ Silt.		
SOILS ENGINEER: R. SWABSIN, PE CONTRACTOR: BORING BROTHERS, INC. DRILLING INSPECTOR: C. PULASKI DRILLER: R. DOLLAR								
The information shown hereon indicates the subsurface conditions encountered at the specific boring location on the date(s) of drilling. Subsurface condition likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.					d at the specific boring location on the date(s) of drilling. Subsurface conditions are			



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-9 SHEET 2 OF 2

DATE STARTED: 11/26/2018 **DATE FINISHED:** 11/26/2018 **DEPTH OF WATER:** 5' **LOCATION:** See Plan GROUND ELEVATION: +7.2'± GROUND WATER ELEV.: +2.2'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
40'	S-13 40-42'	8-6-9-8		S-13 Red-Brown c ⁺ mf SAND , some cmf ⁺ Gravel, trace ⁺ Silt.
45'	S-14 45-47'	4 - 4 - 6 - 9		S-14 Grey SILT & CLAY . (micaceous)
50'	S-15 50-52'	7-6-9-10		S-15 Same as S-14 . END OF BORING @ 52'
55'				
60'				
65'				
70'				
75'				
	NEER: R. SWAE			CONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR
The informat	ion shown hereo			d at the specific boring location on the date(s) of drilling. Subsurface conditions are



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 11/29/2018 **DATE FINISHED:** 11/29/2018 **DEPTH OF WATER:** 4'± **LOCATION:** See Plan

GROUND ELEVATION: +7.0'± **GROUND WATER ELEV.:** +3.0'±

BORING NO.: FPA-10

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>Sample</u> Depth	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL	
	S-1	2-6-8-7		S-1	Dark Grey mf ⁺ SAND , some Silt, trace ⁻ f Gravel.	
	0-2′					
	S-2	3 - 7 - 9 - 10		S-2	Tan & Grey-Light Brown f SAND , little ⁺ Silt, trace ⁻ mf	
5'	2-4' S-3	9-8-11-13		S-3	Gravel. (w/ lenses of Clay) Same as S-2 .	
5	3-3 4-6'	9-8-11-15		3-3	Same as 3-2 .	
	S-4	12 - 7 - 14 - 16		S-4	Tan, Orange Brown mf SAND , some⁺ Silt & Clay.	
	6-8'					
	S-5	14 - 14 - 14 - 14		S-5	Same as S-2.	
10'	8-10'					
	S-6	11 - 10 - 11 - 9		S-6	Light Tan & Grey-Brown mf SAND , trace ⁺ Silt, trace ⁻ m	
	10-12'				Gravel.	
15'	S-7	3 - 3 - 2 - 3		S-7	Brey-Brown m⁺f SAND , little ⁻ Silt, trace ⁻ mf Gravel.	
15	15-17'	5 5 2 5		57		
20'	S-8	3 - 5 - 4 - 4		S-8	No Recovery.	
20	20-22'	5-5-4-4		5-0	NO NECOVELY.	
25'	S-9	1-3-17-14		S-9	TOP 12": Dark Grey Silty CLAY.	
	25-27'				BOT 12": Dark Grey-Brown cmf SAND , some mf ⁺ Gravel,	
					little ⁻ Silt.	
30'	S-10	15 – 17 – 22 – 23		S-10	Brown & Dark Grey mf ⁺ GRAVEL , and cm ⁺ f Sand, little	
	30-32'	15 17 22 25		0 10	Silt.	
35'	S-11	11 - 14 - 20 - 15		S-11	Same as S-10 .	
	35-37'					
	INEER: R. SWA	RSIN PE				
	NSPECTOR: C.			CONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR		
					pecific boring location on the date(s) of drilling. Subsurface conditions are	
likely to vary	across the proje	ect site. Interpretation of the subs	urface data shall	be at the	discretion of the user.	



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-10 SHEET 2 OF 2

DATE STARTED: 11/29/2018 **DATE FINISHED:** 11/29/2018 **DEPTH OF WATER:** 4' **LOCATION:** See Plan GROUND ELEVATION: +7.0'± GROUND WATER ELEV.: +3.0'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
40'	S-12 40-42'	7-9-11-10		S-12 Red-Brown c ⁺ mf SAND , some ⁺ cmf ⁺ Gravel, little ⁻ Silt.
45'	S-13 45-47'	7 – 4 – 5 – 5		S-13 TOP 8": Tan CLAY & SILT . BOT 14": Grey SILT . (micaceous)
50'	S-14 50-52'	3 - 5 - 7 - 8		S-14 Grey Clayey SILT , trace⁺ f Sand. END OF BORING @ 52'
55′				
60'				
65'				
70'				
75'				
				CONTRACTOR, DODING PROTHERS INC
	NEER: R. SWAE NSPECTOR: C. F			CONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR
			ions encountere	d at the specific boring location on the date(s) of drilling. Subsurface conditions are
likely to vary	across the project	t site. Interpretation of the subs	urface data shall	be at the discretion of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 11/21/2018 **DATE FINISHED:** 11/21/2018 **DEPTH OF WATER:** 12'± **LOCATION:** See Plan **GROUND ELEVATION:** +13.5'± **GROUND WATER ELEV.:** +1.5'±

BORING NO.: FPA-11

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL	
FEET				C 1	TOP 19", Park Cray and CAND compt mf Crayal	
	S-1	9 - 9 - 6 - 9		S-1	TOP 18": Dark Grey cmf SAND , some ⁺ mf Gravel,	
	0-2′				little Silt. (Asphalt millings)	
	S-2	9 - 12 - 12 - 16			BOT 6": Tan-Brown cm ⁺ f SAND , trace f Silt, some	
	2-4'				f Gravel. (Fill)	
5'	S-3	13 - 12 - 11 - 12		S-2	Tan-Brown m+f SAND , little Silt, trace f Gravel.	
	4-6'				(w/ lenses of Clay) (Fill)	
	S-4	6 - 6 - 3 - 4		S-3	Same as S-2 . (Low Recovery)	
	6-8′			S-4	Same as S-2 .	
	S-5	1 - 1 - WOH - 1				
10'	8-10′			S-5	Same as S-2 .	
	S-6	6 - 22 - 16 - 12		S-6	TOP 12": Dark Grey cmf SAND , and ⁻ mf ⁺ Gravel,	
	10-12'				little⁺ Silt. (w/ asphalt fragments) (Fill)	
					BOT 12": Grey-Brown cm ⁺ f SAND , and ⁻ Silt &	
					Clay, little ⁺ mf ⁺ Gravel.	
15'	S-7	1 - 1 - 1 - 1		S-7	Grey-Brown cm ⁺ f SAND , and ⁻ Clayey Silt, trace	
	15-17'				mf ⁺ Gravel.	
	S-8	1 – WOH – 1 – WOH		S-8	Grey m ⁺ f SAND , and Silty Clay, trace ⁻ f Gravel.	
	17-19'					
20'	S-9	1 - 1 - 3 - 2		S-9	Grey cm ⁺ f SAND , some Silty Clay, trace ⁻ f Gravel.	
	20-22'					
	S-10	2 - 2 - 5 - 6		S-10	Same as S-9 .	
	22-24'					
25'	S-11	4 - 1 - 2 - 8		S-11	Same as S-9 . (Low Recovery)	
	25-27′					
	S-12	16 - 13 - 21 - 12		S-12	Light Grey-Brown cm ⁺ f SAND , little Silt, trace f	
	27-29'				Gravel.	
30'	S-13	8-8-12-22		S-13	Grey-Brown Clayey SILT, some ⁻ cmf Sand, trace f	
	30-32′				Gravel.	
35'	S-14	17 - 20 - 19 - 26		S-14	Tan-Brown & Red-Brown c⁺mf SAND , and cmf⁺	
	35-37′				Gravel, little Clayey Silt.	
SOILS ENG	INEER: R. SWAB	SIN, PE		CONTRA	CTOR: BORING BROTHERS, INC.	
	NSPECTOR: C. P			DRILLER: R. DOLLAR		
				•	ing location on the date(s) of drilling. Subsurface conditions are	
likely to vary	across the project	t site. Interpretation of the subsurface	e data shall be at th	ne discretion	of the user.	



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-11 SHEET 2 OF 2

DATE STARTED: 11/21/2018 **DATE FINISHED:** 11/21/2018 **DEPTH OF WATER:** 12'± **LOCATION:** See Plan **GROUND ELEVATION:** +13.5'± **GROUND WATER ELEV.:** +1.5'±

FEET DEPTH (PER 6") STRATA DEScription of Sole 40' S-15 26 - 22 - 21 - 24 S-15 Red-Brown cmf GRAVEL, some ⁺ c ⁺ mf S 40' 40-42' S-16 S-15 Red-Brown cmf GRAVEL, some ⁺ c ⁺ mf S 45' S-16 8 - 10 - 5 - 6 S-16 Same as S-15.	and, little ⁻
50' S-17 6-8-6-9 S-17 TOP 16": Tan-Brown SILT & CLAY. 50-52' BOT 8": Grey SILT. (micaceous) END OF BORING @ 52'	
55'	
60'	
65'	
70'	
75'	
SOILS ENGINEER: R. SWABSIN, PE CONTRACTOR: BORING BROTHERS, INC.	
DRILLING INSPECTOR: C. PULASKI DRILLER: M. DANIEL	
The information shown hereon indicates the subsurface conditions encountered at the specific boring location on the date(s) of drilling. Subsurface conditions is likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.	onditions are



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 3/26/2019 **DATE FINISHED:** 3/26/2019 **DEPTH OF WATER:** 5.5'± **LOCATION:** See Plan **GROUND ELEVATION:** +7.5'± **GROUND WATER ELEV.:** +2'±

BORING NO.: FPA-12

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u>	<u>SAMPLE</u>	SPT BLOW COUNTS	STRATA		DESCRIPTION OF SOIL		
FEET	DEPTH	(PER 6")		ļ			
	S-1	3 - 5 - 11 - 13		S-1	TOP 5": Light Brown mf SAND , little ⁻ Silt. (Fill)		
	0-2′				BOT 19": Brown & Dark Brown mf ⁺ SAND,		
	S-2	9 - 15 - 11 - 15			some ⁺ Silt, little m ⁺ f Gravel. (Fill w/ many pieces		
	2-4'				of concrete & wood)		
5'	S-3	5 - 4 - 3 - 3		S-2	TOP 8": Same as S-1 BOT 19" .		
	4-6'				BOT 16": Light Yellow-Brown f SAND , and Silt.		
	S-4	1 - 1 - 1 - 2			(w/ lenses of grey silt & clay)		
	6-8′			S-3	Tan-Brown & Orange-Brown mf⁺ SAND ,		
	S-5	4 - 1 - 2 - 1			some ⁺ Silt, trace ⁺ mf ⁺ Gravel.		
10'	8-10'			S-4	Tan-Brown & Grey-Brown m⁺f SAND , little⁺ Silt,		
	S-6	2 - 2 - 2 - 3			trace f Gravel. (w/ very few lenses of grey clayey		
	10-12'				silt)		
				S-5	Tan-Brown mf SAND , little Silt, trace ⁻ mf ⁺ Gravel.		
				S-6	Tan-Brown cm ⁺ f SAND , little ⁻ Silt, trace ⁺ mf		
15'	S-7	WOH - 1 - 0 - 0			Gravel.		
	15-17'			S-7	Dark Grey-Brown SILT & CLAY, some ⁺ mf Sand.		
					(w/ few shell fragments) (<i>P. Pen = 0.5 tsf</i>)		
20'	S-8	2 - 1 - 2 - 2		S-8	Grey-Brown SILT , and ⁺ mf ⁺ Sand.		
	20-22'				(w/ few shell fragments)		
25/	6.0			6.0			
25'	S-9	11 - 14 - 12 - 14		S-9	Light Brown cm ⁺ f SAND , some ⁻ cmf ⁺ Gravel, little		
	25-27′				Silt.		
30'	S-10	16 - 15 - 17 - 16		S-10	Brown cmf SAND , little ⁺ Silt, little mf Gravel.		
	30-32'						
35'	S-11	7-7-8-13		S-11	Same as S-10		
	35-37'						
SOILS ENG	SOILS ENGINEER: R. SWABSIN, PE			CONTRACTOR: BORING BROTHERS, INC.			
		ROHMEYER, PE		DRILLER: S. HEADLY			
				•	ring location on the date(s) of drilling. Subsurface conditions are		
likely to vary	across the proje	ct site. Interpretation of the subsurface d	ata shall be at th	e discretio	n of the user.		



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-12 SHEET 2 OF 2

DATE STARTED: 3/26/2019 **DATE FINISHED:** 3/26/2019 **DEPTH OF WATER:** 5.5'± **LOCATION:** See Plan **GROUND ELEVATION:** +7.5'± **GROUND WATER ELEV.:** +2'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL	
40'	S-12 40-42'	12 - 11 - 7 - 8		S-12 Brown c ⁺ mf SAND , little mf Gravel, trace Silt.	
45'	S-13 45-47'	6-7-7-10		S-13 Dark Brown c⁺mf SAND , some mf Gravel, trace Silt.	
50'	S-14 50-52'	4-6-9-10		S-14 Grey Clayey SILT, trace f Sand. (micaceous)	
				END OF BORING @ 52'	
55'					
60'					
65'					
70'					
75'					
DRILLING IN		ROHMEYER, PE		CONTRACTOR: BORING BROTHERS, INC. DRILLER: S. HEADLY	
		n indicates the subsurface condition of the subsurface.		d at the specific boring location on the date(s) of drilling. Subsurface condition be at the discretion of the user.	ons are



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-13 SHEET 1 OF 2

DATE STARTED: 3/26/2019 **DATE FINISHED:** 3/26/2019 **DEPTH OF WATER:** 5'± **LOCATION:** See Plan

GROUND ELEVATION: +7'± GROUND WATER ELEV.: +2'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
	S-1 0-2'	4-5-8-8		S-1	Dark Grey-Brown mf ⁺ SAND , and Silt, little ⁺ mf Gravel. (Fill w/ pieces of concrete & wood)
	S-2	7 - 6 - 4 - 4		S-2	TOP 12": Same as S-1 .
	2-4'				BOT 12": Tan-Brown & Yellow-Brown mf ⁺ SAND,
5'	S-3	3-2-2-3			some Silt, little mf Gravel. (w/ few lenses of grey
	4-6'				silt & clay)
	S-4	1 - 2 - 2 - 0		S-3	Tan-Brown mf SAND, little ⁺ Silt. (w/ few lenses of
	6-8′				grey clayey silt)
	S-5	WOH – WOH – 4 – 7		S-4	TOP 14": Same as S-3 .
10'	8-10'				BOT 10": Dark Grey CLAY & SILT, trace f Sand. (w/
	S-6	1 - 0 - 1 - 1			few shell fragments) (P. Pen = 0.25 tsf)
	10-12'			S-5	Grey-Brown SILT & CLAY, little f Sand. (w/ wood
					in tip of spoon) (P. Pen = 0.25 tsf)
1 5 1	6.7			S-6	Tan-Brown m ⁺ f SAND , little ⁺ Silt. (w/ many lenses
15'	S-7	WOH – WOH – WOH – WOH		67	of grey silt & clay) Grey Clayey SILT , some mf ⁺ Sand, trace f Gravel.
	15-17'			S-7	(w/ few shell fragments)
					(w) rew shell hughlends)
20'	S-8	WOR – WOR – WOR – WOH		S-8	Grey-Brown Organic SILT , trace ⁻ f Sand. (w/ few
	20-22'				fibers) (<i>P. Pen</i> = 0.25 <i>tsf</i>)
	UD-1	PUSH: 24"		UD-1	Same as S-8 .
	23-25′	REC.: 17"			
25'	S-9	4 - 7 - 8 - 11		S-9	Brown & Light Brown cm ⁺ f SAND , little
	25-27'				mf⁺ Gravel, little⁻ Silt.
30'	S-10	21 - 16 - 17 - 16		S-10	Brown c⁺mf SAND , some⁺ cmf Gravel, little⁺ Silt.
	30-32'				
35'	S-11	2 - 1 - 2 - 5		S-11	No Recovery. (wash in spoon)
	35-37'				
					Boring collapsed @ 35'. Casing to 35' & redrill
SOILS ENG	INEER: R. SWA	BSIN, PE		CONTRA	ACTOR: BORING BROTHERS, INC.
		ROHMEYER, PE			: S. HEADLY
				•	ring location on the date(s) of drilling. Subsurface conditions are
inkery to vary	across the proje	ect site. Interpretation of the subsurface d	ata shali de at th	ie discretio	





SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-13 SHEET 2 OF 2

DATE STARTED: 3/26/2019 **DATE FINISHED:** 3/26/2019 **DEPTH OF WATER:** 5'± **LOCATION:** See Plan GROUND ELEVATION: +7'± GROUND WATER ELEV.: +2'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
40'	S-11 40-42'	5-4-5-9		S-11 Grey SILT & CLAY, trace ⁻ f Sand. (micaceous) (P. Pen = 1.75 tsf)
	40 42			END OF BORING @ 42'
4 5'				
50'				
55'				
60'				
65'				
70'				
75'				
	NEER: R. SWAE	3SIN, PE ROHMEYER, PE		CONTRACTOR: BORING BROTHERS, INC. DRILLER: S. HEADLY
The informat	ion shown hereo			d at the specific boring location on the date(s) of drilling. Subsurface conditions are



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-14 SHEET 1 OF 2

DATE STARTED: 1/9/2019 **DATE FINISHED:** 1/9/2019 **DEPTH OF WATER:** 2.5'± **LOCATION:** See Plan

GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
			Water		
5′					
10'					
15'					
20'			Mud Line		
	S-1 22-32'	PUSH: 120" REC: 24"		S-1	Dark Grey Organic Clayey SILT, trace mf Sand.
25'					
	,				
30'					
35'	S-2 35-37′	WOR – WOR – WOR – WOR		S-2	Dark Grey Organic SILT , trace mf Gravel, trace ⁻ mf Sand.
	NEER: R. SWA				CTOR: BORING BROTHERS, INC.
	NSPECTOR: C.		countered at the		M. DANIEL ng location on the date(s) of drilling. Subsurface conditions are
		on indicates the subsurface conditions end ect site. Interpretation of the subsurface d			



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-14 SHEET 2 OF 2

DATE STARTED: 1/9/2019 **DATE FINISHED:** 1/9/2019 **DEPTH OF WATER:** 2.5'± **LOCATION:** See Plan GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

<u>DEPTH</u> FEET	<u>Sample</u> Depth	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
40'	S-3 40-42'	2-6-7-8		S-3	Brown cmf GRAVEL , some cm ⁺ f Sand, little ⁻ Silt. (w/ possible concrete obstruction at 37' – 38.5')
45'	S-4 45-47'	3 - 5 - 8 - 8		S-4	Grey SILT & CLAY , trace ⁻ cm Gravel.
50'	S-5 50-52'	4 - 7 - 11 - 13		S-5	TOP 16": Same as S-4 . BOT 8": Grey SILT .
55'	S-6 55-57'	16 - 21 - 9 - 14		S-6	TOP 12": Grey SILT , trace mf Gravel, trace cmf Sand. (w/ possible cobble in the first foot) BOT 12": Dark Grey Silty CLAY , some mf ⁺ Sand. (micaceous)
60'	S-7 60-62	8 - 11 - 17 - 20		S-7	Light Grey SILT , little ⁺ f Sand.
65'	S-8 65-67'	11 - 19 - 21 - 26		S-8	Grey SILT & CLAY, trace f Sand.
70'	S-9 70-72'	9 - 17 - 23 - 22		S-9	Grey SILT & CLAY.
					END OF BORING @ 72'
75'					
	NEER: R. SWAE NSPECTOR: C. F				CTOR: BORING BROTHERS, INC. : M. DANIEL
		n indicates the subsurface conditions enditions enditions endition of the subsurface			ing location on the date(s) of drilling. Subsurface conditions are of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING
CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY
(FPA PROJECT NO. 13749.002)

DEPTH OF WATER:

LOCATION:

BORING NO.: FPA-15 SHEET 1 OF 1

DATE STARTED: N/A DATE FINISHED: DRILLING TECHNIQUE: HAMMER TYPE: GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

<u>DEPTH</u> FEET	SAMPLE DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL	
5'				Note: Test Boring Omitted from the Subsurface Exploration Program.	
10'					
15'					
20'					
25'					
30'					
35'					
SOILS ENG DRILLING I	NSPECTOR:	indicates the subsurface conditions on	CONTRACTOR: BORING BROTHERS, INC. DRILLER: e specific boring location on the date(s) of drilling. Subsurface condi	+ions are	



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 11/27/2018 **DATE FINISHED:** 11/27/2018

DEPTH OF WATER: 12'± LOCATION: See Plan

GROUND ELEVATION: +18.5'± **GROUND WATER ELEV.:** +6.5'±

BORING NO.: FPA-16

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL	
	S-1 0-2'	15 - 12 - 7 - 6		S-1	Dark Grey & Brown mf⁺ SAND , some Silt, trace ⁻ mf Gravel. (w/ few lenses of Silt & Clay) (Fill)	
	S-2 2-4'	5 - 5 - 4 - 4		S-2	Grey-Brown mf SAND , little Silt. (w/ very few lenses of Silt & Clay) (Fill)	
5'	S-3 4-6'	3 - 2 - 3 - 3		S-3	Light Tan f SAND , trace ⁺ Silt, (w/ vert few lenses of Silt & Clay) (Fill)	
	S-4 6-8'	2 - 2 - 2 - 1		S-4	Same as S-3 .	
10'	S-5 8-10'	1 - 2 - 2 - 2		S-5	Light Tan mf ⁺ SAND , trace ⁺ Silt, trace ⁻ mf Gravel. (w/ very few lenses of Silt & Clay & wood pieces) (Fill)	
10	S-6 10-12'	1 - 1 - 1 - 1		S-6	Light Tan mf ⁺ SAND , trace ⁺ Silt. (w/ very few lenses of Silt & Clay)	
	S-7 12-14'	6 - 16 - 14 - 9		S-7	Light Tan mf ⁺ SAND , trace ⁺ Silt, trace ⁻ f Gravel.	
15'	S-8 15-17'	3 - 1 - 2 - 2		S-8	Dark Grey Clayey SILT, some f Sand. (w/ few fibers)	
	S-9 17-19'	2 - 3 - 6 - 5		S-9	TOP 16": Dark Grey CLAY & SILT , some mf ⁺ Sand. (w/ few fibers)	
20'	S-10 20-22'	4 - 4 - 5 - 5		S-10	BOT 8": Dark Brown mf SAND , little ⁻ Silt. Dark Grey-Brown mf ⁺ SAND , little Silt.	
25'	S-11 25-27'	6 - 7 - 11 - 11		S-11	Brown f SAND , little Silt.	
30'	S-12 30-32'	9 - 13 - 19 - 19		S-12	Tan-Brown cmf ⁺ SAND , little Silt, trace f Gravel.	
35'	S-13 35-37′	4 - 12 - 6 - 5		S-13	Tan-Brown & Grey cm ⁺ f SAND , and Clay & Silt, trace ⁺ cm ⁺ f Gravel.	
	SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI			CONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR		
The informa	tion shown here	on indicates the subsurface condit		d at the sp	ecific boring location on the date(s) of drilling. Subsurface conditions are	
		ect site. Interpretation of the subs			с (, с	



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-16 SHEET 2 OF 2

DATE STARTED: 11/27/2018 **DATE FINISHED:** 11/27/2018 **DEPTH OF WATER:** 12' **LOCATION:** See Plan **GROUND ELEVATION:** +18.5'± **GROUND WATER ELEV.:** +6.5'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
40'	S-14 40-42'	4 - 12 - 6 - 5		S-14 Tan-Brown cmf SAND , some ⁻ Silt, little ⁺ mf ⁺ Gravel.
45'	S-15 45-47'	15 - 16 - 22 - 28		S-15 Red-Brown c⁺mf SAND , some m⁻f Gravel, trace⁺ Silt.
50'	S-16 50-52'	8 - 19 - 22 - 8		S-16 TOP 18": Red-Brown mf ⁺ GRAVEL , and cmf Sand, little ⁺ Silt. BOT 6": Grey SILT & CLAY .
55'				END OF BORING @ 52'
60'				
65'				
70'				
75'				
	NEER: R. SWAI			CONTRACTOR: BORING BROTHERS, INC.
	ISPECTOR: C. I ion shown hereo		ons encountered	DRILLER: R. DOLLAR ed at the specific boring location on the date(s) of drilling. Subsurface conditions are
		ct site. Interpretation of the subsu		



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-17 SHEET 1 OF 1

DATE STARTED: 11/27/2018 **DATE FINISHED:** 11/27/2018 **DEPTH OF WATER:** 6' **LOCATION:** See Plan **GROUND ELEVATION:** +12.8'± **GROUND WATER ELEV.:** +6.8'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
	S-1	11 - 15 - 10 - 7		S-1	Dark Grey cmf SAND , some ⁺ mf ⁺ Gravel, little Silt.
	0-2'	F 10 10 11		6.2	(Asphalt millings)
	S-2 2-4'	5 - 19 - 19 - 14		S-2	TOP 10": Dark Grey cmf SAND , some ⁻ Clay & Silt, little ⁺ mf ⁺ Gravel.
5'	2-4 S-3	11 - 8 - 5 - 4			BOT 14": Light Tan-Brown mf ⁺ SAND , little ⁻ Silt.
5	4-6'	11 0 5 4			(w/ very few lenses of Clay)
	S-4	2-2-2-1		S-3	Same as S-2 BOT 14" .
	6-8'			S-4	Dark Grey f SAND , some Silt.
	S-5	1 - 1 - 1 - 2		S-5	Grey & Light Grey-Brown mf SAND, little Silt.
10'	8-10				
	S-6	1 - 1 - 3 - 3		S-6	Dark Grey cmf ⁺ SAND, some Clayey Silt, trace f Gravel.
	10-12'				
	S-7	6 - 22 - 23 - 18		S-7	Grey-Brown cm⁺f SAND , little⁻ Silt, trace⁻ f Gravel.
	12-14'				
15'	S-8	8-8-8-6		S-8	Same as S-7 .
	15-17'				
20'	S-9	1 - 3 - 4 - 8		S-9	Dark Grey-Brown mf⁺ SAND , little Silt, trace ⁻ f Gravel.
	20-22'				
25'	S-10	5-6-7-7		S-10	Grey-Brown mf ⁺ SAND , trace Silt, trace ⁻ f Gravel.
	25-27'				
201	6.44	10 10 12 12		C 11	
30'	S-11 30-32'	10 - 10 - 12 - 13		S-11	Tan-Brown cm ⁺ f SAND , trace ⁺ Silt, trace ⁻ f Gravel.
25'	S 10	7 _ 11 _ 15 _ 13		\$ 12	Brown SILT some mf Sand
35′	S-12 35-37'	7 – 11 – 15 – 13		S-12	Brown SILT , some mf Sand.
					END OF BORING @ 37'
	NEER: R. SWAE		I	CONTR	ACTOR: BORING BROTHERS, INC.
	ISPECTOR: C. I		·		R: R. DOLLAR
		n indicates the subsurface condit ct site. Interpretation of the subs			ecific boring location on the date(s) of drilling. Subsurface conditions a



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 11/27/2018 **DATE FINISHED:** 11/27/2018 **DEPTH OF WATER:** 3' **LOCATION:** See Plan GROUND ELEVATION: +10.0'± GROUND WATER ELEV.: +7.0'±

BORING NO.: FPA-18

SHEET 1 OF 1

DRILLING TECHNIQUE: Mud Rotary

	DEPTH	(PER 6")	STRATA		DESCRIPTION OF SOIL	
	S-1	6-8-8-5		S-1	Grey f GRAVEL , some+ cm ⁺ f Sand, little Silt. (DGA)	
	0-2' S-2 2-4'	3 - 2 - 2 - 2		S-2	Grey & Tan-Brown CLAY & SILT , little⁺ mf Sand.	
5'	S-3 4-6'	4-2-2-1		S-3	Tan-Brown cmf SAND , some ⁺ Clayey Silt, trace ⁺ mf ⁺ Gravel.	
	S-4 6-8'	2 - 2 - 1 - 2		S-4	Dark Grey SILT , some cmf ⁺ Sand.	
10'	S-5 8-10	1-2-3-3		S-5	Dark Grey mf ⁺ SAND , some ⁺ Silt.	
10	S-6 10-12'	5 - 4 - 5 - 4		S-6	Grey-Brown mf SAND , some Silt.	
15'	S-7 15-17'	5 - 11 - 10 - 9		S-7	Grey-Brown mf SAND , little Silt, trace mf Gravel.	
20'	S-8 20-22'	11 - 11 - 16 - 15		S-8	Grey-Brown mf SAND , little ⁻ Silt.	
25'	S-9 25-27'	11 - 11 - 15 - 15		S-9	Light Tan-Brown mf ⁺ SAND , little Silt.	
30'	S-10 30-32'	5 - 5 - 7 - 10		S-10	Grey-Brown SILT , some f Sand.	
35'	S-11 35-37'	16 - 30 - 39 - 26		S-11	Red-Brown & Light Tan-Brown cmf SAND , some ⁻ mf⁺ Gravel, little⁺ Clayey Silt.	
					END OF BORING @ 37'	
	NEER: R. SWAE NSPECTOR: C. I		<u> </u>	CONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR		
The informat	tion shown hereo				ecific boring location on the date(s) of drilling. Subsurface conditions are discretion of the user	



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 11/26/2018 **DATE FINISHED:** 11/26/2018 **DEPTH OF WATER:** 5'± **LOCATION:** See Plan **GROUND ELEVATION:** +7.5'± **GROUND WATER ELEV.:** +2.5'±

BORING NO.: FPA-19

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL	
	S-1	2-3-3-4		S-1	Tan-Brown mf ⁺ SAND , some ⁻ Silt, trace ⁻ mf Gravel.	
	0-2'	1 – WOH – 1 – 1		6.2	Dark Grey & Tan-Brown Silty CLAY , some mf ⁺ Sand,	
	S-2 2-4'	1 - WOH - 1 - 1		S-2	trace ⁻ f Gavel.	
5'	S-3	2-3-4-5		S-3	TOP 12": Same as S-2 .	
	4-6'				BOT 12": Brown cm ⁺ f SAND , little ⁻ Silt, trace mf ⁺ Gravel.	
	S-4	1-2-2-3		S-4	TOP 18": Same as S-3, BOT 12" .	
	6-8'				BOT 6": Grey-Brown mf SAND , trace ⁺ Silt, trace f Gravel.	
101	S-5	1 – WOH – 2 – 4		S-5	Same as S-4, BOT 6" .	
10'	8-10' S-6	1-2-7-8		S-6	Grey mf ⁺ SAND , some ⁻ Silt, trace f Gravel.	
	3-0 10-12'	1-2-7-0		3-0	Grey III SAND, some Sitt, trace i Graver.	
	10 12					
15'	S-7	3 - 2 - 2 - 3		S-7	Dark Grey-Brown mf ⁺ SAND , little ⁺ Clayey Silt.	
12	5-7 15-17'	3-2-2-3		5-7	Dark Grey-Brown min SAND, Intile Clayey Sint.	
	S-8	2-2-4-6		S-8	Grey-Brown mf ⁺ SAND , little Silt, trace ⁻ f Gravel.	
	17-19'					
20'	S-9	3-6-6-7		S-9	Same as S-8 .	
	20-22'					
25'	S-10	8 - 12 - 16 - 17		S-10	Tan-Brown cmf SAND , little mf ⁺ Gravel, trace ⁺ Silt.	
	25-27'					
30'	S-11	30 - 13 - 16 - 20		S-11	Brown cm⁺f SAND , little Silt, trace ⁻ mf Gravel.	
	30-32'					
35'	S-12	18 - 20 - 19 - 18		S-12	Brown cmf ⁺ GRAVEL , some ⁺ cmf ⁻ Sand, trace ⁺ Silt.	
	35-37'	10 20 - 13 - 10		J-12		
		BSIN PF				
	SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI			CONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR		
The informa	tion shown here	on indicates the subsurface condition			ecific boring location on the date(s) of drilling. Subsurface conditions are	
likely to vary	across the proje	ect site. Interpretation of the subs	urtace data shall	be at the	discretion of the user.	



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-19 SHEET 2 OF 2

DATE STARTED: 11/26/2018 **DATE FINISHED:** 11/26/2018 **DEPTH OF WATER:** 5' **LOCATION:** See Plan

GROUND ELEVATION: +7.5'± **GROUND WATER ELEV.:** +2.5'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
40'	S-13 40-42'	3 - 3 - 5 - 7		S-13 Grey SILT & CLAY. (micaceous)
45'	S-14 45-47'	2 - 3 - 3 - 5		S-14 Grey Clayey SILT , trace ⁺ f Sand.
50'	S-15 50-52'	4 - 6 - 16 - 15		S-15 Same as S-13 . END OF BORING @ 52'
55'				
60'				
65'				
70'				
75'				
	NEER: R. SWAR			CONTRACTOR: BORING BROTHERS, INC.
The informat				DRILLER: R. DOLLAR d at the specific boring location on the date(s) of drilling. Subsurface conditions are be at the discretion of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-20 SHEET 1 OF 1

DATE STARTED: N/A DATE FINISHED: DEPTH OF WATER: LOCATION: GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

DRILLING TECHNIQUE: HAMMER TYPE:

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
5'				Note:	Test Boring Omitted from the Subsurface Exploration Program.
10'					
15'					
20'					
25'					
30'					
35'					
	NSPECTOR:	I		DRILLER:	
		on indicates the subsurface conditions enc ect site. Interpretation of the subsurface d			ng location on the date(s) of drilling. Subsurface conditions are of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 11/21/2018 **DATE FINISHED:** 11/21/2018 **DEPTH OF WATER:** 12'± **LOCATION:** See Plan GROUND ELEVATION: +16.0'± GROUND WATER ELEV.: +4.0'±

BORING NO.: FPA-21

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

S-1 $3-6-4-4$ S-1 Dark Grey mf' GRAVEL, and cmf Sand, little 'Silt. (Asphalt millings) S-2 $5-4-3-3$ S-1 Dark Grey mf' GRAVEL, and cmf Sand, little 'Silt. (Asphalt millings) S-2 $5-4-3-3$ S-1 Dark Grey mf' GRAVEL, and cmf Sand, little 'Silt. (Asphalt millings) S-3 $1-1-2-2$ S-4 S-1 Dark Grey mf' GRAVEL, and cmf Sand, little 'Silt. (W/ lenses of Silt & Clay. S-4 $1-1-1-2$ S-4 Same as S-3. S-10' S-6 $10-10-11-9$ S-6 S-6 TOP 20'': Same as S-3. BOT 4'': Dark Grey PEAT, some cmf' Gravel, little'' $15'$ S-7 WOH $-1-1-3$ S-7 S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some Clay & Silt, trace' cmf Gravel. $15'$ S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, and Clayey Silt, trace' cmf Gravel. $15'$ S-9 $1-3-WOH - WOH - 1$ S-8 Light Grey-Brown & Light Grey mf' SAND, and Clayey Silt, trace cmf Gravel. $20'$ S-9 $1-3-WOH - WOH - 1$ S-9 Dark Grey Silty CLAY, little cmf Sand, trace 'mf Gravel. $25'$ S-10 $1-1-WOH - 1$ S-10 Grey Silty CLAY, little cmf Sand, trac	<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL					
S-2 $5-4-3-3$ S-2 Light Tan mf SAND, trace Silt, trace in Gravel. (w/ lenses of Silt & Clay. 5' S-3 $1-1-2-2$ S-3 Light Tan mf SAND, trace Silt, trace in f Gravel. (w/ lenses of Silt & Clay. 10' S-4 $1-1-1-2$ S-3 S-4 10' S-5 $1-1-1-1$ S-5 Same as S-3. 10' S-6 $10-10-11-9$ S-6 TOP 20': Same as S-3. $10-12'$ S-6 $10-10-11-9$ S-6 TOP 20': Same as S-3. $0-12'$ S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace' cmf Gravel. 15' S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace' cmf Gravel. 15' S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace' cmf Gravel. 15' S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace' cmf Gravel. 20' S-9 $1-3-WOH - WOH -1$ S-8 Light Grey-Brown & Light Grey mf' SAND, and 'Claye silt, trace 'mf Gravel. 20' S-9 $1-1-WOH -1$ S-10 Grey Silty CLAY, little cmf Sand, trace 'mf Gravel. <t< td=""><td></td><td></td><td>3 - 6 - 4 - 4</td><td></td><td>S-1</td><td></td></t<>			3 - 6 - 4 - 4		S-1					
5' $5-3$ $1-1-2-2$ (w/ lenses of Silt & Clay. 5' $5-3$ $1-1-2-2$ S-3 Light Tan m ² SAND, trace Silt, trace im 'f Gravel. (w/ lenses of Silt & Clay. 10' $5-4$ $1-1-1-2$ S-4 Same as S-3. 10' $8-10'$ S-5 $1-1-1-1$ S-5 10' $8-10'$ S-6 $10-10-11-9$ S-6 $10-12'$ S-6 $10-10-11-9$ S-6 TOP 20': Same as S-3. 10' S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace' cmf Gravel. 15' S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace' cmf Gravel. 15' S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace' cmf Gravel. 15' S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace' cmf Gravel. 20' S-9 $1-3-WOH - WOH$ S-9 Dark Grey Silty CLAY, trace' f Sand. (w/ some fibers) 20-22' S-10 $1-1-WOH - 1$ S-10 Grey Silty CLAY, little cmf Sand, trace' mf Gravel. 25' S-11 2										
5' S-3 $1-1-2-2$ S-3 Light Tan mf' SAND, trace Silt, trace 'm'f Gravel. (w' lenses of Silt & Clay) 10' S-5 Same as S-3 S-5 S-6 10' S-6 $10-10-11-9$ S-6 TOP 20'': Same as S-3. BOT 4'': Dark Grey PEAT, some cmf* Gravel, little* Organic Silt, trace' cmf Sand. 15' S-7 WOH - 1 - 1 - 3 S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace cmf Gravel. 15' S-7 WOH - 1 - 1 - 3 S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace cmf Gravel. 15' S-9 1 - 3 - WOH - WOH - 1 S-8 Light Grey-Brown & Light Grey mf' SAND, and 'Clayey Silt, trace cmf Gravel. 20' S-9 1 - 3 - WOH - WOH - 1 S-9 Dark Grey Silty CLAY, trace' f Sand. (w/ some fibers) 20' S-9 1 - 3 - WOH - WOH - 1 S-10 Grey Silty CLAY, little cmf Sand, trace' mf Gravel. 25' S-11 2 - 24' 1 - 1 - WOH - 1 S-10 Grey Silty CLAY, little cmf Sand, trace 'f Gravel. 30' S-12 4 - 8 - 12 - 17 S-12 Grey-Brown mf' SAND, little Silt, trace of' Gravel. 35' S-13 3 - 37' 1 - 4 - 2 - 7 S-13			5 - 4 - 3 - 3		S-2	-				
4-6' 5-4 $1-1-1-2$ (w/ lenses of Silt & Clay) 5-8 $5-8$ $1-1-1-1$ S-5 $10'$ 8-10' S-6 $10-10-11-9$ $5-6$ $10-10-11-9$ S-6 TOP 20': Same as S-3. $15'$ S-7 WOH $-1-1-3$ S-7 $5-8$ $1-WOH - WOH - 1$ S-8 Light Grey PEAT, some cmf' Gravel, little* $15'$ S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some: Clay & Silt, trace' cmf Gravel, $15'$ S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some: Clay & Silt, trace' cmf Gravel, $15'$ S-7 WOH $-10-11$ S-8 Light Grey-Brown & Light Grey mf' SAND, and' Clayey Silt, trace cmf Gravel, $20'$ S-9 $1-3-WOH - WOH$ S-9 Dark Grey Silty CLAY, trace' f Sand. (w/ some fibers) $20-22'$ S-10 $1-1-WOH-1$ S-10 Grey Silty CLAY, trace' f Sand, trace 'm fGravel, $25'$ S-11 $4-5-5-6$ S-11 Dark Grey-Brown mf' SAND, little Silt, trace cf' Gravel, $30'$ S-12 $4-8-12-17$ S-12 Grey-Brown mf' SAND, little Silt, trace cf' Gravel, $35'$	F/		1 1 2 2		6.2					
S-4 $1-1-1-2$ S-4 Same as S-3. 10' S-5 $1-1-1-1$ S-5 Same as S-3. 10' S-6 $10-10-11-9$ S-6 TOP 20'': Same as S-3. 10' S-7 $10-10-11-9$ S-6 TOP 20'': Same as S-3. 10' S-7 $10-10-11-9$ S-6 TOP 20'': Same as S-3. 10' S-7 WOH - $1-1-3$ S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace' cmf Gravel. 15' S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace' cmf Gravel. S-8 Light Grey-Brown & Light Grey mf' SAND, and 'Clayey Silt, trace cmf Gravel. 20' S-9 $1-3-WOH-WOH$ S-9 Dark Grey Silty CLAY, trace' f Sand. (w/ some fibers) 2-22' S-10 $1-1-WOH - 1$ S-10 Grey Silty CLAY, little cmf Sand, trace' mf Gravel. 25' S-11 $2-5-27'$ $4-5-5-6$ S-11 Dark Grey-Brown mf' SAND, little Silt, trace cf' Gravel. 30' S-12 $4-8-12-17$ S-12 Grey-Brown mf' SAND, little cmf' Gravel, little' Silt. 35' S-13 $1-4-2-7$ S-13 Light Brown SILT, trace' f Sand. (micaceous)	5		1-1-2-2		5-3	-				
6.8' 5.5 $1-1-1-1$ S-5 Same as S-3. $10'$ $8.10'$ 5.6 $10-10-11-9$ S-6 TOP 20'': Same as S-3. $10-12'$ $0-10-11-9$ S-6 TOP 20'': Same as S-3. BOT 4'': Dark Grey PEAT, some cmf' Gravel, little'' $15'$ S-7 WOH $-1-1-3$ S-7 Tan-Brown mf SAND, some 'Clay & Silt, trace cmf Gravel. $5.8'$ $1-WOH - WOH - 1$ S-8 Light Grey-Brown & Light Grey mf' SAND, and 'Clayey Silt, trace cmf Gravel. $20'$ S-9 $1-3-WOH - WOH$ S-9 Dark Grey Silty CLAY, trace ' f Sand. (w/ some fibers) $20.22'$ S-10 $1-1-WOH - 1$ S-10 Grey Silty CLAY, little cmf Sand, trace' mf Gravel. $22.24'$ $1-1-WOH - 1$ S-10 Grey Silty CLAY, little cmf Sand, trace' mf Gravel. $22.24'$ $2-2.2'$ S-11 Dark Grey-Brown mf' SAND, little Silt, trace cf' Gravel. $30'$ S-12 $4-8-12-17$ S-12 Grey-Brown mf' SAND, little Silt. $30'$ S-13 $1-4-2-7$ S-13 Light Brown SILT, trace' f Sand. (micaceous) SOILS ENGINEER: R. SWABSIN, PE CONTRACTOR: BORING BROTHERS, INC. DRILLER''''. DOLLAR <			1-1-1-2		S-4					
S-5 $1-1-1-1$ S-5 Same as S-3. 10' 8-10' 10-10-11-9 S-6 TOP 20": Same as S-3. 10' S-6 $10-10-11-9$ S-6 TOP 20": Same as S-3. 10' S-7 WOH - 1 - 1 - 3 S-7 Tan-Brown mf SAND, some' Clay & Silt, trace' cmf Gravel. 15' S-7 WOH - 1 - 1 - 3 S-7 Tan-Brown mf SAND, some' Clay & Silt, trace' cmf Gravel. 15' S-7 WOH - WOH - 1 S-8 Light Grey-Brown & Light Grey mf' SAND, and' Clayey Silt, trace cmf Gravel. 20' S-9 1 - 3 - WOH - WOH - 1 S-9 Dark Grey Silty CLAY, trace' f Sand. (w/ some fibers) 20-22' S-10 1 - 1 - WOH - 1 S-10 Grey Silty CLAY, little cmf Sand, trace' mf Gravel. 25' S-11 4 - 5 - 5 - 6 S-11 Dark Grey-Brown mf' SAND, little Silt, trace cf' Gravel. 30' S-12 4 - 8 - 12 - 17 S-12 Grey-Brown mf' SAND, little cmf' Gravel, little' Silt. 35' S-13 1 - 4 - 2 - 7 S-13 Light Brown SILT, trace' f Sand. (micaceous) SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI CONTRACTOR: BORING BROTHERS, INC.			1 1 1 2		5 4					
S-6 $10-10-11-9$ S-6 TOP 20": Same as S-3. BOT 4": Dark Grey PEAT, some cmf* Gravel, little* Organic Silt, trace* cmf Sand. 15' S-7 WOH - 1 - 1 - 3 S-7 Tan-Brown mf SAND, some* Clay & Silt, trace* cmf Gravel. 15' S-7 WOH - WOH - 1 S-8 Light Grey-Brown & Light Grey mf* SAND, and* Clayey Silt, trace cmf Gravel. 20' S-9 $1-3-WOH - WOH$ S-9 Dark Grey Silty CLAY, trace* f Sand. (w/ some fibers) 20-22' S-10 $1-1-WOH - 1$ S-10 Grey Silty CLAY, little cmf Sand, trace* mf Gravel. 25' S-11 $2-5-5-6$ S-11 Dark Grey-Brown mf* SAND, little Silt, trace cf* Gravel. 30' S-12 $4-8-12-17$ S-12 Grey-Brown mf* SAND, little cmf* Gravel, little* Silt. 35' S-13 $1-4-2-7$ S-13 Light Brown SILT, trace' f Sand. (micaceous) SOILS ENGINEER: R. SWABSIN, PE CONTRACTOR: BORING BROTHERS, INC. DRILLING INSPECTOR: C. PULASKI DRILLER: R. DOLLAR			1 - 1 - 1 - 1		S-5	Same as S-3 .				
10-12'BOT 4": Dark Grey PEAT, some cmf* Gravel, little* Organic Silt, trace* cmf Sand15'S-7 15-17' S-8 17-19'WOH $-1 - 1 - 3$ 1 - WOH $- WOH - 1$ S-7 S-7 S-8 1 - WOH $- WOH - 1$ 20' 20-22' S-10 S-10 22-24'S-9 1 - 1 - WOH $- WOH$ 20-22' S-10 S-10 22-24'S-9 1 - 1 - WOH $- 1$ S-9 S-9 S-10 S-10 S-10 Grey Silty CLAY, trace* f Sand. (w/ some fibers) S-10 Grey Silty CLAY, little cmf Sand, trace* mf Gravel25'S-11 25-27'4 - 5 - 5 - 6 S-11 25-27'S-11 S-12 S-12 S-13 3-32'S-12 - 17 S-12 - 17S-12 S-12 S-13 S-13 S-13 S-13 S-13 S-37'1 - 4 - 2 - 7 S-13 S-13 S-13 - 1 - 4 - 2 - 7S-13 S-13 Light Brown SILT, trace* f Sand. (micaceous)SOILS ENGINEER: DRILLING INSPECTOR: C PULASKICONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR	10'	8-10'								
Image: Series of the series		S-6	10 - 10 - 11 - 9		S-6	TOP 20": Same as S-3 .				
15-17' S-8 17-19' $1 - WOH - WOH - 1$ S-8 Light Grey-Brown & Light Grey mf' SAND, and Clayey Silt, trace cmf Gravel20' 20-22' S-10 22-24' $1 - 3 - WOH - WOH$ S-9 S-9 Dark Grey Silty CLAY, trace 'f Sand. (w/ some fibers) S-10 Grey Silty CLAY, little cmf Sand, trace' mf Gravel25' 25' 25'S-11 25-27' $4 - 5 - 5 - 6$ S-11 S-11 Dark Grey-Brown mf' SAND, little Silt, trace cf' Gravel30' 30' 30'S-12 30-32' $4 - 8 - 12 - 17$ S-12 S-12 Grey-Brown mf' SAND, little cmf' Gravel, little' Silt35' S11 35-37' $1 - 4 - 2 - 7$ S-13 S-13 Light Brown SILT, trace 'f Sand. (micaceous)SOILS ENGINEER: DRILLING INSPECTOR: C. PULASKICONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR		10-12'								
S-8 17-19' $1 - WOH - WOH - 1$ S-8 Light Grey-Brown & Light Grey mf' SAND, and Clayey Silt, trace cmf Gravel20'S-9 20-22' S-10 22-24' $1 - 3 - WOH - WOH$ S-9 S-10Dark Grey Silty CLAY, trace' f Sand. (w/ some fibers)25'S-10 22-24' $1 - 1 - WOH - 1$ S-10 Grey Silty CLAY, little cmf Sand, trace' mf Gravel25'S-11 25-27' $4 - 5 - 5 - 6$ S-11 S-11Dark Grey-Brown mf' SAND, little Silt, trace cf' Gravel30'S-12 30-32' $4 - 8 - 12 - 17$ S-12 S-12Grey-Brown mf' SAND, little' cmf' Gravel, little' Silt35'S-13 35-37' $1 - 4 - 2 - 7$ S-13 Light Brown SILT, trace' f Sand. (micaceous)SOILS ENGINEER: DRILLING INSPECTOR: C. PULASKICONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR	15'	-	WOH - 1 - 1 - 3		S-7	Tan-Brown mf SAND , some ⁻ Clay & Silt, trace ⁻ cmf Gravel.				
20-22' S-10 22-24' 1-1-WOH - 1 S-10 Grey Silty CLAY, little cmf Sand, trace* mf Gravel. 25' S-11 25-27' 4-5-5-6 S-11 Dark Grey-Brown mf* SAND, little Silt, trace cf* Gravel. 30' S-12 30-32' 4-8-12-17 S-12 S-12 Grey-Brown mf* SAND, little cmf* Gravel, little' Silt. 35' S-13 35-37' 1-4-2-7 S-13 Light Brown SILT, trace'f Sand. (micaceous) SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI CONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR		S-8	1 – WOH – WOH – 1		S-8					
22-24' $5-11$ $4-5-5-6$ $S-11$ Dark Grey-Brown mf* SAND, little Silt, trace cf* Gravel. $25'$ $S-12$ $4-8-12-17$ $S-12$ Grey-Brown mf* SAND, little cmf* Gravel, little Silt. $30'$ $S-12$ $4-8-12-17$ $S-12$ Grey-Brown mf* SAND, little cmf* Gravel, little Silt. $35'$ $S-13$ $1-4-2-7$ $S-13$ Light Brown SILT, trace f Sand. (micaceous)SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKICONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR	20'		1 – 3 – WOH – WOH		S-9	Dark Grey Silty CLAY , trace ⁻ f Sand. (w/ some fibers)				
25-27'S-12 $4-8-12-17$ S-12Grey-Brown mf* SAND, little cmf* Gravel, little Silt30'S-13 $3-32'$ $1-4-2-7$ S-13Light Brown SILT, trace f Sand. (micaceous)35'S-13 $1-4-2-7$ S-13Light Brown SILT, trace f Sand. (micaceous)SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKICONTRACTOR: BORING BROTHERS, INC. DRILLER: R. DOLLAR			1 – 1 – WOH – 1		S-10	Grey Silty CLAY , little cmf Sand, trace⁺ mf Gravel.				
30-32' S-13 1-4-2-7 S-13 Light Brown SILT, trace f Sand. (micaceous) SOILS ENGINEER: R. SWABSIN, PE CONTRACTOR: BORING BROTHERS, INC. DRILLING INSPECTOR: C. PULASKI DRILLER: R. DOLLAR	25'		4 - 5 - 5 - 6		S-11	Dark Grey-Brown mf ⁺ SAND , little Silt, trace cf ⁺ Gravel.				
35-37' 35-37' SOILS ENGINEER: R. SWABSIN, PE CONTRACTOR: BORING BROTHERS, INC. DRILLING INSPECTOR: C. PULASKI DRILLER: R. DOLLAR	30'		4 - 8 - 12 - 17		S-12	Grey-Brown mf ⁺ SAND , little ⁻ cmf ⁺ Gravel, little ⁻ Silt.				
DRILLING INSPECTOR: C. PULASKI DRILLER: R. DOLLAR	35'		1-4-2-7		S-13	Light Brown SILT , trace ⁻ f Sand. (micaceous)				
DRILLING INSPECTOR: C. PULASKI DRILLER: R. DOLLAR					CONTR	ACTOD. DODING DOTHEDS INC				
The information shown hereon indicates the subsurface conditions encountered at the specific boring location on the date(s) of drining. Subsurface conditions are				ions encountered						
likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.	likely to vary	across the proje	ect site. Interpretation of the subst	urface data shall	be at the	discretion of the user.				



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-21 SHEET 2 OF 2

DATE STARTED: 11/21/2018 **DATE FINISHED:** 11/21/2018 **DEPTH OF WATER:** 12'± **LOCATION:** See Plan **GROUND ELEVATION:** +16.0'± **GROUND WATER ELEV.:** +4.0'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>Sample</u> Depth	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
40'	S-14 40-42'	9 - 30 - 44 - 50		S-14	Tan-Brown cm ⁺ f SAND , and cmf ⁺ Gravel, little ⁻ Clayey Silt,
45'	S-15 45-47'	14 - 19 - 18 - 23		S-15	Brown f SAND , little ⁻ Silt, trace ⁻ m ⁻ f Gravel.
50'	S-16 50-52'	4 - 6 - 12 - 17		S-16	Grey-Brown m⁺f GRAVEL , and ⁻ Silt. (Low Recovery, micaceous)
55'	S-17 55-57'	2-2-6-7		S-17	Grey SILT & CLAY , trace⁺ f Sand.
60'	S-18 60-62'	1-2-3-7		S-18	Same as S-17 .
65'	S-19 65-67'	6 - 9 - 17 - 20		S-19	Same as S-17 .
70'	S-20 70-72'	7 – 9 – 19 – 22		S-20	Same as S-17 .
75'	S-21 75-77'	13 - 18 - 37 - 40		S-21	Same as S-17 .
					END OF BORING @ 77'
	NEER: R. SWAE NSPECTOR: C. F				ACTOR: BORING BROTHERS, INC. R: R. DOLLAR
		n indicates the subsurface condit ct site. Interpretation of the subs			ecific boring location on the date(s) of drilling. Subsurface conditions are discretion of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-22 SHEET 1 OF 1

DATE STARTED: 1/7/2019 **DATE FINISHED:** 1/7/2019 **DEPTH OF WATER:** '± **LOCATION:** See Plan GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
5′			Water	
10'				
15'	S-1 15-18'	PUSH: 36" REC: 20"	Mud Line	S-1 Dark Grey Organic Clayey SILT , trace mf Sand. (Firm resistance on Sampler @18'). END OF BORING @ 18'
20'				
25'				
30'				
35'				
DRILLING I	INEER: R. SWA NSPECTOR: C. tion shown here	PULASKI	countered at the	CONTRACTOR: BORING BROTHERS, INC. DRILLER: M. DANIEL specific boring location on the date(s) of drilling. Subsurface conditions are
		ect site. Interpretation of the subsurface		



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-23 SHEET 1 OF 3

DATE STARTED: 1/4/2019 **DATE FINISHED:** 1/4/2019 **DEPTH OF WATER:** 2.5'± **LOCATION:** See Plan

GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
		(Water	
5'				
10'				
15'				
20'	S-1	PUSH: 120"	Mud Line	S-1 Dark Grey Organic Clayey SILT , trace mf Sand.
25'	23.5-33.5′	REC: 36"		
30'				
35'				
	INEER: R. SWA			CONTRACTOR: BORING BROTHERS, INC.
The informa				DRILLER: M. DANIEL specific boring location on the date(s) of drilling. Subsurface conditions are e discretion of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-23 SHEET 2 OF 3

DATE STARTED: 1/4/2019 **DATE FINISHED:** 1/4/2019 **DEPTH OF WATER:** 2.5'± **LOCATION:** See Plan GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

DRILLING TECHNIQUE: Mud Rotary HAMMER TYPE: 140 lb. Automatic Trip Hammer, 30 Inch Drop

DEPTH SAMPLE SPT BLOW COUNTS **STRATA** DESCRIPTION OF SOIL FEET DEPTH (PER 6") ----40'----WOR - WOR - WOR - WOR S-2 S-2 Dark Grey Organic SILT. 40-42' (casing resistance @ 40') --- 45'---S-3 WOR-WOR-WOR-WOR S-3 Same as S-2. 45-47' ---50'---WOR-WOR-WOR-WOR S-4 S-4 Grey **Silty CLAY**. (w/ few seashell fragments) 50-52' ---55'---WOR-WOR-WOR-WOR S-5 Grey Silty CLAY, trace⁻ f Sand, trace⁻ f Gravel. S-5 55-57' (w/ few seashell fragments) ----60'----WOR – WOR – WOR – WOR Grey **Silty CLAY**, trace⁻ mf⁺ Sand. (w/ very few S-6 S-6 60-62 seashell fragments) ---65'---S-7 WOR – WOR – WOR – WOR S-7 Grey **Silty CLAY**, trace mf Sand, trace⁻ f Gravel. 65-67' (w/ many seashell fragments) ---70'---WOR - WOR - WOR - WOR S-8 S-8 Same as S-7. 70-72' ---75'---S-9 WOH - 8 - 10 - 8 S-9 TOP 6": Same as S-8. 75-77' BOT 18": Brown cmf GRAVEL, some cm⁺f Sand, little⁻ Silt. **CONTRACTOR:** BORING BROTHERS, INC. SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI DRILLER: M. DANIEL The information shown hereon indicates the subsurface conditions encountered at the specific boring location on the date(s) of drilling. Subsurface conditions are likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.





SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-23 SHEET 3 OF 3

DATE STARTED: 1/4/2019 **DATE FINISHED:** 1/4/2019 **DEPTH OF WATER:** 2.5'± **LOCATION:** See Plan GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
80'	S-10	2-6-7-8		S-10 Grey Silty CLAY , trace f Sand, trace ⁻ f Gravel.
	80-82'			END OF BORING @ 82'
85'				
90'				
95'				
100'				
105'				
110'				
115'				
	INEER: R. SWAE NSPECTOR: C. F	PULASKI		CONTRACTOR: BORING BROTHERS, INC. DRILLER: M. DANIEL e specific boring location on the date(s) of drilling. Subsurface conditions ar



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-24 SHEET 1 OF 3

DATE STARTED: 1/7/2019 **DATE FINISHED:** 1/7/2019 **DEPTH OF WATER:** 2.5'± **LOCATION:** See Plan

GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
5'			Water	
10'				
15'				
20'				
25'	S-1 25-35′	PUSH: 120" REC: 14"	Mud Line	- S-1 Dark Grey Organic Clayey SILT , trace f Sand.
30'	,			
35'				
SOILS ENG	INEER: R. SWA	BSIN, PE		CONTRACTOR: BORING BROTHERS, INC.
	NSPECTOR: C.			DRILLER: M. DANIEL
				specific boring location on the date(s) of drilling. Subsurface conditions are
likely to vary	across the proje	ect site. Interpretation of the subsurface	data shall be at th	e discretion of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-24 SHEET 2 OF 3

DATE STARTED: 1/7/2019 **DATE FINISHED:** 1/7/2019 **DEPTH OF WATER:** 2.5'± **LOCATION:** See Plan GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

DRILLING TECHNIQUE: Mud Rotary

S-2 -0-42' S-3 -5-47' S-4 -5-2'	(PER 6") WOR – WOR – WOR – WOR WOR – WOR – WOR – WOR		S-2 S-3	Dark Grey Organic SILT , little mf Gravel. Same as S-2 .
5-47' S-4			S-3	Same as S-2 .
	WOR – WOR – WOR – WOR			
			S-4	Grey Silty CLAY .
S-5 5-57'	WOR – WOR – WOR – WOR		S-5	Same as S-4 .
S-6 50-62	WOR – WOR – WOR – WOR		S-6	Grey Silty CLAY , trace ⁻ f Sand.
S-7 5-67'	WOR – WOR – WOR – WOR		S-7	Grey Silty CLAY .
S-8 '0-72'	WOR – WOR – WOR – WOR		S-8	Grey Silty CLAY , little ⁺ cmf ⁺ Sand.
S-9 '5-77'	WOR – WOR – WOR – WOR		S-9	Grey Silty CLAY, little mf Sand
				CTOR: BORING BROTHERS, INC. M. DANIEL
iown hereoi	n indicates the subsurface conditions enc		specific bori	ng location on the date(s) of drilling. Subsurface conditions are
	5-67' S-8 D-72' S-9 5-77' R. SWAE TOR: C. F	S-67' S-8 D-72' S-9 S-9 WOR – WOR – WOR – WOR 5-77' R. SWABSIN, PE TOR: C. PULASKI	5-67' S-8 O-72' S-9 WOR – WOR – WOR – WOR S-77' R. SWABSIN, PE TOR: C. PULASKI own hereon indicates the subsurface conditions encountered at the	5-67' WOR – WOR – WOR – WOR S-8 5-72' WOR – WOR – WOR – WOR S-8 5-9 WOR – WOR – WOR – WOR S-9 7.7' S-9 CONTRACT



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-24 SHEET 3 OF 3

DATE STARTED: 1/7/2019 **DATE FINISHED:** 1/7/2019 **DEPTH OF WATER:** 2.5'± **LOCATION:** See Plan GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

DRILLING TECHNIQUE: Mud Rotary

-10 WOR – WO -82' WOR – WO -11 WOR -87' WOR – W -92' 3 –	PER 6") DR – WOR – WOR R – 5 – 6 – 6 VOH – WOH – 4		S-10 S-11 S-12	Grey Silty CLAY , little mf Sand. Same as S-10 . (micaceous)
-87' -12 WOR – V -92' -13 3 –				Same as S-10 . (micaceous)
-92' -13 3 –	VOH – WOH – 4		S 12	
			5-12	Grey Silty CLAY , little ⁺ cm ⁺ f Sand, trace mf Gravel.
-97'	6 – 10 – 12		S-13	TOP 14": Grey Silty CLAY , little ⁻ mf Sand. BOT 8": Grey & Light Grey Clayey SILT . (micaceous)
	7 – 10 – 13		S-14	Grey Silty CLAY .
	4 – 9 – 12		S-15	Grey Silty CLAY , some ⁻ f Sand.
	10 - 13 - 15		S-16	Light Grey Silty CLAY , some ⁺ f Sand.
	12 – 13 – 19		S-17	Light Grey & Dark Orange-Brown CLAY , trace ⁻ cmf Sand.
	-102' -15 2 - -107' -16 5 - 1 -112'	$\begin{array}{c c} -102' \\ 2 - 4 - 9 - 12 \\ -107' \\ -16 \\ -112' \\ 5 - 10 - 13 - 15 \\ -17 \\ 7 - 12 - 13 - 19 \end{array}$	$\begin{array}{c c} -102' \\ 2 - 4 - 9 - 12 \\ -107' \\ -16 \\ -112' \\ 5 - 10 - 13 - 15 \\ -17 \\ 7 - 12 - 13 - 19 \end{array}$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING BORING NO.: FPA-25 CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY SHEET 1 OF 3 (FPA PROJECT NO. 13749.002) **DATE STARTED:** 1/6/2019 **DEPTH OF WATER:** 2.5'± **GROUND ELEVATION: N/A DATE FINISHED:** 1/6/2019 LOCATION: See Plan **GROUND WATER ELEV.:** N/A DRILLING TECHNIQUE: Mud Rotary HAMMER TYPE: 140 lb. Automatic Trip Hammer, 30 Inch Drop SPT BLOW COUNTS DEPTH SAMPLE **STRATA DESCRIPTION OF SOIL** FEET DEPTH (PER 6") Water --- 5'-------10'-------15'-------20'----Mud Line ---25'---S-1 PUSH: 120" S-1 Dark Grey Organic Clayey SILT, trace mf Sand. 25-35' REC: 14" ---30'------35'---

 SOILS ENGINEER: R. SWABSIN, PE
 CONTRACTOR: BORING BROTHERS, INC.

 DRILLING INSPECTOR: C. PULASKI
 DRILLER: M. DANIEL

 The information shown hereon indicates the subsurface conditions encountered at the specific boring location on the date(s) of drilling. Subsurface conditions are likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-25 SHEET 2 OF 3

DATE STARTED: 1/6/2019 **DATE FINISHED:** 1/6/2019 **DEPTH OF WATER:** 2.5'± **LOCATION:** See Plan

GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
40'					
45'	S-2 45-47'	WOR – WOR – WOR – WOR		S-2	Grey Silty CLAY , trace f Sand. (w/ some seashell fragments)
50'	S-3 50-52'	WOR – WOR – WOR – WOR		S-3	Same as S-2 .
55'	S-4 55-57'	WOR – WOR – WOR – WOR		S-4	Grey Silty CLAY.
60'	S-5 60-62	WOR – WOR – WOR – WOR		S-5	Same as S-4 .
65'	S-6 65-67'	WOR – WOR – WOR – WOR		S-6	Same as S-4 . (w/ some seashell fragments)
70'	S-7 70-72'	WOR – WOR – WOR – WOR		S-7	Same as S-4 . (w/ few seashell fragments)
75'	S-8 75-77'	WOR – WOR – WOR – WOR		S-8	Same as S-4 .
DRILLING IN	SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI			DRILLER:	CTOR: BORING BROTHERS, INC. M. DANIEL
		in indicates the subsurface conditions enc ct site. Interpretation of the subsurface d			ing location on the date(s) of drilling. Subsurface conditions are of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-25 SHEET 3 OF 3

DATE STARTED: 1/6/2019 **DATE FINISHED:** 1/6/2019 **DEPTH OF WATER:** 2.5'± **LOCATION:** See Plan GROUND ELEVATION: N/A GROUND WATER ELEV.: N/A

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
80'	S-9 80-82'	WOR – WOH – 8 – 10		S-9	Grey Silty CLAY , little ⁺ m ⁺ f Sand.
85'	S-10 85-87'	2 - 8 - 10 - 22		S-10	Grey Silty CLAY , little ⁻ cm⁺f Sand.
90'	S-11 90-92'	WOR – 3 – 4 – 8		S-11	Grey Silty CLAY . (w/ intermittent lenses of Silt)
95'	S-12 95-97'	5 - 12 - 18 - 21		S-12	Grey & Dark Grey Clayey SILT , trace ⁻ mf Sand. (micaceous)
100'	S-13 100-102'	7 – 15 – 25 – 23		S-13	TOP 19": Grey Clayey SILT . BOT 5": Grey f SAND , and Clayey Silt.
105'	S-14 105-107'	WOR – 3 – 4 – 8		S-14	Grey CLAY & SILT.
					END OF BORING @ 107'
110'					
115'					
SOILS ENGI	NEER: R. SWAB	SIN. PE			CTOR: BORING BROTHERS, INC.
DRILLING IN	ISPECTOR: C. P	ULASKI		DRILLER:	M. DANIEL
		n indicates the subsurface conditions end t site. Interpretation of the subsurface d			ng location on the date(s) of drilling. Subsurface conditions are of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 10/5/2020 **DATE FINISHED:** 10/5/2020 **DEPTH OF WATER:** 5'± **LOCATION:** See Plan **GROUND ELEVATION:** +8.5'± **GROUND WATER ELEV.:** +3.5'±

BORING NO.: FPA-26

SHEET 1 OF 1

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u>	<u>SAMPLE</u>	SPT BLOW COUNTS	STRATA		DESCRIPTION OF SOIL
FEET	DEPTH	(PER 6")			
	S-1	4 - 9 - 7 - 6		S-1	Grey mf ⁺ GRAVEL , little cmf Sand, little Silt. (DGA)
	0-2' S-2	5-4-3-1		S-2	Same as S-1 .
	2-4'	2-4-2-1		5-2	Jaine as 3-1 .
5'	S-3	2 - 1 - 1 - 1		S-3	Same as S-1 .
	4-6'				
	S-4	2 - 1 - 1 - 2		S-4	Same as S-1 .
	6-8'			6.5	
10'	S-5 8-10'	2 - 3 - 2 - 5		S-5	Dark Brown f SAND , little ⁻ Silt.
10	8-10 S-6	2-2-2-3		S-6	Dark Brown mf ⁺ SAND , little ⁻ Silt.
	10-12'			50	
	-				
15'	S-7	6 – 15 – 15 – 15		S-7	Brown mf ⁺ SAND , little Silt, trace cmf Gravel.
	15-17'				
20'	S-8	9-11-14-16		S-8	Brown mf⁺ SAND , little Silt.
	20-22'				
25'	S-9	9 - 9 - 10 - 11		S-9	Brown mf ⁺ SAND, some ⁻ Silt, trace ⁻ mf Gravel.
25	25-27'	5 5 10 11		5-5	Brown mi SAND, some sitt, trace mi Gravei.
_					
30'	S-10	7 - 8 - 11 - 10		S-10	Grey-Brown mf ⁺ SAND , some Silt, trace ⁺ mf ⁺
	30-32'				Gravel.
					END OF BORING AT 32'
35'					
					ACTOR: BORING BROTHERS, INC.
	NEER: R. SWA NSPECTOR: C.				CTOR: BORING BROTHERS, INC.
The informa	tion shown here	on indicates the subsurface conditions enc		specific bo	ring location on the date(s) of drilling. Subsurface conditions are
likely to vary	across the proje	ect site. Interpretation of the subsurface d	ata shall be at th	e discretion	n of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 10/2/2020 **DATE FINISHED:** 10/2/2020 **DEPTH OF WATER:** 4'± **LOCATION:** See Plan

GROUND ELEVATION: +6.0'± GROUND WATER ELEV.: +2.0'±

BORING NO.: FPA-27

SHEET 1 OF 1

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
	S-1 0-2'	7-11-10-9		S-1 Dark Grey and Brown cm ⁺ f SAND , little Silt, trace f Gravel.
	S-2	6-3-4-3		S-2 Grey-Brown cm ⁺ f SAND , little ⁺ Silt, trace ⁻ f Gravel.
5'	2-4' S-3	2 - 2 - 1 - 4		(w/ few 2" streaks of silt & clay) S-3 Tan-Brown cm ⁺ f SAND , some Silt & Clay.
	4-6' S-4	4 - 3 - 6 - 3		S-4 Grey cm ⁺ f SAND , some ⁻ Silt & Clay, trace ⁻ f Gravel.
	6-8' S-5	2 - 2 - 4 - 4		S-5 Grey cm ⁺ f SAND , some ⁺ Silt & Clay, little mf ⁺
10'	8-10' S-6	WOH - 1 - 2 - 3		Gravel. S-6 Grey-Brown cm ⁺ f SAND , and ⁻ Silt.
	10-12'			
15'	S-7	4-6-8-11		S-7 Brown mf SAND , trace Silt.
	15-17'			
2.01	6.0	0 14 14 12		
20'	S-8 20-22'	8-11-11-13		S-8 Same as S-7 .
25'	S-9 25-27'	11 - 13 - 13 - 12		S-9 Dark Brown f SAND , some ⁻ Silt.
	25-27			END OF BORING AT 27'
30'				
30				
35'				
	I NEER: R. SWA NSPECTOR: C.			CONTRACTOR: BORING BROTHERS, INC. DRILLER: S. HEADLEY
			ountered at the	e specific boring location on the date(s) of drilling. Subsurface conditions are
likely to vary	across the proje	ect site. Interpretation of the subsurface d	ata shall be at th	he discretion of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 10/5/2020 **DATE FINISHED:** 10/5/2020 **DEPTH OF WATER:** 7'± **LOCATION:** See Plan

GROUND ELEVATION: +9.5'± **GROUND WATER ELEV.:** +2.5'±

BORING NO.: FPA-28

SHEET 1 OF 1

DRILLING TECHNIQUE: Mud Rotary

DEDTU								
<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL			
	S-1	20 - 16 - 6 - 15		S-1	Dark Grey cm ⁺ f SAND , some mf ⁺ Gravel, little Silt.			
	0-2'				(w/ many asphalt pieces)			
	S-2	23 - 15 - 16 - 12		S-2	Tan-Brown cmf ⁺ SAND , some Clayey Silt, trace f			
	2-4'				Gravel.			
5'	S-3	7 – 9 – 5 – 5		S-3	Tan-Brown mf ⁺ SAND, little ⁺ Silt, trace mf ⁺ Gravel.			
	4-6'							
	S-4	1 - 3 - 2 - 1		S-4	Tan-Brown cm ⁺ f SAND , little Silt, trace mf ⁺			
	6-8'				Gravel.			
	S-5	WOH – WOH – WOH – WOH		S-5	Tan-Brown mf SAND , little⁺ Silt, trace⁻ mf Gravel.			
10'	8-10'							
	S-6	2 - 2 - 3 - 5		S-6	Grey-Brown cmf ⁺ SAND , little Silt, trace ⁻ f Gravel.			
	10-12'							
15'	S-7	WOH – 4 – 3 – 2		S-7	Dark Grey SILT , and cm⁺f Sand, trace ⁻ mf⁺ Gravel.			
	15-17'							
20'	S-8	WOH – WOH – WOH – WOH		S-8	Dark Grey SILT , some mf⁺ Sand.			
	20-22'							
25'	S-9	2 2 2 8		5.0	Crow Brown cmft SAND come Clavou Silt trace			
25'	25-27'	2-3-2-8		S-9	Grey-Brown cmf ⁺ SAND , some ⁻ Clayey Silt, trace mf Gravel.			
	25-27				mi Gravei.			
30'	S-10	7 - 16 - 18 - 19		S-10	Brown cmf SAND , and ⁻ cm ⁺ f Gravel, little ⁺ Silt &			
50	30-32'	, 10 10 15		5 10	Clay.			
	30 32							
					END OF BORING AT 32'			
35'								
SOILS ENG	INEER: R. SWA	I. IBSIN. PE	1	CONTRA	ACTOR: BORING BROTHERS, INC.			
	NSPECTOR: C.				R: S. HEADLEY			
					ring location on the date(s) of drilling. Subsurface conditions are			
likely to vary	across the proje	ect site. Interpretation of the subsurface d	ata shall be at th	e discretio	n of the user.			



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 10/5/2020 **DATE FINISHED:** 10/5/2020 **DEPTH OF WATER:** 4.5'± **LOCATION:** See Plan **GROUND ELEVATION:** +8.0'± **GROUND WATER ELEV.:** +3.5'±

BORING NO.: FPA-29

SHEET 1 OF 1

DRILLING TECHNIQUE: Mud Rotary

FEET	DEPTH	(PER 6")	STRATA		DESCRIPTION OF SOIL
	S-1	1 - 4 - 4 - 4		S-1	TOP 6": Dark Grey cm ⁺ f SAND , some ⁺ Silt, trace
	0-2' S-2	1-4-3-2			cmf Gravel. BOT 18": Dark Grey and Tan SILT & CLAY , little ⁻
	3-2 2-4'	1-4-5-2			mf ⁺ Sand, trace cmf Gravel.
5'	S-3	1 – 2 – WOH – 1		S-2	Tan-Brown Clayey SILT , little ⁺ mf ⁺ Sand, trace mf ⁺
	4-6'				Gravel.
	S-4	1 - 4 - 7 - 7		S-3	Tan cm ⁺ f SAND , little Silt, trace mf Gravel.
	6-8'			S-4	TOP 6": Same as S-3 .
10/	S-5	3-4-6-8			BOT 18": Light Grey-Brown cmf ⁺ SAND , little Silt,
10'	8-10' S-6	4-9-9-6		S-5	trace cmf Gravel. Grey-Brown cm⁺f SAND , little Silt, trace cmf
	10-12'	4 - 9 - 9 - 0		5-5	Gravel.
	10 12			S-6	Light Grey-Brown cmf SAND , some ⁻ mf Gravel,
					little Silt.
15'	S-7	1 – WOH – 1 – 2		S-7	No Recovery.
	15-17'				
20'	S-8	1 – WOH – 1 – 2		S-8	Grey-Brown cm ⁺ f SAND , little ⁻ Silt, little mf ⁺
	20-22'				Gravel.
25'	S-9	4 - 3 - 4 - 10		S-9	Brown Clayey SILT , trace cmf ⁺ Sand, trace ⁻ f
	25-27'				Gravel.
30'	S-10	13 - 14 - 15 - 14		S-10	Brown cm ⁺ f SAND , some mf ⁺ Gravel, little ⁺ Silt.
	30-32'				,,,,,,
					END OF BORING AT 32'
35'					
	NEER: R. SWA				ACTOR: BORING BROTHERS, INC.
	NSPECTOR: C.		countered at the		R: S. HEADLEY ring location on the date(s) of drilling. Subsurface conditions are
		ect site. Interpretation of the subsurface d			



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 10/2/2020 **DATE FINISHED:** 10/2/2020 **DEPTH OF WATER:** 4.5'± **LOCATION:** See Plan GROUND ELEVATION: +7.0'± GROUND WATER ELEV.: +2.5'±

BORING NO.: FPA-30

SHEET 1 OF 1

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL	
	S-1 0-2' S-2	6-8-6-8 4-6-6-5		S-1	TOP 10": Dark Grey mf ⁺ SAND , some Silt, trace f Gravel. (Fill w/ some cinders) BOT 14": Light Tan-Brown SILT , some cmf ⁺ Sand,	
5'	2-4' S-3 4-6'	3-3-1-2		S-2	trace f Gravel. (w/ some clay lenses) Light Tan-Brown mf ⁺ SAND , little Silt, trace ⁻ f Gravel.	
	S-4 6-8'	1-3-2-3		S-3 S-4	Same as S-2 . Grey-Brown mf SAND , little Silt, trace⁺ mf⁺	
10'	S-5 8-10' S-6	2 - 2 - 4 - 5 3 - 2 - 4 - 4		S-5	Gravel. Grey-Brown cmf SAND , some⁻ mf⁺ Gravel, little Silt.	
	10-12'	5277		S-6	Grey-Brown cmf ⁺ SAND , little ⁺ Silt, trace mf ⁺ Gravel.	
15'	S-7 15-17'	2-2-3-1		S-7	Grey-Brown cm ⁺ f SAND , and Organic Silt, trace ⁺ mf ⁺ Gravel.	
20'	S-8 20-22'	WOH – 2 – 2 – 2		S-8	Grey Organic SILT , and⁻ cm⁺f Sand, trace⁻ mf⁺ Gravel.	
25'	S-9 25-27'	2 - 10 - 9 - 10		S-9	Brown mf ⁺ SAND , little Silt.	
30'	S-10 30-32'	11 - 12 - 16 - 23		S-10	Tan-Brown cm⁺f SAND , some⁻ mf⁺ Gravel, little⁺ Silt.	
					END OF BORING AT 32'	
35'						
	INEER: R. SWA		1	CONTRACTOR: BORING BROTHERS, INC.		
The informa		on indicates the subsurface conditions end		specific bo	R: S. HEADLEY ring location on the date(s) of drilling. Subsurface conditions are	
likely to vary	across the proje	ect site. Interpretation of the subsurface d	iata shail be at th	ie discretio	n of the user.	



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 9/30/2020 **DATE FINISHED:** 9/30/2020 **DEPTH OF WATER:** 5.5'± **LOCATION:** See Plan

GROUND ELEVATION: +6.0'± **GROUND WATER ELEV.:** +0.5'±

BORING NO.: FPA-31

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

DEDTU					
<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
	S-1	9-14-9-8		S-1	Dark Brown cmf ⁺ SAND , some Silt, trace f Gravel.
	0-2'				· · · · · · · · · · · · · · · · · · ·
	S-2	2 - 2 - 4 - 2		S-2	Light Brown mf SAND , trace⁺ Silt, trace f Gravel.
	2-4'				ç
5'	S-3	2 - 2 - 2 - 2		S-3	Light Brown mf ⁺ SAND , little ⁻ mf ⁺ Gravel, little ⁻
	4-6'				Silt.
	S-4	1 - 2 - 2 - 2		S-4	Grey mf SAND , little Silt & Clay, trace ⁻ mf ⁺ Gravel.
	6-8'				
	S-5	4-6-6-7		S-5	Same as S-4 .
10'	8-10'				
	S-6	8 - 5 - 4 - 3		S-6	Grey-Brown mf SAND , little Silt, trace ⁻ mf ⁺ Gravel.
	10-12'				(w/ few Silt & Clay lenses)
15'	S-7	1 - 1 - 1 - 1		S-7	Grey Organic SILT , trace ⁺ mf ⁺ Sand.
	15-17'				
20'	S-8	1-2-6-8		S-8	TOP 8": Same as S-7 .
	20-22'				BOT 16": Light Grey-Brown mf SAND , little Silt,
					trace ⁻ f Gravel.
251	6.0	F 8 10 13		6.0	Tors Drown on the CAND littlet and Crowel littlet
25'	S-9 25-27'	5 - 8 - 10 - 12		S-9	Tan-Brown cm⁺f SAND , little⁺ mf Gravel, little⁻ Silt.
	25-27				Siit.
30'	S-10	10 - 10 - 12 - 12		S-10	Brown cm ⁺ f SAND , some mf Gravel, trace ⁺ Silt.
50	30-32'	10 10 12 12		5-10	Brown chi i SAND , some ini Gravel, trace sitt.
	50 52				
35'	S-11	29 - 26 - 14 - 12		S-11	Dark Brown cmf SAND , some ⁺ cm ⁺ f Gravel, little ⁺
	35-37'				Silt & Clay.
					<i>,</i>
	NEER: R. SWA				ACTOR: BORING BROTHERS, INC.
	NSPECTOR: C.		ountared at the		: S. HEADLEY
		ect site. Interpretation of the subsurface d			ring location on the date(s) of drilling. Subsurface conditions are n of the user.
,,					·



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING BORING NO.: FPA-31 CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY SHEET 2 OF 2 (FPA PROJECT NO. 13749.002) DATE STARTED: 9/30/2020 **DEPTH OF WATER:** 5.5'± **GROUND ELEVATION:** +6.0'± **DATE FINISHED:** 9/30/2020 LOCATION: See Plan **GROUND WATER ELEV.:** +0.5'± DRILLING TECHNIQUE: Mud Rotary HAMMER TYPE: 140 lb. Automatic Trip Hammer, 30 Inch Drop DEPTH SAMPLE SPT BLOW COUNTS **STRATA DESCRIPTION OF SOIL** FEET DEPTH (PER 6") ----40'----2 - 3 - 4 - 5S-12 Grey SILT & CLAY, trace mf Sand. (micaceous) S-12 40-42' ---4 5'---S-13 2-5-4-50/0''S-13 Grey SILT & CLAY, trace⁻ mf Sand. (micaceous) 45-47' possible cobble at 46.5'. ----50'----S-14 3 - 5 - 6 - 7S-14 Same as S-13. 50-52' ---55'---2 - 2 - 4 - 6S-15 Same as S-13. S-15 55-57' ----60'----S-16 2 - 5 - 6 - 10Dark Grey CLAY & SILT, trace⁺ cm⁺f Sand, trace⁻ mf⁺ S-16 Gravel. (w/ few pieces of Lignite) 60-62' END OF BORING @ 62' ---65'-------70'-------75'---SOILS ENGINEER: R. SWABSIN, PE **CONTRACTOR:** BORING BROTHERS, INC. DRILLING INSPECTOR: C. PULASKI DRILLER: S. HEADLEY The information shown hereon indicates the subsurface conditions encountered at the specific boring location on the date(s) of drilling. Subsurface conditions are likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-32 SHEET 1 OF 1

DATE STARTED: 9/30/2020 DATE FINISHED: 9/30/2020 **DEPTH OF WATER:** 6'± LOCATION: See Plan

GROUND ELEVATION: +7.5'± **GROUND WATER ELEV.:** +1.5'±

DRILLING TECHNIQUE: Mud Rotary HAMMER TYPE: 140 lb. Automatic Trip Hammer, 30 Inch Drop

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL							
	S-1 0-2'	2-8-7-5		S-1 Dark Grey & Tan-Brown cm ⁺ f SAND , some ⁺ Silt & Clay, little ⁻ mf Gravel.							
	S-2 2-4'	6 - 2 - 3 - 2		S-2 Grey-Brown cmf SAND , little ⁺ Silt, trace ⁺ f Gravel.							
5'	S-3 4-6'	3-1-3-2		S-3 Light Brown & Dark Grey cm ⁺ f SAND , little ⁻ Silt, trace mf ⁺ Gravel. (w/ Clay lenses)							
	S-4 6-8'	2-1-2-2		S-4 Light Brown & Dark Grey cm ⁺ f SAND , little ⁻ Silt, trace mf ⁺ Gravel. (w/ few Clay lenses)							
10'	S-5 8-10'	10 - 3 -5 - 3		S-5 Tan-Brown mf ⁺ SAND , trace ⁺ Silt, trace ⁻ f Gravel.							
	S-6 10-12'	4 - 4 - 3 - 2		S-6 No Recovery. (Moved hole 6' North. Obstruction @ 4'. Moved hole 2 additional times and hit obstructions)							
				END OF BORING @ 12'							
15'				(Hole Abandoned)							
20'											
25'											
30'											
35'											
SOILS ENGI	NEER: R. SWA	SSIN, PE	I	CONTRACTOR: BORING BROTHERS, INC.							
	NSPECTOR: C.			DRILLER: S. HEADLEY							
				ed at the specific boring location on the date(s) of drilling. Subsurface conditions are I be at the discretion of the user.							
- , , ,				kely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.							



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 9/30/2020

DEPTH OF WATER: 5'± LOCATION: See Plan

GROUND ELEVATION: +6.5'± **GROUND WATER ELEV.:** +1.5'±

BORING NO.: FPA-33

SHEET 1 OF 1

DATE FINISHED: 10/1/2020 DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
	S-1 0-2'	3 - 21 - 14 - 7		S-1	Hit obstruction @ 2'; moved hole 2' West. No Recovery
	S-2 2-4'	3-4-6-6		S-2	Dark Grey cm ⁺ f SAND , some Silt, little ⁻ f Gravel. (Fill w/ cinders & wood)
5'	S-3 4-6'	3-4-4-3		S-3	Grey-Brown cm ⁺ f SAND , and ⁻ mf ⁺ Gravel, little ⁺ Silt.
	S-4 6-8'	3-2-2-2		S-4	Dark Grey mf GRAVEL , little cm ⁺ f Sand, trace Silt. (Fill, asphalt millings)
10'	S-5 8-10'	2 - 1 - 1 - 1		S-5	TOP 16": Same as S-4. BOT 8": Dark Grey Organic SILT .
	S-6 10-12'	2-1-2-2		S-6	Dark Grey mf GRAVEL , little ⁺ cm ⁺ f Sand, trace Silt. (Fill, asphalt millings)
15'	S-7 15-17'	WOH – WOH – WOH – WOH		S-7	Dark Grey Organic SILT , trace⁻ cm⁺f Sand.
20'	S-8 20-22'	WOR – WOR – WOR – WOR		S-8	Dark Grey Organic SILT , trace ⁻ cmf Sand.
25'	S-9 25-27'	WOR – WOR – WOR – WOR		S-9	Dark Grey Organic SILT , trace cm⁺f Sand, trace⁻ f Gravel.
30'	S-10 30-32'	15 - 24 - 34 - 30		S-10	Dark Brown cm⁺f SAND , some⁺ mf Gravel, little ⁻ Silt.
35'	S-11 35-37'	6 - 9 - 10 - 10		S-11	Dark Brown cm⁺f SAND , trace⁺ mf Gravel, trace Silt.
					END OF BORING AT 37'
DRILLING I	NSPECTOR: C.	PULASKI		DRILLE	ACTOR: BORING BROTHERS, INC. R: S. HEADLEY
DRILLING II The informat	SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI The information shown hereon indicates the subsurface conditions encour likely to vary across the project site. Interpretation of the subsurface data			DRILLE the specif	R: S. HEADLEY ic boring location on the date(s) of drilling. Subsurface conditior



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 10/1/2020 **DATE FINISHED:** 10/1/2020 **DEPTH OF WATER:** 1'± **LOCATION:** See Plan

GROUND ELEVATION: +4.0'± **GROUND WATER ELEV.:** +3.0'±

BORING NO.: FPA-34

SHEET 1 OF 2

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
FEET	S-1	WOH - 2 - 1 - 5		S-1	Dark Brown cm ⁺ f SAND , trace ⁺ Silt, trace mf
	0-2'	WOTT = 2 = 1 = 5		3-1	Gravel.
	S-2	5 - 10 - 13 - 11		S-2	Light Tan-Brown mf ⁺ SAND, some Silt.
	2-4'	5 10 15 11		5-2	(w/ few Clay lenses)
5'	S-3	12 - 16 - 16 - 18		S-3	Light Tan-Brown mf ⁺ SAND , some Silt, trace ⁺ mf ⁺
J	4-6'	12 10 10 18		5-5	Gravel. (w/ few Clay lenses & cemented Sand
	4-0 S-4	12 - 13 - 12 - 18			pieces)
	6-8'	12 - 15 - 12 - 18		S-4	Light Tan-Brown mf ⁺ SAND , some Silt, little ⁻ mf ⁺
	S-5	5 - 5 - 6 - 7		5-4	Gravel. (w/ few Clay lenses)
10'	8-10'	5-5-6-7		S-5	Grey mf ⁺ SAND , some ⁺ Clay & Silt, trace ⁻ f Gravel.
10	S-10	7 - 5 - 4 - 4		3-5	Grey III SAND, some clay & sit, trace i Graver.
	10-12'	7-3-4-4		S-6	Light Grey mf ⁺ SAND, little Silt, trace mf Gravel.
	10-12			3-0	(w/ few Clay lenses & cemented Sand pieces)
					(w) Tew clay lenses & cemented sand pieces)
15'	S-7	2 - 2 - 3 - 4		S-7	Light Grey-Brown mf ⁺ SAND , little ⁺ Silt.
12		2-2-3-4		5-7	(w/ 4" Clay lense)
	12-17				(w/ 4 Clay lefise)
20'	S-8	3-4-4-4		S-8	Light Grey-Brown mf SAND , little Silt, trace ⁻ f
20	20-22'	5-4-4-4		3-0	Gravel. (w/ few Clay lenses)
	20-22				Glavel. (w/ lew Clay lefises)
25'	S-9	1 - 1 - 1 - 1		S-9	Dark Grey SILT , little cmf Sand, trace f Gravel
25	25-27'	1-1-1-1		3-9	Dark Grey SILT, Ittle Cill Sand, trace i Graver
	25-27				
30'	S-10	14 - 17 - 15 - 13		S-10	Dark Brown cmf SAND , some mf Gravel, little⁺
30	30-32'	14 - 17 - 15 - 15		5-10	Silt.
	30-32				Sitt.
35'	S-11	9 - 12 - 6 - 7		S-11	Dark Brown cm⁺f SAND , little⁺ mf Gravel, little
55	35-37'	5 12 0 7		5.11	Silt.
SOILS ENG	INEER: R. SWA	BSIN, PE		CONTR	ACTOR: BORING BROTHERS, INC.
	NSPECTOR: C.				R: S. HEADLEY
					ring location on the date(s) of drilling. Subsurface conditions are
likely to vary	across the proje	ect site. Interpretation of the subsurface of	ata shall be at th	e discretio	n of the user.



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-34 SHEET 2 OF 2

DATE STARTED: 10/1/2020 DATE FINISHED: 10/1/2020 DRILLING TECHNIQUE: Mud Ro

DEPTH OF WATER: 1'± LOCATION: See Plan GROUND ELEVATION: +4.0'± GROUND WATER ELEV.: +3.0'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL
40'	S-12	9-7-8-6		S-12 Dark Brown cm ⁺ f SAND , little ⁺ mf ⁺ Gravel, little Silt.
	40-42'			
				END OF BORING AT 42'
4 5'				
50'				
55'				
60'				
65'				
70'				
75'				
SOILS ENGI	NEER: R. SWA	I 3SIN, PE		CONTRACTOR: BORING BROTHERS, INC.
DRILLING IN	ISPECTOR: C. I	PULASKI		DRILLER: S. HEADLEY
		n indicates the subsurface conditi ct site. Interpretation of the subsu		d at the specific boring location on the date(s) of drilling. Subsurface conditions are be at the discretion of the user
incery to vary			anace udid Sildli	שב מנ נווב שוכו בנוטוו טו נווב שכר.





SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

DATE STARTED: 10/1/2020 DATE FINISHED: 10/1/2020

DEPTH OF WATER: 15'± **LOCATION:** See Plan **GROUND ELEVATION:** +16.0'± **GROUND WATER ELEV.:** +1.0'±

BORING NO.: FPA-35

SHEET 1 OF 1

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
	S-1	12 - 10 - 11 - 9		S-1	TOP 18": Dark Grey cmf ⁺ SAND, little Silt, trace mf ⁺
	0-2′				Gravel.
	S-2	6 - 7 - 7 - 4			BOT 6": Light Tan-Brown mf ⁺ SAND, trace Silt, trace
	2-4'				mf ⁺ Gravel.
5'	S-3	4 - 2 - 4 - 3		S-2	Same as S-1, BOT 6 ".
	4-6'			S-3	Light Tan-Brown mf ⁺ SAND , little ⁻ Silt, trace ⁻ f Gravel.
	S-4 6-8'	2 – 2 – 2 – 2		6.4	(w/ few Clay lenses)
	6-8 S-5	2-1-2-1		S-4	Same as S-3 .
10'	3-5 8-10'	2-1-2-1		S-5	Light Tan-Brown mf ⁺ SAND , trace Silt, trace ⁻ mf ⁺ Gravel.
10	S-6	2-2-1-2		S-6	Same as S-5 .
	10-12'	2 - 2 - 1 - 2		3-0	Same as 5-5 .
	10-12				
15'	S-7	2-1-2-2		S-7	Tan-Brown cmf ⁺ SAND , little ⁺ Clayey Silt, trace mf
	15-17'				Gravel.
20'	S-8	7 - 10 - 6 - 4		S-8	Grey-Brown f SAND , trace⁺ Silt, trace⁻ f Gravel.
20	20-22'	, 10 0 1			
25'	S-9	7 - 12 - 14 - 13		S-9	Grey-Brown cmf ⁺ SAND , little Silt, trace mf ⁺ Gravel.
	25-27'				
30'	S-10	5 - 7 - 9 - 15		S-10	Grey-Brown cm ⁺ f SAND , trace ⁺ Silt, trace ⁺ mf Gravel.
	30-32'				END OF BORING AT 32'
35'					
	NEER: R. SWABS	•			RACTOR: BORING BROTHERS, INC.
					R: S. HEADLEY ic boring location on the date(s) of drilling. Subsurface conditions ar



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-36 SHEET 1 OF 1

DATE STARTED: 10/1/2020 DATE FINISHED: 10/2/2020 DRILLING TECHNIOUE: Mud Ro **DEPTH OF WATER:** 7.5'± **LOCATION:** See Plan **GROUND ELEVATION:** +9.0'± **GROUND WATER ELEV.:** +1.5'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
	S-1	8-5-3-4		S-1	Dark Grey-Brown cmf ⁺ SAND , little ⁺ mf Gravel, little ⁺
	0-2'				Silt. (Fill w/ few brick pieces)
	S-2	6 - 8 - 5 - 4		S-2	Dark Grey and Yellow-Brown cm ⁺ f SAND , some mf ⁺
	2-4'				Gravel, little Silt. (Fill w/ some brick and asphalt
5'	S-3	3-3-2-2			pieces)
	4-6'			S-3	Light Tan-Brown cmf ⁺ SAND, trace ⁺ Silt, trace f Gravel.
	S-4	2-2-2-3			(Fill w/ few brick pieces)
	6-8'			S-4	Tan and Grey cmf ⁺ SAND , and ⁻ Silt & Clay, trace ⁻ f
	S-5	1 - 3 - 2 - 1			Gravel.
10'	8-10'			S-5	Grey Organic SILT, trace mf ⁺ Sand.
	S-6	WOH – WOH – WOH – WOH		S-6	Dark Grey Organic SILT , trace mf Sand, trace f
	10-12'				Gravel.
15'	S-7	WOH – WOH – 1 – 1		S-7	Dark Grey Organic SILT , little ⁻ mf Sand.
	15-17'				
20'	S-8	1 – WOH – 1 – 2		S-8	Grey cm ⁺ f SAND , some ⁺ Organic Silt.
	20-22'				
25'	S-9	8-1-2-2		S-9	TOP 6″: Wood.
-	25-27'				BOT 18": Same as S-8 .
30'	S-10	5 - 19 - 19 - 26		S-10	Dark Brown cm ⁺ f SAND , some cmf ⁺ Gravel, some Silt.
	30-32′				
35'	S-11 35-37'	9 - 15 - 21 - 19		S-11	Dark Brown cmf GRAVEL , and ⁻ cm ⁺ f Sand, little ⁺ Silt.
	55-57				END OF BORING AT 37'
	NEER: R. SWA		<u> </u>		ACTOR: BORING BROTHERS, INC.
-	NSPECTOR: C.				R: S. HEADLEY ic boring location on the date(s) of drilling. Subsurface conditions are
		on indicates the subsurface conditions er ct site. Interpretation of the subsurface			8 () 8



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-37 SHEET 1 OF 1

DATE STARTED: 10/2/2020 DATE FINISHED: 10/2/2020 DRILLING TECHNIQUE: Mud Ro **DEPTH OF WATER:** 4'± **LOCATION:** See Plan **GROUND ELEVATION:** +5.0'± **GROUND WATER ELEV.:** 1.0'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL	
5'	S-1 5-7'	WOH – WOH – 1 – 1		S-1	TOP 12": Light Brown f SAND , some Silt. BOT 12": Grey and Tan cm ⁺ f GRAVEL , and Silt & Clay,	
10'	S-2 9-11'	4 – 1 – 1 – WOH		S-2	little⁺ cmf* Sand. Wood, Brick and Concrete pieces. <i>Void from 8-9 feet.</i>	
15'	S-3 15-17'	3-2-3-3		S-3	Grey cm ⁺ f SAND , some ⁻ Organic Silt, trace ⁻ f Gravel. Casing obstructed at 7 feet. Hole moved 10 feet N/W.	
20'	S-4 20-22'	2-3-2-3		S-4	Grey cm⁺f SAND , some⁺ mf Gravel, little⁺ Organic Silt.	
25'	S-5 25-27'	2 - 2 - 4 - 4		S-5	Dark Grey Organic SILT , some⁻ cm⁺f Sand, little mf Gravel. (low recovery)	
30'	S-6 30-32'	2 - 4 - 14 - 20		S-6	TOP 12": Light Grey mf ⁺ SAND , little ⁺ Silt. BOT 12": Dark Tan-Brown cm ⁺ f SAND , some cmf Gravel, little ⁺ Clayey Silt.	
35'					END OF BORING AT 32'	
DRILLING IN The informat	SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI The information shown hereon indicates the subsurface conditions encountered at					
likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.						



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-38 SHEET 1 OF 1

DATE STARTED: 10/5/2020 DATE FINISHED: 10/5/2020 DRILLING TECHNIQUE: Mud Rotary **DEPTH OF WATER:** 5'± **LOCATION:** See Plan **GROUND ELEVATION:** +6.0'± **GROUND WATER ELEV.:** +1.0'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL	
5'	S-1 5-7'	2-3-2-3		S-1	Light Brown cmf ⁺ SAND , little Silt, trace mf ⁺ Gravel.	
10'	S-2 10-12'	1-1-1-3		S-2	Dark Grey Organic SILT , and mf Sand, trace ⁻ f Gravel. (w/ some seashell pieces and very few wood pieces)	
15'	S-3 15-17′	1-1-1-1		S-3	Dark Grey-Brown Organic SILT , trace mf Sand.	
20'	S-4 20-22'	WOH – 1 – 1 – 1		S-4	Dark Grey-Brown Organic SILT , and cm⁺f Sand, trace ⁻ cmf Gravel.	
25'	S-5 25-27'	4 - 5 - 6 - 20		S-5	TOP 18": Light Grey-Brown Clayey SILT , trace ⁻ f Sand. BOT 6": Tan-Brown cmf SAND , some ⁻ mf ⁺ Gravel, little ⁺ Silt.	
30'	S-6 30-32'	17 - 18 - 18 - 17		S-6	Tan-Brown cm ⁺ f SAND , little ⁺ mf ⁺ Gravel, little ⁺ Silt.	
					END OF BORING AT 32'	
35'						
SOILS ENGI	SOILS ENGINEER: R. SWABSIN, PE			CONTRACTOR: BORING BROTHERS, INC.		
	DRILLING INSPECTOR: C. PULASKI			DRILLER: S. HEADLEY		
The information shown hereon indicates the subsurface conditions encountered at the specific boring location on the date(s) of drilling. Subsurface conditions are likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.						



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-39 SHEET 1 OF 1

DATE STARTED: 11/9/2020 **DATE FINISHED:** 11/9/2020 **DEPTH OF WATER:** 1'± LOCATION: See Plan

GROUND ELEVATION: +1.0'± **GROUND WATER ELEV.:** +0'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>Sample</u> Depth	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPTION OF SOIL	
5'	S-1 0-2' S-2 5-7'	WOH - 1 - 2 - 2 2 - 3 - 5 - 3		 S-1 TOP 6" Grey-Brown cmf⁺ SAND, some Clayey Silt, trace mf⁺ Gravel. BOT 18": Dark Grey mf⁺ SAND, some⁺ Organic Silt, trace⁻ mf Gravel. S-2 Dark Grey Clayey SILT, and⁻ mf Sand. (layered or varved in spoon) 	
10'	S-3 10-12'	4 - 4 - 5 - 3		S-3 Dark Grey Clayey SILT , and cm⁺f Sand, trace mf⁺ Gravel.	
15′	S-4 15-17'	WOH – WOH – WOH – WOH		S-4 Dark Grey Organic SILT , trace ⁻ mf Sand.	
20'	S-5 20-22'	WOH – WOH – WOH – WOH		S-5 Same as S-4 .	
25'	S-6 25-27'	2 - 8 - 15 - 20		S-6 Brown cm ⁺ f SAND , some mf Gravel, little Silt. Hole collapsed and boring terminated.	
30'				END OF BORING AT 27'	
35'					
	SOILS ENGINEER: R. SWABSIN, PE			CONTRACTOR: BORING BROTHERS, INC.	
	DRILLING INSPECTOR: C. PULASKI			DRILLER: R. DOLLAR	
The informat	ion shown hereo	n indicates the subsurface conditions en		t the specific boring location on the date(s) of drilling. Subsurface conditions are at the discretion of the user.	
likely to vary across the project site. Interpretation of the subsurface data shall be at the discretion of the user.					



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-40 SHEET 1 OF 1

DATE STARTED: 11/9/2020 DATE FINISHED: 11/9/2020 DRILLING TECHNIQUE: Mud Rot **DEPTH OF WATER:** 1.5'± **LOCATION:** See Plan **GROUND ELEVATION:** +2.0'± **GROUND WATER ELEV.:** +0.5'±

<u>DEPTH</u> FEET	<u>SAMPLE</u> DEPTH	SPT BLOW COUNTS (PER 6")	STRATA	DESCRIPT	ION OF SOIL
5'	S-1 5-7'	WOH – 1 – 1 – WOH		-1 Brown c⁺mf SAND , tra	ce Silt, trace f Gravel.
10'	S-2 10-12'	WOH – WOH – WOH – WOH		-2 Dark Grey Organic SIL	F , trace cmf Sand.
15'	S-3 15-17'	WOR – WOR – WOR – WOR		-3 Same as S-2 .	
20'	S-4 20-22'	WOH – WOH – WOH – WOH		-4 Dark Grey Organic SIL Gravel.	r , trace ⁻ cmf Sand, trace ⁻ f
25'	S-5 25-27′	11 - 12 - 13 - 14		-5 Brown cm⁺f SAND , sor	ne⁺ mf Gravel, little⁺ Silt.
30'	S-6 30-32' S-7 32-34'	4 - 9 - 12 - 9 10 - 8 - 6 - 10		little Silt. 5-7 Brown c⁺mf SAND , mf	mf* SAND , little mf* Gravel, ⁺ Gravel, little* Silt. F BORING AT 34'
35′					
DRILLING IN	SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI The information shown hereon indicates the subsurface conditions en		ncountered at	DNTRACTOR: BORING BROTHE RILLER: R. DOLLAR specific boring location on the date	
				RILLER: R. DOLLAR specific boring location on the date	



SOUTH AMBOY FERRY TERMINAL FACILITY DESIGN AND PERMITTING CITY OF SOUTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY (FPA PROJECT NO. 13749.002)

BORING NO.: FPA-41 SHEET 1 OF 1

DATE STARTED: 11/9/2020 **DATE FINISHED:** 11/9/2020

DEPTH OF WATER: 5'± LOCATION: See Plan

GROUND ELEVATION: +6.5'± **GROUND WATER ELEV.:** +1.5'±

DRILLING TECHNIQUE: Mud Rotary

<u>DEPTH</u> FEET	<u>Sample</u> Depth	SPT BLOW COUNTS (PER 6")	STRATA		DESCRIPTION OF SOIL
	S-1 0-2'	2-3-2-6		S-1	TOP 18": Light Brown mf SAND , trace ⁺ Silt, trace ⁻ f Gravel. BOT 6" Dark Grey CLAY & SILT .
5'	S-2 5-7'	4 - 5 - 6 - 7		S-2	Grey-Brown cm⁺f SAND , some Silt, little⁺ mf Gravel.
10'	S-3 10-12'	WOH – 1 – 1 – 1		S-3	Light Brown mf SAND , trace Silt. (w/ very few Clay lenses)
15'	S-4 15-17'	3-4-4-6		S-4	No Recovery.
20'	S-5 20-22'	5 - 3 - 4 - 6		S-5	Dark Grey mf GRAVEL , some Silt, little ⁻ cm ⁺ f Sand. (w/ brick, asphalt pieces)
25'	S-6 25-27'	3 - 3 - 6 - 7		S-6	Dark Grey cm⁺f SAND , some⁺ mf⁺ Gravel, some Silt & Clay.
30'	S-7 30-32'	14 - 15 - 18 - 27		S-7	Light Tan-Brown cm⁺f SAND , some mf Gravel, little⁺ Silt.
35'	S-8 35-37'	16 - 15 - 11 - 18		S-8	Brown cm⁺f SAND , some mf Gravel, little Silt.
					END OF BORING AT 37'
DRILLING IN	SOILS ENGINEER: R. SWABSIN, PE DRILLING INSPECTOR: C. PULASKI			DRILLE	RACTOR: BORING BROTHERS, INC. R: R. DOLLAR
The information shown hereon indicates the subsurface conditions encou- likely to vary across the project site. Interpretation of the subsurface data				the specif	ic boring location on the date(s) of drilling. Subsurface conditions a