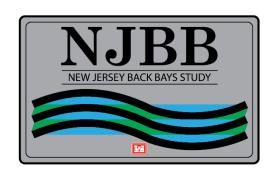
## ENGINEERING APPENDIX GEOTECHNICAL INVESTIGATIONS BORING LOGS AND LABORATORY TESTING

## NEW JERSEY BACK BAYS COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

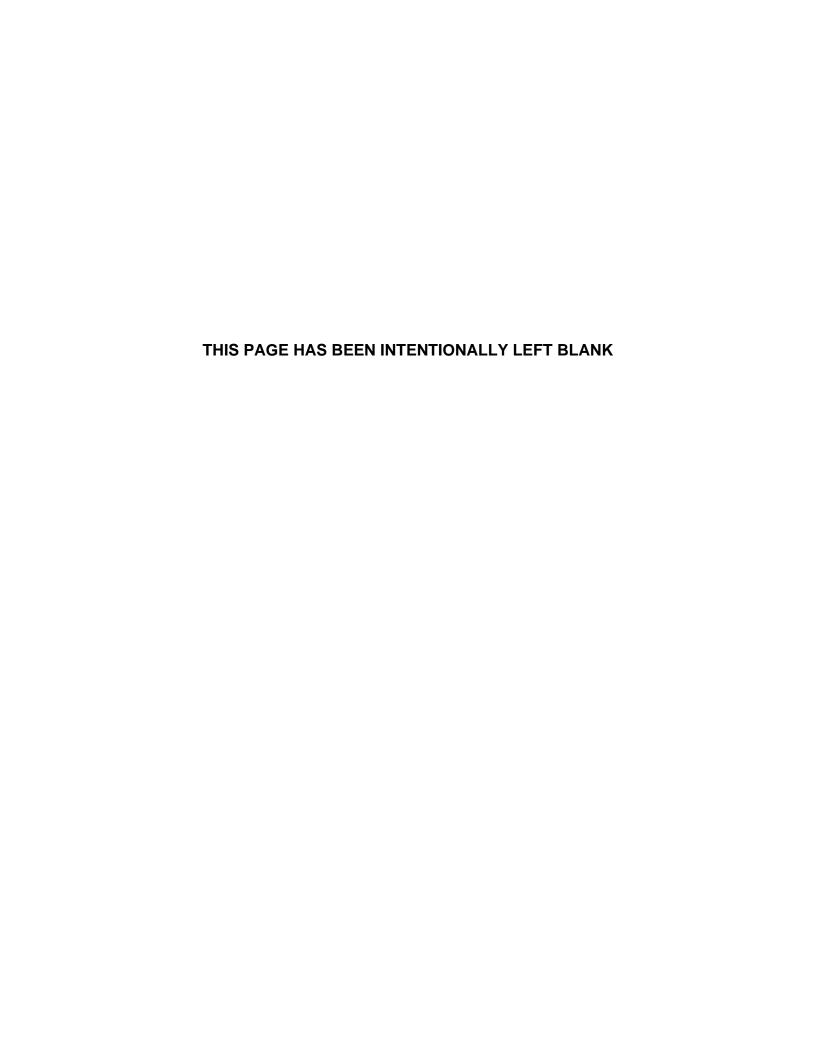
## PHILADELPHIA, PENNSYLVANIA

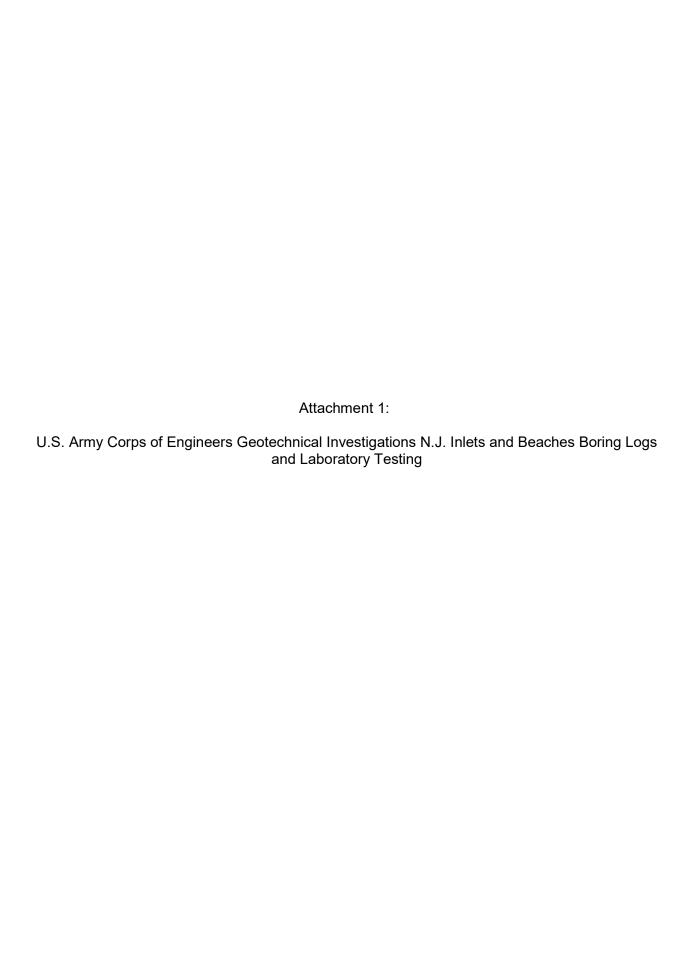
## **APPENDIX B.8**

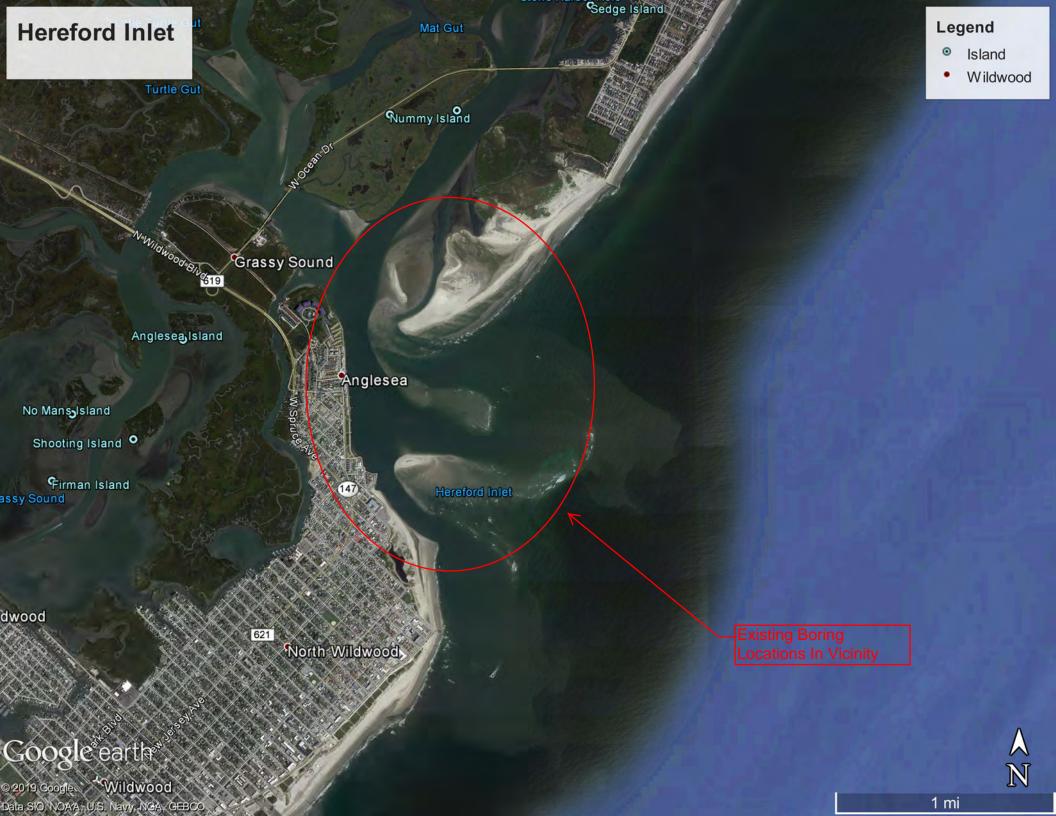
August 2021











DRILLING LOG  W. HOLE NO. (A. a. b.c. on or	DIV	/1310N		MENT OF TH	HE ARMY		· PROJECT	NLE	ITS .	BEACHES	SHEET   OF	
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Besterner better	6.					7	- THICKN	ESS			T9- TOTAL	_
37-10714 BD. OF OCCERNICES SAMPLES TAKE BY					VERTICAL	***************************************	BURDEN	*		INTO ROCK	DEPTH OF H	0
10 DISTRIBUTE STATES  11 - CLEV. TOP OF NOLE  12 - CLEV. TOP OF NOLE  13 - TOTAL COSE RECOVERY TOP  19 - SIGNATURE OF INSTITUTE OF MATERIALS  19 - SIGNATURE OF INSTITUTE OF MATERIALS  10 - CLASSIFICATION OF MATERIALS  11 - CLEVATION OF MATERIALS  12 - CLASSIFICATION OF MATERIALS  13 - COMMING AND CARRY  14 - CLASSIFICATION OF MATERIALS  15 - CLOVE DOWN OF MATERIALS  16 - CLASSIFICATION OF MATERIALS  17 - CLASSIFICATION OF MATERIALS  18 - CLASSIFICATION OF MATERIALS  19 - CLASSIFICATION OF MATERIALS  10 - CLASSIFICATION OF MATERIALS  11 - CLASSIFICATION OF MATERIALS  12 - CLASSIFICATION OF MATERIALS  13 - CLASSIFICATION OF MATERIALS  14 - CLASSIFICATION OF MATERIALS  15 - CLASSIFICATION OF MATERIALS  16 - CLASSIFICATION OF MATERIALS  17 - CLASSIFICATION OF MATERIALS  18 - CLASSIFICATION OF MATERIALS  19 - CLASSIFICATION OF MATERIALS  10 - CLASSIFICATION OF MATERIALS  11 - CLASSIFICATION OF MATERIALS  12 - CLASSIFICATION OF MATERIALS  13 - CLASSIFICATION OF MATERIALS  14 - CLASSIFICATION OF MATERIALS  15 - CLASSIFICATION OF MATERIALS  16 - CLASSIFICATION OF MATERIALS  17 - CLASSIFICATION OF MATERIALS  18 - CLASSIFICATION OF MATERIALS  18 - CLASSI	2"	I.D.	split	SPROVE	(TBM or MSL	, IW		12.	MANUF 7-2			
17. ELEVATION DEPTH LEGEN CLASSIFICATION OF MATERIALS  ELEVATION DEPTH LEGEN CLASSIFICATION OF MATERIALS  18. ELEVATION DEPTH LEGEN CLASSIFICATION OF MATERIALS  19. SINATURE OF THE SPECIAL CLASSIFICATION OF MATERIALS  10. Let the function SAND (by)  12. Some (damp)  10. Special control of the control of t	DISTURBE	D 9	OVERBU	UNDISTURBE	ES TAKEN 14	NO. CORE			IMA	16. DATE	HOLE COMPLETED 124	5
CLASSIFICATION OF PARENALS  THE TIME STAND (Any)  1 Lt ton 1 cm from SAND (Any)  1 Special Control of Sand Sand (Any)  2 Special Control of Sand Sand Sand Sand Sand Sand Sand Sand			HOLE	18. TOTAL BORING	CORE RECOVERY FO		. SIGNAT	2.00	OF INS	PECTOR	I IN AUGUST &	
Let ton & uniform SAND (Lay)    1	LEVATION	DEPTH	LEGEND	CLAS	SSIFICATION OF MA (Description)	ATERIALS	RE	CORE	SAMPL	(prilling time, weathering, etc	votor loss donth	of
Same (damp)  3 Special of the bounder day  12 Special of the second of t		=	1	Lt tan	f. Uniform 3	AND (	doy)		SANSO	Unless other	134 motest some	alec
Same (damp)  Same		_	+				1	10	SP	Spoon \$ 140	hammer dropp	912
Same (demp)  Same		2						3		7		
Same (damp)  12 Same (damp)  13 Sp Some = 12-50 the trace = 5-12 the trace		5 —	-1		1/4		3					
Sight trace - Proston of Marine life - Shells etc.  So Gray f. and work life 19  So Gray f. SAND w/sight 19  So Gray f. SAND w/sight 19  So Gray f. SAND w/sight 19  So Somple (6) - Sight organic of or due to decayed morne life.  So Shape 1 for some sand of line 20  The gray f. SAND w/sight trace of black sit f slight brace of marine life forganic odor?  The gray f. SAND w/ trace 22  So So Gray f. SAND w/ trace 23  The gray f. SAND w/ trace 25  So		1	2	Sam	e (damp)		1		SP	Some = 10	2-30-70	
Gray f. uniform SAND (web)  15  4 Gray f. SAND (web)  10  5 Gray f. SAND w/slight  14 SP  25  6 Gray f. SAND w/slight  15 SP  16 Gray f. SAND w/slight  17 SP  26 Gray f. SAND w/slight  18 SP  27 SAND w/slight  18 SP  28 Sample (6) - slight organic oder due to docoyed  29 morne life.  19 SP  30  7 Ok gray f. SAND w/ trace  10 of black silt f slight brace  10 of marine life forganic oder  20 SP  31 SP  32 SP  33 SP  34 SAND w/brace  18 SP  35 SP  36 marine life forganic oder  37 SAND w/brace  18 SP  38 SP  39 Sample (6) - slight organic oder  19 SP  10 SP  10 SP  11 SP  11 SP  12 SP  12 SP  13 SP  14 SP  15 SP  16 Gray f. SAND w/brace  16 SP  17 SP  18 SP  18 SP  19 SP  19 SP  10 SP  10 SP  11 SP  11 SP  12 SP  13 SP  14 SP  15 SP  16 SP  17 SP  18 SP  18 SP  19 SP  19 SP  10 SP  11 SP  11 SP  12 SP  13 SP  14 SP  15 SP  16 SP  17 SP  18 SP  18 SP  19 SP  19 SP  10 SP  11 SP  11 SP  12 SP  13 SP  14 SP  15 SP  16 SP  17 SP  18 SP  18 SP  19 SP  19 SP  19 SP  10 SP  10 SP  11 SP  12 SP  13 SP  14 SP  15 SP  16 SP  17 SP  18 SP  18 SP  19 SP  19 SP  10 SP  10 SP  10 SP  11 SP  11 SP  12 SP  13 SP  14 SP  15 SP  16 SP  17 SP  18 SP  18 SP  18 SP  18 SP  19 SP  19 SP  10 S		-						13.		Slight trace	- less thon 5 7	10
Gray F. SAND (web)  15  4 Gray F. SAND w/slight  19  20  5 Gray F. SAND w/slight  19  25  6 Gray F. SAND w/slight  19  26 Gray F. SAND w/slight  19  27  28  28  29  20  20  20  20  20  21  20  20  21  20  20										marine life .	= shells etc	
Gray J. SAND W/ slight  Trace of marine like  To gray J. SAND W/ slight  Trace of coarse sand of hine  To sprane like  To gray J. SAND W/ trace  of black silt of slight trace of marine like Linguis odor  The gray J. SAND W/ trace of marine like Linguis odor  The gray J. SAND W/ trace of marine like Linguis odor  The gray J. SAND W/ trace of marine like J. Slight trace of m. sand J. Sand W/ trace of m. sand J. Salt L. Slight of marine like J. Slight trace of m. sand J. Salt L. Slight of marine like J. Slight trace of m. sand J. Salt L. Slight of m. sand J. Salt L. Slight of marine like J. Slight trace of m. sand J. Salt L. Slight of m. sand J. Salt L. Salt of m. sand J. Salt L. Salt of m. sand J. Salt of m. sand J. Salt of m. Salt of m. sand J. Salt of m. sand		10 -	7		0 1 9	Aut /	1 16	6				
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Gray f. SAND W/ slight  Trace of marine life  15  Gray f. SAND W/ slight  Trace of marine life  15  SP  Sample (6) - slight organic odor due to decayed marine life.  25  To gray f. SAND W/ trace of flack silt f slight trace of marine life forganic odor  The gray f. SAND W/ trace of marine life of slight  Trace of black silt blight organic odor  The gray f. SAND W/ trace of marine life of slight  Trace of black silt blight organic odor  The gray f. SAND W/ trace of marine life of slight  Trace of black silt blight organic odor  Bottom of hile El33.6		-						MI				
Gray f. SAND W/ slight  Trace of marine life  15  Gray f. SAND W/ slight  Trace of marine life  15  SP  Sample (6) - slight organic odor due to decayed marine life.  25  To gray f. SAND W/ trace of flack silt f slight trace of marine life forganic odor  The gray f. SAND W/ trace of marine life of slight  Trace of black silt blight organic odor  The gray f. SAND W/ trace of marine life of slight  Trace of black silt blight organic odor  The gray f. SAND W/ trace of marine life of slight  Trace of black silt blight organic odor  Bottom of hile El33.6		=										
Gray f. SAND w/slight  Trace of marine like  Gray f. SAND w/slight  To specify the state of course sand of fine  gravel of marine like.  Lorganic odor?  DK gray f SAND w/ trace of marine like forganic odor?  By of black silt of slight trace of marine like of slight  There of black silt Dight organic odor?  The gray f SAND w/ trace of marine like of slight  Trace of black silt Dight organic odor?  By gray f SAND w/ trace of marine like of slight  Trace of black silt Dight organic odor?  By gray f SAND w/ trace of marine like of slight  Trace of black silt Dight organic odor?  By gray f SAND w/ trace of marine like of slight trace of marine like  Bottom of hale El.—33.6'  Bottom of hale El.—33.6'		15	7		0							
Gray f. SAND w/ slight  Trace of marine life  To so sight organic order due to decoyed trace of course sand of line  To grave I marine life.  To grave I sand w/ trace of black silt f slight trace of marine life forganic order  The gray f. SAND w/ trace of marine life of slight  Through the first blight organic order.  The gray f. SAND w/ trace of marine life of slight  Through the first blight organic order.  The gray f. SAND w/ trace of marine life of slight  Through the distribution of black sitt blight organic order.  The gray f. SAND w/ trace of marine life of slight  Trace of black sitt blight organic order.  Bottom of hole El33.6'  Bottom of hole El33.6'  Bottom of hole El33.6'  Bottom of hole El33.6'		4	Н	Gray	I. SAND	(web	)	100000000	SP			
Gray f. SAND W/slight  To grave of coarse sand of line  To grave of marine life.  To grave of sand water level of marine life.  To gray f. SAND W/ trace  of black silt / slight trace of marine life of slight  Trace of black silt Dight org  anis color?  The gray f. SAND W/ trace of marine life of slight  Trace of black silt Dight org  anis color?  The gray f. SAND W/ trace of marine life of slight  Trace of black silt Dight org  anis color?  Bottom of hole E133.6'  Bottom of hole E133.6'  Grand water level @ 2.  depth on 14 August 64		=								-		
Gray f. SAND W/slight  trace of course sand of line  ground of marine life.  To ground of marine life.  To gray f. SAND W/ trace  of black silt / slight trace of marine life forganic odor?  The gray f. SAND W/ trace of marine life of slight  trace of black silt Displicate  anic odor?  The gray f. SAND W/ trace of marine life of slight  trace of black silt Displicate  anic odor?  DK gray f. SAND W/ trace of marine life of slight  trace of black silt Displicate  anic odor?  By gray f. SAND W/ trace of marine life of slight trace of marine life.  Bottom of hole El33.6'  Grand water level @ 2.  depth on 14 Aucust 64		=										
Gray f. SAND w/slight  trace of course sand of line  grave of sample (6) - slight organic odor due to decayed morne life.  To grave of sample odor  The gray f. SAND w/ trace of flack silt f slight trace of marine life of slight  Trace of black silt sligh		20 -	7	٨ ا	W TIME	101-14	8	1		- 16		
Gray f. SAND W/slight  trace of coarse sand of line gravel of marine life.  Torganic odor  The gray f. SAND W/trace of black silt of slight trace of marine life of slight  Trace of black silt Elight  The gray f. SAND W/trace of marine life of slight  Trace of black silt Elight  The gray f. SAND W/trace of m. sand of slight trace of m.		7	5					1.4	SP			
Trace of coarse sand of fine 20  Trace of coarse sand of fine 20  Trace of marine life.  Torganic odor 7  DK gray & SAND W/ trace 3  DK gray & SAND W/ trace 3  DK gray & SAND W/ trace 42  SP  Of marine life & slight trace 42  Anne odor 7  DK gray & SAND W/ trace 42  SP  Of marine life & slight org- anie odor 7  DK gray & SAND W/ trace 11  SP  Of m. Sand & slift Edight org- of m. Sand & slift Edight trace 16  Of m. Sand & slift Edight 17  Organic odor 17  Bottom of hole E133.6'  Bottom of hole E133.6'  Grand water level @ 2.  depth on 14 Aucust 64		=		arr more	7 7 7 7 7 7 7 7							
Trace of coarse sand of fine 20  Trace of coarse sand of fine 20  Trace of marine life.  Torganic odor?  The gray of SAND W/ trace 3  The gray of SAND W/ trace 3  The gray of SAND W/ trace 42  The gray of SAND W/ trace 11  The gray of SAND W/ trace 11  SP  The gray of SAND W/ trace 12  The gray of SAND W/ trace 12  The gray of SAND W/ trace 13  The gray of S		=					7					
Trace of coarse sand of fine grave of marine life.  Torganic odor?  The gray of SAND W/ trace of marine life Torganic odor?  The gray of SAND W/ trace of marine life of slight  Trace of black sitt Elight org- ania odor?  The gray of SAND W/ trace of marine life of slight  Trace of black sitt Elight org- ania odor?  The gray of SAND W/ trace of marine life of slight trace of marine life of slight trace of marine life of slight trace of m. sand of sitt Edight  The gray of the state of the state of the same		25	1	Gray	. SAND W	/slight		200	SD	Sample (6) -	Slight organic	
DK gray & SAND W/ trace 2  SP  Of black silt & slight trace 3  DK gray & SAND W/ trace 3  DK gray & SAND W/ trace 42  SP  Of marine life & slight organization of black silt [Slight organization of the standard of trace of black silt [Slight organization of the standard of trace of marine life & slight trace of m. sand & silt [Slight trace of m. sand & silt [Slight organization of the standard of the standard of the sandard	1	4	6	trace o	f coarse say	ach & for	30	20	21	murine li	te.	
The gray of SAND W/ trace 2 SP  The gray of SAND W/ trace 3  The gray of SAND W/ trace 42 SP  The gray of SAND W/ trace 42 SP  There of black sitt Estight organized of marine life of slight trace of work of sitt Estight organized of marine life of slight trace of life of slight trace of marine life of slight trace of life of slight trace of marine life of slight trace of slight trace of life of slight trace of slight trace of life of slight trace of life of slight trace of slight trace of life of slight trace of life of slight trace of slight trace of life of slight trace of life of slight trace of		=		grave 1	marine !	Inte_,						
The gray f. SAND W/ trace  of morne life of slight trace of m. sand of silt Edight  organic ador  Bottom of hole E1 33.6  Bottom of hole E1 33.6  OR GRAY SAND W/ trace  Ground water level a 2.  depth on 14 August 64		=		- water	and and							
The gray f. SAND W/ trace  of marine odor?  DK gray f. SAND W/ trace  of m. sand & silt Edight trace  of m. sand & silt Edight  trace of black silt Edight  of m. sand & silt Edight  Bottom of hole E1 33.6'  Bottom of hole E1 33.6'  Cround water level @ 2.		30	T	DK gra	y & SAND	w/tm	ce 2		O Wa			
The gray f. SAND W/ trace  of morne life of slight trace  of m. sand of silt Edight  trace of black silt Edight  of m. sand of silt Edight  briganic odor  Bottom of hole E1 33.6  Bottom of hole E1 33.6  Cround water level @ 2.		F	7	of Diae	K silt & sligh	H truce		5	26			
DK gray f. SAND W/ trace 42 black sitt In week water trace of black sitt Elight organic odor?  The gray f. SAND W/ trace of morne life & slight trace of m. sand & sitt Elight organic odor?  Bottom of hole El 33.6   Grand water level @ 2.	1	4		of man	ine life Long	rank oder	7	2		(34-35) -	c. I sad	
The gray f. SAND W/ trace  of marine life of slight organic odor?  Of m. sand of silt Edight  organic odor?  Bottom of hole E133.6  Bottom of hole E133.6  Bottom of hole E133.6	j	=								W/ OCCASION	eal some of	*
of marine 1, the & state organic of the state of the stat		35	1.	DK gray	P. SAND W	1/ trace	2 42			black solt	IN wash water	-
ance odor?  DK gray f. SAND W trace of morne life & slight trace of m. sand & silt Eslight organic odor?  Bottom of hole E1 33.6'  Grand water level @ 2.  depth on 14 August 64		1	8	of mas	ine life &	Shakt		1	SP			
DK gray f. SAND W/ trace of morthe life & Slight trace of m. sand & silt Eslight organic odor  Bottom of hole E1 33.6' Grand water level @ 2. depth on 14 August 64		4	7	anie of	of black sil	L. Lallani.	ory-	0				
of m. sand & silt Eslytt 17 organic odor 1 to 12 organic odor 14 misust 64		E	9	DK gray	2 SAND W	/ true	. 11					
Bottom of hole E1 33.6' depth on 14 August 64		40-	1	of more	he life of s	light to	ca 16		SP			
Bottom of hole E1 33.6' Ground water level @ 2.		3		organic	odo+7	Laure						
Bottom of hole E1 33.6 depth on 14 August 64  @ 1300 hrs they Time		=	1		and		,/-	1				
@ 1300 hrs then Tibe		=		Bott.	om of hole	E133.	6 -	1		depth on	14 August 64	
	-	7								@ 1300 hrs	HISH TIDE	
		=										I
	1	7										F
		E										F

ENG FORM 1836 (EM 1110-1-1801) PREVIOUS EDITION MAY BE USED TRANSLUCENT UNTIL EXHAUSTED.

PROJECT N. J INLETS & BEACHS HOLE NO. ANHB-1

		-		DLE NO.	ANHB-2	
DIVISION	THENT OF THE ARMY	N. J. In	etsa	Beaches	SHEET OF	
FOR THE PROPERTY OF THE PROPER	hila. Dist office	2. LOCATION Heref	or d	Alignets about	4.3"	
	RILLING LOG	3. DRILLING	AGENCY	riles Drilli		
ANHB-2	on drawing title and file go.)	5. NAME OF Jac	DRILLER	F-1	11 Carlo	
6. 01	INCLINED DEGREES WITH	7. THICKNES	S	B. DEPTH DRILLED	9. TOTAL	4
10. SIZE AND TYPE OF B	BIT 11. DATUM FOR FLEVATION	BURDEN		INTO ROCK ACTURER'S DESIGNAT	DEPTH OF 144	
2 TOTAL NO. OF OVERB	BURDEN SAMPLES TAKEN 14- TOTAL	15· E	LEV.	. 116. DATE	HOLE	-
17. ELEV. TOP OF HOLE	18. TOTAL CORE RECOVERY FOR	19. SIGNATUR	ROUNDZ.	IDAUSLA	14 Aug by	
+7.70	BORING (%)	7.7		cciferro	MARKS	
ELEVATION DEPTH LEGEN	(Beactiption)	RECO	SAMPL	FICE Illing time.	ater less, depth	01
1 3 1	JAND dry	form 24	3 50	Samples +		-
1 =			7	Spoon E 14	a 1P	E
=				hammer d	ropped	E
5 = 12	Brato blk. 5-uniform	SAND 10	SP	Casing 15	5 /2 I D	F
1 3	damp	14	0	Deda vodon	127.0	E
				20mble 5"-	Lecones 12%	)
10 = 13	BIK- 5 uniform SAND	11		AV		E
一事。	very strong odor, to	acre 16	SP			E
13	of decaying organic m	wither -	2	at 34', smo	ell pes	E
15 =				in wash	PECITA	E
= 4	Gray & uniform SAND	19 26 28	SP			E
	1100	- 2	U	The same		F
	White Company of the	-	1 X	Sample 8-		, E
20 = 15	same as above	30	SP			E
		30 36 49	9			E
				Spoon app	enced	-
25		18		To Leave 1	egion	F
][6	Same as above	15 25 27 28	SP	of clay @	; H7.	F
			ť	Completed	h a l a	F
30 3				1300 per 17		F
7	same as above	8118	SP			
		21	-			
	Cause Cause			- 9 111		E
35-18	tr sill (strong odor)	-	SP			
J°	A LINE AND A PARTY OF THE PARTY	25				E
790	Gray frag. (Very wet) Brn. org. SILT	5hell	SP			F
40 = 96	Gray CLAY W/ tral decaying	org. 4563	OL.			E
	matter - J					E
710	Gray f-m SAND W/tr.	chy 123	SP			E
100	Bottom of hole EL-36	3 4 29				E
45	Lettom of hole EL- 36	.00	CH			E
=						E
	44-43					E
ENG FORM 1924 (EM 11.	10-1-1801) PREVIOUS EDITION MAY BE	USED	PO ISCT\		1.12	E

					T			HOLE NO.	ANHB-	3_
DIV	V1310N		MENT OF THE	HE ARMY	1. PRO.	Enle	Ts 4	Beaches	SHEET \ OF \	
			THE RESERVE OF THE PERSON NAMED IN	ist. Office	2. LOC	ATION (	Coordi	INICT N	-	
		DI	RILLING L	.0G	3 . DR I	LLING A	MENCY		. 7	-
4 - HOLE	4/000E 4 NOW		on drawing	fill o and file No.)	5- NAM	E OF DI	RILLER	5 Drilling	Corp.	
6.	HAHR		RECTION OF	HOLE	7. TH.	CKHESS		Harris B. DEPTH	10 10111	
VER			INCLINED	DEGREES WITH	OF	OVER-		DRILLED -	9- TOTAL DEPTH OF 40 HOLE	5
O. SIZE	AND TY	S PE	IT Dm	11 - DATUM FOR ELEVAT	WWD	12	MANUF	ACTURER'S DESIGNAT		
3. TOTA	L NO. OF	OVERB	URDEN SAMPL	ES TAKEN 14- TOT		15 - ELE		116- DATE	HOLE	
7. ELEV	. TOP OF	HOLE	18- TOTAL	CORE RECOVERY FOR	19. SIG	WAT	TER	117 Ava 64	112 AUG 64	
	7.75	Υ	BORING			TovoT	E BOX O	. J. Uccite	2770 MARKS	
75	DEPTH	LEGEN	1	SSIFICATION OF MATERI		RESOV	SAMPL	E (Drilling time.	rator loss desti	h of
		11	gry-de	ay t- uniform	CHAS	256		Samples v	vere taken	
	_	+-	-/			6	-	Spoon & 14		•
								geobbed .	30 inches	
	5 -	1	Brn- gra	y 5- uniform	SAND	9	+	casing is	2½" I.D.	
	1	2	damp			9 24 295	SP	word beg	an 1000 hrs	
	-	[				32	1			
44	10 -	13	DK-gra	S-uniform S	AND	60				
	-				20.000	6877	SP			
	-							111111111111111111111111111111111111111		
	15			and the control of th	THE PROPERTY OF THE PARTY OF TH					
	15 -	14	DK- bla	ck silt. Lowp odor, organ	lasticity	1772	-			
		Π,	STrong	odor, organ	uic	3	OL			
	-							Sau alas	(-1)	
	20 -			uniform SAN			SP-SM	Samples Sand &s		
	-	5a	trace	of organic s	it	12		in Layers o	f about	
	11	130	trace	of decaying		1,1	OL	4 10 6 110 Cl	105.	
	=		VEGETO	ition, also tha	ce of	4.5	01			
	25-	-					n	Sample ?	- this	
-		6	SANT	E w/ layers of for (strong ode	- Uniform	57	0	in wash a	T 22.5	
	_			Control	7,7	16	SP			
								From 37-3	8 m-sand	1
	30	70	0-44	(	. 50	24		was wash	so From	
	Ξ		Gray .	4- uniform SAM	177	24 25 16 28	SP			
	-									
	35_									
	35-	78	same	as above		36	SP	Completed	1330 HL2	
	=	7				15122	31			
-		7.	C- C	er		28				
	40 =	19	oray +	- SAND, few	pes.	28 30 28 35	58			
	=	1		f gravel						-
	=		Bott. o	fhole el32	25					
	=				11.49			Land The Y		
	_				1					
	=									
	-				Thur.	1				
	=									
	1024	40000	0-1-1801)	PREVIOUS EDITION MAY				T. Inlets & Beaches		

		~						_	HOLE NO.	ANH	B-4
			MENT OF TH	E ARMY		PROJECT	ETS	d Pri	AUES	SHEET	1 OF 1
	-	on Phil		District Offi	- 2.	LOCATION	(Coord	Inates or	Station		1. 1
			ILLING L		3.	DRILLING	AGENCY		LET -		lowood
· HOLE	NO. (A			title and Tile	NAME AND ADDRESS OF THE OWNER, WHEN PERSON NAMED IN COLUMN 2 1997	NAME OF	PILLER	ing (	exposur t	157	
	AN	HB	ECTION OF			Frank	Der	by		With the latest the	
VER	TICAL	1	INCLINED	DEGREES WITH	7.	OF OVER-		DRIL		(E) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C	H OF AA
		PE OF B		11 - DATUM FOR I		OWN 1		FACTURER	'S DESIGNA	TION OF DR	
· TOTAL	L NO. O	F OVERBL	IRDEN SAMPLI	ES TAKEN 11	- TOTAL	15 ⋅ €		16-		HOLE	
		F HOLE	A PART OF THE PART OF THE	CORE RECOVERY F	NO. CORE .	SIGNATURE	ATER	"   1	7 Ausust	COMPLEY	HUBUST LA
+ 6	.90		BORING			•	R. W	. Wri			
VATION	DEPTH	LEGEND	CLAS	SSIFICATION OF A		W CO RECO	V SAM	OR OF II	ling time. bering, etc	EMARKS	e, depth o
	0	=1,	ht to	& SAND .	w/ trace	20.70 m	SYMI	Unle	ss other	wite 7	roted ,
1		#	of cr	s sand of f	· grave 1 (	(day) 12					With 2
		3				3	2		PPing 3		
	5 -	1		, 1	Chem		4	Dura	riptive a	J	wood
	3 -	1/2	Shakt	sh- gray trace of 1	atraine   8	4	SI	o the	A or sand	1.3	
1		#1~		e life,	3.000	4	3,	Son	ne = `	715-3	07-
1		3						- 4	ce =	-	170 lan 570
	10 -	1	Garage	SAND W/	slight to	e 2		"Pyrage	ine life	- shel	ls ede.
		3	of ma	wine life;	& LIK sil	£ 1	SF				
		#	(argo	mie ador)		4	3	(12-	15) - Wo	sh wat	ilty 7.
I		1						t	is be a	black &	ilty 7.
	15 -	1		2.0		9			ZWAD	, any	
		14	Gray	1. SAND		919	SF	2			
1		4					5				
	20 -	1.		1 000	1 1	18	1				
		5	true	1. SAND ~	1/ 3/19x4	25	SI SI	2			
		# 1	Commpan	cL.	, 36144	9					
	25 _	1		Λ		12		1			
		6	Gray =	SAND	(stall)	15	SF	)			
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	30 -	-	Lt. gr	ay c-f s	W QUA	21	SW	(			
	1	7	trace	of marine	1.4-2	0	3				
	( <del>-</del>										
		1		Λ.	.1	11					
	35 —	1	Tan & g	ray c- & SA	ND W	17 22 21	SP-S	M			
	-	10	Maria .	of silt &	decoyed !	21	5				
	-	1 1	Langania	s life of the	1	10					
- 1	40 =	9	Gray C.	- P SAND	W/some		SF		ad water	- level	@ 4.5
	-		f. grave	el & slight	thace of	l I	7	Olept	hon 1	7 Austri	1964
				marine !	and the second second			101	500 hrs	on Tiel	0
	37		TRI	tom of Hol	El-33.	1			mieral rid	FIV 1 (98)	ter.
	_		1,354	TOTAL TOTAL							
	_										
	1	1					1				

HERE FORDS INTEL

HOLE NO. ANH 13-5 1 - PROJECT DEPARTMENT OF THE ARMY N. J. In Js & Beaches
2. LOCATION (Coordinates or Station) SHEET 1 INSTALLATION Phila DIST OFFICE Hereford Inlet 3. DRILLING AGENCY DRILLING LOG Drilling 4. HOLE NO. (As shown on drawing title and Tile No.) 5. NAME OF DRILLER ANHB-DIRECTION OF HOLE DEPTH THICKNESS DEGREES WITH OF OVER-INCLINED. VERTICAL DEPTH OF 4 0 VERTICAL INTO ROCK 10. SIZE AND TYPE OF BIT HOLE 11- DATUM FOR ELEVATION SHOWN (TBM or MSL) 12. MANUFACTURER'S DESIGNATION OF DRILL WWD 13 - TOTAL NO. OF OVERBURDEN SAMPLES TAKEN
DISTURBED JUNDISTURBED 14- TOTAL GROUND 5 4 STARTED NO. CORE -19AUG 64 17. ELEV. TOP OF HOLE 18. TOTAL CORE RECOVERY FOR BORING (%) 19. SIGNATURE OF INSPECTOR Ucciferro 6.65 RECOV- SAMPLE (Drilling time, water lose, depth of ERY NO. weethering, etc., if eignificant) CLASSIFICATION OF MATERIALS Blow ELEVATION DEPTH LEGEND BAND day Samples Taken with SP 2" I.D. Split Spoon & 140 16. Hammer dropped 20 inches acternating braitgray seams of function 9+2 work began 1500 hrs 2 SP SAND, very small trace of shell frag, damp Gray &- uniform SAND 3 SP WEL 799B Same as above recovery about SP 5% work stopped at depth of 200 DK- 9 tay S-UNHORM SAND 47 80 5 SP work pedan Hoppist 19449 Work compleTed Brn. f-uniform SAND 6 SP 1400 hrs 19 A ug Gray & - uniform SAND 7 4017 SP 79 Gray & SAND, Trace SP of decaying wood & Brn & gray 5- uniform 9 21 SAND, ONE OF TWO 28 SP small loca, of decaying roo l Bottom of hole el -33.35

			11 000	1503		DLE NO	ANHB-6	
DIVISION DEPAR	THENT OF TH	E ARMY	N.J	IM	ëts	4 Beaches	SHEET OF	
		IST. OFFICE	1 4 4		- 1	Ther N	August 1	
DI	RILLING L	OG	3. DRI	LLING A	GENCY	7/27	4	+
4. HOLE NO. (As. shown		title and file No.	5. NAP	E OF DE	RILLER	like Drilli	ng Corp.	-
	RECTION OF H			CKNESS	-	HATTIS B. DEPTH	9- TOTAL	4
10. SIZE AND TYPE OF B	INCLINED	VERTICAL	OF BUR	OVER-	-	DRILLED	DEPTH OF 40	
2"I.D. Spir S	C10 0 CE	11. DATUM FOR ELEV	I.S.E.D	12.	MANUF	ACTURER'S DESIGNAT	ON OF DRILL	
DISTURBED 9	UNDISTURBED	NO.	O. CORE		V.	16. DATE		
17. ELEV. TOP OF HOLE	18. TOTAL O	ORE RECOVERY FOR	19. SIG	MATURE	OF INS		11 Hug by	-
ELEVATION DEPTH LEGENT	CLAS	SIFICATION OF MATER	PIALS	S COR	SAMPL	cciferro	ZNOKS	-
0		del10		ERY	NO-	woothering, etc.	ater less, depth o	
1 1	dk-gra	4 f-uniforn	MSAND	334		vvith 2" I	tagen.	E
-11'	matte	of decaying	organic	4 5	SP	Spoon & 1	40 lb.	
						hammer a	gropped	E
5-						casing - :	LY"I.D.	E
32	Gray S	r-uniform S	CAND	4321	SP	14 24		F
1 7				-1	-	Mock tu	1200 1200	E
10 =					1 4		itsued (100	E
1	6000	as above		67				E
3	2011/6	X2 0000€		711	SP	7		E
三				13				E
15-	1							E
1 114		as above, l	Tud	9 =	1			F
		ery slight .	Trace.	9159	SP	@ 35, alay	first	E
40	matte	*		1	7.55	appeared		E
20-	0	f-unitorm						E
= 5	gray -	- MUITORM	SAND	20	SP	100		E
1 1	1			26	100			F
25-								E
1 16	C	05 -		6,7		Sample 8	Ь	E
1 11	same	as above		6722	SP	HOOLO CIA	4	E
						300/0 900	(ve)	E
30				3.11		30% Sar	10	F
37	Gray ve	ry-f-unif	NAL D	2.2 3.2 2.3 2.0	SP			E
171	SAND			20				F
35_								E
1 7 1	The state of the s	manufactures and the second se			1994 ( 1975)			F
	^ -		CLAN					E
1 3 8 9	Some s	ilt, trace of	M-ESONA	27	CH			E
40 - 86		2 - 41 WA # 11 A	1 200	33	CL			E
1 1	C 50	indy CIAY		1				E
	Bittom	of hole el	40					E
=		A. T	9		-			E
			The Line				4	F
=								
=			Theres					
ING FORM								

									)LE I	10	ANHE	5-7
DIV	1810N		MENT OF THE AI	RMY		1. PROJ N.J.	Inle	TS &	Beache	S	SHEET )	OF
INS	TALLATI	on Pt	ula. Dis	T. Off	_		The second second		Inlet		J.	
			ILLING LOG			3. DR 11	LING AG	ENCY	illes Dr			0.00
	ANT		on drawing till	le and Ille	No.)	5. NAM	E OF DR	ILLER		7333	-19 -01	71
6.			ECTION OF HOLE	appr wive		7 - THI			· DEPTH		9. TOTAL	1
10. SIZE	A Linkson of S.	State of the state	NCTINED   AEK	TICAL DATUM FOR	ELEVATION	BUR	Marie Marie Comment of the last		DRILLED INTO ROCK			of 40°
2"I.b.	Sphit	Spo	IRDEN SAMPLES T	(TBM or MS	IL) IW	WD	1 /	1CX			CALL TO STATE OF THE STATE OF T	
DISTURBE	9		UNDISTURBED	AREN	NO. CO BOXES		GROUWATE	JAD -	STARTED TO AUG	DATE	COMPLETED	( A.
Nate:			18. TOTAL CORE BORING (%)	RECOVERY		19. SIG		OF INSP	ECTOR		TORUS	9.1
LEVATION	ET BUSTON		CLASSIF	ICATION OF	MATERIALS		CORE	BOX OF	(Drilling e)	REI	MARKS	dopth of
	0			- Wat	62		Biow	NO-	Sampl	e 5	taken	
			6	,			Count		WITH 2	" I	. D. SP	IT
		1	Black SI	And the second of the second of the second	LAIR	an and the first of the first o	6		hammer	- d	ropped	
	5 -	111	highly o	rgani	C		6656	SM	30 Inch			70-
	3 -		11.1.1	,			-		casing	12	2 12 T	0.
									began	111	00	
	-	1	DK- gray	ro black	K SILT	y	4-		Comple	6.2T	1600	
	10 -	12	S-SAN	D, Ver	STro	100	43 24	SM				
	10		odor, Tr			ying						
	7		Organic	matte	· fra							
		13	DK-gray s	Lutamil	a man C	LNIE	7					
	15 -		812. 4. 41	2. 00,150	5 51 006 2	MINU	10	SP	- 1			
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	20 -	11,					187	SP	-		top	
	_											
		75	Same a	oda e	ve.		8					
	25 -	1					891	SP				
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	=		- t- 1.	gravel.				cH				
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	=	8	Gray 5-	gravel	1 C-7;	SANI	27	SP				
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IG EOPH		(m)	0-1-1801) PREV									



Hole No. ANTB-1 DIVISION INSTALLATION SHEET | **DRILLING LOG** Philadelphia OF | SHEETS 10. SIZE AND TYPE OF BIT 2. LOCATION (Coordinates or Station) 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) IWWD 3. DRILLING AGENCY 12. MANUFACTURER'S DESIGNATION OF DRILL Willey J-3 Min UNDISTURBED 13. TOTAL NO. OF OVERBURDEN 4. HOLE NO. (As shown on drawing title ANTB-1 and file number) 14. TOTAL NUMBER CORE BOXES 5. NAME OF DRILLER + 5.33 15. ELEVATION GROUND WATER 6. DIRECTION OF HOLE Lucust 64 G 16. DATE HOLE VERTICAL INCLINED. DEG. FROM VERT. 17. ELEVATION TOP OF HOLE 8.5 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING 8 DEPTH DRILLED INTO ROCK 19. SIGNATURE OF INSPECTOR 9. TOTAL DEPTH OF HOLE REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) BOX OR CLASSIFICATION OF MATERIALS (Description) LEGEND ELEVATION RECOY-ERY NO. Blaus Lt. ton of block f. uniform SAND (dry) Unless otherwise notest Samples were taken with 24 SP 2" I.D. split spoon of 140# hammer dropping 9 12 Description adjectives used Ten f. uniform SAND (dry) SP Silty of Sondy = 30% - 50% 30m = 72 - 30% trace = 5 - 1200 25 slight time = less then 5% Gray & slightly misecous 18 SP uniform SAND (well) 23 34 Gray m- & SAND W/ slight true of marine life. SP 45 Gray & SAND SP 13 22 36 Groy F. SAND W/ trace Grand water level @ 3.17 SP of m sand of marine life depth on a August 64 39 @ 1700 hrs Medium tide 与14 Gray & SAND W/slight SP marine life 22 Gray m - & SAND w/ slight trace cis sand, f. gravel of 36 (37-40) - wash mater brought up shight trues at black SP 8 49 59 marine life SILT (42'-43') - Mostly sand Up toward of black Silt Gray m-f SAND W/ some SILT & slight trace of marine 4637 SP 19 B (43-45) - Wash water turns
don't brown w/ pieces of
tlack's brown silt & Sand
[Kootly Sand & probably ary prakt B (40.5- 42) - Gray Silty m-f SAND W/ slight trace [47-48] - recorded frage of wood, but mostly of tord Gray me + SAND W/small

Pockets of flack organic matter

# trace of marine life

Brown or ten m-f SAND changing
IN Lattern of shee to gray c-f SP 10 24 Bottom of hole @ 50 depth 1138 Hele completed & Rucust &4 ENG FORM 1836 N. J INLETS & Beaches PREVIOUS EDITIONS MAY BE USED (EM 1110-1-1801) ANTB-1 Townsends Inlet Bottom of hole EL - 41.5

	MENT OF THE ARMY	1. PROJECT	1.	73	SHEET / OF /
	AD L 1 0 A	2. LOCATION	(Coord In	BEACHES or Station)	
INSTALLATION Thile	delphie Pistrict Office	Towns	ENDS	INLET - AUAL	ON
	ILLING LOG	3. DRILLING	AGENCY	ng Corporat	
CALL OF THE CONTRACTOR OF THE CALL OF THE	on drawing title and file No.)	5. NAME OF	RILLER	J Corporat	167~
ANTB-		Fra	The second of th	Derby	A CONTRACTOR OF THE CONTRACTOR
	ECTION OF HOLE  NOLINED   DEGREES WITH	7. THICKNESS		DEPTH	9. TOTAL DEPTH OF
SIZE AND TYPE OF BI	TACHLICAL	BURDEN		INTO ROCK	HOLE 30
2" I.D. split	(TBM or MSL) Z	NWD	T- 7	ACTURER'S DESIGNAT	W Tryand
TOTAL NO. OF OVERBU	RDEN SAMPLES TAKEN 14- TOTAL UNDISTURBED NO. C		EV.	16. DATE	HOLE
ELEV. TOP OF HOLE	18- TOTAL CORE RECOVERY FOR	19. SIGNATURE	TERTA.4	9 STARTED 1400	COMPLETED 1630
+ 4.29	BORING (%)	Ty. SIGNATURE		risht	
ATION DEPTH LEGEND	CLASSIFICATION OF MATERIAL		SAMPL	RI	MARKS voter lose, depth o
0 1	(Bescription)	ERY	10.	weathering, etc	If significant ;
1 1	Lt tan f. un form SA	ND pers	" Pluces	Universe others	orth 2" J.D. spl
1		4		Spoon of 14	* hammer
			5	dropping B	
1, 4					
5	Gray & SAND W/ trace organic silt of root mat	e of 12	0.00		djectives used
1 2	organic silt of root mat	ter 2	Sp	Some =	20- 50%
1 -	7	^		trace =	5-1270
=				whole trace	= less than 5%
10 = I	0	7		marine like	= shells, etc
1 3	Gray f. SAND	6	SP	1 1 1	
313		8	1	( C - 2 ) Wa	sh water was
		1	18	of I say	1/ some seams
				4' to 5'	,
15	^	8,		Samples # 2	da had an
1 = 4	Gray 4. SAND	W/ 16	SP		rell about thom
1 4	Slight trace of more	n & 2	0		
The state of	lofa		1	Sample # 4	- orly 5==11
20	Gray m- & SAND W/	same 39	SP	0 1 #-	
3 5	marine life & trace	31	) 31	Jample 5	- only smell
	Coarse sand	F	7		
	SC Sa Noc				
	- 4				
25	Gray & SAND W/ SO	me 810			
16	c-m sand & f. grave	10 1	SP		
	Slight trace of marine	leta 1	1		
1 17					
30 -1	Gray C- & SAND W/ SI	19 15 14	SP		
1 E	11.6	29			
1 3 4	4				
	Du 111 51	2571	9		
	Bottom of hole El.	KD. 11			
35					
1 - 1					
7				water .	1
=				Low Tide	ogoohrs,
				Ground water	- level@1.8
3				depth on 13	Husust 64
		£8		d	
1 3				ANTB-2-	- Loop tron
				15 23' +	owards whet
				[Note change	Lautoro No s
				Burry She	L- Fyact
				bulkhead.	Pell ou stone
				J	

Townsends bale.

Hole No. AN TB-3 DIVISION INSTALLATION SHEET 1 DRILLING LOG Office NAD Philadelphia 1. PROJECT 10. SIZE AND TYPE OF BIT 2" I.D. Sp/12

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) INLETS BEACHES 2. LOCATION (Coordinates or Station) DWWI 3. DRILLING AGENCY 12. MANUFACTURER'S DESIGNATION OF DRILL T-2 Tractor W/ Th Tripod Drilling Giles or poratio UNDISTURBED 13. TOTAL NO. OF OVERBURDEN 4. HOLE NO. (As shown on drawing title SAMPLES TAKEN and file number) 14. TOTAL NUMBER CORE BOXES 5. NAME OF DRILLER 15. ELEVATION GROUND WATER Frank Derby 6. DIRECTION OF HOLE STARTED 11 August 64 11 August 64 16. DATE HOLE VERTICAL INCLINED 17. ELEVATION TOP OF HOLE + 7.85 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING 8. DEPTH DRILLED INTO ROCK 19. SIGNATURE OF INSPECTOR 30.0 Ft 9. TOTAL DEPTH OF HOLE Wright SAMPLE NO. REMARKS CLASSIFICATION OF MATERIALS (Description) (Drilling time, water loss, depth of weathering, etc., if significant) LEGEND ELEVATION ERY. Blows SYMBO Lt. tan f. uniform SAND Unless otherwise noted Samples were taken with 122 W/slight trees of charred wood SP 2" I.D. split spoon \$ (dry) 140 hammer dropping 3011 Gray- from & SAND w/shight 14 SP trace of block sitt (wot) Descriptive adjectives used 2 10 sitty or sandy = 30 - 50 % some = -12 - 30% 5-1270 trace = slight truce = less than 5% Gray & SAND W/ slight trace of marine life. SP manne life = Shells, etc (12-145) - Wash water - was I sand w/some franky sitt seems P OH Black organic SILT W/ trace 4 (17-19) - Black organic Sitt Gray f. SAND 11 SP 12 5 13 917 Same SP Sample 7 - (28-30) 18 918 19 30 7 Same SP Note completed @ depth Bottom of Hole El. - 22.15' 30 ON 11 August 64 @ 1200 hrs Ground water level @ 3.0 depth on 11 August 1964 @ 1600 hrs Low Tide ENG FORM 1836 HOLE NO. N.T. INLETS & BEACHES PREVIOUS EDITIONS MAY BE USED (EM 1110-1-1801) ANTB-3 Townsends Inlet

Hole No. ANTB-4 INSTALLATION SHEET DRILLING LOG PROJECT 10. SIZE AND TYPE OF BIT 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) 2. LOCATION (Coordinates or Station) IWWD 12. MANUFACTURER'S DESIGNATION OF DRILL J-3 Willey Dillong UNDISTURBED 13. TOTAL NO. OF OVERBURDEN DISTURBED 4. HOLE NO. (As shown on drawing title and file number) SAMPLES TAKEN ANTB - 4 14. TOTAL NUMBER CORE BOXES Derby 15. ELEVATION GROUND WATER 6. DIRECTION OF HOLE STARTED 16. DATE HOLE August 14 August 64 VERTICAL INCLINED +7.281 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING 8. DEPTH DRILLED INTO ROCK 19. SIGNATURE OF INSPECTOR 42.0 9. TOTAL DEPTH OF HOLE Wright REMARKS
(Drilling time, water loss, depth of weathering, etc., if significant) BOX OR SAMPLE: NO. CLASSIFICATION OF MATERIALS (Description) LEGEND RECOY-ERY Blowl 9 1. SAND W/ style Untess otherwise noted Samples were taken with SP trace of drift wood (dry) 140# hammer drapping 30 mehes Lt tan to gray f. SAND W/ trace of marine life of slight SP trace of figrave (moist) Gray & SAND W/a zone 8 SP P. sand. Trace of morine 21 life thru-out entire sample (must) Gray m- f MSAND W/ some 4 418 SP marine life. (moist) 44 Gray m. & SAND W/ Some 12 SP 19 marine life (moist) 29 1136 hrs - Prising rain, 8 11 Gray & SAND W/ slight personted through entr SP trace of m. sand of marine life Lt. tan & gray black f. SAND W/slight trace of f. gravel, m - sand of marine life Fred to quite due to SP Work stopped 3 August 4 @ 1430 Ars @dach 32' 10 Work started @ 0800 hrs an 4 August 64@ 32' Note: Sample were obtain w/o inspector present P. SAND W/ slight trace SP crs. send of trace of 8 R. W. Wright was employed setting a busy for 11 morine 1. le hole ANCB-3 - arrows Gray m- & SAND W/ some marine life & slight trace SP 10 Hole completed @ 0935 hr of crs sand Bottom of hole El. -34.72) Water depth 2.8 @ 4 Avoust 64 @ 1000kg Low Lide ENG FORM 1836 M. J INLets & Braches HOLE NO. PROJECT PREVIOUS EDITIONS MAY BE USED (EM 1110-1-1801)

Hole No. ANTB-5 DIVISION INSTALLATION SHEET DRILLING LOG NAD 1. PROJECT 10. SIZE AND TYPE OF BIT

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) INLETS & BEACHES 2. LOCATION (Coordinates or Station) IWWD NLET 12. MANUFACTURER'S DESIGNATION OF DRILL J-3 Willey 4- whee Drilling Giles UNDISTURBED DISTURBED 13. TOTAL NO. OF OVERBURDEN 4. HOLE NO. (As shown on drawing title and file number) ANTB-5 14. TOTAL NUMBER CORE BOXES 5. NAME OF DRILLER 15. ELEVATION GROUND WATER 👉 🍮. 6. DIRECTION OF HOLE H Avent 64 H Avent STARTED 16. DATE HOLE 4 August 64 VERTICAL INCLINED. 17. ELEVATION TOP OF HOLE + 7. 27 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING 8. DEPTH DRILLED INTO ROCK 19. SIGNATURE OF INSPECTOR 9. TOTAL DEPTH OF HOLE REMARKS
(Drilling time, water loss, depth of weathering, etc., if significant) BOX OR SAMPLE NO. CLASSIFICATION OF MATERIALS (Description) LEGEND ELEVATION RECOV-- ERY-Blows SYMBO per 20 P222 tan I SAND (dry) Unless otherwise moted samples were taken with 2" I.D. split spoon of SP 140 # however dropping 30 inches Lt tan to gray of SAND W/ 10 trace of m. Sand & slight SP trace of marine life (unt) 19 Sample 3 - Marine like DK. gray & SAND grading 12 (shells) increased w/ 13 down to a m + SMD w SP lucreuse in depth 21. trace of marine life & slight trace of crs. sand (wet) 21 RK. gray & SAND W/ true 15 of marine life of slight SP 15 Trace of mrc sand (wet 12 Gray C- & SAND W/ trace 17 of marine like & shight SP 25 trace of I gravel ( Just over 28 Wash water @ 24.5 to 14" SIZE) Approx 24.8 turned black 10 Gray f. SAND W/ Some marine life of slight trace + brought up (m=c Sand SP of gravel size particles of graphite or coal 17 of m. sand 19 56 Gray & SAND W/ trace SP of marine life 15 Grey m- I SAND W/ trace of marma like & slight SP 8 10 Wash water from 37-38 trace of f. graval approved to be of sand BIK. 4. sandy SILT 10 ML BIK. silty, c-f sandy, fine GRAVEL 15 GP Hole completed HAugust 19 1864 @ 1400 hrs Boltom of hole El. - 32.73 Water table 2 depth ON 4 August 64 @ LOW tide ENG FORM 1836 PROJECT N.J Inlets & Beaches HOLE NO. PREVIOUS EDITIONS MAY BE USED (EM 1110-1-1801) ANTB-5 TOWNSENDS INLET

BEDADYING AS THE ADMI	1. PROJ	ECT		WOLE NO.	ANT DEG	-
DEPARTMENT OF THE ARMY	N.T.T	nle	rs e	Beaches	SHEET   OF	
INSTALLATION Phila, DIST OFFICE		ALAMANDA MAN		s Injet h	1	
DRILLING LOG	3. DRIL	LING AG	ENCY	N 4		
u. HOLE NO. (As. shown on drawing title and file No.)	5. NAME	OF DR	LLIER	iles Drilli	ng Co.	-
6. DIRECTION OF HOLE		Water Company	ank	Derby		
VERTICAL DEGREES WITH	7- THIC	KNESS VER		DEPTH PRILLED	9. TOTAL DEPTH OF	
10. SIZE AND TYPE OF BIT 11. DATIM FOR FLEVATION	N SHOWN	-	MANUFA	INTO ROCK	HOLE 45	4
	WWD	17	-3 /	Millers 4- W	heel Drive	
DISTURBED UNDISTURBED NO. CO. BOXES	ORE O	GROU		9 STARTED	COMPLETED	-
17. ELEV. TOP OF HOLE 18. TOTAL CORE RECOVERY FOR BORING (%)	19. SIGN	ATURE (	OF INSF	ECTOR	5 August 64	-
		Sep!	BOX OF	uccifer	ADYS	-
(Description)		REDOV-	SAMPLE NO-	(prilling time, we woothering, etc.	stor lose, depth of	1
grayish-brn - & uniform	CUAZO	Blows	0.00	Unless other	wise noded	-
1 1 1 1		22	SP		taken with	E
				2" I.D spli		=
				30"	7	F
= 2 gray & uniform SAN	au	ald'u	0=			E
1 1, ,		15	SP			F
						-
10 = 3 gray f-m SAND, a		18		med. Sand	occured	E
I small trace of shell		1823	SP	IN SMAIL C		E
Fragments, Wet				a small am	her by	E
3					C 07 3/1E	E
Gray C- & SAND W/SO	2 mc	23		1		F
marine life (shell) & s	slight	23 34 447	SP	Samples + &	5 - INSpector	E
truce of f. gravel of blace	etteilt	47		R. W. U	Jright	E
1 1				a contract		E
Gray m- & SAND W/ to	ace.	13	4-5			E
5 of ers sand & marine	2	13 30 52	SP	Work stoned	4 Aug 64 @	F
- 1.te		52		Vork started	to the con C	E
	1			0800 hrs @	5 Mug. 64 Q dopth 221	E
25 - Le tan I SAND W to	reof	19		Inspector - R.	W. Wright	E
marine life trace o	+	38	SP	Note: Sample	(6) gotten @	E
- marine life		75		hose to mean h	water supply	F
3				@ Extremely	Low Tide period	E
30 - Ton m- & SAND W/sly	kt	27				F
truck of cis. sand of m	2477AC	53 55	SP		- host Simple	E
1.60		57		metriouse	it again and	E
B						E
35 -	-1.17	0			Approx 3 hrs	
It gray m- 1 SAND W/	Stight	7	SP	Working time	e @ Low tole	F
trace of crs send of marin	160	8 13		hose to reac	to lack of	E
(38.0 - 38.5) - Gray m- 1 S	duk	-	SP			F
40 - 16 W/ trace organic silt, Crs St.	mely "	23	OL			E
- (38.5 - 40.0) - Greensteh - a	Pay-yell	7				-
= 10 Organia SILT W/ Some &.	Sand	7	SM	Hole complete	1 5 Nasustay	E
Yellwish-bour to dark g		88		@ 1700 hrs		-
45 - Tong Sitty C-+ SAND W/S	om e	9	SKI			F
7 + grave 1. Lors sand	4.			Water table	2.7depth	F
] grave also approved in	1"			on 6 Augus	上64 (四)	F
Seams thru-out sample	104			0830 hrs -	melium tide	
Castler of hole El 35.4						
ENG FORM 1024 (EM 1110-1-1801) PREVIOUS EDITION MAY BE	USED	800	IEM	-Ar 1 1		E

8 8 8 8
PER CENT COARSER BY WEIGHT

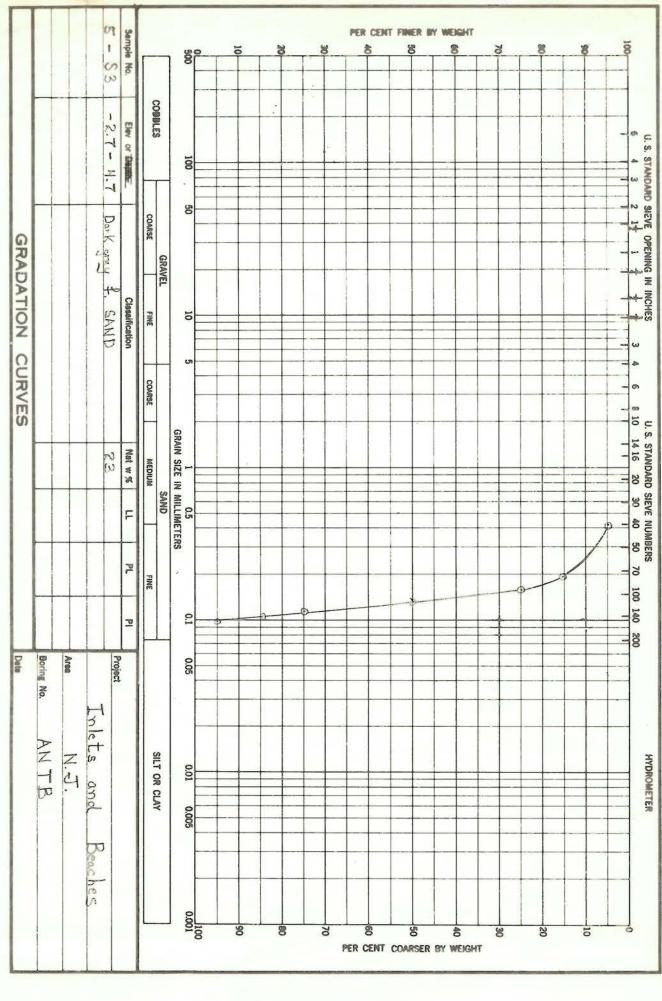
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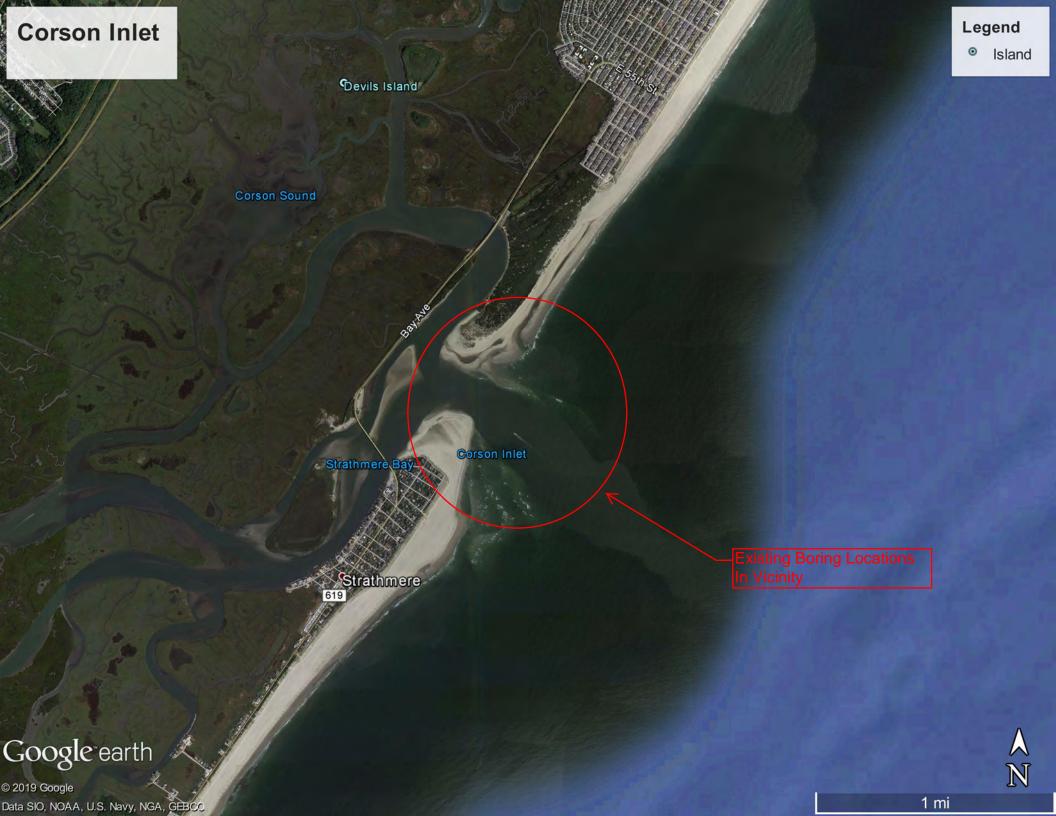
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B51831





ATION CURVES	SAND	SAND	SAND	SAND	Classification	FINE COARSE		10 5											
	19.6	3 C C	25.2	22.4	Nat w %	MEDIUM	GRAIN SIZE IN	1 0.5								57			
					TT   %L	FINE	MILLIMETERS	0.5						-					
Date	Boring No.	Area		Project	P			0.1 0.05		0-	0			•			»—		



Hole No. ANCB-1 INSTALLATION SHEET | DRILLING LOG MAD Philade phia 10. SIZE AND TYPE OF BIT MLETS 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) 2. LOCATION (Coordinates or Station) IWWD 12. MANUFACTURER'S DESIGNATION OF DRILL 4. HOLE NO. (As shown on drawing tale and file number) 3. DRILLING AGENCY J-3 Willey 4-Wheel -UNDISTURBED 13. TOTAL NO. OF OVERBURDEN ANCB 14. TOTAL NUMBER CORE BOXES 5. NAME OF DRILLER Frank Derby + 2.66 15. ELEVATION GROUND WATER 6. DIRECTION OF HOLE July 64 29 July 64 29 VERTICAL INCLINED\_ \_ DEG. FROM VERT. 17. ELEVATION TOP OF HOLE 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING 8. DEPTH DRILLED INTO ROCK 19. SIGNATURE OF INSPECTOR 42.0 9. TOTAL DEPTH OF HOLE BOX-OR SAMPLE NO. REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) % CORE CLASSIFICATION OF MATERIALS (Description) ELEVATION LEGEND ERY g LT. brown to yellowish brown Unless otherwise noted SP samples were taken with f. SAND (clean) mount 2" I.D. split spoots of 8 140 = hammer drapping 80 10 Lt brown to yellowish brown changing to gray f. SAND W/ about trace of morne life (well) 710 Holo was advanced between samples by washing with SP 15 22 124 Gray & SAND grading into a grey C-+ SAND W/slytt Trace of marine life (well) SP 23 9 15 Browish - gray f. SAND W/ trace of m. SAND & slight trace of marine life (wal) SP 17 24 12 Gray m- & SAND W/ trace SP of marine life (wel) At approximately 24.0 OL depth wash water brought Gray f. SAND W/ slight up black organic sitt, 14 SP 15 [NOT enough sample for texting 20 (27-30) - did not detect any sitt in wash Gray m- & SAND w/ slight SP. 6 trace of marine life (wet) Gray & SAND W/ trace of SP 8 marine life 11 11 Gray C- & SAND W/ Frace of SW Bettern of hole El. - 37.34. Water Table Jept h @ 2.0 on 29 Julya @ 1645hrs - Low TIDE ENG FORM 1836 PROJECT N. J. Inlets & Beaches PREVIOUS EDITIONS MAY BE USED (EM 1110-1-1801)
# GPO 1963 0F-7:2-275 ANCB Common s met

Hole No. ANCB-2 INSTALLATION SHEET 1 DRILLING LOG Phila, DIST. Office OF I

10. SIZE AND TYPE OF BIT 2"I.D. Split Spoon

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) N. OF | SHEETS 1. PROJECT N.J. Inlets & Beaches
2. LOCATION (Coordinates or Station) IWWD CUTSON'S INLET N.J 12. MANUFACTURER'S DESIGNATION OF DRILL J-8 WILLEYS 4-Wheeldtye UNDISTURBED UNDISTURBED Warren Giles Drilling 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 4. HOLE NO. (As shown on drawing title and file number) ANCB-2 14. TOTAL NUMBER CORE BOXES + 2+3" Frank

6. DIRECTION OF HOLE Derby 15. ELEVATION GROUND WATER COMPLETED STARTED 16. DATE HOLE 30 July 64 31 JUly 64 VERTICAL | INCLINED. 17. ELEVATION TOP OF HOLE + 4.5 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING 8. DEPTH DRILLED INTO ROCK 19. SIGNATURE OF INSPECTOR OR REMARKS
APLE (Drilling time, water loss, depth of weathering, etc., if significant) Blows J. J. 9. TOTAL DEPTH OF HOLE 42' % CORE BOX OR SAMPLE NO. CLASSIFICATION OF MATERIALS (Description) ELEVATION LEGEND SYMBOL Lt. Brn. 4- uniform SAND 235 Samples were Taken with 2"I.D. Split spoon & 1401b hammer dropped Brn-Gray f-uniform SAND BB11 30 Inches 2 2 /2 Inch I.D. casing 8 after spoon was pounded down And the blow count 223036 gray f-uniform SAND 3 recorded, the moist rod WAS FRISED and dropped Several Times To insure a sufficient 5 232 37 same as above sample recovery. SP See back of This Sheet for Location gray f-uniform SAND many pieces of small shell fragments. Also A very small trace of 793 of This hole 16 decaying organic matter. Gray f- uniform SAND 10113 10 3,0 WORK STOPPED ON 30 July at 1700 hrs same as above Tropic continued 800 Nrs 31 July 7899 gray f-m SAND many pieces of Shell fragments ranging UP TO 12" IN SIZE gray f-c SAND 30,498 Sumple 9 -SP-SM with a trace of fine Silt appeared Some sit, dark gray IN thin seams or Layers el. Bott. of hole -37.5' completed 1100 hrs 31July 64 ENG FORM 1836 HOLE NO. PREVIOUS EDITIONS MAY BE USED (EM 1110-1-1801) N.J. Inlets & Beaches ANCB-2

		Inn	VISION	INSTALLATI	ON	_	Hole No. A		5
DRILLI	NG LO	G	N.A.D.	Ph.	la. D	154, (	Office	OF SHEETS	
1. PROJECT	Tol	T. r	Beaches	10. SIZE A	ND TYPE OF BI	7 2"3	C.D. Split S	P007	
2. LOCATION (	Coordinates	or Station)		11. DATUA	I W W	D SHOWN	(TBM or MSL)		
3. DRILLING AC	FS O	D'S	Inlet N.I.	12. MANU	FACTURER'S DE	SIGNATION	OF DRILL		
Wa	7740	G-11.	es Drilling Co.	13 TOTAL	NO. OF OVER		DISTURBED	INDISTURBED	-
4. HOLE NO. ( and file nu	As shown or	n drawing	ANCB-3		ES TAKEN	PORDEIN	8	Section 1	
5. NAME OF DI	RILLER			14. TOTAL	NUMBER COR	E BOXES	( <del></del>		
6. DIRECTION C	Jaco	de	Harris	15. ELEVA	TION GROUND	WATER	TED COMP	IFTED	
VERTICAL		INED	DEG. FROM VERT.	16. DATE	HOLE	A STATE OF THE PARTY OF THE PAR		Aug 64	
7. THICKNESS		oranicalia.	THE TAXABLE STREET, AND ADDRESS OF THE TAXABLE STRE	17. ELEVA	TION TOP OF		ater Hole!	200 100 100	
8. DEPTH DRILL					CORE RECOVE	70.0011.0010.0010.00	RING ——	9	%
9. TOTAL DEPTH	OF HOLE	4	o'		Blowns		J. Uccifer		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)		% CORE RECOV-	BOX OR SAMPLE NO.	REMARK (Drilling time, water weathering, etc., if	S r loss, depth of	
a	0 6	с	- Water		-	SYMBOL-	Drilling be	gan	
	=		Ground el 1.7				800 hrs, 5	Aug 64.	
		1	Brn. 5-uniform S	AND	368		Samples	were	
	=	٦ '	Very Small trace	0 7	13		taken with	2 I.D.	
	5 —		Shell fragments	•			Split spoor	# 1401B	
	=						30 inches	phea	
	Ξ			A grante	70		1 - 7 - 7	E Carr	
	_	2	gray f-uniform S	DUA	703350		Sample # 3	A.	
	=	٢			50		Casing drop		
	10-						6" when tal	th wolf	
	=						hammer	No	
		3	same as above		31		recovery W	Nen	
	Ξ		The state of the s		34 23		Spoon Was	DroughT	
	15-						UP for 1 514	-Ime.	
	.3 =					SP	Spoon wa	sagain	
	=			4		C-SINE NA	dropped t	o Same	
		14	grain size slightly	20 C	19 <sub>1720</sub>		depth and	MICH	
	==	1	larger. also small	1	20		motion of	rod	
	20 —		trace of fine she	11			sample we		
	=		frag.				tained.		
	_=	Η			23		When wash	ina out	
		5	gray 5-uniform SA	IND	23		14-10, ZIUS	a ravel	
	_	ď	24		17		appeared.	4	
	25-						18000		
	=								
	-	76	Same as above		6768				
	=	11°	A STATE OF THE PARTY OF THE PAR		8				
	30-								
	=								
	=	-	1	242	7-				
	-	7	Same as above, b	プレ	61519				
	=	Ц	small trace of sh	ell	16				
	35-		frag.						
	=								
	=								
	_	10	gray C-5 SAND		8				
-	], =	8	trace of shell f	raq	8 <sub>29</sub> 94				
	40-	1	Bott of hole, el -	to'	24		Completed 1	400 hrs	_
			The state of the s				P. 2. 30	41 49	
	=								
	_=								
	=								
	=								
	_								
ENG FORM	1100				PROJECT			HOLE NO.	
1 APR 63	1836	PREV	YIOUS EDITIONS MAY BE USED (EM 1110-1-1	801)	N.Z.	Inlet	s& Beaches	ANCE-	-2

Hole No. ANCB-4 INSTALLATION SHEET \ DRILLING LOG Phila. Dist. Office SHEETS 10. SIZE AND TYPE OF BIT 2" I.D. SPIT SPOON

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)

I W D 1. PROJECT N.J. IHLETS & Beaches
2. LOCATION (Coordinates or Station) Corson's InLet 12. MANUFACTURER'S DESIGNATION OF DRILL acker modified Warren Giles

4. HOLE NO. (As shown on drawing title and file number) Driffind UNDISTURBED 13. TOTAL NO. OF OVERBURDEN 6 SAMPLES TAKEN 14. TOTAL NUMBER CORE BOXES 5. NAME OF DRILLER 15. ELEVATION GROUND WATER Harris ACOD 6. DIRECTION OF HOLE 16. DATE HOLE 29 July 64 29 July 64 VERTICAL INCLINED 17. ELEVATION TOP OF HOLE 12.00 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING 8. DEPTH DRILLED INTO ROCK 19. SIGNATURE OF INSPECTOR J.J. Ucciferro 40'-0" 9. TOTAL DEPTH OF HOLE BOX OR SAMPLE NO. REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) % CORE RECOV-ERY CLASSIFICATION OF MATERIALS (Description) LEGEND Samples were BLOW Taken with 2"I.D. CounT Split spoon & 1401b hammer dropped 30 Inches Water 2/2 Inch I.D. Casing 10 LT. Brn. f-uniform SAND 2P24 Ground EL .- 12.00 No recovery first attempt. Rag was inserted 15 IN EFOOD TO CATCH Sample ON NexT Try. Gray f- uniform SAND 2 21 25% recovery WIET 20 13404 3 Same as above 25% recovery SP 25 16 22 14 Same as above 15 % recovery 30 1321 5 Same as above 25% recovery 35 24 21/7 Same as above 6 25% recovery 40 BOTT. of hole, el. -40'0" Completed 1645 hrs. ENG FORM 1836 HOLE NO. PREVIOUS EDITIONS MAY BE USED (EM 1110-1-1801) NJ INLET'S & Beaches ANCB-4

ANCB - 5 Hole No. SHEET 1 **DRILLING LOG** NAD 1. PROJECT 10. SIZE AND TYPE OF BIT N.J. INLETS &
2. LOCATION (Coordinates or Station) BEACHES 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) IWWD 12. MANUFACTURER'S DESIGNATION OF DRILL 3 DRILLING AGENCY J-3 Willey 4- Whee 4. HOLE NO. (As shown on drawing title UNDISTURBED DISTURBED 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN ANCB - 5 and file number) 14. TOTAL NUMBER CORE BOXES 5. NAME OF DRILLER 15. ELEVATION GROUND WATER Derby 6. DIRECTION OF HOLE STARTED 16. DATE HOLE 30 July 64 INCLINED. 17. ELEVATION TOP OF HOLE + 4.60 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING 8. DEPTH DRILLED INTO ROCK 19. SIGNATURE OF INSPECTOR 42.0' R. W. Wright 9. TOTAL DEPTH OF HOLE REMARKS
(Drilling time, water loss, depth of weathering, etc., if significant) BOX-OR-SAMPLE NO. CLASSIFICATION OF MATERIALS (Description) LEGEND ELEVATION Blows 9 DARK gray & SAUD W/ some Unless otherwise moted Samples were taken with swamp matter & surface 45 2" I.D. split spoon 7 vegetation 140 hammer dropping 30 lucke 5 Dark gray 4. SAND - (Slight SP Hole was advanced between Samples by washing with organic or only Smell) Gray - LIK silty 7, SAND SM split spoon Gray - bik. f. sandy org. SILT OH Gray f. SAND (clean) CP Somple 3 - No Rosevery with backet of tried eyers Note: Wash water appeared Dork-brownish-blk 1. sandy PT trong 7 to 8.5 & changing PEAT W/ some sea shell or marine life 8 ц a. f. sandy org. SILT from 8.5 to 9.5 Brownish - gry 1. SAND W/ some organic matter (13-15) - Wash water 44 brought up dark brown selly Peat Lt. tan f. SAND W/ Some SP 5 5 m - Sand (17-20) - Wash water brought up few thin to to be some of gray & brown Thek gray organic SILT W/ OH P Some Swamp matter of Vegetation (Simple in 2- jus) & sandy org. SILT (22-24) - Wash water trought up & sand (24'-25') - Wash water Dark gray organic SILT HO 13 brought up & sandy org SILT W/ some SWAMP matter & Pat Lt. tan m- f SAND W/ Slight trace of sitt 9 12 SP (27-30') - Wesh water brought up dk gray org SIET Dark gray silty f. SAND W/ (37-40) - Wash water SM brought up gray sitty c-m some c-m sand (organic sine) Lt gray of white C- & SAND SW W/ some of grave ( Just over + ") 40 Bottom of hole E1 .- 37.4. Water Table Dept L @ 1.1 ON 30 July 64 @ 1245 hrs ENG FORM 1836 PROJECT N. T HOLE NO. Inleto & Borches PREVIOUS EDITIONS MAY BE USED (EM 1110-1-1801)

Hole No. ANCB-6 SHEET | INSTALLATION DRILLING LOG NAD Phila. )istrice 1. PROJECT N.J. Inlets & Beaches
2. LOCATION (Coordinates or Station)
Corson's 10. SIZE AND TYPE OF BIT 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) IWWD 12. MANUFACTURER'S DESIGNATION OF DRILL Willey 4 Wheel Drive Giles ()r1 -orp UNDISTURBED DISTURBED 13. TOTAL NO. OF OVERBURDEN 4. HOLE NO. (As shown on drawing title and file number) 10 0 SAMPLES TAKEN ANCB-6 14. TOTAL NUMBER CORE BOXES 5. NAME OF DRILLER Frank Derbu 15. ELEVATION GROUND WATER +3.09 6. DIRECTION OF HOLE 23 July 64 COMPLETED 1464 16. DATE HOLE VERTICAL INCLINED. 17. ELEVATION TOP OF HOLE + 6.09 12.0 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING 0.0 8. DEPTH DRILLED INTO ROCK SIGNATURE OF INSPECTOR J. D. Kane 42.0 9. TOTAL DEPTH OF HOLE REMARKS
(Drilling time, water loss, depth of weathering, etc., if significant) % CORE BOX OR SAMPLE NO. CLASSIFICATION OF MATERIALS (Description) ELEVATION DEPTH LEGEND RECOV. S LOW 6.09 Damp to moist . Micacous Unless otherwise note 224 1 SP samples were taken with 2"1.D. split spoon & 14016 hammer droppin Same as above. Wet (Sample recovery 60%)
Contains few sea shell pcs.
(Turns to gry-due to moisticentent) 30 inches. 2754 Hole was advanced between samples by 2 burring split spoon repeatedly & washing out loosened material. (293740 Same as above. Wet 3 Contains small pes of shells Casing diameter is 21/2" 1.0. SP 31618 Same as above Gry. med-f. micaceous SAND w/few small pcs. of shells Dk. gry organic CLAY w/many pcs of decaying vegetation. From 25 to 30.5 Highly Dlastic. OH material Some odor OH Brn. - gry micaceous med-f SAND Wet SP 2316223 DR. gry. CLAY w/many seams CL. off SAND. SC Lt. gry f-to C. SAND w few 2975 SW Completed @ 1510 on 23 July 64 f. tom. GRAVEL Bottom of Hale @ El. -35.91 Water Table Depth @ 3.0' on 23 July @ 1500. ENG FORM 1836 PROJECT J. Inlets & Beaches HOLE NO. PREVIOUS EDITIONS MAY BE USED (EM 1110-1-1801)

© GPO 1963 | OF-712-275 ANCB-6 Corson's Inlet

Hole No. ANCB-7 SHEET 1 INSTALLATION DIVISION DRILLING LOG Philadelphia District Office NAD OF SHEETS 10. SIZE AND TYPE OF BIT 2"1.D. SPLIT SPOON N.J. Inlets & B 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) 2. LOCATION (Coordinates or Station) IWWD 12. MANUFACTURER'S DESIGNATION OF DRILL 3. DRILLING AGENCY Drive Willey's 4-Whe Warren Giles Drilling Corp. UNDISTURBED 13. TOTAL NO. OF OVERBURDEN DISTURBED 4. HOLE NO. (As shown on drawing title SAMPLES TAKEN ANCB-7 and file number) 14. TOTAL NUMBER CORE BOXES 5. NAME OF DRILLER Frank 15. ELEVATION GROUND WATER +3.17 6. DIRECTION OF HOLE STARTED 24 July 24 July 16. DATE HOLE VERTICAL INCLINED. 792 17. ELEVATION TOP OF HOLE 5 39,0 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING 8. DEPTH DRILLED INTO ROCK 0.0 19. SIGNATURE OF INSPECTOR J.D. Kane 9. TOTAL DEPTH OF HOLE 39,0 REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) % CORE RECOV-ERY CLASSIFICATION OF MATERIALS (Description) ELEVATION LEGEND +5.92 unless otherwise noted, Higry uniform fine SAND. Dry Place. samples were taken with a 2 LD. split spoon & a 1401b. hammer dropped 30 inches. Et. to de gry f. micaceous SAND. Moist to wet. 560016 Hole was advanced between samples by slight 1 contains few med pes of dropping split spoon repeatedly & washing SAND. out loosened material. Dk. gry. micoceous fine SADD W/many pes of sea shell fragments. Wet (w/o sample recovery) 21 21 27 35 SP 2 Casing \$ 15 2/21.D. slight odor. Gry, mica, fine SAND shortly 14 21 coarser than above. Wet 3 Contains many small pes of shells. 9889 Same as above TE BOIL No Recovery No Recovery except for many small pes of shells.

From 27.0 to 28.0 H. gry
c. to f. SAND changing @
28.0 to dk. gry f. SAND.
Wet. Some small pes of grave From 25.0 to 27.0 SW 781112 4310/8 No Recovery No Recovery From 30.0 to 32.0 13,233 Brn-gry, m-f. SAND w/ small pokts of brn. organic matter. wet 6 w/300 lb hammer SP Gry m-f SAND. Wet. Mica. 12<sub>12</sub>374 CL DR gry. f. sandy CLAY. Shight odor Ground Water Depth @ 2'-9" on 24 July 04 Bottom of hole @ El-33.08 @ 1330. Completed ANCB-7 @ 1340. ENG FORM 1836 PROJECT N.S. Inlets & Beaches HOLE NO. PREVIOUS EDITIONS MAY BE USED (EM 1110-1-1801) ANCB-7 Corson's Intel

	07	I	(3)	i	1	Sam					1	_	13	N)		60)				Y WE		4		-				0	5
	S	1	S	1	SH	Sample No.	Γ		500		74	5		90		8	5		5		3		3		3		3	100	3
	,	1 2	()	-20	-10	1 0	COBBI	COMMITTEE																					
Ì	1	22.0-	- 32.0-34.0	0.3-7	10.3-12.3	- Elev or Beptia-	6.9	93	100																			-	6
	7.4	24.0		1		1			0																			-	w
	Gray	Gray	Gray	Cia	Br		COARSE		50																			-	2 15
2	to	+0	10	17	070			GRAVEL																				-	4 3 2 12 1 2 2 2
A APPLICATION	SAND	SAND	SAND	-	10	Cle		YEL											k									-	n.)
2	O		W		SAND W	Classification	FINE		10																			==	
			SOME	i	1 to	3	-		UI									rie .									24.77 25		3
			m. s		70. Say		COARSE																					-	6 8
)			Sand		2				GRAIF										1.35										10 14 16 20 30 40 50
	24.9	26.6	平.万	24.4	19.6	Not w %	MEDIUM		GRAIN SIZE IN MILLIMETERS																				16 20
I						F		SAND	0.5 N MILLIN																		/		30
									ETERS															9				- a _	50
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I						70			0.1			50	9-		8				_									_	100 140
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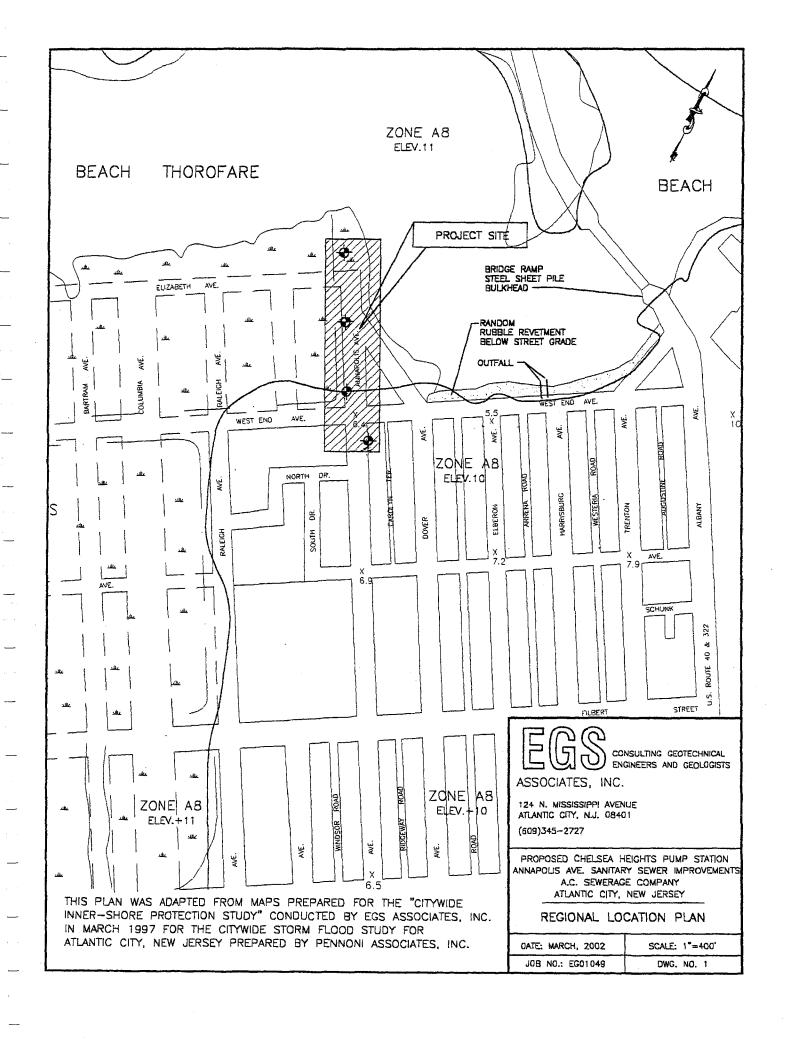
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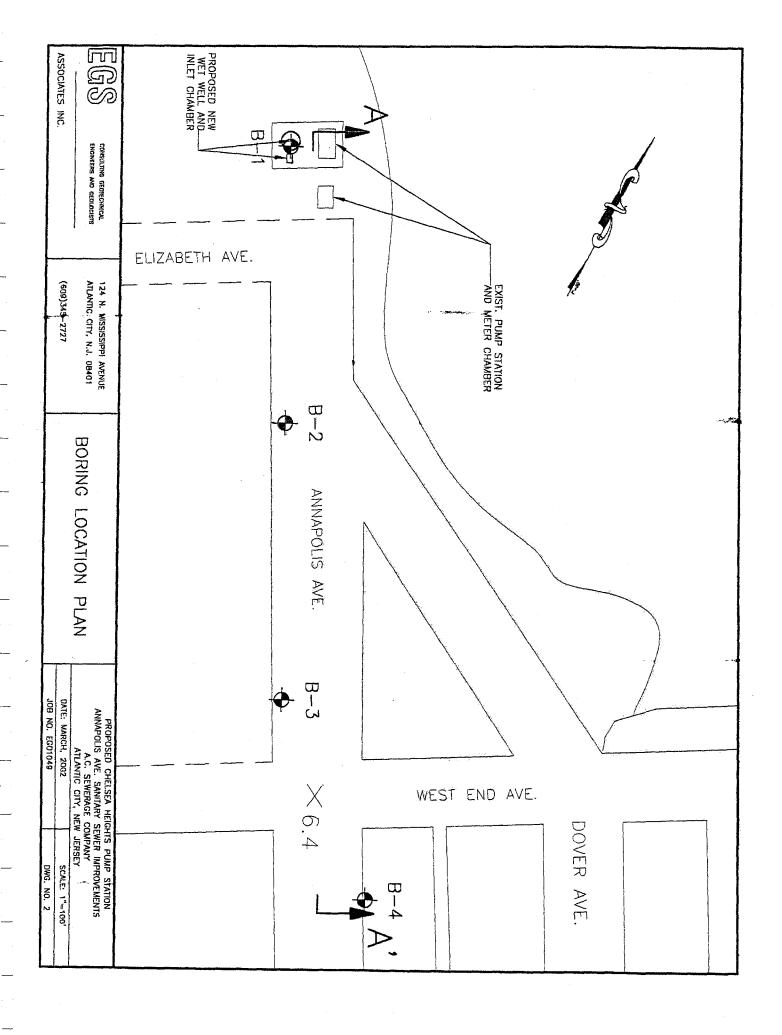
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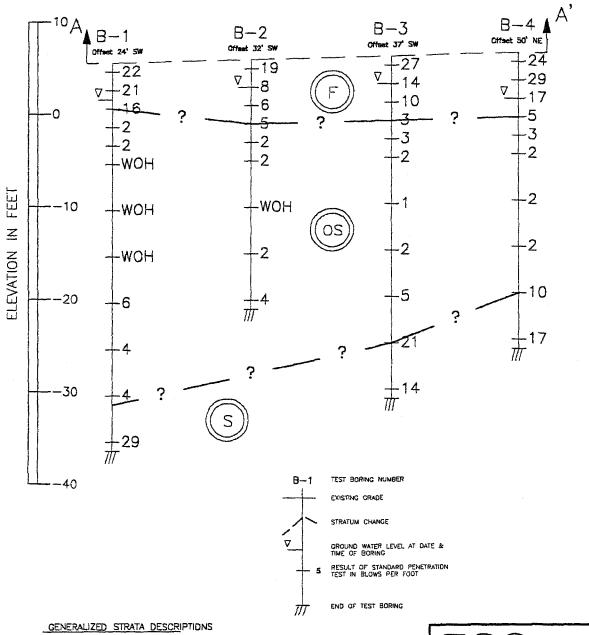
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CERC - FORM 24

# Attachment 2: Chelsea Heights Pump Station Boring Logs and Laboratory Testing







FILL DEPOSITS LAYER F
FILLS GENERALLY CONSISTING OF COARSE TO FINE
SANDS, TRACE SILT, SOME COARSE TO FINE GRAVEL
WITH STONE AND CINDER FRAGMENTS, TRACE SHELLS.

ORGANIC SILT DEPOSIT OS
STRATUM CONSISTING OF ORGANIC SILT, TRACE FIBERS,
TRACE SHELLS WITH PENETRATION RESISTANCE N VALUES
RANGING FROM WOH TO 21 BLOWS PER FOOT.

SAND LAYER'S
STRATUM CONSISTING OF MEDIUM TO FINE SANDS WITH
LITTLE AMOUNTS OF FINES PASSING THE NO. 200 SIEVE,
FOUND IN A MEDIUM STATE OF COMPACTION.

EGS

CONSULTING GEOTECHNICAL ENGINEERS AND GEOLOGISTS

ASSOCIATES, INC.

124 N. MISSISSIPPI AVENUE ATLANTIC CITY, N.J. 08401

(609)345-2727

PROPOSED CHELSEA HEIGHTS PUMP STATION
ANNAPOLIS AVE. SANITARY SEWER IMPROVEMENTS
A.C. SEWERAGE COMPANY
ATLANTIC CITY, NEW JERSEY

SUBSURFACE PROFILE A-A'

DATE: APRIL, 2002	SCALE: 1"=200" HORZ, 1"=10" VERT.
JOB NO. EGO 1049	DWG. NO. 3

Sheet: 1 of 2 Sampler: 2 inch split spoon ASSOCIATES, INC. 日 Hammer/Fall: 140 lbs/30 inch Boring No.: B-1 CONSUMING GEOFFERN CAL SIGNASTIS AND SIGNASTIS Location Plan: See Plan Rig Type: Truck Drilling Method: Drilling Company: Project: Chelsea Heights Pump Station, Atlantic City, NJ Hollow Stem Auger M& R Soil Investigations Ground Elevation: ~+5.5' **Drilling Inspector:** T. Antonetti EG01049 Project#: Start Date: 3/6/02 Depth To-Water: ~4.0" Date/Time: Soils Engineer: Paul Echaniz, P.E. +1.5' Ground Water Elev: 3/6/02 12:25pm End Date: 3/6/02 Sample Blows Depth Identification of Soils/Remarks Below Casing Sampler per Depth Surface (ft) per ft. 6 Inches (ft) 10 13 12 10 S-1 0-2 S-1 Tan cmf SAND, little Silt, some of Gravel. 2 6 15 12 13 (Fill) (maist) 3 S-2 S-2 Dk. Gray mf SAND, little Silt w/brick/stone 4 2-4 5 12 11 & cinder fragments. (Fill) S-3 4-6 6 S-3 Same as S-2 w/little Organic Silt @ bot. 7 (wet) 8 S-4 6-8 S-4 Dk. Gray Organic Clayey SILT w/fibers. (wet) Rec. = 22" 9 10 S-5 8-10 S-5 Dk. Gray Organic SILT w/some silt and gravel. 11 WH (wet) Rec. = 20" WH WH S-6 10-12 S-6 Same as S-5. 12 13 Rec. = 0 14 15 WH WH WH 16 WH 17 S-7 15-17 S-7 Dk. Gray Organic SILT. 18 (maist) Rec. = 24" 19 20 21 WH WH WH WH 22 S-8 20-22 S-8 Dk. Gray Organic SILT w/fibers. 23 (moist) Rec. = 22" 24 25 26 27 S-9 25-27 S-9 Top: Same as S-8. Rec. = 22" (moist) 28 Bot: Gray f SAND, and Silt w/shell fragments. 29 30 3 31 2 32 S-10 30-32 S-10 Top: Dk. Gray Organic SILT w/fibers. 33 Bot: Dk. Gray Organic SILT w/shells. 34 35 36 37 S-11 35-37 S-11 Gray mf SAND, little Silt.

Stratigraphy

6.0"

os

36.5

VISUAL INDENTIFICATION TERMS USED Relative Density (Dr) Of @ Ball Moist Consistency of Clayey Soils Clayey Soils Granular Soils **Proportions Used** Clayey SILT slight PL Thread 1/4" Very Loose 0-15% soft (S) 0.1-0.5 tsf trace 1-10% SILT & CLAY low PL Thread 1/8" Loose 15-35% 0.5-1.0 tsf little 10-20% firm (F) CLAY & SILT med PL Thread 1/16" 35-65% med hard (MH) 20-35% Medium 1.0-2.0 tsf some Silty CLAY high PL Thread 1/32" 65-85% 35-50% Dense 2.0-4.0 tsf and hard (H) CLAY Thread 1/64" very high PL Very Dense 85-100% very hard (VH) over 4.0 tsf

(wet) Rec. = 21"

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					Rig Typ				Location Plan: See P	ran	
Project:	Chelsea	-			Drilling I				Drilling Company:		
	Station	, Atlanti	c City, N				m Auger		M& R Soil Investiga		
Project#:	EG0	1049		Ground	Elevatio	n:	~+5.5'	·	Drilling Inspector:	T. Antonetti	
Start Date:	3/6/02			Depth 1	o Water	:	~4.0'	Date/Time:	Soils Engineer:	Paul Echaniz, P.E.	
End Date:	3/6/02			Ground	Water E	lev:	+1.5'	3/6/02 12:25pm			
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Below	Casing	}	Samp	oler per		OI.	Depth	ide	ntification of Soils/Rem	arks	Stratigraphy
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Clayey SILT	Clayey slight Pl		@ Ball Thread			ranular	Soils 0-15%		of Clayey Soils	Proportions	1-10%
	low PL	<b>L</b>	Thread		Very Lo	USE	0-15% 15-35%	soft (S) firm (F)	0.1-0.5 tsf 0.5-1.0 tsf	trace little	10-20%
	med PL		Thread		Medium	1	35-65%	med hard (MH)	1.0-2.0 tsf	some	20-35%
Silty CLAY	high PL		Thread		Dense	•	65-85%	hard (H)	2.0-4.0 tsf	and	35-50%
CLAY	very hig		Thread		Very De	ense		very hard (VH)	over 4.0 tsf		

					Sample	r: 2 inc	h split spo	on	Sheet: 1 of 1		
	3 3		ESTADO2		Hamme	r/Fall:	140 lbs/30	inch	Boring No.: B-2		·
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Project:	Chelsea	Height	s Pump		Drilling	Method	:	!	Drilling Company:		
		_	c City, N	J	Holi	ow Ster	n Auger		M& R Soil Investiga	tions	
Project#:		1049	<u> </u>	<del></del>	Elevatio		~5.5'		Drilling inspector:	T. Antonetti	
Start Date:	3/6/02			Depth 1	o Water	<del></del>	~3.0'	Date/Time:	Soils Engineer:	Paul Echaniz, P.E.	
End Date:	3/6/02			<del></del>	Water E		+2.5'	3/6/02 3:14pm			
Depth	1		Blows			T	ample	1			
Below	Casing	Ī	Sami	oler per		ΙD	Depth	lder	ntification of Soils/Rem	arks	Stratigraphy
Surface (ft)	per ft.	Į	•	nches			(ft)	1			
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2		<u> </u>				S-1	0-2	S-1 Dk. Brown & Ta	an cmf SAND, trace S	ilt,	
3	1	10	5	3	4			some of Gravel	(Fill) (moist)		
4	<del>                                     </del>					S-2	2-4	S-2 Brown mf SAN	D, some Silt, some of	Gravel.	F
5	<del>                                     </del>	3	3	3	3			(Fill) (wet) R			
6						S-3	4-6	S-3 Dk. Grav mf S/	AND, trace Silt, little r	nf Gravel	
7	<del>                                     </del>	2	2	3	1			w/trace shells.			
8				1		S-4	6-8	4	AND, trace Silt, some i	nf Gravel.	8.0'
9	<del>                                     </del>	1	1	1	1			(wet)			
10				<del>                                     </del>	<u> </u>	S-5	8-10	S-5 Dk. Brown PEA	T, little Organic Silt.		
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28				<del>                                     </del>				•	AND, trace Silt w/som	e shells.	
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	Clayey			Moist		ranular			of Clayey Soils	Proportion	
Clayey SILT	slight P	L	Thread		Very Lo	ose	0-15%	soft (S)	0.1-0.5 tsf	trace	1-10%
SILT & CLAY CLAY & SILT	low PL		Thread Thread		Loose		15-35%	firm (F)	0.5-1.0 tsf	little	10-20%
Silty CLAY	high PL		Thread		Medium Dense	ı	35-65% 65-85%	med hard (MH) hard (H)	1.0-2.0 tsf 2.0-4.0 tsf	some and	20-35% 35-50%
CLAY	very hig		Thread		Very De	ense		very hard (VH)	over 4.0 tsf		46.44.0

1 of 1 Sheet: Sampler: 2 inch split spoon ASSOCIATES, INC. Boring No.: B-3 Hammer/Fall: 140 lbs/30 inch Location Plan: See Plan Rig Type: Truck Drilling Method: Drilling Company: Project: Chelsea Heights Pump M& R Soil Investigations Station, Atlantic City, NJ Hollow Stem Auger Ground Elevation: Drilling Inspector: T. Antonetti Project#: EG01049 ~+6.5' Depth To Water: ~3.0' Date/Time: Soils Engineer: Paul Echaniz, P.E. Start Date: 3/6/02 End Date: 3/7/02 Ground Water Elev: +3.5 3/7/02 11:06am Blows Sample Depth ID Depth Identification of Soils/Remarks Stratigraphy Sampler per Below Casing (ft) Surface (ft) per ft. 6 Inches 11 12 10 17 1 **\$-1** 0-2 S-1 Tan cmf SAND, trace Silt, some cf Gravel. 2 10 12 6 8 3 F 4 S-2 S-2 Tan c mf SAND, little Silt, little mf Gravel, trace shells. 5 7 5 5 6 4-6 S-3 Gray mf SAND, some Sitt, trace shells. S-3 7.0 7 2 2 (wet) 8 S-4 6-8 S-4 Top: Same as S-3. 1 Bot: Gray Organic SILT. (wet) Rec. = 20" 9 8-10 S-5 Dk. Gray Organic SILT wifibers. 10 S-5 (moist) Rec. = 19" 11 12 S-6 10-12 S-6 Dk. Gray Organic SILT. (moist) Rec. = 15" 13 14 os 15 16 17 S-7 15-17 S-7 Dk. Gray Organic SILT. 18 (moist) Rec. ≈ 20" 19 20 21 20-22 S-8 Dk. Gray Organic SILT, trace f Sand. 22 S-8 (moist) Rec. = 24" 23 24 25 26 6 25-27 S-9 Gray Organic SILT, little f Sand w/trace shells. 27 S-9 28 (moist) Rec. = 24" 29 30 11 10 15 31 30.5 32 S-10 30-32 S-10 Top: Same as S-9. 33 Bot: 6" Gray mf SAND, trace Silt. S 34 35 36 37.0 37 S-11 35-37 S-11 Gray mf SAND, some Silt. 38 39 END OF TEST BORING @ 37.0' 40 VISUAL INDENTIFICATION TERMS USED Relative Density (Dr) Of @ Ball Moist Clayey Soils Granular Soils Consistency of Clayey Soils Proportions Used Clayey SILT Thread 1/4" 1-10% slight PL Very Loose 0-15% soft (S) 0.1-0.5 tsf trace SILT & CLAY low PL Thread 1/8" 15-35% 0.5-1.0 tsf little 10-20%

firm (F)

hard (H)

med hard (MH)

very hard (VH)

1.0-2.0 tsf

2.0-4.0 tsf

over 4.0 tsf

some

and

20-35%

35-50%

35-65%

65-85%

85-100%

Loose

Dense

Medium

Very Dense

Thread 1/16"

Thread 1/32"

Thread 1/64"

CLAY & SILT

Silty CLAY

CLAY

med PL

high PL

very high PL

1 of 1 Sampler: 2 inch split spoon Sheet ASSOCIATES, INC. Boring No.: B-4 Hammer/Fall: 140 fbs/30 inch CONNECTION OF CHARLES Location Plan: See Plan Rig Type: Truck Project: Chelsea Heights Pump Drilling Method: Drilling Company: M& R Soil Investigations Station, Atlantic City, NJ Hollow Stem Auger EG01049 Project#: Ground Elevation: -+6.5 Drilling Inspector: T. Antonetti Depth To Water: ~5.0 Date/Time: Paul Echaniz, P.E. Start Date: 3/7/02 Soils Engineer: +1.5 End Date: 3/7/02 Ground Water Elev: 3/7/02 2:36pm Blows Sample Depth ID Identification of Soils/Remarks Stratigraphy Below Casing Sampler per Depth Surface (ft) per ft. 6 Inches (ft) 15 11 20 S-1 S-1 Top: Brown Topsoil 2 0-2 20 20 3 19 Bot: Decomposed wood piece. 4 S-2 2-4 S-2 Brown cmf SAND, and Silt, little cf Gravel, 8 9 5 8 trace cinder (Fill) 6 S-3 4-6 S-3 Lt. Gray cmf SAND, trace Silt. 7 3 3 7.0 8 S-4 6-8 S-4 Top: Gray mf SAND, trace Silt. 2 Bot: Gray Organic Clayey SILT, some fibers. 9 10 S-5 8-10 (wet) Rec. = 20" S-5 Dk. Brown PEAT. 11 12 S-6 10-12 (moist) Rec. = 24" 13 S-6 Dk. Gray Organic SILT, w/trace fibers. 14 (moist) Rec. = 17" 15 16 os S-7 15-17 17 Dk. Gray Organic SILT, w/trace fibers. 18 (moist) Rec. = 24" 19 20 21 22 S-8 20-22 S-8 Dk. Gray Organic SILT, w/trace fibers. 23 (moist) Rec. = 24" 24 25 26.01 26 S-9 Top: Same as S-8. 27 S-9 25-27 28 Bot: 12" Gray mf SAND, little Silt. S 29 (moist) Rec. = 20" 30 5 31 11 32 S-10 32.01 30-32 S-10 Lt. Gray mf SAND, trace Silt. 33 (moist) Rec. = 10" 34 35 END OF TEST BORING @ 32.0' 36 37 38 39 40 VISUAL INDENTIFICATION TERMS USED Relative Density (Dr) Of Clayey Soils @ Ball Moist Granular Soils Consistency of Clayey Soils **Proportions Used** Clayey SILT slight PL Thread 1/4" 0.1-0.5 tsf Very Loose 0-15% soft (S) trace 1-10% SILT & CLAY low PL Thread 1/8" Loose 15-35% 0.5-1.0 tsf little 10-20% firm (F) CLAY & SILT med PL Thread 1/16" Medium 35-65% 1.0-2.0 tsf 20-35% med hard (MH) some

Silty CLAY

CLAY

high PL

very high PL

Thread 1/32"

Thread 1/64"

Dense

Very Dense

65-85%

85-100%

hard (H)

very hard (VH)

2.0-4.0 tsf

over 4.0 tsf

and

35-50%

ASSOCIATE, INC,
CONDUM OF DET ON THE SHEET OF THE SHEET O

## SUMMARY OF LABORATORY TEST RESULTS

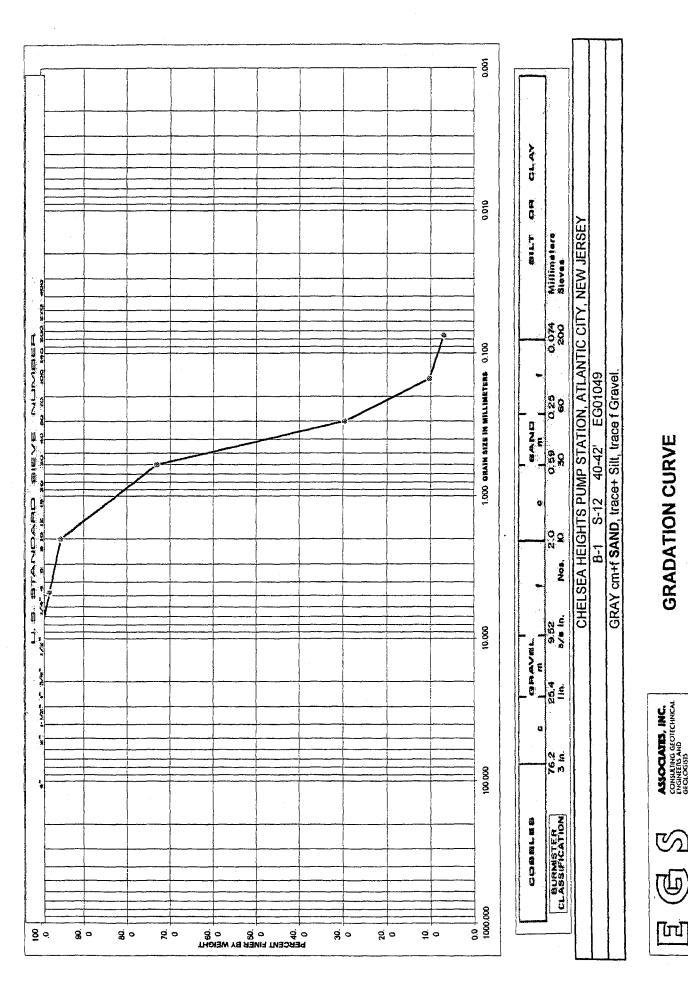
Project: ACSC Chelsea Heights Pump Station, Atlantic City, New Jersey EG01049

Date: 4/02

Sample   Depth   Classification   Clas	A																1
Dk. Gray Organic SILT   157.4   TSF   Skrain   25 g dc   E g		Depth	Costination	efer.	Atterberg	g Limits	Compr	ntined ession	# bCE : Div	ytilids	всцои					anic	
Dk. Gray Organic SILT         157.4         Box Gray Organic SILT         60.5         Box Gray Organic SILT         60.5         Box Gray Organic SILT         120.2         129.5         94.4         Box Gray Organic SILT         120.2         129.5         94.4         Box Gray Organic SILT         Box Gray Organic SILT <td></td> <td></td> <td>Classification</td> <td>M:</td> <td>Liquid Limit</td> <td>Plastic Limit</td> <td>Stress</td> <td>Strain %</td> <td>finU lgisW</td> <td>Perm</td> <td>сошь</td> <td></td> <td></td> <td></td> <td></td> <td>g)O</td> <td></td>			Classification	M:	Liquid Limit	Plastic Limit	Stress	Strain %	finU lgisW	Perm	сошь					g)O	
Dk. Gray Organic SILT.   60.5			Dk. Gray Organic SILT											-	-	-	Γ
Dk. Gray Organic SILT.         60.5         94.4           w/fibers.         120.2         129.5         94.4           w/fibers.         25.7         84.4         86.5           Dk. Gray Organic SILT.         25.7         84.4         86.5           m/fibers.         25.7         86.6         86.6           Db. Gray Organic SILT.         146.3         86.6         86.6           Dk. Gray Organic SILT.         100.4         86.6         86.6           Dk. Gray Organic SILT.         75.1         86.7         88.3           Dk. Gray Organic SILT.         62.3         67.5         58.3		.8-9	w/trace fibers.	157.4													<del></del>
Dk. Gray Organic SILT  w/fibers.  Dk. Gray Organic SILT  Organic Silt.  Dk. Gray Organic SILT  Organic Silt.  Dk. Gray Organic SILT  w/fibers.  Dk. Gray Organic SILT  Organic SILT  Dk. Gray Organic SILT  Organic		15-	Dk. Gray Organic SILT.											-	-		T
Dk. Gray Organic SILT         120.2         129.5         94.4           Myfibers.         Dk. Gray Organic SILT         25.7         Property Care of		17,		60.5								<del></del>					
w/fibers.       120.2       129.5       94.4         Dk. Gray Organic SILT       25.7       25.7         w/fibers.       Gray cm+f SAND, trace+ Silt, tracef Gravel.       146.3       6.0         Dk. Brown PEAT, little of Gray Organic Silt.       146.3       6.0         Dk. Gray Organic SILT, trace fibers.       50.6       6.0         Dk. Gray Organic SILT       100.4       61.8         Dk. Gray Organic SILT.       75.1       75.1         Dk. Gray Organic SILT.       62.3       67.5         Sand.       75.3       75.1         Dk. Gray Organic SILT, trace       35.5         Fox Gray Organic SILT, trace       35.5		20-	Dk. Gray Organic SILT											-			T
Dk. Gray Organic SILT         25.7         9 W/fibers.         25.7         9 W/fibers.         25.7         9 W/fibers.         9 Gray cm f SAND, trace f Gravel.         146.3         9 Gray cm f SAND, trace f Gravel.         146.3         9 Gray cm f SAND, trace f Gravel.         146.3         9 Gray cm c Sitt, trace f Gravel.         146.3         9 Gray Cm cm c Sitt, trace f Gravel.         9 Gray Organic SILT, trace f Gravel.         100.4         9 Gray Organic SILT.         100.4         9 Gray Organic SILT.         15.1 <td></td> <td>22,</td> <td>w/fibers.</td> <td>120.2</td> <td>129.5</td> <td>94.4</td> <td></td> <td></td> <td></td> <td> </td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		22,	w/fibers.	120.2	129.5	94.4				 	-						
w/fibers.         25.7         Pay(fibers.)         25.7         Pay(fibers.)         Pa		30-	Dk. Gray Organic SILT											-	-	_	<u> </u>
Gray cm+f SAND, trace+ Silt, tracef Gravel.         146.3         9. Organic Silt.         146.3         9. Organic Silt.         146.3         9. Organic Silt.         9. Organic Silt.         146.3         9. Organic Silt.		32,	w/fibers.	25.7													
tracef Gravel.  Dk. Brown PEAT, little  Organic Silt.  Dk. Gray Organic SILT, trace fibers.  Dk. Gray Organic SILT  W/fibers.  Dk. Gray Organic SILT  W/fibers.  Dk. Gray Organic SILT  T5.1  Dk. Gray Organic SILT  T5.1  Dk. Gray Organic SILT  T5.1  Dk. Gray Organic SILT  T5.1  Dk. Gray Organic SILT  T5.1  Dk. Gray Organic SILT  T5.1  Dk. Gray Organic SILT  T5.1  Dk. Gray Organic SILT  T5.1  T5.1  Dk. Gray Organic SILT  T5.1  T5.1  Dk. Gray Organic SILT  T5.1  T5.1  Dk. Gray Organic SILT  T5.1  T5.1  Dk. Gray Organic SILT  T5.1  T5.1  Dk. Gray Organic SILT  T5.1  T5.1  Dk. Gray Organic SILT  T5.1  T5.1  Dk. Gray Organic SILT  T5.1		-04	Gray cm <sup>+</sup> f SAND, trace <sup>+</sup> Silt,												-	-	
Dk. Brown PEAT, little         146.3           Dk. Gray Organic SILT, trace fibers.         50.6           Dk. Gray Organic SILT w/fibers.         100.4           Dk. Gray Organic SILT W/fibers.         61.8           Dk. Gray Organic SILT.         75.1           Dk. Gray Organic SILT.         62.3           Dk. Gray Organic SILT.         62.3           f Sand.         135.5		42,	tracef Gravel.									×					
Organic Silt.   146.3   146.3   146.3   146.3   146.3   146.3   146.3   146.3   146.3   146.3   146.3   146.3   146.3   146.5   146.	-		Dk. Brown PEAT, little											-		-	Ţ
Dk. Gray Organic SILT, trace fibers.         50.6           Dk. Gray Organic SILT w/fibers.         100.4           Dk. Gray Organic SILT bk. Gray Organic SILT.         61.8           Dk. Gray Organic SILT.         75.1           Dk. Gray Organic SILT.         62.3           Dk. Gray Organic SILT.         62.3           f Sand.         35.5		8-10,	Organic Silt.	146.3													
fibers.   50.6     Dk. Gray Organic SILT   100.4     W/fibers.   100.4     Dk. Gray Organic SILT   61.8     Dk. Gray Organic SILT   75.1     Dk. Gray Organic SILT   62.3   67.5     Dk. Gray Organic SILT   62.3     F. Sand   53.5   67.5     F. Sand   53.5   67.5     F. Sand   53.5   67.5     Constant   62.3   67.5     F. Sand   62.3   62.3     F. Sand   62.3		15-	Dk. Gray Organic SILT, trace														
Dk. Gray Organic SILT       100.4         w/fibers.       100.4         Dk. Gray Organic SILT.       61.8         Dk. Gray Organic SILT.       75.1         Dk. Gray Organic SILT.       62.3       67.5         Dk. Gray Organic SILT, trace f Sand.       35.5		17,	fibers.	9.05													
w/fibers.         100.4           Dk. Gray Organic SILT         61.8           Dk. Gray Organic SILT.         75.1           Dk. Gray Organic SILT.         62.3         67.5           Dk. Gray Organic SILT, trace f Sand.         35.5	——	20-	Dk. Gray Organic SILT														
Dk. Gray Organic SILT         61.8           Dk. Gray Organic SILT.         75.1           Dk. Gray Organic SILT.         62.3         67.5           Dk. Gray Organic SILT, trace f Sand.         35.5		22°	w/fibers.	100.4											,		
3° w/fibers.       61.8         Dk. Gray Organic SILT.       75.1         Dk. Gray Organic SILT.       62.3       67.5         Dk. Gray Organic SILT, trace f Sand.       35.5			Dk. Gray Organic SILT						·····					<u> </u>			
Dk. Gray Organic SILT.         75.1           Dk. Gray Organic SILT.         62.3         67.5           Dk. Gray Organic SILT, trace f Sand.         35.5         67.5		8-10,	w/fibers.	61.8					-								
75.1   75.1   75.1		10-	Dk. Gray Organic SILT.													L	
Dk. Gray Organic SILT. 62.3 67.5  Dk. Gray Organic SILT, trace f Sand.		12,		75.1											_,		_
Dk. Gray Organic SILT, trace f Sand.		15-	Dk. Gray Organic SILT.														
Dk. Gray Organic SILT, trace f Sand.		17,		62.3	67.5	58.3								-	-		$\neg$
f Sand.		20-	Dk. Gray Organic SILT, trace	1									<del></del>				<del></del>
		22,	f Sand.	35.5											_		7

\* See Test Curves

Organic Content % Ηq C.B.R. Triaxial dation Conosii-4/02 Size Grain Date: Compaction Permeability Specific Gravity SUMMARY OF LABORATORY TEST RESULTS Unit Dry Weight PCF Project: ACSC Chelsea Heights Pump Station, Atlantic City, New Jersey EG01049 Strain % Unconfined Compression Stress TSF Plastic Limit Atterberg Limits Liquid Limit Natural Water Content % 105.8 24.9 47.6 33.1 Dk. Gray Organic SILT Dk. Gray Organic SILT Dk. Gray Organic SILT Dk. Brown PEAT, little Dk. Gray Organic SILT Classification ASSOCIATES, INC.
CORRESPINANCE
CORRESPINANCE
STOLOGRIS w/trace fibers. Organic Silt. w/fibers. w/fibers. \* See Test Curves Depth (II) 8-10, 25-27' 10-12' 15-17' 20-22' Boring & Sample No. िंग B-3 S-9 



### **GRADATION CURVE**

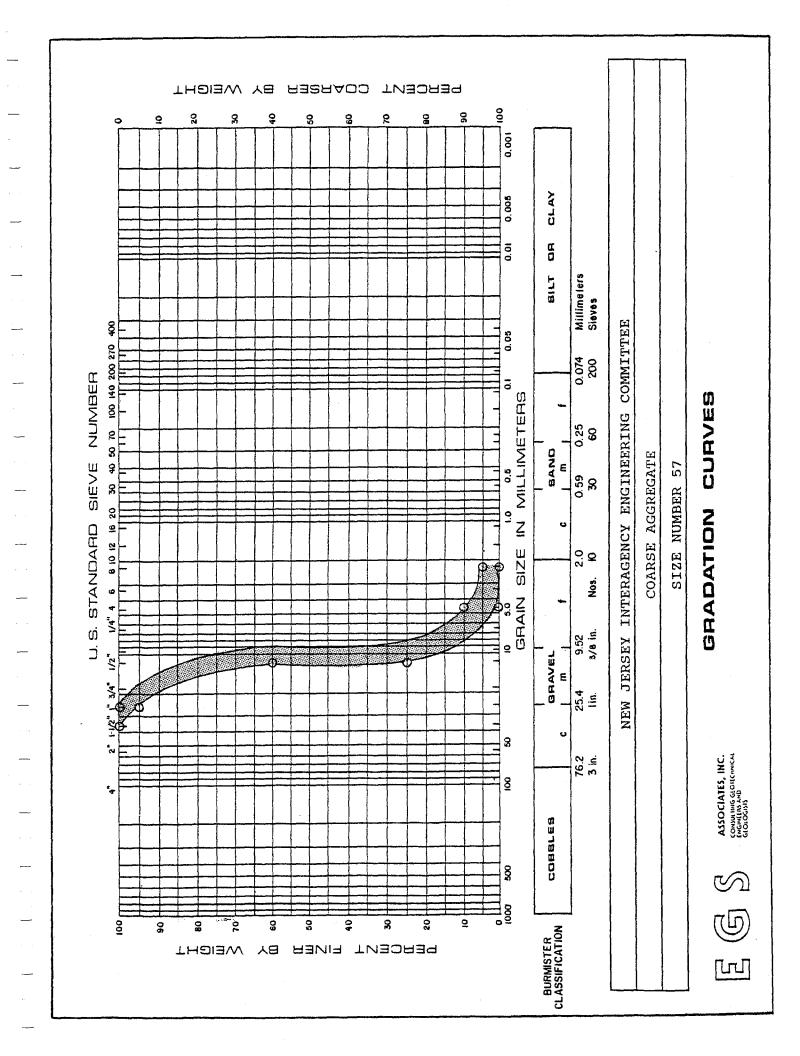


ASSOCIATE, INC.
CONSUTING GEOTECHNICAL
ENGINEERS AND
GEOLOGISTS

### Allowable Gradational Envelope NEW JERSEY DEPARTMENT OF TRANSPORTATION

Coarse Aggregate Size No. 57

U.S Standard Sieve Size	Percent Finer By Weight
1-1/2''	100
1"	95-100
1/2"	25-60
No. 4	0-10
No. 8	0-5

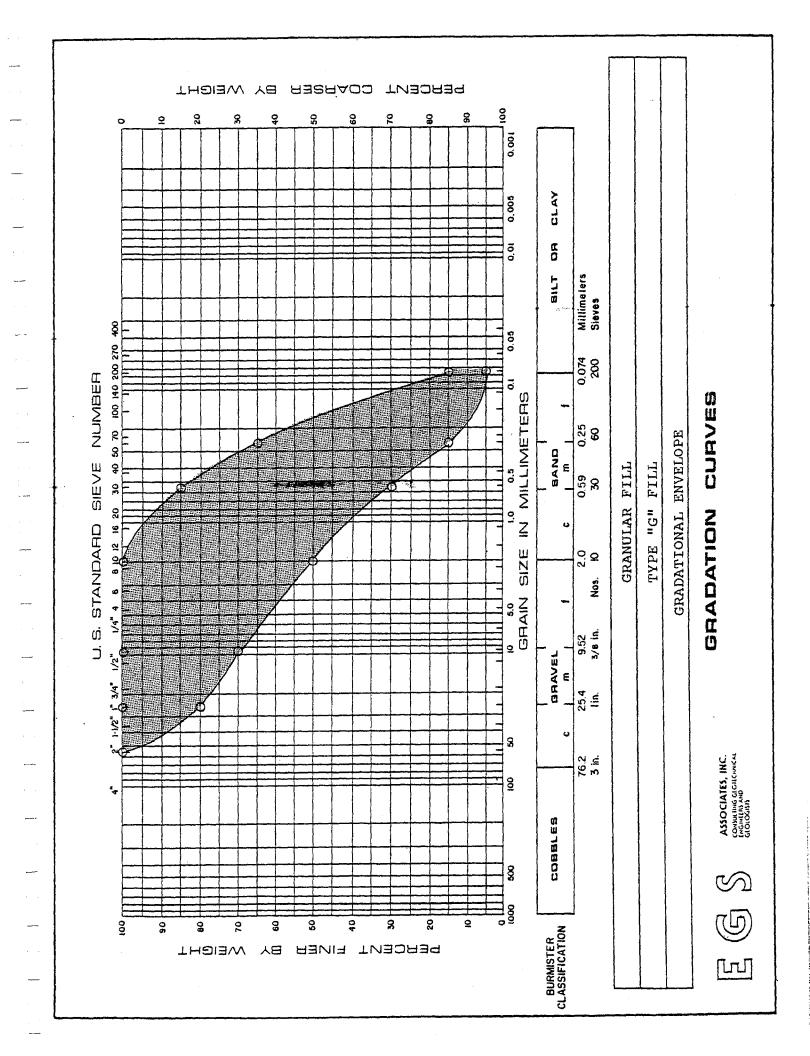


### Allowable Gradational Envelope

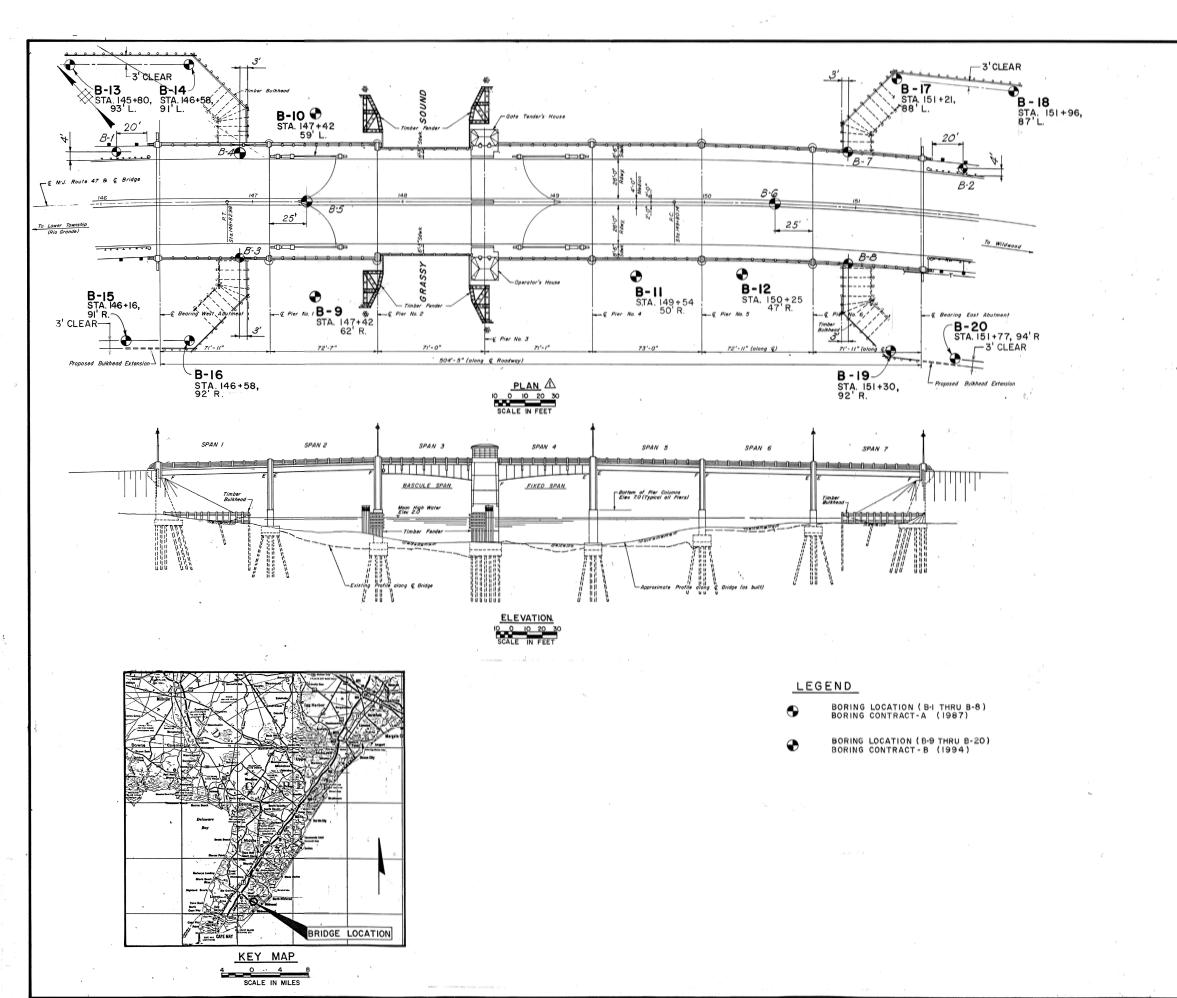
### Type "G" Fill

### Granular Fill

U.S Standard Sieve Size	Percent Finer By Weight
2"	100
1"	80-100
3/8"	70-100
No. 10	50-100
No. 30	30-85
No. 60	15-65
No. 200	5-15







### **ROUTE 47 - SECTION IF**

STRUCTURE NO. 0506-150
THE GEORGE A. REDDING BRIDGE
LOWER TOWNSHIP AND WILDWOOD CITY
CAPE MAY COUNTY, NEW JERSEY

### AS-DRILLED LOCATION PLAN

BORING CONTRACTS A & B

MODJESKI AND MASTERS Conculting Engineers Bordentown, New Jersey

DATE: MAY 12, 1995

DWG. B-I

SHEET 1 OF 4 SITE ENGINEERS, INC. TEST HOLE NO. B-12 LOCAL NAME: GEORGE REDDING BRIDGE ROUTE: 47 SECTION: STATION: 150+25 OFFSET: 47' RT REFERENCE LINE: BRIDGE CL GROUND LINE ELEVATION: -6.5 ELEVATION G.W.T. BORINGS MADE BY: W. GEORGE DATE STARTED: 8-15-94 O Hr. +2 MHW (TIDE) Date: 8-15-94 Date: 24 Hr. DATE COMPLETED: 8-16-94 ft. P.P. Installed INSPECTOR: POR H. CHHEU Sample ID Slows on Spoon CASING REC. SAMPLE NO. DEPTH and BLOWS 0-6" 6-12" 12-18" Profile Change 0 Gray F SAND, some Organic 1.5 WOH WOH WOH 18 0 MUD S-1 Silt (organic odor) DRLING Gray organic SILT and F Sand, 5 5.0 6.5 WOH WOH 12 S-2 trace Clay (strong organic odor) 10.0 10 11.5 WOR WOR WOR 11 Gray organic Clayey SILT, 10.0 S-3 little F Sand (organic odor) v 12.0 13.5 24 14.0 16.0 U-1 15 16.0 Gray M(+)-F SAND, some Silt 3 5 16.0 17.5 2 2 S-4 20.0 20 -Gray SILT, little F Sand 18 7 21.5 6 6 20.0 S-5 Penetration test: V=1.25;

H=1.0

H=1.0

trace Silt

16

5

15

18

Gray SILT and CLAY, some

Light Gray C(+)-M-F SAND,

M-F(+) Sand, trace M Gravel Penetration test: V=.75;

Nominal I. D. of Drive Pipe	4"
Nominal I.D. of Split Barrel Sampler	1 1/2"
Weight of hammer on Split Barrel Sampler	140 lbs
Drop of hammer on Split Barrel Sampler	30"

25.0

30.0

S-6

S-7

26.5

31.5

13

13

The subsurface information shown hereon was obtained for state design and estimate purposes. It is made available to authorized users only that they may have access to the same information available to the State. It is presented in good faith, but is not intended as a substitute for investigations, interpretation or judgement of such authorized users.

30.0

Core	Día.		

Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

25 .

30

Approximat	e Chai	nge	in Str	ata_		 
Inferred C	hange	in	Strata		_	 _

ROUT	E: 47		LOCAL N	NAME:	GEOR	e red	DING B	RIDGE	TEST HOLE NO. B-12	
	CION:									
STAT	TION: 150	+25 OFF	SET: 47						ELEVATION G.W.T.	
	INGS MADE						D: 8-1		O Hr. +2 MHW (TIDE) Date: 8-15-94 Date:	
INSI	ECTOR:	OR H. C	HHEU	<u> </u>		COMPLE ows on \$	TED: 8	-16-9	4 ft. P.P. Installed Date: Sample ID	
	CASING BLOWS	SAMPL	E NO. DEP	TH	0-6"	6-12"	1	REC.	and Profile Change	
	BLONG				-	U 1.2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
	MUD								<u> </u>	
35 -	DRLING			٠.	<u></u>				SAME	
35		S-8	35.0	36.5	21	23	29	8		
					<u> </u>		-			
					-	-			,	
					-		<del> </del>			
40 -		S-9	40.0	41.5	21	26	17	8	SAME	
							T			
										5.0
45 -		S-10	45.0	46.5	1	3	5	18	Green Silty CLAY, trace F	
					<u> </u>				Penetration test: V=1.0;	
		V	47.0	48.5	├	<del> </del>	<u> </u>	-	H=.25	
				<del> </del>	-		<del> </del>	24	<del> </del>	
50 -		U-2	49.0	51.0	-	+	-	24	<del> </del>	
		<del>  </del>	51.0	52.5	9	11	14	18	Green SILT, trace F Sand	
		S-11	51.0	32.5	<del>                                     </del>		+	+==	Penetration tests: V=1.5; H=1.75	
		<del> </del>	1	+	1-		1	<del>                                     </del>	1	
		<del>                                     </del>		+	1					
55 -		S-12	55.0	56.5	8	9	14	18	Gray Silty CLAY Penetration tests: V=1.5;	
									H=1.75	
									<u> </u>	
									-	
60			ļ		—				Gray Clayey SILT, trace F	
00		S-13	60.0	61.5	7	13	15	18	Sand (fine sand and clayey	
		ļ	<u> </u> `	+	+-	_		-	silt are in alternate layers)	
		<del> </del>	-	+	+-		-	+-	i – – – – – – – – – – – – – – – – – – –	
	<u></u>		-	+	+-	+	<del></del>		1	
65										
	inal I.D. o			er	1 1/	211			The subsurface information shown hereon was obtained for the design and estimate purposes. It is made availate authorized users only that they may have access to same information available to the State, it is present good faith, but is not intended as a substitute for investigations, interpretation or judgement of such authorized users.	ble
Wei	ght of hamme	er on Spli	t Barrel	Sampler	140				same information available to the State. It is presen good faith, but is not intended as a substitute for	tea
Dro	p of hammer	on Split	Barrel Sar	npler	30"				authorized users.	
L										
Cor	e Dia									
Soil	description	ns represe	nt a field	identi	ficati	on			Approximate Change in Strata	
afte	r D.M. Burm	ister unie	SS OTHERM	ise note	٠.				Inferred Change in Strata	
									THEFTER CHANGE THE DETACK	-

POTE	E: 47		LOCAL N	IAME:	GEORG	SE REI	DING B	RIDGE	TEST HOLE NO. B-12	
	11									
	CION: 15		CEM. 4"	71 1977	prri	ERENCE	LINE	BRID	GE CL GROUND LINE ELEVATION: -6.	5
									O Hr. +2 MHW (TIDE)  ELEVATION G.W.T. Date: 8-15-94	
	INGS MADI						D: 8-1		24 Hr. Date:	
INS	PECTOR:	POR H. C	HHEU	<u>D</u>	ATE (	ows on S	ETED: 8	-16-3	Sample ID	
	CASING	SAMPL	E NO. DEP	TH	0-6"	6-12"	12-18"	REC.	and Profile Change	
65 -	BLOWS			-				10	SAME	
ا ت	MUD	S-14	65.0	66.5	14	14	14	18	Penetration test:V=1.25,H=0.5	
	DRLING					-		-		
								<del> </del>		
70 -				71.5	21	16	20	18	SAME	
		S-15	70.0	/1.5	21	10	20	+=-	Penetration test:V=1.25; H=.75	
						<del> </del>	-	1		
						+		+		
								<del>                                     </del>		
75 -		S-16	75.0	76.5	6	6	12	18	Gray CLAY and SILT, trace	
		2-10	, ,/5.0	170.5	<u> </u>	<del>                                     </del>		1	F Sand Penetration test: V=1.25;	
	- 35.11 - 1883 II	v	77.0	78.5	-	$t^{}$	<del>                                     </del>	<u> </u>	H=1.25	
		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		1,010		1			1	79.0
		S-17	79.0	80.5	23	31	32	5	Gray M-F(+) GRAVEL, C-M(+)-F	
80 -		3-17		1					SAND, some Silt	
					T			1	1	
	134								1	
									<u>}</u>	
			i i						]	85.0
85 -		S-18	85.0	86.5	5	5	6	18	Green Silty CLAY	
			1	· .					Penetration test: V=1.75; H=1.25	
		U-3	87.0	89.0				24	_	-
									_	
	60	v	89.0	90.5					4	-
90 -	13.11	S-19	90.5	92.0	5	7	12	18	SAME	-
	184 H							1	Penetration test: V=1.5; H=1.25	-
	1341				1_				4	-
								-	4	-
	14:11				<del> </del>	-			SAME	-
95	8 2 d	S-20	95.0	96.5	4	4	7	18	Penetration test: V=1.25;	-
	19:11				4—			+-	H=1.25	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 1-11 1 11 - 11 1								d for
	inal I.D.			1	1 1/	211			The subsurface information shown hereon was obtaine state design and estimate purposes. It is made ava to authorized users only that they may have access same information available to the State. It is pre good faith, but is not intended as a substitute for	ilable to the
	inal I.D.	of Split Ba			140				same information available to the State. It is pre	sented

Core Dia.

Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

30"

Drop of hammer on Split Barrel Sampler

investigations, interpretation or judgement of stauthorized users.

Approxima	ite	Chai	ıge	111	SCIE	···a_	 	
Inferred	Cha	nge	in	Str	ata		 	

TEST HOLE NO. B-12

ROUT	ROUTE: 47 LOCAL NAME: GEORGE REDDING BRIDGE TEST HOLE NO. B-12													
	SECTION:  SECTION:  GROUND LINE ELEVATION: -6.5													
STAT	STATION: 150+25 OFFSEI: 17 AZ KELZKENE ZELEVATION G.W.T.													
BOR	INGS MADE	BY: W	GEORGI						O Hr. +2 MHW (TIDE) Date: 8-15-94 Date:					
INS	PECTOR: 1	POR H.	CHHEU	D			TED: 8	3-16-9	4 ft. P.P. Installed Date: Sample ID					
	CASING SAMPLE NO. DEPTH					6-12"	_	REC.	and Profile Change					
	BLOWS				0-6"	0-12"	12-10"		Profite Change					
									<u></u>					
100-	MUD	S-21	100	101.5	2	5	6	18	SAME Penetration test: V=1.0;					
	DRLING								H=.75					
									ļ					
					ļ	-	-	├	<del> </del>					
105-					<u> </u>	<del>  -</del>	8	18	SAME					
200		S-22 105.0 106.5 3 7							Penetration test: V=.5; H=.5					
				-		-	-	+	i					
				-	-		-	+	1					
					-		<del>                                     </del>	1	1					
110-		S-23	110.0	111.5	6	13	31	18	Gray Clayey SILT, some F Sand Penetration test: V=2.25;					
		1							H=2.25					
									<u> </u>					
									4 -					
115-										15.				
		S-24	115.0 116.5 36 59 95 10 Gray M(+)-F SAND, little					Gray M(+)-F SAND, little Silt						
					┼		<del> </del>	+	-					
		<del> </del>		+	┼	<del> </del>			1 -					
120-	<u> </u>		120.0 120.9 64 100 7 Light					+ 7	ight pink M(+)-F SAND, some					
		S-25	120.0	120	103	0.4		+	M-F Gravel, little Silt					
			+	1	+-			<b>—</b>	End of boring at 120.9'					
		-	1	1										
		1		1					]					
125		1							_  -					
									_{					
					-			+-	- <b> </b>					
130				<u> </u>										
Nom	inal I. D.	of Drive P	ipe		411				The subsurface information shown hereon was obtained fatte design and estimate purposes. It is made available to the subsurface information shown hereon was obtained for the subsurface information shown hereon was obtained for the subsurface information shown hereon was obtained for the subsurface information shown hereon was obtained for the subsurface information shown hereon was obtained for the subsurface information shown hereon was obtained for the subsurface information shown hereon was obtained for the subsurface information shown hereon was obtained for the subsurface information shown hereon was obtained for the subsurface information shown hereon was obtained for the subsurface information shown hereon was obtained for the subsurface information shown here of the subsurface information shown here of the subsurface information shown here of the subsurface information shown here of the subsurface information shown here of the subsurface information shown here of the subsurface information shown here of the subsurface information shown here in the subsurface information shown here is not subsurface in the subsurface information shown here is not subsurface in the subsurface	β[e				
Nom	inal I.D. o	f Split Ba	rrel Samp	ler Sampler	1 1/				to authorized users only that they may have access to same information available to the State. It is preser good faith, but is not intended as a substitute for	ited				
Dro	ght of hamm p of hammer	on Split	Barrel Sar	mpler	30"				The subsurface information shown hereon was obtained factor design and estimate purposes. It is made availate outported users only that they may have access to same information available to the State. It is presergood faith, but is not intended as a substitute for investigations, interpretation or judgement of such authorized users.					
L														
Cor	e Dia													
Soil	description	ns represe ister unle	ent a field	identi ise note	ficati d.	on			Approximate Change in Strata					
2									Inferred Change in Strata					

LOCAL NAME: GEORGE REDDING BRIDGE TEST HOLE NO. B-17 ROUTE: 47 SECTION: STATION: 151+21 OFFSET: 88' LT REFERENCE LINE: BRIDGE CL GROUND LINE ELEVATION: 3.5 ELEVATION G.W.T. BORINGS MADE BY: W. GEORGE DATE STARTED: 8/10/94 0 Hr. 1.0 Date: 8/11/94 24 Hr. Date: DATE COMPLETED: 8/11/94 INSPECTOR: POR H. CHHEU ft. P.P. installed Date: Blows on Spoon Sample ID CASING SAMPLE NO. DEPTH REC. and BLOWS 0-6" 6-12" 12-18" Profile Change 0 Brown C-M-F(+) SAND, some 2 7 DRIVEN S-1 0 1.5 2 3 Silt CASING 5 Gray F SAND, some Silt 11 6 S-2 5.0 6.5 5 10 Gray F SAND, little Silt 12 S-3 10.0 11.5 2 2 2 15 . SAME 18 S-4 15.0 16.5 4 6 20.0 20 -20.0 21.5 4 6 9 18 Gray F SAND and organic S-5 Clayey Silt 25 . Gray F SAND, some Silt S-6 25.0 26.5 3 18 30 -Gray F SAND and Silt S-7 30.0 31.5 12 14 18 18 The subsurface information shown hereon was obtained for State design and estimate purposes. It is made available to authorized users only that they may have access to the same information available to the State. It is presented in good faith, but is not intended as a substitute for investigations, interpretation or judgement of such authorized users. Nominal I. D. of Drive Pipe Nominal I.D. of Split Barrel Sampler 1 1/2" 300 lbs Weight of hammer on Drive Pipe 140 lbs Weight of hammer on Split Barrel Sampler 24" Drop of hammer on Drive Pipe Drop of hammer on Split Barrel Sampler Core Dia. Soil descriptions represent a field identification Approximate Change in Strata\_\_\_\_\_ after D.M. Burmister unless otherwise noted. Inferred Change in Strata \_\_\_ \_

LOCAL NAME: GEORGE REDDING BRIDGE ROUTE: 47 TEST HOLE NO. B-17 SECTION: GROUND LINE ELEVATION: 3.5 STATION: 151+21 OFFSET: 88' LT REFERENCE LINE: BRIDGE CL ELEVATION G.W.T. BORINGS MADE BY: W. GEORGE DATE STARTED: 8/10/94 O Hr. 1.0 Date: 8/11/94 24 Hr. Date: DATE COMPLETED: 8/11/94 INSPECTOR: POR H. CHHEU ft. P.P. Installed Date: Blows on Spoon Sample ID CASING SAMPLE NO. DEPTH REC. and BLOWS 0-6" 6-12" 12-18" Profile Change 35.0 DRIVEN 17 18 S-8 35.0 36.5 11 15 Gray Clayey SILT, trace F Sand CASING 40.0 40 Gray C(+)-M-F SAND, trace 41.5 23 34 40 10 S-9 40.0 Silt 45 Light Gray C-M(+)-F SAND, 26 12 46.5 20 22 S-10 45.0 trace Silt 50 Gray C(+)-M-F SAND, some Silt 18 29 10 50.0 51.5 24 S-11 55 Light gray C-M(+)-F SAND, 56.5 25 31 48 7 S-12 55.0 little Silt 60 SAME 10 61.5 28 42 69 S-13 60.0 61.5 End of Boring at 61.5' 65 The subsurface information shown hereon was obtained for State design and estimate purposes. It is made available to authorized users only that they may have access to the same information available to the State. It is presented in good faith, but is not intended as a substitute for Investigations, interpretation or judgement of such authorized users. Nominal I. D. of Drive Pipe Nominal I.D. of Split Barrel Sampler 1 1/2" 300 lbs Weight of hammer on Drive Pipe 140 lbs Weight of hammer on Split Barrel Sampler 24" Drop of hammer on Drive Pipe Drop of hammer on Split Barrel Sampler Core Dia. \_ Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted. Approximate Change in Strata\_\_\_\_\_ Inferred Change in Strata \_\_\_ \_\_

LOCAL NAME: GEORGE REDDING BRIDGE

ROUTE: 47

after D.M. Burmister unless otherwise noted.

TEST HOLE NO. B-18

SECTION: GROUND LINE ELEVATION: 3.9 STATION: 151+96 OFFSET: 87' LT REFERENCE LINE: BRIDGE CL ELEVATION G.W.T. BORINGS MADE BY: W. GEORGE DATE STARTED: 8/9/94 0 Hr. -3.1 24 Hr. 1.9 Date: 8/9/94 Date: 8/10/94 INSPECTOR: POR H. CHHEU DATE COMPLETED: 8/9/94 ft. P.P. Installed Blows on Spoon Sample ID CASING SAMPLE NO. DEPTH REC. and BLOWS 0-6" 6-12" 12-18" Profile Change 0 3 5 Gray F SAND, some M Gravel, 25 S-1 1.5 3 4 0 little Silt 5 Gray C-M(+)-F SAND, some Silt, 18 6.5 2 2 4 40 S-2 5.0 little shells 10 Gray F SAND, little Silt 7 5 60 S-3 10.0 11.5 5 5 15 Gray F SAND and Silt 11 16.5 6 9 100 S-4 15.0 20.0 20 Gray F SAND and organic Silt 12 81 S-5 20.0 21.5 2 2 2 (strong organic odor) 25 SAME 18 92 S-6 25.0 26.5 30 . Gray M-F(+) SAND, some Silt 16 162 S-7 30.0 31.5 28 33 42 (organic odor) The subsurface information shown hereon was obtained for State design and estimate purposes. It is made available to authorized users only that they may have access to the same information available to the State. It is presented in good faith, but is not intended as a substitute for investigations, interpretation or judgement of such authorized users. Nominal 1.D. of Drive Pipe 44 Nominal 1.D. of Split Barrel Sampler 1 1/2" Weight of hammer on Drive Pipe 300 lbs Weight of hammer on Split Barrel Sampler 140 lbs 24" Drop of hammer on Drive Pipe Drop of hammer on Split Barrel Sampler 30" Core Dia. \_ Soil descriptions represent a field identification

Approximate Change in Strata\_\_

Inferred Change in Strata \_\_\_\_\_

SITE ENGINEERS, INC. SHEET 2 OF 2 LOCAL NAME: GEORGE REDDING BRIDGE TEST HOLE NO. B-18 ROUTE: 47 SECTION: STATION: 151+96 OFFSET: 87' LT REFERENCE LINE: BRIDGE CL GROUND LINE ELEVATION: 3.9 ELEVATION G.W.T. BORINGS MADE BY: W. GEORGE DATE STARTED: 8/9/94 o Hr. -3.1 Date: 8/9/94 24 Hr. 1.9 Date: 8/10/94 DATE COMPLETED: 8/9/94 INSPECTOR: POR H. CHHEU ft. P.P. Installed Blows on Spoon Sample ID CASING SAMPLE NO. DEPTH REC. and BLOWS 6-12" 12-18<sup>#</sup> Profile Change 35 Gray organic SILT, some F 35.0 36.5 5 7 10 18 202 S-8 Sand (organic odor) Penetration tests: V=1.25, H=1.040.0 40 Gray C-M(+)-F SAND, some Silt 340 S-9 40.0 41.5 10 16 16 16 45 Light gray C-M(+)-F SAND, 309 45.9 32 100 11 S-10 45.0 trace Silt . 4 ' 50 Light gray C(+)-M-F SAND, 50.0 51.5 17 38 18 470 S-11 14 trace F Gravel, trace Silt 55 Gray M(+)-F SAND, some Silt 10 520 S-12 55.0 56.5 27 46 52 (strong organic odor) SAME 38 100 7 S-13 59.0 60.5 18 60 . 60.5 End of boring at 60.5' 65 -The subsurface information shown hereon was obtained for state design and estimate purposes. It is made available to authorized users only that they may have access to the same information available to the State. It is presented in good faith, but is not intended as a substitute for investigations, interpretation or judgement of such authorized users. Nominal I.D. of Drive Pipe 1 1/2" Nominal 1.D. of Split Barrel Sampler Weight of hammer on Drive Pipe 300 lbs Weight of hammer on Split Barrel Sampler 140 lbs 24H Drop of hammer on Drive Pipe 30" Drop of hammer on Split Barrel Sampler Core Dia. \_

Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

Approximate Change in Strata\_\_\_ Inferred Change in Strata \_\_ \_

SITE ENGINEERS, INC. SHEET 1 OF 2 ROUTE: 47 LOCAL NAME: GEORGE REDDING BRIDGE TEST HOLE NO. B-20 SECTION: STATION: 151+77 OFFSET: 94' RT REFERENCE LINE: BRIDGE CL GROUND LINE ELEVATION: 6.3 ELEVATION G.W.T. BORINGS MADE BY: W. GEORGE DATE STARTED: 7/27/94 0 Hr. 2.31 Date: 7/28/94 24 Hr. \* Date: 7/29/94 INSPECTOR: POR H. CHHEU DATE COMPLETED: 7/28/94 ft. P.P. Installed Date: **Blows on Spoon** Sample ID CASING SAMPLE NO. DEPTH REC. and BLOWS 0-6" 6-12" 12-18" Profile Change Ó Gray M-F(+) SAND, some silt, 98 S-1 0 1.5 6 7 7 11 trace M-F Gravel 5 Black M-F(+) SAND and Silt 105 S-2 5.0 6.5 4 3 3 16 (slightly organic odor) 10 DRIVEN Gray M-F(+) SAND, some Silt S-3 10.0 11.5 8 7 4 10 CASING 15 Gray F SAND, trace Silt S-4 15.0 16.5 3 4 5 7 20 . Gray F SAND, little Silt S-5 20.0 21.5 8 9 7 18 25 SAME S-6 25.0 26.5 4 4 5 18 30 Dark gray F SAND and Silt 140 S-7 30.0 31.5 19 23 31 18 The subsurface information shown hereon was obtained for State design and estimate purposes. It is made available to authorized users only that they may have access to the same information available to the State. It is presented in good faith, but is not intended as a substitute for investigations, interpretation or judgement of such authorized users.

Nominal I.D. of Drive Pipe	4"
Nominal I.D. of Split Barrel Sampler	1 1/2"
Weight of hammer on Drive Pipe	300 lbs
Weight of hammer on Split Barrel Sampler	140 lbs
Drop of hammer on Drive Pipe	24"
Drop of hammer on Split Barrel Sampler	30"

Core	Dia.	

Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

Approximate	Change	in Strata	_
Inferred Ch	ange in	Strata	

LOCAL NAME: GEORGE REDDING BRIDGE ROUTE: 47 TEST HOLE NO. B-20 SECTION: STATION: 151+77 OFFSET: 94' RT REFERENCE LINE: BRIDGE CL GROUND LINE ELEVATION: 6.3 ELEVATION G.W.T. BORINGS MADE BY: W. GEORGE DATE STARTED: 7/27/94 o Hr. 2.31 Date: 7/28/94 24 Hr. \* Date: 7/29/94 INSPECTOR: POR H. CHHEU DATE COMPLETED: 7/28/94 ft. P.P. installed Blows on Spoon Sample 1D CASING SAMPLE NO. DEPTH REC. and BLOWS 0-6" 6-12" 12-18" Profile Change 35 Gray F SAND, some Silt 36.5 5 7 8 18 163 S-8 35.0 40 Dark gray M-F(+) SAND and 41.5 20 18 180 S-9 40.0 16 18 Silt 45 Gray M(+)-F SAND, little Silt 18 7 8 190 S-10 45.0 46.5 5 50 MUD SAME 12 S-11 50.0 51.5 16 24 5 DRLLNG 55 Gray M(+)-F SAND, trace Silt 17 16 S-12 55.0 56.5 12 12 60 SAME 61.5 12 19 10 S-13 60.0 15 End of boring at 61.5' 65 Nominal I.D. of Drive Pipe Ln The subsurface information shown hereon was obtained for state design and estimate purposes. It is made available to authorized users only that they may have access to the same information available to the State. It is presented in good faith, but is not intended as a substitute for investigations, interpretation or judgement of such authorized users. Nominal I.D. of Split Barrel Sampler 1 1/2" 300 lbs Weight of hammer on Drive Pipe 140 lbs Weight of hammer on Split Barrel Sampler Drop of hammer on Drive Pipe 24" Drop of hammer on Split Barrel Sampler Core Dia. \_ Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted. Approximate Change in Strata\_\_\_ Inferred Change in Strata \_\_\_\_\_

ROU	TE: 1	4 7		LOCAL N	AHE:	St	ruc	ture	Boring (Beach Creek) TEST HOLE NO. S-97					
	SECTION: Burleigh to N. Wildwood  STATION: 271+94 OFFSET: 360L REFERENCE LINE: Survey Baseline GROUND LINE ELEVATION:7_0													
STA	TION: 2	71+94	OFFSET	: 360L		REFE	RENC	E LINE:	Survey Baseline GROUND LINE ELEVATION: -7.0					
BOR	NGS MAD	E BY:	F. S	ipple		DATE	STAR	TED: 9	-25-84 Elevetion G.W.T.					
INSP	ECTOR:		P. C.	alise		DATE	COMP	LETED:	O Mr. Depth of water varies Deter 24 Mr. from 6.0 to 11.0 Deter	10-2-				
	CASING	SAMP	LE NO. D			ws on	Speen	REC.	Semple ID ft. P.P. Installed Detect					
	BLOWS				100	12	12/8		Profile Change					
		S-1	0'	1.5	4	5	1/	.41	Dark gray f SAND, trace Silt w/shells					
				<del>                                     </del>	+-	$\vdash$	-	<del> </del>	1					
									]					
<sup>5</sup> —		S-2A	5.0	6.5	╂-	<del> </del>	2	1.5	4.					
	<b></b>	S-2B		-	+-	<del> -</del>	<del> </del>	1.0	Dark gray f SAND, trace(+)Silt w/shells Cray SILT	6.01				
									J Gray Sill					
					Ι					ģ 0'				
10 _	-	S-3	10.0	11.5	╁ᡒ	10	5	1.4	Gray mf SAND, little (-) Silt w/shells					
			10.0	11.0	+-	1	<del>ا</del>	1	dray mi skib, little (-) silt wyshells					
				<u> </u>	<b>├</b> ─	-	_	ļ						
15	_	S-4	15.0	16 5	1	1	1	1 5'	Gray of SAND some Silt w/maste					
	ш							1.5	Gray cf SAND, some Silt w/roots					
	- 2					-				18.0				
20					┼─	+								
		S - 5	20.0	21.5	2	2	3	1.0'	Gray SILT, some cf Sand , w/shells					
						_			1					
	-				<del> </del>	<del>                                     </del>	-			23.0				
25									j					
	-	S-6	25.0	26.5	10	15	30	1.01	Gray of SAND, trace of Gravel, trace	~				
	r i				┼	-			Silt_w shells	27.0'				
	a								1					
30 _		S-7	20 01	21 6	_	_	10	1 51						
		3-7	30.0	31.5	10-	8	10	1.5'	Gray SILT & CLAY					
									j					
35						-			1					
~~ -		S-8	35.0	36.5	6	5	9	1.5'	Gray SILT & CLAY, trace of Sand					
					Ľ	Ľ			a. a.y ozz. a oznij trace ci sana					
					<u> </u>				l l					
40					-	-			į į					
	Naminal I	.D. of Dri		_										
_			it Barrel S	iampler		11/2"	_	-	The Contractor shall make his own subsurface investigations in order to satis	ıfy				
	Weight of	hammer e	a Drive Pi	pe 300	lbs.				himself of the actual subsurface conditions. The Information contained on the log is not warranted to show the actual subsurface conditions. The Contract					
			n Split Be Drive Pipe		er 14	10 lbs.			agrees that he will make no claims against the State if he finds that the actu- conditions do not conform to those indicated by this log.	el				
			Split Barre		30	11				,				
Core	Die					·								
Soil d	lescriptie	ns r <del>oproso</del>	nt a field	identifica	tion		ŀ							
after	D.M. Burn	ni ster unic	ss otherw	ise noted.	•				Approximate Change in Strate					

ROU	ROUTE: 147 LOCAL NAME: Structure Boring (Beach Creek) TEST HOLE NO. S-97												
SEC	SECTION: Burleigh to N. Wildwood												
STAT	10N: 2		OFFSET					E LINE:	Survey Baseline GROUND LINE ELEVATION: -7 0	,			
BOR	NGS MAI	E BY:	F. Si	onle		DATE	STAR	TED: 9.	Elevetien G.W.T.				
	ECTOR:		Calise	•					10-2-84 24 Hr. from 6.0' to 11.0 beres	10-2-8			
	CASING BLOWS		LE NO. D			75 on		REC.	Semple ID ft. P.P. Installed Deter				
40	5000	S-9	40.0	1/1 5	5	6			Profile Change				
. •		3-3	70.0	71.5	1-	1	3	1.5	Gray SILT & CLAY, little cf Sandw/shell & fibers	15			
45			<del> </del>	-	┼─	-	<del>                                     </del>		1				
_		S-10	45.0'	46.5	3	5	6	1,1'	Gray SILT & CLAY, little(-)cfSandwshel	1 5			
			<del> </del>			_	_		brown fibers	47.0			
					<del> </del>	$\vdash$	-		·				
5,0 _	-	6 11	50.01			<u> </u>			<u> </u>				
	- a	2-11	50.0'	51.5	8	7	9	.5'	a				
	S								(+) Silt	53 0			
55_										33.0			
55_		S-12	55.0'	56.5	4	7	8	1 0'	Gray SILT & CLAY, trace of Sand				
	9								dray Sili a CLAY, trace of Sand				
			-		├				,				
60 _													
	_	S-13	60.0'	61.51	8	10	14	1.5'	Gray CLAY & SILT				
	ij			<del>                                     </del>		-							
	ŗ.												
65_	۵	C 1 /	65 01	66 61	-	-	-		. <u>.</u>				
		2-14	65.0'	06.5	1-5	9	15	1.5'	Same				
70_			-		├—	-	-						
/ -		S-15	70 0'	71 5'	3	5	6	81	Same -				
						-							
75 _													
		S-16	75.0'	76.51	5_	6	8	5!	Same				
								-					
80													
7					1 A 1	<u> </u>							
		I.D. of De	ive Pipe lit Barrel S		"3½	<u>"</u>			The Contractor shall make his own subsurface investigations in order to set	lefy			
			n Drive P			-			himself of the actual subsurface conditions. The information contained on t log is not warranted to show the actual subsurface conditions. The Contrac	bl a			
			on Spilit Be		or 14	10 lbs.			agrees that he will make no claims against the State if he finds that the act conditions do not conform to those indicated by this log.	u al			
_			Drive Pipe Split Berry		30 '				committees on not contains to mose indicated by this leg.				
Core	Die								•				
		ns repres	mt a field	identifica	tion								
after	D.M. Bur	mister uni	ess otherw	rise neted.					Appreximete Change In Strate				

ROU	TE:	14	4 7	LOCAL N	AME:	S	tru	cture	Boring (Beach Creek) TEST HOLE NO. S-97	<del> </del>
SECT	TION:	R.	ırlaid	th to	NI.					<del></del>
STAT	10N: 27			: 360L					Survey Baseline GROUND LINE ELEVATION: -7.0	
			- Sip						25 04 Elevetion G.W.T.	
	ECTOR:								0-2-84 24 Mr. Depth of water varies	10-2-
	CASING		Ca]			75 en 5		CETEDIT	0 - 2 - 84 24 Hr. Deter Sample ID ft. P.P. Installed Deter	
	BLOWS	SAMP	LE NO. D	EPTH	0		112/	REC.	and Profile Change	
80		S-17	80.0	81.5	12	2	5	1.5'		T
				<del> </del>	-	-				
				<del> </del>	<del> </del>	$\vdash$				
85_										
		S-18	85.0'	86.5'	6	6	8	1.5'	Same	
			-	-	┼—	-	-			
										98.5
90_	·	C 10	00.01	h1 51	2				•	
		2-13	90.0.	91.5'	2/	/0	100	1.0'	Gray cf SAND, little mf Gravel, littl	•
	a								3111	-
0.5										
95 _		5-20	95 0'	96,5'	112	100		.5'	Cman & tan as saup 2000	
		<u> </u>		50.5		- 4		. 5	Gray & tan cf SAND, little (-) mf Gravel, trace (+) Silt	<b></b>
									u. u. v. c. a ce (1) 3111	
100	- 5			ļ			$\vdash$			
100	Σ	S-211	00.0'	101.2	8 ' 3	887	00	1.1'	Same	
							.2	5 1	Jame	
	1 1					<u> </u>				
105			<del></del>	<b></b>	-	-				
		S-22	105.0	106.	3'3	075	00	1.0'	Same	1
					<b> </b> -		-3			
l	:		<b></b>	-	-	-				
110	()									<b>—</b>
}		5-23 1	10.0'	111.5	16	46	88	1.4'	Grey/tan mf SAND, trace Silt	
1				<b></b>		_				
115		5 24 1	15 01	116.5	7 7	12	35	,		
		2-24	19.0	110.5	_ ≟.≱.	13	35	1.5'	Tan mf SAND, trace Silt	116
									Bottom of hole	116.5
120										
_				1						
			ve Pipe			<b>%</b> "			The Contractor shall make his own subsurface investigations in order to ser	Hafe.
			n Drive P	ipe 300		n			himself of the actual subsurface conditions. The information contained as	hia
	Weight of	hammer o	a Split Be	rrel Sempl	~~~	0 lbs.			log is not warranted to show the actual subsurface conditions. The Contrac agrees that he will make no claims against the State if he finds that the act	itor Ivol
_			Drive Pipe	e 24" el Sampler	30 "				conditions do not conform to those indicated by this log.	
_			spirt Berr	u sampler	30 "				•	
Core (										
	escription		mt a fleid	identificat	ion					

ROL	TE: 1	47		LOCAL	NAME:	Str	ucti	re Bo	ring (Beac	h Creek	Areal				- 100	
SEC	ROUTE: 147 LOCAL NAME: Structure Boring (Beach Creek Area) TEST HOLE NO. S-102  SECTION: Burleigh to N. Wildwood															
	STATION: 274+97 DEESET, 210 IT DESCRIPTION D. 11															
										L	GI		INE ELEVA	TION:	5.61	
			arl We	ller		DATE	STAR	TED: 9-	-7-84	0 Hr.	Tidal		orien G. W. I.		Date: 0	-7-84
INSPECTOR: P. Calise DATE COMPLET										24 Hr.					Dates	-/-04
	CASING BLOWS	SAME	LE NO. D	DEPTH	Blov	ws on	Spoon	REC.	Sample ID and	L		H. P.P.	Installed		Dates	
	BC0#3		,		6	12	1/8		Profile Change							
	i	S-1	0.0'	1.51	6	-5	4	1.2'	Tan m(+)	SAND,	trace	(-)	f Gravel	, trac	ce (-)	
	5.0		<del> </del>	<del> </del>	+	+-		<del> </del>	Silt, w/1	coots					. ,	
	-				+	t	<del>                                     </del>	<u> </u>	<u> </u>							
5 _	1								†							3.51
	ا ف	S-2	5.0'	6.5'	W/H	W/H	W/H	1.5'	Dark grey	organ	ic SIL	T. w/:	roots			<del></del>
	ا م		├	<del> </del>	<del> </del>	_	_			Ū						
	ㅂ		<del> </del>	<del>                                     </del>	┼─	-	-									
10 _	a				+ -	<del>                                     </del>										9.5
	50	S-3	10.0'	11.5'	6	12	20	1.2'	Grey mf S	AND. 1	ittle	(-) S:	ilt w/roc			- 9.5
	n R								]			. ,	#/100			
	-			<del> </del>	-				ļ							
15			<del></del> -	<del> </del>	+-	-			ł							
''	60	S-4	15.0'	16.5	25	35	50	1.3'	Same							
	160								50							ļ
	200															
20	260 310															
20 _	310	S-5	20.0'	21.51	19	20	35	1.2	Sama						_	
			20.0		1.7	23	35	1.2	Same - no	roots	Toots					
					_											
																-
<sup>25</sup> —	p n	- (	05.01	00100												
	Σ	S-6	25.0'	26.5	19	19	13	1.3'	Same						_	
	60			<del>                                     </del>	-											
	c						_									
30 _	- 71															-
		S-7	30.0'	31.5'	2	4	13	1.3'	Grey mf S.	AND, an	d SILT	!			-	<del>                                     </del>
				<b></b>	$\vdash$											32.5'
35 _	9															
		S-8	35.0'	36.5'	6	9	14	1.2'	Grey CLAY	& SILT	, trac	e (+)	f Sand		-	+
					$\vdash$							` '				
					-		-									
40 _																
	Nominal I	D. of Dri		401							~					<b>⊥</b>
			t Barrel S	ampler	11	4"			The Contractor	shall make	his own	sub surfe	te investigati	ens in er	der to se	Hafe.
				pe 300 l		-			himself of the	ectual subs	urface con	ditions.	The Informat		cined on a	41-
				rrel Sample	er 140	lbs.			log is not warr	will make r	no claims	egainst t	he State if he	ions. Th	e Contrac	ter hal
			Drive Pipe						conditions de n	et conform	to those is	ndi cated	by this log.			
Drop of hammer on Split Barrel Sampler 30"																
Core I	Dia															
Soil d	scription	s represe	nt a field i	identificat	ion											
after (	D.M. Burm	ister unle	ss otherwi	ise neted.					Approximate Cha	nge in Stret	•					

ROU	TE: 14	7		LOCAL N	IAME:	Stru	ıctuı	e Bor	ing (Beach creek area) TEST HOLE NO. S-102	<u></u>
SEC	TION: B	urleig	h to N	. Wild						
STA	TION: 2	74+97	OFFSET	:210 L	T	REFE	RENC	E LINE:	Survey Baseline GROUND LINE ELEVATION: 5.61	
BOR	NGS MAI	E BY: C	arl We	ller				TED: 9.	-7-84 Elevetien G.W.T.	
INSP	ECTOR:	Р. С	alise						9-11-84 24 Hr. Tidal Deter	9-7-84
	CASING BLOWS		LE NO. E	EPTH	Blov	76 /	Spoon	REC.	Sample ID ft. P.P. Installed Date:	
40	500	S-9	140.01	41.5'	10	17	22	1.2	Grey SILT & CLAY, and (-) f Sand	
			40.0	41.5		1		1.2	Grey Sili & CLAI, and (-) I Sand	
45			<del> </del>	<del> </del>	+-	-	-		-	
		S-10	45.0'	46.5	3	4	7	1.3	Grey Clayey SILT, and cm(+)f Sand	+
				<del> </del>	-	-				
				<del> </del>	+-	<del>                                     </del>			<del> </del>	48.0'
50_										
	<b></b>	S-11	50.01	51.5'	10	14	21	1.4'	Grey mf SAND, some Silt with shells	
									1	53.0
					-					
55_		S-12	55/0	56/51	5	6	10	1.4	Grey Clayey SILT with shells	
									and the second s	
	n q			<del> </del>	-					
60_	Σ								İ	
		S-13		61.5'	10	13	14	1.5'	Grey Clayey Silt	
	8 u		<u> </u>	┼	┼	_	$\vdash$			
	Ŧ									
65	1 1	S-14	65.0'	66 51	10	14	20	1.5'	Cross Classes Cd1s 1dss1 . C C . 1	
	Ŧ	5-14	03.0	00.5	10	14	20	1.5	Grey Clayey Silt, little cf Sand	
	r									68.0'
70	- D			<del> </del>		-				
		S-15	70.0	71.5'	20	32	48	1.0'	Grey cf SAND, trace Silt, trace mf Gravel	+
										72.0'
						_				
75_		0.16	75 01	77 61	_	_				
		S-16	75.0	76.5	5	. /	10	1.5'	Grey Clayey Silt	
80										
_										
		D. of Sol	it Barrel	26" Sampler		4" %"			The Contractor shall make his own subsurface investigations in order to	satisfy
			n Drive P						himself of the actual subsurface conditions. The Information contained a log is not warranted to show the actual subsurface conditions. The Cont	n this
				errel Sempl	er 14	O Iba.			agrees that he will make no claims against the State if he finds that the	actual
-			Split Barr	e 24'' el Sampler	30'			-	conditions do not conform to those indicated by this log.	
Core	Die									
		ns represe	nt a field	identifica	tion					
				rise neted.					Approximete Change In Strate	

	1	. 7								
ROU	TE: 14	+ /		LOCAL N	AME:	Str	ucti	re Bo	ring (Beach Creek Area) TEST HOLE NO. S-102	
SEC	TION: BE	rleig	h to N							
			OFFSET				RENC	E LINE:	Survey Baseline GROUND LINE ELEVATION: 5.61	
BORI	NGS MAI	E BY:	C. Well	ler				TED: 9-	_7_Q/. Elevation G.W.T.	
									Deter 9-/-	84
INSP		P. Ca	lise					LETED:	9-11-84 24 Hr. Detec	
	CASING BLOWS	SAME	LE NO. D	EPTH	810	ws on 5		REC.	Sample IDft. P.P. Instelled Deter	
80	820#3		1 00 01	1 01 -1	1/6		12/8		Profile Change	
	<u> </u>	S-17	80,0	81.5	6	8	13	1.5'	Gray SILT and CLAY	
			<del> </del>		├—	┼				
	<del></del>		<del>                                     </del>	-	<del> </del>	+			-	
8 <u>5</u>			<del>                                     </del>		+	+	-		<del> </del>	
0		S-18	85.0	86.51	5	7	9	1.5'	Gray CLAY and SILT	
				1	<del>  -</del>	†		1.5	Gray Char and Sili	
			1		┼─	1			1	
									1	
9 <u>0</u>									<u></u> ]·	
		S-19	90.0	91.5	3	5	7	1.5	Same	
					L_				]	
	<u> </u>		ļ			_				
95	<b> </b>		ļ		<u> </u>				1	
95		S-20	95 01	96.5	4	4	6	1 27		
		0 20	1 33.0	30.5	<del>                                     </del>	+	0	1.5	Same	
			<del> </del>			├	-			97.0'
	p n		<del>                                     </del>	<b></b>	-				-	
100	Σ		<del>                                     </del>		-	<del>                                     </del>			1	
		S-21	100.0'	101.5	10	14	28	1 41	Grav of SAND little (+) Silt to San I	
	60			10000		1		1.7	Gray cf SAND, little (+) Silt, trace f Gravel	
	u								1	
	Ţ								1	
105	-								]	
		S-22	1 <b>0</b> 5,0'	105.8'	38	100		0.6'	Gray & Tan cf SAND, little (-) Silt, trace mf	
	7					.3'			Gravel	
-										
110	Q					-	-		- I	
1101		5-23	110.0	111 0	48	130	-	0.8	I dobt ones of CD4777	
					70	1-50		0.0	Light gray mf GRAVEL, some cf Sand, trace (-)	
									d	
									†	
115									1 }	
		5-24	115.0'	116.0'		100		0.8'	Same	
						0.4			]	
									]	
120									ļ t	
129										
	Nominal I	.D. of Dri	ve Pipe		3	211				
	Nominal I	.D. of Spi	it Barrel S	ampler	1	%"			The Contractor shall make his own subsurface investigations in order to patis himself of the octual subsurface conditions. The Information contained on thi	fy
	Weight of	hammer o	n Drive Pi	pe 300	ba.				log is not warranted to show the actual subsurface conditions. The Contracto	•
			n Split Be		or 14	0 lbs.			agrees that he will make no claims against the State if he finds that the actua	ı
			Drive Pipe						conditions do not conform to those indicated by this leg.	
_	Drop of h	00 10 mm	Split Barre	ol Sampler	30'	·			•	
Core	Dia									
Soil d	escription	18 1801-1-	mt e field	identifi	ia-					
after l	D.M. Burn	nister unl	ess otherw	ise neted.					Appreximate Change in Strate	
									The state of the s	

ROU	80														
SEC	rion: Bi	urleig	h to N	. Wildv	<b>v</b> ood								***		
STAT	10N: 2	74+97	OFFSET	: 210 I	_	REFE	RENC	E LINE:	Survey Ba	selir	ne	GROUND LI	NE ELEVATION:	5.61	
BORI	NGS MAD	E BY:	C. Well	ler								Elevat	ion G.W.T.		
INSP	ECTOR:	P. Ca	alise									-			9-7-84
	CASING			FPTH	Blov	~3 On	Spoon		Sample 1D			_ 6. P.P. I	nstalled		
120					6	/12			Profile Change						
		S-25	120.0	121.5	38	55	50	1.4	Light Gre	mf	GRAVEL,	some cf	Sand, trac	:e (-)	
	net.						<del>                                     </del>		_	tom	of Hole		<del></del>		121.5
105															
123	- 7				-	-	-		4						
									]						
130			<u> </u>		-	-	-		4.						
	1								1						+
									1						
_															
									-						
									<u> </u>						9-7-84
$\dashv$									]						
						-			4						
									<u> </u>						
									]						
7							$\vdash$		1						
									1			GROUND LINE ELEVATION: 5.61  Eleverien G.W.T.  Fidal Determine fr. P.P. Installed Determine fr. P.P. In			
-															
									-						
7	SCASING SAMPLE NO. DEPTH Business Spans Sp														
ŀ	RINGS MADE BY. C. Weller  DATE STARTED: 9-7-84  DATE COMPLETED: 9-11-84  SAING SANG SAMPLE NO. DEPTH  Stevening Tops REC.  S-25 120.0 121.5 38 55 50 1.4 121ght Grey mf GRAVEL, some of Sand, trace (-) 121.5 38 55 50 1.4 121ght Grey mf GRAVEL, some of Sand, trace (-) 121.5 38 55 50 1.4 121ght Grey mf GRAVEL, some of Sand, trace (-) 121.5 38 55 50 1.4 121ght Grey mf GRAVEL, some of Sand, trace (-) 121.5 38 55 50 1.4 121ght Grey mf GRAVEL, some of Sand, trace (-) 121.5 38 55 50 1.4 121ght Grey mf GRAVEL, some of Sand, trace (-) 121.5 38 55 50 1.4 121ght Grey mf GRAVEL, some of Sand, trace (-) 121.5 38 55 50 1.4 121ght Grey mf GRAVEL, some of Sand, trace (-) 121.5 39 50 50 50 50 50 50 50 50 50 50 50 50 50														
									1						
4									1						-
ł							-								
į									1						
									j						
									<u> </u>						
_									The Contracte	shell	maka his au	m subsurface			
						7.			himself of the	ectuei	subsurface (	conditions.	The Information co	stained a	m shi a
	leight of	hammer or	n Split Ber	rel Sample		lbs.			agrees that he	will m	eke ne clain	s esginat th	e State if he finds	The Cent	ractor ectual
					20 !!			-	conditions do	et cen	form to thes	o indicated t	y this log.		
				Jampier	30 "										
S-25   120.0   121.5   38   55   50   1.4   Light Grey mf GRAVEL, some cf Sand, trace (-)   12   125   5   120.0   121.5   125															

	HAKL	ESII	ų mai	OVLK					CONSULTING ENGINEERS				
ROU	TE:	147		LOCAL N			Stri	ıcture	Boring (Beach Creek) TEST HOLE NO. S-151				
SECT	TION:	Bur	leigh 1	to N. V	vild	wood							
STAT	TION:	270+85	OFFSET	: 340L		REFE	RENC	E LINE:	Survey Baseline GROUND LINE ELEVATION: -5.0'	_			
BORI	NGS MAI	DE BY:	Frank	Cinnla		DATE	STAR	TED: 10-	-8-84 Elevation G.W.T.				
	ECTOR:	P. (	Calise	<del>3 (pp (€</del>	-				10-10-84 24 Hr. depun varies from 4'-9' Date: 10-10	-84			
	CASING				T	vs on S			Sample ID ft. P.P. Installed Date:				
	BLOWS	SAMP	LE NO. D	EPTH	00		12/8	REC.	and Profile Change				
		S-1	0.0'	1.5'	1	4	5	1.1'	Gray f SAND, trace (+) Silt w/shells				
	12	<u> </u>	-		<del> </del>				The state (a) street my smerry				
	18 25	-		<del>                                     </del>	├─	<del>                                     </del>	<u> </u>	<del> </del>	<del> </del>				
5	20				1				1 <u> </u>				
	13	S-2	5.0'	6.5'	3	4	5	7'	Gray mf SAND, little (-) Silt w/shells & fibers				
	15		ļ	<del>                                     </del>		-							
	16 16		<del>                                     </del>	ļ	├		-		<del> </del>				
10 _	44				1			-	<del>-</del>				
	43	S-3	10.01	11.5'	8	6	3	6'	Gray mf SAND, trace(+)Silt				
	37	-	<del> </del>	ļ	<del> </del>	<del> </del>		ļ					
	27 27	<del> </del>	-		<del> </del>	├	-		<del> </del>	.0'			
15	25				1				†				
_	41	S-4	15.0'	16.51	1	1	2	1.5'	Gray SILT & CLAY w/roots				
	34		<del> </del>		ļ	<u> </u>				7.0			
	32 25	-	<u> </u>		-	-		<del> </del>	<del> </del>				
20 _	100			<del>                                     </del>	1			<del> </del>	<del> </del>				
_		5-5	20.0	21.5	23	35	30	1.0'	Tan cf SAND, trace Silt				
		-	<del>                                     </del>	<b> </b>	-				·				
			<del> </del>	-	├	├	-	-					
25									†				
_	Ð	5-6	25.0	26.5	7	9	7	.5'	Gray & tan cf SAND, trace f Gravel, trace Silt				
			<del> </del>		-	<del>                                     </del>			27_	0'			
	Σ	<del>                                     </del>			<del> </del>	-	-		<del> </del>				
30 _	- 01							<del> </del>	†				
		S-7	30.0	31.5	7	9	17	1.2'	Gray Clayey SILT, trace (+) f sand, trace				
		ļ	ļ		<del> </del>	<u> </u>	<u> </u>		f Gravel				
			<del> </del>	<del> </del>	<del> </del>	+	-		┥ ├─				
35 _									j —				
	7	S-8	35.0'	36.5	5	10	9	1.3'	Gray CLAY & SILT				
			<del> </del>	<del>                                     </del>	<del> </del>				-				
		<del>                                     </del>	<del> </del>	<del> </del>	┼	-	-		<del> </del>				
40							<del>                                     </del>		†				
Ē	Nomicel	I.D. of D	ive Pine	25;									
			lit Barrel			1%"			The Contractor shall make his own subsurface investigations in order to satisfy himself of the actual subsurface conditions. The Information contained on this				
	Weight a	f hammer	on Drive P	ipe 300	lbs.				lag is not warranted to show the actual subsurface conditions. The Contractor				
-			on Split B		ler 1	40 lbs.			agrees that he will make no claims against the State if he finds that the actual conditions do not conform to those indicated by this log.				
$\vdash$			Split Bar		r 30	"							
			p	p. 6					•				

Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

Approximate Change in Strate \_\_\_\_

Inferred Change In Strata

ROU	re: 1	17		LOCAL N	AME:		St	ructur	e Boring TEST HOLE NO. S-151	
	ION:	Du val	eigh t			lood.			3-131	
			OFFSET		L	REFE	RENCI	E LINE:	Survey Baseline GROUND LINE ELEVATION: -5.0'	
			Frank			DATE	STAR	TED: 1	0-8-84 water Elevation G.W.T.	
	ECTOR:		alise			DATE	COMP	LETED:	0-10-84  O-10-84	
	CASING BLOWS	SAMP	LE NO. D	EPTH	Blow	6 12	poon 12	REC.	Sample ID ft. P.P. Installed Date:	
40		S-9	40.0	41.5	36	612	15	1.5	Gray cf SAND, some (-) Silt	
							10			42.0
			-							
¥5 _					-	-				
10 -		S-10	45.0'	46.5'	6	8	10	1.5'	Gray clayey SILT	
				<u> </u>			-			
50 .					<del> </del>	_			-	
		S-11	50.0'	51.5'	4	6	12	1.5'	Same	
					├					
55					<del>                                     </del>	+	_	<del> </del>		
٠.									_	
		S-12	55.01	56.5	4_	5	7_	1.5'	Gray CLAY & SILT	
					-	-				
					<del>                                     </del>	<b> </b>				
60_	Σ								_	
	-	T-1	60.0'	62.0'		5	9	1.8'	Same	
		2-13	02.0	63.5	1	۲	-	1.5	Jame	
65	·				<u> </u>					
00					┼	-	-	<del> </del>	<del>-</del>	
			-	-	<del> </del>	<del>                                     </del>	$\vdash$	<b></b>	1	-
									]	
70			<del> </del>	<del> </del>		-	<u> </u>		1	
, o_	<del> </del>	S-14	70.01	71.5	7	8	11	1.5	Same -	├
										_
		-								
75_					+	+-	+-	-	-	
/ 3_			75.0	77.0	P	ress			<u>-</u>	
		0.15	77.0	70.5				1 51	Const. CLAY & STIT	
	-	S-15	17.0	78.5	4	6	7	1.5'	Gray CLAY & SILT	-
					1		$t^{-}$		1	<b> </b>
Ē	Nominal	I.D. of De	ive Pine	2½'						-
			lit Barrel			1%"			The Contractor shall make his own subsurface investigations in order to sat himself of the actual subsurface conditions. The Information contained on t	
			on Drive P						log is not warranted to show the actual subsurface conditions. The Contrac	tor
-			on Split B			40 lbs.			agrees that he will make no claims against the State if he finds that the act conditions do not conform to those indicated by this log.	u el
			Split Bar			11				
۔۔۔									•	
Soil	description	ons repres	ent a field						Approximate Change in Strata	

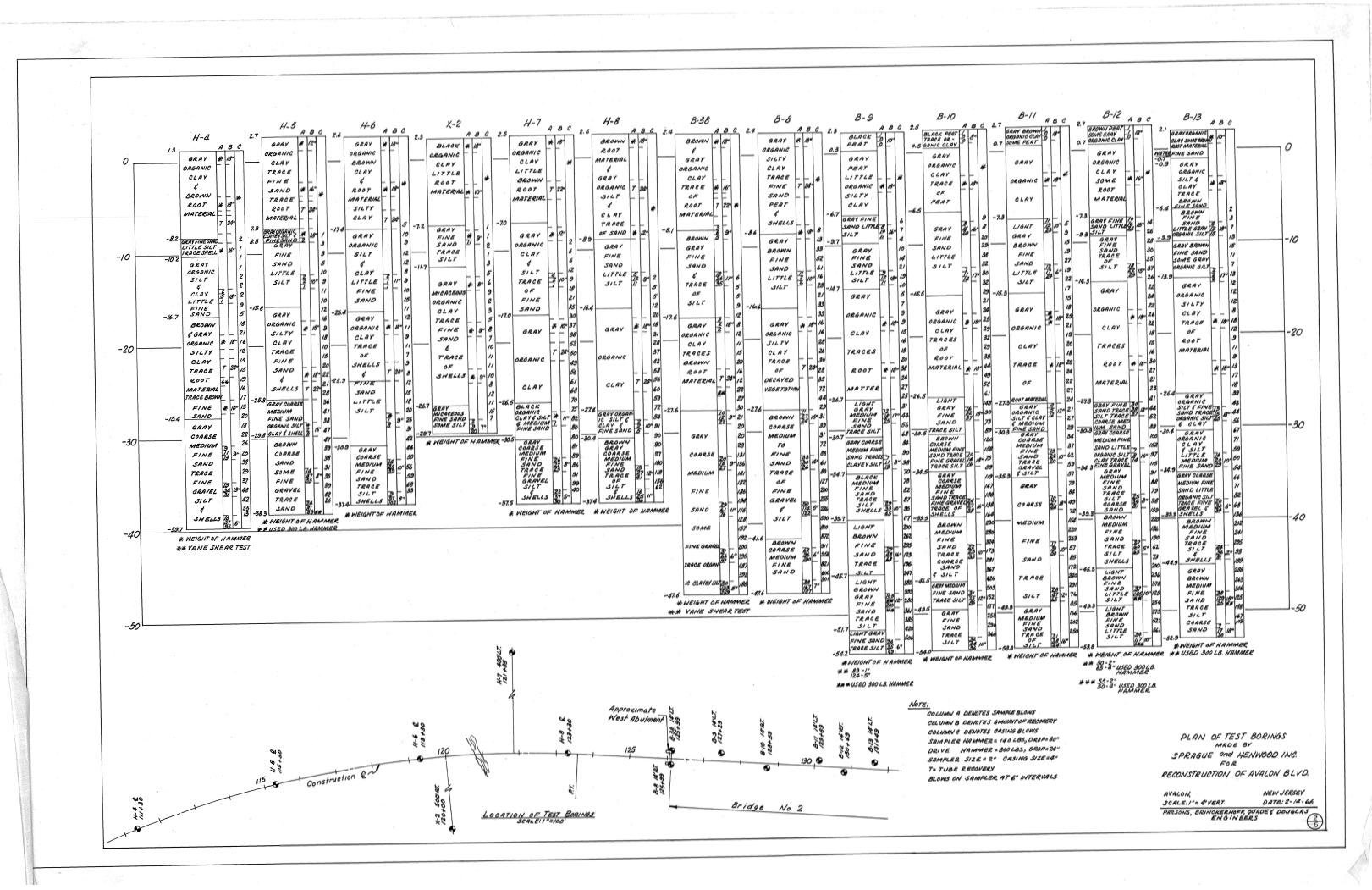
ROU	re: 14	4 7		LOCAL N	AME:		Sti	ructu	re Boring (Beach Creek) TEST HOLENO. S-15	1
SECT	ION:	Burle	iah to	N. J	Wild	dwoo	n d			
STAT	10N: 2	70+85	OFFSET	3401	<u> </u>	REFE	RENC	E LINE:	Survey Baseline GROUND LINE ELEVATION: -5.0	
BORI	NGS MAD	E BY:	F. Si	ple		DATE	STAR	TED: 1	0-8-84 Water Elevation G.W.T.	10-8-8
INSP	ECTOR:	P C	alise			DATE	COMP	LETED:	10-10-84 24 Hdepth varies from 4'-9 Deter	10-0-0
	CASING		LE NO. D			s on S		REC.	Sample ID ft. P.P. Installed Dates	
0.0	BLOWS				10/8	6/12	12/8		Profile Change	
80			80.018	1.5.	Pres	S-S-WF	151	enO.	<b>•</b> • • • • • • • • • • • • • • • • • •	
		- 16	81.5	00 0	-	g	10	1 5	0	
		2-10	81.5	83.0	}-	9	12	1-5	Gray CLAY & SILT, trace of Sand	
85_									L	85.0
					ļ	<u> </u>				
					<del> </del>	-		<del>                                     </del>		
		i		l	-	_		<u> </u>		
_									<u>'</u>	
90		S-17	90.0	91.5	9	19	29	1.5		
	ļ		ļ	ļ	<del> </del>				trace f Gravel	
	<del> </del>		-			-				
95	-				1				1	
_			95.0	96.5	29	57	100	1.4	Tan & gray cf SAND, trace (+) Silt,	
	Σ		ļ		<del> </del>				trace (-) f Gravel	
			ļ	-	┼				-	-
100			<del> </del>		<del> </del>		$\vdash$	<del></del>	1	<b>—</b>
_	_ =	S-19	100.0	101.	14:	55	78	1.4'		el
									trace (+) Silt	
			<del> </del>		<del> </del>		-	ļ	-	
105			<del>                                     </del>		1	<del> </del>	-		-	-
- 0_4		S-20	05.0	106.	5'10	19	37	1.0'	Light gray mf (+) SAND, little Silt -	
	_									
110					-	-			4	-
110	<b> </b>			<del> </del>	<del> </del>	<del>                                     </del>	-	<del> </del>	1	
_		S-21	110.0	111.	5 2	33	66	1.3'	Same	
										111 5
	ļ				<del> </del>	├	-		4	
115			1		1	<del>                                     </del>	1		Bottom of hole	
									1	
		ļ	ļ		<del> </del>	-	<del> </del>		4	
120	<del> </del>	<del> </del>	<del> </del>	1	1-	+-	<del>                                     </del>	<del> </del>	1	
_									· · · · · · · · · · · · · · · · · · ·	
F		I.D. of So	lit Barrel	2½ '		15"	••		The Contractor shall make his own subsurface investigations in order to se	
卜			on Drive P		ibs.				himself of the actual subsurface conditions. The Information contained on log is not warranted to show the actual subsurface conditions. The Contra	
			on Split B	arrel Samp		40 lbs.			agrees that he will make no claims against the State if he finds that the ac	
-			Drive Pip			"			conditions do not conform to those indicated by this log.	
L			Split Bar	el Jample	7 30				l ·	
Core	Dia									
	-	•	ent a field						According to the second	
017 e	D.M. Bu	rmister un	less other	wise noted					Approximate Change in Strate	

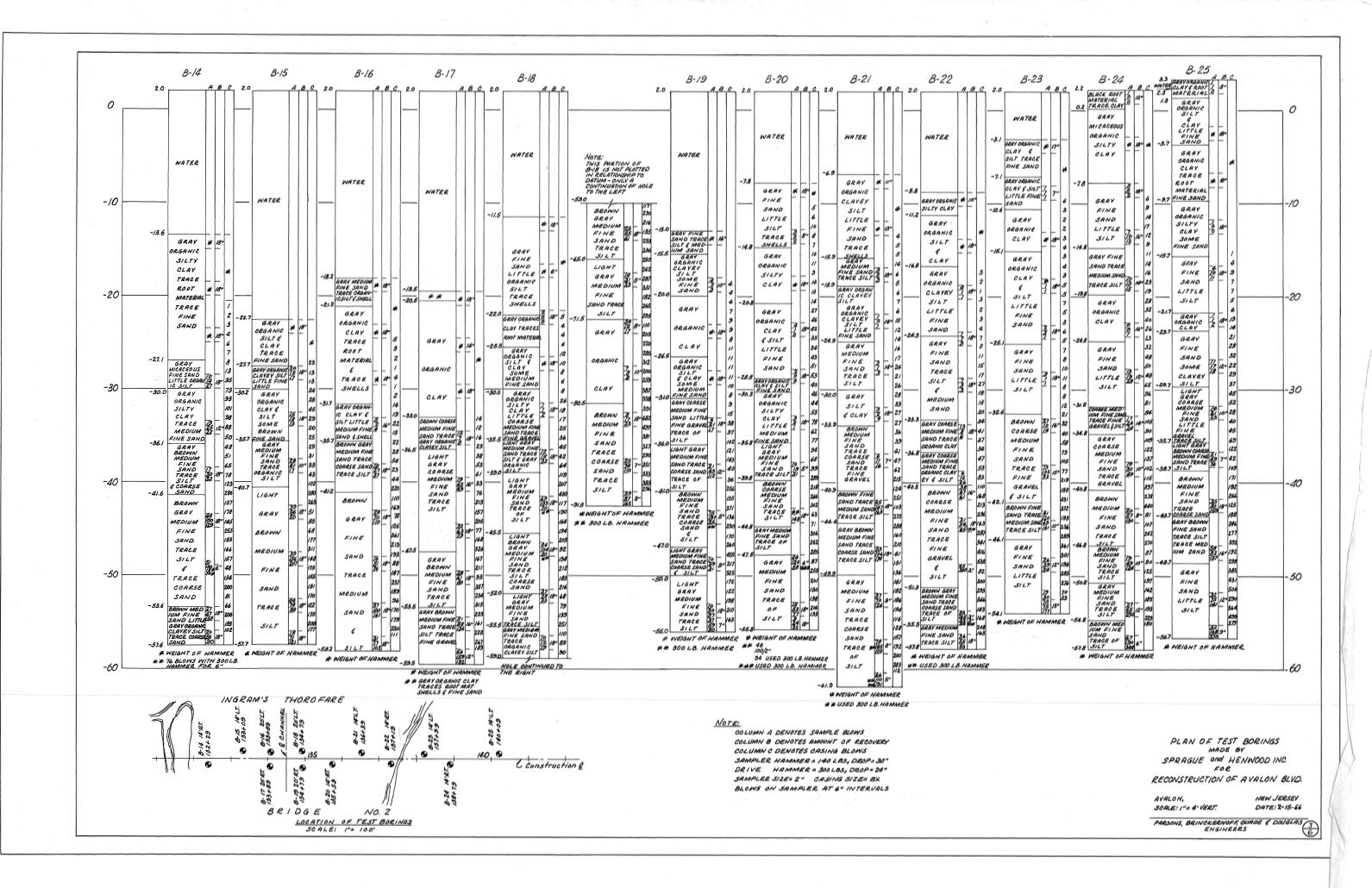
ROU	TE: 147			LOCAL N	AME:	Str	uctu	re Bor	ing (Beach Creek) TEST HOLE NO. S-155	
SEC	TION: Bu	rleigh	to N.	Wildw	ood					
STA	TION: 27	6+80	OFFSET	180L	-	REFE	RENCE	LINE:	Survey Baseline GROUND LINE ELEVATION: 5.17	
BOR	INGS MAD	EBY: (	. Well	er		DATE	STAR	TED: 8	-29-84 OHr. 2.17 (Tidal) Deter 8	-31-84
INSP	ECTOR:	P. Ca	lise			DATE	COMP	LETED:	8/31/84 24 Hr. Detet	
	CASING	SAMP	LE NO. D	EPTH	Blow	s on S	poon 12	REC.	Sample 1D ft. P.P. Installed Detect	
	000.00	S-I	0.0	1.5'	36	52	38	1.4	Profile Change	
									Gray & Brown cf SAND, trace mf Gravel, trace Silt (Fill)	
			ļ							
5						-				4-0'
_		S-2	5.0'	6.5'	W	0	H	1.5'	Gray organic Silt with Roots (meadow mat)	
			-		-					
										9.0'
10 _		S-3	10.01	11.5'	10	16	21	1.5'		
		3-3	10.0	11.5	10	10	21	1.5	Gray mf SAND, little organic Silt	
, 15 _				<u></u>			-			<u></u>
.,_		S-4	15.0'	16.5'	10	17	26	1.4	Same -	
			<del> </del>			_				-
20 _	pn								_	
	Σ_	S-5	20.0'	21.5	30	46	72	1.1'	Gray mf SAND, trace Silt	
	80									
25	표		<del> </del>		-	-				
	Н	S-6	25.0'	26.51	21	39	37	1.4'	Same _	<del> </del>
	1									
	r 1		<del>                                     </del>		├─		-			-
30 _	Q								] _	
	-	S-7	30.0'	31.5'	18	22	29	1.4'	Same	
									1	
35							-		-	
-		S-8	35.0'	36.5'	19	24	32	1.5'	Same	+
	-				├	$\vdash$	_		1	
40 _									1	
	Nominal	I.D. of De	ive Pipe		3	135			The Contractor shall make his arm a handard and a six along the	
-			lit Barrel			1%"			The Contractor shall make his own subsurface investigations in order to se himself of the actual subsurface conditions. The Information contained on	thi s
-			on Drive P			10 lbs.			log is not warranted to show the actual subsurface conditions. The Contrac agrees that he will make no claims against the State if he finds that the ac	
F	Drep of I	ammer on	Drive Pip	• 24"					conditions do not conform to those indicated by this log.	
L			Split Barr	el Sample	30				·	
_	Dia								•	
	_		ent a field less other						Approximate Change in Strete	
										· .
									Inferred Change in Strate	

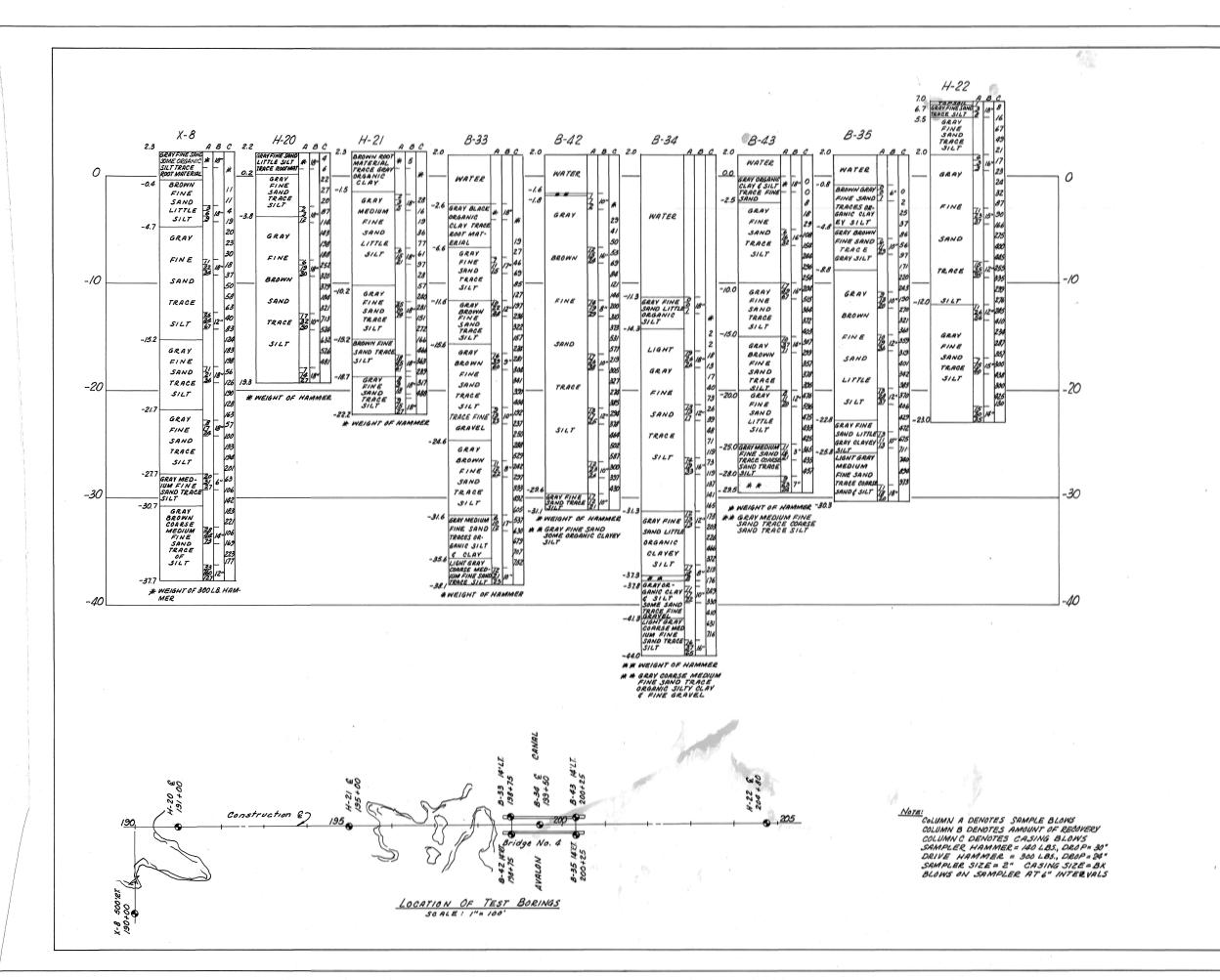
ROU	TE: 14	47		LOCAL N	AME:	Str	uctu	re Bo	ring (Beach Creek) TEST HOLE NO.	S-155	
SEC	TION:	Burlei	gh to l	N. W11	dwoo	d					
STA	TION: 2	76+80	OFFSET	: 180	L	REFE	RENC	E LINE:	Survey baseline GROUND LINE ELEVATION:	5 17	
			. Welle						Elevation G.W.T.	3.17	
				er				TED: 8-		Dete: 8-31	L <b>-</b> 84
INSP		P. Cal	lise		<del></del>			LETED: {		Deter	
	CASING BLOWS		LE NO. D	EPTH	0	76 /	12/18	REC.	ond .	Detec	
40		S-9	40.01	41.5'	5	_	9	1 /1	Profile Change		
		3-3	40.0	41.5	12	6	19	1.4.	Dark Gray f SAND, and organic Silt	}	
						<b>—</b>			1	1	
										1	
45_		0.10	15.01								
		S-10	45.0	46.5	3	4	9	1.5'	Gray cf SAND, same Silt		
	<b></b>		-	<del> </del>	┼	$\vdash$	-		1		
					+	+			1	}	
50_									<b>]</b> : .	ł	
		S-11	50.0'	51.5'	3	5	9	1.5'	Gray cf SAND, some Silt, trace shells	7	
			<u> </u>		<u> </u>				-	[	
					┼	┼	-				53.0'
55					<del>                                     </del>	<del>                                     </del>				}	
_		S-12	55.0'	56.5	3	4	7	1.5'	Gray CLAY and SILT	+	
										t	
	P n			ļ	<del> </del>	-	$\vdash$			[	
60_	E				┼	┼	-		1	1	
00_		S-13	60.0	61.5'	5	7	10	1.5	Same	+	
									f	ŀ	
	60									•	
65	u H				<u> </u>	-	$\vdash$				
65_		S-14	65 0'	66.5'	5	8	13	1.5'	F	4	
		5-14	05.0	00.5	<del>  _</del> _	P -	13	1.5	Same 1	}	
	Ţ				<del>                                     </del>	_			1	ŀ	
	r									<b>.</b>	
70_	Ð	0.15	70.01	71 51	<u> </u>				[		
		S-15	70.0	11.2.	7_	9	12	1.5'	Same		
				<del>                                     </del>	+-	+-	+-+		1	1	
									1	ŀ	
75_											
		S-16	75.0'	76.5	6_	10	13	1.5'	Same	7	
				-	┼	+	$\vdash$				
				<b></b>	<del> </del>	<del>                                     </del>	<del>                                     </del>		1	,	
80_									1	ŀ	
_	Nomicel	I.D. of Dri	va P			3 1/2	2"			1	
			it Barrel	Sampler		15"			The Contractor shall make his own subsurface investigations in a	order to satis	ify
			n Drive P					$\neg \neg$	himself of the actual subsurface conditions. The information con- leg is not warranted to show the actual subsurface conditions. T	tained on thi	
			n Split Be		er 1	10 lbs.			agrees that he will make no claims against the State if he finds t	hat the actua	el
$\vdash$			Drive Pipe						conditions do not conform to those indicated by this log.		
L			Split Barr	ei Samplei	30				·	•	
Core	Die										
Soil	escriptio	ns represe	nt e field	identifica	tion						
after	D.M. Bun	mister unl	ess otherw	rise neted	•				Approximate Change in Strate		53.0 <sup>T</sup>

							·			
ROU	TE: 1	47		LOCAL N	AME:	Stru	ctu	re bor	ing (Beach Creek) TEST HOLE NO. S-155	
SECT	TION: B	urleig	h to N							
		6+80		180 L			PENC	FINE.C	urvey Baseline GROUND LINE ELEVATION: 5.17	
									Floration C W T	
BORI	NGS MAD	E BY: C	. Well	er		DATE	STAR	TED: 8-	29-84 O Hr. 2.17 (Tidal) Dete: 8-31	L <b>-</b> 84
INSP	ECTOR:	P. Ca	lise			DATE	COMP	LETED:	8-31-84 24 Hr. Deter	
	CASING		LE NO. D	ERTU		vs on S		REC.	Sample 1D ft. P.P. Installed Date:	
80	BLOWS				06		12/8	AEC.	and Profile Change	
		S-17	80.0	81.5	4	5	9	1.4	Gray CLAY & SILT	
	<u> </u>		<u> </u>		<u> </u>				1	
	<u> </u>				<del> </del>	-			4	
85	<b></b>		-		├	-			<del>-</del>	
٥ <u>_</u>		S-18	85.01	86.51	4	5	7	1.5'	Same	
			1	10015	<del>                                     </del>		i i	1.5	1	
									1	
									] [	
90_	ļ	0.10	00 01	01 51	<del>  ,</del> _	<u> </u>			1	
	<u> </u>	s-19	190.0	91.5	4	6	8	1.5'	Same	
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			<del>                                     </del>			<b></b>	<del>                                     </del>		<b>1</b>	
95									1	
	P	S-20	95.0'	96.51	3	4	6	1.5'	Same	
	_=_				<u> </u>		<u> </u>		1	
	_Ξ_		ļ			-			4	
100					├	-	-			99.0'
	80	S-21	100.0	101.5	3	4	7	1.5	Gray cf SAND, some Silt	
	g g				<del>                                     </del>	<u> </u>			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	7								]	
105_		C 22	105 01	106 5	100	127	<del>, -</del>	1 21		
	#	5-22	105.0'	106.5	122	34	45	1.3'	Gray cf SAND, little mf Gravel, trace (+) Silt	
	Dr			-	<del> </del>	-	-		4	
									<b>†</b>	
110_									]	
		S-23	110.0	110.5	130	1		0.5'	Light gray cf SAND, little (+) mf Gravel, trace Silt	
				ļ	1-0	-			P11t	
	<b>—</b> —		<del> </del>		-	+	-		-{	
.15		······	<u> </u>		<del>                                     </del>					
_		S-24	115.0'	116.0'	58	120		1.0'	Light gray mf SAND, trace (+) Silt	
									]	
					<u> </u>					
20				ļ	├		-			
-~0=				1	<u></u>		<u> </u>			
-		I.D. of Dr				1/2"			The Contractor shall make his own subsurface investigations in order to setts	
-			lit Barrel			1%"			himself of the actual subsurface conditions. The Information contained on thi	
$\vdash$			on Drive P			40 11 -			log is not warranted to show the actual subsurface conditions. The Contractor agrees that he will make no claims against the State if he finds that the actual	
<b>+</b>			Drive Pip		-ev 14	-0 186.			conditions do not conform to those indicated by this lag.	<b>U</b> 1
			Split Barr		, 30	"				
Care	Die.									
			ent a field ess atherv						Approximete Change In Strate	

ROU	re: 1	47		LOCAL N	AME:	Str	uctu	re Bor	ing (Beacl	n Cree	k)	TEST	HOLE NO.	S-155	
SECT	ION: E	Burleig													-
STAT	10N: 27	76+80	OFFSET	: 180 I		REFE	RENCE	LINE: S	Survey Bse	line		ROUND LINE ELE	VATION:	5 17	
BORI	NGS MAD	E BY:	C. Well	er								Elevation G.W			
		······								ł		(tidal)			1-84
	CASING				Blov	15 on 5	poon		Sample ID			_ ft. P.P. Installed		Detec	
120	BLOWS								Profile Change						
		S-25	120.0	121.5	58	70	90	1.5'	Light gra	y mf S	AND, t	race (+) Sil	t		
			<del> </del>		├-	$\vdash$			-						
									]						
12 <u>5</u>		S-26	1251	126.5	58	110		1 0!	icht ama	. <i>e</i> ca	NTD 14	1- 041-		_	126 0
		5 -0	1		-	6"		1.0	Bottom of	hole	126.0	ttle Slit			120.0
130						-			1						ļ
_									1					-	†
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135															
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									1			÷			
140						-			4					_	
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F	Montest	I.D1.D.	lua D		2 1	/211									1
				Sampler					The Contract	or shall n	ake his e	on subsurface inves	tigations in	order to set	Hafy
				<u> </u>					log is not wa	rranted to	show the	actual subsurface o	enditions.	The Centres	ter
-			rleigh to N. Wildwood  +80												
			· · · · · · · · · · · · · · · · · · ·		30								-		
Core	Die														
									Approximete Ch	enge in S	itrata				
															,







PLAN OF TEST BORINGS MADE BY SPRAGUE and HENWOOD INC. FOR RECONSTRUCTION OF AVALON BLVD.

AVALON, SCALE: I' # 4' VERT.

NEWJERSEY DATE: 2-19-66 PARSONS, BRINCKERHOFF, QUADE & DOUGLAS ENGINEERS

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS BORING LOG PROJECT & LOCATION AVALON BLVD RELOC. AVALON, N.J STATION & OFFSET 133+89 20 CONTRACTOR SPRAGOE & HELVE HOLE No. 13-7 GROUND ELEY. - 19.3 DATE: FR 10/6/610 FOREMAN & RIG ..... Casing: 0.D.  $B \times 1.D. - 2/2$ Sample: 0.D. Z 1.D.  $I \times Z$ Inside Lg. Type  $S \times Z$ On Casing 300 On Sampler 140 Hammer Fall On Casing 24 On Sampler 30" Type of Sample: D=Dry U=Undisturbed W=Washed C=Cored P=Pit A=Auger sample Depth below ground surface Š Blows on sampler Blows on casing Moisture 응 Sample Field identification of soil and remarks 5 18 6 12 0 24 ELEV. +20 12 18 6 TIK 0 TOM ELEV - 19.5 6RAY FICSAND GORG. SILT, SOME SHELLS -20.5 ORGANIC SILT, TR. ROOTS RIVER BO TOM ¥ P 195 0-1.5 11/ O.H CH. 1 EL -20.5 REC 18 CH. 2 5' 12 -23.0 5 10 -2415 ORGANIC SILT GRAY M 5-6.5 W. 0. REC:14 10 75 0 0 ORGANIC SILT GRAY 29.5 10-11.5 W 0 14 RE 18" 14 CH. 13.5 EL-12 15 20 FIM GRAYER & FIR SAND, LITTLE SILT, TROISHELLS W GRAY 8 D 34.5 15.165 12 16 REC 18 23 EL -36 CH. 17' 38 53 61 20 25 FICSAND, TR FIGRAYEL, TRE) SILT, TR. SHELLS 39.5 20-21.5 42 A9 GRAY 33 19 D 76 REA 2/3 157 EL - 43 .5 CH = 205 25 30 GRAY F/C SAND, SOME F/M GRAVEL, 32 63 D W 77 145 25-265 79 TRG) SILT, TR. SHELLS 168 REC 326 CH. 28. EL -47 167 30 38 211 F/M SAND, TR. SHELLS, TR.(-) SILT 19.5 30.31.5 28 61 80 73 RAC 327 284 313 \$4. -53.5 CH 34' 35 22,3 40 Water level is \_\_\_ft. below ground surface \_\_\_ hrs. after completion Water level is\_fl. below ground surface\_\_ hrs. after completion Inspector H 900000 REMARKS ITEM # 5 59.54.F. Sheet No. \_/ Hole No. *B-1*7

CON-6-IMI60

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								во	RIN	G	LOG	
		PROJ STAT CONT	ECT &	LOCAT	rion_	AVA	La / 2	1 E	20 D	5 7 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	/ sc.	HOLE No. F-17  GROUND ELEV/9.55  DATE: FR / D TO 10/4/55
-											ler == '	
-												Inside Lg Type - Cored P=Pit A= Auger
		Depth below ground surface	Blows on casing	Sample No.		ws on s			sample	Moisture	Color	Field identification of soil and remarks
	~	Depth ground	Blow	Samp	0	6	12 18	18 24	Type of	_		,
35	9.5	25.265	161	E	51	28		C 11	D	W	gray	f/m. SAND, trsilt
	580	38.5.4	287	<b>"</b> 9	66	157	/82		D	W	gray	f/m. SAND, trsilt
to	3		, ,			Rec	= 12	4			, ,	Bottom Hole EL-59.5
												,
	10											
											,	
	15			·	-					-	-	
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	35		<u> </u>		-	-	-	-		-	-	
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	40				-				1			
	70	REMA	RKS		Wa	ter lev	el is,	_ft. bel		d surfe	ce h	rs. after completion rs. after completion
												Sheet No. 2 Hole No. B = 17

CON-6-IMI60

### PARSONS, BRINCKERHOFF, QUADE & DOUGLAS

### BORING LOG

PROJECT & LOCATION Reconstruction of avalor Blook avalor 11, I
STATION & OFFSET 157 #0 14 14 # HOLE No. ES
CONTRACTOR Sprance of Alexander 11 GROUND ELEV
FOREMAN & RIG 7. Downey DATE: FR & -3 HOLE No. 3-29

GROUND ELEV. - 4.6 AVER
DATE: FR 6-30 TO 2-1-3-15

Weight of Hammer On Casing 300 On Sampler 140

Hammer Fall
On Casing 2000 On Sampler 3000

Casing: 0.D. 2 1.D. 2 1.2 1. Sampler: 0.D. 2 1.D. 13/4 1 1.D. 13/4

		-					-				Inside Lg. 2412 Type <u>rplit</u>
			Туре	of Sar	nple : I	D = Dry	U=Un	disturbed	W=Wo	shed C	= Cored P=Pit A= Auger
	Depth below ground surface	Blows on casing	Sample No.	Blo	ws on a	sam ple	r	of sample	Moisture	Color	Field identification of soil and remarks
	d pt	888	San	0	6	12	18	Type of	ž	"_	72.0
0	3.6			6	12	18	24	Þ.			woter
					_		,				River BoHm - 4.6
	0'-16"	X		w+	9.0	ROC		0	w		ORGANIC SIIT & SOME YEGATATION
		3 %				-		1			18*R <c< td=""></c<>
_	ļi	0 30 %		-							
5		NAUL ON SO S						<del>  .  </del>		<del> </del>	·
	5'-66'	2	2		6	8	14	56"	- /0./	CH.	GRAY FINE SILTY SAND 10" RCC
	3	2			-	9	74	0	6		11 10" Rec
		24						1			
10		53						1			
		67									
	10-116	43	_3		9	18	32	0	w		11 11 11 18"Rec
		51									
		39		-				13'6"	-17.6		C224 544 5
15		54		-	-			130	2///0	CH.	GRAY FINE SAND
	15'-166'	52 39	4	<u> </u>	15	10		·			
	15-766	41		<del>                                     </del>	/3	70	11	D	w		11 11 14"Rec
		53						1		İ	
20		71						1		İ	
		96									
	20-216		5		9	16	25	0	w		11 11 15" Rec
		75								,	,,
		87				ļ					4
25		130		├				<del> </del>		<u> </u>	
	25-256	137	6		10	17	2.	-			11 11 16"Rec
	23-436	108	-6-	<del>                                     </del>	10	//	21	D	w		11 16"RCC
		151		<u> </u>	<del>                                     </del>		<del>                                     </del>	1			
30		164		T				1		1	
		127									
	30316	143	_7_		18	32	94	כ	w		17 11 11 /2"Rec
		170				ļ		1			
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35	_	205			-	-	-	-	<u> </u>	<del> </del>	
	20'2"	229			-	-		- 1	*		
1	35:36		g A		25	52	67	B	W		No Rec
	37-38	78	ළය		7	10	10	1			
40		139	- 0 - 0		7	10	19	. D	w		" " " " 6"Rec
<u> </u>	1	.,37				1					

Water level is\_\_\_ft. below ground surface\_\_\_\_hrs. after completion Water hote Water level is\_ft. below ground surface\_\_\_ hrs. after completion inspector Expectation

50.1 LF Iden #

> Sheet No. \_\_\_\_ Hole No. 4-29

CON-6-1M180 PARSONS, BRINCKERHOFF, QUADE & DOUGLAS BORING LOG PROJECT & LOCATION\_ STATION & OFFSET\_ CONTRACTOR HOLE No. 23 - 2 9
GROUND ELEV. 4.6 1811VER FOREMAN & RIG DATE: FR\_ Weight of Hammer sing \_\_\_\_On Sampler. Hammer Fall og \_\_\_\_On Sampler. Casing: O.D. \_ Sampler: O.D. Inside Lg. L.D. On Casing\_\_\_ On Casing\_ Type Type of Sample: D=Dry U=Undisturbed W=Washed C=Cored P=Pit A=Auger Š Blows on casing Blows on sampler Sample Color Field identification of soil and remarks ₹ 6 12 6 12 18 24 120 231 42.43 9 15 23 32 D W GRAY FINE SAND 4" RCC Bo Hamof hole - 48.1. 10 15 20 25 30 35 40 Water level is\_\_\_ft. below ground surface\_\_\_\_hrs. after completion Water level is \_\_ft. below ground surface \_\_\_ hrs. after completion Inspector Dayne Caster REMARKS Sheet No. \_\_2 Hole No. 13-29

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS BORING LOG PROJECT & LOCATION AVALON BLVD RECONST. STATION & OFFSET STA. 199+20 HOLE No. 8-34 GROUND ELEV. (-1/-3) CONTRACTOR \_\_S/ FOREMAN & RIG JERRY DOWE. DATE: FR Weight of Hammer On Casing 30010 Sampler 190163 Hammer Fall On Casing 24-30\* On Sampler 24-30\* Casing: O.D. \_\_\_\_\_\_ Sampler: O.D. \_\_\_\_\_ Inside Lg. 22 Type S.S Type of Sample: D=Dry U=Undisturbed W=Washed C=Cored P=Pit A=Auger Depth below ground surface sample ું Blows on casing Blows on sampler Moisture Sample 응 Field identification of soil and remarks ₹ 0 6 12 18 λ 2 Y WATER 6 12 18 24 0'-16 wt 0 0 D w GRAY FINE SILTY SAND 18"Rec. 04 REC HAH. -14.4 CHI. 3 GRAY FINE SAND, TRACE of SILT 2 1645-66 8 2 26 26 ۵ w " " 18 Rec. 13 EE. 17 40 10 23 -214 10-116 26 3 13 13 17 Δ w . . " " 12" Rec 39 Pec 12 48 21 15 119 -26.4 15'-166 23 14 19 33 D w " " 16" Rec. 119 REC 16 137 191 20 165 CH. 31.4 GRAY FINE SAND FRACE OF Clayey SIH -31.4 20-216 113 12 13 13 REG /2 203 12"Rec 226 466 25 372 6" of Clayey Sandy 5:1+. 25:266 213 8 18 Ø REC 8 176 FINE TO COURSE SAND LITTLE 10"Rec CLAYEY SIIT, TRACE OF FINE TO Med. GRAVE! 27:286 249 4 17 22 D -37.9 REC. 10 330 416 30 631 CH. 30' -41.1 FINE to Course GRAY SAND, TRACE 716 OF GRAUE! 32:33 16 37 65 Ø

> Water level is\_\_ft. below ground surface\_\_\_hrs. after completion Water level is \_\_ft. below ground surface \_\_\_ hrs. after completion Inspect or \_\_\_\_\_\_

REMARKS

35

40

ITEM #3 46.96.F.

REC 16

Sheet No. \_ Hole No. 2-34

-44.8(H)

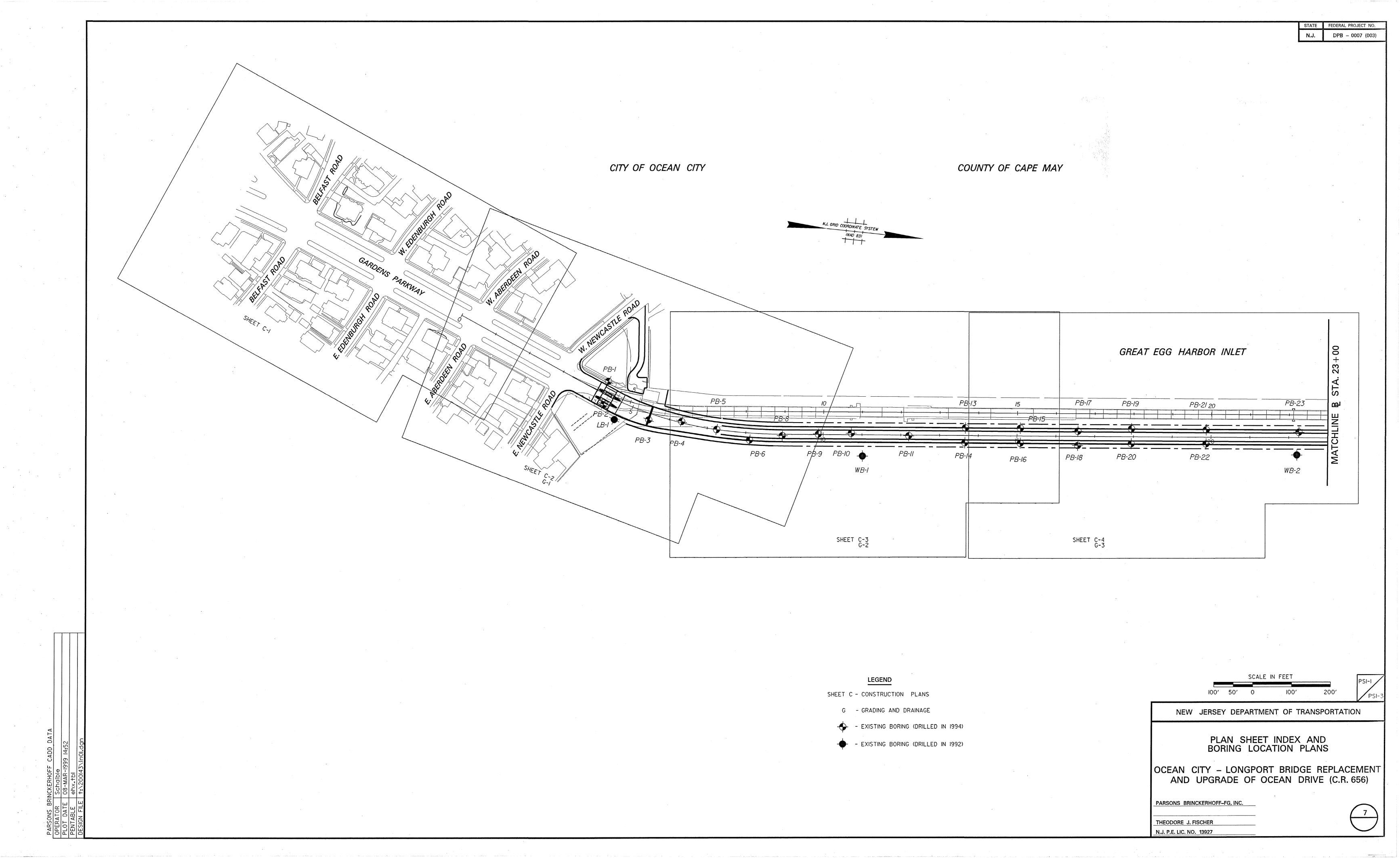
BOTIOM OF HOLE -450

CON-6-1M160

			-	ARSI	UNS	, вк			,	LOG	DE & DOUGLAS
	PRO	JECT 6	LOCA OFFSE	TION_	AV	<u>A 1 0</u>	מנ	BLU	DR	IE CON	4577 LVV - 10 1V 15-
	CON	TRACTO	OR S RIG A	12.0	SUE		HEI	11.000	2018 2	T	HOLE NO. 2 - 25 GROUND ELEV 0.8 ) DATE: FR 2 / 3 TO 2 / 5
	We On Casin	ight of	Hammer On Sampl	er <i>190</i>	163	On (	Hi Casing 2	ammer 1 24-301	Fall On Samp	oler24-30	Cosing:OD A LD 31/2
			Туре	of Sar	nple:	D = Dry	U = Ur	disturbe	d W=W	ashed C	=Cored P=Pit A=Auger
	Depth below ground surface	Blows on casing	Sample No.	Blo	wson	sam plo	er .	of sample	Moisture	Color	Field identification of soil and remarks
0	Dep	ă°	S	6	12	12	18	Type o	ž	"	TOP OF WATER + 2.0
0.9	0-16	0	1		0	0	1	۵	W		GRAY ORGANIC SIH, SOME FINE
		2			REC	6.	1				SAND AND VEG.
		25	-	-		ļ	-				
5		37	<del> </del>			-	-	CH.	4'	-49	FINE GRAY SAND, SOME SILT
	5-66	56	2		6	12	23	۵	w		2448, 35ME 2117.
		97				c 1	9 -	] -	1		
		171		_			-	-			
0		220	·			-		CH.	8'-	8.9	FINE GRAY SAND, TRACE OF SILT
	10-116	190	3		و	/3	20	۵	w		15 25 45 45 45
		270			PE	c. /		] ~	"		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
		321									
5	14'15'	360	4			19	36	_			
14.9	7 1-13	319	1		10 RE	_	12"	٥	W	-	21 11 12 13 11 12
		901									
		342									
7.9	19.20%	383					ļ				
-	19.506	906	-5		13 REC	28	127	۵	W		11 17 11 12 11 11
		429			112						
		472						CH.	22'	-22.9	FINE GRAY SAND, +RACE of Clayey
23.9	23-246		6		13	,11	13	۵	~		
25		711			RE	,	10"				
		894						CH,	25'	- 25.9	
		923									of SMAIL GRAND TRACE
- 1	28'29'6'				11		20	٥	W		FL 11 12 11
30	· ·			-	RE		18"				F1 11 11 11 11 11
t											BOTTOM OF HOLE -30.4
-											
}											
55											
t					$\neg \neg$						
Į											
}											
0					<u>,  </u>						
				Water	r level	is	ft. beloy	w ground w ground water	surface	hrs.	. after completion . after completion
R	EMARI	is TEM	3		32,	4 1	,F				
											Sheet No. 1

Hole No. 13:

. . D



### **BORING LOG**

**BORING NUMBER: PB-5** 

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ

CONTRACTOR: Warren George, Inc.

DRILLER: Rob Danielson TYPE RIG: ATV - CME - 550 INSPECTOR: A. Reed

GROUND ELEVATION: +5.70 ft

DRILLING FINISH TIME: 1:50 PM

STATION: 7+25

BASELINE: Proposed Bridge Baseline

OFFSET: 0 ft

DRILLING START TIME: 3:30 PM

DATE: 10/26/94 DATE: 10/28/94

**DEPTHS** METHOD(S) OF DRILLING **BOREHOLE WATER LEVEL DATA** 0 - 95.2 ft **Rotary Drilling DEPTH** HOUR DATE REMARKS TYPE OF SAMPLE UNDISTURBED SS SPLIT SPOON SHELBY D DENISON Notes: O.D.: 2 in TUBE 1. The subsurface information shown hereon was obtained for 1.D.: 1-3/8 in the design and estimate purposes for our Client. It is made LENGTH: 24 in O.D.: O.D.: available to authorized users only that they may have HAMMER WEIGHT: 140 lbs I.D.: I.D.: access to the same information available to our Client. It is HAMMER FALL: 30 in I.L.: I.L.: presented in good faith, but is not intended as a substitute С CORE **PISTON** for investigations, interpretations or judgment of such **BARREL TYPE:** O.D.: authorized users. O.D.: I.D.: 2. Field identification of soil samples is based on Burmister Soil I.D.: I.L.: Identification System. **CASING** 3. pp = Unconfined compression strength from Pocket O.D.: 4 in I.D.: 3-1/4 in Penetrometer (tsf)

WEIGHT OF	HAMMER:	300 lb:	s	HAMME	R FALL:	24 in		4		= Weight of Hammer; WOR = Weight of Rod
			SAM	IPLE	ROCK CORING INFORMATION RUN   REC.   REC.   L > 4"   RQ					
DEPTH	BLOWS	Т	N	DEPTH					RQD (%)	FIELD IDENTIFICATION
BELOW GROUND SURFACE	ON CASING	Y P E	U M B	(ft)	SOIL	SAMPLII	NG (Blow	s per 6 ir	nches)	OF SOIL / ROCK
(ft)			E R		0-6	6-12	12-18	18-24	REC. (in)	
	7	SS	1	0-2	1	.1	2	2	12	Brown f SAND, trace (-) Silt
	7		<u> </u>							
	19									
	30									
5	29									
	65	SS	2	5-7	3	4	4	7	10	Same as SS-1
	70									
	125									
	68									
10	77									
	91	SS	3	10-12	16	7	8	11	12	Gray f SAND, trace (+) Silt
15										

**BORING NUMBER: PB-5** 

### **BORING LOG (continued)**

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ INSPECTOR: A. Reed

			SAM	IPLE	BO	CK COF	RING INF	ORMAT	ION	
DEPTH	BLOWS	Т	N	DEPTH	RUN (in)	REC.	REC. (%)	L > 4" (in)	RQD (%)	
BELOW GROUND SURFACE	ON CASING	Y P E	U M B	(ft)		SAMPLII				FIELD IDENTIFICATION OF SOIL / ROCK
(ft)			E R	·	0-6	6-12	12-18	18-24	REC.	SOIL / HOUR
		ss	4	15-17	6	18	21	29	12	Gray f SAND, trace (+) Silt
								·		
20										·
		SS	5	20-22	8	10	12	14	12	Same as SS-4
25		SS	6	25-27	13	17	20	19	10	Same as SS-4
				2027	10		20	19	10	Same as 33-4
30										·
		SS	7	30-32	9	13	15	15	14	Same as SS-4
35										
		SS	8	35-37	12	12	21	28	16	Same as SS-4
40		00		40.15						
		SS	9	40-42	14	15	18	20	18	Same as SS-4
45										
45										BORING NO. PB-5 SHEET 2 OF 4

### **BORING LOG (continued)**

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ INSPECTOR: A. Reed

	I				Ī					
			SAM	IPLE	RC	OCK CO	RING IN	FORMAT	TION	
DEPTH	BLOWS	Т	N	DEPTH	RUN (in)	REC.	REC. (%)	L > 4" (in)	RQD (%)	
BELOW GROUND SURFACE	ON CASING	Y P E	M B	(ft)	SOIL	SAMPLI	NG (Blov	vs per 6 i		FIELD IDENTIFICATION OF SOIL / ROCK
(ft)			E R		0-6	6-12	12-18	18-24	REC.	
		ss	10	45-47	13	16	17	19	10	Gray f SAND, trace (+) Silt
			ļ						ļ	
						<u> </u>				
50										
		ss	11	50-52	13	19	20	14	7	Same as SS-10
55										
		ss	12	55-57	12	12	19	23	12	Gray mf SAND, little (-) Silt, trace (-) mf Gravel
										, , , , , , , , , , , , , , , , , , ,
					·					
60									,	
		ss	13	60-62	1	1	1	1	19	Gray Clayey SILT, some (+) f Sand, trace mf
										Gravel
										(pp = 0.25)
65										
		ss	14	65-67	4	3	3	5	20	Gray Clayey SILT, some (+) f Sand
										(pp = 0.5)
70										
		ss	15	70-70.3	100/4"				3	Gray cf SAND, little (+) mf Gravel, trace Silt
										Gray or Orivo, inde (+) fill Graver, trace oill
-										
<b>7</b> 5										
				<u>-</u>						BORING NO. PB-5 SHEET 3 OF 4

## **BORING LOG (continued)**

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ INSPECTOR: A. Reed

		T T			I					
			SAM	PLE	ROC	CK COR	ING INF	ORMATIC	ON	
DEPTH	BLOWS	Т	N	DEPTH	RUN (in)	REC. (in)	REC. (%)	L > 4" (in)	RQD (%)	
BELOW GROUND SURFACE	ON CASING	Y P E	U M B	(ft)	SOIL	SAMPLIN	IG (Blow	s per 6 in		FIELD IDENTIFICATION OF SOIL / ROCK
(ft)			E R		0-6	6-12	12-18	18-24	REC. (in)	
		ss	16	75-75.4	100/5"				3	Gray cf SAND, little Silt, trace (-)f Gravel
80			<b> </b> -				···			
		ss	17	80-80.2	100/3"	***			3	Same as SS-16
										Jame as 30-10
			<u> </u>							
_							·-··			
85		66		05.05.5		-				
		SS	18	85-85.5	100/6"				_2	Same as SS-16
90										
		SS	19	90-90.5	100/6"				2	Same as SS-16
95										
		ss	20	95-95.2	100/3"				2	∖Same as SS-16
ŀ										End of Boring @ 95.2 ft
100										
		1								
[										
-										
105										
105		<u></u>								RODING NO. DR.E. SHEET A OF A

### **BORING LOG**

**BORING NUMBER: PB-6** 

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ

CONTRACTOR: Warren George, Inc.

DRILLER: Rob Danielson TYPE RIG: ATV - CME - 550 INSPECTOR: A. Reed & K. Ro GROUND ELEVATION: +3.0 ft

BASELINE: Proposed Bridge Baseline

STATION: 8+12

OFFSET: 18 ft RT

DRILLING START TIME: 3:00 PM

DATE: 10/28/94 DATE: 10/31/94

DRILLING FINISH TIME: 1:40 PM **DEPTHS** METHOD(S) OF DRILLING **BOREHOLE WATER LEVEL DATA** 0 - 95.5 ft **Rotary Drilling** DEPTH HOUR DATE **REMARKS** TYPE OF SAMPLE **UNDISTURBED** SS SPLIT SPOON SHELBY D DENISON Notes: O.D.: 2 in TUBE 1. The subsurface information shown hereon was obtained for I.D.: 1-3/8 in the design and estimate purposes for our Client. It is made LENGTH: 24 in O.D.: O.D.: available to authorized users only that they may have HAMMER WEIGHT: 140 lbs I.D.: I.D.: access to the same information available to our Client. It is HAMMER FALL: 30 in I.L.: I.L.: presented in good faith, but is not intended as a substitute CORE **PISTON** for investigations, interpretations or judgment of such **BARREL TYPE:** O.D.: authorized users. O.D.: I.D.: 2. Field identification of soil samples is based on Burmister Soil I.D.: I.L.: Identification System. CASING 3. pp = Unconfined compression strength from Pocket O.D.: 4 in I.D.: 3-1/4 in Penetrometer (tsf)

WEIGHT OF	HAMMER:	300 lb	s	HAMME		24 in				= Weight of Hammer; WOR = Weight of Rod
			SAM	IPLE	RO	СК СОР	RING INF			
DEPTH BELOW GROUND	BLOWS ON CASING	T Y P	N U M	DEPTH (ft)	RUN (in)	REC. (in) SAMPLII	REC. (%)	L > 4" (in)	(%)	FIELD IDENTIFICATION OF SOIL / ROCK
SURFACE (ft)		ш	B E R		0-6	6-12	12-18	18-24	REC.	SUL/ HUCK
	Casing	SS	1	0-2	3	2	5	11	12	Gray f SAND, little (-) Silt
5										
		SS	2	5-7	13	30	29	34	10	Same as SS-1
_10										
		SS	3	10-12	4	4	10	11	15	Gray f SAND, little (+) Silt
15										

# **BORING LOG (continued)**

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ INSPECTOR: A. Reed & K. Ro

DEPTH BELOW ORNER   SAMPLE   ROCK CORING INFORMATION   Page   Rec.   Lo.4   Rec.   Rec.   Lo.4   Rec.   Rec.   Lo.4   Rec.   Rec.   Lo.4   Rec.   Rec.   Lo.4   Rec.   Rec.   Lo.4   Rec.   Rec.   Lo.4   Rec.   Rec.   Lo.4   Rec.   Rec.   Lo.4   Rec.   Rec.   Rec.   Lo.4   Rec.   Rec.   Lo.4   Rec.   Rec.   Rec.   Lo.4   Rec.   Rec.   Rec.   Lo.4   Rec.   Rec.   Rec.   Lo.4   Rec.   R				/						· · · · · · · · · · · · · · · · · · ·	
DEPTH   BLOWS   T   N   CASING   T   N   CASING   CASING   CHIP   CHIP   CHIP   CASING   CHIP   CHIP   CHIP   CHIP   CHIP   CHIP   CASING   CHIP				SAM	IPLE	RC	CK COF	RING IN	ORMAT	ION	
Solicy   Casing   Facility   Solicy   Casing   Facility   Solicy				N	DEPTH	RUN (in)				RQD (%)	
Solit / ROCK  (it)  SS 4 15-17 9 9 9 9 13 15  Same as SS-4  Same as SS-4  SS 6 25-27 6 8 13 14 12  SS 6 25-27 6 8 13 14 12  SS 7 30-32 7 8 10 11 14  Same as SS-4  SS 8 35-37 8 9 11 10 14  Same as SS-4	GROUND	ON CASING	Р	М	(ft)	SOIL	SAMPLII				FIELD IDENTIFICATION
SS 4 15-17 9 9 9 13 15 Gray f SAND, little (+) Silt, trace (-) f Gravel  20 SS 5 20-22 4 4 5 6 10 Same as SS-4  25 SS 6 25-27 6 8 13 14 12 Same as SS-4  30 SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4			E	Ε			<del>1</del>	ı —			SOIL / ROCK
20										REC. (in)	
SS 5 20-22 4 4 5 6 10 Same as SS-4  25 Same as SS-4  SS 6 25-27 6 8 13 14 12 Same as SS-4  30 SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4			SS	4	15-17	9	9	9	13	15	Gray f SAND, little (+) Silt, trace (-) f Gravel
SS 5 20-22 4 4 5 6 10 Same as SS-4  25 Same as SS-4  SS 6 25-27 6 8 13 14 12 Same as SS-4  30 SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4						-					
SS 5 20-22 4 4 5 6 10 Same as SS-4  25 Same as SS-4  SS 6 25-27 6 8 13 14 12 Same as SS-4  30 SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4											
25 SS 6 25-27 6 8 13 14 12 Same as SS-4  30 SS 7 30-32 7 8 10 11 14 Same as SS-4  SS 8 35-37 8 9 11 10 14 Same as SS-4	20										
SS 6 25-27 6 8 13 14 12 Same as SS-4  30 SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4  40 SS 8 25-27 6 18 13 14 12 Same as SS-4			SS	5	20-22	4	4	5	6	10	Same as SS-4
SS 6 25-27 6 8 13 14 12 Same as SS-4  30 SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4  40 SS 8 25-27 6 18 13 14 12 Same as SS-4											
SS 6 25-27 6 8 13 14 12 Same as SS-4  30 SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4  40 SS 8 25-27 6 18 13 14 12 Same as SS-4											
SS 6 25-27 6 8 13 14 12 Same as SS-4  30 SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4  40 SS 8 25-27 6 18 13 14 12 Same as SS-4	25										
30 SS 7 30-32 7 8 10 11 14 Same as SS-4  SS 8 35-37 8 9 11 10 14 Same as SS-4  40 Same as SS-4	25		SS	6	25.27	6	0	10	4 4	40	
SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4  40 SS 8 7 30-32 7 8 10 11 14 Same as SS-4				U	2,3-21	- 0	0	13	14	12	Same as SS-4
SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4  40 SS 8 7 30-32 7 8 10 11 14 Same as SS-4											
SS 7 30-32 7 8 10 11 14 Same as SS-4  35 SS 8 35-37 8 9 11 10 14 Same as SS-4  40 SS 8 7 30-32 7 8 10 11 14 Same as SS-4											
35 SS 8 35-37 8 9 11 10 14 Same as SS-4	30										
SS 8 35-37 8 9 11 10 14 Same as SS-4			SS	7	30-32	7	8	10	11	14	Same as SS-4
SS 8 35-37 8 9 11 10 14 Same as SS-4									-		
SS 8 35-37 8 9 11 10 14 Same as SS-4											
SS 8 35-37 8 9 11 10 14 Same as SS-4	35										
40			ss	8	35-37	8	9	11	10	14	Same as SS-4
SS 9 40-42 9 12 12 15 11 Same as SS-4	40										
1	ŀ		55	9	40-42	9	12	12	15	11	Same as SS-4
	<u></u>										
	-			$\neg$							
45	45										

# BORING NUMBER: PB-6

# **BORING LOG (continued)**

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ INSPECTOR: K. Ro

			SAM	PLE	RO	ск соғ	RING INI	ORMAT	ION	
DEPTH	BLOWS	Т	N	DEPTH	RUN (in)	REC. (in)	REC. (%)	L > 4" (in)	RQD (%)	
BELOW GROUND SURFACE	ON CASING	Y P E	M B	(ft)	SOIL	SAMPLII	NG (Blow	/s per 6 i	nches)	FIELD IDENTIFICATION OF SOIL / ROCK
(ft)			E R		0-6	6-12	12-18	18-24	REC.	
		SS	10	45-47	10	13	18	19	13	Gray f SAND, little (+) Silt, trace (-) f Gravel
50	erra Venda	SS	11	E0 E0	10	45	4.5	05		
		3	11	50-52	13	15	15	25	12	Same as SS-10
55										
		SS	12	55-57	3	4	3	5	13	Gray Clayey SILT, little f Sand, trace (-) f Gravel
60				The The						
		SS	13	60-62	4	6	6	15	14	Gray f SAND, some (-) Clayey Silt
<u> </u>										
65		ss	14	65-67	3	5	5	30	16	Campa an 00 40
<u> </u>			17	00-07		3	3	30	10	_Same.as.SS-13 Gray mf SAND, little Silt
-										
_70										
		SS	15	70-70.2	100/3"				2	Brown cf SAND, little (-) Silt, trace f Gravel
75										BORING NO PR.6 SHEET 3 OF 4

# **BORING LOG (continued)**

**BORING NUMBER: PB-6** 

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ

			SAM	PLE	ROC	CK COR	ING INF	ORMATIO	ON .	
DEPTH	BLOWS	Т	N	DEPTH	RUN (in)	REC.	REC. (%)	L > 4" (in)	RQD (%)	
BELOW GROUND SURFACE	ON CASING	Y P E	M B	(ft)	SOIL	SAMPLIN	IG (Blows	s per 6 inc	ches)	FIELD IDENTIFICATION OF SOIL / ROCK
(ft)			E R		0-6	6-12	12-18	18-24	REC. (in)	
		ss	16	75-75.3	100/4"				3	Brown cf SAND, little (-) Silt, trace (-) f Gravel
									<u></u>	
80										
		SS	17	80-80.4	100/5"				4	Same as SS-16
85										
		SS	18	85-85.5	100/6"				4	Same as SS-16
								1		
90										
		SS	19	90-90.2	100/3"				3	Same as SS-16
95	7.00									
-		SS	20	95-95.5	100/6"				6	Yellow/Brown cf SAND, little Silt, trace (+) f
-										Gravel End of Boring @ 95.5 ft
Ī										End of boiling & 55.5 ft
100										
-										
<u> </u>										
-										
105					A.,					BORING NO. PR-6 SHEET 4 OF 4

### **BORING LOG**

METHOD(S) OF DRILLING

BORING NUMBER: PB-16

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ

CONTRACTOR: Warren George, Inc.

DRILLER: Gus Suri

TYPE RIG: Truck - Mounted (Mayhew 220)

INSPECTOR: K. Ro

**DEPTHS** 

GROUND ELEVATION: - 51 ft

BASELINE: Proposed Bridge Baseline

STATION: 15+09

OFFSET: 19 ft RT

BOREHOLE WATER LEVEL DATA

DRILLING START TIME: 10:45 AM DRILLING FINISH TIME: 12:10 PM

DATE: 11/3/94 DATE: 11/4/94

SHEET 1 OF 4

BORING NO. PB-16

0 - 95.9 ft				Rotary	Drilling				DEPTH	I HOUR	DATE	REMARKS
				-				$\dashv$			<del> </del>	
		TY	PF (	DF SAMPL	F			-		7 7		
				I		STURBE	D					
O.D.: I.D.: LENG HAMM HAMM	MER WEIGHT MER FALL: E REL TYPE:			U SHE TUE O.D I.D.: I.L.: P PIS' O.D I.D.	ELBY BE  : : : : : : : : : : : :	D D C I. I.	ENISON D.: D.: L.:		the de availa acces prese for inva	esign and estimated ble to authorize to the same in th	ate purposes for d users only the aformation avaith, but is not in erpretations or	ereon was obtained for our Client. It is made nat they may have ilable to our Client. It is tended as a substitute judgment of such
I.D.:				I.L.:		in.				fication System.		
			C	ASING					3. pp = L	Inconfined com	pression stren	gth from Pocket
O.D.: 5-1/2				I.D.: 4-3						enetrometer (ts		Malaba of Dod
WEIGHT OF	HAMMER:	300 lbs	3	HAMME	R FALL: 2	24 in			4. WOH	= weight of Har	nmer; WOH :	= Weight of Rod
			SAMI	PLE	RO	СК СОВ	ING INF	ORMA	TION			
DEPTH	BLOWS	Т	N	DEPTH	RUN (in)	REC. (in)	REC. (%)	L > 4 (in)	" RQD (%)		FIELD IDENT	
BELOW GROUND SURFACE	ON CASING	Y P E	M B	(ft)	SOIL	SAMPLIN	NG (Blow	s per 6	inches)		SOIL / R	
(ft)			E R		0-6	6-12	12-18	18-24	REC.			•
	9	SS	1	0-2		WOR	/ 24 in		3	Gray f SAND	, some (+) S	hells, trace Silt
	10											
	7											
	10											
5	13											
	12	ss	2	5-7	22	22	12	14	18	Dark Gray c	SAND, little	(-) f Gravel, trace
	11									Shells		
	15											
	23											
10	48											
	Mud	ss	3	10-12	2	2	3	2	10	Gray SILT &	CLAY, trace	(-) f Gravel (pp=0.1)
	used							_	_	-		
		-	-		-		-					
45		-	$\vdash$		-			-	-			
15	1		4				1			l		

### BORING NUMBER: PB-16

## **BORING LOG (continued)**

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ

			SAMI	PLE	ROC	CK COR	ING INF	ORMATI	ON	
DEPTH BELOW	BLOWS ON	T Y	N U	DEPTH (ft)	RUN (in)	REC. (in)	REC. (%)	L > 4" (in)	RQD (%)	FIELD IDENTIFICATION
GROUND SURFACE	CASING	P	M B		SOIL	SAMPLIN	NG (Blow	s per 6 in	iches)	OF SOIL / ROCK
(ft) u			E R		0-6	6-12	12-18	18-24	REC. (in)	
		ss	4	15-15.5	100/6"				3	Gray cf SAND, little (+) mf Gravel, trace Clayey
										Silt
20									210.00	
		SS	5	20-20.8	60	100/4"			5	Gray cf SAND, little (-) Silt, trace (-) f Gravel
		-	-			-	ļ			
		-	-				<u> </u>			
05		-	-			,		-		
25		ss	6	25-25.3	100/4"				4	Same as SS-5
		55	l	2020.0	1007		-			Same as co-o
		$\vdash$	$\vdash$	<u> </u>						
30							,			
		ss	7	30-30.5	100/6"				5	Same as SS-5
	-				,					
			_					ļ	ļ	
35	<u> </u>	<u> </u>	_				<u> </u>			
		SS	8	35-35.4	100/5"	, , ,	<u> </u>	-	4	Yellow / Gray cf SAND, little Silt
		_	_		ļ		-	<u> </u>	<u> </u>	-
		+	$\vdash$	-		ļ	-	-	-	-
		+-	+	<del> </del>	├		-		+	1
40	-	100	+	40-40.5	100/6"	<del></del>		1		Same as SS-8
		SS	9	40-40.5	100/6	<del>                                     </del>	+	+	6	Jaine as 33-0
	-	+-	-	-	1	<del>                                     </del>	1	+-	1	1
		+-	+			1	1	1		1
45		+	1	1	1		1	1	1	1

## **BORING LOG (continued)**

BORING NUMBER: PB-16

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ

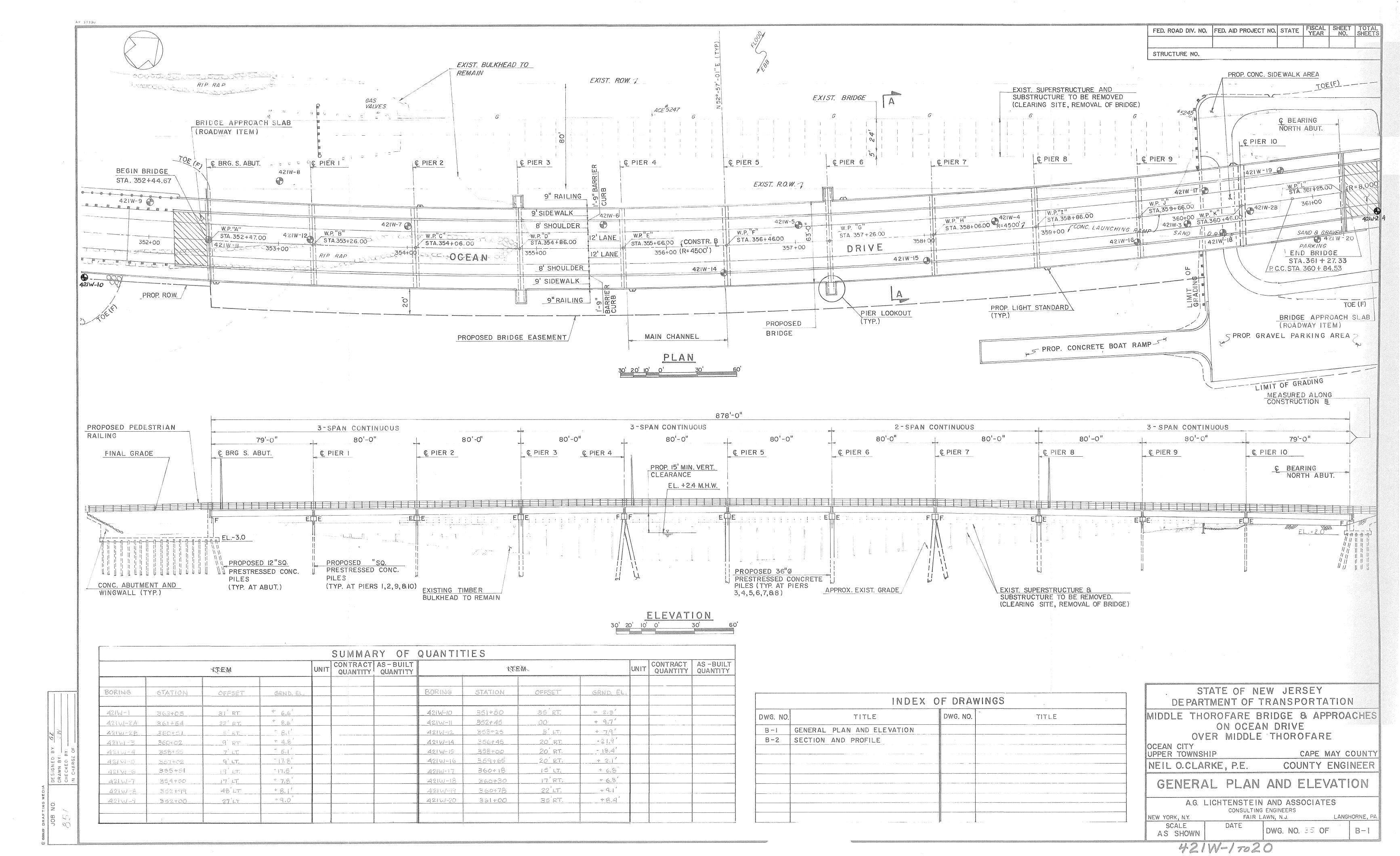
	1	1								
			SAME	PLE	ROC	K CORI	NG INFO	DRMATI	ON	
DEPTH	BLOWS	Т	N.	DEPTH	RUN (in)	REC. (in)	REC. (%)	L > 4" (in)	RQD (%)	
BELOW GROUND SURFACE	ON CASING	Y P E	U M B	(ft)	SOIL S	SAMPLIN	G (Blows	per 6 in	ches)	FIELD IDENTIFICATION OF SOIL / ROCK
(ft)			E R		0-6	6-12	12- 18	18- 24	REC. (in)	
		SS	10	45-46	74	100/6"			4	Yellow / Gray cf SAND, little Silt
50		-								
50		ss	44	50-50.3	100/4"				2	Same as SS-10
		33	11	30-30.3	100/4					Same as 33-10
55	-									
		ss	12	55-56	48	100/6"			10	Same as SS-10
		-								
		-								
60		ss	10	60-61.3	40	62	100/4"		12	Grey f SAND, some (-) Silt
		33	13	00-01.3	49	02	100/4		12	Grey I SAND, some (-) Silt
							,			
_65										
		ss	14	65-66	72	100/6"			10	Same as SS-13
			_		ļ ,					
		-	-						<u> </u>	
70		+-	-				-		<del> </del>	-
_70		ss	15	70-71.5	40	72	100/6"		10	Same as SS-13
		1 55	13	1371.5	1-40	'-	1		1 10	
		P	1	73-75					19	Dark brown SILT & CLAY, trace f Sand (pp = 0.4)
						1	,			Yellow / Brown cf SAND, little Silt
75										
										BORING NO. PB-16 SHEET 3 OF 4

# **BORING LOG (continued)**

PROJECT: Ocean City - Longport Bridge

LOCATION: Ocean City, NJ

		SAMPLE		PLE	ROC	CK COR	NG INF	ORMATIC	ON	
DEPTH	BLOWS	Т	N	DEPTH	RUN (in)	REC. (in)	REC. (%)	L > 4" (in)	RQD (%)	FIELD IDENTIFICATION
BELOW GROUND SURFACE	ON CASING	Y P E	U M B	(ft)	SOIL S	SAMPLIN	G (Blows	per 6 inc	ches)	OF SOIL / ROCK
(ft)			E R		0-6	6-12	12-18	18-24	REC. (in)	
		ss	16	75-76.5	75	77	100/6"		6	Yellow / Brown cf SAND, little Silt
80										
		ss	17	80-80.9	56	100/5"			10	Grey cf SAND, little Silt
								,		
85						ļ				
- 65		SS	18	85-85.4	100/5"				5	Same as SS-17
						-			ļ	
						<u> </u>	-	<u> </u>	-	
90		ss	19	90-90.5	100/6"	<del> </del>		<del>                                     </del>	6	Same as SS-17
		00	19	50 00.0		1		<u> </u>		Came as co-17
						7				
						<u> </u>				
95				 	·	1,00,1511	<u> </u>		1.0	
		SS	20	95-95.9	72	100/5"	┼──	-	10	Same as SS-17 End of Boring @ 95.9 ft
			1	<u> </u>		1	<u> </u>			2.10 61 261 1119
100		_	1	<u> </u>				1		
		+-	-	-		-	-		-	-
		-	+			+		-	-	
		1	$\vdash$	1	1					]
105										BORING NO. PB-16 SHEET 4 OF 4



ROU	TE:			LOCAL N	IAME:	St	cucti	ure Bo	ring TEST HOLE NO. 421W-1	6		
SEC	TION: ]	Middle	Thoro						7211 +	ν		
STA.	TION: 3!			r: 20'					Constr. BL GROUND LINE ELEVATION: +2.1			
			<u> </u>						Elevation G.W.T.			
BORINGS MADE BY: Bronston DATE STARTED:  INSPECTOR: Lord DATE COMPLETE									V nr. 11441 Date:			
Mar Coron.								LETED:	T			
BLOWS SAMPLE NO. DEPTH						ws on	117/	REC.	and			
	29	S-1	0.0'	1.5'	5	7	7		Profile Change	<del></del>		
	27		10.0	11.5	1	<del>                                     </del>	<del>                                     </del>	0.5	Light Brown CF(+)SAND, trace(-)Silt.			
	20	7.40.							7			
	16			ļ								
<sup>5</sup> _	18 17					<u> </u>	ļ		_			
	19	S-2 S-3	5.0' 6.5'	6.5'	2	5	2	1.0'	Light Gray F SAND, trace(-)Silt.			
	20	3-3	0.5	8.0'	.	13	8	0.2	Light Gray F SAND, trace Silt, trace F Gravel.	ļ		
	21	S-4	8.0'	9.5'	4	4	6	1.0'	Gray F SAND, trace Silt.			
10	23	S-5	9.5'	11.0'	1	3	3		Gray F SAND, trace Silt, trace(-)F Gravel.			
	23		11 01	10.51	Ļ	<u> </u>	1.0		<u> </u>			
	28 34	S-6 S-7	11.0'	12.5'		11	13 15		Gray F SAND, trace Silt.			
	44	3-7	12.5	14.0	1	173	172	0.3	SAME.			
15	50	S-8	14.0'	15.5'	13	15	14	0.21	Gray F SAND, trace(+)Silt, trace(-)Fibers.	<b></b>		
	42	S <b>-</b> 9	15.5'		11	16	19	0.7'	Gray F SAND, trace(-)Silt.	<u> </u>		
	37				<u> </u>							
	40		17.0'			11	9	0.3'	Gray F SAND, trace Silt, trace(-)F Gravel.			
20	40 42	S-11	18.5'	20.0'	15	16	18	1.1'	Gray CF(+)SAND, trace Silt, trace F Gravel.			
20	45	S-12	20.01	21.51	6	2	2	0.21	Gray CF(+)SAND, trace Silt, little(-)Shell —			
	48		21.5'		1	1	1	1.5'		21.5'		
	44								Dark Gray Organic CLAY and SILT, trace(-) Fibers.			
	50		23.0'		1	1	2	<u> 1.5'</u>	SAME.			
25	39	S-15	24.5'	26.0'	1	1	1	1.5'	Dark Gray Organic CLAY and SILT, trace F Sand,			
	36 37	S-16	26.0'	27.51	1	1	1	1.5	trace Fibers. (Slightly Micaceous). Dark Gray Organic CLAY and SILT, trace(-)Fibers	<u></u>		
	42		27.5'		1	1	1	~~~~	SAME. (Slightly Micaceous)	<del></del>		
	39		27.3	27.0	-	-		<u> </u>	omic.			
30	60		29.0'			2	1	1.5'	SAME.			
	47	S-19	30.5'	32.0'	2	2	3	1.5'	Dark Gray Organic CLAY and SILT, little(-)			
	49	G 20	32.0'	22 51	1	-		1 -1	Shell Fragments, trace CF Sand, trace(-)Fibers.			
	57 69		33.5		2	2	2 21	$\frac{1.5!}{1.5!}$	Dark Gray Organic CLAY and SILT, trace(-)Fibers (Micaceous).	<del> </del>		
35	65	0 21	22.2	33.0				<u> </u>	Gray CLAY and SILT, some MF(+)Gravel, trace	35.0'		
	45								CF Sand.			
	86	S-22	35.0'	36.5'	58	46	42	0.3'	Gray CF GRAVEL, trace(-)Silt, trace(+)CF Sand.			
	113											
40	185 202											
										<u> </u>		
		.D. of Dri		2½"			x <b>x</b> x		The Controctor shall make his own subsurface investigations in order to sati	sfy		
	·		it Barrel S n Drive Pi			1/2''	<del></del> <u></u>		himself of the actual subsurface conditions. The Information contained on th	nis		
<u>-</u>			n Split Ba	<del></del>		0 lbs.	<del></del> .		log is not warranted to show the actual subsurface conditions. The Contract agrees that he will make no claims against the State if he finds that the actu			
			Drive Pipe						conditions do not conform to those indicated by this log.			
	Drop of h	ommer on	Split Barre	el Sampler	30'	1			New Jersey Department of Transportation			
Core	Dia				,				The state of the s			
Soil d	escription	s renrese	nt o field	identifica	tion				<b>Bureau of Geotechnical Engineering</b>			
	Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.  Approximate Change in Strata											

Inferred Change in Strata

Form	SO-2 2	/79				NEW 3	ERSE	Y DEPA	RTMENT OF TRANSPORTATION Sheet 2 of 2		
ROU	TE:			LOCAL N	AME:	St	ruct	ure Bo	oring TEST HOLE NO. 421W-16	5	
SECT	TION: M	lidd1e	Thoroi	fare B	idg	e FA	US M	1-5305 (	(001)		
STAT	STATION: 359+65 OFFSET: 20' Rt.REFERENCE LINE: Constr. BL GROUND LINE ELEVATION: +2.1'										
BORI	BORINGS MADE BY: Bronston DATE STARTED, 0-23-85 Elevation G.W.T.										
	UHr. 11dal Date:										
11131	CASING		Lord		T			LETED:	10-9-85 24 Hr. Tida1 Date:   Sample ID		
BLOWS SAMPLE NO. DEPTH 0 6 12 REC.									and		
	101	S-23	40.0'	40.8	66		1.3'	0.3'	Profile Change   Light Gray F GRAVEL, trace(-)Silt, some CF		
	179								Sand.		
	197										
_	282 349			ļ	ļ	<del> </del>					
5	140	S-24	45 0'	46.0	52	122	-	0.51	-		
	254	0 27	73.0	70.0	72	122		0.5'	SAME.		
İ	535										
	384										
10	286	0.05	50.01	F1 01	7.	1.01					
	330 422	S-25	50.0	51.0'	/6	121		0.4'	Tan CF SAND, trace(-)Silt, some(-)F Gravel.		
	561				<del> </del>	<u> </u>	<del>  </del>			<del>" ,</del>	
	236										
15	115										
	227	S-26	55.0'	56.5'	36	48	74	0.3'	Tan CF SAND, trace(-)Silt, little(-)F Gravel.		
	382 370					<del> </del>					
	391									<del></del>	
20 _	418										
	320	S-27	60.0'	61.3'	30	84	120/	0.31			
}	401	S-28	62.0 <b>'</b>	62.7	60	120	.3'	0 (1	(+)CF Sand.	20 3 T	
ł		5-20	02.0	02.7	09	120	1.2	0.4	Tan CF SAND, trace(-)Silt, trace(+)F Gravel.  Bottom of Hole	62.7	
25									Bottom of More		
٦											
ŀ											
30									•		
									+		
										······	
35											
<i></i> +							$\dashv$		-		
									<u> </u>		
40											
** ≓		l				1					
	Nominal I.		······································	21/2 11			⋪üx		The Contractor shall make his own subsurface investigations in order to satis	. 6.,	
			t Barrel S			1/2 ' '	<del></del>		himself of the actual subsurface conditions. The Information contained on thi	s	
			n Drive Pi	·		O Iba			log is not warranted to show the actual subsurface conditions. The Contracto agrees that he will make no claims against the State if he finds that the actua	) [ 	
Weight of hammer on Split Barrel Sampler 140 lbs.  Drop of hammer on Drive Pipe 24''									conditions do not conform to those indicated by this log.	J1	
	Drop of ha	mmer on	Split Barre	l Sampler	30 ''				New Jersey Department of Transportation		
Core [	)ia			1.00			Solog Sopasmont of Italisportation				
Soil descriptions represent a field identification									Bureau of Geotechnical Engineering		
	after D.M. Burmister unless otherwise noted.  Approximate Change in Strata										
	20			se norea.				•	Approximate Change in Strata		

ROU	TE:			LOCAL N	IAME:	St	ruct	ure Bo	oring TEST HOLE NO. 421W-17	 7		
SECT	TION:	Midd1	e Thor	ofare	Brio	dge	FAUS	#BR-M	I-5305 (001)			
STAT	TION: 3	60+18							Constr. BL GROUND LINE ELEVATION: +6.8'			
BORINGS MADE BY: Augustine DATE STARTED: 8							STAR	TED: 8	Elevation G.W.T.			
INSPECTOR: Lord						LETED:	0_13_95 OHr. 12.9 FILLER III DIY Date: 9-13	3 <b>–</b> 85 5 <b>–</b> 85				
					Υ	ws on		T	Sample ID ft. P.P. Installed Date:	J-0J		
	BLOWS	SAMF	PLE NO. D	EPTH		74	12/18	REC.	and Profile Change			
	14	S-1	0.0'	1.5'	6	9	12	0.2'	Light Brown F SAND, trace(-)Silt.			
	44		ļ	ļ		ļ	1					
	31			<del> </del>		-			-			
5	33		<del> </del>	<del> </del>	<del>                                     </del>	1	+		<del> </del>			
	49	S-2	5.0'	6.5'	9	13	11	0.2'	Light Brown F SAND, trace Silt, trace F Gravel.			
	53						ļ		Light Gray CF SAND, trace(-)Silt, little (+)			
	37 16	S-3 S-4	6.5' 8.0'	8.0' 9.5'	15 3	17	21	1.0'	MF Gravel. Brown CF SAND, trace(-)Silt, little F Gravel,			
10	19	5-4	8.0	9.5	3	+-		0.2'		0.0		
	33	S-5	10.0'	11.5'	2	1	2	0.8'	Gray Fibrous Organic CLAY & SILT, trace (+) F			
	41 37			ļ		-			Sand.			
	22	U-1 S-6		13.0' 14.5'		ESSI 2	2 2	1.5' 0.2'	Gray CLAY & SILT, trace F Sand, trace(-)			
15	25	3-0	13.0	14.5	1	-	-	0.2	Fibers.	4.5		
	40	U-2	15.0'	16.5'	PR	ESS	D	1.3'	] +			
	55 62		16.51	100		<u> </u>	-					
	67	S-7	16.5	18.0'	1_	1	2	0.8'	Gray F SAND, little Silt.			
20	53					<u> </u>			†			
	73	U-3	20.0'	21.5'	TR	APP	D	0.5'	Sampel Placed In Jar.			
	82 110		01.51	00.01	<del>  ,                                   </del>	1.5		0.51	Crow E CAND troop Cilt			
1	89	S-8	21.5	23.0'	4	15	19	0.5'	Gray F SAND, trace Silt.	23-5+		
25 _	86								<del> </del> -			
	96	U-4	25.0'	26.5'	PR	ESSI	D	1.5'	Dark Gray Orgainic CLAY and SILT, trace F			
}	93		26 51	20.01	1		1	1 51	Sand, trace Fibers,			
ł	65	S-9	26.5	28.0'		0	1	1.5'	Dark Gey Organic CLAY & SILT, trace (-) Sand, trace(-)Dibers.			
30	53							-	Janu, Clace(-)Dibers.			
-	82	U-5	30.0'	31.5'	PR	ESSI	ΣD	1.5'				
ŀ	95 83	c 10	21 51	22 01	1	1	3	1 51	CAME			
ŀ	73	S-10	31.5	33.0'			3	1.5'	SAME.			
35	81								ļ			
	92	U-6	35.0'	36.5'	PR	ESSI	ED 03	1.5'				
. +	97	S-11	36.5'	38.0'	1	0	1	0.3'	SAME.			
t	161	2-11	30.5	30.0		0		0.3	- SATIL			
40 _	197									<u>0.0'</u>		
	Nominal I	.D. of Dri	ve Pipe	x <b>3</b> /x'			4"		71.6			
	Nominal I	.D. of Spl	it Barrel S	ampler	1	1/2"			The Contractor shall make his own subsurface investigations in order to satisfy himself of the actual subsurface conditions. The Information contained on this	,		
			n Drive Pi						log is not warranted to show the actual subsurface conditions. The Contractor			
			n Split Bar Drive Pipe		er 14	U lbs.			agrees that he will make no claims against the State if he finds that the actual conditions do not conform to those indicated by this log.			
			Split Barre		30 ''	ı			New Jersey Department of Transportation			
Core [	Dia											
Soil descriptions represent a field identification									Bureau of Geotechnical Engineering			
after D	D.M. Burn	nister unle	ess otherwi	ise noted.					Approximate Change in Strata			

Inferred Change in Strata

Sheet 2 of 2

Form	POUTE. LOCAL NAME Structure Period																		
ROU	ROUTE: LOCAL NAME: Structure Boring TEST HOLE NO. 421W-17  SECTION: Middle Thorofare Bridge FAUS #BR-M-5305(001)																		
SECT	TION:	Midd	ile Tho	rofare	Br	idge	FAU	S #BR-	-M-5305 (00	1)									
STAT	TION: 3		OFFSET										GRO	DUND LI	NE ELEV	ATION:	+6.	8 <b>'</b>	
BORI	NGS MAD	E BY:	Augus	tine	1	DATE	STAR	TED: 8	3-30-85		u	+2.9	' F	Elevar	ion G.W.T.	V		9_1	L3−85
INSP	ECTOR:		Lord			DATE	СОМР	LETED:	9-13-85			SAME		11100	III DI	y	Date:		L6-85
	CASING	SAMP	LE NO. D	EDTU	Blov	vs on S		REC.	Sample ID					t. P.P. I	nstalled		Date:		
	BLOWS				06		12/18		and Profile Change										
	97 174	S-12	40.0	41.5	3	9	13	0.2'	Gray CF	SAND	), t	race	(-)	Silt.					
	712			<del> </del>		-			-									+	
	1230								]									ŀ	
5	1563		15.01	1.5					],										
	298 535	S-13	45.0	46.5	1/	38	72	0.2'	Tan MF(+)	) SAN	ND,	trace	e(-	·)Silt	•			-	
	1220			<del> </del>		<del>                                     </del>			1									+	
	977								]				. '					t	
10	1135	0.1/	50.01	50.51	105			0.01	SAME.									4	50.5
		S-14	50.0'	50.5'	182	-	-	0.2'				I	Bot	tom o	f Hole			_	
									1									ŀ	
									]									ŀ	
15																		_	
									1									-	
									1									ŀ	
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20																		4	
	-																	-	
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25																		1	
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30	+	· · · · · · · · · · · · · · · · · · ·																+	
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40 ⊒																			
_		D. of Dri		2%xtx			4"		The Contracto	r shal	II make	e his o	wn s	ubsurfac	e investiga	ations in	order to	satis	fy
			it Barrel So n Drive Pij			1/2 11			himself of the	actua	al subs	surface	cond	ditions.	The Inform	ation co	ntained o	n thi	s
			n Split Bar			lbs.			log is not war agrees that he	will	make	no clai	ms o	gainst th	ne State if	he finds			
	not co	on form	to thos	se in	di cated	by this log													
	Drop of ho	mmer on	Split Barre	Sampler	30 ''						New	Jersey	y De	partmen	t of Tran:	sportatio	on '		
Core I	Dia		,										-0 -			_			
		-	nt a field i ess otherwi		ion				Approximate Cha	onge i					ical Engi	neering			
									Approximate Change in Strata										

ROU	TE:			LOCAL N	IAME:	St	ruct	ure Bo	ring TEST HOLE NO. 421W-18	 8				
SEC	TION:	Midd1e	Thoro	fare B	ridg	e F	AUS ;	∦BR−M−	5305(001)	<del></del>				
STA									Constr. BL GROUND LINE ELEVATION: +6.3'					
BOR			August						17 OF Elevation G.W.T.	11 01				
	ECTOR:		Lord	<del></del>					Date: 10					
11131	CASING	Γ	LOLU			vs on		LETED:	10-11-85 24 Hr. +1.9 Date: 10- Sample ID ft. P.P. Installed Date:	-1585				
	BLOWS	SAMI	PLE NO. D	EPTH		6/12	112/	REC.	and Profile Change					
	13	S-1	0.0'	1.5'	11	16	*	1.0'	FILL-Brown and Yellow CF GRAVEL, trace(-)Silt,	T				
	18				† <del></del>	1		1.0	little(+)CF Sand.	<b></b> -				
	51	S-2	1.5'	3.0'	8	13	7	1.2'	Black MF GRAVEL, trace(-)Silt, some(-)CF Sand.					
	37	S-3	3.0'	4.5'	5	7	7	0.8'	SAME. (Coal & Cinders)					
5	43	0 /	, 51	1. 0.										
	85	S-4 S-5	6.0'	6.0'	8	12	13		SAME.					
	90	13-3	10.0	7.5'	17	27	29	1.5'	Top 1' SAME. Bottom of Fill Bottom 0.5' - Gray F SAND, trace Silt.	7.0'				
	65	S-6	7.51	9.0'	15	15	9	1.2'	Gray F SAND, trace Silt.					
10 _	52									9.51				
	37	S-7	10.0'	11.5'	6	3	3	1.2'	Dark Gray Fibrous Organic SILT, M.P.I.					
	43		<b>_</b>		<u> </u>				,					
	61	U-1		13.0'		RESS	ED	0.8'						
	59 68	S-8	13.0	14.5'	1	2	1	0.5'	Gray Fibrous Organic SILT, L.P.I.					
15 _		U-2	15 0'	16.5'	DI	RESS	ED	0.5'		15.5				
	51	0 2	12.0	10.5		LESS	בט	<u>U.5</u>						
		S-9	16.5'	18.0'	12	14	14	1.5'	Gray F SAND, little Silt, trace(-)Fibers.					
	108								, and size, class ( ). Ibels.					
20 _	104	- 10			ļ									
		S-10	20.0'	21.5'	11_	18	26	1.0'	Gray F SAND, trace(+)Silt.					
	76 84			<del> </del>	ļ				4					
	158			<del> </del>						23.5				
25	110			<del> </del>										
		S-11	25.0'	26.5'	2	2	2	1.5'	Dark Gray Fibrous Organic SILT, M.P.I.					
	100								,					
		<u>u-3</u>	26.5'	28.0'	PI	ESS		1.5'						
30	121 137	S-12	28.0'	29.5'	2	2	3	1.5'	SAME.					
30		U-4	30.0'	31 51	DI	ESS	2D	0.11	In Jar.					
	84	<del></del>	50.0	<u> </u>	1 1	ILOO.	עניי	<u> </u>	un Jar.					
		S-13	31.5'	33.0'	1	2	2	1.5'	SAME.					
	97													
35	98	a 1 .								35.0				
		S-14	35.0'	36.5'	9	12	17	1.5'	Gray MF(+)SAND, little Silt.	<del></del>				
	116 141		<del> </del>											
	113													
40	116						- 1							
F	N ! I	D (D-	D:	2%			4''							
		D. of Dr	lit Barrel S			1/2 11	4		The Contractor shall make his own subsurface investigations in order to satisfy	sfy				
			on Drive P				····		himself of the actual subsurface conditions. The Information contained on the log is not warranted to show the actual subsurface conditions. The Contractor					
			on Split Ba	·	er 14	0 ibs.			agrees that he will make no claims against the State if he finds that the actual					
			Drive Pipe						conditions do not conform to those indicated by this log.					
L	Drop of h	ammer on	Split Barr	el Sampler	30 ''	·			New Jersey Department of Transportation					
Core	Dia								_					
Soild	escription	ns represe	ent a field	identi fi cat	ion				Bureau of Geotechnical Engineering					
after	D.M. Burn	nister unl	ess otherw	ise noted.					Approximate Change in Strota					

Form	SO-2 2	2/79			]	NEW J	ERSE	EY DEPA	ARTMENT OF TRANSPORTATION Sheet 2 of 2	
ROU	TE:			LOCAL N	AME:	Str	uctu	re Bo	ring TEST HOLE NO. 421W-	18
SECT	TION: M	liddle	Thorof	are Br	ride	e FA	US #	BR-M-	5305(001)	
									Constr. BL GROUND LINE ELEVATION: +6.3'	
**	NGS MAD		August						El., CWT	
		E DI:								0-11-85
INSP	ECTOR:		Lord		· · · · · · · · · · · · · · · · · · ·			LETED:		0–15–85
	BLOWS	SAMP	LE NO. D	EPTH	0/	vs on !	112/	REC.	Sample ID ft. P.P. Installed Date:	
	121	S-15	40.01	41.5	16	26	33	0.21	Profile Change   Gray CF SAND, little Silt, little Shell	
	164	0 13	40.0	71.5	1 -0	20	133	0.2	Fragments.	
	500					<b>†</b>				<b> </b>
	860									
5	1312	0.16	/ 5 0 1	16.01	56	110	ļ	0.01		
	319 1402	S-16	45.0	46.0	56	1113		0.3'	Gray F SAND, trace(+)Silt.	
	$\frac{1402}{1671}$					<u> </u>				
	2091		<u> </u>		<b></b> -					<u> </u>
10	2140									
	916	S-17	50.0'	51.0	81	150	-	0.5'	Gray F SAND, little Silt.	
	1363	······		<b> </b>		ļ				
	1571 2114				<del>                                     </del>	<del> </del>				
15	2396					-				<b> </b>
		S-18	55.01	56.5'	59	96	112	0.5'	Gray CF SAND, trace Silt, trace(+)F Gravel.	56.51
		<del></del>			ļ				Bottom of Hole	20.3
						-		<del></del>	Bottom of hore	
20										<u> </u>
										<u> </u>
25										
23	<del>-</del>									<del></del>
}										
30									-	
ļ										<u> </u>
Į										<b>-</b>
[										
35									_	
}								·		ļ
-							+			<b> </b>
			1							<del></del>
40	<u>l</u> .	l	1				]			
	Nominal I	D. of Dri	ve Pipe	×21/2×1		<del></del> -	4 11			
	Nominal I.	D. of Spli	it Barrel S	ampler	13	2"			The Contractor shall make his own subsurface investigations in order to sa himself of the actual subsurface conditions. The Information contained on	itisfy this
	<del></del>		n Drive Pi	·					log is not warranted to show the actual subsurface conditions. The Contra	ctor
			n Split Bar Drive Pipe		r 140	lbs.			agrees that he will make na claims against the State if he finds that the ac conditions do not conform to those indicated by this log.	tual
_	<del></del>		Split Barre		30''					
<b>.</b>			·· · · · ·	······································					New Jersey Department of Transportation	
									Bureau of Geotechnical Engineering	
	-	•	nt a field i ss otherwi		ion				Approximate Change in Strata	
									Informal Characters in	
									Inferred Change in Strata ——————————————————————————————————	

ROUTE: LOCAL NAME: Structure Boring TEST HOLE NO. 421W-19 Middle Thorofare Bridge FAUS #BR-M-5305(001) SECTION: OFFSET: 22' Lt. REFERENCE LINE: Constr. BL **STATION:** 360+78 GROUND LINE ELEVATION: +9.1' Elevation G.W.T. BORINGS MADE BY: Augustine DATE STARTED: 8-9-85 0 Hr. +1.3' Filled In Dry Date: 8-29-85 INSPECTOR: DATE COMPLETED: 24 Hr. Lord 8-29-85 SAME Date: 9-3-85 CASING Sample ID ft. P.P. Installed Blows on Spoon Date: SAMPLE NO. DEPTH REC. and 12 12 18 **BLOWS** Profile Change 4 S-1 0.0' 1.5' 6 10 1.5 Brown CF SAND, trace(-)Silt, trace(+)F Gravel. 11 S-21.5' 3.0' 8 11 11 1.5' Light Brown F SAND, trace(-)Silt. 12 S-3 3.0 4.5 11 10 9 1.2'SAME. 10 14 1.5 S-44.5' 6.0' SAME. 11 S-5 6.0' 7.5 8 8 1.5' SAME. 13 Gray CF SAND, trace (-) Silt, some (+) F 10 7.5' 9.0' S-66 Gravel. 6 S-7 9.0' 10.5 1.5' 5 4 4 Gray & Black F SAND, trace(+)Silt. 10 20 32 10.5' 12.0' 2 Gray & Brown CF(+)SAND, trace Silt. S-8 1 Bottom - 6" - Gray Fibrous Organic CLAY & SILT some(-)F Sand. 33 12.0' 13.5' 2 2 S-9 32 34 13.5' 15.0' 2 1.2' S - 1015 39 U-1 15.0' 16.5' PRESS 0 35 68 S-11 16.5' 18.0' 1.0' Dark Gray Organic CLAY & SILT, little(+)F 51 Sand, trace Shell Fragments, trace(-)Fibers. 51 20 20.0 61 U-220.0' 21.5" PRESS 1.5' 62 Gray F SAND, trace Silt, little (+) Shell 68 S-12 21.5 11 23.0 11 1.2' Fragments. 23.0 84 89 25 67 S-1325.0 | 26.5 | 2 2 1.5' Gray Fibrous Organic CLAY & SILT, trace(+)F 71 Sand, trace Shell Fragments. 80 U-326.5 28.0 PRESS 1.5' 82 76 S-14 28.0 29.51 1.2' Gray Fibrous Organic CLAY & SILT in jar. 80 U-40.5 1\* 30.0 31.5 PRESS 80 31.5 99 31.5 S-15 33.01 2 3 10 1.5' Gray MF SAND, trace(+)Silt, trace Shell 149 Fragments. 164 35 94 S-16 36.51 13 11 10 0.8' Gray CF SAND, trace Silt, some(+)Shell 154 Fragments. 158 150 146 Nominal I.D. of Drive Pipe 4" **2**2次以 The Contractor shall make his own subsurface investigations in order to satisfy 11/2 Nominal I.D. of Split Barrel Sampler himself of the actual subsurface conditions. The Information contained on this Weight of hammer on Drive Pipe 300 lbs. log is not warranted to show the actual subsurface conditions. The Contractor agrees that he will make no claims against the State if he finds that the actual Weight of hammer on Split Barrel Sampler 140 lbs. conditions do not conform to those indicated by this log. Drop of hammer on Drive Pipe

Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

Core Dia. \_

Drop of hammer on Split Barrel Sampler

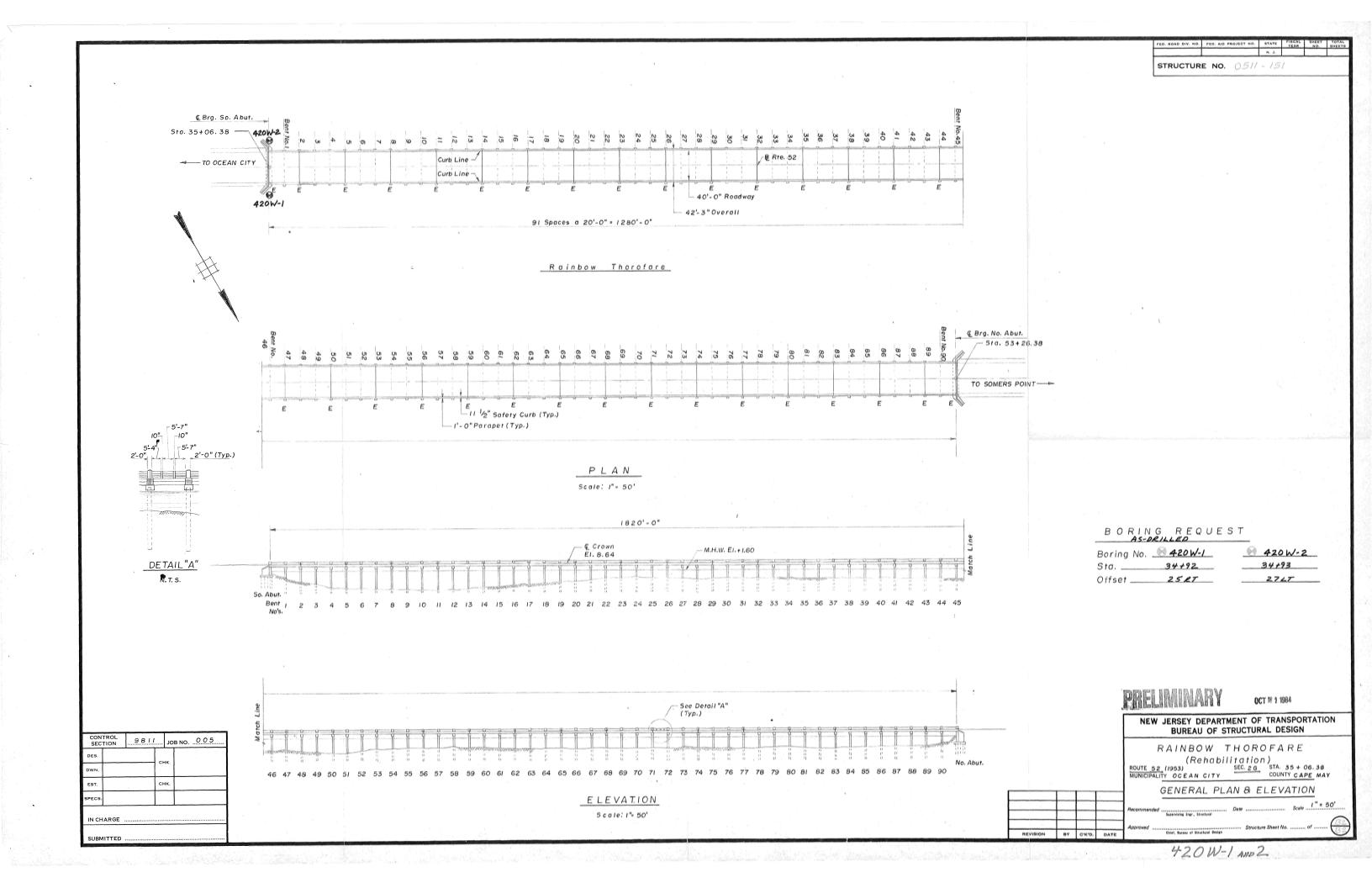
**Bureau of Geotechnical Engineering** 

**New Jersey Department of Transportation** 

Approximate Change in Strata

Sheet 2 of 2

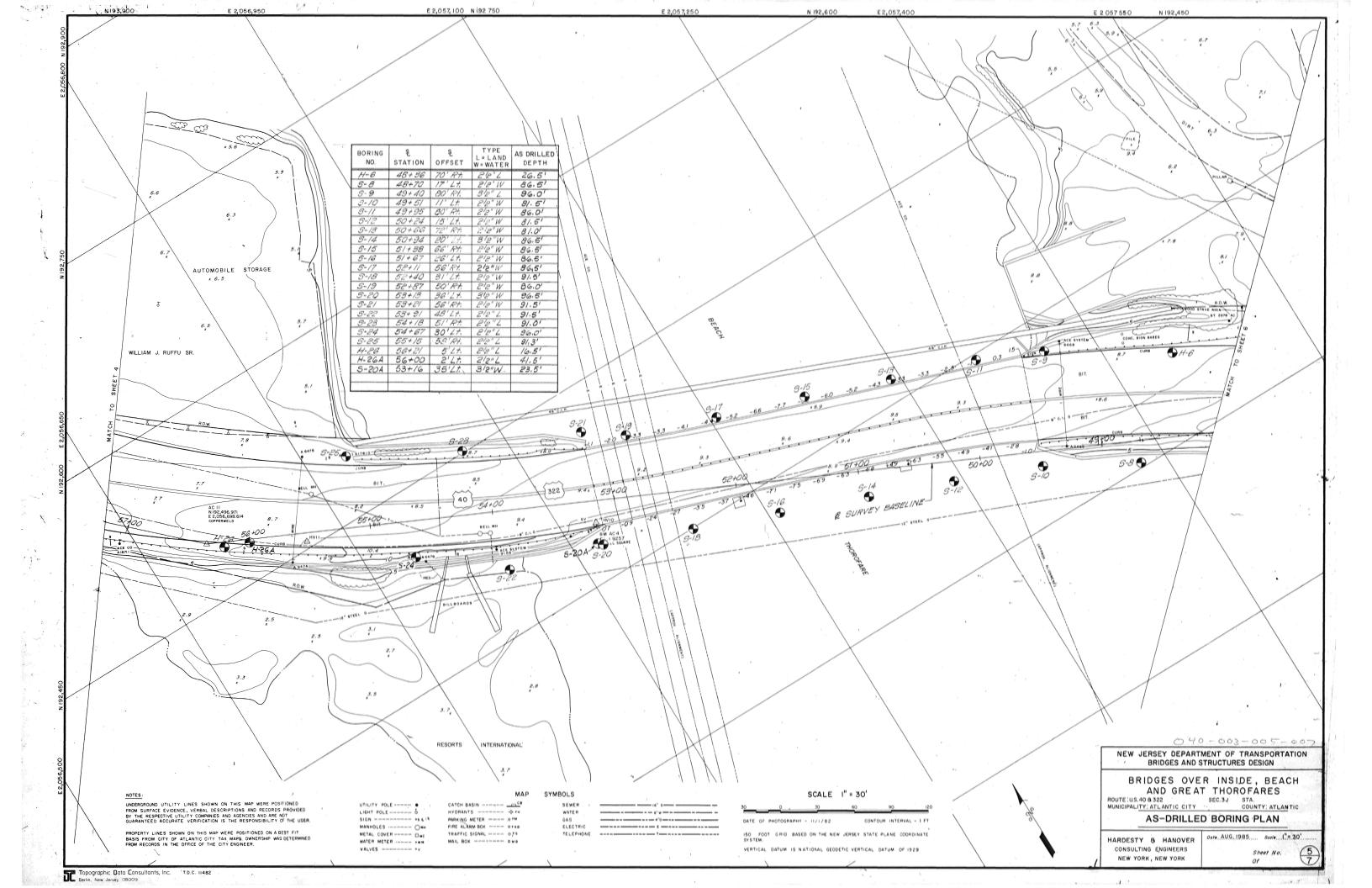
	TE.			LOCAL	A					TEST HOLE NO 4047-14			
ROU				LOCAL N	···				3oring	TEST HOLE NO. 421W-19			
	TION:								-M-5305(00				
STAT	rion: 3	60+78	OFFSET	: 22 ' I	.t.	REFE	RENC	E LINE:	Constr. Bl				
BOR	NGS MAD	EBY:	Nugusti	ine		DATE	STAR	TED: 8-	-9-85	Elevation G.W.T.  O Hr. +1.3' Filled in Dry  Date: 8-29	-85		
INSP	ECTOR:	I	Lord			DATE	COMP	LETED:	8-29-85	24 Hr. SAME Date: 9-3-			
	CASING	5.4.4.5			Blov	vs on S	poon		Sample ID	ft. P.P. Installed Date:			
	BLOWS	SAMP	LE NO. D	EPIH	0 6	6/12	12/18	REC.	and Profile Change				
	143	S-17	40.0'	41.5	5		11	1.5'	<del></del>	CLAY, some(-)C(+)F SAND, trace(+)F			
	159			<del> </del>	ļ	<u> </u>	ļ		Gravel.		42.		
	194 172			<del> </del>	-	╂			+				
5	200			<del> </del>	<del> </del>	<del>                                     </del>	<del> </del>		1	<del> -</del>			
_	168	S-18	45.0'	46.5	38	65	106	0.2'	Light Gray	MF(+)SAND, trace(-)Silt.	******		
	243												
	358		<b> </b>	<del> </del>		<u> </u>							
	367			<del> </del>	<del> </del>	<del> </del>			-	· ·			
10	385 184	S-19	50.0'	51.5	24	65	121	0.21	light Brow	vn CF(+)SAND, trace(-)Silt, trace	<del></del>		
	289	0 1.7	30.0	31.3				0.2		rs(Lignitic), trace(-)F Gravel.			
	343				<u> </u>								
	634	·····	ļ	ļ	ļ	ļ	<u> </u>						
15	1180	S-20	55.0'	55.5'	169	-	<del> </del> -	0.2	Tan F SANI	), trace(-)Silt.	5.5		
		5 20	33.0	33.3	100	<del> </del>	-	0.2		Bottom of Hole			
									1 .	-			
									]				
20	-			<u> </u>	<u> </u>				*NOTE:	Sample removed from tube and placed			
	<b></b>					<del>                                     </del>			-	in jar.			
									1	<u> </u>			
									1	<u> </u>			
25					ļ				]				
									4	<u>L</u>			
										-			
					<b>-</b>				1	<del> -</del>			
30													
									-	<u></u>			
	<del>  </del>									<u> </u>	·····		
35										<del> </del>			
									]				
										<u> </u>			
40										<del> </del>			
									<u> </u>				
-		.D. of Dri	ve Pipe it Barrel S	x <del>2(x'</del>		1/2 ' 1	4."			r shall make his own subsurface investigations in order to satisfy			
			n Drive Pi	<del></del>		· •				actual subsurface conditions. The Information contained on this ranted to show the actual subsurface conditions. The Controctor			
			n Split Ba			0 lbs.			agrees that he	will make no claims against the State if he finds that the actual			
	<del></del>		Drive Pipe						conditions do	not conform to those indicated by this log.			
L	Drop of h	ammer on	Split Barre	el Sampler	30 '	•				New Jersey Department of Transportation			
Core	ere Dia												
Soil d	lescription	ns represe	ent a field	i denti fi cat	ion					Bureau of Geotechnical Engineering			
			ess otherw			inge in Strata							



rorm	30-2 2	///											
ROU	UTE: 52 LOCAL NAME: South Abutment, Rainbow Thorofare Bridge TEST HOLE NO. 420W-1												
SEC	TION: O	cean (	City to	Route	9								
STAT	TION: 3	4+92	OFFSET	: 25' R	t.	REFE	RENCI	E LINE:	Rt. 52 BL GROUND LINE ELEVATION: +7.0'+				
	NGS MAD					DATE	STAR	TED 5	Elevation G.W.T.	-			
		E BT:	Servi	110				TED: 5	VIII. 10.0				
INSP	ECTOR:		Lord		T		-	LETED:	5-17-85	-20–85			
	BLOWS	SAME	PLE NO. D	EPTH		vs on S	112/	REC.	and				
	3	S-1	0.0'	1.5'	16	3	<del>18</del> 5	0.2'	Profile Change	<del></del>			
	4	3-1	10.0	1.5	2	13		0.2	FILL - Yellow and Brown CF Sand, trace (-) Silt, some (+) Wood Fibers, trace F Gravel.				
	7												
	8				-					.41			
5	8	0.0		6.51	<del>  _</del> _	<del> </del>	10	0.01		-			
	10	S-2	5.0'	6.5'	7	9	12	0.3'	Yellow and Brown CF SAND, trace Silt, little (+) MF Gravel.	1,22			
	13		<u> </u>		<del>                                     </del>	†	-		Bottom of Fill	8.0'			
	21												
10	29		ļ		<u> </u>	<u> </u>	ļ	ļ	-				
	32	S-3	10.0'	11.5'	7	13	19	0.7'	Grey F SAND, trace Silt.				
	31		<del> </del>	<del> </del>	<del> </del>	+	-		-				
	32			l	<u> </u>	†	<u> </u>		1				
15	29								]				
	32	S-4	15.0'	16.5'	6	11	16	0.5'	Grey F SAND, trace (-) Silt.				
	34 29				-	+			-	-			
	27		-		<del>                                     </del>	<del> </del>			†	<b> </b>			
20	26								_	1,2			
_	50	S-5	20.0'	21.5'	6	8	12	0.5'	SAME.	(1) (2)			
	50		<u> </u>		-	┼	ļ		4	- 33			
	52 44		<del> </del>	<b> </b>	-	<del> </del>			-				
25	43		<del> </del>		1.				-				
_	61	S-6	25.0'	26.5'	3	8	9	0.6'	SAME.				
	51		ļ			ļ			4	-			
	50 44		<del> </del>	<u> </u>					-				
30	47		<del> </del>		<del> </del>	†	l		-				
-	95	S-7	30.0'	31.5'	7	10	12	0.6'	SAME.				
	113												
	128 117			ļ	ļ	<del> </del>	ļ		-				
35	110		<del> </del>	<del> </del>	-	<del> </del>			1	-			
	60	S-8	35.0'	36.5'	10	13	19	0.5'	Grey CF SAND, trace (-) Silt, some (+) F	1 7			
	70								Gravel, trace (-) Shell Fragments.				
	78		<u> </u>	ļ	ļ	—			4				
40	87 70		-		<del> </del>	┼			4				
~ _	70 1						<u> </u>						
-			rive Pipe	2½"		11/ !!	x4Kx		The Contractor shall make his own subsurface investigations in order to sa	tisfy			
F			on Drive P			1½"			himself of the actual subsurface conditions. The Information contained on t log is not warranted to show the actual subsurface conditions. The Contrac				
L.			on Split Bo			40 lbs.			agrees that he will make no claims against the State if he finds that the act				
			Drive Pip						conditions do not conform to those indicated by this log.				
L	Drop of h	ammer or	Split Barr	el Sample	r 30	"			New Jersey Department of Transportation				
Core	Dia												
			sent a field less otherw						Bureau of Geotechnical Engineering  Approximate Change in Strata				
2.701	501				200								

Form	SO-2 2	2/79		-					RETMENT OF TRANSPORTATION SHEET 11 01 11	-
ROU	re:	52		LOCAL N	AME:	Sou	th A	butmer	nt, Rainbow Thorofare Bridge TEST HOLE NO. 420W-	1
SECT	ION:	0cean	City t						•	
STAT	10N: 34	+92	OFFSET	: 25' E	Rt.	REFE	RENC	E LINE:	Rt. 52 BL GROUND LINE ELEVATION: +7.0'+	
BORI	NGS MAD	DE BY:	Servill	.0		DATE	STAR	TED: 5-	o III.	5-17-85
INSP	ECTOR:	I	Lord			DATE	COMP	LETED:		5-20-85
	CASING	SAMP	LE NO. D	FPTH	Blow	vs on S	poon	REC.	Sample ID ft. P.P. Installed Date:	
	BLOWS				6	/12	/18		Profile Change	
	72 75	S-9	40.0	41.5	7	10	10	0.5'	Grey CF SAND, trace (-) Silt, some (+) F Gravel, trace (-) Shell Fragments.	
	83				<del> </del>	<del> </del>	<del>                                     </del>		Glaver, trace (-) bherr fragments.	43.0
	53		<b> </b>		<b> </b>	<del>                                     </del>	1			+43.0
5	52									
	145 100	S-10	45.0'	46.5	3	3	3	1.1'	Grey ORGANIC SILT.	
	113	<del> </del>	<del> </del>	<del> </del>	-		-		-	
	121			<b></b>	<del> </del>	<del> </del>	<del> </del>		1	
10	119									
	120	S-11	50.0'	51.5	18	33	44	1.1'	SAME.	
	285 489		ļ	<u> </u>	├					52.0
	195		<del> </del>		<del>                                     </del>	<del> </del>	-			-
15	189				<b>†</b>		1			
	169	S-12	55.0'	55.5	150	_	-	0.3'	Grey CF SAND, trace (-) Silt.	
	171				ļ	ļ			-	,
	153 139				-					
20	153		<u> </u>	<u> </u>	1	<b></b>				
-	200	S-13	60.0'	61.5	13	15	21	0.6'	SAME.	
	210				ļ	ļ				
	213 190		<del> </del>	ļ		<del> </del>			-	
25	133		<del>                                     </del>		<del>                                     </del>	<del> </del>	<del> </del>		Black ORGANIC SILT little, CF Sand, trace CF	64.0
	142	S-14	65.0'	66.5	28	31	36	0.9'	Gravel.	66.0
	183								Grey CF SAND, trace Silt.	
	150 174				-					
30	200		<u> </u>		-				-	<b></b>
		S-15	70.0'	70.5	131	_	_	0.2'	Grey CF SAND, trace Silt.	70.5
									Bottom of Hole	
					↓				4	
35	<u> </u>				<del>                                     </del>	-			1	
_										1
			ļ		-				4	
40				ļ	-		-		-	
~ =										
-		I.D. of Dr	·	2½"		1½"	<b>XX</b> X		The Contractor shall make his own subsurface investigations in order to s	
F			lit Barrel S on Drive P			/2			himself of the actual subsurface conditions. The Information contained on log is not warranted to show the actual subsurface conditions. The Contri	
_			on Split Bo			O lbs.			agrees that he will make no claims against the State if he finds that the a	
	Drop of I	nammer on	Drive Pip	e 24''					conditions do not conform to those indicated by this log.	
L	Drop of I	nammer on	Split Barr	el Sample	r 30 '				New Jersey Department of Transportation	
Core	Dia				:				Person of Godinated American	
Soil	descriptio	ons repres	ent a field	identifica	ition				Bureau of Geotechnical Engineering	
after	D.M. Bur	mister unl	ess otherw	ise noted	•				Approximate Change in Strata	

Inferred Change in Strata -----



			***************************************									
ROUTE: 40 & 322 LOCAL NAME: Inside, Beach & Great Thorofare Bridges TEST HOLE NO. S-7												
	TION:	3.	J				•	16				
STA	TION: 4	7+75	OFFSET	. 18	Lt.	REFE	RENCI	LINE:	Survey Baseline GROUND LINE ELEVATION: 4.9'			
BOR	INGS MAD	E BY:	B. Lev	ering		DATE	STAR	TED: 9/	20/85 Elevation G.W.T.			
INSP	ECTOR:		R. Fie	lds				LETED:	9/24/85 24 Hr. +1.9 Detet	9/24/85 9/25/85		
	CASING					vs en S			Semple ID ft. P.P. Installed Date:	3/23/03		
	BLOWS	SAMI	PLE NO. D	EPTH	06	6/12	12/8	REC.	end Profile Change			
		S-1	0.0'	1.5'	14	21	33	1.3'	Brown cf SAND, little (+) Silt, trace (+)			
			<del> </del>			-	-		mf Gravel			
			1		-	<del>                                     </del>	<del>                                     </del>					
5 _	网											
	- 6	S-2	5.0'	6.5	6	14	19	0.9	, , , , , , , , , , , , , , , , , , , ,			
			<del> </del>	<del> </del>	-	├	-		roots & fibers			
	n			<del> </del>	1	<del>                                     </del>				9.01		
10 _												
	<b>∀</b>	S-3	10.0	11.5'	WH	WH	WH	1.5	Organic SILT w/decomposed roots & fibers			
			<del>                                     </del>	<u> </u>	<del>                                     </del>	<del>                                     </del>	$\vdash$					
15	Σ	S-4	15 01	16 61				, ,				
	M	5-4	15.0	10.5	WH	WH	1	1.5	Same			
			1	<b></b>	<del> </del>	<del>                                     </del>	·					
	H								,			
20		S-5	20.01	21.5	1777	1777		1 51	a			
	S	3-3	20.0	21.5	WH	WH	WH	1.5'	Gray Clayey SILT w/decomposed fibers			
										-		
										14-0'		
<sup>25</sup> _	3	S-6	25.01	26.51	3	10	10	1.5'	Gray f SAND, trace Silt			
	0		1	20.5	<u>ا</u>	1	10	1.5	Gray I SAND, trace Silt			
30					<del> </del>	<del> </del>						
· _	1	S-7	30.01	31.5	8	10	9	1.5'	Same	-		
	0											
35	E				-	_				-		
_		S-8	35.0'	36.5	12	15	15	0.51	Same	_		
	DING		ļ .									
	30		<b></b>					·				
40 _	M M							·				
Ē	Nominal I	D -4 D	dua Pina	215 "			Ж					
			lit Barrel S			<b>%</b> "			The Contractor shall make his own subsurface investigations in order to	setisfy		
	Weight of	hammer	en Drive Pi	pe 300	lbs.				himself of the actual subsurface conditions. The Information contained a log is not warranted to show the actual subsurface conditions. The Cont	rector		
-			on Split Ba		er 14	O lbs.			agrees that he will make no claims against the State If he finds that the conditions do not conform to those indicated by this log.	sctuel		
卜			Split Barr		30	11	···	$\dashv$				
Co	Die.								•			
			ent a field		•••							
	ar actiotic	na rebres	ant a field	. destifies	TIAN							

Core Die.

Sail descriptions represent a field identification after D.M. Burmister unless otherwise noted.

Appreximete Chenge in Strate

Inferred Change In Strate -----

Core Dia.

Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

Approximate Change In Strate

Inferred Change in Strate ------

Nominal I.D. of Drive Pipe	21/2 "	<b>€XX</b>
Nominal I.D. of Split Barrel Sa	mpler	ነத"
Weight of hammer on Drive Pip	<ul> <li>300 lbs.</li> </ul>	
Weight of hommer on Split Barr	el Sampler 1	40 lbs.
Drop of hommer on Drive Pipe	24"	
Drop of hammer en Split Barrel	Sampler 30	**

The Contractor shall make his own subsurface investigations in order to satisfy himself of the actual subsurface conditions. The information contained on this lag is not warranted to show the actual subsurface conditions. The Contractor agrees that he will make no claims against the State if he finds that the actual conditions do not conform to those indicated by this lag.

Note: 4.0' water with tide gage at +1.5'

Soil descriptions represent a field identification after D.M. Burnister unless otherwise noted.

Approximate	Change In	Strate	

ROU	TE: 40	& 322	2	LOCAL N	AME:	Ins	ide,	Beach	& Great Thorofare Bridges TEST HOLE NO. S-8	
SEC	TION:	3J								
STAT	rion: 4	8+70	OFFSET	. 17'I	t.	REFE	RENC	E LINE: S	urvey Baseline GROUND LINE ELEVATION: -2.5'	
BOR	NGS MAD	E BY:	. Sipp	le	1	DATE	STAR	TED:	9/17/85 Elevation G.W.T.  O Mr. Water hole Date:	
INSP	ECTOR:	F	. Fiel	.ds	1	DATE	COMP	LETED:	9/19/85 24 Hr. Date:	
	CASING BLOWS	SAMP	LE NO. D	EPTH	Blow	's en 3	poon	REC.	Sample ID ft. P.P. Installed Date:	
	Pro#2			41.5	16	2/2	23		Profile Change	
		S-8	40.0	41.5	10	24	32	1.1'	Gray cf SAND, some cf Gravel, trace (+)Silt	
									· .	
5 _		S-9	45.01	46.5	11	16	24	1.0'	Gray cf SAND, some (-)f Gravel, trace (+)Silt	
				40.5		10	2-7	1.0	dray of Band, some (-)1 Graver, trace (+)Sift	•
	Ω								·	
10	S					-				49.0
	n	S-10	50.0'	51.5'	6	11	10	1.1'	Gray CLAY & SILT, trace (-)f Sand	
					-		_			
15										
		S-11	55.0'	56.5'	10	12	19	1.0	Gray CLAY	
	- A		<b>-</b>	<u> </u>	-	<u> </u>				
	Σ								· · · · · · · · · · · · ·	
20 _		0.10	60.00							
		S-12	60.0	61.5'	.6	10	12	1.0'	Same	60.0
					-					62.0
<sup>25</sup> —	2	S-13	65.0'	66.51	20	28	47	1.5'	Crow & Brown of CAND 14441 - C414	
	H	- 13	03.0	00.5	20	20	7/	1.5	Gray & Brown cf SAND, little Silt, trace (+)f Gravel	·
	1,								. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
30	H			<u> </u>						
·· –	×	S -14	70.0	70.5	100	-		0.5	Gray cf SAND, some (-)f Gravel, trace Silt	
	Q								, , , , , , , , , , , , , , , , , , , ,	
35 _	1								<b> </b>	
_		S-15	75.0'	76.5'	24	44	80	0.91	Gray mf SAND, trace (+)Silt	
	<del>                                     </del>									
. •									}	
<sup>40</sup> _										
	Nominal	I.D. of Dri	ve Pipe	21/2"			XX		The Contractor shall make blo and a life in the same of the same o	
H			it Berrel S			<b>%</b> "			The Contractor shall make his own subsurface investigations in order to satis himself of the actual subsurface conditions. The information contained on thi	
<b> </b>			n Drive Pi			O Ibe			lag is not warranted to show the actual subsurface conditions. The Contracto agrees that he will make no claims against the State If he finds that the actua	r .t
	Drop of h	ammer on	Drive Pipe	• 24"					conditions do not conform to those indicated by this log.	
L	Drop of h	ommer en	Split Barr	el Sampler	30'	•				
Core	Die									
			int a field ess otherw						Appreximate Change in Strate	

Core Dia.

Soit descriptions represent a field identification after D.M. Burmister unless otherwise noted.

Appreximete Change in Strate	

Inferred Change In Strate ----

ROU	TE: 40 ·	+ 322		LOCAL N	AME:	Insi	ide,	Beach	& Great Thorofare Bridges TEST HOLE NO. S-17	
SEC	TION:	3J								
STA	TION: 5	2+11	OFFSET	56 R	t.	REFE	RENCE	LINE:	Survey Baseline GROUND LINE ELEVATION: -6.0	
	NGS MAD		F. Si				STAR		10/28/85   Elevation G.W.T.	
	ECTOR:		R. Fi	elds				LETED:	10/30/85 O Hr. Water Hole Date:	
	CASING					vs on S			Sample ID ft. P.P. Installed Date:	
	BLOWS	SAMP	LE NO. D	EPTH	00	6/12	12/	REC.	end Profile Change	
	WH	S-1	0.0'	1.5	WH	WH	WH	0.6	Gray cf SAND, some (+) Silt, w/shell	
	WH				├—		-		fragments	
	WH		<del> </del>			├				3.0
5	WH					<del>                                     </del>				
	WH	S-2	5.0'	6.5'	WH	WH	WH	1.5	Gray organic SILT, trace f Sand, w/shell	
	WH			ļ	<del> </del>	<u> </u>			fragments	
	WH		-		├		-		1	
10	WH								ţ.	
	4	S-3	10.0'	11.5'	WH	WH	WH	1.5	Same	
	6 17		<u> </u>	ļ	ļ		-			
	17		<del> </del>		<del> </del>	├	$\vdash$			13.0'
15	17								· ·	
	30	S-4	15.0'	16.0'	2	2	4	1.0'	Gray f SAND, little (+) Silt, w/shell	
	33 35				├				fragments	
	56		<del> </del>			-			·	
20	66				<del>                                     </del>	-				-
		S-5	20.0'	21.5	4	11	14	0.8	Gray f SAND, little Silt, w/shell fragments	
			<del> </del>		<b>├</b>					
	· A		<del>                                     </del>		├─		-			-
25	D									<u> </u>
	Σ	S-6	25.0	26.5	6	2	1	0.7'	Gray f SAND, trace Silt	1
	<u> </u>		<b> </b>				$\vdash$		*	
			1.0		<del> </del>	-				
30	9				<b></b>					
	Z	S-7	30.0'	31.5'	1	1	2	1.5	Gray cf SAND, some Silt, trace f Gravel,	
	1				ļ				w/shell fragments	
	F		<del> </del>			-	$\vdash$			-
35 _	H									<u> </u>
	24	S-8	35.0	36.5'	4	15	30	1.2	Gray mf SAND, trace Silt	
	<u> </u>				<del> </del>	<u> </u>	$\vdash$			
	$\vdash \vdash \vdash$		-				$\vdash$			
40 _								~		
٦	Nominal	I.D. of Dr	ive Pine	235"			XX			
r			lit Barrel			<b>%</b> "			The Contractor shall make his own subsurface investigations in order to	atisfy
	Weight of	hammer	on Drive P	ipe 300	lbs.				himself of the actual subsurface conditions. The Information contained a log is not warranted to show the actual subsurface conditions. The Control	sctor
-			Dalam Bla		er 14	O Ibs.			agrees that he will make no claims against the State if he finds that the conditions do not conform to those indicated by this log.	ictual
F			Split Barr		30	"				
C	0:-					-			Note: 6.0' water at 0.0' tide gage.	

Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

Appreximate Change In Strate \_\_\_

POLI	TE: 40	+ 322		LOCAL	445.	Tne	146	Read	h & Great Thorofare Bridges TEST HOLE NO. S-17	
	TION:			LUCAL R	AME:	IIIS	Iue,	Beaci	h & Great Thorofare Bridges TEST HOLE NO. S-17	
		3J 2+11	OFFSET	. 56 Rt		DEEE	DEVC	ELIVE	Survey Baseline GROUND LINE ELEVATION6.0'	·
						KEFE	KENC	E LINE:	GROUND LINE ELEVATION: -6.0'	
BOR	NGS MAD		. Sipp			DATE	STAR	TED:	10/28/85 9Mt Water Hele Deter	
INSP	ECTOR:		. Fiel	.ds	~			LETED:	10/30/63 24 Hr. Dates	
	CASING BLOWS	SAMP	LE NO. D	EPTH	Blov	vs on S	Spoon	REC.	Sample IDft. P.P. Installed Dates	
	BEO. 3	S-9	1 40 01	41.5	12	37	35	0.61	Profile Change	
		5-7	40.0	41.3	123	131	33	0.0	Gray mf SAND, little (-) Silt	<u> </u>
					<del>                                     </del>	<del>                                     </del>	$\vdash$	<del></del>	<del>[</del>	
5		S-10	45.0	46.5	11	15	7	0.51	Gray cf SAND, little Silt, trace f Gravel	
		5-10	45.0	40.5	<del> </del>	123	<del>                                     </del>	0.5	Gray CI SAND, IIILLIE SIIL, LIACE I GRAVEI	<u> </u>
									1	
	А									49.0
10 _	Б	S-11	50.01	51.5	5	7	9	1.5'	Cross Claver STIM Amaza (1) 5 Carl a /art	
		5-11	30.0	71.5	-	<del>                                     </del>	,	1.5	Gray Clayey SILT, trace (+) f Sand, w/wood	
	X								<u> </u>	
15 _	<del>                                     </del>	S-12	55.0	56 51	4	5	6	1.1'	Gray SILT & CLAY	
			33.0	30.5	-	-	-	1.1	Gray Silli & Clar	<b></b>
	ß								]	58.0
••	Z					_				
20 _	-	5-13	60.0'	61.5	8	16	21	0.6	Brown cf SAND, little (-) Silt	
	H		0010	02.0	Ŭ			0.0	brown or braid; riccie (-) bric	-
									·	
25	1				-	-		-	•	
	ы	S-14	65.01	66.5'	12	31	36	0.7'	Gray cf SAND, trace (+) Silt	<del> </del>
									300, 30 3000, 30000 (1, 5220	-
	I					<u> </u>				
30	<u>~</u>					-				
_		S-15	70.0	71.5	14	26	30	0.7'	Gray mf SAND, trace (+) Silt	<del> </del>
	Q									
	<del>                                     </del>					-	$\vdash$		1	
35 _						-				-
		S-16	75.0	76.5	26	50	84	1.0'	Gray cf SAND, little (-) Silt	
	<b>  </b>									
	<del>                                     </del>				-	-			1	
40 _										-
Ē	Nomical I	.D. of Dri	ve Pine	25'	-		XX			
			it Barrel S			<b>½</b> "			The Centractor shall make his own subsurface investigations in order to set	isfy
	Weight of	hammer o	n Drive Pi	ipe 300	lbs.				himself of the actual subsurface conditions. The information contained on t leg is not warranted to show the actual subsurface conditions. The Contrac	tor
-			Split Be		er 14	0 1bs.			agrees that he will make no claims against the State if he finds that the act conditions do not conform to those indicated by this log.	vel
H			Orive Pipe Split Barre		30	"			The state of the s	
Core										

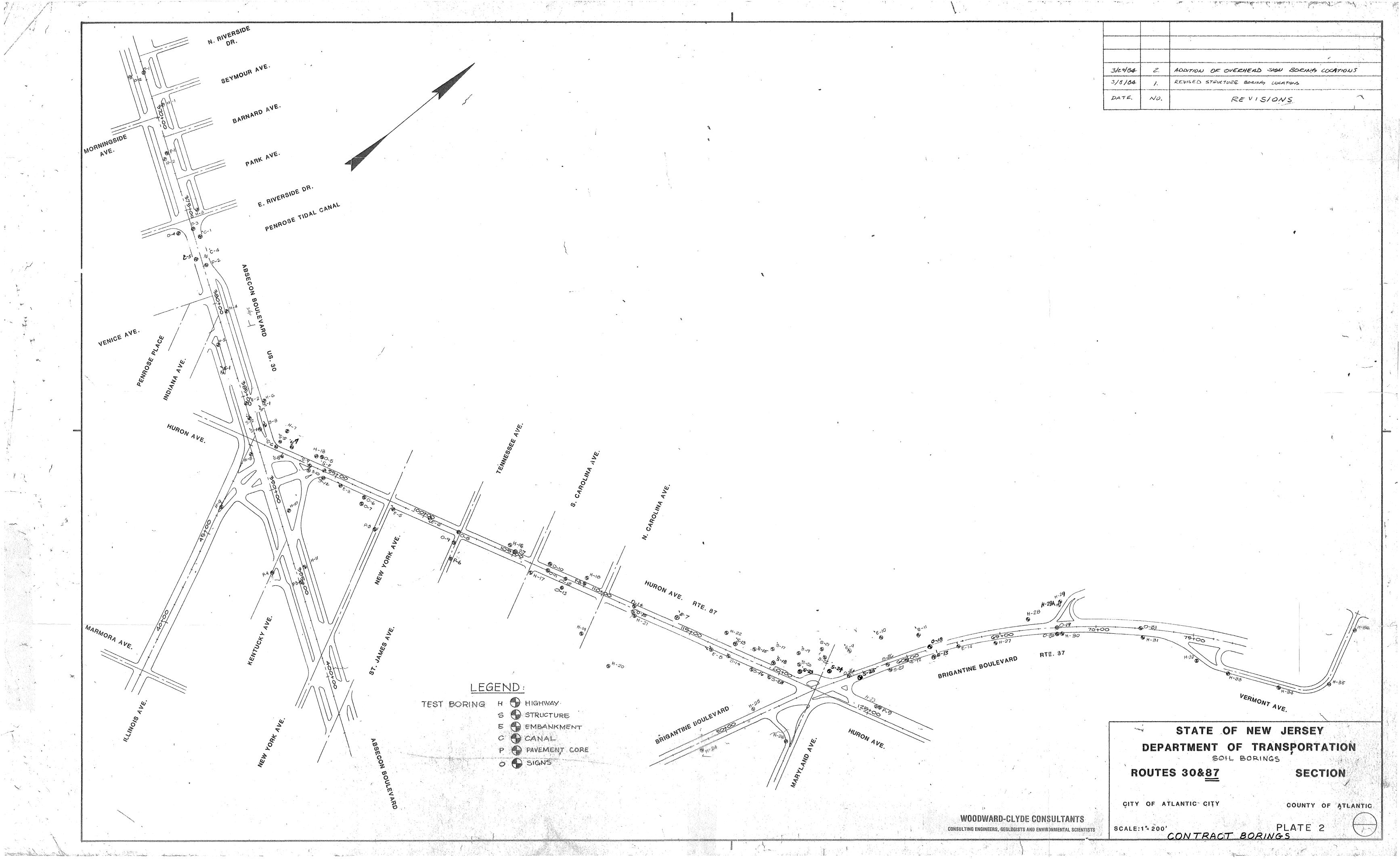
Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

Approximate Change in Strate

Inferred Change in Strate -----

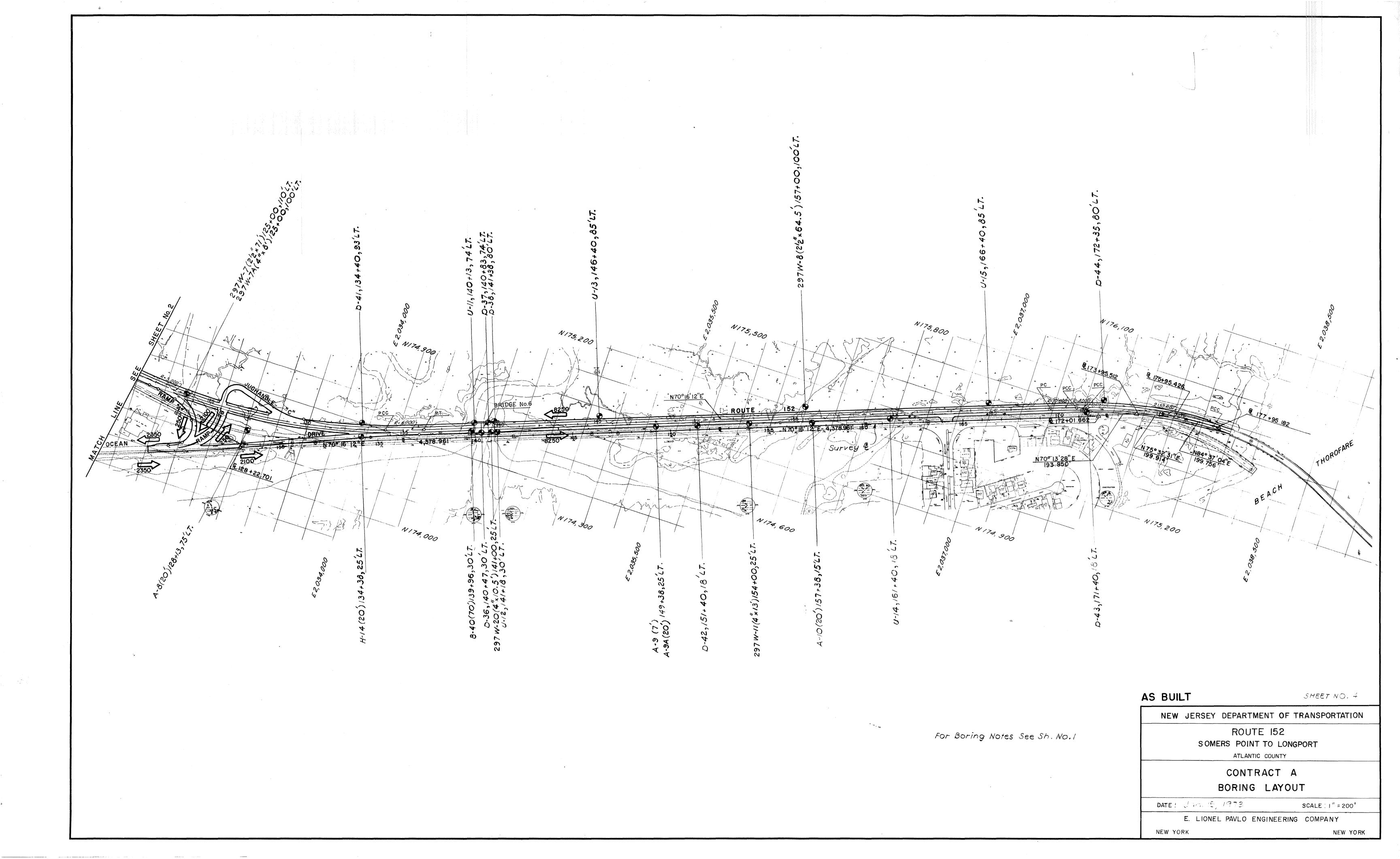
Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

Approximate Change in Strate\_



DATE 4/17/84 SURFACE ELEVATION 7.3 LOCATION														
SAMPLES	SAMPLING RESISTANCE	DESCRIPTION	ELEVATION	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS							
, <del>-</del>	41	Bituminous Pavement (4") Concrete (8")  Very dense brown and black medium to	6.1											
	19	\fine sand, trace gravel	4.3											
-	1	Very dense, becoming loose gray silty fine sand, slight sulfur odor	-0.7											
) _	22	Very soft dark brown silty clay with plant matter; sulfur odor	-3.7											
_	33 27	Very dense gray silty fine sand	-10.7											
、┨			1007	•										
- - - -	WOH WOH	Very soft dark gray fine sandy silty clay												
, 1			-23.2											
	13	Medium dense dark gray silty fine sand, becoming loose dark gray medium to fine sand	-31.7											
0 -	105	Very dense light gray medium to fine sand, trace coarse sand	-38.7											
° –	100 6"	Firm dark gray silty clay, trace fine sand	-39.7											
0 -	93	Very dense gray medium to fine sand, trace coarse sand and gravel												
0 —	102 161		-64.2											
1														
io —														
_														
						4/17/								





Form 50-2	5/73				Ε.	Lic	nel	Pavlo	Engineering Co. Sheet 1 of 3	
ROUTE:	252		LOCA	L NAME:					ongport Blvd. TEST HOLE NO. D-36 (Water)	
SECTION	: JFK	Bridge	to Sh	ore Ro	ad	Con	trac	tor:	Raymond International Inc.	
HOITATZ	: 140+4	;7 OF F	SET: 3	80 Lt.	REF	EREN	CELH	ESurve	BL Rtc 152 GROUND LINE ELEVATION: - 1.5	
		r: L. A						9/17/	Elevation G.W.T.	-
INSPECT			Dowd					FD:9 <b>/2</b> 1	/73 24 Hr. +2.6 to - 1.5 Dote:	
	CASING			•		s on S				
•	BLOWS		LE NO. D		<b>/</b> -	·	13/18		SAMPLE IDENTIFICATION AND PROFILE CHANGE	0.0
	2	S-1	0_	2'	P	P	P	7"	Brownish Gray mf SAND, trace(-) Silt, trace Shell fragments	
	0			<u> </u>		<b></b>			orace sherr fragments	
	14									
5 _	5	S <b>-</b> 2	5	6'-6'	5	6	6	16"	David Grane C GAND 21112 (1) G121	i
	5	5-2	2	0 -0	_2_	0	0	70	Dark Gray f SAND, little(+) Silt trace Shell fragments, 1-1/2" layer organic	!
	20								Silt, tr. Fibers	,
<b>3/17</b>	<b>31</b> 49			<u> </u>	ļ					
10	23	S <b>-3</b>	10	11'-6"	62	62	100/5	<del>п 5п</del>	Gray f SAND, trace Silt, trace Fibers	- <del></del> · .
	<b>3</b> 9								See Note #1	
	40								·	
15	41 40									
13	<b>3</b> 5	S-4	15	16'-6"	6	9	6	411	Gray f SAND, little(+) Silt	
	52									
	62 63				<del> </del>					
20	80									
<u></u> -	7	S-5	20	21'-6"	12	24	24	10"	Gray f SAND, trace(-) Silt	
	10					ļ			_	
	43					<b>-</b>		-1	•	
25	68			1					, ,	
	105 100	s <b>-</b> 6	25	261-6	13	40	90	14"	Gray f SAND, trace(+) Silt	
	99				ļ					
9/ <b>1</b> 8	101									
30	98 65	0.7	30	31'-6"	7.	9	18	2"	Gray f SAND, trace(-) Silt	
	70	S-7		J0	<del> !</del>			<b>_</b> _	drag r many, orace(-) birto	<del>  </del>
	95									j
	90			<del> </del>	<u> </u>			I		
35	55	s-8	35	361-6"	6	10	10	8"	Gray mf SAND, trace(-) Silt	
	67								, , , ,	
	67									
40	7 <u>1</u> 96			<del> </del>	<b></b>					
		Cocie		Kana 2	1	<u>'</u>	ا ۔۔۔۔۔	·		
	1 1.D. of 1 1.D. of				3 /8	-			actor shall make his-own subsurface investigations in order to the actual subsurface conditions. The Information contained	
		r on Cas	ing 5	OXO 10X 6 3			1.	og is not	warranted to show the actual subsurface conditions. The Con	tractor
		er on Space			40 lb	5.		•	it he will make no claims against the State if he finds that the do not conform to those indicated by this log.	o <b>c</b> tual
		on Casin on Spoan			0 "	$\dashv$		_	E. Lionel Pavlo Engineering Co.	
01017 01		about							me manior reare militudering co.	

Soil descriptions represent a field identification ofter D.M. Burmister unless otherwise noted.

Core Dia.

Approximate Change in Strata	
Inferred Change in Strata	

		LOCA	1 NAME.	Some	, w.c.	Doin	+ + <sub>0</sub> T	Engineering Co. Sheet 2 of 3						
152	n							ongport Blvd. TEST HOLE NO. D-36 (Water)						
140+4	7 OFF	SET: 3	0' Lt.	REF	EREN	CE LIN	ESurve							
MADE BY	′: L. А	nthon	у	DAT	ESTA	RTED:	9/17/7							
DR:	J. R	. Dow	đv	DATI	E COM	PLET	ED: 9/21	. [						
CASING								ft. P.P. Installed Date:						
BLOWS	SAMPL	LE NO. E	PEPTH	00	6/12	12/18	REC.	SAMPLE IDENTIFICATION AND PROFILE CHANGE						
101	S-9	40	41'-6	1 4	5	9	0"	See Note # 1						
105														
<del></del>	S-10	42	144	13	8	10	0"							
	G 11	1, 1,	16.	<del>  _</del>			011	G 0 GAND / / \ G 0						
	2 <u>-</u> TT	44	<del>  ™</del> —	<del>  2</del>	1 -2	0	0							
			<b>+</b>	<u> </u>										
80														
	A							A. Gray c-m-f SAND, trace(+) mf Gravel,						
	S-12 B	49	50'-6	14	7	6	7"							
			1											
146			<del> </del>	<u> </u>	<del> </del>			2. drag organic billi, brace car band						
92								ļ						
81	S-13	54	55 <b>'-</b> 6'	8	9	16	9"	Gray c-f SAND, little organic Silt,						
			ļ	<u> </u>			-	trace m-f Gravel						
				-				-						
				<del> </del>	<del> </del>			-						
	S-14	59	60'-6	21	17	27	17"	Gray c-f SAND. little(-) Silt. trace m-f						
61								Gravel, 3" ALTERNATING 1/4" to 1/2" layers of Gray Silt, Tr. c-f SAND &						
			<u> </u>	ļ										
I			_					c-f Sand, little(+) Silt						
	S-15	64	651-6	26	49	97	4"	Gray c-f SAND, trace(+) Silt, trace f						
146	~ _/		+					Gravel, several 1/4" layers of Gray						
179								Silt, trace m-f Gravel						
		-			ļ				,					
	s-16	69	70'-6	177	28	11	<del>- 711</del>	Gray organic STIT & CIAV savenal 1/2"	69 <b>'</b>					
<del></del>	~ =0	<b>9</b>	+		<del>                                     </del>		ſ							
185			<del> </del>	ΙĖ					721					
190														
204		<del></del>			0=									
	S-17	74	75 <b>'-</b> 6'	159	87	95	6"							
			- <del></del>	-				orace Sillo, or, c Salid						
					<u> </u>			<b>-</b>						
197								Gray c-f SAND, trace Silt, trace(-) f						
185	S-18	79	80 <b>'-</b> 6'	71	79	89	4"	Gravel						
1 I.D. of	Casing		}t" 2	2/2 "	7	т	he Contr	actor shall make his-own subsurface investigations in order to so	atisf					
				3 ′8 '		h	imselfof	the actual subsurface conditions. The Information contained on	this					
اه . <u>۱.D</u>		n. 17	COO LXs 3	00 1ь	s .		-	worranted to show the actual subsurface conditions. The Control						
	r on Casi	22							: tual					
of hamme of hamme	r on Spoo	n	1	40 lb	5.		-	the will make no claims against the State if he finds that the ac do not conform to those indicated by this lag.						
of hamme of hamme hommer		n	2	40 lb	<u>s.</u> ]		-	do not conform to those indicated by this log.  E. Lionel Pavlo Engineering Co.						
	140+4  MADE BY  OR:  CASING BLOWS  101 105 50 57 72 60 53 80 131 100 127 130 146 92 81 84 76 85 83 77 61 86 101 113 130 146 179 230 200 175 186 187 190 204 125 183 204 285 197	140+47 OFF  MADE BY: L. A  OR: J. R  CASING BLOWS SAMP  101 S-9 105 50 S-10 57 72 S-11 60 53 80 131 A 100 S-12 127 B 130 146 92 81 S-13 84 76 85 83 77 S-14 61 86 101 113 130 S-15 146 179 230 200 175 S-16 186 185 190 204 125 S-17 183 204 285 197	140+47 OFFSET: 30  MADE BY: L. Anthon:  OR: J. R. Down  CASING BLOWS SAMPLE NO. 1  101 S-9 40  105 50 S-10 42  57 72 S-11 44  60 53 80  131 A 100 S-12 49  127 B  130 146 92  81 S-13 54  84 76  85 83 77 S-14 59  61 86 101  113 130 S-15 64  146 179 230  200 175 S-16 69  186 185 190 204  125 S-17 74  183 204 285 197	140+47   OFFSET: 30' Lt.	NADE BY: L. Anthony   DATE	140+47	140+47   OFFSET: 30'   Lt.   REFERENCE LIN	140+47	100447					

Approximate Change in Strata ....

Interred Change in Strato

Soil descriptions represent a field identification

ofter D.M. Burmister unless otherwise noted.

Form 50-2	5-73				E.	Lic	nel	Pavlo	Engineering Co. Sheet 3 of 3	
ROUTE:	_152		LOCA	L NAME:					ongport Blvd. TEST HOLE NO. D-36 (Water)	
SECTION	: JFK	Bridge							Raymond International Inc.	
STATION	: 140+1	7 of	FSET: 30	O' Lt.	REF	EREN	CE LII	NESUrv	Dy BL Rte 152 GROUND LINE ELEVATION: - 1.5	
BORINGS	MADE B	Y: L.	Anthor	ny	DAT	E STA	RTED	9/17/7	3 O Hr. TIDAL Date:	
INSPECT	OR:	J.	R. Dow	<b>/</b> dy	DAT	E COM	PLET	ED:9/19	2010.	
	CASING BLOWS					s on S			ft. P.P. Installed Date:	<del> </del>
80	240	SAMP	LE NO. I	JEPTH -	6	12	18	REC.	SAMPLE IDENTIFICATION AND PROFILE CHANGE	
See Note	745									
# 3 9/20	90									
9/21 <sup>85</sup> –	117	S <b>-</b> 19	84	85 <b>'-</b> 8'	53	72	83	6"	Gray cmf SAND, trace Silt, trace(-) f	
<i>7/ <b>C.1</b></i> —	145								Gravel	
	190 205			<del> </del>		ļ			•	
	403									
90 _		S-20	89	90'		125	. @	12"	1 91.5	90'
				150 6 600	01	HOL	9	90.0 E	Completed @ 3:00 9/21/73	
95 _	<b> </b>		· · · · · · · · · · · · · · · · · · ·	<del> </del>					Note # 1 & 2 - Made 3 attempts	
)). <u>~</u>									0" Rec. @ 40'-41'-6"	
		·		<del> </del>					Made 7 attempts O" Rec. @ 42'- 44'	
									Made 3 attempts	
100_									0" Rec. @ 44'- 46'. Recovered	
									wash sample @ 44'-46' for classi- fication minus silt content.	
\										
105									Note # 3 - Washed ahead of casing @ 82'	
±07 _	-								-	
									· · · · · · · · · · · · · · · · · · ·	
						-				
110 _										
									<u>[,</u>	
115 _										
									<i>\</i> €	
120_									<u>.</u>	
Nominal	I.D. of	Casing		X <sup>11</sup> 2	ן ב''	٦_	Т	he Contro	actor shall moke his-own subsurface investigations in order to so	atisfy
Nominal	1.D. of	Spoon			3 /8 '	{	h	imself of	the actual subsurface conditions. The Information contained on	this
		r on Casi r on Spoo		<u>%O l<b>)</b>(830</u>	00 lbs	1			worranted to show the actual subsurface conditions. The Contro the will moke no cloims against the State if he finds that the ac	
		on Casing			4 ''			-	do not conform to those indicated by this lag.	-
Drop of	hommer	on Spoon		3(	o ''	]			E. Lionel Pavlo Engineering Co.	

Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted.

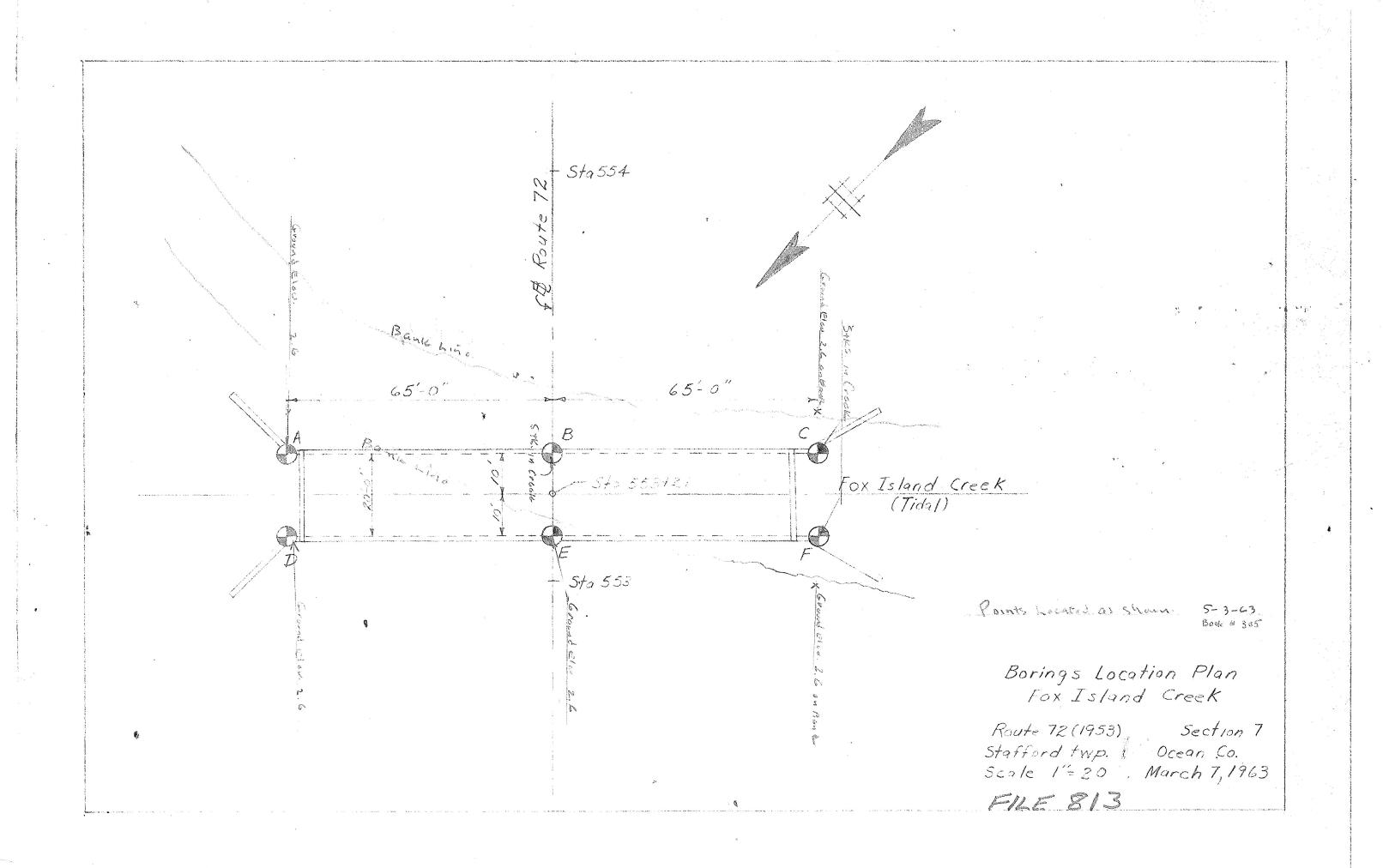
Core Dia.

Approximate	Change in Strata	 
Information		

**************************************			•						o Engineering Co. Sheet 1 Of 3
ROUTE:	152		Loc	AL NAME:	Som	ers	Poir	it to	Longport Blvd. TEST HOLE NO. D-37 (Land)
SECTION	· JFK	Bridg		Shore Ro					: Raymond International, Inc.
STATION	: 140+8	33 <b>o</b> i	FFSET: 7	4' Lt.	REF				vey BL Rte 152 ground line ELEVATION: +3.3
BORINGS	MADE D	Y: L.	Antho	ny				: 9/24/	/73 Elevation G.W.T.
INSPECT	OR:		R. Do					FD: 10/	/2 /72   24 to
	CASING	<del></del>				/s on 5		1	1/13 24 Hr. Dete:
	BLOWS	SAM	PLE NO.	LEPTH	00		12/18	REC.	SAMPLE IDENTIFICATION AND PROFILE CHANGE O.
	1	S-1	0	1'-6'	1	1	2	17"	
	3_	<del> </del> -		<del></del>	<u> </u>	<del> </del>	ļ	ļ	
	7	<del> </del> -			<del> </del>	┼	-		-
5	9	<del> </del>	<del> </del> -		<del>                                     </del>	<del> </del>	<del> </del>		- <del> </del>
	9	S-2	5 <b>'</b>	6'-6'	2	2	3	13"	Same
	12	ļ	<del> </del>		<u> </u>	ļ	ļ		•
	8 16	<del> </del>	<del> </del>	<del></del>		<del> </del> -	<del> </del>		_
10	17					<del>                                     </del>	<del> </del>		-
	10	S <b>-</b> 3	101	116.	9	111	7	9"	Brown f SAND, trace (-) Silt
	16	<u> </u>			<del> </del>	<b> </b>	ļ	ļ 	
	33 49	<del> </del>	<del></del>		<del> </del>	<del> </del>		<u> </u>	-
15	40				1				1
9/24	48	S-4	15'	16'-6"	10	14	11	8"	Grey f SAND, trace (-) Silt
<b>9/2</b> 5	5 <u>1</u>		-	<del> </del>	<b> </b>	<del> </del>			
	74		-		ļ				-
20 🛎	42				! !				<del> </del>
Casi	55	S-5	201	21'-6"	28	20	20	10"	Same
			<del> </del>	<del> </del>		ļ			
ູ້ຕ	83		<del> </del>	- :	ļ ——				-
25	58								j
<i>:</i> .	56 62	s <b>-</b> 6	25'	26 <b>'-</b> 6"	24	20	25	16"	Same
	67	<u> </u>	<del> </del>	- <u> </u>					
	82			į					<del> </del>
· 30	58								
	63 60	S-7	301	31'-6'	4,	9	19	9"	Same
	53	<u> </u>	<del> </del> -						<del> </del>
·	64								]
35	50 75	<b>s-</b> 8	35'	36'-6"	70	7	11	10"	Somo \ -
•	57		<del>ردا</del>	120 -0	13			TO	Same
	57								<u> </u>
	53		ļ						
40	51		<u></u> .						
Nominal			_3"_		() ''				ractor shall make his-awn subsurface investigations in order to satisfy
Nominal Weight o			tine (	) XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	3 /8 "				f the actual subsurface conditions. The Information contained on this t worranted to show the actual subsurface conditions. The Contractor
Weight o					40 lbs				at he will moke no claims against the State if he finds that the actual
Drop of	tuinmer	on Casin	9		4 ''		c	onditions	s do not conform to those indicated by this log.
Drop of	hammer	on Spoon	<u> </u>	3(	o "	ل			E. Lionel Pavlo Engineering Co.
Core Dic	)								
Soil des	cription	s represe	ent a fiel	d identific	otion			_	
, , .		-		rwise noted			^	pproxime	ute Change in Strata
			•	. =			le	oferred C	Change in Strato

					E	1.1	oneT	Pavio	Engineering Co. Sheet No. 2 of 3
ROUTE:	152		L	DCAL NAME:	Som	ers	Poi	it to 1	Longport Blvd. TEST HOLE NO. D-37 (Land)
SECTION	JFK	Bridge	e to	Shore R	oad		Cor	tracto	r: Raymond International, Inc.
STATION									CY BL Rte 152 GROUND LINE ELEVATION: +3.3
BORINGS	MADE B							: 9/24/	73 Elevation G.W.T.
ENSPECT	OR:	J. R	. Do	wdy	. DAT	E CO	MPLET	FD: 10/	1/73 24 Hr. Dote:
	CASING	ł		•	-		Spoon	J	ft. P.P. Installed Date:
40	BLOWS			O. DEPTH	06	6/1	12/18	REC.	SAMPLE IDENTIFICATION AND PROFILE CHANGE
	70 60	<b>s-</b> 9	40.	41'-6	"  22	14	14	7"	Same
	67	<u> </u>	-			<del> </del>	<del> </del>		
	69	<del></del>	╁			╁	<del> </del>	<del> </del>	
45	56	<del> </del> -	<del> </del> -		╁	<del> </del>	<del> </del>		<u> </u>
	71	S-10	451	46'-6'	1 24	14	14	7"	Gray f SAND trace ( ) Gilt little
	68				T -	† <u> </u>	1		Grey f SAND, trace (-) Silt, little f Gravel, trace (-) Shells
	61								481
	58		1						~
50 _	61	~			<del> </del>	<u> </u>			
	75	S-11	50'	51 <b>'-</b> 6'	1 12	7	7	<u> 11"</u>	Grey m-f GRAVEL, some c-f Sand, trace Silt,
	78 100		├	<del></del>	┿	<del> </del>			(slight organic odor) (Loose)
,	86		<del> </del>		┼	<del> </del>			
<b>5</b> 5	47		<del> </del>		+	<del> </del>	<del> </del>		
****	51	S-12	55 <b>'</b>	56'-6"	27	31	29	7"	Same
	55								- Source
	58								581
	61		ļ		]				
60 <u>ş</u>	71	0.10	601	72.0	1 00	1			
": Casir	97 85	S-13	bυ.	61'-6'	39	49	53	15"	Light and dark brown c-f SAND, trace Silt,
D :	82		<del> </del>		<del> </del>				trace f Gravel
3".	79	***************************************	<del>                                     </del>		<del> </del>	<del> </del>			•
65	90			i	<del>                                     </del>				<u> </u>
	95	S-14	651	66'-6'	50	48	<b>3</b> 9	18"	Grey c-f SAND, trace (+) Silt, trace f
	90	<del></del>	<u> </u>						Gravel
	112					ļ			
70	235	<del></del>	<del> </del>						
70 /28	117	S-15	701	71'-6"	78	96	7'7 2	7"	
	218	_ <del>~</del>	<u>'</u>	1/1-0	10	00	113		Light brown c-f SAND and (-) m-f (+) Gravel, trace Silt
•	101								Graver, trace Silt
	92								· · · · · · · · · · · · · · · · · · ·
<b>7</b> 5	102								
	89	S-16	75 <b>'</b>	76 <b>'-</b> 6"	36	47	52	14"	Grey cmf SAND, trace Silt, trace (-) f
	96		<b></b>						Gravel, occ. 1/4" pockets of Grey Silt
	92 121			-					(slight organic odor)
80	140								
					لــــــــــــــــــــــــــــــــــــ		l		
Nominal			3"_	Xi '' 2	X; ''	4			ector shall make his-awn subsurface investigations in order to satisfy
Nominal					3 /8 "				the actual subsurface conditions. The Information contained on this
Weight o				XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX					worranted to show the actual subsurface conditions. The Contractor he will make no claims against the State if he finds that the actual
Dieb of p					40 lbs	4			do not conform to those indicated by this log.
Drop of I			<b>4.</b>		0 "	1			
Core Dio						ر			E. Lionel Pavlo Engineering Co.
		40040		_1.0 : 0. = <10	- <b></b>				•
	-	•		eld identific erwise note:			٨	<b>ppro</b> ximo	le Change in Strata
				Transcriptor	-•				

ROUTE:	152		Loc	AL NAME:	Som	ers	Poli	nt to 1	Iongport Blvd. TEST HOLE NO. D-37 (Land)	
SECTION	JFK	Bridge	to S	hore Ro	ed		Con	tracto	or: Raymond International, Inc.	
STATION									VCY BL Rte 152 GROUND LINE ELEVATION: +3.3	
BORINGS	MADE B							:9/24/7	73 Elevation G.W.T.	
INSPECTO	DR:	J. I	R. Dowd	ly	DAT	E COA	(PLE)	rfd:10/1	1/73 24 Hr. +2.3 to -1.6 Dete:	
0.0	CASING BLOWS	ŀ		•	Blov	's on S			ft. P.P. Installed Date:	
80	141	S-17	80'	81'-6"	127	53	12/18 66		SAMPLE IDENTIFICATION AND PROFILE CHANGE	
	163			1	41	23	00	4"	"Grey c-f SAND, trace Silt, trace m-f Gravel	
	294 410									
So tast ng	450		<del> </del> -	-	<del> </del>	<u> </u>			-	
Cas	72	S-18	85'	86 <b>'-</b> 6"	35	89	113	13"		
3" (	277		<del> </del> -	-		<b> </b>			(+) m-f Gravel	
	308								1	<del></del>
90 _	240	<b>S-1</b> 9	90'	91'-6"	3).	190	3.50	7.11		<del></del>
		D-17	30	91 -0	24	190	720	11"	The state of the s	91 <b>'</b> =
									Completed hole 10:30 AM 10/1/73	<u> </u>
95									Depth 91'-6" El88.2	
									<u>-</u> -	
									]	
									1	
100									]	
į									}	
105				i——						
7									<del>-  </del>	
ŀ									- [	
110										
110 +										<del></del>
				<del>  </del>						
									<del> </del>	
115										
Ţ									-	
-									· <u>E</u>	
									<u> </u>	<del></del>
120						$\Box$				
Nominal I			3"	X+ '' 2\$7		]	Th	e Contra	actor shall moke his-own subsurface investigations in order to sa	tisfy
Nominal 1 Weight of			ر الآل الا	1 3 145 5 300	78 " O Ibs.	-	hi: lo:	mselfoft gisnotw	the actual subsurface conditions. The Information contained on warranted to show the actual subsurface conditions. The Contrac	thi s
Weight of	hommer	on Spoor		140	lbs.	1	091	rees that	t he will make no claims against the State if he finds that the act	lual
Drop of he				30		1	. CO	ndilions (	do not conform to those indicated by this log.	
				30		j			E. Lionel Pavlo Engineering Co.	
					•		•		•	
				identificat	lion		۸r	proximut	te Change in Strata	
Dim		ici unics	s omerw	rise noted,			Inf	ferred Chi	sange in Strata	
									The state of the s	



## Rt. 72 Fox Island Creek NEW JERSEY STATE HIGHWAY DEPARTMENT

Bureau of Soils

Sheet 1 of 2

		TE	ST BORING DA	ATA				_			TEST HOL	E N	0. 63-813	<b>-</b> A	
Bridge &	y 12	1.77 2.	4 : 12: 13:12: 1	Rt.	72	S	ec.	7		Sta	. 553+	31	Offset	651	KX BL Rt. 72
Borings n	nade b	y: A.	Colangelo	)	Inspect	or	J.	Ma	han	ey	Da	te St	arted 5-6-6	3 Comple	eted 5-9-63
MHW EI.			MLW EI.		E	l. o	f Gro	·		+2.	,01	Leng	gth of Casing [	riven 631	
1	Ground	Line Elev	vation			±2	.61	Blow 0 6		poon 12					
	2	Line Lie	dion			12	L	6	/12	18	Inside Di	a. of	Casing 2		
,	1 BH												Spoon 1		
	BH										" "	nan	mer on Casing	140 lbs.	
5	BH BH		ish grey m ic material		.th				200		Drop of H	lamm "	er on Casing " Spoon	24" 30"	
	BH								<b>D</b>						
	BH BH						1	BH	BH	BH			Elevation	IPLE DATA	
10 -	BH BH				-8.1	11					Sample N	lo.	bottom of Spoon	Total Penetration	Length of Sample
	10							-			1		-5.91	18"	18"
	9 8		fine moist							7	2		-12.91	18"	71,1
15 -	2 lı	traces	of organ	ic mat	cerial		2	3	9	12	3		-19.91	18"	18"
	15			terinicole initia de la c	- Carl Share China		-				4		-26.91	18"	18"
	19 16	5 Grey	fine mois	t sand	1		-				5		-33.91	18"	18"
20 -	26 37	etrat			-17.9	91					6		-40.91	18"	18"
	10	Pen S	fine mois			Jer	3	10	44		7		-47.91	18"	18"
et	<u>17</u> 33	asing				Sample Number	-			33					
Depth in Feet	35	ರ Greg	y coarse me	oist s	and	nple								-	
pth i	35 39 34 43	Foot				Sa	-			-				-	
ది	43	Per			<b>-</b> 26.1	. 1	4	3.0	27						
30 -	30	Blows	apolina modernia dia Gercini in edita H		-2001	and a space		10	21	21					
30	10 57	ω					-					T	CORE	DATA	
	115										Sample No.		Elevation	Core Recovered	Boring Feet Per Hour
25	140 140	Gre	y moist fin	ne sil	Lty san	$\mathbf{n}\mathbf{d}$	-				140.		op Bot.		Pei Houi
35-		wit	h slight t	races	of cla	ау	5	13	53	27	and Specific Section 1	+-			
	40 38 67									27		+-			
	67 72											+-			
40 -	50				20.1						Tuncato	<u> </u>			
	<u>41</u>				<del>-</del> 39•4		6	14	19						
	50 41 71 61 60	One	r moist si	OTF 4-41	h two	0.00				21	The info	orma	tion contained	on this log is a	not warranted
45-			y moist cl fine sand	ay Wil	on ora	ces					to show	the	actual subsurf	ace condition. ake no claims	The Contrac-
. 1	_70 _7h _75						-				State if	he f	inds that the a	ctual condition	s do not con-
	90						_							Jersey State H	ighway Dept.
50 -	61	Fill in w	vith Black Draw	ing Ink			1	8	10		DO NOT	WRI	TE ON BACK	Soils Bure	au

## Rt. 72 Fox Island Creek NEW JERSEY STATE HIGHWAY DEPARTMENT

Bureau of Soils

Sheet 2 of 2

		TEST BORING DA	TA						Colonialistics		TEST HOL	E NO.	63 <b>-</b> 8	13 <b>-</b> A	
Bridge	-		Rt.	72	Se	ec.	7	National Mills Control	St	a.	553+3	1	Offse	t 651	Lt. XXX BL Rt. 7
Borings m	nade by:	A. Colangelo		Inspect	or	J.	Mal	hane	y		Dat	e Start	ed 5 <b>-</b> 6-		eted 5-9-63
MHW EI.		MLW EI.		E	El. o	f Gro	und '	Wate	r +2		01	ength	of Casing	Driven 63	} t
_ · ·		ine Elevation							Sp oon						
	58 G	rey moist clay wi	ith t	races	of 9.9			-	10		Inside Di			는 II II	
. [	58 f 66 69	:	-										er on Casin	A	
ا ہ	69 69	Grey moist sand w	with	some				-			" "	11	" Spoor	140 lbs.	
٠ ا	61	gravel & clay					-	-			Drop of H		on Casing "Spoon	2¼" 30"	
	66 72			<b>-</b> 51	1.8	8	48	73	0.7					MPLE DATA	
	86	Brown fine moist	sand	and the same of th	and particularly	70.5	-	-	91				Elevation		
<b>6</b> 0 -	109 128			<b>-57</b>	11						Sample N	0.	bottom of Spoon	Total Penetration	Length of Sample
	148 : 218	Light grey fine m	noist			-					8		-54.91	18"	18"
		Bottom of Ho	~~~	<u>-61</u>	3'	- 9	43	100			9		-61.3'	9"	9"
<b>5</b> 5		DOUGOM OF THE	7			-									
ŀ	s														
<b>2</b> 0 -	Penetration						-								
20	B														
]	Casing				Sample Number				7						
Feet	ss				e		- 20								
.≘ 65	<u>‡</u>				amp		i acili								
Depth in Feet	Per Foot of				0,		103				-			***************************************	
30	Blows	Note:													
	—   "	BH means casing was pushed down						r-properties					CORE	DATA	
		partitud don't	9 11				-				Sample No.	-	vation	Core	Boring Feet
											140.	Тор	Bot.	Recovered	Per Hour
35															
· -															
-															
810											eren i i og er stor det				
1										7	Type of Co	re Drill			
-										(	Core Diame	ter			
<b>#</b> 5											to show to tor agree State if h	the act is that ie finds	ual subsuri he will n	on this log is ace condition. take no claims ctual condition	The Contrac-
<b>5</b> 0		Fill in with Black Drawin	g Ink						7-7000 3-700-3 105-5-3				New	Jersey State H Soils Bure OF SHEET	

## Rt. 72 Fox Island Creek

NEW JERSEY STATE HIGHWAY DEPARTMENT
Bureau of Soils

					Jure	au o	501	ls	nancina bi nas	National Carlotter	Sheet	l of 2	Conservation of the Selection of The Print
		TEST BORING DAT	Α					TEST	IOL	E NO.	63-81	3 <b>-</b> B	
Bridge			Rt. 72	Sec.	7		St	a. 553	+40	)	Offset	BL	XX. XX.
Borings	made by:	A. Colangelo	Inspector	J.	Ma	han	еу		Date	Start	ed 5 <b>-27-</b>	63 Compl	eted 5-28-6
MHW EI.		MLW EI.	EI.	of Gro	und	Wate	r +	1.61	L	ength	of Casing I	Oriven 63	
	0	ine Flourtier					Spoon		***************************************	Tel 14 Nicoland Day 1			managani sa sa sa sa sa sa sa sa sa sa sa sa sa
	BH	ine Elevation	+2	61	6	12	12/18	Inside	Dia	of C	asina 2	1111	
	BH							11	"	" Sp	oon 1	1 1 2 1 2	
	BH BH	Blackish grey si material	lty organic		-	-	-	Weigh	t of I	Hamme "	r on Casing		
5 -	BH	material								-	on Casing	24"	•
•	BH BH			-	┼		-	"	11	11	" Spoon	30"	
	BH			1	BH	BH					DRY SAI	MPLE DATA	_
	BH		-7.4	-	-	-	BH	Samp	e No		Elevation bottom of	Total	Length of
10 -	3	Blackish grey mu			1			Comp	- 110		Spoon	Penetration	Sample
	11	Diackish grey ma	-10.41	-	100	-			1		-5.91	18"	3"
	19	and and the state of the state							2		-12.91	18"	3"
15 -	11	Grey moist fine	sand	2	8	6	7		3		-19.91	18"	2 <del>1</del> "
	20								4		-26.91	18"	811
	30 41 5	<b>,</b>	-16.41	-	-		-		5		-33.91	18"	12"
20 -			are a minimizer out to are the price of subtice the						6		-40.91	18"	18"
	147 E	•		3	11	24		7			-47.91	18"	18"
<b>.</b>	12 mse 3		Minhor			district.	49						
e 25 ~	42 5	Grey moist coa	rse sand								With the state of		
Depth in Feet	72 19 72 19 75 19 75 19	with some grave	91 5	5					-				
Dep	15	<b>.</b>											
	29 d s 80 g			4	8	9	3.0						
<b>3</b> 0 -							12	99 <sup>2</sup> - 1900	wid ye		CORE	DATA	
	20			-		-		Sampl	e	Εle	vation	Core	Boring Feet
	1 <sub>12</sub>		-31.41					No.		Тор	Bot.	Recovered	Per Hour
35-	34			5	14	24							
	35	Dark grey fine	silty fine				<b>1</b> 9						
	81 81	sand		-	-								
40 -	72												
	6)1 67 7)1	STATE OF THE STATE OF THE PROPERTY OF THE PROP	-38.91	_	-			Type of	Cor	e Drill	Parliments to commence of the		
	7)1			6	8	9	30	Core Di	amet	er			
45	101	Grey moist clay sand	with some				19	The	nfor	mation	contained	on this log is race condition.	not warranted
45	97							tor a	gree	s that	he will m	ake no claims	against the
	97 81 90 81							State form	to th	e finds ose in	that the a	ctual conditions	s do not con-
	81			7	6	7	1.000				New	Jersey State Hi	ghway Dept.
50 -	- <del></del>	Fill in with Black Drawin	g Ink	L				DO N	T W	RITE	ON BACK	Soils Bure OF SHEET	au

## Rt. 72 Fox Island Creek

NEW JERSEY STATE HIGHWAY DEPARTMENT

Bureau of Soils

Sheet 2 of 2

		TE	EST BORING	DATA								TEST HOL	ENO. 63-	813.	<b>-</b> B	Description (Appendix Appendix
Bridge				Rt.	72	Se	ec.	7		Sta	a.	553+40	O Of	fset	BL	****
Borings	made t	y: A.	Celangel	Lo	Inspect	tor	J.	Mah	ane	еу		Dat	e Started 5-2	7 <b>-</b> 6	3 Comple	ted 5-28-63
MHW EI.			MLW E	1.	<u> </u>	El. 0	f Gro	und V	Vate	r +	1	.61 L	ength of Casi	ng Dr	iven 63 <b>1</b>	
۲٥.	Croun	d Line Ele	vation							Sp oon 12 18						
-		I Line Cie	vation				T	6	/12	9		Inside Did	ı. of Casing	2분#		
	61 56 57 68 60 91 78 96 108 101											11 11	" Spoon	1 <del>1</del> "	200 71	
	68	-	moist cla	ay with	some		at par	-				Weight of	Hammer on Ca	-	300 lbs.	
5 <b>5</b> -	60	sand											ammer on Casi		24"	
73	91						0					" "	" " Spoo		30"	
	96			refer calculations	-54.8	t	8	19	47	81			DRY	SAME	PLE DATA	
	108	Greyi grave	sh brown	sand w	rith -56.9			<b> </b>		0.1			Elevati			
40 -	101	Brown	ish grey	fine t	o medi	um						Sample N	o. bottom		Total Penetration	Length of Sample
	150	sand			-58.9	1		-		-			Spoon			
	293		grey fir									8	-54.9		18"	18"
		110150	Bottom o	of Hele	-00-11		9	125				9	-60.5	1	3"	3"
615 -	$\vdash$				V		-	-		$\vdash$						
		E														
		ratio	Not	te			-						Marine and the second s	-		
<b>72</b> 0 -		Sta.	was char	nged fr	om 553	+31										
		a to 5	53+40 due	e to lo	cation	ıber		-								
ë		asin	OI TIIG.			Nu										<u> </u>
- <b>7</b> 5-		BH m	eans cast	ing or	sample	Sample										
Depth in Feet - <b>52.</b>	$\vdash$	Foot of Casing Penetration to to to to be well and to be be being being the state of the state o	n was pus	shed do	wn by	San										
Dep		Per H	•				-	-								
		vs P														
<b>83</b> 0 -	$\vdash$	Blows						-		-						
							-	7,						RE D	DATA	
								144.5				Sample No.	Elevation	4	Core Recovered	Boring Feet
							-					110.	Top Bot.	-	Vecoveien	Per Hour
885-								100								
								7 % C								]
							-									
<b>4</b> 0 -																
90	$\vdash$									-		Type of Co	re Drill			
								$\vdash$								
											(		ter			
45-	-											to show	the actual subs	urfac	e condition.	The Contrac-
												tor agree State if h	es that he wil ne finds that th	l mal	ke no claims	against the
												form to the	nose indicated	by th	nis log.	as not con-
	$\vdash$							$\left  - \right $	,				N	ew J	ersey State Hi	
50 -		Fill in v	with Black Dr	awing Ink				<u></u>				DO NOT	WRITE ON BA	ck o	Soils Burea	1 <b>u</b>

BORING REQUEST

BORING STATION VEFSET

NO STATION VEFSET

234 151+04.00 20-LEFT

W5

Approx. bottom Ftg El. -4.0

ROUT 71 SECTION 3C BRIELLE MANASQUAN BOUNDARY CONTROL SECTION 1320

BORING PLAN LOC.

SCALE I"= 10

WIDENING & RESURFACING OFR OM
UNION LANE TO THE BOUNDARY OF
BRIELLE MANASQUAN, BOROUGHOF
BRIELLE, MONMOUTH COUNTY
BRIDGE CULVERT DESIGN

Sheet #1 of 1

Route:	71		Local Na	me: (	Culv	ert		×4F-B-AP-g-Laboratory	TEST HOLE NO. 234W-4				
Section:	Rt.	35 Br	ielle t	o Rt.	35	So.	Bel	mar.					
Station:			Offset: 2						L. Proposed Rt. 71. Ground Line Elevation: +8.0'				
Borings	made by	/: Pa	atykula	1			Starte		-7-69 El. G.W.T. +7.0' (UNCASED) Date: 1-10-	69			
Inspecto	r:	Ma	ahaney	& Wink	ler	Date	Compl	eted: 1.					
	Casing Blows	1	Sample No Depth		Blo	wson	Spoon	Rec.	Sample Identification and Profile Change				
	8	1	1		۲Ť			1 Party Street, or other lands of the lands					
	5	S-1	0.0	1.5	20	13	5	9"	Brown CF SAND, little Silt, little MF Gravel.				
_	2		-504										
5_	1	<u> </u>	-	-	├	<del> </del>	╀						
	4	<del>                                     </del>	+	<del> </del>	<del> </del>	<del> </del>	+		-				
	50	S-2	7.0	8.5	6	3	2	12"	Dark Brown CF Sand, and CF Gravel, trace (+)				
• •	53	<u> </u>			<u> </u>				Silt.				
10_	59 73	<del> </del>		1	-	-			_				
	113			<del>                                     </del>	-	-	++		Jight Cray ME CAND to				
	37	S-3	12.0	13.5	38	64	188	9"	Light Gray MF SAND, trace (-) Silt, trace (-) MF Gravel.				
	80	S-4	13.5	15.0	37	39	53	8"	Brown MF SAND, trace Silt, trace (-) F Gravel.				
15_	252	<u> </u>		<del> </del>	-	ļ	1		1				
	375 601			<del> </del>	-	-			1				
	149	-		1	<del> </del>	+	+-+		-				
	297												
20_	130								<u> </u>				
	190 130	S-5	21.0	22.5	50	4.0	2.7	<u> </u>					
=	$\frac{130}{102}$	3-3	2.1.0	22.3	139	48	21	6	Gray & Brown F SAND, trace (+) Silt, trace (-)				
1994 III 1905   1906	198	1	<del> </del>				1		F Gravel. (One ½" layer Dark Gray Silt & Clay.)				
<u>25</u>	86												
TG CGD	116 150				<u> </u>	ļ			_				
_	99	<u> </u>	<del> </del>	ļ	╂			·····					
	86	S-6	28.0	29.5	7	11	10	18"	Dark Gray CLAY & SILT. (Few 1/8-%" layers Gray	28.0			
30_	101		<u> </u>		1				F Sand.)				
-	198								]				
	$\frac{153}{213}$	<b></b>	<del> </del>	ļ	<del> </del>	-			ļ .				
	$\frac{213}{175}$				-	_			1				
35	136	ļ	1	<del>                                     </del>	<del>                                     </del>	-		**************************************	en to to the transfer of the second measurement of the community of the first of the second contract of the second				
· · · · · · · · · · · · · · · · · · ·		S-7	35.0	36.5	11	41	48	18"	Gray CF SAND, little Silt, some MF Gravel.				
			-	ļ	ļ	ļ				6.5			
			-	<del>                                     </del>	<del> </del>	-			BOTTOM OF HOLE:				
40_			<del> </del>					***************************************	1				
س	[:-	a Dia 🚅	Conin			·	<u>-</u>			m-corrected.			
	10310	e Dia, of	Casing Spoon		2호"				The information contained on this log is not watranted				
	Waid		~~~ ~~ ^- ~		12		<del></del>		to show the actual subsurface condition. The Contrac-				

Weight of Hammer on Casing 300# tor agrees that he will make no claims against the State if he finds that the actual conditions do not conform to those indicated by this log.

""" "Spoon 30"

NEW LERSEY DEPT. OF TRANS

NEW JERSEY DEPT. OF TRANS. Soils Bureau

Type of Core Drill \_\_\_\_\_\_

Form SO-2 Rev. 6/27/68

Bureau of Soils

Route	: 7:	1		Local Nam	e: <u>Cu1</u>	vert			-	TEST HOLE NO. 234W-5	an read was					
Sectio	n: R	t. #	35 Br	<u>ielle</u>	to Rt.	35	So.	<u>Be</u>	lmar.							
Statio	n: 1	51+0	)4	Offset: 2	0'Lt.	F	Refere	ence L	ine: CI	Proposed Rt.71. Ground Line Elevation: +8.0'	g (PO) (1 PO) (Po)					
Boring	gs mad	de by:	Paty	kula	of the latest states and the latest states a	[	Date :	Starte	1: <u>1-2</u>	-69 El. G.W.T. +5.0' (UNCASED) Date: 1-8-	69					
Inspec	ctor:		Maha	ney-Wi	nkler	Ī	Date	Compl	eted: 1-	7-69 El. G.W.T. (Auger): Date:						
	•	sing ows		Sample <b>N</b> o. Depth		Blow		000n 12/ 18	Rec.	Sample Identification and Profile Change						
	2	0	S-1	0.0	1.5	9	7	5	18"	Brown CF SAND, and MF Gravel, little Silt, trace (-) Fibers.						
	6 2															
5	5 2 5									_						
	6 2 4	5	S-2	7.0	8.5	1	1	1	18"	Brown CF SAND, little Silt, little (+) MF Grave						
10		5				-		ž.		· 						
	9	4	S-3	12.0	13.5		21			Orange Brown CM + F SAND, trace Silt.						
15		7	S-4	13.5	15.0	18	34	56	18"	Orange Brown MF SAND, trace Silt.						
	1	35 87				<u> </u>										
2	1	65 40 03				-										
20	6	9 01	S-5	21.0	22.5	24	40	76	12"	Dark Gray SILT & CLAY.	21.0					
Feet		2				-	-									
Depth in Feet 5.	7	3								- -						
۵	6	6					-									
30	0 1	.61 .00 .21	S-6	28.0	29.5	28	13	15	18.	Dark Gray Silty CLAY.	30,0					
	2	264														
3.	1	78 93														
3.	$\frac{1}{1}$	.52 .28	S-7	35.0	36.5	19	24	26	18"	Gray F SAND, trace (+) Silt. (Few ½" layers Gra Silty CLAY.)						
4.	1	.78 .56				-	-									
4	ـــــــــــــــــــــــــــــــــــــ	.48	<u> </u>		1,	A1	··	1			Alexandrian					
	-	11		f Casing Spoon nmer on Ca	ısing	2½ 1½ 30		)		The information contained on this log is not warranted to show the actual subsurface condition. The Contractor agrees that he will make no claims against the						

Type of Core Drill \_\_\_ Core Diameter \_

Spoon

10 II II

Drop of Hammer on Casing

" " " Spoon

140 LB.

24"

30"

tor agrees that he will make no claims against the State if he finds that the actual conditions do not conform to those indicated by this log.

> NEW JERSEY DEPT. OF TRANS. Soils Bureau

Form SO-2 Rev. 6/27/68

Bureau of Soils

Ro	ute:	71		Local Nam	e: Cul	vert	-	······	**************************************	TEST HOLE NO. 234W-5	
Sec	tion:	Rt.	35 Bri	elle t	o Rt.	<u>35 S</u>	<u>So.</u>	Bel:	mar.		
Sta	tion:	151+	04	Offset: 2	0'Lt.	T will the observer	Refer	ence L	ine: CI	Proposed Rt. 71 Ground Line Elevation: +8.0	t
Boı	ings	made by:	Paty	kula				Starte	and the second second	-2-69 El. G.W.T. +5.0' (UNCASED) Date:	1-8-69
Ins	pecto	r°.	Maha	ney-Wi	nkler		Date	Compl	eted: 1.	7-69 El. G.W.T. (Auger): Date:	
_		Casing Blows		Sample No Depth	•	Blow		poon 12 18	Rec.	Sample Identification and Profile Change	
		115 104									
		84 78	S-8	42.0	43.5	19	31	41	15"	Gray F SAND, little Silt.	
,	4 5	115 141				-					
		103				1					
		136									
50	/1/0_		S-9	49.0	50.5	26	52	101	16"	Dark Gray & Brown F SAND, some (+) Silt.	50.5
										BOTTOM OF HOLE	
					<del> </del>	-					
	15_					1				- - -	
						-				1	
										-1 -1	
	20			ļ	<del> </del>	-					
<del></del>			<u> </u>		<del> </del>	╁					
Depth in Feet	0.5										
pth ir	25_	<del> </del>	ļ			-	<del> </del>				+
a											
						$\dashv$		-			
	30_						1			1	
						-	<del> </del>	ļ		-	
	25					-	<del> </del>			4	
	35 _	-			<u> </u>	+	+	<del> </del>	<u> </u>	-	
						1					
				+	<del> </del>	+	-	-		-	
	40_				1	1_					
		Insi	de Dia. of			21/2				The information contained on this log is not warranted	
		Weis		Spoon nmer on Ca	sing	1월 300			<del></del>	to show the actual subsurface condition. The Contrac- tor agrees that he will make no claims against the	

form to those indicated by this log.  $\label{eq:NEW JERSEY DEPT. OF TRANS. }$  NEW JERSEY DEPT. OF TRANS.

State if he finds that the actual conditions do not con-

NEW JERSEY DEPT. OF TRANS
Soils Bureau

Type of Core Drill \_\_\_\_\_\_

140#

24"

30"

" " " Spoon

Drop of Hammer on Casing

" " " Spoon