APPENDIX B: Geotechnical Boring Logs



	SURVEYORS							Designation FD24-B-01		
DF	RILLIN	GL	OG	DIVISION North Atlantic Division				d District OF		1 IEETS
CONTR	ACT NO.:	W	/912DS	S22D0017	9. COC			STEM HORIZONTAL VERT	ICAL	
				J24F0024			-		MLLW	
	E NUMBER			ace Exploration of New Haven Harbo OCATION COORDINATES				OF BIT Mud Rotary (4" Tricone F	(oller)	
FD2	24-B-01			N 640196.5 E 956643.2	AD	Г-24(), CN	IE-55, autohammer efficiency 83.2% (
	LING AGE		& Test	ting (ADT)- A Cascade Company	12. TO	TAL SA	AMPLE	ES DISTURBED UNDIST		
4. NAME	E OF DRIL	LER			13. TO	TAL N	JMBE	R CORE BOXES 0	0	
	NINICK P			DEG FROM BEARING				OUND WATER See Remarks		
×ک	/ERTICAL NCLINED		and	VERTICAL	15. DA	ГЕ ВО	RING	STARTED COMPLET 7/22/24 7/2	ED 22/24	
6. THIC	KNESS OF	F OVE	ERBURD	EN >20'	16. ELE	VATIO	ON TO	P OF BORING -36.5' (Measured in field)		
7. DEPT	TH DRILLE	D IN	TO ROCK	<u>۲</u> 0'				ECOVERY FOR BORING N/A		
8. TOTA	AL DEPTH	OF E	ORING	20'	- 18. SIG			ID TITLE OF INSPECTOR Rimanelli, Geologist		
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION OF MATERIALS (Description)	% RE	o No.	RQD %		Blows/ 0.5 ft	N-Value
			POOF	RLY GRADED SAND WITH SILT (SP-SM)		Ű	<u> </u>	USCS - Gradation results and classification	6	Z
	_		(2.5Y homo	3/1), very dark gray, wet, very loose to loose geneous, rapid dilatancy, medium to coarse few shell fragments, Marine Sediments		SS-0	1	provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples	22	8
	F							Gravel: 0; Sand: 92; Fines: 8; MC: 18; SP-SM	3 4 5 3	Ē
	-				10) ss-0	2		3	9
-40.5	4.0									
			Some	shell fragments					0 0 0	
	_				35	ss-0	3		1 WOH/1.5	0
	-						-		0	
					10) SS-0			0 0 WOR/2.0	0
						J 00-0				
	-					-	-		22	┝──┠
									1 2	
	-				40	SS-0	5			3
-46.5	10.0					_			0	⊢ ‡
			Very lc	SAND (SM) (2.5Y 3/1), very dark gray, wet pose, homogeneous, rapid dilatancy, fine to				Gravel: 3; Sand: 78; Fines: 18; MC: 31; SM	0	
	-		mediu	m sand, few shell fragments	95	SS-0	6		WOH/2.0	0
-48.5	12.0									l E
			POOF	RLY GRADED SAND (SP) (2.5Y 3/1), very d wet, very loose, homogeneous, rapid dilatan	ark		1		1 0 0	Ē
	-			m to coarse sand, some shell fragments		SS-0	7	Gravel: 0; Sand: 97; Fines: 3; MC: 24; SP	0 WOH/1.5	0
-50.5	14.0									¦ F
-30.3	14.0		ORGA	NIC SILT (OH) (2.5Y 3/1), very dark gray, w	/et,	-	1		3 0 0	F
	L			oft, homogeneous, rapid dilatancy, trace fine Organic Sediments		SS-0	8		0 1 WOH/1.0	0
							-			F
	-	۲¥¥			-		-	Gravel: 0; Sand: 4; Fines: 96; LL: 117; PI: 58;	0	├
		۲¥۴						MC: 97; OH	0 0 WOH/2.0	F
	F				75	SS-0	9			0
	L								4	⊨F
									1 1	¦ F
	-				50	SS-1	0			2
-56.5	20.0									<u>⊢</u> ⊧
		<u> </u>	Borin	BOTTOM OF BOREHOLE AT 20.0 ft						\neg
			SILT	terminated at EL -56.5' MLLW in ELASTIC						
				ı conducted from Northstar Marine Services, Northstar L/B Vision						
FORM	1836-/	1				Bor	ina	Designation FD24-B-01	HEET	1 of 1

	SURVEYORS					Во	ri	ng l	Designation FD24-B-02				
DF	RILLIN	GL	.0G	DIVISION North Atlantic Division	INSTA	LATI	ON		SHEE		1 EETS		
CONTRA	ACT NO.:	W	/912DS	22D0017	9. COC	RDIN	IAT	E SY	STEM HORIZONTAL VERT	ICAL			
	RDER NO CT NAME:			24F0024 ce Exploration of New Haven Harbo				-					
2. HOLE	NUMBER		LO	CATION COORDINATES	11. MA	NUFA	ACT	URE	R'S DESIGNATION OF DRILL	,			
	4-B-02		I	N 643342.7 E 955065.9	ADT-240, CME-55, autohammer efficiency 83.2% (08/30/23) 12. TOTAL SAMPLES DISTURBED UNDISTURBED								
Aqui	ifer Drill	ling	& Testi	ng (ADT) - A Cascade Company	12. TOTAL SAMPLES DISTURBED UNDISTURBED 13 0								
	OF DRIL		1						CORE BOXES 0				
5. DIREC	CTION OF			DEG FROM BEARING	- 14. EL	EVAT	ION	I GRO	DUND WATER See Remarks				
	ERTICAL			VERTICAL	15. DA		-	-	7/21/24 7/2	21/24			
6. THICH	KNESS OF	OVE	ERBURDE	N >26'					OF BORING -33.3' (Measured in field)				
7. DEPT	H DRILLE	D IN	TO ROCK	0'	-				ECOVERY FOR BORING N/A				
8. TOTA	L DEPTH		ORING	26'		Lou	ıka		Rimanelli, Geologist				
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION OF MATERIALS (Description)	% RE	C C Samo No		RQD %	REMARKS	Blows/ 0.5 ft	N-Value		
	_		(2.5Y 3) homoge sand, s	Y GRADED SAND WITH SILT (SP-SM) /1), very dark gray, wet, very loose to loose eneous, rapid dilatancy, medium to coarse ubangular to subrounded, trace shell	[,] 50) ss			USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all	6 6 2 4	8	- (- - -	
	_		fragmei	nts, Marine Sediments	2	5 ss	.02		samples Gravel: 0; Sand: 95; Fines: 6; MC: 26; SP-SM	2 3 1 1	4	- - -	
					20) ss	.03			2 2 3 3	5	- 4 - -	
	-				7:	5 ss	-04			3 2 4 3	6		
40.0	-				50) ss	.05			5 1 1 1	2	- 8 - - -	
-43.3	_ 10.0		loose to	SAND (SM) (2.5Y 3/1), very dark gray, wet, o medium dense, homogeneous, rapid cy, fine sand		0 ss	-06		Gravel: 0; Sand: 86; Fines: 14; MC: 28; SM	1 5 5 9	10	- - -	
	-		Trace s	hell fragments	70) ss	.07			8 6 5 5	11	- 12 - -	
-49.3	- 16.0				90) ss	•08			7 5 6 6	11	- - -	
40.0	-		(2.5Y 3) dense,	Y GRADED SAND WITH SILT (SP-SM) /1), very dark gray, wet, very loose to medi homogeneous, rapid dilatancy, fine sand, ular to subrounded	^{um} 10	0 ss	.09			0 0 0 WOR/2.0	0	- 16 - 16 -	
	_				10	0 ss	·10		Gravel: 0; Sand: 89; Fines: 12; MC: 24; SP-SM	0 3 4 5 WOR/0.5	7		
	-				90) ss	.11			2 1 3 4	4	- 2(- 2(-	
	-		Fine to	medium sand	60) ss	·12			4 5 4 4	9		
-59.3	- 26.0				90) ss	·13			6 9 9 10	18	- - 2! -	
	1836-A	<u>·</u>	GRADE Boring	BOTTOM OF BOREHOLE AT 26.0 ft terminated at EL -59.3' MLLW in POORLY ED SAND WITH SILT conducted from Northstar Marine Services, orthstar L/B Vision					Designation FD24-B-02	SHEET	1 of 1		

G	EA
ENGINEER	S * SURVEYORS

ENGINEERS * 1	BURVEYORS								Designation FD24-B-03		<u> </u>		
DF	RILLIN	IG L		sion orth Atlantic Div	vision				d District OF		1 IEETS		
	ACT NO.:		912DS22D0	0017		9. COO	RDINA	TE SY	STEM HORIZONTAL VERT	ICAL			
TASK OI	RDER NO	D.:W ∷SI	912WJ24F0)024 xploration of Ne	w Haven Harbor					MLLW Roller)			
2. HOLE	NUMBER	R	LOCATIO	N COORDINATES		11. MANUFACTURER'S DESIGNATION OF DRILL							
	4-B-03		N 644	4903.8 E 9549	68.8	ADT-240, CME-55, autohammer efficiency 83.2% (08/30/23) 12. TOTAL SAMPLES DISTURBED UNDISTURBED							
Aqui	fer Dri	lling	& Testing (A	ADT) - A Cascad	de Company				16	0			
	of dril Inick F								CORE BOXES 0				
5. DIREC	CTION OF		ING	DEG FROM	BEARING				OUND WATER See Remarks	ED			
	ICLINED					15. DAT				20/24			
			RBURDEN	>32'					P OF BORING -28.5' (Measured in field) ECOVERY FOR BORING N/A				
			O ROCK	0'		18. SIGI	ATUR	RE AN	D TITLE OF INSPECTOR				
8. TOTA	L DEPTH		ORING	32'			-	as F	Rimanelli, Geologist		Ð		
ELEV	DEPTH	LEGEND		D CLASSIFICATION ((Description))	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value		
	-		saturated, ver homogeneou	0 (SM) (10YR 3/1), ry loose to medium is, medium to coars ed, some shell fragi	n dense, se sand, subangula	75 ar	SS-01	_	USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all	4 3 0 WOH/1.0	3		
	-		Sediments	a, some shen nagi		75	SS-02	-	samples Gravel: 1; Sand: 84; Fines: 15; MC: 34; SM	0 0 WOR/1.0 WOH/1.0	0		
	_					25	SS-03			0 0 0 WOH/2.0	0		
	_					45	SS-04			0 0 WOR/2.0	0		
	_					30	SS-05			0 0 0 WOH/2.0	0		
	-					30	SS-06			0 0 0 WOH/2.0	0		
-42.5	_ 14.0					80	SS-07			0 0 WOR/2.0	0		
	-		Fine to mediu	um sand, little fine	gravel	100	SS-08	-	Gravel: 11; Sand: 75; Fines: 14; MC: 30; SM	1 2 1 WOH/0.5	3		
-46.5	18.0					100	SS-09	-		0 0 WOR/2.0	0		
-48.5	20.0			gments, no fine gra	avei	45	SS-10	-		4 0 0	4		
-50.5	22.0		Medium to co	barse sand		100	SS-11	-		2 4 1 2	5		
-52.5	24.0		Trace gravel			25	SS-12		drive casing	6 5 4 6	9		
-54.5			Few gravel			25	SS-13	i		7 4 4 2	8		
			(10YR 4/2), d	lark grayish brown		25	SS-14			7 7 7 7	14		
-57.4 -58.1	- 28.9 29.6				H SAND (GW) (10	YR 85	SS-15			17 19 26 49	45		
-60.5	_ _ 32.0		POORLY GR grayish browr	ayish brown, dense RADED SAND (SP) n, dense, fine to m o subrounded, som) (10YR 4/2), dark edium sand,	90	SS-16			15 16 31 45	47		
00.0	52.0	<u></u>	BOT Boring termin GRADED SA	TOM OF BOREHC nated at EL -60.5' M	DLE AT 32.0 ft MLLW in POORLY		1		,				
			Boring condu	ucted from Northsta ar L/B Vision	ar Marine Services,								

					Designation FD24-B-04		<u> </u>
DRILLING LOO	North Atlantic Division	INSTALI			I District OF		1 IEETS
	2DS22D0017	9. COOF	RDINA	TE SY	STEM HORIZONTAL VERT	ICAL MLLW	,
TASK ORDER NO.: W912 PROJECT NAME: Subs	urface Exploration of New Haven Harbor	-					
2. HOLE NUMBER FD24-B-04	LOCATION COORDINATES N 646663.5 E 953725.5				R'S DESIGNATION OF DRILL E-55, autohammer efficiency 83.2% (, , , , , , , , , , , , , , , , , , ,	(22)
3. DRILLING AGENCY	+	12. TOT			S DISTURBED UNDIST		
Aquifer Drilling & T 4. NAME OF DRILLER	esting (ADT) - A Cascade Company	40. 707				0	
Dominick Pepe			-		CORE BOXES 0		
5. DIRECTION OF BORING	DEG FROM BEARING VERTICAL	15. DAT			STARTED COMPLETE	ED 9/24	
6. THICKNESS OF OVERBL	JRDEN >38'				POF BORING -24.4' (Est. from GBA April	'24 Bai	thy)
7. DEPTH DRILLED INTO R	оск 0'				ECOVERY FOR BORING N/A		
8. TOTAL DEPTH OF BORIN	NG 38'		_ouk		imanelli, Geologist		
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	OORLY GRADED SAND WITH SILT (SP-SM) OYR 3/1), very dark gray, wet, medium dense to ry dense, homogeneous, medium to coarse sand	4	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch	3 6 10 4	16
-28.4 4.0 Ma	bangular to subrounded, some shell fragments, arine Sediments 5YR 4/3), reddish brown, fine to medium sand, fi		SS-02		diameter, 24 inches long split spoon used on all samples Gravel: 1; Sand: 92; Fines: 7; MC: 19; SP-SM	14 28 46 32	74
<u>-30.4 6.0</u> gra	avel 5YR 5/2), weak red, very loose to loose, fine to		SS-03	-		0 2 2 4 5	4
-324 80 fra	arse sand, subangular to subrounded, few shell igments 5YR 5/3), brown	7	SS-04		Gravel: 0; Sand: 59; Fines: 41; MC: 25; SM	5 5 7 4	10
	LTY SAND (SM) (5YR 3/4), dark reddish brown / oderate brown, wet, loose to medium dense, mogeneous, rapid dilatancy, fine sand	/	SS-05	-	Gravel. 0, Gand. 33, Fines. 41, NO. 23, Siv	2 2 3 3 3	4
	negeneeds, rapid dilataney, inte sana		SS-06	-		5 7 8 7	8
			SS-07	-		6 7 10 11 10	13
	LT (ML) (5YR 3/4), dark reddish brown / moderat	ie	SS-08 SS-09	-	Gravel: 0; Sand: 24; Fines: 77; MC: 28; ML	13 13 16 19 14 13	21 33
	own, wet, soft to very stiff, homogeneous, low asticity, rapid dilatancy	60	SS-10	-		13 4 5 5 5	10
-		100	SS-11			3 5 6 7	11
		40	SS-12			3 0 4 3 WOH/0.5	4
		100	SS-13			5 5 7 13	12
-52.4 28.0			SS-14			3 3 4 5	7
- sti	ASTIC SILT (MH) (7.5YR 4/2), brown , wet, soft ff, homogeneous, medium plasticity, rapid atancy	to 100	SS-15		Gravel: 0; Sand: 3; Fines: 97; MC: 37; MH	4 5 4 5	9
		100	SS-16			2 2 3 3 5	5
		100	SS-17			5 5 6 2	10
			SS-18	-		2 2 3 2	4
-62.4 38.0	BOTTOM OF BOREHOLE AT 38.0 ft	100	SS-19			4 4 5	8
SI	pring terminated at EL -62.4' MLLW in ELASTIC						
	pring conducted from Northstar Marine Services, c Northstar L/B Vision						
ORM 1836-A			D		Designation ED21_B-04 S	HEET	1 of 1

		E	Bori	ng	Designation FD24-B-05					
DRILLING LOG	antic Division	NSTALL	ATION	N	SHEE		1 IEETS			
CONTRACT NO.: W912DS22D0017		. COOR	DINA	TE SY	STEM HORIZONTAL VERT	ICAL				
TASK ORDER NO.: W912WJ24F0024	on of Now Hoven Herbert			-						
PROJECT NAME: Subsurface Exploration 2. HOLE NUMBER LOCATION COORE	on of New Haven Harbor 10				OF BIT Mud Rotary (4" Tricone F R'S DESIGNATION OF DRILL	koller)				
FD24-B-05 N 648476.7	E 954065.8	ADT-	240,	, CM	E-55, autohammer efficiency 83.2% (
3. DRILLING AGENCY Aquifer Drilling & Testing (ADT) - A		12. TOTAL SAMPLES DISTURBED UNDISTURBED 12 0								
4. NAME OF DRILLER	· · ·	3. TOTA	AL NU	MBEF	CORE BOXES 0	0				
Dominick Pepe 5. DIRECTION OF BORING DEG FR	OM BEARING	4. ELEV	'ATIOI	N GRO	OUND WATER See Remarks					
VERTICAL VERTIC	ΔI :	5. date	BOR	RING	STARTED COMPLETI 7/24/24 7/2	ED 2 4/24				
6. THICKNESS OF OVERBURDEN	>24'	6. ELEV	'ATIOI	N TOF	POFBORING -36.1' (Measured in field)					
7. DEPTH DRILLED INTO ROCK	0.				ECOVERY FOR BORING N/A					
8. TOTAL DEPTH OF BORING	24'				Rimanelli, Geologist					
ELEV DEPTH 😤	FICATION OF MATERIALS	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value			
(7.5YR 3/1), very dark medium dense, rapid	AND WITH SILT (SP-SM) gray , wet, very loose to dilatancy, medium to coarse ments, Marine Sediments	70	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples	1 2 1 2	3			
-40.1 4.0		90	SS-02		Gravel: 2; Sand: 91; Fines: 7; MC: 21; SP-SM	3 4 7 4	11			
Few shell fragments		25	SS-03			4 5 3 5	8			
	AND (SP) (7.5YR 3/1), very			-	Gravel: 1; Sand: 97; Fines: 1; MC: 19; SP	5 1 1				
coarse sand, trace gra	, rapid dilatancy, medium to avel	25	SS-04	-		1 2 5	2			
-46.1 10.0		60	SS-05			3 2 1	5			
	AND WITH SILT (SP-SM) gray , wet, loose, rapid	40	SS-06			5 3 2 1	5			
WELL GRADED SAN	D (SW) (7.5YR 3/1), very dark rapid dilatancy, medium to e gravel	60	SS-07			2 2 1 0	3			
POORLY GRADED S	AND WITH SILT (SP-SM) gray , wet, very loose to loose, and	100	SS-08			1 1 2 3	3			
-54.1 18.0		25	SS-09			4 4 3 3	7			
POORLY GRADED S	AND (SP) (5YR 4/1), dark gray nedium dense, rapid dilatancy,		SS-10			6 8 9 8	17			
		100	SS-11			2 5 11 11	16			
-60.1 24.0		100	SS-12			7 7 9 15	16			
BOTTOM OF	BOREHOLE AT 24.0 ft EL -60.1' MLLW in POORLY			I	1	1	-			
Boring conducted from	n Northstar Marine Services,									
Inc Northstar L/B Vi	SION	_			Designation ED24 D 05	UEET	ل			

G	EA
ENGINEER	* SURVEYORS

ENGINEERS * SURVEYORS		Duteration			Bori	ng	Designation FD24-B-06				
DRILLING	g lo	G North Atlantic Division	ision	INSTALL			District OF		1 eets		
		2DS22D0017		9. COOF	DINA	TE SY	STEM HORIZONTAL VERT				
TASK ORDER NO.: PROJECT NAME:		2WJ24F0024 surface Exploration of Nev	w Haven Harbor	-							
2. HOLE NUMBER		LOCATION COORDINATES		11. MANUFACTURER'S DESIGNATION OF DRILL							
FD24-B-06 3. DRILLING AGENO	CY	N 650187.6 E 95473	31.2	ADT-			E-55, autohammer efficiency 83.2% (
Aquifer Drillir	ng & ⁻	Testing (ADT) - A Cascad	e Company	.2			9	0			
4. NAME OF DRILLE Nick Marmol							CORE BOXES 0				
5. DIRECTION OF B			BEARING	- 14. ELE\	/ATIO	N GRO	DUND WATER See Remarks				
VERTICAL		VERTICAL		15. DATI	EBOR	RING		ED 10/24			
6. THICKNESS OF (OVERB	URDEN >18.6'	•	16. ELE\	/ATIO	N TOF	OF BORING -30.5' (Measured in field)				
7. DEPTH DRILLED	INTO F	ROCK O'					ECOVERY FOR BORING N/A				
8. TOTAL DEPTH O	OF BORI	NG 18.6'					D TITLE OF INSPECTOR Pugh, PG, Geologist				
ELEV DEPTH	EGEND	FIELD CLASSIFICATION C	F MATERIALS	%	Samp No.		REMARKS	Blows/ 0.5 ft	N-Value		
	-	(Description)		REC	Sam	RQD %		Blo	>-Z		
-	XX ve	RGANIC SILT (OH) (5Y 2.5/1) ry soft, homogeneous, mediui latancy, Organic Sediments	, black , saturated, m plasticity, rapid	25	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples	0 0 0 WOR/2.0	0		
						-	torvane (1.0) (uncorrected): 0.0 kg/cm ² pocket penetrometer (uncorrected): 0.0 tsf				
	Ĭ					-		0			
	×							0 0 WOR/2.0			
				60	SS-02				0		
	×							0			
- 55							Gravel: 0; Sand: 1; Fines: 99; LL: 106; PI: 59; MC: 102; OH	0			
	×			100	SS-03			WOR/2.0	0		
	×							0 0 0			
				100	SS-04			0 WOR/2.0	0		
- 5									Ŭ		
						-		0			
								0 0 WOR/2.0			
				100	SS-05				0		
	Ĭ							0			
	××			100	SS-06			0 WOR/2.0	0		
	Ĭ										
-43.1 12.6	Щ́о	RGANIC CLAY (OH) (5Y 4/1),	dark gray / olive			1	Gravel: 0; Sand: 2; Fines: 98; LL: 132; PI: 83;	0			
		ay, rapid dilatancy	<i>. .</i>	100			MC: 115; OH	0 0 WOR/2.0	~		
	Ň			100	SS-07				0		
	×,							0			
\vdash	××							0 0 0 WOR/2.0			
	Ĭ			100	SS-08			WOR/2.0	0		
	×										
	Ĭ					1		0 0 0			
	× ×			100	SS-09			0 WOR/2.0	0		
									0		
-49.1 18.6 🕅	Ň	BOTTOM OF BOREHO	I F AT 18 6 ft								
		oring terminated at -49.1' MLL									
	B	LAY oring conducted from Northsta	r Marine Services,								
		c Northstar L/B Vision									
FORM 1836-A					Rori	ina l	Designation FD24-B-06 S	SHEET	1 of 1		

	SURVEYORS								Designation FD24-B-07		
DF	RILLIN	IG L	OG	DIVISION North Atlantic Division			ATION End		I District OF		1 IEETS
CONTR	ACT NO.:	W	/912DS	22D0017					STEM HORIZONTAL VERT	ICAL	
				J24F0024				-		MLLW	
	CT NAME			ICE Exploration of New Haven Harl					OF BIT Mud Rotary (4" Tricone F R'S DESIGNATION OF DRILL	(oller)	
FD2	4-B-07			N 651713.3 E 954490.3	A	DT	-240,	, CM	E-55, autohammer efficiency 83.2% (
	ING AGE		& Testi	ing (ADT) - A Cascade Company	12.	тот	AL SAI	MPLE	S DISTURBED UNDIST	URBED)
4. NAME	E OF DRIL		<u>a 1001</u>		13.	тот	AL NU	MBEF	CORE BOXES 0		
	an CTION OF		ING	DEG FROM BEARING	14.	ELE\	/ATIO	N GRO	OUND WATER See Remarks		
×ک	ERTICAL			VERTICAL	15.	DATI	E BOR	ING	STARTED COMPLETI 7/10/24 7/1	ED 10/24	
		F OVE	RBURDE	;; N >29.5'	16.	ELE\	/ATIO	N TOF	P OF BORING -31' (Measured in field)	0/21	
			O ROCK	0'					ECOVERY FOR BORING N/A		
8. TOTA	L DEPTH	I OF B	ORING	29.5'	18.				D TITLE OF INSPECTOR Pugh, PG, Geologist		
		D Z		FIELD CLASSIFICATION OF MATERIALS						ft /s/	lue
ELEV	DEPTH			(Description)		% REC	Samp No.	RQD %	REMARKS USCS - Gradation results and classification	° Blows/ 0.5 ft	N-Value
-33.0	2.0		wet, ve	NIC SILT (OH) (5Y 4/1), dark gray / olive ry soft, homogeneous, some fine sand, a agments, Organic Sediments		100	SS-01		provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all	0 0 0 WOR/2.0	0
	-		Little fir	ne sand, and shell fragments		100	SS-02		samples Gravel: 0; Sand: 10; Fines: 90; LL: 106; PI: 58; MC: 114; OH	0 0 0 WOR/2.0	0
	F				ŀ						
	-					100	SS-03			0 0 0	0
	-					100	00-00			WOR/2.0	0
	-				-					0	
	-					100	SS-04			0 0 WOR/2.0	0
-40.2	- 9.2		Samat	ine cond	-			-		0	
	-		Some	fine sand		100	SS-05			0 0 WOR/2.0	0
	-				-			-		0	
	-					100	SS-06			0 0 WOR/2.0	0
	-							-	Switched from drag rotary bit to tricone roller bit,	W0102.0	
	-					100				0 0 0	•
-46.5	15.5					100	SS-07			0 WOR/2.0	0
	_		SILTY	SAND (SM) very loose, some shell fragn		100	SS-08		Gravel: 0; Sand: 56; Fines: 44; LL: 33; Pl: 9; MC: 39; SM	0 0 0 WOR/2.0	0
-48.9	17.9							-		4 4	
	L			LY GRADED SAND (SP) (7.5YR 3/2), da , saturated, loose to medium dense,	ark	75	SS-09			7 7	11
-50.5	19.5		homog	eneous, medium to coarse sand, trace findarine Sediments	ne			-		1	
	Γ		4 1	coarse sand		55	SS-10			7 7	10
-52.5	21.5		Fine to	medium sand	ŀ			-	drive 3ft of casing Gravel: 1; Sand: 96; Fines: 4; MC: 24; SP	23	
	Γ					95	SS-11		C.S.O. 1, Cana. 00, 1 mos. 7, 100. 27, 01	3 5 6	8
-54.5	23.5		Trace	pooroo cond	ŀ			-		3	
	F		i race o	coarse sand		100	SS-12			4 5 6	9
-56.5	25.5			and the set of the set	ŀ					6	
	-			coarse sand, trace fine gravel		100	SS-13			6 7 7	13
						100	SS-14			5 6 7 7	12
-60.5	29.5		4	BOTTOM OF BOREHOLE AT 29.5 ft							
			Boring GRADI	terminated at EL -60.5' MLLW in POORI	LY						
			Boring	conducted from Northstar Marine Service lorthstar L/B Vision	es,						
FORM	1836-	4	110. - N				Bori	na	Designation FD24-B-07	SHEET	1 of 1

	SURVEYORS					В	ori	ng	Designation FD24-B-08		
DF	RILLIN	IG L	.OG	DIVISION North Atlantic Division	INSTA				I District OF		1 IEETS
	ACT NO.:	~ ~ ~		22D0017	9. CO	ORD	DINA	TE SY	STEM HORIZONTAL VER	TICAL	
				J24F0024 ace Exploration of New Haven Harbo				-	OF BIT Mud Rotary (4" Tricone	MLLW Roller)	
HOLE	NUMBE	R	E LO	DCATION COORDINATES	11. MA	٩NU	FAC	TURE	R'S DESIGNATION OF DRILL	,	
	4-B-08			N 653153.8 E 955163.2	AD 12. TC				E-55, autohammer efficiency 83.2% s DISTURBED UNDIS	(08/30/ STURBED	
			& Test	ing (ADT) - A Cascade Company					22	0	
	e of drii Ninick F		1						CORE BOXES 0		
٧	CTION OF ERTICAL		RING	DEG FROM BEARING VERTICAL	14. EL		-	-	STARTED COMPLE	TED /23/24	
		F OVE	ERBURDE	n >44'	16. EL	EVA		N TOF	P OF BORING -25.2' (Est. from GBA Apr		thy)
DEPT	HDRILLE	ED IN	TO ROCK	0'					ECOVERY FOR BORING N/A		
ΤΟΤΑ	L DEPTH	I OF E	ORING	44'	- 18. SIC				D TITLE OF INSPECTOR Rimanelli, Geologist		
ELEV	DEPTH	EGEND		FIELD CLASSIFICATION OF MATERIALS (Description)	% RE	6	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	_		greeni	NIC SILT (OH) (GLEY1 3/5G_/1), very dark sh gray, very dark greenish gray, wet, very s	oft, 10)0 s		-	USCS - Gradation results and classification provided by CDM Smith Laboratory	0 0 0 0	0
			homog	eneous, rapid dilatancy, Organic Sediments)0 s	S-02		Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on al samples	WOR/2.0 0 0 0 WOH/2.0	0
	_				4	0 s	S-03		Gravel: 0; Sand: 11; Fines: 89; LL: 88; PI: 49; MC: 91; OH	WOR/2.0-	0
32.8	- 7.6				10	00 s	S-04			0 0 1	1
	-		(2.5YF	LY GRADED SAND WITH SILT (SP-SM) 3/2), dusky red, wet, medium dense, eneous, rapid dilatancy, medium to coarse	50)0 s	S-05			WOR/1.0 4 5 6 6	11
37.2	12.0	-	sand, Ī	Marine Sediments	7	0 s	S-06		Gravel: 0; Sand: 92; Fines: 7; MC: 17; SP-SM	7 7 8 10 8	15
39.2	14.0		Some	gravei	8	5 s	S-07			10 12 12	22
41.2	16.0		WELL red, we	GRADED GRAVEL (GW) (2.5YR 3/2), dusk et, medium dense, homogeneous, fine grave	ky Bil 3	5 s	S-08			5 6 7 6	13
43.2	18.0		(2.5YF	LY GRADED SAND WITH GRAVEL (SP) 3/2), dusky red, wet, medium dense, eneous, medium to coarse sand	3	5 s	S-09		Gravel: 27; Sand: 70; Fines: 4; MC: 13; SP	8 8 10 16	18
	-		SILTY	SAND (SM) (5YR 3/3), dark reddish brown	,	5 s	S-10			4 4 6 6	10
	_		wet, lo	ose to medium dense, homogeneous, fine	3	0 s	S-11		Gravel: 0; Sand: 79; Fines: 21; MC: 25; SM	2 2 3	5
	_		- - - - -			-	S-12			2 6 9 7 11	16
	-		•		3	5 s	S-13			5 5 6 7	11
	Ē				7	5 s	S-14			6 9 7 7	16
55.2	- 30.0		· · ·		6	5 s	S-15			4 6 6 6	12
57.2	32.0			Y SILT (ML) (5YR 3/3), dark reddish brown , ery stiff, homogeneous, no dilatancy, fine sa)0 s	S-16			4 8 11 13	19
	-			SAND (SM) (5YR 3/3), dark reddish brown	, .	00 s	S-17		Gravel: 0; Sand: 52; Fines: 48; MC: 25; SM	7 7 8 10	15
	- 		wet, m fine sa	edium dense, homogeneous, slow dilatancy nd)0 s	S-18			6 8 9 11	17
					7	5 s	S-19			5 7 9	14
	_				7	5 s	S-20			6 7 10 10	17
	_ _				7	0 s	S-21			6 8 9 10	17
69.2	44.0				10	00 s	S-22			8 12 24	20
			SANĎ	BOTTOM OF BOREHOLE AT 44.0 ft terminated at EL -69.16' MLLW in SILTY		!		_			
				conducted from Northstar Marine Services, Northstar L/B Vision							
RM	1836-	Δ				D	~ "	200	Designation ED24_B-08	SHEET	1 of 1

	Boring Designation FD24-B-09														
DF	RILLIN	IG L	OG	-	on rth Atlantic Div	vision							1 IEETS		
	ACT NO.:	• •		22D00			9. COORDINATE SYSTEM HORIZONTAL VERTICAL State Plane - Connecticut NAD83 MLLW								
				J24F00 ice Exp		ew Haven Harbor	-				OF BIT Mud Rotary (4" Tricone F			1	
2. HOLE	NUMBE	R	LC	CATION	COORDINATES		11. MANUFACTURER'S DESIGNATION OF DRILL								
3. DRILL	ING AGE	NCY	•				ADT-240, CME-55, autohammer efficiency 83.2% (08/30/23) 12. TOTAL SAMPLES DISTURBED UNDISTURBED								
	ifer Dri		& Testi	ing (AD	DT) - A Casca	de Company	16 0								
Nick	Marm	olejc					13. TOTAL NUMBER CORE BOXES 0 14. ELEVATION GROUND WATER See Remarks								
	CTION OI 'ERTICAL		ING		DEG FROM VERTICAL	BEARING			BOR		STARTED COMPLET			1	
	NCLINED										7/12/24 7/1 P OF BORING -28.6' (Measured in field)	2/24		-	
					>32.1'						ECOVERY FOR BORING N/A			1	
					32.1'					D TITLE OF INSPECTOR			1		
ELEV	DEPTH	LEGEND		FIELD (CLASSIFICATION (Description		R	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value		
	_		very so	oft, homo	AY (OH) (2.5Y 2 ogeneous, rapid I fine sand, Orga	.5/1), black, saturate dilatancy, trace she	ed, II 1	00	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch	0 0 0 WOR/2.0	0		
	-		lingino	nio, unu	r into ouria, orge		1	00	SS-02		diameter, 24 inches long split spoon used on all samples	0 0 0 WOR/1.8	0 /4	ŧ	
	-						1	00	SS-03		Gravel: 0; Sand: 9; Fines: 92; LL: 102; PI: 60; MC: 107; OH	0 0 0 WOR/2.0	0		
							1	00	SS-04			0 0 0 WOR/2.0	0	- - -	
	-						1	00	SS-05			0 0 0 WOR/2.0	0	- - -	
-38.4	9.8 			éneous,		, wet to saturated, trace shell fragment	ts, 1	00	SS-06		Gravel: 0; Sand: 13; Fines: 87; LL: 77; PI: 43; MC: 72; OH	0 0 0 WOR/2.0	0	- - 1 -	
	-			c sand			1	00	SS-07			0 0 0 WOR/2.0	0	- - -	
	-						1	00	SS-08			0 0 0 WOR/2.0	0	- - - - 1	
	-						1	00	SS-09			0 0 0 WOR/2.0	0		
-47.7	_ _ 19.1				SM) (2 5VP 3/3)), dark reddish browi		00	SS-10			0 3 8 5 WOR/0.5	11	- - -	
-48.7	20.1		wet, me fine sa	edium de nd, Marir	ense, homogene ine Sediments	TH SILT (SP-SM)	∕,		SS-11		Switched from drag rotary bit to tricone roller bit,	6 8 6 6	14	- 2 -	
	-		(2.5YR dense, mediur	3/3), da homoge n sand, t	ark reddish brow eneous, rapid dil trace coarse sal	n, saturated, mediui latancy, fine to		45	SS-12		drive 5ft of casing	6 6 8 8	14		
-52.7	_ 24.1		subang		subrounded			55	SS-13		Gravel: 0; Sand: 93; Fines: 7; MC: 17; SP-SM	13 8 10 8	18	- 2	
-54.7	_ 26.1 _	-	Trace f	ine grav	/el			55	SS-14			6 7 7 8	14		
	_						-		SS-15			5 7 8 8	15		
							-		SS-10			6 5 6 7	11	- - 3	
-60.4 -60.7	31.8 - 32.1		saturat	ed, med	lium dense, hom), dark reddish browi nogeneous, rapid		, ,			conducted from Northstar Marine Service:	,	11	F	
			dilatan	cy, fine s	sand, little mica	· ·			In	ic N	Northstar L/B Vision				
			Boring			MLLW in SILTY SA	ND								

	VEYORS					1				Designation FD24-B-10	_		
DRI	LLIN	GL	. OG	NVISION North Atlantic Div	vision			ation Eng		d District OF 1 SHEET 1	s		
CONTRAC			912DS22							/STEM HORIZONTAL VERTICAL onnecticut NAD83 MLLW	1		
			/912WJ24 ubsurface	Exploration of Ne	ew Haven Harbor						-		
2. HOLE N	IUMBEF	2	LOCA	TION COORDINATES		11. M	1ANI	JFAC	FURE	R'S DESIGNATION OF DRILL			
FD24- 3. DRILLIN	IG AGE	NCY	•	657343.8 E 9556			ADT-240, CME-55, autohammer efficiency 83.2% (08/30/23) 12. TOTAL SAMPLES DISTURBED UNDISTURBED						
Aquife 4. NAME C			& Testing	g (ADT) - A Casca	de Company		21 0						
)							CORE BOXES 0 OUND WATER See Remarks	_		
		BOR	ING	DEG FROM VERTICAL	BEARING			BOR		StarteD COMPLETED 7/11/24 7/11/24	_		
		OVE	RBURDEN	>42.5'		16. E	LEV		N TOF	P OF BORING -17.5' (Measured in field)			
7. DEPTH	DRILLE	D INT	O ROCK	0'						ECOVERY FOR BORING N/A			
8. TOTAL I	DEPTH	OF B	ORING	42.5'		- 18. S				D TITLE OF INSPECTOR Pugh, PG, Geologist			
		SND	F	FIELD CLASSIFICATION	OF MATERIALS								
ELEV D	DEPTH			(Description	ר)		% REC	Samp No.	RQD %		0		
-			wet, very s	C SILT (OH) (5Y 4/1), soft, homogeneous, s	some shell fragments	ay, s, 1	00	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch	-		
F			little fine s	and, Organic Sedime	ents	1	00	SS-02		diameter, 24 inches long split spoon used on all samples 0	Ē		
F						1	00	SS-03		Gravel: 0; Sand: 8; Fines: 92; LL: 92; PI: 50; MC: 92; OH	Ŧ		
-25.7	8.2					6	65	SS-04		0	7 7		
-20.1 =	0.2		(OH) medi fine sand	lium plasticity, trace s	hell fragments, and	1	00	SS-05		Gravel: 0; Sand: 3; Fines: 97; LL: 108; PI: 64;	-		
-						1	00	SS-06		0	Ŧ		
-						1	00	SS-07					
-						1	00	SS-08			Ē		
-						1	00	SS-09					
-						1	00	SS-10			-		
-						1	00	SS-11			20 		
	23.4						70	SS-12		WOR/2.0 0 3 4 7 7	ŧ		
42.0 = : 	24.5		3/3), dark dense, ho	GRADED SAND WIT reddish brown, satur mogeneous, fine to n	rated, loose to mediu nedium sand, trace	um ⊢	00	SS-13		Switched from drag rotary bit to tricone roller bit,; Gravel: 0; Sand: 90; Fines: 11; LL: NP; PI: NP; MC: 21; SP-SM			
-46.0 -	28.5		Coarse sai		orounaea, Marine	7	70	SS-14		2 6 10 10	27 27		
-			POORLY	GRADED SAND (SP rown, medium to coar		!	50	SS-15		6 7 6 8 13	1		
-50.0 -	32.5			ace fine sand		ţ	50	SS-16		Gravel: 11; Sand: 86; Fines: 4; MC: 15; SP	1		
	52.0		Trace fine	e gravel		4	45	SS-17		6 5 7 10	- 33		
-53.1	35.6			.ND (SM) (5YR 4/3), r	eddish brown wet	7	75	SS-18		20 21 32 41	1		
-56.0 -	38.5			medium dense, homo			75	SS-19		12 15 19 24 34			
	50.5		brown , sa	RADED SAND (SW) (aturated, medium den	ise, homogeneous,	7	70	SS-20		4 10 12 13 22			
	<u>41.6</u> 42.5		fine to coa	arse sand, subangula ND (SM) (5YR 4/3), r	r to subrounded		60	SS-21		7 15 21 24 36	- - '		
		<u>ar Ale</u>	dense, ho B	OTTOM OF BOREH minated at EL -60.0	d DLE AT 42.5 ft					· · · · ·	1		
			Boring cor	nducted from Northst r L/B Vision									
FORM 1	J J L A										4		

								Designation FD24-B-11			
DR	RILLIN	IG L	OG	DIVISION North Atlantic Division	INSTAL New			I District OF		1 IEETS	
CONTRA		••		22D0017	9. COO	RDINA	TE SY	STEM HORIZONTAL VEF	RTICAL		
				J24F0024 Ice Exploration of New Haven Harboi				OF BIT Mud Rotary (4" Tricone	MLLW Roller)		
	NUMBER			DCATION COORDINATES				R'S DESIGNATION OF DRILL	Ruller	,	
FD2	4-B-11			N 658650.7 E 955766.9	ADT 12. TOT			E-55, autohammer efficiency 83.2%	(08/30 STURBED		
			& Test	ing (ADT) - A Cascade Company	12.101	AL SA	MPLE			, ,	
4. NAME	OF DRIL		, ,		13. TOT	'AL NU	MBEF	CORE BOXES 0			
5. DIREC	CTION OF	BOR		DEG FROM BEARING	14. ELE	VATIO	N GRO	OUND WATER See Remarks			
	ERTICAL			VERTICAL	15. DAT	E BOF	RING		7/3/24		
6. THICK	KNESS O	F OVE	RBURDE	N >42.6'				OF BORING -17.3' (Measured in field)			
7. DEPT	H DRILLE	ED INT	O ROCK	0'				ECOVERY FOR BORING N/A			
8. TOTA	L DEPTH		ORING	42.6'		Linds		Pugh, PG, Geologist			
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	- (
	_		ORGA	NIC CLAY (OH) (2.5Y 4/1), dark gray, w oft, homogeneous, trace shell fragments, a	et, 57 nd	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory	0 0 <u>WOR/1.1</u>	/5	– (-
	_		fine sa	nd, Organic Sediments		SS-02		Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on a samples	II 🕺	0	
	-				100	SS-03	5		- <u>WOR/2.0</u> / 0 0 0	0	
-24.7	- - 7.4				100	SS-04	ļ		WOR/2.0/ 0 0 0	0	-
	-		No she	Il fragments, and fine sand	100	SS-05	5	Gravel: 0; Sand: 5; Fines: 95; LL: 108; PI: 64; MC: 114; OH	-WOR/2.0/ 0 0	0	
	_				100	SS-06	ò		- <u>WOR/2.0</u> / 0 0 - <u>WOR/2.0</u> /	0	E
	-				100	SS-07			0 0 0	0	- - - 1;
	-				100	SS-08	5		WOR/2.0/ 0 0 0	0	
	-				100	SS-09			WOR/2.0/	0	E
	-				100	SS-10			WOR/2.0/ 0 0	0	
-38.7	_ - 21.4				100	SS-11			WOR/2.0/ 0 0 0	0	- 20
	-			Y LEAN CLAY (CL) (2.5Y 4/1), dark gray, we oft, some fine sand, and shell fragments	et, 100	SS-12	2	Gravel: 0; Sand: 45; Fines: 55; LL: 41; PI: 17; MC: 45; CL	WOR/2.0/	0	
-42.9	- 				80	SS-13		Switched from drag rotary bit to tricone roller b	it 34/7	11	Ę
	- -		3/2), da	LY GRADED SAND WITH SILT (SP-SM) (5 ark reddish brown / grayish brown, wet, very o medium dense, fine to coarse sand, and	YR		-	Gravel: 7; Sand: 87; Fines: 6; MC: 18; SP-SM	8 3 5 4	9	- - 21
	-			Marine Sediments	55		;		6 6	12	-
-47.9	<u>- 30.6</u> -		Trace f	ine gravel	40	SS-16	5		9 4 1 0 0	1	
-49.9	- <u>32.6</u> - -		No fine	gravel	55	SS-17			3 4 5 6	9	- 3:
-53.4	_ _ 36.1				60	SS-18			3 5 4 10	9	
	_			Y SILT (ML) (2.5YR 3/3), dark reddish browr very stiff, homogeneous, mica	ı, 70		1	Gravel: 0; Sand: 47; Fines: 53; MC: 24; ML	4 9 8 9	17	Ē
-57.0	- 39.7 			SAND (SM) (2.5YR 3/3), dark reddish brow	75	SS-21	1		5 7 9 11	16	- - - 4
-58.3	41.0		saturat	ed, medium dense, homogeneous, fine san	d /	SS-22	,		2 1 2 2	3	- -
-59.9	- 42.6			CLAY (CL) (2.5YR 3/3), dark reddish brown, ft, homogeneous, mica		00-22			2		
			Boring	BOTTOM OF BOREHOLE AT 42.6 ft terminated at EL -59.9 in LEAN CLAY conducted from Northstar Marine Services, lorthstar L/B Vision							

G	EA
ENGINEER	S * SURVEYORS

		Boring Designation FD24-B-12
DRILLING I	OG DIVISION North Atlantic Division	INSTALLATION SHEET 1 New England District OF 1 SHEETS
	912DS22D0017	9. COORDINATE SYSTEM HORIZONTAL VERTICAL
TASK ORDER NO.: V	912WJ24F0024	State Plane - Connecticut NAD83 MLLW
	LOCATION COORDINATES	10. SIZE AND TYPE OF BIT Mud Rotary (4" Tricone Roller) 11. MANUFACTURER'S DESIGNATION OF DRILL
2. HOLE NUMBER FD24-B-12	N 659568.5 E 955379.1	ADT-240, CME-55, autohammer efficiency 83.2% (08/30/23)
3. DRILLING AGENCY	8 Testing (ADT) A Cossede Company	12. TOTAL SAMPLES DISTURBED UNDISTURBED
4. NAME OF DRILLER	& Testing (ADT) - A Cascade Company	: 12 : 0 13. TOTAL NUMBER CORE BOXES 0
Dominick Pepe		14. ELEVATION GROUND WATER See Remarks
5. DIRECTION OF BOP	ING DEG FROM BEARING VERTICAL	15. DATE BORING STARTED COMPLETED 7/25/24 7/25/24
6. THICKNESS OF OV	RBURDEN >24'	16. ELEVATION TOP OF BORING -36.4' (Measured in field)
7. DEPTH DRILLED IN	O ROCK O'	17. TOTAL CORE RECOVERY FOR BORING N/A
8. TOTAL DEPTH OF E	ORING 24'	18. SIGNATURE AND TITLE OF INSPECTOR Loukas Rimanelli, Geologist
O Z	FIELD CLASSIFICATION OF MATERIALS	
ELEV DEPTH	(Description)	
-38.4 2.0	SILT WITH SAND (ML) (2.5Y 4/1), dark gray, wet, very soft, low plasticity, rapid dilatancy, Organic Sediments	75 SS-01 USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples 0
-	With fine sand	20 SS-02 Gravel: 0; Sand: 32; Fines: 68; LL: NP; PI: NP; MC: 39; ML 20
-41.2 4.8	POORLY GRADED SAND WITH SILT (SP-SM) (2.5YR 3/3), dark reddish brown, wet, very loose,	90 SS-03
-44.4 8.0	rapid dilatancy, medium to coarse sand, Marine Sediments	70 SS-04 Gravel: 1; Sand: 94; Fines: 5; MC: 23; SP-SM 1
	WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) (2.5YR 3/3), dark reddish brown, wet, very loose to medium dense, rapid dilatancy, medium to coarse sand, with gravel	10 SS-05
-48.4 12.0		35 SS-06
-50.4 14.0	Rapid dilatancy, medium to coarse sand	50 SS-07 Gravel: 21; Sand: 70; Fines: 9; MC: 16; SW-SM 7 3 3 10
	SILT (ML) (2.5YR 3/3), dark reddish brown, wet, medium stiff to stiff, low plasticity, slow dilatancy, with coarse sand	15 SS-08
		T5 SS-09 Gravel: 0; Sand: 4; Fines: 96; LL: NP; PI: NP; 3 3 4 5 3 3 4 5 7
-		45 SS-10
-		55 SS-11
		75 SS-12
-60.4 24.0	BOTTOM OF BOREHOLE AT 24.0 ft Boring terminated at EL -60.4' MLLW in SILT Boring conducted from Northstar Marine Services, Inc Northstar L/B Vision	

GE ENGINEERS *							E	Bori	ng	Designation FD24-B-13			_
DF	RILLIN	IG L	_00	G DIVISION North Atlant	ic Division				-	District OF		1 IEETS	
CONTR	ACT NO.:	N	/91	2DS22D0017		9. CO	OR	DINA	TE SY	STEM HORIZONTAL VERT	ICAL		
				2WJ24F0024	of Now Hoven Harbor				-		MLLW		-
			aubs		of New Haven Harbor					OF BIT Mud Rotary (4" Tricone F R'S DESIGNATION OF DRILL	(olier)		-
	4-B-13			N 660674.7 E						E-55, autohammer efficiency 83.2% (
	ING AGE			Гesting (ADT) - A C	ascade Company	12. T(ΟΤΑ	L SAI	MPLE	S DISTURBED UNDIST	URBED)	
4. NAME	OF DRIL	LER		(13. TC	ΟΤΑ	LNU	MBER	CORE BOXES 0			
	Marm			DEG FROM	BEARING	14. EL	LEV	ATIO	N GRO	OUND WATER See Remarks			
V	ERTICAL			VERTICAL		15. D/	ATE	BOR	ING	STARTED COMPLET 7/2/24 7/	ED 2/24		
	(NESS O	F OVI	ERB	JRDEN >27		16. EL	LEV	ATIO	N TOF	P OF BORING -34.1' (Measured in field)			
7. DEPT	'H DRILLE		TOF		0'					ECOVERY FOR BORING N/A]
8. TOTA	L DEPTH	OF E	BORI	NG 27	'.1'	18. SI				D TITLE OF INSPECTOR Pugh, PG, Geologist			
					TION OF MATERIALS		%				/s/ ft	Iue	1
ELEV	DEPTH			(Des	cription)	RI	% EC	Samp No.	RQD %	REMARKS USCS - Gradation results and classification	。 Blows/ 0.5 ft	O N-Value	- o
	L) sc	oft, homogeneous, Orga	5Y 2.5/1), black, wet, very nic Sediments		00	<u>SS-01</u>		provided by CDM Smith Laboratory; Gravel: 0; Sand: 2; Fines: 98; LL: 95; PI: 51; MC: 117; OH	0 0 WOR/1.1	/	F
	L									Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all	0 0 0	0	E
	L					10	00	SS-02		samples	WOR/2.0		E
	ľ					F			1		0 0 0 0		E
-39.0	4.9					10	00	SS-03			0 WOR/2.0	0	- 4
00.0				OORLY GRADED SAN			_			Gravel: 0; Sand: 91; Fines: 9; MC: 24; SP-SM	3 5 6		Ł
	-			.5YR 4/3), reddish brow omogeneous, fine to me	vn, wet, medium dense, edium sand, Marine	1	00	SS-04			6 6	11	E
	-		Se	ediments							6	<u> </u>	Ł
						6	35	SS-05			5 7 6	12	È.
-42.7	8.6		SI	LTY SAND (SM) (2.5YI	R 4/3), reddish brown,								- 9
			- 1 I	iturated, very loose to lo ind, mica	oose, homogeneous, fine			~~ ~~		Gravel: 0; Sand: 66; Fines: 34; MC: 26; SM	3 4 3	_	-
							55	SS-06				7	-
											2 0 1		F
	-					7	75	SS-07			1	1	Ē
	-					-					4 2		- 13 -
	-					6	55	SS-08			1 2	3	F
	-										0	<u> </u>	E
	_					8	30	SS-09			0 2 3	2	E
-51.1	17.0		<u> </u>								WOR/1.0	-	- - 17
			S	ANDY SILT (ML) (2.5YI et. medium stiff to v	R 3/3), dark reddish browr /ery stiff, slow dilatancy					Gravel: 0; Sand: 10; Fines: 90; MC: 28; ML	10 16 8 7		£ ''
				minated, fine sand, mic		8	30	SS-10				24	È.
	-										3 3 3		È.
	-					7	70	SS-11			4	6	Ę
	-					\vdash	_				3 4	<u> </u>	- 21
	F					7	75	SS-12			4 2 4	6	F
	-										4	<u> </u>	F
	Ļ					7	75	SS-13			4 4 6	8	E
	L					Ľ							F
	L						, [4 3 5 6		F 26
-61.2	27.1						50	SS-14				8	F
<u> </u>	<u></u>		Bo	oring terminated at EL -	REHOLE AT 27.1 ft 61.2' MLLW in sandy SILT orthstar Marine Services, 1	г ⁽							
FORM	1836-	<u> </u>						Pori	na	Designation ED24-B-13	HEET	1 of 1	J

G	EA
ENGINEER	S * SURVEYORS

ENGINEERS *	SURVEYORS								Designation FD24-B-14		
DF	RILLIN	IG L	.OG	DIVISION North Atlantic Division					I District OF		1 IEETS
	ACT NO.:			22D0017		9. COOF			STEM HORIZONTAL VERT	ICAL	
		D.: W	912W	J24F0024				-	· · · · ·	MLLW	
				ace Exploration of New Have	en Harbor	10. SIZE			······································	(oller)	
	NUMBE			DCATION COORDINATES N 661622.6 E 955233.2					R'S DESIGNATION OF DRILL E-55, autohammer efficiency 83.2% (08/30/	(23)
3. DRILI	ING AGE	ENCY				12. TOT			S DISTURBED UNDIST		,
	ifer Dri E OF DRII		& Test	ing (ADT) - A Cascade Com	pany				14	0	
	inick F								CORE BOXES 0		
5. DIRE	CTION O	F BOR	ING	DEG FROM BEARING	G	14. ELE\	/ATIO	N GRO	DUND WATER See Remarks		
	ERTICAL			VERTICAL		15. DATI	EBOR	RING		-D 26/24	
6. THIC	KNESS O	F OVE	RBURDE	N >28'		16. ELE\	/ATIO	N TOF	POF BORING -33.1' (Measured in field)		
7. DEPT	H DRILLI	ED INT	O ROCK	0'					ECOVERY FOR BORING N/A		
8. TOTA		I OF B	ORING	28'					D TITLE OF INSPECTOR Rimanelli, Geologist		
		Q		FIELD CLASSIFICATION OF MATER						ft 's'	an
ELEV	DEPTH	EGEND		(Description)	(IALS	REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
				NIC SILT (OH) (GLEY1 2.5/N), bla oft, homogeneous, low plasticity, ra		40			USCS - Gradation results and classification provided by CDM Smith Laboratory	0	
	Ľ			cy, Organic Sediments	apia	40	SS-01		Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples	0 WOR/2.0	0
	L					50	SS-02		Gravel: 0; Sand: 1; Fines: 99; LL: 113; PI: 67; MC: 146; OH	0 0 0 WOR/2.0	0
	L										U
	Γ							1		0 0 0	
	-					80	SS-03			0 WOR/2.0	0
	-					-		-		0	
	F					60	SS-04			0 0 WOR/2.0	0
	L										
										0	
	-					75	SS-05			0 WOR/2.0	0
	-							-		0	
-44.0	10.9		SII TY	SAND (SM) (7.5YR 3/2), dark bro	wn wet	100	SS-06			0 0 WOR/2.0	0
	L		very lo	ose to loose, homogeneous, slow	dilatancy,						
			fine sa	nd, Marine Sediments		45			Gravel: 0; Sand: 62; Fines: 38; MC: 27; SM	1 4 4	F
47 4	- 14.0					45	SS-07			WOH/0.5	5
-47.1	14.0		POOR	LY GRADED SAND WITH SILT (S	SP-SM)			-		2 2	
	+		(7.5YR	3/2), dark brown , moist, loose to	medium	_ 25	SS-08			3 2	5
-49.1	16.0		dense, sand	homogeneous, slow dilatancy, fin	ie lo mediu	'''					
				8/2), dark reddish brown / grayish b	brown,	05	00.00		Gravel: 12; Sand: 77; Fines: 11; MC: 16; SP-SM	4 3 5	
51 1	100		mediur	m to coarse sand		65	SS-09			Ů	8
-51.1	18.0		Trace	fine gravel			-	1		19 13	
	-			~		100	SS-10			12 36	25
-53.1	_20.0										
			SILT W	VITH SAND (ML) (2.5YR 3/3), dark moist, medium stiff to stiff, homog	k reddish					3 4 3 6	_
	Γ		rapid d	lilatancy, fine sand	geneous,	60	SS-11			Ů	7
	F						-	1	Gravel: 0; Sand: 28; Fines: 72; MC: 24; ML	5 4	
	F					25	SS-12			3 4	7
-57.1	24.0										
			With fi	ne gravel						56	
E0 4						25	SS-13				11
-59.1	26.0	$\left \left \right \right $	No fine	egravel		-	-	1		47	
	F			•		100	SS-14			8 17	15
-61.1	28.0										
			Boring	BOTTOM OF BOREHOLE AT 28 terminated at EL -61.1' MLLW in S		SVND					
				conducted from Northstar Marine S							
				ar L/B Vision							
	1836-	^							Designation ED24 D 14	UCCT	1 - 5 1

						Designation FD24-B-15		
DRILLING	LOG DIVISION North Atlantic Division	INSTALLATION SHEET 1 New England District OF 1 SHEETS						
	V912DS22D0017	9. COORDINATE SYSTEM HORIZONTAL VERTICAL						
TASK ORDER NO.: 💧	V912WJ24F0024 Subsurface Exploration of New Haven Harbor						ILLW	
2. HOLE NUMBER	LOCATION COORDINATES					R'S DESIGNATION OF DRILL	Jier	
FD24-B-15 3. DRILLING AGENCY	N 662791.5 E 955175.7	AD				E-55, autohammer efficiency 83.2% (C		
Aquifer Drilling	& Testing (ADT) - A Cascade Company	12. 10	ЛА	L SAN			0	
4. NAME OF DRILLER Nick Marmole		13. TC	DTA	L NUI	MBER	CORE BOXES 0		
5. DIRECTION OF BO	RING DEG FROM BEARING	- 14. EL	.EV/	ATION	N GRO	DUND WATER See Remarks		
	VERTICAL	15. D/				8/7/24 8/7	/24	
6. THICKNESS OF O	ERBURDEN >29.6'					P OF BORING -31.7' (Measured in field) ECOVERY FOR BORING N/A		
7. DEPTH DRILLED IN					D TITLE OF INSPECTOR			
8. TOTAL DEPTH OF	BORING 29.6'		L		ay F	Pugh, PG, Geologist		
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)	R	é EC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
- 333333	ORGANIC SILT (OH) (2.5Y 2.5/1), black, saturatec very soft, homogeneous, low plasticity, rapid dilatancy, Organic Sediments		5	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch	0 0 0 WOR/2.0	0
		1	00	SS-02		diameter, 24 inches long split spoon used on all samples torvane (1.0) (uncorrected): 0.0 kg/cm ² pocket penetrometer (uncorrected): 0.0 tsf	0 0 0 WOR/2.0	0
		1	00	SS-03		Gravel: 0; Sand: 3; Fines: 97; LL: 119; PI: 68; MC: 134; OH	0 0 0 WOR/2.0	0
		8	5	SS-04			0 0 0 WOR/2.0	0
-		1	00	SS-05			0 0 0 WOR/2.0	0
			5	SS-06			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0
<u>-42.8 11.1 ()</u>	POORLY GRADED SAND (SP) (7.5YR 3/2), dark brown , saturated, medium dense, homogeneous,		5	33-00		Gravel: 17; Sand: 80; Fines: 3; MC: 18; SP	WOR/1.5	
-45.3 13.6	rapid dilatancy, fine to medium sand, trace fine gravel, subangular to subrounded, Marine Sedimer	nts 8	5	SS-07			6 7 7 WOR/0.5	13
	(5YR 3/2), dark reddish brown / grayish brown, dense, fine sand, subrounded	7	0	SS-08		drive 5ft of casing	17 20 18 13	38
<u>-47.3 15.6</u> -	POORLY GRADED SAND WITH SILT (SP-SM) (5 3/2), dark reddish brown / grayish brown, saturated		0	SS-09			8 8 7 6	15
<u>-49.3 17.6</u>	medium dense, homogeneous, rapid dilatancy SANDY SILT (ML) (5YR 3/2), dark reddish brown / grayish brown, saturated, stiff to hard, homogeneou					Gravel: 0; Sand: 45; Fines: 55; MC: 29; ML	5 4 5 6	
-	rapid dilatancy, fine sand, with mica	us, 4	5	SS-10			777	9
-		7	5	SS-11			11 18 10	18
-		6	0	SS-12			10 10 13 17	23
-		10	00	SS-13			15 14 15 16	29
-59.3 27.6		6	5	SS-14			12 19 23 19	42
-	(7.5YR 3/2), dark brown , slow dilatancy	1	00	SS-15		torvane (1.0) (uncorrected): 0.5 kg/cm² pocket penetrometer (uncorrected): 0.25 tsf	7 6 9 12	15
-61.3 29.6	BOTTOM OF BOREHOLE AT 29.6 ft Boring terminated at EL -61.3' MLLW in sandy SIL ⁻ Boring conducted from Northstar Marine Services, Inc Northstar L/B Vision	T			<u> </u>	I		

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					Designation FD24-B-16	_	
DRILLING LOG	DIVISION North Atlantic Division				d District OF		1 IEETS
	522D0017	9. COO	RDINA	TE SY	STEM HORIZONTAL VERT	ICAL MLLW	,
TASK ORDER NO.: W912W. PROJECT NAME: Subsurfa	J24F0024 ace Exploration of New Haven Harbor						
	OCATION COORDINATES N 663859.7 E 955391.6				R'S DESIGNATION OF DRILL IE-55, autohammer efficiency 83.2% (,	(23)
3. DRILLING AGENCY		12. TOT			S DISTURBED UNDIST	URBED	
Aquifer Drilling & Test 4. NAME OF DRILLER	ing (ADT) - A Cascade Company	40 TOT			CORE BOXES ()	0	
Nick Marmolejo	· · · ·				CORE BOXES 0 OUND WATER See Remarks		
5. DIRECTION OF BORING	DEG FROM BEARING	15. DAT			STARTED COMPLETE		
					8/4/24 8/4/24 8/5 P OF BORING -34.2' (Measured in field)	5/24	
6. THICKNESS OF OVERBURDE 7. DEPTH DRILLED INTO ROCK					ECOVERY FOR BORING N/A		
8. TOTAL DEPTH OF BORING	25.8'				D TITLE OF INSPECTOR Pugh, PG, Geologist		
		<u> </u>				ft s/	en
	FIELD CLASSIFICATION OF MATERIALS (Description)	REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
ORGA	NIC SILT (OH) (2.5Y 2.5/1), black, saturated oft, homogeneous, low plasticity, rapid cy, hydrocarbon odor, Organic Sediments	d, 0	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all	0 0 0 WOR/2.0	0
		30	SS-02	2	samples Gravel: 0; Sand: 6; Fines: 94; LL: 119; PI: 65; MC: 115; OH	0 0 0 WOR/2.0	0
		35	SS-03	5		0 0 0 WOR/2.0	0
-41.7 7.5	LY GRADED GRAVEL (GP) (5YR 3/4), dark	70	SS-04		rig chatter from 7.5' - 8.0'	0 0 2 WOR/1.5	0
<u>-42.7 8.5 C reddish</u> homog	h brown / moderate brown, saturated, loose, jeneous, rapid dilatancy, fine to medium , Marine Sediments	15	SS-05	5	Gravel: 6; Sand: 23; Fines: 71; MC: 25; ML	9 4 4 4	8
brown	VITH SAND (ML) (5YR 3/4), dark reddish / moderate brown, saturated, stiff to very stif jeneous, slow dilatancy, fine to medium sand ica	ff, d, 5	SS-06	6		10 10 6 5	16
_ SILTY	SAND (SM) (5YR 3/4), dark reddish brown / ate brown, saturated, very loose, geneous, rapid dilatancy, fine sand, with mica	10	SS-07	,		5 4 3 3	7
		10	SS-08	5		5 3 4 5	7
		0	SS-09			4 6 4 4	10
-54.2 20.0		30	SS-10			3 3 3 3	6
_ SAND`	Y SILT (ML) (5YR 3/4), dark reddish brown / ate brown, saturated, hard to stiff, stratified, lilatancy, fine sand, with mica		SS-11		Gravel: 0; Sand: 30; Fines: 70; MC: 27; ML torvane (1.0) (uncorrected): 0.0 kg/cm ² pocket penetrometer (uncorrected): 0.0 tsf	12 20 16 11	36
		55	SS-12			12 8 7 7	15
-60.0 25.8		85	SS-13			4 4 4 4	8
Boring Boring	BOTTOM OF BOREHOLE AT 25.8 ft terminated at EL -60.0' MLLW in sandy SIL conducted from Northstar Marine Services, Northstar L/B Vision				Designation ED24 B 16 S	HEFT	

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ENGINEER	* SURVEYORS

ENGINEERS * SURVEYORS						Designation FD24-B-17		<u> </u>
DRILLIN	G LOG	DIVISION North Atlantic Division				I District OF		1 IEETS
CONTRACT NO .:		S22D0017	9. COOF	RDINA	TE SY	STEM HORIZONTAL VERT	ICAL	
TASK ORDER NO		VJ24F0024 face Exploration of New Haven Harbor					MLLW Roller)	
2. HOLE NUMBER	۱ ک	LOCATION COORDINATES	11. MAN	IUFAC	TURE	R'S DESIGNATION OF DRILL	,	
FD24-B-17 3. DRILLING AGE		N 664746.8 E 956025.9	ADT 12. TOT			E-55, autohammer efficiency 83.2% (s : DISTURBED : UNDIST		
Aquifer Dril	ling & Tes	sting (ADT) - A Cascade Company	12. 101			14	0	
4. NAME OF DRIL Nick Marmo						CORE BOXES 0		
5. DIRECTION OF		DEG FROM BEARING	- 14. ELE'	VATIO	N GRO	DUND WATER See Remarks	=D	
			15. DAT	E BOR	ING			
6. THICKNESS OF	OVERBURE	DEN >28.1'				POF BORING -32.6' (Measured in field)		
7. DEPTH DRILLE	D INTO ROC	к 0'				ECOVERY FOR BORING N/A		
8. TOTAL DEPTH		28.1'		Linds		Pugh, PG, Geologist		
ELEV DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
_	very s	ANIC SILT (OH) (2.5Y 2.5/1), black, saturated soft, low plasticity, rapid dilatancy, Organic nents	i, 30	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory; Gravel: 0; Sand: 1; Fines: 99; LL: 119; PI: 68; MC: 180; OH	0 0 0 WOR/2.0	0
			65	SS-02		Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples torvane (1.0) (uncorrected): 0.0 kg/cm ² pocket penetrometer (uncorrected): 0.0 tsf	0 0 0 WOR/2.0	0
			50	SS-03		poore peretrometer (uncorrected). U.U ISI	0 0 0 WOR/2.0	0
-			50	SS-04			0 0 0 WOR/2.0	0
-42.6 10.0			100	SS-05		torvane (1.0) (uncorrected): 0.0 kg/cm ² pocket penetrometer (uncorrected): 0.0 tsf	0 0 0 WOR/2.0	0
-43.6 11.0		ANIC SILT WITH SAND (OL)	55	SS-06		Gravel: 0; Sand: 20; Fines: 80; MC: 125; OL	0 0 0	
-	satur:	L GRADED SAND (SW) (2.5Y 2.5/1), black, ated, medium dense, rapid dilatancy, fine to se sand, trace fine gravel		SS-07			4 WOR/1.5 6 8 9	0
-46.0 ⁻ 13.4		V SAND (SM) (EVR 2/2), dark raddiab brown	70				10	17
-	satur	Y SAND (SM) (5YR 3/3), dark reddish brown , ated, medium dense, rapid dilatancy, fine san nica, Marine Sediments	d, 📃	SS-08 SS-09			10 9 9 9	18
<u>-48.7 _ 16.1</u> - -50.7 _ 18.1	reddi dilata	RLY GRADED SAND (SP) (5YR 3/3), dark sh brown , saturated, medium dense, rapid ncy, fine to medium sand, subrounded, with	50	SS-10			6 8 8 10	16
		Y SAND (SM) (5YR 3/3), dark reddish brown , ated, medium dense to loose, rapid dilatancy, and		SS-11		Gravel: 0; Sand: 87; Fines: 13; MC: 30; SM	7 5 8 7	13
			70	SS-12			4 3 5 5	8
			70	SS-13			3 4 4 6	8
-58.2 25.6		DY SILT (ML) (5YR 3/3), dark reddish brown ,	70	SS-14			4 5 6 5	11
-60.7 28.1		ated, stiff, rapid dilatancy, fine sand, with mica	a 50	SS-15			6 6 8	12
	Borin	BOTTOM OF BOREHOLE AT 28.1 ft g terminated at EL -60.7' MLLW in sandy SIL g conducted from Northstar Marine Services, Northstar L/B Vision	T					

G	EA
ENGINEER	S * SURVEYORS

ENGINEERS * SURVEYORS					Designation FD24-B-18		
DRILLING LOG	DIVISION North Atlantic Division			-	I District OF		1 IEETS
	S22D0017	9. COO	RDINA	TE SY	STEM HORIZONTAL VERT	ICAL	
TASK ORDER NO.: W912W PROJECT NAME: Subsurfa	J24F0024 ace Exploration of New Haven Harbor				• •	MLLW Roller)	
2. HOLE NUMBER	OCATION COORDINATES	11. MAN	IUFAC	TURE	R'S DESIGNATION OF DRILL	,	
FD24-B-18	N 666144.3 E 955439.9	ADT 12. TOT			E-55, autohammer efficiency 83.2% ((08/30/ TURBED	,
Aquifer Drilling & Test	ting (ADT) - A Cascade Company	12. 101	/n_ 3A	.vii⁻ LC			,
4. NAME OF DRILLER Nick Marmolejo		13. TOT	AL NU	MBEF	CORE BOXES 0		
5. DIRECTION OF BORING	DEG FROM BEARING	- 14. ELE	VATIO	N GRO	OUND WATER See Remarks		
VERTICAL	VERTICAL	15. DAT	E BOR	RING		 1/24	
6. THICKNESS OF OVERBURDE	EN >40.9'				OF BORING -20.7' (Measured in field)		
7. DEPTH DRILLED INTO ROCK	< 0'				ECOVERY FOR BORING N/A		
8. TOTAL DEPTH OF BORING	40.9'				Pugh, PG, Geologist		
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
ORGA	NIC SILT (OH) (10YR 2/1), black, saturated ery soft, homogeneous, medium plasticity,	to 20			USCS - Gradation results and classification provided by CDM Smith Laboratory	0 0 0 0	0
⊢ bitti Organ	ic Sediments				Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples	WOR/2.0	
		70	SS-02	2	Gravel: 0; Sand: 1; Fines: 99; LL: 117; Pl: 62; MC: 135; OH	0 0 0 WOR/2.0	0
				1		WOR/2.0	
- 5		50	SS-03	-		0	
		50	55-03	1		0 0 WOR/2.0	0
- 💥							
- 5							-
		100	SS-04			0 0 0	0
- 🚟				-		WOR/2.0	
					Gravel: 0: Sand: 2: Fines: 98: LL: 151: PI: 86:	0	
- 🚟		100	SS-05	i	MC: 110; OH	0 0 0 WOR/2.0	0
-				1		WOR/2.0	
- 🚟				-		0	
- 55		100	SS-06	i		0 0 WOR/2.0	0
-)							
-)				-		0	
-51.3 30.6	(SAND (SM) (2 EVD 2/2) don't roddiate brown		SS-07			0 0 WOR/2.0	0
_ suban	SAND (SM) (2.5YR 3/3), dark reddish browr gular, wet, very loose, homogeneous, fine	·,	_				
_ sand, ∣	mica, Marine Sediments						
		60	SS-09	1	Gravel: 0; Sand: 71; Fines: 29; MC: 26; SM	2 1 2	3
			00-08			3	
		100	SS-10			0 2 2 3	4
-61.6 40.9	BOTTOM OF BOREHOLE AT 40.9 ft		1			WOR/0.5	
Boring Boring	terminated at EL -61.6' MLLW in SILTY SAN conducted from Northstar Marine Services,	ND					
Inc N	Northstar L/B Vision						
FORM 1836-A			Bori	ina	Designation FD24-B-18	SHEET	1 of 1

	s								Designation FD24-B-19		
DRILL	.INC	G L	OG	DIVISION North Atlantic Division		ISTALL New			I District OF		1 IEETS
NTRACT N				22D0017		COOR	DINA	TE SY	STEM HORIZONTAL VERT	ICAL	
				24F0024	on Horbor 4			-		MLLW	
HOLE NUM				ce Exploration of New Hav					OF BIT Mud Rotary (4" Tricone F R'S DESIGNATION OF DRILL	(olier)	
D24-B-	19			N 668042.5 E 956680.8		ADT	240	, CM	E-55, autohammer efficiency 83.2% (
RILLING A			R. Tosti	ng (ADT) - A Cascade Cor		2. TOT/	AL SA	MPLE	S DISTURBED UNDIST	URBED)
NAME OF D	ORILL	.ER	1030			3. TOT/	AL NU	MBER	CORE BOXES 0	0	
Nick Mai					1/				DUND WATER See Remarks		
DIRECTION	CAL	BORI	NG	DEG FROM BEARI		5. date	BOR	RING	STARTED COMPLETE 8/8/24 8/	ED 8/24	
THICKNESS	S OF	OVE	RBURDE	N >22.7'					POF BORING -38.7' (Measured in field)		
DEPTH DRI	ILLED		O ROCK	0'					ECOVERY FOR BORING N/A		
TOTAL DEF	РТН С	OF BO	ORING	22.7'	10				Pugh, PG, Geologist		
LEV DEP	тн	EGEND		FIELD CLASSIFICATION OF MATE (Description)	ERIALS	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
		<u> </u>	ORGAN	VIC SILT (OL) (5Y 2.5/1), black	saturated		s	Υ Υ	USCS - Gradation results and classification	ш-	Ż
L	F		soft, ho	mogeneous, rapid dilatancy, no	dry strength,				provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch		
	F		organic	Sediments					diameter, 24 inches long split spoon used on		
F	E								all samples torvane (1.0) (uncorrected): 0.0 kg/cm ² pocket		
F	ŀ	-					00.01	1	penetrometer (uncorrected): 0.0 tsf	0 4 0	
2.5 3.8	8 -		D C 1 -		(00.01.1)	100	SS-01			3 3 WOH/0.7	7
Γ			3/3), da	Y GRADED SAND WITH SILT rk reddish brown , saturated, lo	ose,		SS-02				
-			homoge	eneous, rapid dilatancy, fine to r ular to subrounded, Marine Sed	medium sand,			1	Gravel: 0; Sand: 91; Fines: 9; LL: NP; PI: NP; MC: 31; SP-SM	1 1 4	
L			Sunglið	מומו נט שטרטעוועפע, ואאוווופ 200		100	SS-03			5	5
5.4 6.7	7										
-			SILTY	SAND (SM) (5YR 3/3), dark red ed, very loose to medium dense	dish brown,				Gravel: 0; Sand: 57; Fines: 43; MC: 24; SM	0000	
Ļ			homoge	eneous, rapid dilatancy, fine sar	nd, with mica	100	SS-04			0 WOR/2.0	0
										1	
F										1 3 3	
-						100	SS-05				4
										12 5	
Γ						70	SS-06			5 7 9	10
-						10	55-06				12
L										3	
						70	SS-07			3 5 7	8
F							22.07				
F								1		3 5	
						70	SS-08			5 5 6	10
F											
-								1		2 4 4	
						70	SS-09			6	8
F											
F								1		3 3 4	
L						70	SS-10			6	7
F										2 2 5	
L						40	SS-11			5	7
61.4 22.	7										
			Boring	BOTTOM OF BOREHOLE AT terminated at EL -61.4' MLLW i							
			Boring	conducted from Northstar Marir							
			- North	star L/B Vision							
ORM 183	6 1						Dori	na	Designation FD24-B-19 ^s	HEET	1 of 1

GEA ENGINEERS * SURVEYORS								Bor	ing	Designation FD24-B-20		
DRILLI	NG L	OG		on rth Atlan	tic Div	rision	INSTAL			I District OF	EET 1 SH	1 HEETS
CONTRACT NO).: W	912DS				131011	9. COO	RDINA	TE SY	STEM HORIZONTAL VEF	RTICAL	
TASK ORDER I PROJECT NAM					of No	w Haven Harbo			-	onnecticut NAD83 OF BIT Mud Rotary (4" Tricone	MLLW	
2. HOLE NUMB				COORDIN						R'S DESIGNATION OF DRILL	Roller)
FD24-B-2			N 668	739.3 E	9565	22.8				E-55, autohammer efficiency 83.2%		
3. DRILLING AC Aquifer D		& Testi	ng (A[DT) - A (Cascad	de Company	12. TOT	AL SA	MPLE	S DISTURBED UNDI	STURBED 0)
4. NAME OF DE Nick Mari			0	,			13. TOT	AL NU	IMBEF	CORE BOXES 0		
5. DIRECTION	OF BOR			DEG FRO	M	BEARING	- 14. ELE	VATIC	N GR	OUND WATER See Remarks		
VERTIC/				VERTICAL			15. DAT	E BOF	RING	STARTED COMPLE	/30/24	
6. THICKNESS	OF OVE	RBURDE	ч.	3	1.5'	•	16. ELE	VATIC	N TOF	POF BORING -30.8' (Measured in field)		
7. DEPTH DRIL	LED INT	O ROCK			0'					ECOVERY FOR BORING N/A		
8. TOTAL DEP	TH OF B	ORING		3	1.5'					D TITLE OF INSPECTOR Pugh, PG, Geologist		
ELEV DEPT	LEGEND		FIELD		CATION (DF MATERIALS	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-			gh plast			/1), black, wet, very n odor, Organic	0	SS-01	1	USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch	0 0 0 WOR/2.0	0
-										diameter, 24 inches long split spoon used on a samples		
-							100	SS-02	2	Gravel: 0; Sand: 5; Fines: 95; LL: 121; PI: 58; MC: 167; OH	0 0 0 WOR/2.0	0
-									-		WOR/2.0	
-												
-							100	SS-03	3		0 0 WOR/2.0	0
-												
-							100	SS-04		Gravel: 0; Sand: 14; Fines: 87; LL: 96; PI: 53; MC: 128; OH	0 0 0 WOR/2.0	0
-47.8 17.0									-			
-	° 0	reddish	brown. coarse	wet, med	lium de	SM) (2.5YR 3/4), da nse, homogeneous o coarse sand, Mar	i,			rig chatter from 17' to 28' below mudline		
	• 0						20	SS-05	5	Gravel: 31; Sand: 50; Fines: 19; MC: 16; SM	8 5 7 9	12
-	•								1			
53.8 _ 23.0		(2.5YR	3/4), da		h browr	H SILT (SP-SM) n, wet, loose,						
		lionioge		,	50100 00		30	SS-06	5	Gravel: 0; Sand: 93; Fines: 7; MC: 20; SP-SM	4 5 3 5	8
-58.8 28.0									-			
				SM) (2.5) lense, stra		dark reddish brow ine sand	n, —			Gravel: 0; Sand: 72; Fines: 28; MC: 21; SM	35	
62.3 ⁻ 31.5			BOTT			DLE AT 31.5 ft	95	SS-07	7	5.6761. 0, Odina. 72, 1 mos. 20, 100. 21, SM	5 6 7	11
		SAND Boring	termina conduc	ited at EL ted from I	-62.3' N Northsta	ALLW in SILTY ALLW in SILTY ar Marine Services,						
FORM 1836	. ^	Inc N	orthsta	r L/B Visio	on			Der		Designation ED24 B 20	SHEET	1 of 1

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ENGINEER	* SURVEYORS

ENGINEERS *	SURVEYORS						Designation FD24-CAD-01	
D	RILLIN	IG L	OG DIVISION North Atlantic Division				I District OF	ET 1 1 SHEETS
CONTR	RACT NO.	: W	912DS22D0017	9. COC	RDIN/	TE S	YSTEM HORIZONTAL VERT	FICAL
			912WJ24F0024			-		MLLW
	ECT NAME		LOCATION COORDINATES				OF BIT Mud Rotary (4" Tricone F ER'S DESIGNATION OF DRILL	koller)
FD2	4-CAD	-01	N 656,611.0 E 954,152.9	AD.	Г-240	, CM	E-55, autohammer efficiency 83.2% (0	
	LING AGE		& Testing (ADT) - A Cascade Company	12. TO	TAL SA	AMPLE	ES DISTURBED UNDIS	TURBED 0
	E OF DRI		a resuling (ADT) - A cascade Company	13. TO		JMBEI	R CORE BOXES 0	0
	Marm			14. ELI	EVATIO	N GR	OUND WATER N/A	
\boxtimes	CTION O /ERTICAL NCLINED	-	RING DEG FROM BEARING VERTICAL	15. DA	TE BO	RING	STARTED COMPLET	ED 14/24
6. THIC	KNESS C	F OV	ERBURDEN >81'				P OF BORING -5.1' (Measured in field)	
7. DEP	TH DRILL	ed in	то воск 14.7'				RECOVERY FOR BORING N/A	
8. TOT/	AL DEPTH	I OF I	BORING 95.7'	10. 510			Pugh, PG, Geologist	
ELEV	DEPTH	EGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% RE		RQD %	REMARKS	Blows/ 0.5 ft N-Value
0.4	2.0	·):):	ORGANIC SOIL WITH SAND (OL) (2.5Y 5/1), gray,	35			USCS - Gradation results and classification	
-8.1	- 3.0 -		saturated, very soft, homogeneous, rapid dilatancy, fin sand, Organic Sediments	/			provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch	WOR/2.0
	-		POORLY GRADED SAND WITH SILT (SP-SM) (2.5)	/ 55	5 SS-02	1	diameter, 24 inches long split spoon used on all samples	
-15.8	-10.7		3/1), very dark gray, saturated, loose, homogeneous, rapid dilatancy, fine to medium sand, trace silt,	75	5 <u>SS-0</u> 3	3	Gravel: 0; Sand: 91; Fines: 9; MC: 19; SP-SM	5 5 6
-18.1	- 13.0		subangular to subrounded		- <u>88-04</u>	ŀ		
	F		(SP-SM) trace shell fragments ORGANIC CLAY (OL) (2.5Y 5/1), gray, wet, very soft.	-10	0 55-0	5	Gravel: 0; Sand: 28; Fines: 72; MC: 66; OH	
	-		homogeneous, medium plasticity, slow dilatancy, sand	<u>y</u>				WOR/2.0
	F		ORGANIC SILT WITH SAND (OH) (5Y 4/1), dark gra olive gray, wet to moist, very soft, homogeneous,	y/ 10	0 ss-06	5	pocket penetrometer (uncorrected): 0.5tsf	
	-		medium plasticity, no dilatancy, fine sand, and shell	10	0 88-07	7	pocket penetrometer (uncorrected): 0.5tsf	
	F		fragments			1		
	-			10	0 55-08	3	pocket penetrometer (uncorrected): 0.5tsf; Gravel: 0; Sand: 28; Fines: 72; MC: 66; OH	
							Gravel: 0; Sand: 28; Fines: 72; MC: 66; OH	
-42.1	- 37.0				0 88-09		pocket penetrometer (uncorrected): 0.75tsf	
	L		POORLY GRADED SAND WITH SILT (SP-SM) (5YR 3/2), dark reddish brown / grayish brown, saturated,		0 55-10			WOR/2.0 10 10
	-		medium dense, homogeneous, rapid dilatancy, fine to			1		
	L		medium sand, trace coarse sand, Marine Sediments	55	5 SS-1	1	Gravel: 1; Sand: 94; Fines: 6; MC: 20; SP-SM	⁵ / ₇ 14
-53.1	48.0		POORLY GRADED SAND (SP) (5YR 3/3), dark reddi					
-58.1	- 53.0		brown , saturated, medium dense, homogéneous, rapi		5 SS-12	2		
-00.1	-		dilatancy, fine to medium sand, trace silt SILTY SAND (SM) (5YR 3/3), dark reddish brown ,	/) SS-1:	3	_	
	L		saturated, loose to medium dense, homogeneous, rap		,			
-67.1	62.0		dilatancy, fine sand, little mica	70) SS-14	1	-	
-07.1			SANDY SILT (ML) (5YR 3/3), dark reddish brown ,					
-72.1	- 67.0	Ш	saturated, stiff, homogeneous, low plasticity, rapid dilatancy, low toughness, low dry strength, little mica	80) SS-1	5	drive 5ft of casing	
	È		SILTY SAND (SM) (5YR 3/3), dark reddish brown ,]) SS-16	5	drive 5ft of casing	
-78.1	- 73.0		saturated, medium dense, homogeneous, rapid dilatancy, trace mica		, 55-1	1		7 10 10 12
	È		SILT (ML) (5YR 3/3), dark reddish brown , saturated t	o 95	5 SS-17	7	drive 5ft of casing	
	F		wet, stiff, homogeneous, low plasticity, rapid dilatancy. low toughness, low dry strength, trace fine sand, little					-
-87.1	82.0		mica, Glacio-Marine Silt	10	0 SS-18	3	pocket penetrometer (uncorrected): 1.00tsf	
	-		∖(ML) no fine sand, some mica ELASTIC SILT (MH) (5YR 3/3), dark reddish brown ,	-/	0 55-19		pocket penetrometer (uncorrected): 1.25tsf	4 5 WORID 5 9
	F		wet, stiff to soft, laminated, medium plasticity, no		0 00-1	1		0 5 9 4 VOH/0.5
	F		dilatancy, medium toughness, medium dry strength, some mica	10	0 SS-20		pocket penetrometer (uncorrected): 1.25tsf	
	F							3 3 WOR/0.5
-100.8	95.7			10	0 SS-2	1	pocket penetrometer (uncorrected): 1.25tsf	0 2 2 3 VOH/0.5
		В	BOTTOM OF BOREHOLE AT 95.7 ft pring terminated at EL -100.8' MLLW in ELASTIC SILT					онио.я
			oring conducted from Northstar Marine Services, Inc I	Northsta	ar L/B ۱	/ision		

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ENGINEER	* SURVEYORS

ENGINEERS * SURVEYORS					Designation FD24-CAD-	
DRILLING LOG	DIVISION North Atlantic Division	INSTAL			District	SHEET 1 OF 1 SHEETS
CONTRACT NO.: W912DS2	22D0017	9. COO	RDINA	TE S		VERTICAL
TASK ORDER NO.: W912WJ PROJECT NAME: Subsurfac	24F0024 ce Exploration of New Haven Harbor				OF BIT Mud Rotary (4" Trico	
2. HOLE NUMBER LO	CATION COORDINATES				ER'S DESIGNATION OF DRILL	,
FD24-CAD-02 IN 3. DRILLING AGENCY	N 656,869.4 E 954,654.4	AD I 12. TO1			E-55, autohammer efficiency 83.2	.% (08/30/23) INDISTURBED
	ng (ADT) - A Cascade Company				19	0
4. NAME OF DRILLER Nick Marmolejo					R CORE BOXES 0	
5. DIRECTION OF BORING	DEG FROM BEARING				OUND WATER N/A	IPLETED
		15. DAT			7/9/24	7/9/24
6. THICKNESS OF OVERBURDE	02.0				P OF BORING -9' (Measured in field) RECOVERY FOR BORING N/A	
7. DEPTH DRILLED INTO ROCK		18. SIG	NATU	RE AN	ID TITLE OF INSPECTOR	
8. TOTAL DEPTH OF BORING	92.6'		Linds	say F	Pugh, PG, Geologist	<u> </u>
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC		RQD %	REMARKS	Blows/ 0.5 ft
wet, ver	IIC SILT WITH SAND (OH) (2.5Y 2.5/1), black y soft, homogeneous, little sand, shell nts. Organic Sediments	k, <u>85</u>	SS-01		USCS - Gradation results and classificat provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch	
	, - <u>-</u>	100) SS-02	2	diameter, 24 inches long split spoon used all samples	d on $0 - \frac{1}{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{2}}}}}}} - \frac{1}{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{$
		100) SS-03	3		
<u>-24.3 - 15.3</u> - UNI ORGAN	IIC SILT (OH) (5Y 4/1), dark gray / olive gray,	100) SS-04	4	-	
- Wet, ver	y soft, homogeneous, trace fine sand, shell					WOR/2.0
		100) SS-05	5	Gravel: 0; Sand: 8; Fines: 92; MC: 104; C	
		100) SS-06	6	-	0 0
-39.3 30.3				1		
-43.0 34.0 50me fil	ne sand, trace wood	100) SS-07	-		
POORL	Y GRADED SAND WITH SILT (SP-SM) (7.5Y rk brown , wet to saturated, loose,	′R 60	SS-08	3	Switched from drag rotary bit to tricone ro bit, drive 5ft of casing	
homoge	neous, rapid dilatancy, fine to coarse sand, tra ine Sediments				bit, drive bit of casing	
		55	SS-09		Gravel: 0; Sand: 95; Fines: 5; MC: 21; SF	$\begin{array}{c c} 2-\text{SM} & 4 \\ 5 \\ 4 \\ 5 \\ 5 \\ -4 \\ -4 \\ -4 \\ -4 \\$
-56.1 - 47.1		75	-		_	
- SILT W	ITH SAND (ML) (2.5YR 3/3), dark reddish saturated, medium stiff to stiff, homogeneous,		- <u>SS-10</u>	X		
	atancy, some fine sand, mica, Glacio-Marine S	ilt 75	SS-11		Gravel: 0; Sand: 11; Fines: 90; MC: 30; M	
		100) SS-12	2	-	³ / ₄ 8
-69.6 -60.6	no cond little mice	400				
-73.0 64.0	ne sand, little mica	100) SS-13			
moist, m	IL) (2.5YR 3/3), dark reddish brown, wet to nedium stiff to very soft, laminated, low plasticit) SS-14	ŀ		$\begin{array}{c c} 5 \\ 4 \\ 4 \\ 4 \end{array}$
no dilata	ancy, fine sand, trace mica, laminated thin cla	·			Crouple Or Sandy 1: Finance OO: MC: 26: MI	
) SS-15		Gravel: 0; Sand: 1; Fines: 99; MC: 36; ML	
		100) SS-16	6		
		100) SS-17	,	-	
			, 00-17	1		⁰ / ₂ 5 ³ / ₄ <u>worvo.s</u> –
		100) SS-18	8	-	8 2 6
-100.0 -91.0				<u> </u>		3 WOR/1.0
wet, me	SAND (SM) (2.5YR 3/3), dark reddish brown edium dense, rapid dilatancy, fine sand, ered clay	$n, \int \frac{100}{100}$) SS-19	2	1	
	BOTTOM OF BOREHOLE AT 92.6 ft terminated at EL -101.6' MLLW in SILTY				ucted from Northstar Marine Services tar L/B Vision	S,

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ENGINEER	S * SURVEYORS

ENGINEERS * SURVEYORS						Designation FD24-CAD-03		
DRILLING L	OG	DIVISION North Atlantic Division				I District OF	ET 1 1 SHEETS	
CONTRACT NO.: W		22D0017	9. COC	RDIN/	ATE S	YSTEM HORIZONTAL VERT	FICAL	
TASK ORDER NO.: W		24F0024 ce Exploration of New Haven Harbor				onnecticut <u>NAD83</u> I E OF BIT Mud Rotary (4" Tricone R	MLLW Poller)	
2. HOLE NUMBER	LO	CATION COORDINATES	11. MA	NUFAC	CTURE	ER'S DESIGNATION OF DRILL		
FD24-CAD-03 3. DRILLING AGENCY		N 657,210.7 E 954,209.8	AD 12. TO			E-55, autohammer efficiency 83.2% (0	8/30/23) TURBED	
Aquifer Drilling	& Testir	ng (ADT) - A Cascade Company	12.10			20	0	
4. NAME OF DRILLER Dominick Pepe						R CORE BOXES 0		
5. DIRECTION OF BOI		DEG FROM BEARING VERTICAL	- 14. ELE	VATIC	ON GR	COUND WATER N/A	ED	
			15. DA			8/1/24 8/	1/24	
6. THICKNESS OF OV	/ERBURDE	N >96.5'				P OF BORING -4.5' (Measured in field)		
7. DEPTH DRILLED IN	ITO ROCK	0'				RECOVERY FOR BORING N/A		
8. TOTAL DEPTH OF	BORING	96.5'			say F	Pugh, PG, Geologist		
ELEV DEPTH		FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft N-Value	
-7.5 - 3.0	SILTY S	AND (SM) (10YR 3/1), very dark gray, d, very loose, rapid dilatancy, fine sand,	40	SS-0	1	USCS - Gradation results and classification provided by CDM Smith Laboratory		- (
	subroun	ded		SS-02	2	Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on	woR/1.0 woR/1.0 4 3	
-12.5 8.0	引3/2), ver	Y GRADED SAND WITH SILT (SP-SM) (2.5 y dark grayish brown, saturated, very loose,	il			all samples Gravel: 1; Sand: 94; Fines: 5; LL: NP; PI: NP;	2 1 2	
F F		atancy, fine to medium sand, trace shell ts, subangular to subrounded	100) SS-0:	3	MC: 22; SP torvane (1.0) (uncorrected): 1.5 kg/cm ²		
-19.0 - 14.5	ORGAN	IIC SILT (OH) (2.5Y 3/1), very dark gray, wet,	100) SS-04	1	pocket penetrometer (uncorrected): 0.0 tsf torvane (1.0) (uncorrected): 1.0 kg/cm ²		- 15
-24.0 19.5		t, slow dilatancy, little fine sand, and shell ts, Organic Sediments				pocket penetrometer (uncorrected): 0.0 tsf; Gravel: 0; Sand: 9; Fines: 92; MC: 68; OH		
	7	ne sand, and shell fragments	100) SS-0	5	torvane (1.0) (uncorrected): 1.25 kg/cm ² pocket penetrometer (uncorrected): 0.0 tsf		
	i no line :	sand, and shell fragments	100) SS-06	6	torvane (1.0) (uncorrected): 1.25 kg/cm²	8 0 -	
					1	pocket penetrometer (uncorrected): 0.0 tsf	WOR/2.0	
			100) SS-07	7	torvane (1.0) (uncorrected): 1.0 kg/cm² pocket penetrometer (uncorrected): 0.0 tsf;		- 30
-39.0 - 34.5	SANDY	SILT	r 55	SS-08 	3	Gravel: 0; Sand: 13; Fines: 87; MĆ: 77; OH torvane (1.0) (uncorrected): 1.5 kg/cm²	<u>woн/2.g</u> 1 4	
-42.5 38.0		AND (SM) (2.5Y 3/1), very dark gray, saturat	ed, r			pocket penetrometer (uncorrected): 0.0 tsf drive 5ft of casing	3 5 WOR/0.5	
		se, rapid dilatancy, fine to medium sand, som d, Marine Sediments	e 100) SS-10	2		$\begin{array}{c cccc} 10 & 22 \\ 10 & 12 \\ 12 & 21 \end{array}$	
		Y GRADED SAND WITH SILT (SP-SM) (7.5 k brown, saturated, medium dense to loose,	YR	SS-1	1	 Gravel: 12; Sand: 81; Fines: 7; MC: 17; SP-SM		- 45
-54.0 49.5	rapid dil	atancy, medium to coarse sand, trace shell ts, and fine gravel, subangular to subrounded			1			
-57.5 - 53.0	No fine	. . .	50	SS-12	2		$\begin{array}{c c} 4 & 9 \\ 5 & 5 \\ 5 & 5 \end{array}$	
		L) (2.5YR 3/3), dark reddish brown, wet, stiff	, 55	SS-13	3	torvane (1.0) (uncorrected): 0.5 kg/cm²		
		atancy, some mica, Glacio-Marine Silts				pocket penetrometer (uncorrected): 0.0 tsf		
-67.5 - 63.0			60	SS-14	1	torvane (1.0) (uncorrected): 0.0 kg/cm² pocket penetrometer (uncorrected): 0.0 tsf	5 6 10 10	- 61
	ELASTI	C SILT (MH) (2.5YR 3/3), dark reddish browr t to stiff, slow dilatancy, some mica	n, 100) SS-1:	5	torvane (1.0) (uncorrected): 2.0 kg/cm²		
	WCL, SUI	to our, now undurity, some milea			1	pocket penetrometer (uncorrected): 0.75 tsf		
			100) SS-16	6	torvane (1.0) (uncorrected): 2.5 kg/cm² pocket penetrometer (uncorrected): 0.5 tsf	0 2 3 2 WOHV0.5	
-79.0 - 74.5	Lensed		100) SS-17	7	torvane (1.0) (uncorrected): 2.5 kg/cm ²		- 76
	201000				1	pocket penetrometer (uncorrected): 0.5 tsf		10
			100) SS-18	3	torvane (1.0) (uncorrected): 1.5 kg/cm² pocket penetrometer (uncorrected): 0.25 tsf	0 3 4 WOR0.5	
			100) SS-19	9	torvane (1.0) (uncorrected): 2.0 kg/cm ²	4 7 12	
-92.5 88.0		AND (SM) (2.5YR 3/3), dark reddish brown,			1	pocket penetrometer (uncorrected): 0.5 tsf	5	
		d, medium dense, rapid dilatancy, some mica	80	SS-20	2	1	6 8 19 11 13	- 91
-101.0 - 96.5	·]		75	SS-2	1	-		
		BOTTOM OF BOREHOLE AT 96.5 ft	/ 70	100-2	.1	1	$11 \\ 10 \\ 14 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12$	
		inated at EL -101.0' MLLW in SILTY SAND Jucted from Northstar Marine Services, Inc	Northsta	r L/B ۱	Vision			

G	EA
ENGINEER	S * SURVEYORS

ENGINEERS *	SURVEYORS								Designation FD24-CAD-		
D	RILLIN	IG L		vision North Atlantic Divi	ision	INSTALI				SHEET OF 1 SH	1 IEETS
			/912DS22E	00017		9. COOF	RDINA	TE S	YSTEM HORIZONTAL	VERTICAL	
			/912WJ24F ubsurface l	-0024 Exploration of Nev	v Haven Harbor	State 10. SIZE			nnecticut NAD83 E OF BIT Mud Rotary (4" Tricor	MLLV	
2. HOLE	E NUMBE	R	LOCAT	ION COORDINATES		11. MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL		
	4-CAD			57,470.8 E 954,	704.6	ADT- 12. TOT			E-55, autohammer efficiency 83.2 ^d DISTURBED	% (08/30/2 NDISTURBE	
Aqu	ifer Dri	lling	& Testing ((ADT) - A Cascad	e Company	_			19	0	
	E OF DRI Marm								R CORE BOXES 0		
5. DIRE	CTION O	F BOF		DEG FROM	BEARING				OUND WATER N/A	PLETED	
	NCLINED					15. DAT	-	_	7/6/24	7/7/24	
6. THIC	KNESS (DF OV	ERBURDEN	>95.3'					P OF BORING -7.7' (Measured in field)		
7. DEP1	TH DRILL	ed in	TO ROCK	0'					RECOVERY FOR BORING N/A		
8. TOT <i>I</i>	AL DEPTI		BORING	95.3'		<u> </u>		say F	Pugh, PG, Geologist		
ELEV	DEPTH	LEGEND	FIE	LD CLASSIFICATION ((Description		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	-			CLAY (CH) (5Y 2.5/1) us, trace fine sand, ar		it, <u>100</u>	SS-01	-	USCS - Gradation results and classificati provided by CDM Smith Laboratory	ion 0 0 WOR/2.0	0
-13.5	5.8		Organic Sec	diments	a sheri nayinenis,				Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used	lon	E
	-		(2.5Y 3/1), v	very dark gray		100	SS-02		all samples		0
	F					0	SS-03	;		WOR/2.0 0	0
-23.5	15.8										
	F		(5Y 4/1), da	rk gray / olive gray		65	SS-04		Gravel: 0; Sand: 6; Fines: 94; LL: 112; PI: MC: 91; OH	. hõv	0
-28.5	-20.8		No fine san	d, and shell fragments		65	SS-05	;		WOR/2.0	0
	-			, and ener nagnene				1		WOR/2.0	Ē
	F					100	SS-06	5			0
	E					100	SS-07			WOR/2.0	0
	F					100	00-07	1		WOR/2.0	
-45.0	- 37.3		With wood			100	SS-08	5			0
-49.4	41.7					05	SS-09			0 WOR/2.0	18
-52.7	- 45.0			RADED SAND WITH eddish brown / grayish			55-08	,	Switched from drag rotary bit to tricone ro bit, drive 5ft of casing		
	_		dense, hom	ogeneous, fine to coal ne Sediments			SS-10)	Gravel: 8; Sand: 87; Fines: 5; MC: 16; SP- drive 15ft of casing		10
-57.7	50.0		SILT (ML) (5YR 3/3), dark reddisł		-'r					
-62.7	- - 55.0		homogeneo	us, some sand, and m	nica, Glacio-Marine	100	SS-11	-		$\begin{bmatrix} 2\\ 2\\ 3\\ 3 \end{bmatrix}$	5
	-		LEAN CLAN	((CL) (5YR 3/3), dark		100	SS-12	2	-	0 2	5
	F		LEAN CLAN	f, homogeneous, trace ⁄ (5YR 3/3), dark redd]		0 2 3 WOH/0.5	F
-70.7	- 63.0 -	¥///	laminated Lensed			100	SS-13		 Gravel: 0; Sand: 1; Fines: 99; LL: 44; PI: 2	21· 0	5
	+		LEUSEU				00-10	1	MC: 37; CL	21; 0 2 3 <u>4</u> <u>WOR/0.5</u>	μ
-78.7	- 					100	SS-14			0 4	8
			SILT (ML) (very stiff, le	5YR 3/3), dark reddisł	h brown , wet, stiff to		00.1			4 4 WOR/0.5	
-85.7	78.0					100	SS-15	2	Gravel: 0; Sand: 8; Fines: 92; MC: 28; ML	5 6 7 7	13 _
-05.7 -88.7	-81.0	1111	SANDY SIL	T (ML) wet		100	SS-16	5	-	4 7 11 13	18
-93.7	86.0		saturated, n	D (SM) (5YR 3/3), dar nedium dense, homog		w 100	SS-17	·	_	11 12 14 15 13	29
			POORLY G	p-Marine Sands RADED SAND (SP) (urated, medium dense			SS-18	5	-	$ \begin{array}{c} 13\\ 13\\ 10\\ 13\\ 11\\ 12\\ \end{array} $	24
	E	[·····	sand				00.13				╞
-103.0	- 95.3	<u> :</u>	'] B(OTTOM OF BOREHO	LE AT 95.3 ft	100	SS-19	1		8 9 8 11	17 -
			oring terminat	ed at EL -103.0' MLL ed from Northstar Ma	W in POORLY GRAD			/ision			

G	EA
ENGINEER	S * SURVEYORS

ENGINEERS *	SURVEYORS								g C	Designation FD24-CAD-05		
D	RILLIN	IG L	OG	DIVISION North Atlantic Division		INSTA			ind	District OF		1 IEETS
				22D0017		9. CO	ORDI	VATE	E SY	STEM HORIZONTAL VER	TICAL	
				24F0024 ce Exploration of New Ha	ven Harbor					nnecticut <u>NAD83</u> OF BIT Mud Rotary (4" Tricone F		/
2. HOLE	E NUMBE	R	LC	CATION COORDINATES		11. M	ANUF	ACTU	URE	R'S DESIGNATION OF DRILL		
	4-CAE			N 657,808.3 E 954,261.	7		DT-24			E-55, autohammer efficiency 83.2% ((s : DISTURBED : UNDIS)8/30/2 TURBE	
				ng (ADT) - A Cascade Co	mpany	12. 10				20	0	
	E OF DR hinick F					13. TC	OTAL	NUM	IBER	CORE BOXES 0		
5. DIRE	CTION C	F BOF	RING		RING	14. EL	EVAT	ION	GR	OUND WATER N/A		
	/ERTICA			VERTICAL		15. DA					28/24	
6. THIC	KNESS (OF OV	ERBURDE	EN >97'						P OF BORING -5.6' (Measured in field)		
7. DEPT	TH DRILL	.ED IN	TO ROCK	0'						ECOVERY FOR BORING N/A		
8. TOT/	AL DEPT		BORING	97'			Lou	ıkas		imanelli, Geologist		
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION OF MA (Description)	TERIALS		EC	ROD	2%	REMARKS	Blows/ 0.5 ft	N-Value
	-		ORGAN soft, ho	IC CLAY (OL) (2.5Y 2.5/1), bla mogeneous, low plasticity, slow	ack, wet, very dilatancy, low o		15 SS			USCS - Gradation results and classification provided by CDM Smith Laboratory		0
-10.6	- 5.0 -	1	strength	n, Organic Sediments		· _	00 ss	.02		Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on	WOR/2.0	0
	_		fragmer	NC CLAY SANDY (OH) with sa nts	nd, trace shell					all samples pocket penetrometer (uncorrected): 1.0 tsf	0 0 WOR/2.0	
	F					1(00 ss	03		pocket penetrometer (uncorrected): 1.0 tsf; Gravel: 0; Sand: 35; Fines: 65; LL: 73; PI: 42;		0
						1(00 ss	.04		MC: 51; OH pocket penetrometer (uncorrected): 1.0 tsf	WOR/2.0	0
-25.6	20.0							04				
20.0	-			IIC SILT medium plasticity, no c		ım 6	0 ss	05		drive 5ft of casing pocket penetrometer (uncorrected): 1.25 tsf		0
	-		ary stre	ngth, no sand, no shell fragmen	IS	10	00 ss	00		pocket penetrometer (uncorrected). 1.25 (Sr	0 WOR/2.0	0
	-						00 33	00		pocket penetrometer (uncorrected): 1.25 tsf	WOR/2.0	
	-					1(00 ss	07		drive 5ft of casing	0	0
	-									pocket penetrometer (uncorrected): 0.5 tsf		
-44.6	- 39.0					10	00 ss	.08		drive 5ft of casing; Gravel: 0; Sand: 20; Fines: 80; LL: 82; PI: 43; MC: 99; OH	0 2 WOR/1.5	0
	_			Y GRADED SAND WITH SILT rk reddish gray, saturated, very			0 ss	09	_	pocket penetrometer (uncorrected): 0.25 tsf drive 5ft of casing; Gravel: 1; Sand: 94; Fines:	4	11
	-		dense, l	nomogeneous, rapid dilatancy, r		se				6; MC: 24; SP-SM		
	-		sand, iv	larine Sediments		() ss	10		drive 5ft of casing	2 2 3 WOH/0.5	4
-55.6	_ 50.0	-	(2.5YR	4/4), reddish brown, fine sand,	with mica	5	0 ss	.11	_		<u>WOH/0.</u> 11 10 13	23
-59.6	54.0		Ľ	ITH SAND (ML) (2.5YR 4/4), re		[<u>16</u>	
	L		saturate	ed, very stiff to hard, homogeneo	ous, rapid	9	0 ss	·12		Gravel: 0; Sand: 29; Fines: 71; MC: 25; ML	2 18 23 24	41
	-		dilatanc	y, fine sand, Glacio-Marine Silts	3	6	5 SS	.13				34
	-							Ť			$ \begin{bmatrix} 14 \\ 17 \\ 17 \\ 14 \end{bmatrix} $	
	F					6	5 ss	-14			16 24 27 23	51
	F					p	0 ss	15				34
-79.6	74.0		L				0 00				12 15 19 24	34
	-		POORL	Y GRADED SAND (SP) (2.5YF saturated, dense to medium der	R 4/4), reddish nse.	8	5 ss	16			10 15 18 19	33
-85.6	80.0		homoge	eneous, rapid dilatancy, medium Marine Sands	to coarse sand							
	-		Fine sa			7	0 ss	17			15 14 18 16	32
	F					7	'0 ss	18			9 13 15 13	28
	F											-
	-					6	5 ss	19			8 9 13 15	22
-102.6	- 97 0					8	0 ss	20				25
		<u> </u>		BOTTOM OF BOREHOLE A								
				hinated at EL -102.6' MLLW in F ducted from Northstar Marine S				8 Vis	ion			
<u></u>												

G	EA
ENGINEER	S * SURVEYORS

ENGINEERS *	SURVEYORS					1			Designation FD24-CAD-06		
D	RILLIN	IG L	OG	DIVISION North Atlantic	Division				d District OF	ет 1 1 sне	
				22D0017		9. COC	RDIN	ATE S	YSTEM HORIZONTAL VER	TICAL	\neg
				J24F0024 ace Exploration of	New Haven Harbor			-	nnecticut NAD83 E	MLLW Roller)	-
2. HOL	E NUMBE	R	LC	CATION COORDINAT	ES	11. MA	NUFA	CTUR	ER'S DESIGNATION OF DRILL	,	
	24-CAD			N 658,062.2 E 9	954,770.9	AD ⁻ 12. TO			E-55, autohammer efficiency 83.2% (C	08/30/23 TURBED	
Aqu	ifer Dri	lling		ing (ADT) - A Cas	cade Company	12.10	.,	uvn · Ll	19		
	e of dr (Marm					13. TO	TAL N	UMBE	R CORE BOXES 0		
5. DIRE	CTION C	F BOF		DEG FROM	BEARING	- 14. ELE	EVATIO	ON GF	ROUND WATER N/A		
	/ERTICA NCLINED			VERTICAL		15. DA	TE BO	RING	STARTED COMPLET	/5/24	
6. THIC	KNESS (DF OV	ERBURD	EN >93	3'	16. ELE	EVATIO	ON TC	P OF BORING -8.5' (Measured in field)		
7. DEP	TH DRILL	.ED IN	TO ROCI	K ()'				RECOVERY FOR BORING N/A		
8. TOT	AL DEPT	h of i	BORING	93	3'	- 10. 510			Pugh, PG, Geologist		
ELEV	DEPTH	GEND		FIELD CLASSIFICAT	ION OF MATERIALS	%	No.			ws/ 5 ft	N-Value
ELEV	DEPTH	LEGE		(Descr	iption)	RE	Samp	RQD %	REMARKS	Blows/ 0.5 ft	°∼N
	-		ORGA	NIC SILT (OH) (2.5Y ft, homogeneous, little	3/1), very dark gray, wet,	10) ss-0	1	USCS - Gradation results and classification provided by CDM Smith Laboratory		0
	+		fragme	ents, Organic Sedimen	ts				Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on	WOR/2.0	F
	F					10) ss-0	2	all samples Gravel: 0; Sand: 9; Fines: 91; LL: 89; PI: 46;		
	F					10) ss-0	3	MC: 102; OH	0	
-24.2	15.7						J 00-0	3			Ť
-24.2	- 15.7	-	ORGAI	NIC CLAY (OH) trace	shell fragments, no fine	10) SS-0	4	-		0
	F		sand							0 WOR/2.0	
	+					10) SS-0	5			0
	È.					10				WOR/2.0	<u> </u>
	-					10) SS-0	6	Gravel: 0; Sand: 9; Fines: 91; LL: 104; PI: 65; MC: 90; OH	WOR/2.0	0
	F					10) ss-0	7	-	0 0	0
-44.5	36.0						-	1		WOR/2.	1
-++.0	_ 00.0	$\overline{\mathbb{N}}$	POOR	LY GRADED SAND V	VITH SILT (SP-SM) (5YF	2 65	; SS-0	8	1		10
-49.2	-40.7			ark reddish brown / gra n dense, homogeneou							
	L		Fine to	coarse sand, trace fir	ne gravel	65	5 SS-0	9	Gravel: 4; Sand: 89; Fines: 7; MC: 19; SP-SM Switched from drag rotary bit to tricone roller		11
-54.5 -56.5	46.0	-	No fine	aravel		60) SS-1	0	bit, drive 5ft of casing drive 5ft of casing	5	7
00.0		1	SILT (N	ML) (2.5YR 4/3), reddi	sh brown, stiff to very sti	/		Ť			<u> </u>
	F			enéous, trace fine sar Marine Silts	nd, some mica,	95	i SS-1	1	1		8
	Ľ									5	
	F					10) SS-1	2	Gravel: 0; Sand: 3; Fines: 97; MC: 30; ML	$\begin{pmatrix} 4\\ 4\\ 3\\ 6 \end{pmatrix}$	7
	F					10) SS-1	3	4		19
-72.5	64.0				/3), reddish brown, mediu		5 33-1	Ĭ		9 10 9 7	
77 -			dense,	homogeneous, fine sa) SS-1	4	1	9 13	26
-77.5	<u>- 69.0</u> -			Marine Sands	SP) (2.5YR 4/3), reddish	[1			
<u> </u>	-		brown,	medium dense, homo	ogeneous, fine sand, trac	e 10) SS-1	5]		16
-83.5	- 75.0 -	11	silt, and		/3), reddish brown, mediu	/_			4		
-88.5	80.0			homogeneous	, o, requisit brown, mean	10) SS-1	6		8 6 7 12	13
					/3), reddish brown, very) SS-1	7	-	5 7	16
-92.5	84.0			omogeneous, trace mi LY GRADED SAND (S	ca, <u>sandy</u> SP) (2.5YR 4/3), reddish			1		9 <u>14</u>	<u> </u>
	Ĺ		brown,	very dense to dense,	homogeneous, fine sand) SS-1	8	1	35 45 44 53	100+
	F		trace si	.IL							F
-101.5	- 93.0		1	BOTTOM OF BOR		10) SS-1	9			41
				minated at EL -101.5'	MLLW in POORLY GRA					<u></u>	
		Bo	oring con	aucted from Northsta	r Marine Services, Inc	Northsta	ar L/B	VISION	1		
l											

ENGINEERS * SURVEYORS					Designation FD24-RC-01	_	
DRILLING LOG	DIVISION North Atlantic Division	INSTALL			I District OF		1 EETS
	S22D0017	9. COOF	RDINA	TE SY	STEM HORIZONTAL VERTION		
TASK ORDER NO.: W912W. PROJECT NAME: Subsurfa							
2. HOLE NUMBER	OCATION COORDINATES N 643,953.1 E 954,939.9	11. MAN			R'S DESIGNATION OF DRILL E-55, autohammer efficiency 86.5% (1	10/17/	24)
3. DRILLING AGENCY	· · · · · · · · · · · · · · · · · · ·	12. TOT					
Aquifer Drilling & Test 4. NAME OF DRILLER	ing (ADT) - A Cascade Company	40 707				0	
Nick Marmolejo			-		CORE BOXES 1		
5. DIRECTION OF BORING	DEG FROM BEARING VERTICAL	15. DAT			STARTED COMPLETE	D 3/24	
6. THICKNESS OF OVERBURDE	n 14.3'	16. ELE	VATIO	N TOF	P OF BORING -39' (Measured in field)		
7. DEPTH DRILLED INTO ROCK	7'				ECOVERY FOR BORING 85%		
8. TOTAL DEPTH OF BORING	21.3'				Pugh, PG, Geologist		
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
gray, s	LY GRADED SAND (SP) (2.5Y 3/1), very dau aturated, very loose to medium dense, rapid cy, fine to medium sand, trace silt, trace				USCS - Gradation results and classification provided by CDM Smith Laboratory; Gravel: 0; Sand: 97; Fines: 3; MC: 24; SP	0 0 1 1	 1 /2
	sand, subangular to subrounded Marine				Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples	6 5 4	
		5	SS-02			6	9
					switch from continuous sampling to 5ft intervals to stabilize 4in casing quickly due to strong undercurrents		
							Ē
-45.7 6.7							-
– (7.5YR	R 3/4), dark brown					4 6 8	Ŀ
		25	SS-03	5			14 -
-49.0 10.0							
SILTY	SAND (SM) (7.5YR 3/4), dark brown , ted, medium dense, rapid dilatancy, very fine trace mica						-
						10 10 9	-
		75	SS-04	+		9	19
-53.3 14.3					switch from roller bit to wireline coring setup		
					set 3inch casing within 4inch casing in order to create good seal for NQ2 core drilling - rig	100 100/0.0	100
– ∬∛.⊀ black p	RED GRANITE SCHIST slightly weathered, pinkish white, medium crystalline, K-feldspar,				chatter while 4inch is advanced R1a (15.9'-16.2') UCS=18.69 Ksi	100/0.0	100 [/0 -
hard, s	r, Plagioclase, Biotite present, very hard to lightly to moderately fracture spacing, near				Youngs Modulus at failure=5,915.9 Ksi 0-10° joint at 16.3'		F
	nal joints with iron oxidation on rough surface	s			0-5° weathering mineralization vein at 17.3'		F
		85	Run	82	R1b (18.2'-18.5') UCS=21.47 Ksi		E
			'		Youngs Modulus at failure=7,144.1 Ksi		F
					heavily altered mineralization containing chlorite between 19.1'-19.9'		F
							F
-60.3 21.3							-
	BOTTOM OF BOREHOLE AT 21.3 ft minated at -60.3' MLLW in ALTERED GRAN nducted from Northstar Marine Services, Inc.			/B Vi	sion		
FORM 1836-A			Bori	ina	Designation ED24_BC_01 St	HEET	1 of 1

ENGINEERS * SURVEYORS		,			ng E)esig	nat	tion	F	D24-RC-01
CORE LOG	DIVISION North Atlantic Division	INSTA			and	Distrio	ct			SHEET 1 OF 1 SHEETS
CONTRACT NO .: W912DS	22D0017	9. COC	ORDI	NATI	E SYS	STEM				ZONTAL VERTICAL
TASK ORDER NO.: W912W	I24F0024 ce Exploration of New Haven Harbor									IAD83 MLLW
	CE EXPloration of New Haven Harbor									
FD24-RC-01	N 643,953.1 E 954,939.9						auto			ficiency 86.5% (10/17/24)
3. DRILLING AGENCY	ng (ADT) - A Cascade Company	12. TO	DTAL	SAM	PLES			DIS	TURB	ED UNDISTURBED 6 0
4. NAME OF DRILLER		13. TC	TAL	NUM	IBER	CORE E	BOXE	: S	1	
Nick Marmolejo	DEG FROM BEARING	14. EL	EVA	ΓION	GRO	UND W/	ATEF	र	-	
	VERTICAL	15. DA		ORI	NG		ST	ARTED		COMPLETED
						OF BOF			23/24	-39.0
6. THICKNESS OF OVERBURDE						COVER			NG	85%
7. DEPTH DRILLED INTO ROCK	7'		GNAT	URE	AND	TITLE (OF IN	ISPECT	OR	
8. TOTAL DEPTH OF BORING	21.3'					ugh, F			ogist	
Ledend Ledend	FIELD CLASSIFICATION OF MATERIALS (Description)	3	Run No.	No Box	Rec %	Frac. per foot	RQD %	Drill Tim (Rate ft/hr)	W _x	REMARKS
-53.3 14.3										switch from roller bit to wireline coring setup
-54.3 15.3	<u> </u>									set 3inch casing within 4inch
	ALTERED GRANITE SCHIST slightly		Run 1	1		0		(6)		casing in order to create good seal for NQ2 core drilling - rig
	crystalline, K-feldspar, Quartz, Plagioclas	se,	'			U		(0)		chatter while 4inch is
	Biotite present, very hard to hard, slightly moderately fracture spacing, near horizon	nal				1		(6)		R1a (15.9'-16.2') UCS=18.69 Ksi
	[/] joints with iron oxidation on rough surface	es						(0)		Youngs Modulus at failure=5,915.9 Ksi
M.J.	N					0		(3)		0-10° joint at 16.3' 0-5° weathering mineralization
					85		82	(0)		vein at 17.3'
M.J	.8				00	0	02	(7)		R1b (18.2'-18.5') UCS=21.47 Ksi
	t v							(')		Youngs Modulus at failure=7,144.1 Ksi
	1/]					1		(3)		heavily altered mineralization containing chlorite between
								(0)		19.1'-19.9'
	·<					0		(4)		
-60.3 21.3	×1							(+)		-
	ated at -60.3' MLLW in ALTERED GRANITE nducted from Northstar Marine Services, Inc			nr L/I	3 Vis	ion				
			В	orir	ng E	Desig	nat	tion	F	D24-RC-01 SHEET 1 of 1

	URVEYORS					Bor	ing	Designation FD24-RC-02			_
DR		GL	OG	DIVISION North Atlantic Division	INSTAL	LATIO	N	SHEE		1 IEETS	1
CONTRA TASK OF				22D0017 J24F0024	9. COO	RDINA	TE SY	STEM HORIZONTAL VERT			
PROJEC	T NAME:	Sı	ubsurfa	ce Exploration of New Haven Harbor	10. SIZI	E AND	TYPE	OF BIT NQ2 series 10 bit			1
2. HOLE FD24	NUMBEF			DCATION COORDINATES N 648,012.9 E 954,452.4				R'S DESIGNATION OF DRILL IE-55, autohammer efficiency 86.5% ((10/17	/24)	
3. DRILLI	ING AGE	NCY	•		12. TOT			S DISTURBED UNDIS	TURBED		1
4. NAME	OF DRIL	LER		ng (ADT) - A Cascade Company	13. TO	AL NU	JMBEF	CORE BOXES 2	0		1
5. DIREC	Marmo			DEG FROM BEARING				OUND WATER N/A			1
🖂 VE	CLINED	DOIN		VERTICAL	15. DAT				ED 31/24		
6. THICK	NESS OF	OVE	RBURDE	N 26.4'				P OF BORING -21.4' (Measured in field)			4
7. DEPTH	H DRILLE	D INT	O ROCK	9.8'				ECOVERY FOR BORING 92%			-
8. TOTAL	DEPTH		ORING	36.2'		Lind		Pugh, PG, Geologist			
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	
-	_		black, s	NIC SILT WITH SAND (OL) (2.5Y 2.5/1), saturated, very soft, low plasticity, rapid cy, fine sand, Organic Sediments	50		1	USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch	0 0 0 WOR/2.0	0	
-	_							diameter, 24 inches long split spoon used on all samples switch from continuous sampling to 5ft intervals to stabilize 4in casing quickly due to marginal			
-	_							weather conditions torvane (1.0) (uncorrected): 0.0 kg/cm ²			F
20 5	- 71				114	1 SS-02	2	pocket penetrometer (uncorrected): 0.0 tsf Gravel: 0; Sand: 31; Fines: 68; MC: 89; ML	0 1 2	2/0	ŧ,
-28.5	7.1			SAND (SM) (2.5Y 5/2), grayish brown,		SS-0	3	-	1 WOR/0.5		Ē
-	_		coarse	ed, very loose to loose, rapid dilatancy, fine sand, trace fine gravel, some shell fragmen Sediments							
	_							-	5		ŧ.
-	-				50	SS-04	4		5 3 4 3	7	
-	-										Ē
-	-										F
	_							-	0		Ł
-	-				50	SS-0	5		0 3 WOR/1.5	0	F 1
-40.4	- 19.0						1				Ē
	_		brown ,	/ITH SAND (ML) (5YR 3/3), dark reddish , wet, stiff, rapid dilatancy, some fine sand,							
	-		with mid	υa	50	SS-06	6	torvane (1.0) (uncorrected): 2.0 kg/cm ² pocket penetrometer (uncorrected): 0.75 tsf	3 3 6 14	9	F
-44.4	23.0						-				÷ 2:
	-			GRADED GRAVEL (GW) (2.5Y 2.5/1), black nse, Glacial Till	κ,			rig chatter as 4inch roller is advanced to next sample interval			Ē
	-				33	SS-0	<u>z</u> —	roller and spoon refusal on glacial till. switch to	100 \100/0.3	100	
-47.8	- 26.4 -	1	ALTER	ED GRANITE SCHIST moderately weather				rock coring setup		\ <u>_/4_</u>	1
	-		to slight	tly weathered, yellowish white and black, n crystalline, K-feldspar, Quartz, Plagioclase	80	Run 1	37				F.
EAA		NI N NI N	Biotite p	present, very hard to hard, highly to ately fracture spacing, iron oxide staining,	,			2 near vertical cross fractures from 28.4'-29.2'			
-51.4	30.0	劇	vertical	to near vertical fractures with rough surface	•		-				E
	_	ŴŻ	contain	ing iron oxidation staining				near vertical fracture from 30.6'-33.0'			F
	-	1 \1 {1/1			100	Run	61				F
	-					2		near vertical fracture from 33.6'-34.8'			- 3
	-	NA						45° fracture at 35.3'			F
-57.6	- 36.2	1.2711.		BOTTOM OF BOREHOLE AT 36.2 ft				R2(35.4'-35.7') UCS=15.56 Ksi Youngs Modulus at failure=5,282.7 Ksi	\vdash		ſ
				minated at -57.6' MLLW in ALTERED GRAN minated early due damage to NQ2 inner bar		HIST	-	י סטוועס ואוסעטועס מג ומוועוכ-ס,202.1 הסו	J		
		Bo	oring con	nducted from Northstar Marine Services, Inc.	North	istar L	_/B Vi	sion			
	1836-4							Decignation ED24 BC 02 S			Ļ

							В	orir	na E	Desid	inat	ion	F	D24-RC-02	
(CORE	LO	G		DIVISION	INSTA	LLA	ION					-	SHEET 1]
	ACT NO.:			152	North Atlantic Division	9. CO				Distri TEM	ct	:	HORI	OF 1 SHEETS	-
TASK OI	RDER NO	.: W	912	WJ2	24F0024	Sta	ate I	Plar	ne - I	Conn		ut	N	AD83 MLLW	
	T NAME: NUMBEF				e Exploration of New Haven Harbor							NQ2		es 10 bit	
FD2	4-RC-0)2			I 648,012.9 E 954,452.4	AD	T-2	73,	CME	E-55, a		namm	er et	fficiency 86.5% (10/17/24)	
	ING AGE		& Te	estin	ig (ADT) - A Cascade Company	12. TC	DTAL	SAM	IPLES			DIS	TURB	ED UNDISTURBED 9 0	
4. NAME	OF DRIL	LER			g (/12 1) / Cubbado Company	13. TC	TAL	NUM	1BER	CORE	BOXE	_; S	2		
	Marmo				DEG FROM BEARING	14. EL	EVA	TION	GRO	UND W				1	
	ERTICAL				VERTICAL	15. DA	ATE E	BORI	NG		STA	ARTED 8/3	31/24	COMPLETED 4 8/31/24	
	NESS OF	OVE	RBUF	RDEN	26.4'	16. EL	EVA	TION	TOP	OF BO	RING			-21.4	
7. DEPT	H DRILLE	D INT	O RO	СК	9.8'									92%	
8. TOTA	L DEPTH	OF B	ORING	G	36.2'	18. SI						SPECT Geolo			
ELEV	DEPTH	Fracture Drawing	Fracture Number	Legend	FIELD CLASSIFICATION OF MATERIALS (Description)		Run No.	-	Rock	Erac. Frac.	ROD %	Drill Time (Rate ft/hr)	W _x	REMARKS	
-47.8	26.4		1		ALTERED GRANITE SCHIST moderately weathered to slightly weathered, yellowis	y				1		(3)			-
	_	Yd	2		white and black, medium crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to moderately fracture spacing, iron oxide		Run 1	Box 1	80	1	37	(3)			
	_		-		staining, vertical to near vertical fractures rough surface containing iron oxidation	with				0		(3)		2 near vertical cross fractures from 28.4'-29.2'	
-51.4	30.0		-	深行						0		(5)			
			3							1		(5)		near vertical fracture from	- 30
	_		4							1		(4)		30.6'-33.0'	-
	_	•	5							1		(3)			-
	_		6				Run 2	Box 1	100	1	61	(3)		near vertical fracture from	-
	_	6	7	家族						1		(4)		33.6'-34.8'	-
-57.6	- 36.2	h	8	民気が						1		(4)		45° fracture at 35.3' R2(35.4'-35.7') UCS=15.56 Ksi	- 35
-01.0		Borinc	ı tern	ninate	ed at -57.6' MLLW in ALTERED GRANITE	SCHI	ST		I		1			Youngs Modulus at failure=5,282.7 Ksi	1
	E	Boring	, tern	ninate	de early due damage to NQ2 inner barrel ducted from Northstar Marine Services, Inc			ar L/I	B Vis	ion					
															J

ENGINEERS *	BURVEYORS									Designation FD24-RC-03			_
DF	RILLIN	IG I	LO	G	North Atlantic Division	1	NSTALL New		-	I District OF		1 IEETS	
CONTR	ACT NO.:	V	V91	12DS2	2D0017	g	. COOF	RDINA	TE SY	STEM HORIZONTAL VERT	ICAL		1
					24F0024						MLLW	/	4
	CT NAME		Sub		e Exploration of New Have					OF BIT NQ3 series 8 bit R'S DESIGNATION OF DRILL			-
	4-RC-(645,964.0 E 954,427.6					E-55, autohammer efficiency 83.2% (08/30/	(23)	
	ING AGE			Taatin			2. TOT/	AL SA	MPLE	• • •)	1
Aqu I. NAMI	E OF DRI	IIIN <u>G</u> LLER	<u>j α</u>	resur	g (ADT) - A Cascade Com		3 TOT		MREE	: 12 : R CORE BOXES 1	0		1
Nick	k Marm	olej	0			1		-		OUND WATER N/A			1
×ک	CTION OI (ERTICAL NCLINED	-	RINO	3	DEG FROM BEARIN VERTICAL	NG	5. DATI			STARTED COMPLET	ED 16/24		
3. THIC	KNESS O	FOV	/ERE	BURDEN	11.8'	1	6. ELE\	/ATIO	N TOF	POF BORING -28.7' (Measured in field)			1
. DEPT	H DRILLI	ED IN	ITO	ROCK	19.6'					ECOVERY FOR BORING 88%			
3. TOTA	L DEPTH	I OF E	BOR	RING	31.4'	1				D TITLE OF INSPECTOR Pugh, PG, Geologist			
		_							<u> </u>		ft s/	en	1
ELEV	DEPTH				FIELD CLASSIFICATION OF MATER (Description)		REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	
	-		V	ery loo:	AND (SM) (2.5Y 2.5/1), black, s se to loose, rapid dilatancy, fine bangular to subrounded	to medium	60	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory; Gravel: 0; Sand: 83; Fines: 17; MC: 27; SM Autohammer, 140lbs, 30in drops, 2-inch	0 0 2 WOR/1.0 WOH/0.5	0	Ē
-32.6	3.9						95	SS-02		diameter, 24 inches long split spoon used on all samples	1 2 4 6	4 /5	Ē
-32.0	- 3.9		Т	race sł	nell fragments		55	SS-03	6		10 4 2 1	6	
-34.7	6.0				GRADED SAND WITH SILT					_	1 3 2 4		ŧ
	-		m	nedium	₋ (SP-SM) (5Y 5/1), gray , satur dense, rapid dilatancy, fine to c Il fragments, trace gravel	ated, loose to coarse sand,	90	SS-04		Gravel: 13; Sand: 82; Fines: 5; MC: 17; SP-SM	4 8 7	5	Ē
							45	SS-05	;		4 2	11	
-39.3	10.6	0	l v	VELL G	RADED SAND WITH SILT ANI	D GRAVEL	75	SS-06			10 21 32 100/0.1	53	È
-40.5	11.8		2 s	aturate) (10YR 3/2), very dark grayish d, very dense, stratified, fine to e to medium gravel, and silt, Ti	coarse sand,	0			switch from roller bit to wireline coring setup set 3 inch casing within 4 inch casing in order to			-
-42.1	- 13.4	$\langle h \rangle$	J۲		D GRANITE SCHIST slightly w					create good seal for NQ3 core drilling - extremely hard drilling with roller rock bit (~45			E
	-		∬ m	noderat	ely weathered, pale yellowish w	hite and	95	Run 1	50	minutes) 40° fracture at 14.4'			F
-44.1	-15.4	版			nely crystalline, K-feldspar, Qua ase, Biotite present, very hard to					70° fracture at 15.1'			E
	-		K∣ fr	actures	ely to highly fracture spacing, n with iron oxidation and epidote surfaces, clay mineralization alo	on rough	90	Run 2	30	45° fracture at 16.4' R2 (17.1'-17.4') UCS=8.86 Ksi			
-47.1	- 18.4	KI.			o moderately weathered joint su					Youngs Modulus at failure=5,375.7 Ksi 110° fracture at 17.4'			F
	-		$\frac{\gamma}{1}$							150° fracture at 18.4'			E
	-		1							180° fracture at 19.4'			F
	-		۸ t				94	Run 3	68	120° fracture at 20.4' R3 (20.8'-21.0') UCS=21.04 Ksi Youngs Modulus at failure=7,815.4 Ksi			
FG .		(A)	1							0-10° joint at 21.7'			F
-52.1	- 23.4		ХM	ledium	crystalline, moderately to slight	lv fracture		-		140° fracture at 23.0'			F
	F		n 1	pacing	, stame, moustatoly to olight	.,							F
		KI.						Run					F
	F		γ				98	4	96	150° fracture at 26.0'			F
	F	高	4										F
-57.1	- 28.4	<u>الأمار</u>	М.		a harring a the second s					-			F
	F	N.			ely weathered, finely crystalline fracture spacing	, moderately				0-10° joint at 29.2'			F
	-	欧	7	·	6								F
-60.1	- 31.4	И\) !	Ņ				100	Run 5	23	near vertical fracture from 30.2'-31.4' with near horizontal jointing throughout			F
		P	Rorin		BOTTOM OF BOREHOLE AT 3 inated at EL -60.1' MLLW in AL			SCHI	ST.				
					lucted from Northstar Marine Se					sion			
	4020	•							_				1

	SURVEYORS							B	orir	ng D	esig	nati	on	FI	D24-RC-0)3	
	CORE	10	G			ISION	INSTA	ALLA	TION							SHEET 1	٦
				<u> </u>		North Atlantic Division	Ne 9. CO				Distri	ct					5
TASK C	RACT NO.: DRDER NO	D.: W	/912	WJ2	24F(0024	Sta	ate I	Plar	ie - (Conn		ut	١	IZONTAL NAD83	VERTICAL MLLW	
						xploration of New Haven Harbor									es 8 bit		
FD2	E NUMBEI	3		•		ON COORDINATES 5,964.0 E 954,427.6	AD	T-2	40,	CME	-55, a			er ef	ficiency 83.	2% (08/30/23)	
Aqu		ling		estir	ng (A	ADT) - A Cascade Company	12. TC	DTAL	. SAN	1PLES	6		DIS		3ED 12	UNDISTURBED 0	
							13. TC	DTAL	. NUM	/BER	CORE	BOX	ES	1			
	CTION O					DEG FROM BEARING	14. EL	EVA		I GRO		VATE	R				
\boxtimes	/ERTICAL					VERTICAL	15. DA	ATE I	BORI	NG		ST	ARTED 7/1	5/2		MPLETED 7/16/24	1
6. THIC	KNESS O	FOV	ERBL	JRDE	N						OF BC				-28.7		
7. DEP		ED IN	TOR	оск		19.6'									88%		_
8. TOT	AL DEPTH	I OF I	BORI	NG		31.4'	18. SI		ndsa	ay P	ugh, l	°G	NSPEC Geolo				
ELEV	DEPTH	Fracture Drawing	Fracture Number	Legend		FIELD CLASSIFICATION OF MATERIALS (Description)	6	Run No.	I No No	Rock 9	Erac. Per foot	RQD %	Drill Time (Rate ft/hr)	W _x	F	REMARKS	
-40.5	11.8			1.2.						0					switch from	roller bit to wireline	╞
-42.1	- 13.4		1	K.	/ 										coring setu set 3inch ca	asing within 4inch	ŀ
	+		2	(jii)	∠ AL /∣ to	TERED GRANITE SCHIST slightly weath moderately weathered, pale yellowish wh	nerea ite	Rur	Box	95	1	50	(11)		casing in or seal for NQ	der to create good 3 core drilling -	F
-44.1	- 15.4		3	M)	∖≬ an	id black, finely crystalline, K-feldspar, Qua	artz,	1	1		1		(8)		extremely h	ard drilling with	F
	-			13	∑ Pla / mo	agioclase, Biotite present, very hard to ha oderately to highly fracture spacing, near	rd,				1		(12)		40° fracture	oit (~45 minutes) e at 14.4'	F
	F		4	N	ve	rtical fractures with iron oxidation and epi			Box	90	1	30	(3)		70° fracture 45° fracture		F
47.1	- 10 /		5) on	rough fracture surfaces, clay mineralizat ong joints with slightly to moderately weat	ion hered	2	1		1		(6)		R2 (17.1'-1	7.4') UCS=8.86 Ksi	
-47.1	- 18.4		6	ΓX;		nt surfaces	norea	-			2		(3)		Youngs Mo failure=5,37	dulus at	
	Γ		7	剧	/]										110° fractu	re at 17.4'	F
	-		-	М\).	M						2		(5)		150° fractur 180° fractur		F
	+		8	11/1/1				Rur 3	Box	94	0	68	(5)		120° fractu	re at 20.4'	F
	+		9	KI	/				'		1		(5)		R3 (20.8'-2 Ksi	1.0') UCS=21.04	┢
-52.1	23.4		9	MV	Ņ						1		(5)		Youngs Mo		╞
	-	1	-	12		edium crystalline, moderately to slightly					0		(5)		failure=7,81 0-10° joint a		F
			-	X	/ fra	acture spacing					0		(4)		140° fractu		F
			10	M	<u>}</u>			Dur	Box	08	1	96	(5)				
	Γ		-	13	4			4	1	30		30	. ,		150° fractu	re at 26.0'	Γ
	F		11	N	(1						0		(5)				F
-57.1	28.4		12		Ĥ						1		(6)				F
	+		13	13		oderately weathered, finely crystalline, oderately to highly fracture spacing					1		(4)		0.40% is inter	-+ 00 01	F
	-		14	$\langle D \rangle$	N						6		(2)		0-10° joint a		┢
-60.1	- 31.4		14	1	ć.					100	5	23	(2)			al fracture from with near horizontal	╞
		Roring		hinat	ad at	EL -60.1' MLLW in ALTERED GRANITE	: SCHI	<u>\</u>	1)ointing thro		1
						ed from Northstar Marine Services, Inc - N			/B Vi	sion							

ENGINEERS * SURVEYORS				Designation FD24-RC-04	
DRILLING LOG	INSTAL			District OF 1	1 SHEET
CONTRACT NO.: W912DS22D0017	9. COO			STEM HORIZONTAL VERTICAL	_
TASK ORDER NO.: W912WJ24F0024				onnecticut NAD83 MLI	_W
PROJECT NAME: Subsurface Exploration of New Haven Harbor 2. HOLE NUMBER LOCATION COORDINATES				OF BIT NQ2 series 10 bit R'S DESIGNATION OF DRILL	
FD24-RC-04 N 646,516.4 E 954,612.2	ADT	-273	, CM	E-55, autohammer efficiency 86.5% (10/	
3. DRILLING AGENCY Aquifer Drilling & Testing (ADT) - A Cascade Company	12. TOT	AL SA	MPLE	S DISTURBED UNDISTURE	
4. NAME OF DRILLER	13. TOT	AL NU	MBEF	CORE BOXES 2	
Nick Marmolejo 5. DIRECTION OF BORING DEG FROM BEARING	- 14. ELE	VATIO	N GRO	OUND WATER N/A	
VERTICAL VERTICAL	15. DAT			STARTED COMPLETED 8/16/24 8/16/2	24
6. THICKNESS OF OVERBURDEN 8'				P OF BORING -25.1' (Measured in field)	
7. DEPTH DRILLED INTO ROCK 27.5'				ECOVERY FOR BORING 96%	
8. TOTAL DEPTH OF BORING 35.5'		Linds		Pugh, PG, Geologist	
ELEV DEPTH D	% REC	Samp No.	RQD %	REMARKS	0.5 ft N-Value
POORLY GRADED SAND WITH SILT (SP-SM) (2.5Y 3/1), very dark gray, saturated, medium dens to very loose, homogeneous, rapid dilatancy, fine t	se 55	SS-01		provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch	⁰ ³ ⁵ 8
coarse sand, some shell fragments, subangular to		SS-02		diameter, 24 inches long split spoon used on all samples	4 5 12
		00-02		Gravel: 1; Sand: 92; Fines: 8; LL: NP; PI: NP; MC: 22; SP-SM	5 12
	30	SS-03			wor
-33.1 8.0		SS-04			
ALTERED GRANITE SCHIST moderately weather to slightly weathered, pale yellowish white and black finely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to moderately fracture spacing, near vertical fractures with rough surfaces that are slightly to moderately weathered and contain iron oxidation, near horizon	ck, 100 s	Run 1	66	switch from roller bit to wireline coring setup set 3inch casing within 4inch casing near vertical fracture from 8.0'-11.4' with horizontal jointing throughout 60° and 90° cross fractures at 12.0' 60°, 70° and 90° cross fractures at 12.4'	
-43.1 18.0 1/1	94	Run 2	70	40° fracture at 15.5' R2 (16.0'-16.3') UCS=27.19 Ksi Young's Modulus at failure=30,472.4 Ksi 0° joint at 17.3' 170° fracture at 17.6'	
N\/.⟩ Slightly weathered to unweathered, medium N//.⟩ Crystalline N//.⟩	96	Run 3	74	intensely fractured at 18.8' 120° fractured at 19.6' R3 (20.7'-21.1') UCS=12.06 Ksi Young's Modulus at failure=8,900.2 Ksi 0-5° joint at 21.5'	
48.1 23.0 4777 Moderately to slightly fracture spacing	-			_ 0-5° joint at 21.7'	
	96	Run 4	88	20-30° joints from 26.6'-27.0'	
Finely crystalline, increase in pyroxene, biotite and hornblende mineralization	100	Run 5	98	0° joint at 31.8'	
$\begin{array}{c c} -58.1 & 33.0 \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & $	80	Run 6	80		
-60.6 〒35.5 M(/) 約 BOTTOM OF BOREHOLE AT 35.5 ft					
Boring terminated at -60.6' MLLW in ALTERED GRAN Boring conducted from Northstar Marine Services, Inc	NITE SC	HIST star L	/B Vi	sion	

1 OF 1 SHEETS VERTICAL MLLW

12

WOR/20

8 WOR/08

0

6

11

17

22

28

33

ENGINEERS * SU	URVEYORS				-					ng E)esi <u>c</u>	inat	ion		<u>D24-RC-</u>		_
c	ORE	LO	G		D	NVISION				and	Distri	ct				SHEET 1 OF 1 SHEETS	
CONTRA	CT NO.:	W	912	DS2	22	2D0017	9. CC	ORD	INATI	E SYS	STEM			HORI	ZONTAL	VERTICAL	
TASK OR	RDER NO					IF0024	St	ate	Plar	ie -	Conn	ectic	ut	Ν	IAD83	MLLW	
PROJEC	T NAME:	: Sı				Exploration of New Haven Harbor									es 10 bit		
2. HOLE	NUMBEF			•		TION COORDINATES 646,516.4 E 954,612.2							TION OI			.5% (10/17/24)	
3. DRILLI										IPLES			DIS			JNDISTURBED	
			& Te	estir	ng	(ADT) - A Cascade Company									10	0	
4. NAME Nick	OF DRIL						13. T	OTAL	NUM	1BER	CORE	BOXE	S	2			
5. DIREC						DEG FROM BEARING	14. E	LEVA	TION	GRO	UND W						
	ERTICAL CLINED					VERTICAL	15. D	ATE E	BORI	NG		ST	ARTED 8/1	6/24		/PLETED 8/16/24	
6. THICK	NESS OF	F OVE	RBUF	RDEN	١		16. E	LEVA	TION	TOP	OF BO	RING			-25.1		
7. DEPTH	H DRILLE	D INT	O RO	СК		27.5'							R BORII		96%		
8. TOTAL	. DEPTH	OF B	ORINO	3		35.5'	10. 3	Lii	ndsa	ay P	ugh, l	PG	Geolo				
		ure ing	ure oer	pu		FIELD CLASSIFICATION OF MATERIALS				Rock	Core		, te e				1
ELEV	DEPTH	Fracture Drawing	Fracture Number	Legend		(Description)		Run No.	S Box	Rec %	Frac. per foot	RQD %	Drill Time (Rate ft/hr)	W _x	F	REMARKS	
-33.1	8.0	12	1 2			ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale	/				5		(8)			al fracture from ith horizontal	t
		4		\mathbb{N}	st.	yellowish white and black, finely crystallin	e,				7		(5)		jointing thro		- 10
	_	12	3	[j.\.1	ŕ	K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to		Rur	Box	100	5	66	(6)				- 10
-	-	1	4	同時	/]	moderately fracture spacing, near vertica	l	1	1		4	1	(4)				-
-38.1	- 13.0	2	5	n	Ņ	fractures with rough surfaces that are slig to moderately weathered and contain iror	htly				5		(5)			° cross fractures at	F
-00.1	10.0	7	6		Į	oxidation, near horizontal joints with iron oxidation					1		(6)		12.0' 60°, 70° an		F
-	-		-	K,	4	ondation					0		(6)		fractures at	12.4'	-
-	-	M	7	M. / . /	Ŷ			Rur	Box	94	1	70	(6)				- 15
-	-	ſ	-		4			2	1		0		(6)		40° fracture R2 (16.0'-1	e at 15.5' 6.3') UCS=27.19	╞
	-	-	8		Ň						2	-	(6)		Ksi Young's Mo	,	F
-43.1	18.0	F	9	$\left + \frac{1}{2} \right $	Ę	Slightly weathered to unweathered, media	um	-			1		(0)		failure=30,4	172.4 Ksi	╞
-	-		10	紁		crystalline					1		. ,		0° joint at 1 170° fractu		F
-	-	\backslash	-	MV J	Ņ								(8)		intensely fra 120° fractur	actured at 18.8'	- 20
-	-	1.1	11		4			Rur 3	Box	96	0	74	(4)			1.1') UCS=12.06	-
-	-		-	K.	1						2	-	(4)		Ksi Young's Mo	odulus at	╞
-48.1	23.0		-	ľ₩.1	Ϋ́						0		(4)		failure=8,90	0.2 Ksi	F
	-		-	辺辺	1	Moderately to slightly fracture spacing					0		(3)		0-5° joint at 0-5° joint at	21.7	ŀ
	_		_	N) !	Ņ						0		(3)				- 25
	_		12	$ \cdot\rangle$	ţ			Rur	Box	96	0	88	(5)				
	_	E.	12	KI	/			4	'		4		(5)		20-30° ioint	s from 26.6'-27.0'	L
-53.1	28.0	-	-	M' / .	X						0		(5)		20-00 joint	3 110111 20:0 -27:0	Γ
			-			Finely crystalline, increase in pyroxene, b and hornblende mineralization	iotite				0		(5)				Γ
	-		-	\mathbb{N}	1						0	1	(6)				
	-		-	[]. 	ŕ			Rur	Box	100	0	98	(5)				- 30
	-		13		1			5	2		1	1	(6)				-
E0 1	- 33.0		-	h) i	M						0		(7)		0° joint at 3	1.8'	F
-58.1	33.0		-	$ \cdot $	¥			-			0		(10)				F
	-		-	KI.	/			Rur	Box	80	0	80	(10)				F
-60.6	-35.5		-	MJ	X			6	2		-		(5)				- 35
		Dening					0011	ют									1

Boring terminated at -60.6' MLLW in ALTERED GRANITE SCHIST _________ Boring was conducted from Northstar Marine Services, Inc - Northstar L/B Vision

							Designation FD24-RC-05		
DRILLIN	G LOG	B DIVISION	: Division				I District OF		1 IEETS
CONTRACT NO.: TASK ORDER NO.	: W912	2DS22D0017 2WJ24F0024		9. COOF State	RDINA Plan	TE SY e - C	STEM HORIZONTAL VERT		
PROJECT NAME: 2. HOLE NUMBER		urface Exploration o	f New Haven Harbor				OF BIT NQ2 series 10 bit R'S DESIGNATION OF DRILL		
FD24-RC-0	5	N 646,697.0 E		ADT	-240	, CM	E-55, autohammer efficiency 83.2% (
3. DRILLING AGEN Aquifer Drill		esting (ADT) - A Ca	scade Company	12. TOT	AL SA	MPLE	S DISTURBED UNDIST	URBED	
4. NAME OF DRILI Nick Marmo	LER			13. TOT	AL NU	MBEF	CORE BOXES 0		
5. DIRECTION OF		DEG FROM	BEARING	14. ELE\	/ATIO	N GRO	OUND WATER N/A		
VERTICAL		VERTICAL		15. DATI	E BOF	RING	STARTED COMPLET	ED 1/24	
6. THICKNESS OF	OVERBU	IRDEN >17.	7'				P OF BORING -25.4' (Measured in field)		
7. DEPTH DRILLEI	d Into Ro	ОСК	0'				ECOVERY FOR BORING N/A		
8. TOTAL DEPTH		NG 17.	7'	l		say F	Pugh, PG, Geologist		
ELEV DEPTH	LEGEND		FION OF MATERIALS ription)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	ver	RGANIC SILT (OL) (2.5` ry soft, low plasticity, raj diments	(2.5/1), black, saturated bid dilatancy, Organic		SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples	0 0 0 WOR/1.7	0 /2
-28.5 - 3.1				55	SS-02		torvane (1.0) (uncorrected): 0.0 kg/cm ² pocket penetrometer (uncorrected): 0.0 tsf	0 0 2 WOR/1.5	0
20.0 - 0.1		TY SAND (SM) (2.5Y 3			SS-03	5	1		F
_	dila	turated, very loose to m atancy, fine to coarse sa bangular to subrounded	and, some shell fragment		SS-04	ļ		3 5 5 3	10
-32.9 7.5				50	SS-05		Gravel: 2; Sand: 76; Fines: 23; MC: 29; SM	3 2 2 4	4 =
	3/3	B), dark reddish brown ,	and, little fine to medium		SS-06	5		3 3 2 2	5
-35.6 -10.2	sat	turated, medium stiff, ra	/3), dark reddish brown , pid dilatancy, fine sand,	100	SS-07	,	torvane (1.0) (uncorrected): 0.75 kg/cm² pocket penetrometer (uncorrected): 0.25 tsf	2 2 4 9	6
-37.1 11.7	mic	ca							F
-38.0 12.6	?	B), dark reddish brown ,	and, little fine to medium	100			Gravel: 0; Sand: 27; Fines: 73; MC: 20; ML	17 20 13 9	33
-39.4 14.0	SA sat		/3), dark reddish brown ,		SS-09			0 0 4	
-		T CLAY (CH) (5YR 3/3) ft, laminated, high plasti	, dark reddish brown , we city, no dilatancy	ət, 100	SS-10		torvane (1.0) (uncorrected): 2.5 kg/cm ² pocket penetrometer (uncorrected): 0.5 tsf torvane (1.0) (uncorrected): 2.5 kg/cm ² pocket penetrometer (uncorrected): 0.25 tsf	4 WOR/1.0	4
-				50	SS-11			3 3 5 6	8 -
43.1 17.7	Boring Boring	g terminated at -43.1' Mi g terminated early due to	REHOLE AT 17.7 ft LLW in FAT CLAY. o mechanical breakdown star Marine Services, Inc.	- North			sion Designation FD24-RC-05 S		

	SURVEYORS								Designation FD24-RC-05A		
DF	RILLIN	G L	OG	DIVISION North Atlantic Div	vision				I District OF		1 IEETS
	ACT NO.:	••		22D0017		9. COOF	RDINA	TE SY	STEM HORIZONTAL VERT	ICAL	
				24F0024 ce Exploration of Ne	w Haven Harbor					MLLW	<u>/</u>
2. HOLE		र	LO	CATION COORDINATES		11. MAN	UFAC	TURE	R'S DESIGNATION OF DRILL		
	4-RC-C			N 646,706.8 E 954,	590.1	ADT 12. TOT			E-55, autohammer efficiency 86.5% (•	,
Aqui	ifer Dril	ling	& Testi	ng (ADT) - A Cascad	de Company	12. 101			7	0	,
	E OF DRIL								CORE BOXES 0		
5. DIREC	CTION OF	BOR		DEG FROM	BEARING	14. ELE	/ATIO	N GR	OUND WATER N/A	ED	
	ERTICAL			VERTICAL		15. DAT	EBOR	RING		14/24	
6. THICH	KNESS OF	F OVE	RBURDEI	N >20.6'					P OF BORING -25.4' (Measured in field)		
7. DEPT	'H DRILLE	D INT	O ROCK	0'					ECOVERY FOR BORING N/A		
8. TOTA	L DEPTH	OF B	ORING	20.6'			_inds		Pugh, PG, Geologist	_	
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION ((Description		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	-								Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples drilled down to previous sample interval from FD24-RC-05		
			FAT CL soft, lar	AY (CH) (5YR 3/3), dar ninated, high plasticity, i	k reddish brown , we no dilatancy	et, 100	\$S-10/	4	torvane (1.0) (uncorrected): 2.0 kg/cm² pocket penetrometer (uncorrected): 0.75 tsf	2 4 7 7	11
<u>-41.0</u> -41.6	15.6 - 16.2			TTH SAND (ML) (5YR 3			\$S-11/	4	torvane (1.0) (uncorrected): 1.0 kg/cm²		╎╵┠
<u> </u>	-		dilatanc	saturated, medium stiff cy, fine sand, mica .AY (CH) (5YR 3/3), darl		et, 100	SS-12/		pocket penetrometer (uncorrected): 0.75 tsf torvane (1.0) (uncorrected): 3.0 kg/cm ² pocket penetrometer (uncorrected): 1.5 tsf	6 8 14 13	
-43.0	17.6		medium	n stiff, high plasticity, no	dilatancy	/ 100					22
	-		4/3), bro	Y SAND WITH GRAVE	n dense to very dens		SS-13	' 	-	21 19	├ि
	-			latancy, fine to coarse s angular to subangular, c		5	SS-14			32 30	51
			9.4101,		uginonio	5	14				''
-46.0	20.6					100	SS-15				┢──┠
-46.1	20.7 1836-4	Bo Bo	oring tern	BOTTOM OF BOREHO ninated at -46.0' MLLW ninated early due to mee ducted from Northstar M	chanical breakdown				sion Designation FD24-RC-05AS		

	BURVEYORS								Designation FD24-RC-05	БB		_
DF	RILLIN	GL	OG	DIVISION North Atlantic Division		STALL New				HEET F 1 SI	1 HEETS	
CONTR	ACT NO.:	W	912DS	22D0017	9.	COOR	DINA	TE SY	STEM HORIZONTAL VI	ERTICAL		
				J24F0024					ONNECTICUT NO2 aprice 10 hit	MLLV	V	
				ace Exploration of New Haven Har					OF BIT NQ2 series 10 bit R'S DESIGNATION OF DRILL			
	4-RC-0			N 646,699.7 E 954,590.6					E-55, autohammer efficiency 86.5		,	
	LING AGE		& Test	ing (ADT) - A Cascade Company	12	. TOTA	AL SA	MPLE	S DISTURBED UNI	DISTURBEI 0	D	
4. NAM	OF DRIL	LER			13	. TOTA	AL NU	MBEF	CORE BOXES 1			
	Marm			DEG FROM BEARING	14	. ELEV	/ATIO	N GR	DUND WATER N/A			
×ک	ERTICAL			VERTICAL	15	. DATE	E BOF	RING	STARTED COMPL	LETED 8/19/24		
	KNESS O	F OVE	RBURDE	::::::::::::::::::::::::::::::::::::::	16	. ELEV	/ATIO	N TOF	P OF BORING -25.7' (Measured in field			
7. DEPT	'H DRILLE	ED INT	O ROCK						ECOVERY FOR BORING 87%			
8. TOTA	L DEPTH	OF B	ORING	36.1'	18				D TITLE OF INSPECTOR Pugh, PG, Geologist			
				FIELD CLASSIFICATION OF MATERIALS						ft s/	e	
ELEV	DEPTH	EGEND		(Description)		REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	
							0	-				F
	Ē								Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on	all		È
									samples drilled down to previous sample interval from	ı		È
	L								FD24-RC-05A			È
	-											-
	-											F
	-											-
	Ľ											-
	_											-
	-											Ę,
	-											E
	-											E
	-											E
												L
	-											Ŀ.
	-											È
	-			EY SAND WITH GRAVEL (SW-SC) (7.5		70	\$S-14/			7 19 30	49	È
-46.7	21.0		rapid d	rown , saturated, medium dense to very (ilatancy, fine to coarse sand, fine to med	dium					18		F
-46.8	21.0			angular to subangular, quartz fragments RED GRANITE SCHIST moderately weat		100	SS-15/			100/0.0		F
			to sligh	ntly weathered, pale yellow and white, me	edium,				40° fracture at 22.5'			F :
	-	K.ť	hard to	par, Quartz, Plagioclase, Biotite present hard, highly to moderately fracture space	, very cing,	84	Run 1	40	70° fracture at 22.9' 20° joint at 23.4'			-
	-	版	iron sta	aining from 21.1' to 21.8', near vertical es with rough surfaces and clay mineraliz	zation				near vertical fracture from 23.8'-24.4' 40° fracture at 24.8'			F
-51.8	_ 26.1	ΝŻ	and iro	n staining on near horizontal joints					100° mineralization vein from 24.7'-25.3' 0-5° joints from 26.1'-27.9'			F
	-			/ weathered to unweathered, moderately fracture spacing	to				····			E
	F	N's	5,			84	Run 2	54				Ēź
	Ĺ	Rt							R2 (28.7'-29.0') UCS=21.27 Ksi Young's Modulus at failure=9,149.2 Ksi			F
-56.8	_ 31.1	KII										F
	F	図之	Pale ye	ellow black					R3 (31.6'-31.9') UCS=24.58 Ksi			E
	+	協				92	Run 3	68	Young's Modulus at failure=6,227.9 Ksi			F
	-	心人				92	3	00	0-5° joints from 34.1'-35.7'			- 3
-61.8		以戊										È
		<u>, , , , , , , , , , , , , , , , , , , </u>	oring to-	BOTTOM OF BOREHOLE AT 36.1 ft	ΟΛΝΙΙΤΓ		110 T		•			
		So	oil collec	minated at -61.8' MLLW in ALTERED GF tion data at RC-05, RC-05A and RC-05E					into RC-05B location and renamed RC	;-05 COM	BINED	
				ere caused by mechanical issues. nducted from Northstar Marine Services,	Inc N	Norths	star L	/B Vi	sion			
FORM	1836-		<u> </u>	,					Designation FD24-RC-05	BSHEET	Г 1 of 1	

	SURVEYORS					_			ng [Desig	inat	ion	F	D24-RC-05B	1
(CORE	LO	G		North Atlantic Division				and	Distri	ct			SHEET 1 OF 1 SHEETS	
	ACT NO.:	•••			22D0017 24F0024	9. CO				STEM Conn	ectio			ZONTAL VERTICAL	
				urfac	e Exploration of New Haven Harbo	or 10. SI	ZE A	ND T	YPE (OF BIT		NQ2 s	erie	es 10 bit	
	NUMBER				CATION COORDINATES 1 646,699.7 E 954,590.6							TION OF hamme		L ficiency 86.5% (10/17/24)	
3. DRILL	ING AGE	INCY	о т	•		12. TC						DIST	JRBI	ED UNDISTURBED	
4. NAME	OF DRIL	LLER		esui	ng (ADT) - A Cascade Company	13. TC	DTAL	NUN	1BER	CORE	BOXE	s ź	1	5 : 0	
	Marm				DEG FROM BEARING	- 14. EL	EVA	TION	GRO	UND W	ATEF	R			
٧	ERTICAL	-	-		VERTICAL	15. DA	ATE E	BORI	NG		ST	ARTED 8/19	9/24	COMPLETED 8/19/24	
6. THICH	KNESS O	FOVE	ERBU	RDEN	21'					OF BO				-25.7	
7. DEPT	'H DRILLE	ED INT	TO RO	CK	15.1'		GNA	TURE	AND	TITLE	OF IN	R BORING	R	87%	
8. TOTA	L DEPTH				36.1'							Geolog	gist		
ELEV	DEPTH	Fracture Drawing	Fracture Number	Legend	FIELD CLASSIFICATION OF MATERIAL (Description)	S	Run No.	No. So.	Rec %	Frac. per foot	RQD %	Drill Time (Rate ft/hr)	W _x	REMARKS	
-46.7 -46.8		20	1		ALTERED GRANITE SCHIST moderate weathered to slightly weathered, pale ye	ellow				1		(4)			-
	-	0	2		and white, medium, K-feldspar, Quartz, Plagioclase, Biotite present, very hard t highly to moderately fracture spacing, ir	o hard,					-				-
	-	V	3	资	staining from 21.1' to 21.8', near vertica fractures with rough surfaces and clay	I				2		(5)		40° fracture at 22.5' 70° fracture at 22.9'	-
	_	T	1		horizontal joints		Rur 1	Box 1	84	2	40	(7)		20° joint at 23.4' near vertical fracture from	-
		L	4		À					1		(4)		23.8'-24.4'	
	-		5							1		(5)		40° fracture at 24.8' 100° mineralization vein from 24.7'-25.3'	- 2
-51.8	- 26.1	~	6		Slightly weathered to unweathered, moderately to slightly fracture spacing		-			4		(2)		0-5° joints from 26.1'-27.9'	-
	-	113	7							1	-	(2)			-
	_	X	_	R						6		(8)			-
							Rur 2	Box	84	0	54	(4)		R2 (28.7'-29.0') UCS=21.27	L
			-							0		(5)		Ksi Young's Modulus at failure=9,149.2 Ksi	-
	-		-							0		(5)			- 3
-56.8	- 31.1		-		Pale yellow black			-							-
	-		_							0		(5)		R3 (31.6'-31.9') UCS=24.58 Ksi	-
										0		(3)		Young's Modulus at failure=6,227.9 Ksi	I
	_		-	版 】	×			вох	92	0	68	(4)			-
	-	2	8	阙			3	1						0-5° joints from 34.1'-35.7'	-
	-	B	19		4					6		(6)			- 3
-61.8	36 1									1		(6)			L
-01.0		u Borin	g teri	minat	ed at -61.8' MLLW in ALTERED GRANIT	E SCHI	ST.	I	I	ļ	I	I		1	-
	5	Soil c	ollec	tion o	lata at RC-05, RC-05A and RC-05B have aused by mechanical issues.	been c	omb	ined	into	RC-05	iB loc	ation an	id re	enamed RC-05 COMBINED.	
					ducted from Northstar Marine Services, Ir	nc - Nor	thsta	ar L/	B Vis	ion					
							_								

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	SURVEYORS								Designation FD24-RC-05	<u>COM</u> I	30	_
DF		GL	OG	DIVISION North Atlantic Division		INSTALL	ATIO	N	SHE	EET	1 HEETS]
	ACT NO.:			22D0017		9. COOF				T SH	HEETS	-
).: W	/912WJ	24F0024					onnecticut NAD83	MLLV	V	
	CT NAME			ce Exploration of New Haven					OF BIT NQ2 series 10 bit R'S DESIGNATION OF DRILL			-
				N 646,699.7 E 954,590.6					IE-55, autohammer efficiency 86.5%	(10/17	/24)	I
	ING AGE		9 Tooti	ng (ADT) - A Cascade Compa		12. TOT	AL SA	MPLE	S DISTURBED UNDIS	STURBE)	1
				ng (ADT) - A Cascade Compa	-	13 TOT		MREF	CORE BOXES 1	0		-
	Marm				H				OUND WATER N/A			1
\boxtimes \	CTION OF /ERTICAL		RING	DEG FROM BEARING	-	15. DAT			STARTED COMPLE			1
	NCLINED								8/11/24 8 P OF BORING -25.7' (Measured in field)	/19/24		-
			ERBURDEI						ECOVERY FOR BORING 97%			-
			TO ROCK	15.1'	L	18. SIGN	IATUF	RE AN	D TITLE OF INSPECTOR			1
B. TOTA	AL DEPTH		BORING	36.1'		I		say l	Pugh, PG, Geologist		0	┦
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION OF MATERIAL (Description)	LS	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	
	L		ORGAN	NIC SILT (OL) (2.5Y 2.5/1), black, s ft, low plasticity, rapid dilatancy, Org	saturated,	12	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory	0 0	0/2	Ŧ
	L	F	Sedime		yanno				Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on a	0 0 WOR/1.7	12	Ŧ
-28.8	_ 3.1					55	SS-02 SS-03		samples torvane (1.0) (uncorrected): 0.0 kg/cm ²	0 2 WOR/1.5	0	F
	-		saturate	SAND (SM) (2.5Y 3/1), very dark gra ed, very loose to medium dense, rap	pid				pocket penetrometer (uncorrected): 0.0 tsf	3 5 5 3		Ŧ
	-			cy, fine to coarse sand, some shell f ular to subrounded, Marine Sedime		, 75	SS-04				10	╞
				,		50	SS-05		Gravel: 2; Sand: 76; Fines: 23; MC: 29; SM	3 2 2 4	4	ŀ
-33.2	7.5		WEII (GRADED SAND WITH SILT (SW-S	SM) (5YR				4	4 3 3		╞
	L		3/3), da	ark reddish brown , saturated, loose, cy, fine to coarse sand, little fine to r	, rápid	50	SS-06	5		3 2 2	5	F
-35.9	_10.2		gravel,	subangular to subrounded						2		╂
-37.4	11.7	$\left \left \right \right $	SANDY	′ SILT (ML) (5YR 3/3), dark reddish ed, medium stiff, rapid dilatancy, fin	brown ,	100	SS-07	'	torvane (1.0) (uncorrected): 0.75 kg/cm ² pocket penetrometer (uncorrected): 0.25 tsf	2 4 9	6	þ
-38.3			¦∖mica			 100	SS-08	5		17 20 13 9	33	1
-39.7	- 14.0		WELL (GRADED SAND WITH SILT (SW-S ark reddish brown , saturated, dense	SM) (5YR e, rapid		SS-09		Gravel: 0; Sand: 27; Fines: 73; LL: NP; PI: NP; MC: 20; ML			╞
			dilatanc	cy, fine to coarse sand, little fine to r	medium	100	SS-10			0 0 4 4	4	ŧ
-41.3 -41.9	<u>15.6</u> 16.2		SANDY	SILT (ML) (5YR 3/3), dark reddish	brown ,	_⊫	\$S-11/	4	torvane (1.0) (uncorrected): 2.5 kg/cm ² pocket penetrometer (uncorrected): 0.5 tsf	WOR/1.0		╂
-43.3	17.6		saturate sand, n	, , , , ,,	cy, fine	50	SS-12		torvane (1.0) (uncorrected): 1.0 kg/cm ² pocket penetrometer (uncorrected): 0.75 tsf	6 8 14 13	22	F
	-		FATCL	AY (CH) (5YR 3/3), dark reddish br		t, [SS-13	6	torvane (1.0) (uncorrected): 3.0 kg/cm ² pocket penetrometer (uncorrected): 1.5 tsf			₽
	F			minated, high plasticity, no dilatancy /ITH SAND (ML) (5YR 3/3), dark rec		-	\$S-14/	4		7 19 30 18	49	F
-46.7	21.0		brown ,	saturated, medium stiff, low plastic cy, fine sand, mica	city, slow	100	<u>\$</u> \$-15,	4			1100	Æ
-46.8	21.1		FAT CL	AY (CH) (5YR 3/3), dark reddish br	rown , we		1		swtich from roller bit to wireline coring setup set 3inch casing within 4inch casing	19 100 100/0.0	100	作
	F	$\langle h \rangle$	1 IL	n stiff, high plasticity, no dilatancy Y SAND WITH GRAVEL (SW-SC)	(7 5VP		Run		40° fracture at 22.5'			╞
	-		4/3), br	own , saturated, medium dense to v	very dens	e, 84	1	40	70° fracture at 22.9' 20° joint at 23.4'			F
-51.8	26.1	KY.		latancy, fine to coarse sand, fine to angular to subangular, quartz fragm					near vertical fracture from 23.8'-24.4' 40° fracture at 24.8'			þ
-JI.0	_ 20.1		ALTER	ED GRANITE SCHIST moderately	weathere				100° mineralization vein from 24.7'-25.3' 0-5° joints from 26.1'-27.9'			ŧ
			K-felds	tly weathered, pale yellow and white par, Quartz, Plagioclase, Biotite pre	esent, very							ŧ
	L	前达		hard, highly to moderately fracture ining from 21.1' to 21.8', near vertic		84	Run 2	54	R2 (28.7'-29.0') UCS=21.27 Ksi			ŧ
	-		fracture	es with rough surfaces and clay mine n staining on near horizontal joints		ו ו			Young's Modulus at failure=9,149.2 Ksi			ŧ
-56.8	_ 31.1	KI.	Slightly	weathered to unweathered, modera	ately to		<u> </u>		4			ŧ
	-	\ .1	1 0 1	fracture spacing Ilow black	-				R3 (31.6'-31.9') UCS=24.58 Ksi Young's Modulus at failure=6,227.9 Ksi			ŧ
	F	欧萨	rale ye	HUW DIAUN		92	Run 3	68				F
	Ľ	図グ	,						0-5° joints from 34.1'-35.7'			F
-61.8	36.1	121	4									ŀ
	_	R	orina terr	BOTTOM OF BOREHOLE AT 36. ² ninated at -61.8' MLLW in ALTERE		TE SCI	IIST	_		_	_	
		S	oil collect						into RC-05B location and renamed RC-0	5 COM	BINE	C
				iducted from Northstar Marine Servi	ices, Inc.	- North	star L	/B Vi	sion			
ORM	1836-	1					Bori	ina	Designation FD24-RC-05 C	OMBC)	-

ENGINEERS * SURVEYORS					1			ng E	Desig	Inat	ion	F	D24-RC-05 COMBO	-
CORE	LOG		DIVISION North Atlantic Div	ision	INSTA Ne			and	Distri	ct			SHEET 1 OF 1 SHEETS	
CONTRACT NO .:			2D0017		9. CO	ORDI	NATI	E SYS	STEM				ZONTAL VERTICAL	1
TASK ORDER NO.			24F0024 e Exploration of Nev	u Hayan Harbor									IAD83 MLLW	-
2. HOLE NUMBER			ATION COORDINATES											4
			646,699.7 E 954,	590.6						auto			ficiency 86.5% (10/17/24)	1
3. DRILLING AGEN Aquifer Drilli		estin	g (ADT) - A Cascad	le Company	12. TC	TAL	SAM	IPLES	5		DIS	TURBE 2	ED UNDISTURBED	
4. NAME OF DRILL	.ER		<u> </u>		13. TC	TAL	NUM	1BER	CORE	BOXE	s	1	•	1
Nick Marmo			DEG FROM	BEARING	14. EL	EVA	FION	GRO	UND W	ATEF	R			
VERTICAL			VERTICAL		15. DA	TE E	ORI	NG		ST	ARTED 8/1	1/24		
6. THICKNESS OF	OVERBL	JRDEN	21'		-		-	-	OF BO	-			-25.7	4
7. DEPTH DRILLED) INTO R	OCK	15.1'								R BORI		97%	4
8. TOTAL DEPTH (36.1'			Lir	ndsa	ay P	ugh, l	PG	Geolo			
ELEV DEPTH	Fracture Drawing Fracture	Legend		ATION OF MATERIALS	3	Ro.	30X No.	Rock	Core oot uc:	å å	Drill Time (Rate ft/hr)	W _x	REMARKS	
∖-46.7 /∖ 21.0 /			ALTERED GRANITE	• •		u –	<u> </u>	-	ш	Ľ.			swtich from roller bit to	ł
\ <u>-46.8</u> /\21.1/	204	K.	weathered to slightly v and white, medium, K	weathered, pale yel -feldspar, Quartz,	low				1		(4)		wireline coring setup set 3inch casing within 4inch casing	
	2		Plagioclase, Biotite pr highly to moderately f	racture spacing, iro	hard, n				2		(5)		40° fracture at 22.5'	
-	3	K.	staining from 21.1' to fractures with rough s	urfaces and clay						-	(-)		70° fracture at 22.9'	╞
	~		mineralization and iron horizontal joints	n staining on near		Run		84	2	40	(7)		20° joint at 23.4'	
-	4	版印				1	1			-			near vertical fracture from 23.8'-24.4'	ŀ
	4	M/ /	1						1		(4)			
-	5	K.									(5)		40° fracture at 24.8' 100° mineralization vein from 24.7'-25.3'	- 25
-51.8 – 26.1	- 6	M). H(-ff							1		(5)			-
	~	K	Slightly weathered to moderately to slightly						1		(2)		0-5° joints from 26.1'-27.9'	
-	7													F
	Ľ								6		(8)			L
	-	M).	,				_							Γ
						Run 2	Box 1	84	0	54	(4)		R2 (28.7'-29.0') UCS=21.27	
	-								0		(5)		Ksi Young's Modulus at	
		N.t							0		(3)		failure=9,149.2 Ksi	- 30
	-								0		(5)			
-56.8 - 31.1		M./.? }↑									(-)			╞
		1. Ant	Pale yellow black						0		(5)		R3 (31.6'-31.9') UCS=24.58	
-	-	$ \langle \rangle\rangle$								-			Ksi	ŀ
									0		(3)		Young's Modulus at failure=6,227.9 Ksi	
-	-									-				F
		N.T				Run 3	Box	92	0	68	(4)			
-	8	KI!				3	1			-			0-5° joints from 34.1'-35.7'	F
	R	M/ A							6		(6)			
	19													- 35
-61.8 - 36.1	-	前於	ł						1		(6)			L
· · · · · · · · · · · · · · · · · · ·	orina ter	minate	⊥ ed at -61.8' MLLW in Al	TERED GRANITE	SCHI	ST		<u> </u>	L				ł	ſ
S	oil colle	ction d	ata at RC-05, RC-05A a used by mechanical iss	and RC-05B have b	been co	ombi	ned	into	RC-05	Bloc	ation a	and re	enamed RC-05 COMBINED.	1
			ducted from Northstar N		c - Nor	thsta	ır L/I	B Vis	ion					1
														1
L						_								J

GEA

G	EA
ENGINEER	S * SURVEYORS

DRILLING LOG DVMSION North Attantic Division INSTALLTION SHEET 1 CONTRACT NO: W912DS22D0017 SHEET 1 OPT SHEET 1 TASK ORDER NO: W912DS22D0017 SOUTHALTION SOUTHALTION SHEET 1 OPT SHEET 1 TASK ORDER NO: W912DS22D0017 SOUTHALTION SOUTHALTION <t< th=""></t<>
CONTRACT NO: W912DS22D0017 9 COORDNATE SYSTEM HORZONTAL VERTICAL DBSK ORDER NO: W912WJ24F0024 Interpretation of New Haven Harbor 10 Size AND TYPE OF BIT NQ2 series 10 bit 10 SUBSURFACE Exploration of New Haven Harbor 10. SIZE AND TYPE OF BIT NQ2 series 10 bit MLLW 11 MANUFACTURERS DESIGNATION OF DRILL ADD83 MLLW 2 HOLE NUMBER LOCATION COORDINATES DISTURGED UNDISTURGED 3. ORLILING ACENCY 4845(190.4 E 954(887.4 ADT-723. CME-55, autoharmer efficiency 66.5% (10/17/24) 3. ORLILING ACENCY 400/05 CPRBURGED USTURGED USTURGED 4. NUME OF DRILLER 11. NANUFACTURERS DESIGNATION OF DRILL TOTAL NUMBER CORE BOXES 2 10 KERTICAL BEARING 13. TOTAL NUMBER CORE BOXES 2 10 VERTICAL BEARING 14. ELEVATION TOP OF BORING -26.8' (Est. from USACE Dec. '23.8 Bath) 1. DEPTH OF BORING 31' TOTAL CORE RECOVERY FOR BORING 95% 1. OTAL DEPTH OF BORING 31' IIndsay Pugh, PC, Geologist 100 1. DEPTH OF BORING S1' IIndsay Pugh, PC, Finase 20, MC3, SM 100 1. DEPTH OF BORING S1' IIndsay Pugh, PC, Geologist 100 2. 3 - 5.5 S1.
PROJECT NAME: Subsurface Exploration of New Haven Harbor 10. SIZE AND TYPE OF BIT NQ2 series 10 bit HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURERS DESIGNATION OF DRILL MADT-273, CMR-55, autohammer efficiency 86.5% (10/17/24) JORILING AGENCY Auffer Drilling & Testing (ADT) - A Cascade Company 11. MANUFACTURERS DESIGNATION OF DRILL IDISTURBED IUNDISTURBED JORICTION OF BORING DEG FROM BEARING 13. TOTAL NUMBER CORE BOXES 2 INKE Marmolejo 13. TOTAL NUMBER STARTED ICOMPLETED INCLINED VERTICAL ISCOMPLETED 15. DATE BORING 8/31/24 8/31/24 INCLUED VERTICAL ISCOMPLETED 15. DATE BORING 8/31/24 8/31/24 INCLUED NOLKESS OF OVERBURDEN 5.5' 16. ELEVATION TOP OF BORING -26.8' (Est. from USACE Dec. '23 Bath) I. TOTAL DEPTH OF BORING 31' 10. TOTAL CORE RECOVERV FOR BORING -95% 10. SIGNATURE AND TITLE OF INSPECTOR I. TOTAL DEPTH OF BORING 31' 10. SIGNATURE AND TITLE OF INSPECTOR 10. INTRACURER 28, MC.33, SM 10. Sont Startafed, loose, homogeneous, rapid litatancy, fine to carge starting discompaneous, rapid litatancy, fine to carge starting discompaneous, rapid litatancy, fine to carge started at 13.'''''''''''''''''''''
HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURERS DESIGNATION OF DRILL ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24). DISTURBED FD24-RC-06 N 645,190.4 E 954,887.4 ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24). DISTURBED Aquifer Drilling & Testing (ADT) - A Cascade Company 12. TOTAL SAMPLES DISTURBED 10. MOISTURBED NME OF DRILLER Nick Marmolejo 13. TOTAL NUMBER CORE BOXES 2 14. ELEVATION GROUND WATER N/A DIRECTION OF BORING DEG FROM VERTICAL 16. DATE BORING STARTED 200/17/24 INCINED VERTICAL 16. DATE BORING STARTED 8/31/24 INCINED 10. DATE BORING 26.8 (Est. from USACE Dec. 23 Bath) DEPTH DRILLED INTO ROCK 25.5' 17. TOTAL CORE RECOVERY FOR BORING 95% TOTAL DEPTH OF BORING 31' 10. SIGNATURE AND TITLE OF INSPECTOR 10. SIGNATURE AND TITLE OF INSPECTOR SILEV DEPTH DF SILTY SAND (SM) (ST9 6/1), gray / light olive gray, saturated, loose, homogeneous, rapid dilatancy, fine saturated, loose, homogeneous, rapid dilatancy, fine saturated, loose, homogeneous, rapid dilatancy, fine saturated, loose, nonogeneous, rapid dilatancy, fine saturated, loose, homogeneous, rapid dilat
DRILLING AGENCY IDISTURBED UNDISTURBED UNDISTURBED Aquifer Drilling & Testing (ADT) - A Cascade Company 12. TOTAL SAMPLES DISTURBED UNDISTURBED MALE OF DRILLER 13. TOTAL NUMBER CORE BOXES 13. TOTAL NUMBER CORE BOXES 2 Nick Marmolejo 14. ELEVATION GROUND WATER N/A DIFECTION OF BORING DEG FROM BEARING 15. DATE BORING STARTED COMPLETED INCLINED 15. DATE BORING 16. ELEVATION TOP OF BORING -26.8' (Est. from USACE Dec. '23 Bath) DEPTH DRILLED INTO ROCK 25.5' 17. TOTAL CORE RECOVER FOR BORING 95% 10. DEPTH OF BORING 31' 11. Indicasy Pugh, PG, Geologist 11. Indicasy Pugh, PG, Geologist ELEV DEPTH FIELD CLASSIFICATION OF MATERIALS (Description) % C $\frac{2}{8}$ 0. REMARKS $\frac{30}{8}$ $\frac{30}{8}$ 32.8 5.5 SILTY SAND (SM) (F0 f), gray light olive gray, casang in marginal sea state conditions or question and assign in acting in other to writeline conditions of the start in the response of the
Aquifer Drilling & Testing (ADT) - A Cascade Company 7 0 NAME OF DRILLER NICK Marmolejo 13. TOTAL NUMBER CORE BOXES 2 NICK Marmolejo 14. ELEVATION GROUND WATER N/A DIRECTION OF BORING DEG FROM EEARING 14. ELEVATION GROUND WATER N/A VERTICAL 15. DATE BORING STARTED COMPLETED VERTICAL 16. ELEVATION GROUND WATER N/A DEPTH DRILLED INTO ROCK 25.5' 16. ELEVATION TOP OF BORING 056's 25's TOTAL DEPTH OF BORING 31' 17. TOTAL CORE RECOVERY FOR BORING 056's 05% 15. SIGNATURE AND THE OF INSPECTOR Lindsay Pugh, PG, Geologist 100 s5:01 18. SIGNATURE AND THE OF INSPECTOR ELEV DEPTH G FIELD CLASSIFICATION OF MATERIALS (Description) Sign 2's REMARKS 0's 4's 0's 2's 32.8 5.5 SILTY SAND (SM) (5Y 6/1), gray / light olive gray, saturated, loose, homogeneous, rapid dilatancy, line to osaling in marginal sea state conditions of grave: 1; Sand: 70; Fines: 29, MC: 33; SM 100 s5:01
Nick Marmolejo Intervention of Borning DEG FROM BEARING DIRECTION OF BORING DEG FROM VERTICAL Intervention of Borning Complete Text N/A Intervention VERTICAL Intervention BEARING Intervention B/31/24 B/31/24 Intervention VERTICAL Intervention B/31/24 B/31/24 B/31/24 Intervention Intervention Intervention Intervention B/31/24 Interventio
DRECTION OF BURNES DEG FROM BEARING IS DATE BORING STARTED COMPLETED WERTICAL IS. DATE BORING 8/31/24 8/31/24 8/31/24 8/31/24 THICKINESS OF OVERBURDEN 5.5' 15. DATE BORING 95% 16. ELEVATION TOP OF BORING 95% DEPTH DRILLED INTO ROCK 25.5' 17. TOTAL CORE RECOVERY FOR BORING 95% 18. SIGNATURE AND TITLE OF INSPECTOR TOTAL DEPTH OF BORING 31' 18. SIGNATURE AND TITLE OF INSPECTOR Lindsay Pugh, PG, Geologist ELEV DEPTH B SILTY SAND (SM) (5Y 6/1), gray / light olive gray, saturated, loose, homogeneous, rapid dilatancy, fine to coarse sand, some shell fragments, subangular, Marine Sediments Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples 32.8 6.0 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pink and whitish gray, coarsely crystalline, K-feldspar, Quarz, Plagioclase, Biottle present, very hard to hard, moderately to slightly weathered rough surfaces containing iron oxidation and black staining 100 80 130' fracture at 8.5' 37.8 11.0 42 16.0 45' fracture at 14.3' 30' cross fracture at 12.7' 160' cross fracture at 12.7' 160' cross fracture at 13.1' 45' fracture at 13.1' 45' fracture at 13.1'
INCLINED
Instruction of of of both curves 0.0 DEPTH DRILLED INTO ROCK 25.5' IT. TOTAL DEPTH OR ING 31' IT. TOTAL DEPTH OF BORING 31' IT. TOTAL CORE RECOVERY FOR BORING 95% IT. TOTAL DEPTH OF BORING 31' IT. TOTAL CORE RECOVERY FOR BORING 95%
UDEPTH ORILLED INFORMING 21.5 TOTAL DEPTH OF BORING 31' IELEV DEPTH OF BORING SILTY SAND (SM) (SY 6/1), gray / light olive gray, saturated, loose, homogeneous, rapid dilatancy, fine to coarse sand, some shell fragments, subangular, Marine Sediments
LEV DEPTH B FIELD CLASSIFICATION OF MATERIALS (Description) No. 1 REMARKS REMARKS 2.LEV DEPTH B FIELD CLASSIFICATION OF MATERIALS (Description) No. 1 REMARKS
32.3 5.5 32.8 6.0 ALTERED GRANITE SCHIST moderately weathered, pink and whitish gray, coarsely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, moderately to slightly weathered rough surfaces containing iron oxidation and black staining 100 SS-01 37.8 11.0 100 Run and black staining 80 37.8 11.0 100 Run and black staining 100 Run fracture at 11.0' Vertical fracture station of the stabilized fracture station of the stabilized fracture at 13.1' 42.5 100 SS-01 Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples 100 SS-01 100 SS-01 100 SS-01 Switch from roller bit to wireline conditions of the stabilize casing within 4linch casing into noder to create good seal for NO2 core drilling vertical fractures with moderately weathered from 5.0'-7.2' 100 Run fracture at 8.5' 100 Run fracture at 11.0' 100 Run fracture at 11.0' 100'''''''''''''''''''''''''''''''''''
- - Autohammer, 140lbs, 30in drops, 2-inch dimeter, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 25 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 25 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 24 inches long split spoon used on all samples liometer, 25 inches liometer, 25 inches liometer, 25 inches listret, 25 inches liometer, 25 inches liometer, 26 inches
32.3 5.5 32.8 6.0 32.8 6.0 32.8 6.0 32.8 6.0 32.8 6.0 32.8 6.0 32.8 6.0 32.8 6.0 32.8 6.0 32.8 6.0 32.8 6.0 32.8 6.0 32.8 6.0 4 100 SS-01 Stabilize casing in marginal sea state conditions failure as the conditions of stabilize casing in order to create good seal for NO2 core driling vertical fracture from 6.0-7.2' switch from roller bit to wireline coring setup set sinch casing within 4inch casing in order to create good seal for NO2 core driling vertical fracture from 6.0-7.2' 100 Run and black staining 37.8 11.0 - - - - - - - - - - - - - - - - - - - - - -
32.3 5.5 32.8 6.0 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pink and whitish gray, coarsely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, moderately to slightly fracture spacing, vertical fractures with moderately weathered rough surfaces containing iron oxidation and black staining 100 SS-02 switch from roller bit to wireline coring setup set 3inch casing within 4inch casing in order to create good seal for NQ2 core drilling vertical fracture from 6.0'-7.2' 37.8 11.0 Run 1 80 130° fracture at 8.5' 37.8 11.0 Run 2 80 130° fracture at 8.5' 42.8 16.0 Moderately to highly fracture spacing 94 Run 2 88 42.8 16.0 Moderately to highly fracture spacing Moderately to highly fracture spacing 30° cross fracture at 14.3' roor space fracture at 13.1'
32.8 6.0 100 SS-02 switch from roller bit to wireline coring setup set 3inch casing within 4inch casing in order to create good seal for NQ2 core drilling vertical fracture from 6.0'-7.2' 100 SS-02 switch from roller bit to wireline coring setup set 3inch casing within 4inch casing in order to create good seal for NQ2 core drilling vertical fracture from 6.0'-7.2' 100 SS-02 switch from roller bit to wireline coring setup set 3inch casing within 4inch casing in order to create good seal for NQ2 core drilling vertical fracture from 6.0'-7.2' 37.8 11.0 100 Run 1 80 130° fracture at 8.5' 37.8 11.0 100 Run 2 88 130° fracture at 11.0' 42.8 16.0 100 Run 2 88 160° cross fracture at 14.3' 42.8 16.0 N/4 Moderately to highly fracture spacing 45° fracture at 15.3'
32.8 6.0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
42.8 16.0 Moderately to bightly fracture spacing Moderately to bightly fracture
37.8 11.0 42.8 16.0
37.8 11.0 11.0 R2a (10.0'-10.3') UCS=17.12 Ksi Young's Modulus at failure=4,679.0 Ksi 130° fracture at 11.0' 42.8 16.0 16.0 16.0
-37.8 11.0 -2 Young's Modulus at failure=4,679.0 Ksi - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
42.8 16.0 42.8 16.0 45° fracture at 12.7' 42.8 16.0 45° fracture at 13.1' 45° fracture at 13.1' 45° fracture at 13.1' 45° fracture at 13.1' 45° fracture at 14.3' R2b (14.7'-15.0) UCS=22.51 Ksi Young's Modulus at failure=7,605.6 Ksi 45° fracture at 15.3'
42.8 16.0 45° fracture at 14.3' Young's Modulus at failure=7,605.6 Ksi 45° fracture at 14.3' Young's Modulus at failure=7,605.6 Ksi 45° fracture at 14.3' Young's Modulus at failure=7,605.6 Ksi 45° fracture at 15.3'
42.8 16.0
42.8 16.0 Young's Modulu's at failure=7,605.6 Ksi
- MUN
/ (. 作, 17.0' 60° fracture at 17.0'
$\begin{bmatrix} 100 \\ 3 \\ 100 \end{bmatrix} = \begin{bmatrix} 100 \\ 3 \\ 125^{\circ} \\ 12$
47.8 21.0 1/1/1 Auscovite and biotite mineralization banding, slightly
- M h fracture spacing, chlorite on fracture surfaces 2 near vertical cross fractures from 21.9'-23.0'
$- \begin{pmatrix} \gamma_1^n \\ \gamma_1^{\prime} \\ \gamma_1^{\prime} \end{pmatrix} $ 100 $\begin{bmatrix} \operatorname{Run} \\ \delta \\ $
R4a (23.7'-23.9') UCS=21.24 Ksi Young's Modulus at failure=7,734.9 Ksi
R4b (24.9'-25.2') UCS=19.76 Ksi
PEGMATITE
- ₩V ⁻ /2 N 1
88 Run 5 84
BOTTOM OF BOREHOLE AT 31.0 ft Boring terminated at -57.8' MLLW in ALTERED GRANITE SCHIST.
Boring terminated early due to increasing sea state conditions to prevent tooling from breaking downhole
Boring conducted from Northstar Marine Services, Inc Northstar L/B Vision
ORM 1836-A Boring Designation FD24-RC-06 SHEET 1 of B 08

		B	oriı	ng E	Desig	gnat	ion	F	D24-RC-0	06	
CORE LOG	INSTA	LLA	ΓΙΟΝ							SHEET	1
CONTRACT NO.: W912DS22D0017	9. CO				Distri STEM	CL	:	HORI	ZONTAL :	OF 1 VERTICAL	SHEETS
TASK ORDER NO.: W912WJ24F0024					Conn		ut	N	IAD83	MLI	
PROJECT NAME: Subsurface Exploration of New Haven Harbo									es 10 bit		
2. HOLE NUMBER LOCATION COORDINATES FD24-RC-06 N 645,190.4 E 954,887.4					R'S DES				LL fficiency 86.	5% (10/	17/24)
3. DRILLING AGENCY	12. TC					auto				JNDISTURE	
Aquifer Drilling & Testing (ADT) - A Cascade Company								-	7	0	
4. NAME OF DRILLER Nick Marmolejo	13. TC	DTAL	NUN	1BER	CORE	BOXE	S	2			
5. DIRECTION OF BORING DEG FROM BEARING	— 14. EL	EVA	TION	GRO	UND W						
VERTICAL VERTICAL	15. DA	ATE E	BORI	NG		ST	ARTED	31/24		1PLETED 8/31/2	24
6. THICKNESS OF OVERBURDEN 5.5'	16. EL	EVA	TION	TOP	OF BO	RING			-26.8		
7. DEPTH DRILLED INTO ROCK 25.5'					COVEF				95%		
8. TOTAL DEPTH OF BORING 31'	- 18. SIC				TITLE ugh,						
				Rock	Core	. 🧳	e				
ELEV DEPTH D	LS	Run S	Х Во Х	Rec %	er Erac. foot	RQD %	Drill Ti (Rate ft/hr)	W _x	R	EMARKS	
	- h. i			100					switch from		- ·
32.8/6.0/2 ALTERED GRANITE SCHIST moderate	nd				1		(6)		wireline cori set 3inch ca	ising withir	1 4inch
whitish gray, coarsely crystalline, K-feld Quartz, Plagioclase, Biotite present, ver	lspar,				2		(4)		casing in or seal for NQ	der to crea	ate good
to hard, moderately to slightly fracture		Rur	Box	100	1	80	(3)		vertical fraction	ture from 6	
4	ely on	'	'		0		(3)		130° fractur		
-37.8 11.0 5 Volution and black staining	011				1		(2)		R2a (10.0'-1 Ksi	0.3') UCS	=17.12
					1		(6)		Young's Mo		
					2]	(6)		failure=4,67 130° fractur		Ē
			Вох	94	1	88	(5)		vertical fract	ture from	F
		2	1		1	1	(4)		30° cross fra 160° cross f		
-42.8 16.0 9					2	1	(4)		45° fracture	at 14.3'	
10 Moderately to highly fracture spacing					2		(3)		R2b (14.7'-1 Ksi	5.0') UCS	=22.51 -
					4	1	(3)		Young's Mo failure=7.60	dulus at	-
		Rur	Box	100	4	72	(3)		45° fracture	at 15.3'	-
		3	1		1	1.2	(7)		140° fractur vertical frac		F
					1	-		$\left \left \right \right $	16.5'-16.9' 60° fracture	at 17 0'	┣
-47.8 21.0 15 $\frac{1}{1}$ Muscovite and biotite mineralization bar	ndina	<u> </u>	-		1	-	(3)	$\left \left \right \right $	numerous c	ross and r	
- 16 $\frac{ \langle j \rangle }{ \lambda }$ slightly fracture spacing, chlorite on fractional fractional space in the statement of the statement					1	-	(3)	$\left \left \right \right $	vertical frac 17.5'-19.0'		ŀ
- ↓ surfaces				100	1	-	(4)		125° fractur 125° fractur		ŀ
		Rur 4	∎Box 1	100		88	(4)		2 near vertion	cal cross fr	actures
					0	4	(6)		from 21.9'-2 R4a (23.7'-2		5=21.24
-52.8 26.0 17 H = 0 = 0					0		(4)		Ksi Young's Mo	dulus at	Ļ
- 18 1/1/2 PEGMATITE					1		(3)		failure=7,73	4.9 Ksi	
					1		(3)		R4b (24.9'-2 Ksi	,	=19.76
			-	88	0	84	(3)		Young's Mo failure=10,3		ſ
		5	2		0		(4)	$\left \left \right \right $	near vertica		rom
-57.8 31.0					0]	(6)]	26.7'-28.0'		F
Boring terminated at -57.8' MLLW in ALTERED GRANIT	E SCHI	ST									

GEA

Boring terminated at -57.8' MLLW in ALTERED GRANITE SCHIST. Boring terminated early due to increasing sea state conditions to prevent tooling from breaking downhole Boring was conducted from Northstar Marine Services, Inc - Northstar L/B Vision

	BURVEYORS					E	Bori	ng	Designation FD24-RC-07		
DF		GL	OG	DIVISION North Atlantic Division			ATION End	-	District OF		1 EETS
	CT NO.:			22D0017	9. C	OOR	DINA	TE SY	STEM HORIZONTAL VERT	ICAL	
				l24F0024 ce Exploration of New Haven Harbo						MLLW	
	NUMBER			CE EXPloration of New Haven Harbo					R'S DESIGNATION OF DRILL		
	4-RC-0			N 647,931.6 E 954,570.3					E-55, autohammer efficiency 86.5% (
	ING AGE fer Dril		& Testi	ng (ADT) - A Cascade Company	12. 1	ΓΟΤΑ	AL SAI	MPLE	S DISTURBED UNDIST	URBED	
4. NAME	OF DRIL	LER.			13. 1	ΓΟΤΑ	AL NU	MBER	CORE BOXES 2		
	Marmo			DEG FROM BEARING	— 14. E	ELEV	'ATIOI	N GRO	DUND WATER N/A		
×Σ	ERTICAL			VERTICAL	15. [DATE	BOR	ING	STARTED COMPLETE	ED 22/24	
3. THICH	NESS OF	= OVE	RBURDE	N 19.7'					POF BORING -15.4' (Measured in field)		
7. DEPT	H DRILLE	D INT	O ROCK	25'					ECOVERY FOR BORING 98%		
3. ТОТА	L DEPTH	OF B	ORING	44.7'	10. 0				Pugh, PG, Geologist		
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION OF MATERIALS (Description)	1	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
				NIC CLAY (OH) (2.5Y 2.5/1), black, satura ft, homogeneous, high plasticity, rapid	ted,	100	SS-01		USCS - Gradation results and classification provided by CDM Smith Laboratory	000000000000000000000000000000000000000	0
	_		dilatano	cy, little fine sand, and shell fragments,	F				Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all	0 	
	_		Organio	Sediments					samples perform 5ft sampling intervals in order to quickly		
					Ļ				stabilize 4inch casing into soil during marginal wind and sea state conditions (seas ~1ft)		
	-					100	SS-02		torvane (1.0) (uncorrected): 0.0 kg/cm ² pocket penetrometer (uncorrected): 0.0 tsf	0 0 0	0
	_				F				Gravel: 0; Sand: 11; Fines: 89; LL: 114; PI: 70; MC: 124; OH	_WOR/2.0	
	_								10. 124, 011		
					ŀ	100	<u> </u>			0 0 0 0	0
-28.4	13.0				Ļ	100	SS-03			0 0 WOR/2.0	0
	_			SAND (SM) (7.5YR 3/2), dark brown ,	— — -						
			to coars	ed, loose, homogeneous, rapid dilatancy, f se sand, trace shell fragments, subangular	to						
	-		subrou	nded, Marine Sediments		25	SS-04		Gravel: 0; Sand: 84; Fines: 16; MC: 18; SM	4 4 5	9
	_				F					-	
-35.1	19.7										
-40.1	- - 24.7		unweat crystall present fracture	ED GRANITE SCHIST slightly weathered hered, pale yellowish white and black, fine ine, K-feldspar, Quartz, Plagioclase, Biotite t, very hard to hard, moderately to slightly spacing, clay mineralization along rough	ly e	94	Run 1	84	switch from roller bit to wireline coring setup set 3inch casing within 4inch casing in order to create good seal for NQ3 core setup R1 (20.2'-20.5') UCS=23.80 Ksi Young's Modulus at failure=9,036.3 Ksi 50° fracture at 22.2'		
-40.1	24.1	K.	weathe	fracture planes that are slightly to modera red					0-5° joint at 22.4' 160° fracture at 22.7'		
	-	N/1				100	Run 2	93	75° fracture at 26.0' 70° fracture at 26.2'		
-44.1	28.7	黨					_		0-5° joint at 26.7'		
		μĴŻ							70° fracture at 27.5' switch from NQ3 to NQ2 barrel with series 10		
							Run		bit to help decrease drill rate time and reduce down pressure needed to advance barrel		
	_	Ň,				97	3	80	R3 (29.8'-30.2') UCS=21.43 Ksi Young's Modulus at failure=8,137.3 Ksi		
-50.1	- 34.7	N.ť							130° fracture at 30.7' 40° fracture at 33.1'		
-30.1	34.7	黛庐			F				vertical fracture from 33.1'-33.9' 80-90° fracture from 33.8'-34.7'		
	_	ΝĴŻ	1			00	Run				
	_		1			98	4	96			
-55.1	39.7	Ň,							70° fracture at 39.0'-39.5'		
		限者							70° fracture at 40.0' 80-90° fracture from 40.7'-41.7'		
	-	颐				100	Run 5	84			
0 0		μĴŻ									
-60.1	44.7	11.11	1	BOTTOM OF BOREHOLE AT 44.7 ft							
				ninated at EL -60.1' MLLW in ALTERED G iducted from Northstar Marine Services, In					sion		
	1000										
ORM	1836-4	7					2ari	na	Designation FD24-RC-07 S	HEET	1 of 1

	SURVEYORS						В	orir	ng E	Desig	nat	ion	F	D24-RC-	07		
	CORE	10	G		DIVISION	INSTA	LLAT	ION							SHEET	1	1
					North Atlantic Division					Distri	ct				OF 1	SHEETS	
TASK O).: W	912	WJ2	2D0017 24F0024		ate F	Plar	ne - I	Conn		ut	N	zontal IAD83		L LW	
			ubsı		e Exploration of New Haven Harbor									series 10	bit		
	ENUMBER				CATION COORDINATES 647,931.6 E 954,570.3							TION O		L ficiency 86	5% (10	/17/2/1	
3. DRILL	ING AGE	NCY	& Те	•	g (ADT) - A Cascade Company	12. TC					auto		TURB		JNDISTUR	BED	
4. NAME	OF DRIL	LER				13. TC	TAL	NUM	IBER	CORE	BOXE	s	2				
	Marme				DEG FROM BEARING	14. EL	EVA	TION	GRO	UND W	ATEF	ł					
٧	ERTICAL				VERTICAL	15. DA					-	ARTED 8/2	22/24	1	/IPLETED 8/22/2	24	
6. THIC	KNESS OF	F OVE	RBU	RDEN	19.7'					OF BO				-15.4			
7. DEPT	'H DRILLE	ED INT	O RC	CK	25'							R BORI		98%			-
8. TOTA	L DEPTH	OF B	ORIN	G	44.7'	10. 510						Geolo					
		ure ing	ure ber	pu	FIELD CLASSIFICATION OF MATERIALS				Rock			ime (1
ELEV	DEPTH	Fracture Drawing	Fracture Number	Legend	(Description)					Frac. per foot	RQD %	Drill Time (Rate ft/hr)	W _x		REMARKS		
-35.1	-19.7		-		ALTERED GRANITE SCHIST slightly weathered to unweathered, pale yellowish	h	Run	Box 1		0		(9)		switch from wireline cor	ing setup		- 2
	-		1	M.	white and black, finely crystalline, K-felds Quartz, Plagioclase, Biotite present, very	par,				0		(7)		set 3inch ca casing in or	asing withi	n 4inch ate good	F
	F	E		N.t	to hard, moderately to slightly fracture	naru			94	3	84	(7)		seal for NQ	3 core set	up	-
	-			K!!	spacing, clay mineralization along rough surface fracture planes that are slightly to	`				0		(7)		R1 (20.2'-20 Ksi	,	=23.80	-
-40.1	24.7		-	M_{λ}	moderately weathered	,				0		(10)		Young's Mo failure=9,03			-
	-	\geq	-							0		(12)		50° fracture	e at 22.2'		- 2
	-		2	M.					400	2	~~	(8)		0-5° joint at 160° fractur	re at 22.7'		F
	-	2	3	N.A			Run 2	Box 1	100	1	93	(15)		75° fracture 70° fracture			F
-44.1	28.7		-	前						0		(17)		0-5° joint at 70° fracture	26.7'		F
	-		-							0		(3)		switch from	NQ3 to N		-
	-		4	KI.						1		(3)		barrel with s decrease di			- 3
	-	~	-	M. / ./						0		(3)		reduce dow to advance	n pressur		-
	Ļ	2	-				Run 3		97	0	80	(3)		R3 (29.8'-30		=21.43	-
	Ļ		5	M.	,		3	1		2		(3)		Ksi Young's Mo	dulus at		L
	Ļ	V,	6	Kt								(3)		failure=8,13 130° fractur			L
-50.1	34.7	1	-							1				40° fracture	e at 33.1'		- 3
	L		-	顾						0		(2)		vertical frac 33.1'-33.9'			
			-	\mathbb{N}						0		(3)		80-90° fract	ture from		
	L		- 1		-		Run 4	Box 1	98	0	96	(3)					
	L		7	KX.						0		(3)					L
-55.1	39.7	4	8	//\/.?/ .√.¶						1		(3)		70° fracture	e at 39.0'-3	89.5'	Ĺ.
	Γ	5	9	高						1		(2)		70° fracture			- 40
	F	V		M.	4					1		(2)		80-90° fract	ture from		F
	F			N.t				Box	100	0	84	(2)					F
	-		-	版印			5	2		0		(3)					F
-60.1	44.7		-	M	1					0		(4)					F
	E				- ed at EL -60.1' MLLW in ALTERED GRAN ducted from Northstar Marine Services, Inc				3 Vis	ion							
	-	2.11	,	2.011				,									
																	L
																	I I

G	EA
ENGINEER	S * SURVEYORS

DRILLING LOG DIVISION North Atlantic Division INSTALLATION New England District SHEET 1 or 1 sheet CONTRACT NO: TASK ORDER NO: W912DS22D0017 North Atlantic Division New England District or 1 sheet CONTRACT NO: W912DS22D0017 © CORDINATE State Plane - Connecticut NAD83 MLLW PRUCET NAME: Subsurface Exploration of New Haven Harbor TD24-RCC-08 N 647,932.8 E 954,162.6 ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24 ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24 ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24 ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24 BLEVATION GROUND WATER N/A 3. DRILLING AGENCY Aquifer Drilling & Testing (ADT) - A Cascade Company 13. TOTAL NUMBER CORE BOXES 1 INDISTURBED 0 1. NAME OF DROINING WERTICAL EVERTICAL VERTICAL SIGNATURE AND THE OF INSPECTOR 8/15/24 6. THICKNESS OF OVERBURDEN 3.9' 16. ELEVATION TOP OF BORING 88/6 8/15/24 7. DEPTH ORILLED INTO ROCK 18.8' 18. SIGNATURE AND THE OF INSPECTOR 8/15/24 8/15/24 8. TOTAL DEPTH OF BORING 22.7' Incluss ADD THE OF INSPECTOR 1 9/2 8/2 8/2 8/2 8/2 8/2 9/2 9/2
CONTRACT NO: W912DS22D0017 9. COORDINATE SYSTEM HORIZONTAL WERTCAL TASK ORDER NO: W912DS24F0024 MLLW State Plane - Connecticut NAD83 MLLW PROJECT NAME: Subsurface Exploration of New Haven Harbo 10. SJZE AND TYPE OF BIT NQ2/NQ3 series 10 bit MLLW 2. HOLE NUMBER ILCATION COORDINATES 11. MANUFACTURERS DESIGNATION OF DRILL MLLW 7.02 FLOCA N 647,932.8 E 954,162.6 ADT-273.CME-55, autohammer efficiency 86.5% (10/17/24 3. ORLING AGENCY Aquifer Drilling & Testing (ADT) - A Cascade Company 13. TOTAL NUMBER CORE BOXES 1 INCINNE Aumic of DRILLER 13. TOTAL NUMBER CORE BOXES 1 INCINNE GONDON BORINO EG FROM SIDECTIONO FORINO DEG FROM BEARING 14. ELEVATION GROUND WATER N/A 5 DIRCTONONO FORINO SIGNATION OF ADRINO BEGRINON (STATE ADDITIE) SIGNATION OF ORININO 88% 16. ELEVATION TOR COK 18.8' 11. MAUMEACTIVE CONTINUE OF INSPECTOR 11. SIGNATURE AND TITLE OF INSPECTOR 1. TOTAL CORE RECOVERY FOR BORINO SIGNATION OF MATERIALS Signative Resign with Alinch casing in order to go go fracture at 0.7' Signative Resign go go fracture at 0.7' 4.11 CP FLO BO
PROJECT NAME: Subsurface Exploration of New Haven Harbor Io. SIZE AND TYPE OF BIT NQ2/NQ3 series 10 bit 2. HOLE NUMBER LICATION COORDINATES 10. SIZE AND TYPE OF BIT NQ2/NQ3 series 10 bit 7. DED24-RC-08 N 647,932.8 E 954,162.6 ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24 3. ORLING AGENCY 4.ME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Auxier Dr DRILLER 13. TOTAL NUMBER CORE BOXES 1 Nick Marmolejo 14. ELEVATION GROUND WATER N/A 5 DIRECTION OF BORING DEG FROM BEARING 14. ELEVATION OF DORING 8/15/24 6. THICKNESS OF OVERBURDEN 3.9' 16. ELEVATION TOP OF BORING 38% 10. SIZE AND TYPE OF BIT 10. SIZE AND TYPE OF BIT 7. DEPTH DRILLED INTO ROCK 18.8' 17. TOTAL CORE RECOVERY FOR BORING 88% 10. SIZE AND TYPE OF BORING 88% 8. TOTAL DEPTH OF BORING 22.7' 10. SIZE AND TYPE OF BORING 88% 10. SIZE AND TYPE OF BORING 88% 12. SILTY SAND (SM) (5Y 2.5/1), black, saturated, very loss of homogeneous, rapid dilatancy, fine to mediatory. Fine to moderately reaction and tanch. Casing in order to genes and in Anch. Casing in order to genes and tor Casing
2: HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURERS DESIGNATION OF DRILL FD24-RC-08 N 647,932.8 E 954,162.6 ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24 ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24 ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24 AuME oF DRILLER TOTAL SAMPLES DISTURBED UNDISTURBED Nick Marmolejo 13. TOTAL NUMBER CORE BOXES 1 5. DIRECTION OF BORING DEG FROM BEARING 13. TOTAL NUMBER CORE BOXES 1 14. ELEVATION GROUND WATER N/A 15. DATE BORING 8/15/24 8/15/24 6. UNDISTURBED StartED COMPLETED 0 7. DEPTH OF BORING 22.7 16. ELEVATION TOP OF DRING 88% 8. TOTAL DEPTH OF BORING 22.7 18.8' 18.6' 18.6' ELEV DEPTH OF BORING 22.7' 10.05, saturated, very Longary Lipid dilatancy, fine to medium sand, some shell fragments, subangular to saturated, very Longary Lipid dilatancy, fine to medium subrounded, Marine Sediments 5 Ss-ot Ss-ot 4.3.1 4.9 ALTERED GRANITE SCHIST moderately weathered, pale pinkish yellow and black, finely crystalline, K-feldspar, Quarz, Plagioclase, Both frind/03 care setup of tracure at 6.9' Ston a sating f
3. DRLINK AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED AQUIFE DRILER 13. TOTAL SAMPLES 0 NAME OF DRILER 13. TOTAL NUMBER CORE BOXES 0 NICK Marmolejo 14. ELEVATION GROUND WATER N/A 5. DIRECTION OF BORING DEC FROM BEARING 14. ELEVATION GROUND WATER N/A 6. THICKNESS OF OVERBURDEN 3.9' 16. ELEVATION OF DORING COMPLETED 7. DEPTH DRILED INTO ROCK 18.8' 17. TOTAL CORE RECOVERY FOR BORING 32.2' (Measured in field) 7. DEPTH OR DORING 22.7' 17. TOTAL CORE RECOVERY FOR BORING 38.4' 8. TOTAL DEPTH OF BORING 22.7' 10. SIGNATURE AND TITLE OF INSPECTOR Lindsay Pugh, PG, Geologist ELEV DEPTH G SILTY SAND (SM) (5Y 2.5'1), black , saturated, very loose, homogeneous, rapid dilatancy, fine to medium sand, some shell fragments, subangular to subrounded, Marine Sediments 5 SS-01 Autohammer, 140bs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples 0 43.1 4.9 ALTERED GRANITE SCHIST moderately weathered to subround black, findly crystalline, K-fieldspar, Quartz, Plagloclase, both mediataling on surfaces, near vortical fractures to 3''' Torkture at 5.3''''''''''''''''''''''''''''''''''''
Aquifer Drilling & Testing (ADT) - A Cascade Company 6 0 4. NAME OF DRILLER Nick Marmolejo 13. TOTAL NUMBER CORE BOXES 1 5. DIRECTION OF BORING WERTICAL INCLINED DEG FROM WERTICAL INCLINED 13. TOTAL NUMBER CORE BOXES 1 6. THICKNESS OF OVERBURDEN 3.9' 16. ELEVATION GROUND WATER N/A N/A 7. DEPTH DRILLED INTO ROCK 18.8' 17. TOTAL CORE RECOVERY FOR BORING ISSIGNATURE AND TITLE OF INSPECTOR Lindsay Pugh, PG, Geologist 3.8' (Measured in field) 8. TOTAL DEPTH OF BORING 22.7' 10. SIGNATURE AND TITLE OF INSPECTOR Lindsay Pugh, PG, Geologist 10. SIGNATURE AND TITLE OF INSPECTOR Lindsay Pugh, PG, Geologist ELEV DEPTH INSUE OF SORING some shell fragments, subangular to subrounded, Marine Sediments 10. Signature and and angles 10. Signature and angles 10. Signature and angles 42.1 3.9 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale pinkish yellow and black, finety crystalline, K-feldspar, Quartz, Plagioclase, biotic present, very hard to hard, highly to more and joint surfaces are slightly to moderately weathered 85 Run for future at 6.9' R1 (7.9-8.2) UCS=24.22 Ksi Youngs Modulus at failure=8,045.8 Ksi 0' joint at 8.6' 1
Nick Marmolejo In Tortac Understand In Tortac Understand N/A 5. Direction OF BORING DEG FROM WERTICAL DEG FROM WERTICAL BEARING 14. ELEVATION GROUND WATER N/A 6. THICKNESS OF OVERBURDEN 3.9' 15. DATE BORING 38.2' (Measured in field) 17. TOTAL CORE RECOVERY FOR BORING 38.8' 7. DEPTH DRILLED INTO ROCK 18.8' 16. SIGNATURE AND TITLE OF INSPECTOR 17. TOTAL CORE RECOVERY FOR BORING 88% 8. TOTAL DEPTH OF BORING 22.7' 11. dissignature and put the to modum 18. SiGNATURE AND TITLE OF INSPECTOR 18. SiGNATURE AND TITLE OF INSPECTOR ELEV DEPTH FIELD CLASSIFICATION OF MATERIALS (Description) 18. SiGNATURE AND TITLE OF INSPECTOR 11. dissignature and put the to medium is and, some shell fragments, subangular to subrounded, Marine Sediments 15. SS-ot Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples 42.1 3.9 ALTERED GRANITE SCHIST moderately weathered, bight to moderately fracture spacing, near vertical fractures icontaining iron oxidation on surfaces, near horizonti rotare and joint surfaces are slightly to moderately weathered to unweathered, near horizonti racture at 6.1' 160 17. O' fracture at 6.9' 47.9 9.7 Virtue Stiphtly weathered to unweathered, medium 160 17. O' fracture at 6.9' 16
5. DIRECTION OF BORING DEG FROM VERTICAL 14. ELEVATION GROUND WATER N/A Mail VERTICAL INCLINED 15. DATE BORING 8/15/24 8/15/24 6. THICKNESS OF OVERBURDEN 3.9' 16. ELEVATION TOP OF BORING 38.2' (Measured in field) 7. DEPTH DRILLED INTO ROCK 18.8' 17. TOTAL CORE RECOVERY FOR BORING 88% 8. TOTAL DEPTH OF BORING 22.7' 10. ELEVATION TOP OF BORING 88% 18. SIGNATURE AND TITLE OF INSPECTOR Lindsay Pugh, PG, Geologist 10. SILTY SAND (SM) (5Y 2.5/1), black , saturated, very loose, homogeneous, rapid dilatancy, fine to medium sand, some shell fragments, subangular to subrounded, Marine Sediments 10. Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all subrounded, Marine Sediments 10. SILTY SAND (SM) (SY 2.5/1), black , saturated, very loose, homogeneous, rapid dilatancy, fine to medium sand, some shell fragments, subangular to subrounded, Marine Sediments 82 S-02 SS-01 43.1 4.9 ALTERED GRANITE SCHIST moderately weathered poterately fracture apair invito largh into invide line on surfaces, near horizontal in the signification on surfaces, shoth fractures and joint surfaces are slightly to moderately weathered 85 Run 1 60 Rt (7.9-8.2) UCS=24.22 Ksi Young's Modulus at failure=8,045.8 Ksi 0' joint at 8.6'
INCLINED 15. DATE BORING 8/15/24 8/15/24 8/15/24 6. THICKNESS OF OVERBURDEN 3.9' 16. ELEVATION TOP OF BORING -38.2' (Measured in field) 7. DEPTH DRILLED INTO ROCK 18.8' 17. TOTAL CORE RECOVERY FOR BORING 88% 8. TOTAL DEPTH OF BORING 22.7' Lindsay Pugh, PG, Geologist ELEV DEPTH FIELD CLASSIFICATION OF MATERIALS (Description) % c 2/8 REMARKS 8% 4.1 SILTY SAND (SM) (5Y 2.5/1), black, saturated, very loose, homogeneous, rapid dilatancy, fine to medium subrounded, Marine Sediments 4/8 Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples 0 42.1 3.9 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale pinkish yellow and black, finely crystalline, K-feldspar, Quartz, Plagicolase, lipins with clay mineralization on surfaces, near horizontal joints with clay mineralization on su
7. DEPTH DRILLED INTO ROCK 18.8' 8. TOTAL DEPTH OF BORING 22.7' ELEV DEPTH 9 FIELD CLASSIFICATION OF MATERIALS (Description) 9 FIELD CLASSIFICATION OF MATERIALS (Description) 9 SILTY SAND (SM) (5Y 2.5/1), black , saturated, very loose, homogeneous, rapid dilatancy, fine to medium subrounded, Marine Sediments 42.1 3.9 -42.1 3.9 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale pinkish yellow and black, Biotic present, very hard to hard, highly to moderately fracture spacing, near vertical fractures ortaning ion oxidation on surfaces, both fractures and joint surfaces are slightly to moderately weathered -47.9 9.7 -47.9 9.7
7. DEPTH DRILLED INTO ROCK 10.0 8. TOTAL DEPTH OF BORING 22.7' ELEV DEPTH B FIELD CLASSIFICATION OF MATERIALS (Description) % C % EC Ø W SILTY SAND (SM) (SY 2.5/1), black , saturated, very loose, homogeneous, rapid dilatancy, fine to medium subrounded, Marine Sediments, subangular to subrounded, Marine Sediments Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples -42.1 3.9 -42.1 3.9 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale pinkish yellow and black, finely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to moderately fracture spacing, near vertical fractures containing iron oxidation on surfaces, near horizontal joints with clay mineralization on surfaces, soth ractures and joint surfaces are slightly to moderately weathered 85 Run 1 60 70' fracture at 6.9' R1(7.9*8.2) UCS=24.22 Ksi Yoing Modulus at failure=8,045.8 Ksi 0' joint at 8.6'
8. TOTAL DEPTH OF BORING 22.7' Lindsay Pugh, PG, Geologist ELEV DEPTH 0 FIELD CLASSIFICATION OF MATERIALS (Description) % 0 % REMARKS % 0 % <
-42.1 3.9 -42.1 3.9 -43.1 4.9 -43.1 4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -4.9 -43.1 -5 -43.1 -5 -43.1 -5 -43.1 -5 -43.1 -5 -43.1 -5 -43.1 -5 -43.1 -5 -43.1 -5 -43.2 -5 -43.3 -5 -43.4 -5 -43.5 -5 -47.9 -5 -47.9 </td
-42.1 3.9 -42.1 3.9 -43.1 4.9 -47.9 9.7
-42.1 3.9 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale pinkish yellow and black, finely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to moderately meathered, pale pinkish yellow and black, finely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to moderately meathered to sufficient or suffaces are slightly to moderately weathered to sufface are slightly to moderately weathered. 82 ss.02 -47.9 9.7 Slightly weathered to unweathered to unweathered medium. 85 Run 1 60 -47.9 9.7 Slightly weathered to unweathered to unweathered medium. 85 Run 1 60
-42.1 3.9 3.9 diameter, 24 inches long split spoon used on all samples -42.1 3.9 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale pinkish yellow and black, finely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to moderately fracture spacing, near vertical fractures containing iron oxidation on surfaces, near horizontal joints with clay mineralization on surfaces, both fracture and joint surfaces are slightly to moderately weathered. 85 Run 1 60 Run 70° fracture at 6.9' R1 (7.9-8.2') UCS=24.22 Ksi Young's Modulus at failure=8,045.8 Ksi 0° joint at 8.6' -47.9 9.7 Slightly weathered to unweathered medium moderately medium 85 Run 1 60 R1 (7.9-8.2') UCS=24.22 Ksi Young's Modulus at failure=8,045.8 Ksi 0° joint at 8.6'
-42.1 3.9 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale pinkish yellow and black, finely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to moderately fracture spacing, near vertical fractures containing iron oxidation on surfaces, near horizontal joints with clay mineralization on surfaces, both fractures and joint surfaces are slightly to moderately weathered. 85 Run 1 60 85 Run 2.0 70° fracture at 5.3° 70° fracture at 6.9' -47.9 9.7 9.7 Slightly weathered to unweathered to unweathered medium medium 85 Run 1 60 R1 (7.9'-8.2') UCS=24.22 Ksi Young's Modulus at failure=8,045.8 Ksi 0° joint at 8.6' 86
4.9 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale pinkish yellow and black, finely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to moderately fracture spacing, near vertical fractures containing iron oxidation on surfaces, near horizontal joints with clay mineralization on surfaces, both fractures and joint surfaces are slightly to moderately weathered 82 SS-02 switch from roller bit to wireline coring setup set 3inch casing within 4inch casing in order to create good seal for NQ3 core setup 90° fracture at 5.3° 70° fracture at 6.1° switch from roller bit to wireline coring setup set 3inch casing within 4inch casing in order to create good seal for NQ3 core setup 90° fracture at 6.1° 47.9 9.7 Slightly weathered to unweathered medium 85 Run 1 60 47.9 9.7 Slightly weathered to unweathered medium 85 Run 1 60
4.9 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale pinkish yellow and black, finely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to moderately fracture spacing, near vertical fractures containing iron oxidation on surfaces, near horizontal joints with clay mineralization on surfaces, both fractures and joint surfaces are slightly to moderately weathered 82 ss-o2 switch from roller bit to wireline coring setup set 3inch casing within 4inch casing in order to create good seal for NQ3 core setup 90° fracture at 5.3° 70° fracture at 6.1° switch from roller bit to wireline coring setup set 3inch casing within 4inch casing in order to create good seal for NQ3 core setup 90° fracture at 6.1° 47.9 9.7 Slightly weathered to unweathered medium 85 Run 1 60 47.9 9.7 Slightly weathered to unweathered medium medium 85 Run 1 60
-43.1 4.9 ALTERED GRANITE SCHIST moderately weathered to slightly weathered, pale pinkish yellow and black, finely crystalline, K-feldspar, Quartz, Plagioclase, Biotite present, very hard to hard, highly to moderately fracture spacing, near vertical fractures containing iron oxidation on surfaces, near horizontal joints with clay mineralization on surfaces, both fractures and joint surfaces are slightly to moderately weathered 85 Run 1 60 Switch from roller bit to wireline coring setup set 3inch casing within 4inch casing in order to create good seal for NQ3 core setup 90° fracture at 5.3° 70° fracture at 6.1° 90° fracture at 6.1° -47.9 9.7 9.7 Slightly weathered to unweathered medium 85 Run 1 60 R1 (7.9°-8.2') UCS=24.22 Ksi Young's Modulus at failure=8,045.8 Ksi 0° joint at 8.6' 85 81 1 60 81 86 81
47.9 9.7 Slightly weathered to unweathered medium
-47.9 9.7 9.7 Sightly weathered to unweathered medium
-47.9 9.7
-47.9 9.7
-47.9 9.7
-47.9 9.7
-47.9 9.7
$[5, t^{\prime}]/1$ Slightly weathered to unweathered medium
4 joint at 9.9
95° fracture at 10.4'
20° joint at 11.6'
$- \frac{1}{\sqrt{1}} \frac{1}{$
R2 (13.3'-13.6') UCS=23.14 Ksi Young's Modulus at failure=27.344.0 Ksi
-52.9 14.7 10-5° joint at 14.0°
signify weathered to moderately weathered, intely crystalline, moderately to highly fracture spacing switch from NQ3 to NQ2 barrel with series 10 bit to help reduce down pressure needed to
- M/ /> advance barrel
$\begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{bmatrix}$ $\begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{bmatrix}$ $\begin{bmatrix} 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{bmatrix}$ $\begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{bmatrix}$ $\begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{bmatrix}$ $\begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{bmatrix}$ $\begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{bmatrix}$ $\begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{bmatrix}$
90-95° fracture from 17.0'-17.8', which include
- (3) 0-5° joints
Sightly weathered to unweathered, medium M 70° fracture at 19.1'
\sim
Image: Second
Young's Modulus at failure=11,339.2 Ksi 10° joint at 21.0°
- 60° fracture at 21.3'
-60.9 22.7 10° joint at 22.0' BOTTOM OF BOREHOLE AT 22.7 ft 80° fracture at 22.3'
Boring terminated at EL -60.9' MLLW in ALTERED GRANITE SCHIST
Boring conducted from Northstar Marine Services, Inc Northstar L/B Vision

									ng D	esig	nat	ion	F	D24-RC-()8	_
	CORE	LO	G		DIVISION North Atlantic Divis		NSTALLA		and	Distri	ct				SHEET 1 OF 1 SHEETS	
CONTR	ACT NO.:	W	/912	DS2	2D0017		. COORI	DINAT	E SYS	TEM				ZONTAL	VERTICAL	1
TASK ORDER NO.: W912WJ24F0024 PROJECT NAME: Subsurface Exploration of New Haven Harbor							State Plane - Connecticut NAD83 MLLW									
2. HOLE NUMBER LOCATION COORDINATES							10. SIZE AND TYPE OF BIT NQ2/NQ3 series 10 bit 11. MANUFACTURER'S DESIGNATION OF DRILL									-
	4-RC-C			N	647,932.8 E 954,1		ADT-273, CME-55, autohammer efficiency 86.5% (10/17/24)									-
Aqu	fer Dril	ling	& Те	estin	g (ADT) - A Cascade		2. 101A	AL SAIV	IPLES			015		6		
	OF DRIL)			13	13. TOTAL NUMBER CORE BOXES 1]
5. DIRE	CTION OF					BEARING 14	14. ELEVATION GROUND WATER									-
	ERTICAL				VERTICAL	15	15. DATE BORING STARTED COMPLETED 8/15/24 8/15/24 8/15/24									
6. THICI	KNESS OF	= OVE	ERBUR	RDEN	3.9'		6. ELEV							-38.2		4
7. DEPT	H DRILLE	D INT	FO RC	CK	18.8'		7. TOTA 8. SIGN							88%		-
8. TOTA	L DEPTH	OF B	ORIN	G	22.7'		L	inds	ay P	ugh, I	PG	Geolo				
ELEV	DEPTH	Fracture Drawing	Fracture Number	Legend		TON OF MATERIALS	Run	No. No. No.	Rock (Frac. per foot	RQD %	Drill Time (Rate ft/hr)	W _x	R	EMARKS	
-42.1	3.9				ALTERED GRANITE S weathered to slightly w											1
-43.1	4.9	2	1		vellow and black, finely	crystalline. K-feldsp	oar.							switch from	roller bit to	- 5
		T		劇	Quartz, Plagioclase, Bi to hard, highly to mode	rately fracture spacir	ard ng,			6		(4)		wireline cori		
	-	30	2	例之	near vertical fractures of oxidation on surfaces,	near horizontal joints	;			4					der to create good	F
		R	3		with clay mineralization fractures and joint surfa	on surfaces, both aces are slightly to				4		(4)		90° fracture 70° fracture	at 5.3'	
	_	1	Ū	们为	moderately weathered	0,	Ru	InBox	85	2	60	(7)		70° fracture		
	_	~	4	民族			1			1		(5)		Young's Mo		-
	-		-	M)										failure=8,04 0° joint at 8.		F
-47.9	9.7		5	1 1, 2						0		(7)				
	-	The		影	Slightly weathered to u crystalline	nweathered, medium	n			3		(7)		4° joint at 9.	9'	- 10
	_	3.0	6	M	i I							(1)		95° fracture	at 10.4'	_
										1		(9)				
	-		-	前之				InBox	90	0	74	(8)		20° joint at 7	1.6'	F
	_	~	7	以近			2	2 1		1		(9)		0.5% in int of		-
			8	以上											5.6') UCS=23.14	
-52.9	14.7	2750								2		(9)		Ksi Young's Mo		Γ
	_		-		Slightly weathered to m					0		(10)		failure=27,3 0-5° joint at	14.0'	- 15
		32	9	m.	spacing	ratery to highly haclt				v				75° fracture switch from	NQ3 to NQ2	
	-	A		N.A						4		(12)		reduce dow	eries 10 bit to help n pressure needed	F
	_	R T	10	K.			Ri 3	unBox 3 1	85	6	40	(2)		to advance 0-5° joint at	15.7'	╞
		E	11							0		(3)		0-5° joint at 10° joint at	6.5'	
50.0	-	7		厥						1		(3)			ure from which include (3)	F
-56.9	18.7 -	2	12	4.1.2	Slightly weathered to u	nweathered, medium	n -							0-5° joints		L
			13	KI.	crystalline					1		(3)		70° fracture	at 19.1'	1
	-	-	15							2		(4)		20° fracture 0-5° joint at		- 20
		2	14	厥				InBox	95		73	. '			0.4') UCS=15.48	
	–	-		關於			4	1		2		(6)		Young's Mo		ſ
	-	2	15	同						2		(4)		10° joint at 2	21.0'	F
-60.9	22.7	h		1. Pr						2		(ד)		60° fracture	22.0'	4
					ed at EL -60.9' MLLW in ducted from Northstar Ma				R Vie	ion				8 0° fracture	ai 22.3	
	L	-onny	y was						5 113							1

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ENGINEER	S * SURVEYORS

DIVISION INSTALLATION North Atlantic Division New England District	SHEET 1 OF 1 SHE	1									
North Atlantic Division New England District		ETS									
CONTRACT NO.: W912DS22D0017 9. COORDINATE SYSTEM	HORIZONTAL VERTICAL										
TASK ORDER NO.: W912WJ24F0024 State Plane - Connecticut PROJECT NAME: Subsurface Exploration of New Haven Harbor 10. SIZE AND TYPE OF BIT M	NAD83 MLLW										
2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION	In Size and type of Bit Mud Rotary (4" Tricone Roller) 11. MANUFACTURER'S DESIGNATION OF DRILL										
	Immer efficiency 86.5% (10/17/2 DISTURBED UNDISTURBED	24)									
Aquifer Drilling & Testing (ADT) - A Cascade Company	13 0										
4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES	0										
5. DIRECTION OF BORING DEG FROM BEARING 14. ELEVATION GROUND WATER											
VERTICAL VERTICAL 15. DATE BORING	TED COMPLETED 8/30/24 8/30/24										
6. THICKNESS OF OVERBURDEN >59.3' 16. ELEVATION TOP OF BORING -	16. ELEVATION TOP OF BORING -14.6' (Measured in field)										
7. DEPTH DRILLED INTO ROCK 0' 17. TOTAL CORE RECOVERY FOR E 18. SIGNATURE AND TITLE OF INSP	17. TOTAL CORE RECOVERY FOR BORING N/A										
8. TOTAL DEPTH OF BORING 59.3' Lindsay Pugh, PG, Ge											
ELEV DEPTH Depth Depth Field Classification of Materials (Description) % REC Depth Depth		N-Value									
ELEV DEPTH Depth Depth Depth Depth FIELD CLASSIFICATION OF MATERIALS (Description) % 2 %	REMARKS	ž z									
	tion results and classification	0 -									
Autohammer, 14	40lbs, 30in drops, 2-inch	=									
0 ss-02 samples		0									
	WOR/2.0	F									
	ncorrected): 0.0 kg/cm ²	0									
Gravel: 0; Sand:	meter (uncorrected): 0.0 tsf; l: 9; Fines: 91; LL: 95; PI: 51;										
- MC: 156; OH	0 0 0	0									
-30.6 16.0	WOR/2.0	Ť									
SILTY SAND (SM) (2.5Y 3/1), very dark gray,		-									
- saturated, very loose to medium dense, rapid dilatancy, fine to coarse sand, some shell fragments,	4 3 1	4 L									
Marine Sediments		-									
	l: 86; Fines: 14; MC: 20; SM										
	5 7	9									
-41.9 27.3		E									
Fine to medium sand, trace shell fragments 65 ss-07	6 6 10	16									
	5										
55 SS-08		8									
-51.9 37.3 200		F									
-51.9 57.5 Wood 50 ss-09	6 2 2	4 -									
-55.6 41.0		‡									
POORLY GRADED SAND (SP) (5YR 3/3), dark		F									
-59.6 45.0 reddish brown , saturated, medium dense, rapid dilatancy, fine to coarse sand	7 8 9	15									
CLAYEY SAND (SC) (2.5YR 5/3), reddish brown, mild rig chatter f	from ~45'-46'	F									
 wet, very dense, slow dilatancy, fine to coarse sand, little fine gravel 0 SS-11 	16 32 21	53 -									
rig chatter while	e drilling to next sample interval	<u> </u>									
from 47.3'-52.3'		_									
75 SS-12	28 40 62 65	100+_									
		-									
-71.9 57.3	65	<u> </u>									
	84 75 86	100+_									
BOTTOM OF BOREHOLE AT 59.3 ft Boring terminated at -73.9' MLLW in CLAYEY SAND.											
Boring terminated early due to increasing sea state conditions to prevent tooling from br Boring conducted from Northstar Marine Services, Inc Northstar L/B Vision	reaking downhole										

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ENGINEER	S * SURVEYORS

ENGINEERS * S	BURVEYORS			1	Bor	<u>'ing</u>	Designation FD24-RC-10							
DF	RILLIN	GL	.OG DIVISION North Atlantic Division				d District OF 1 s	1 SHEETS						
CONTRACT NO.: W912DS22D0017						ATE S	SYSTEM HORIZONTAL VERTICAL							
			/912WJ24F0024 ubsurface Exploration of New Haven Harbor				• •	vv						
						10. SIZE AND TYPE OF BIT NQ2 series 10 bit 11. MANUFACTURER'S DESIGNATION OF DRILL								
	4-RC-1		N 646,337.1 E 954,627.1				/E-55, autohammer efficiency 86.5% (10/17							
	ING AGE fer Dril		& Testing (ADT) - A Cascade Company	12. TO	TAL S	AMPL	ES DISTURBED UNDISTURB 9 0	ED						
4. NAME	OF DRI	LER		13. TO	TAL N	IUMBI	ER CORE BOXES 2							
	Marmo			- 14. ELI	EVATI	ON G	ROUND WATER N/A							
🖂 V	ERTICAL		VERTICAL	15. DA			8/21/24 8/21/24	1						
3. THICK	KNESS O	FOV	ERBURDEN 7.7'				OP OF BORING -26' (Measured in field)							
7. DEPT	H DRILLE	ED IN	TO ROCK 27.2'				RECOVERY FOR BORING 99% ND TITLE OF INSPECTOR							
Β. ΤΟΤΑ	L DEPTH	I OF E	BORING 34.9'		Lind	lsay	Pugh, PG, Geologist							
ELEV	DEPTH	EGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% RE		RQD %	REMARKS	N-Value						
	_		POORLY GRADED SAND WITH SILT (SP-SM) (2.5 ^v 4/1), dark gray, saturated, very loose to loose,	Y 75			USCS - Gradation results and classification provided by CDM Smith Laboratory	4						
	-		homogeneous, rapid dilatancy, fine to medium sand, some shell fragments, subangular, Marine Sediments		+	-	Autohammer, 140lbs, 30in drops, 2-inch diameter, 24 inches long split spoon used on all samples	-						
-29.7	3.7					\perp								
	_		Fine to coarse sand	70) ss-0)2	Gravel: 0; Sand: 91; Fines: 9; MC: 25; SP-SM	8						
	_					_		_						
) SS-0	13		4						
-33.7	7.7		ALTERED GRANITE SCHIST highly weathered to	40	, 55-0		switch from roller bit to wireline coring setup	<u>• /</u>						
	_	KI.	moderately weathered, pale yellow and light gray, fine crystalline, K-feldspar, Quartz, Plagioclase, Biotite	ly			set 3inch casing within 4inch casing in order to create good seal for NQ2 core setup							
		M / /	present, very hard to hard, highly fracture spacing, ne	ar 96	3 Rur	י 12 וי	two near vertical fractures from 7.7'-9.7' with							
	_		vertical fractures with iron oxidation and clay mineralization along rough surfaces that are slightly to				throughout section near vertical fracture from 9.7'-10.8' with 4							
-38.7	12.7		moderately weathered, and contains post weathering				horizontal joints							
	_	[K.f	mineralization veins Highly to moderately fracture spacing		+	1	- 150° fracture at 10.9' 50° fracture at 11.1'							
	_	版印					vertical fracture from 11.3'-12.5' vertical fracture from 12.7'-14.0'							
		μĴŷ	<i>1</i>	10	0 Rur 2	י 66	80° fracture from 13.9'-14.8'							
	_						10° joint at 16.1'							
-43.7	17.7				—	+	10° joint at 16.2' 160° fracture at 16.6'							
	_	[]\\.T	Moderately weathered				R2 (16.7'-17.0') UCS=20.67 Ksi Young's Modulus at failure=9,775.2 Ksi							
		颐			Rur	1	80° fracture from 18.5'-19.8'							
	_	μĴŷ	A	10	0 3	76	70° fracture from 20.1'-20.4' 30° fracture at 20.7'							
10 7	- 00 -						mineralization vein at 21.1'							
-48.7	22.7		Moderately weathered to unweathered		+	+	20° fracture at 22.2'							
-50.7	24.7	KT.					(3) 10° joints from 23.7'-23.9'							
.00.1		17.19	QUARTZ-BIOTITE-PLAGIOCLASE SCHIST	98	3 Rur	י 92	10° joint at 24.2' 40° mineralization vein at 24.5'							
	-	MAL	unweathered, foliated, black with white, pyrite present hard, unfractured fracture spacing	,	4									
-53.7	27.7	MXK					R4 (26.7'-27.0') UCS=12.45 Ksi							
-54.6	28.6		·				Young's Modulus at failure=4,067.1 Ksi							
-55.9	_ 29.9	応	ALTERED GRANITE SCHIST unweathered, unfractu fracture spacing	red										
-56.6	30.6	<u>phi</u>		<u></u> 9٤	3 Rur 5	י 84	R5 (29.6'-29.9') UCS=16.55 Ksi Young's Modulus at failure=11,057.3 Ksi							
	-	高	unweathered, foliated, black with white, pyrite present	.,			near vertical fracture from 30.4'-31.9'							
-58.7	32.7		unfractured fracture spacing ALTERED GRANITE SCHIST unweathered, slightly to	<u>-</u> _	\perp		45° fracture at 32.0'							
	_	K.ť	moderately fracture spacing	10	0 Rur	¹ 64	. near vertical fracture from 33.4'-34.5'							
-60.9	- 34.9				6	04								
			BOTTOM OF BOREHOLE AT 34.9 ft				-√45° mineralization vein at 34.6'							

ENGINEERS * SURVEYORS						esig	nati	on	<u> </u>	<u>D24-RC-10</u>	
CORE LOG	DIVISION North Atlantic Division	INSTA				Distri	ct			SHEET 1 OF 1 SHEETS	
CONTRACT NO .: W912DS	New England District OF 1 SHEETS 9. COORDINATE SYSTEM : HORIZONTAL : VERTICAL										
TASK ORDER NO .: W912WJ	State Plane - Connecticut NAD83 MLLW										
PROJECT NAME: Subsurfa		10. SIZE AND TYPE OF BIT NQ2 series 10 bit									
	DCATION COORDINATES		11. MANUFACTURER'S DESIGNATION OF DRILL								
FD24-RC-10 3. DRILLING AGENCY	N 646,337.1 E 954,627.1	AD 12. TO					autor		er eπ TURB	iciency 86.5% (10/17/24) ED UNDISTURBED	
	ng (ADT) - A Cascade Company	12.10		GAN		5				9 0	
4. NAME OF DRILLER		13. TO	TAL	NUN	/BER	CORE	BOX	ES	2		
Nick Marmolejo	·	- 14. ELEVATION GROUND WATER									
5. DIRECTION OF BORING	DEG FROM BEARING VERTICAL	15. DA	TE E	BORI	NG		ST		21/24	COMPLETED 8/21/24	
6. THICKNESS OF OVERBURDE	;;; EN 7.7'	16. EL	EVA	TION	I TOF	OF BC	: DRING		21/2-	-26.0	
7. DEPTH DRILLED INTO ROCK								OR BOF		99%	
8. TOTAL DEPTH OF BORING	34.9'	- 18. SIG						NSPEC Geolo			
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5											
Le N T F A C C C C C C C C C C C C C C C C C C	FIELD CLASSIFICATION OF MATERIAL	s	Run No.	Box No.	Rec %	Frac. per foot	RQD %	Drill Time (Rate ft/hr)	W _x	REMARKS	
-33.7 - 7.7	ALTERED GRANITE SCHIST highly weath	nered				3		(9)		switch from roller bit to wireline	-
	$\frac{1}{\sqrt{2}}$ to moderately weathered, pale yellow and light gray, finely crystalline, K-feldspar, Quartz,	gnt				2		(5)		coring setup set 3inch casing within 4inch	-
	$\frac{\gamma}{\lambda}$ Plagioclase, Biotite present, very hard to ha	ard,	Run	Box	96	1	12	(4)		casing in order to create good seal for NQ2 core setup	- 10
	12 highly fracture spacing, near vertical fracture 1/1 with iron oxidation and clay mineralization a	162	1	1	00	3		(3)		two near vertical fractures from	-
5	rough surfaces that are slightly to moderate									7.7'-9.7' with numerous horizontal joints 0.2'-0.3' in	_
-38.7 12.7 6	weathered, and contains post weathering					1		(9)		length throughout section	_
7	/ Highly to moderately fracture spacing					1		(8)		near vertical fracture from 9.7'-10.8' with 4 horizontal	
						2		(6)		joints	-
	Ť			Box 1	100	3	66 (6	(6)		150° fracture at 10.9' 50° fracture at 11.1'	- 15
9	17.		2			3		(6)		vertical fracture from 11.3'-12.5' - vertical fracture from 12.7'-14.0'	-
-43.7 17.7						0				80° fracture from 13.9'-14.8'	-
-43.7 17.7	لاً المراجعة Moderately weathered					-		(6)		10° joint at 16.1' 10° joint at 16.2'	-
	1/]					0		(4)		160° fracture at 16.6'	_
10 M/	. <u>}</u>			_				(4)		R2 (16.7'-17.0') UCS=20.67 Ksi	- 20
			Run 3	Box 1	100	1	76	(5)		Young's Modulus at	20
						3		(5)		failure=9,775.2 Ksi 80° fracture from 18.5'-19.8'	-
-48.7 22.7 12 H						0		(5)		70° fracture from 20.1'-20.4' 30° fracture at 20.7'	-
	Moderately weathered to unweathered					1		(6)		mineralization vein at 21.1'	-
-50.7 24.7 13	/' 1 \ \					3		(4)		20° fracture at 22.2' (3) 10° joints from 23.7'-23.9'	-
	QUARTZ-BIOTITE-PLAGIOCLASE SCHIS	ST	Run	Box	98	1	92	(4)		10° joint at 24.2'	- 25
	unweathered, foliated, black with white, pyr	ite	4	1		0		(4)		40° mineralization vein at 24.5'	-
	<pre> present, hard, unfractured fracture spacing</pre>					-				R4 (26.7'-27.0') UCS=12.45	_
-53.7 27.7 -						0		(3)		Ksi`	
-54.6 28.6						0		(3)		Young's Modulus at failure=4,067.1 Ksi	-
-55.9 29.9	ALTERED GRANITE SCHIST unweathered	a,				0		(4)			-
-56.6 30.6	QUARTZ-BIOTITE-PLAGIOCLASE SCHIS	ST	Run		98	0	84	(4)		R5 (29.6'-29.9') UCS=16.55 Ksi	- 30
	unweathered, foliated, black with white, pyr	rite	5	2		1	1	(3)		Young's Modulus at	-
	Altered GRANITE SCHIST unweathered					0		(5)		failure=11,057.3 Ksi near vertical fracture from	-
-58.7 32.7 16	A slightly to moderately fracture spacing	,	\vdash			1		(5)		30.4'-31.9'	-
17 17	17]		Run	Box	100		64			45° fracture at 32.0' near vertical fracture from	-
-60.9 34.9 M\)	.×		6	2		1		(6)		33.4'-34.5'	
Boring terminat	ted at EL -60.9' MLLW in ALTERED GRANITE	E SCHIS	ST							\$5° mineralization vein at 34.6'	

Boring was conducted from Northstar Marine Services, Inc - Northstar L/B Vision

GEA