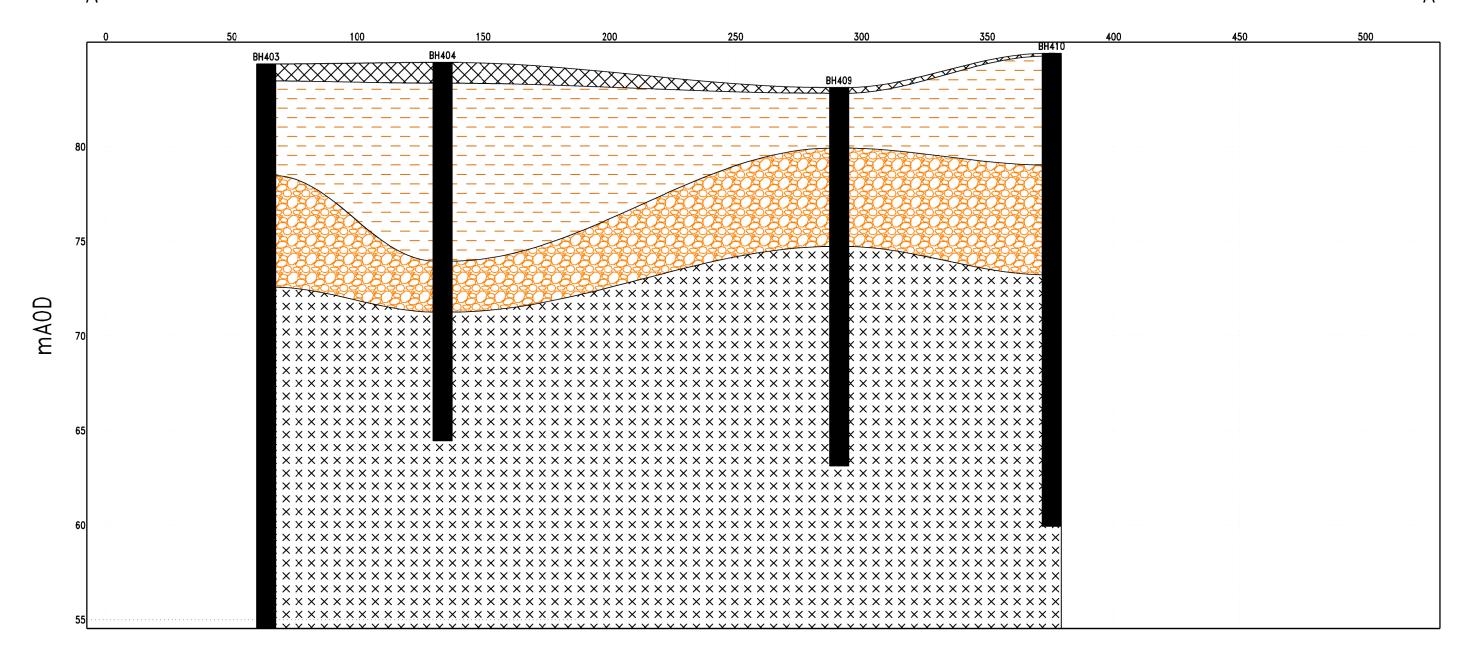


NORTH
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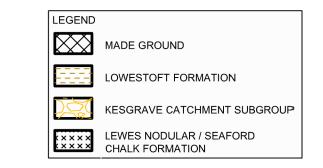


Horizontal Scale - 1:1,500 Vertical Scale - 1:200



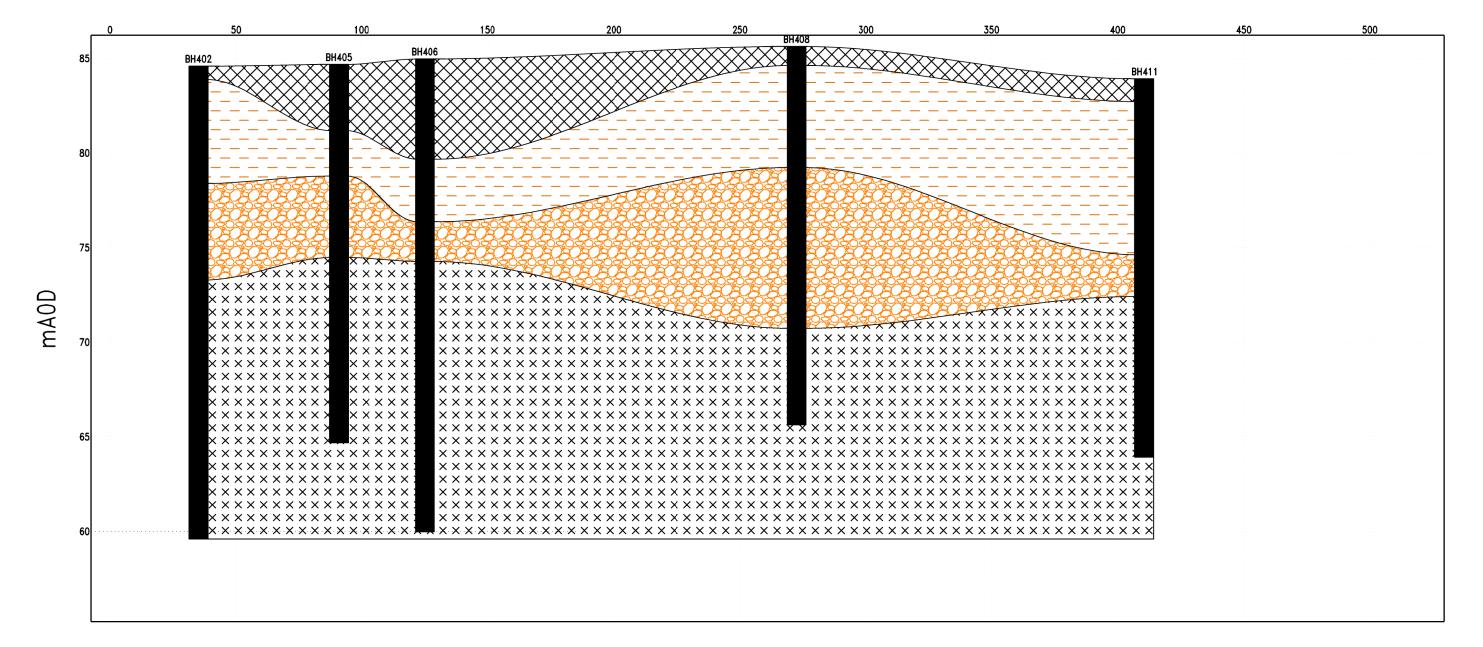
Indicative Geological SectionA
Broadwater Road
Welwyn Garden City

-	DWN:	SCA:	PROJECT NO.:
	DE	sca: To Scale @ A3	2342.18
	CHK:	REV:	2072.10
	SS	1	FIGURE NO.:
	DATE: 26 Nov	vember 2014	5a

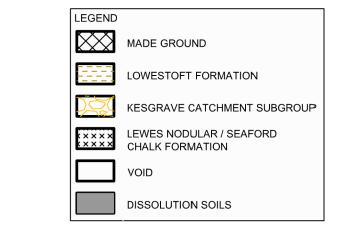


SOUTH NORTH .





deltasimons

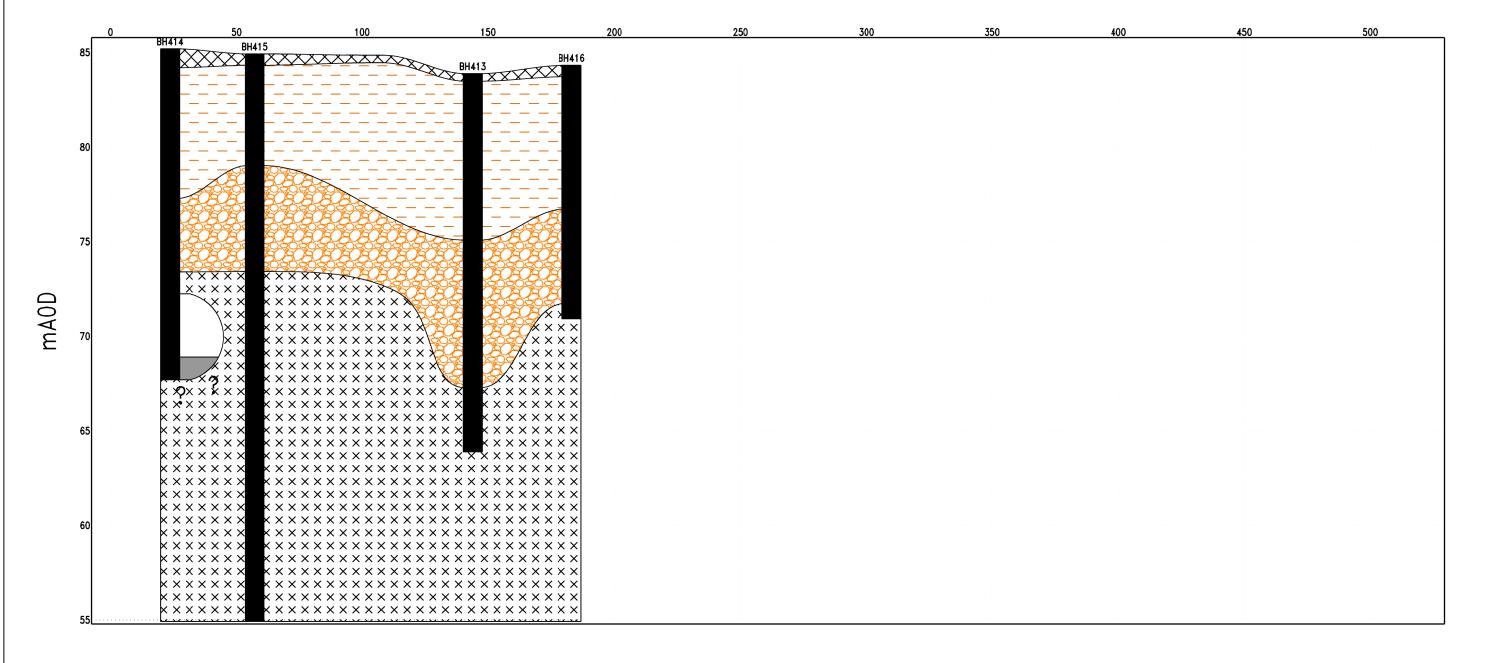


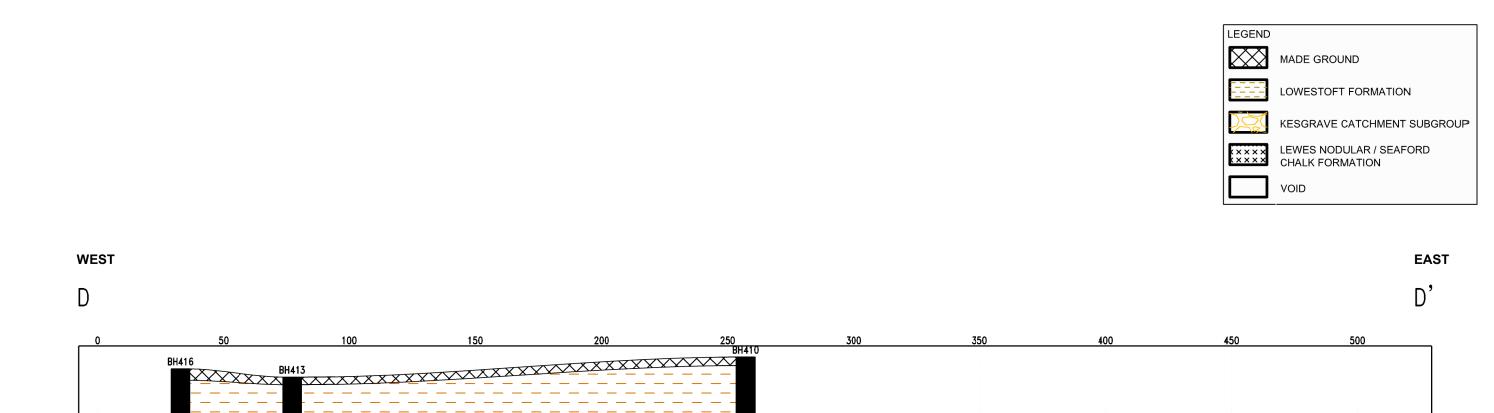
SOUTH

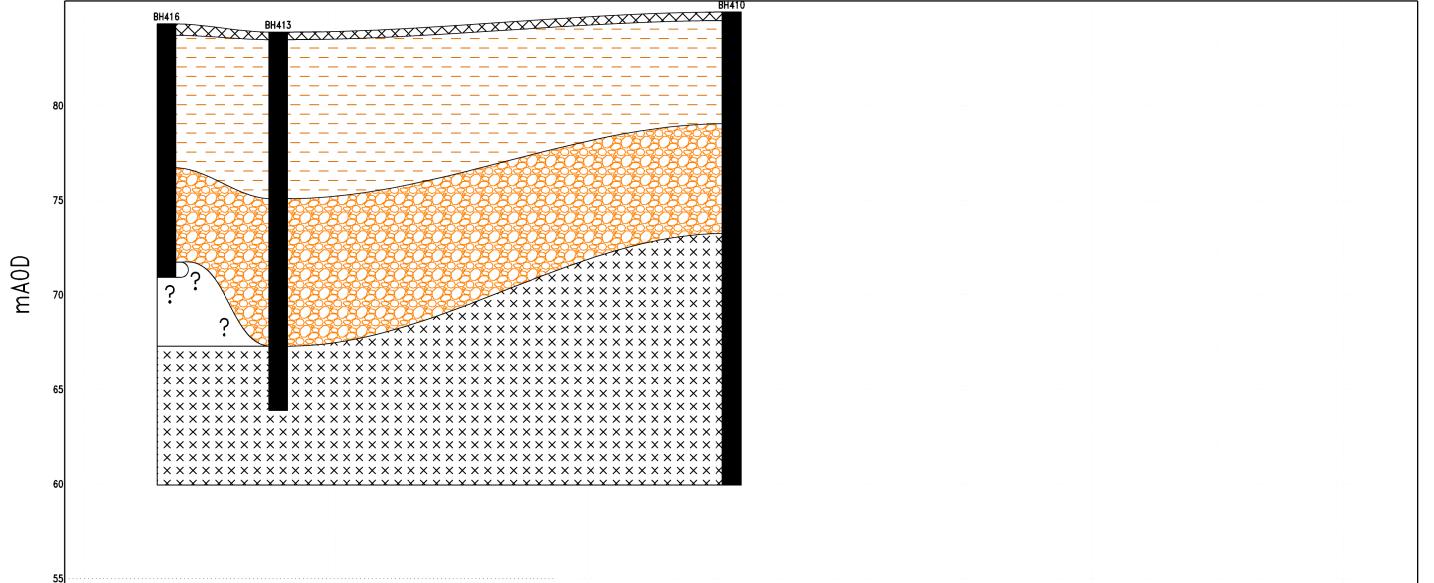
(

NORTH









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Indicative Geological Section D
Broadwater Road
Welwyn Garden City

DE TO Scale @ A3

CHK: SS REV: 1

DATE: 26 November 2014

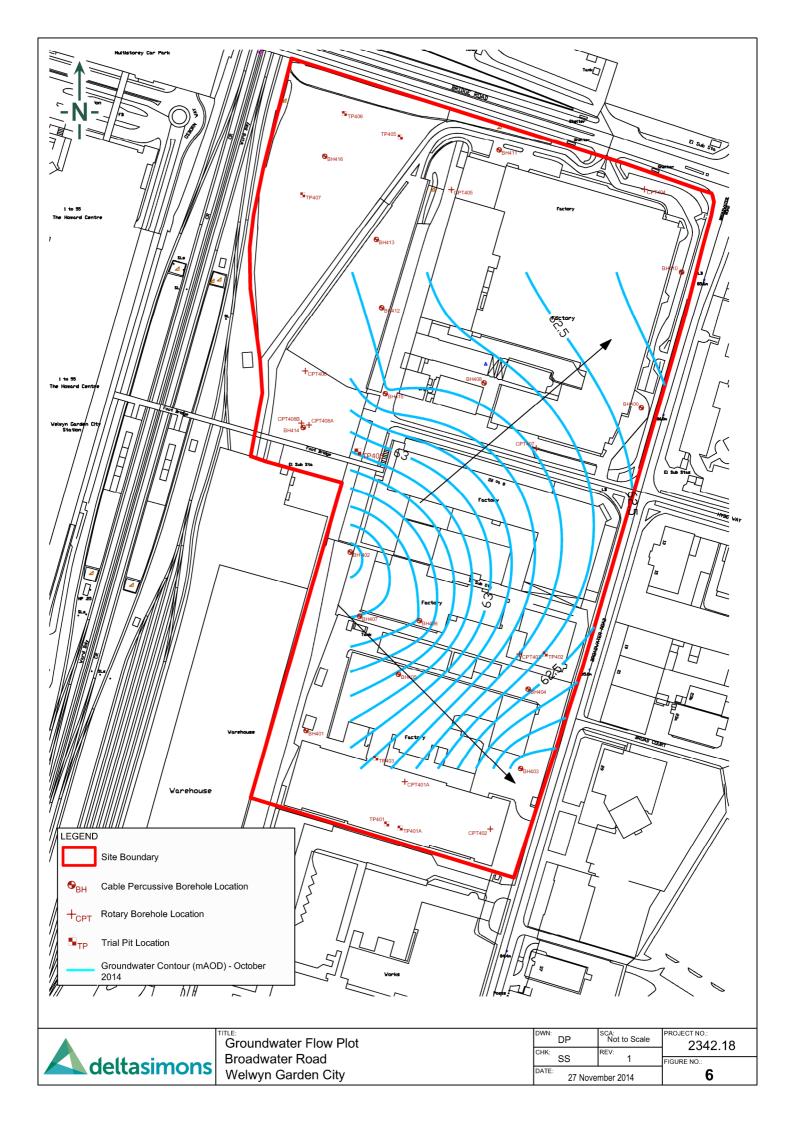
SCA: TO Scale @ A3

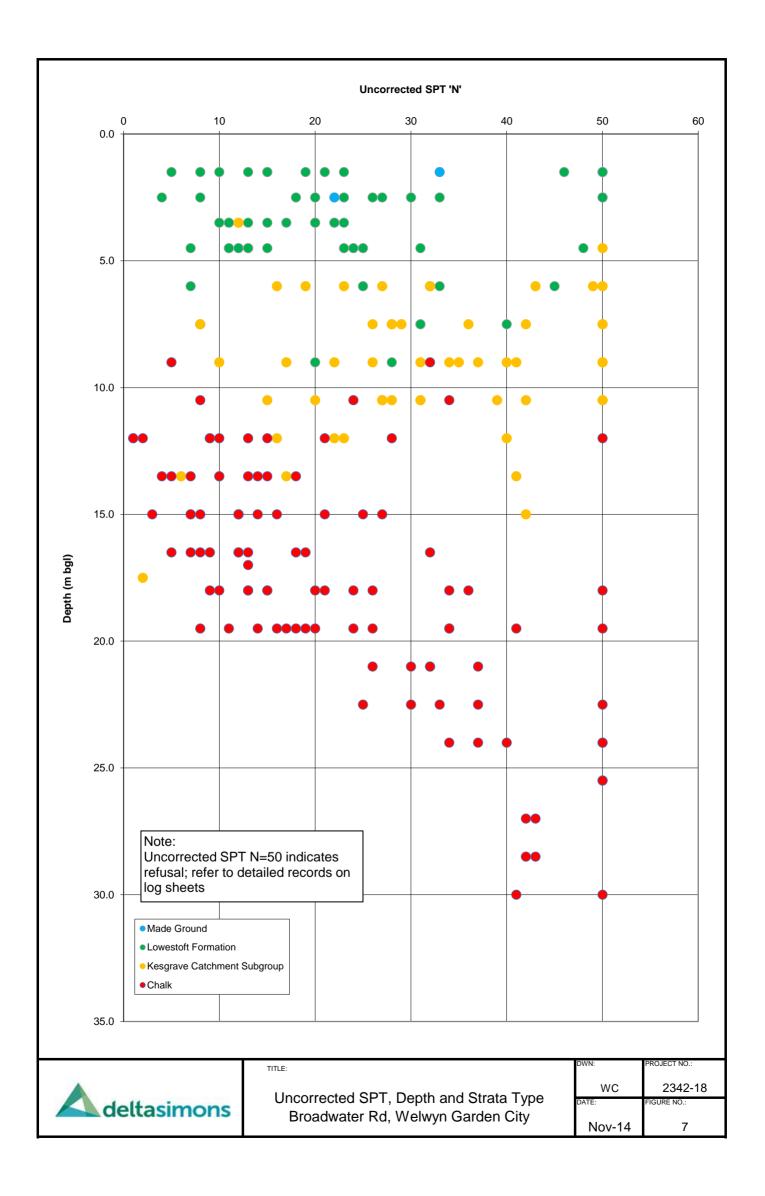
PROJECT NO.:
2342.18

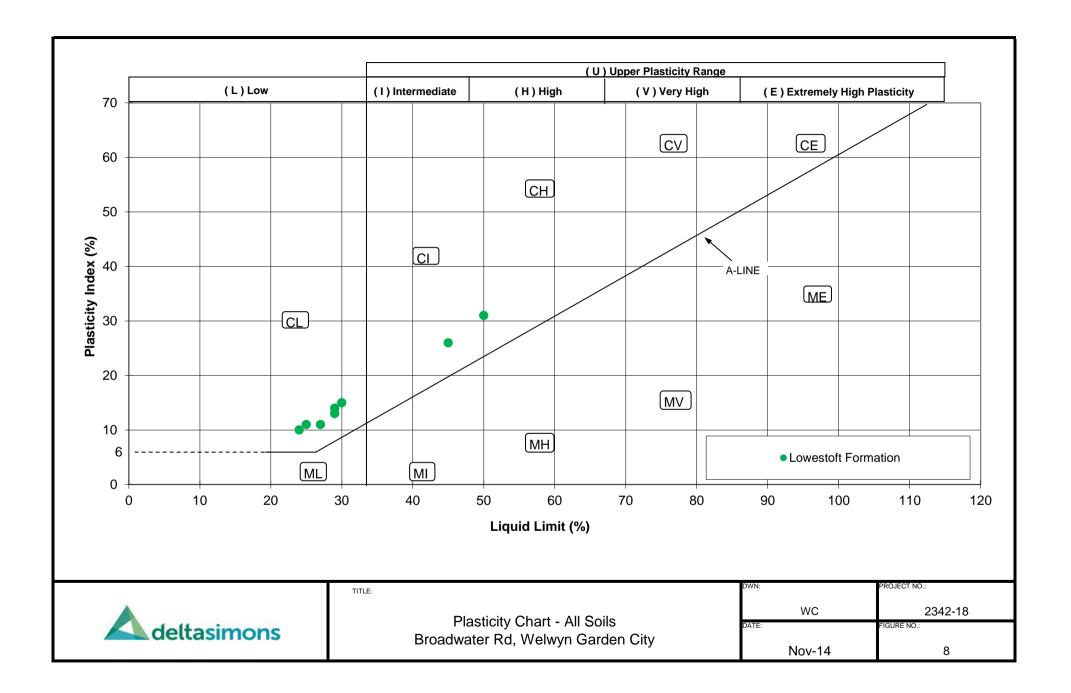
LEGEND MADE GROUND LOWESTOFT FORMATION KESGRAVE CATCHMENT SUBGROUP LEWES NODULAR / SEAFORD CHALK FORMATION VOID DISSOLUTION SOILS **WEST EAST** BH408 BH414 BH415 Br mA0D $\times \times \times \times$

deltasimons

Indicative Geological Section E Broadwater Road Welwyn Garden City







Appendix I







Email: info@deltasimon					Hole ID:					
Project: Broadwater Road, Welwyr	City	Project No:	342.18		Hole	e ID:	E	3H401		
CABLE PERCUSSION BORE	HOLE LOG		Date From / 06/10/2	To: 2014 - 07/10	/2014	Clie		n Hill	Developments Ltd	
		H.	CASING	REDUCED LEVEL/		Samp	ole Details		Test Results	(fill
DESCRIPTION OF STRATA	LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	S	SPT N Value/Drive mm	Backfill Details
MADE GROUND: Asphalt. MADE GROUND: Concrete		}		84.52 0.15 84.37 0.30		1	0.50			
MADE GROUND: Conclete MADE GROUND: Dark brown sandy gravelly clay. (is angular to rounded fine to coarse and of mixed lithologies including concrete, brick and flint. Sand i coarse. Frequent ash and tarmac.	$\langle \rangle \rangle \rangle$			(1.10) 83.27 1.40	D	2	1.00			
Stiff orange brown slightly gravelly sandy CLAY. Grangular to subrounded fine to coarse flint. Sand is roto coarse. (LOWESTOFT FORMATION)	ravel is medium	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		03.27 1.40	В	1	1.50 - 2.00 1.50 -		CPT N=21 4,5/5,6,5,5	
		4- 			D	3	2.50 - 3.00 2.50 -		CPT N=23 5,5/4,6,6,7	
				(4.60)	D	4	3.50 - 4.00 3.50 -		SPT N=22 3,4/4,6,6,6	
					D	5	4.50 - 5.00 4.50 -		CPT N=23 4,5/5,6,6,6	
Medium to very dense orange brown very sandy ar to rounded fine to coarse flint GRAVEL. Sand is fine coarse. Occasional flint cobbles. (KESGRAVE CATCHMENT SUBGROUP)	e to 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$	(150mm)	<u>78.67</u> 6.00	В	2	6.00 - 6.50 6.00 -		CPT N=27 5,6/6,6,7,8	
					D	6	7.50 - 8.00 7.50 -	705	CPT N=50/240mm 7,12/12,16,18,4/15mm)	
		٠٠٠		(5.90)	D	7	9.00 - 9.50 9.00 -	9.45	CPT N=34 6,7/8,8,9,9	
REMARKS:				HISELLING Depth T	ime	_			EL OBSERVATIONS Water Standing	
 Engineer verified logged in general accordance to the second secon	o BS 5930:2010.		From		aken		Date	Time	Strike Level	Donath
				EHOLE DIA		R	CASING D	IAME	 TER DEPTH SE	ALED
			1	50mm to 20	.00m		150mm to	o 11.90	0m	
All measurements in metres unless otherwise stated 10m/pa	ge Scale: 1:6	62.50					National Gr Ordnance		m Page 1 of 3	}
	/ Level (mAOD): 524054.54 N: 212 Level: 84.67	697.97	Logge	d By:		C	Checked By:	Approved By: /C SS		



Broadwater Road, W	ity	Project No:	342.1	3	Ho	BH401							
CABLE PERCUSSION	N BOREHOLE I	LOG		Date From / 06/10/2	To: 2014 - 07/1	0/2014		ent: Spe	en Hill	Develop	ments Ltd		
			ER	CASING	REDUCED)	Sam	ple Details		Test F	Results	≣ ⊴	
DESCRIPTION OF STRATA	\	LEGEND	WATER	DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thickness	TYPE	REF	Depth		SPT N Valu	ue/Drive mm	Backfill	
Medium to very dense orange brown veron rounded fine to coarse flint GRAVEL. Scoarse. Occasional flint cobbles. (KESGR CATCHMENT SUBGROUP)(BH Continue)	Sand is fine to RAVE					D	8	10.50 - 11. 10.50 - 1			N=31 7,7,8,9		
Recovered as structureless CHALK composith rare orange veins slightly gravelly silt subangular fine to medium extremely weak ream. Grade Dm. (LEWES NODULAR)	t. Gravel is ak low density			11.90	<u>72.77</u> 11.9	0 B D	3 9	11.90 12.00 - 12. 12.00 - 1			N=9 ,2,2,3		
CHALK FORMATION)						D	10	13.50 - 14. 13.50 - 1			N=18 ,4,5,5		
					(8.10)	D	11	15.00 - 15. 15.00 - 1			N=25 6,6,6,7		
					(0.10)	D	12	17.00					
						D	13	18.00 - 18. 18.00 - 1			N=15 .,3,4,4		
					<i>64.67</i> 20.0	D	14	19.50 - 20. 19.50 - 1			N=17 -,5,4,4		
REMARKS:					HISELLIN Depth	G Time				Wate	RVATION r Standing		
Engineer verified logged in general acc. Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 20.00		30:2010.		From	To CHISELL DERTAK	Taken		Date	Time			~ ~	
					EHOLE DI		ER	CASING E	DIAME.	 TER	 DEPTH SE	 EALFD	
					50mm to 2			150mm t			31		
All measurements in metres	nents in metres				Cod	ordinat	es to	National G	rid		2		
unless otherwise stated	10m/page S Coordinates / Level (mAC	Scale: 1:62.	bU	1000	Gro		evel to	Ordnance Checked By:		"	Page 2 of 3	3	
Dando 2000	E: 524054.54	од): 4 N: 212697 d: 84.67	7.97	Logge	Logged By:			Checked By:			Approved By:		



		Project No:				Hole ID:							
Broadwater Road, W	Broadwater Road, Welwyn Garden Cit						Hole	e ID:	ВН	401			
CABLE PERCUSSION	N BOREHOLE L	.OG		Date From / 06/10/2	To: 2014 - 07/10)/2014	Clie		n Hill Dev	elopments Ltd			
DESCRIPTION OF STRATA		: EOENID	Ä	CASING	REDUCED LEVEL/		Samp	ole Details		Test Results	kfill ails		
DESCRIPTION OF STRATA	· 	LEGEND	WATER	DEPTH / (Diam. mm)	DEPTH (Thickness)	TYPE	REF	Depth	SPT	N Value/Drive mm	Backfill Details		
Borehole complete at 20.00m bgl.			[
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			É		Y WOELLING			\^/^TED		SOSSI (A TIONIC			
REMARKS : 1. Engineer verified logged in general acc	cordance to BS 5930	0:2010.				Fime aken		Date	Time \	BSERVATIONS Vater Standing Strike Level	Casing		
Borehole remained dry on completion.	eer verified logged in general accordance to BS 5930:2010. AT scanned prior to excavation. ble remained dry on completion.				CHISELLIN				,	COUNTERED:	Боран		
4. Installed with nume standpipe to 20.00	nstalled with HDPE standpipe to 20.00m bgl.					W:		<i>H</i> 0	WATERE	100-			
		BOR	EHOLE DIA	METE	R (CASING D	IAMETER	DEPTH SE	ALED				
					50mm to 20	J.UUIII		130111111 α) II. 9 0111				
All measurements in metres	40/							lational Gr		D 0 15			
unless otherwise stated Plant Used:	Coordinates / Level (mAO			Logged	Grou		el to	Ordnance Checked By:		Page 3 of 3 Approved By:	•		
Dando 2000		ordinates / Level (mAOD): E: 524054.54 N: 212697.97 Level: 84.67						W	'C	SS	SS		



Project: Broadwater Road, We	rden City	/ Proj	ject No:	342.18	}	Hol	e ID:	В	H402) !		
CABLE PERCUSSION	BOREHOLE	LOG		e From / 09/10/2	To: 2014 - 10/10	/2014	Clie		Hill De	evelopm	ents Ltd	
		<u> </u>	CA	ASING	REDUCED		Sam	ple Details		Test Re	sults	<u> </u>
DESCRIPTION OF STRATA		LEGEND LEGEND	DE (Dia	EPTH / Im. mm)	LEVEL/ DEPTH (Thickness)	TYPE	REF	Depth	SP	T N Value	Drive mm	Backfill
MADE GROUND: Brown sandy clayey grav angular fine to coarse concrete and brick. S coarse.					(0.70) 83.89 0.70	D	1	0.50				
Stiff orangey brown slightly sandy gravelly (angular to subrounded fine to coarse flint. S					00.00	D	2	1.00				
coarse.(LOWESTOFT FORMATION)	Sand is line to					D	3	1.50 - 1.95 1.50 - 1.	95	CPT N 4,6/9,11,		
					(4.30)	D	4	2.50 - 2.95 2.50 - 2.		PT N=50 7/8,12,16,	/275mm 14/50mm)	
						В	1	3.50 - 3.95 3.50 - 3.	95	CPT N 2,3/3,4		
						D	5	4.50 - 4.95 4.50 - 4.	95	CPT N 2,3/5,6		
Very stiff orangey brown slightly sandy slight CLAY. Gravel is angular to rounded fine to Sand is fine to coarse. Fine to medium grav to coarse sand sized organic particles throughout.(LOWESTOFT FORMATION) Medium to very dense orange brown sandy rounded fine to coarse flint GRAVEL. Sand	coarse flint. vel and medium v subangular to is fine to	0000	(15	(0mm)	79.59 5.00 (1.20) 78.39 6.20	D	6	6.00 - 6.45 6.00 - 6.		SPT N=50. ,8/14,18,1		
coarse.(KESGRAVE CATCHMENT SUBGF	ROUP)					В	3	7.50 - 7.95 7.50 - 7.	95	CPT N 3,4/5,6		
					(5.10)	D	7	9.00 - 9.45 9.00 - 9.	1 5	CPT N 4,6/7,8,		
REMARKS:		1.0 0 0.1			HISELLING		<u> </u>	WATER I	.EVEL			
 Engineer verified logged in general according. Area CAT scanned prior to excavation. Borehole remained dry on completion. 	rdance to BS 593	30:2010.		From	To T	ime aken	1	Date 10-10-14	Time	Strike 24.00	Standing Level	Dep
Borenole remained dry on completion. Installed with HDPE standpipe to 25.00m	ı bgl.			NC	CHISELLIN	<i>N</i> :				00		
			ļ	BOR	EHOLE DIA	METE	R	CASING DIA		_	EPTH SE	ALED
				1,	55 10 20			.0311111110				
All measurements in metres unless otherwise stated	10m/page	Scale: 1:62.50						National Grid		Pa	ige 1 of 3	3
		NOD): 7 N: 212675.7 el: 84.59	6	Logged			Checked By: WC			Approved By:		



Email: info@delta					Hole ID:											
Broadwater Road, We	City	Project No:	342.18		Hol	Hole ID: BH402										
CABLE PERCUSSION I	BOREHOLE L	.OG		Date From / 09/10/2	To: 2014 - 10/10	/2014	Clie	ent: Spen	Hill Deve	lopments Ltd						
			Ë	CASING	REDUCED LEVEL/		Sam	ple Details	Т	est Results	dils					
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	SPT N	Value/Drive mm	Backfill Details					
Medium to very dense orange brown sandy rounded fine to coarse flint GRAVEL. Sand i coarse.(KESGRAVE CATCHMENT SUBGR Continued)	s fine to			11.30	73.29 11.30	D	8	10.50 - 10.95 10.50 - 10.9	15	CPT N=39 6/7,8,11,13						
Recovered as structureless CHALK compos with rare orange veins slightly gravelly silt. G angular to subangular fine to medium extren density chalk. Rare subrounded coarse rind gravel.Grade Dm.(LEWES NODULAR/ SEA FORMATION)	Gravel is nely weak low ed flint		-			D	9	12.00 - 12.45 12.00 - 12.4	15	SPT N=9 2,2/2,2,2,3						
						D	10	13.45 - 13.95 13.50 - 13.9	95	SPT N=13 2,2/3,3,4,3						
						D	11	15.00 - 15.45 15.00 - 15.4	۱ ۱ ۱	SPT N=12 2,3/2,3,4,3						
						D	12	16.50 - 16.95 16.50 - 16.9	95	SPT N=9 3,3/2,2,3,2						
					(13.70)	D	13	18.00 - 18.45 18.00 - 18.4	اءا	SPT N=21 2,3/5,6,6,4						
						D	14	19.50 - 19.95 19.50 - 19.9	95 3,	SPT N=34 4/6,8,10,10						
REMARKS:				Depth	CHISELLING Depth T	ime		WATER L	١٨	SSERVATION ater Standin						
 Engineer verified logged in general accord Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 25.00m 		0:2010.		From To Ta		From To Tak		From To Take				1	Date 10-10-14	ıme s	trike Level	
				BOR	EHOLE DIA	METE	R	CASING DIA		DEPTH S	EALED					
All measurements in metres unless otherwise stated								National Grid Ordnance D		Page 2 of	3					
	ordinates / Level (mAC E: 524103.37 Level		75.76	Logge				Checked By:		Approved By:	Approved By:					



Broadwater Road, We	ity	Project No:	342.18	3	Hol	BH402						
CABLE PERCUSSION		Date From / 09/10/2	To: 2014 - 10/1	0/2014	Clie		lill Devel	opments Ltd				
			ĸ	CASING	REDUCED)	Sam	ole Details	Те	st Results	<u>≡</u> s	
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thickness	TYPE	REF	Depth	SPT N \	/alue/Drive mm	Backfill Details	
Recovered as structureless CHALK compo with rare orange veins slightly gravelly silt. angular to subangular fine to medium extre density chalk. Rare subrounded coarse ring gravel.Grade Dm.(LEWES NODULAR/ SE, FORMATION)(BH Continued)	Gravel is mely weak low ded flint		-			D	15	21.00 - 21.45 21.00 - 21.45		PT N=32 8/6,7,9,10		
			-			D	16	22.50 - 22.95 22.50 - 22.95		PT N=33 /6,6,10,11		
			<u>‡</u>		59.59 25.0	D	17	24.00 - 24.45 24.00 - 24.45		PT N=37 5/7,9,9,12		
			-									
REMARKS: 1. Engineer verified logged in general acco	rdance to BS 593	0:2010.	-			G Time Taken			wa Wa	SERVATIONS ater Standing rike Level		
Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 25.00m					CHISELL		1	10-10-14		1.00	11.3	
				BOR	EHOLE DI	AMETE	R	CASING DIAN 150mm to 1		DEPTH SE	ALED	
All measurements in metres unless otherwise stated	10m/page S	Scale: 1:62	.50					National Grid Ordnance Da	ntum	Page 3 of 3	3	
l e	^{DD):} 7 N: 21267 I: 84.59	75.76	Logge				Checked By:		Approved By:			



Procedure Proc	Email: info@deltasimons.com							To a second					
DESCRIPTION OF STRATA	Broadwater Road, Wo	ity	,	342.18	}	Hol	BH403						
DESCRIPTION OF STRATA LIGIND ## OF STRATA LIGIND	CABLE PERCUSSION	BOREHOLE L	.OG				/2014	Clie		II Developments Ltd			
MADE GROUND: Concrete Agular to subrounded fine to coarse of mixed lithologies including brick, flint and concrete. Sand is medium to coarse. Stiff orange brown slightly gravely sandy CLAY. Gravel is coarse. (NCSSTOFF FORMATION) MADE GROUND: Cray sandy gravel gravely sandy care coarse. (NCSSTOFF FORMATION) MADE GROUND: Cray sandy gravel gravely sandy clay. Gravel is angular to subrounded fine to coarse film and rare concrete. Stiff brown slightly gravely clay. Gravel is angular to rounded fine to coarse film and rare concrete. Stiff brown slightly sandy slightly gravely CLAY. Gravel is angular to rounded fine to coarse film and rare concrete. Stiff brown slightly sandy slightly gravely CLAY. Gravel is angular to subrounded fine to medium fint. Stand is fine to coarse. River medium gravel size of gravel patterns. (LOWESTOFF FORMATION) MADE GROUND: Crange brown slightly gravely clay. Gravel is angular to rounded fine to coarse film and rare concrete. Stiff brown slightly sandy slightly gravely CLAY. Gravel is angular to subrounded fine to medium fint. Stand is fine to coarse. River medium gravel size of gravel patterns. (LOWESTOFF FORMATION) MADE GROUND: Crange brown slightly gravely CLAY. Gravel is angular to subrounded fine to medium fint. Stand is fine to coarse. River medium gravel size of gravely clay. Gravel is angular to subrounded fine to medium fint. Stand is fine to subrounded fine to medium fint. Stand is fine to coarse. River medium gravel size of gravely clay. Gravel is angular to subrounded fine to medium fint. Stand is fine to coarse. River medium gravel size of gravely clay. Gravel is angular to subrounded fine to medium fint. Stand is fine to subrounded fine to medium fint. Stand is fine to subrounded fine to medium fint. Stand is fine to subrounded fine to medium fint. Stand is fine to subrounded fine to medium fint. Stand is fine to subrounded fine to medium fint. Stand is fine to subrounded fine to medium fint. Stand is fine to subrounded fine to medium fint. Stand is fine to subroun			. = 0 = 1 =	띪				Samp	ole Details	Test Results	Afill sils		
MADE GROUND. Grey sand graved. Grave is a coarse. Stiff crown slightly gravely sandy transplant of the coarse of masel timodegies including pinks, filint and concrete. Sand is medium to coarse. Stiff crown slightly gravely sandy clay. Grave is angular to rounded fine to coarse filint. Sand is fine to coarse. (LOWESTOFF FORMATION). MADE GROUND. Crange brown slightly gravely sandy clay. Grave is angular to rounded fine to coarse filint and rare concrete. Stiff brown slightly sandy slightly gravely sandy clay. Grave is angular to rounded fine to coarse filint and rare concrete. Stiff brown slightly sandy slightly gravely cLAY. Gravel is angular to subrounded fine to coarse filint and rare concrete. Stiff brown slightly sandy slightly gravely cLAY. Gravel is angular to subrounded fine to medium fint. Sand is fine to coarse. Rare medium gravel sized organic patches. (LOWESTOFF FORMATION). Medium dense to dense browny orange sandy subangular to rounded fine to caarse fint GRAVEL. Sand is fine to coarse. (KESGRAVE CATCHHENT SUBGROUP) Stiff brown slightly sandy slightly gravely cLAY. Gravel is angular to subrounded fine to medium fint. Sand is fine to coarse. (KESGRAVE CATCHHENT SUBGROUP) Stiff brown slightly sandy slightly gravely clay. Gravel is angular to subrounded fine to medium fint. Sand is fine to coarse. (KESGRAVE CATCHHENT SUBGROUP) Stiff brown slightly sandy slightly gravely clay. Gravel is angular to subrounded fine to medium fint. Sand is fine to coarse. (KESGRAVE CATCHHENT SUBGROUP) Stiff brown slightly sandy slightly gravely clay. Gravel is angular to subrounded fine to medium fint. Sand is fine to coarse. (KESGRAVE CATCHHENT SUBGROUP) Stiff brown slightly sandy slightly gravely clay. Gravel is angular to subrounded fine to medium fint. Sand is fine to coarse. (KESGRAVE CATCHHENT SUBGROUP) Stiff brown slightly sandy slightly gravely clay. Gravel is angular to subrounded fine to medium fint. Sand is fine to coarse. (KESGRAVE CATCHHENT SUBGROUP) Stiff brown slightly sandy slightly gravely cla	DESCRIPTION OF STRATA		LEGEND	WAT		DEPTH	TYPE	REF	Depth	SPT N Value/Drive mm	Bac		
angular to subrounded fine to coarse of mixed tilhologies including block, first and concrete Sand is medium to coarse. Stiff orange brown slightly gravely sendy CLAY. Gravel Is angular to rounded fine to coarse film Sand is fine to coarse film Sand Sand Sand is fine to coarse film Sand Sand Sand Sand Sand Sand Sand Sand						<i>84.18</i> 0.20	1 1						
angular to rounded fine to coarse fint. Sand is fine to coarse. (CNESCRAVE CATCHMENT SUBGROUP) REMARKS: 1. Engineer verified logged in general accordance to BS 5930-2010. All measurements in metres unless otherwise stated All measurements in metres Language by Language to coarse fint. Sand is fine to coarse. (RESCRAVE CATCHMENT SUBGROUP) All measurements in metres Language Scale: 1:62.50 CHISELING CHISELING CHISELING CHISELING CHISELING CHISELING CHISELING WATER LEVEL OBSERVATIONS Alfa, 58, 81, 112 CHISELING CHISELING WATER LEVEL OBSERVATIONS Alfa, 58, 81, 112 CHISELING CHISELING CHISELING WATER LEVEL OBSERVATIONS Alfa, 58, 81, 112 CHISELING WATER LEVEL OBSERVATIONS Alfa, 58, 81, 112 CHISELING CHIS	angular to subrounded fine to coarse of mi including brick, flint and concrete. Sand is	ar to subrounded fine to coarse of mixed lithologies ing brick, flint and concrete. Sand is medium to a. range brown slightly gravelly sandy CLAY. Gravel is ar to rounded fine to coarse flint. Sand is fine to a. (LOWESTOFF FORMATION).				, ,							
Cary Gravel is angular to rounded fine to coarse flint and rare concrete. Common sightly sandy sightly gravely CLAY Gravel is angular to subrounded fine to modium fine. Sand is fine to coarse. Rare medium gravel sized organic patches (LOWESTOFT FORMATION) Common sightly sandy sightly gravely CLAY Gravel is angular to subrounded fine to modium fine. Sand is fine to coarse. Rare medium gravel sized organic patches (LOWESTOFT FORMATION) Common sightly sandy sightly gravely CLAY Gravel is angular to subrounded fine to modium fine. Sand is fine to coarse. Rare medium gravel sized organic patches (LOWESTOFT FORMATION) Common sightly sandy sightly gravely CLAY Gravel is angular to subrounded fine to coarse flint GRAVEL. Sand is fine to coarse. (KESGRAVE CATCHMENT SUBGROUP) Common sightly sandy sightly gravely CLAY Gravel is angular to subrounded fine to subrounded fine to coarse flint GRAVEL. Sand is fine to coarse. (KESGRAVE CATCHMENT SUBGROUP) Common sightly sandy sightly gravely CLAY Gravel is angular to subrounded fine to subrounded fine to subrounded fine to coarse flint GRAVEL. Sand is fine to coarse flint GRAVEL. Sand is fine to coarse. (KESGRAVE CATCHMENT SUBGROUP) Common sightly sandy sightly gravely CLAY Gravel is angular to subrounded fine to coarse flint GRAVEL. Sand is fine to coarse flint GRAVEL. S	angular to rounded fine to coarse flint. Sar coarse. (LOWESTOFF FORMATION).					, ,		1					
Stiff brown elightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium fint. Sand is fine to coarse. Rare medium gravel sized organic pathes. (CWSSTOFT FORMATION) Medium dense to dense browny orange sandy subangular to rounded fine to coarse in RGAYEL. Sand is fine to coarse. (KESGRAVE CATCHMENT SUBGROUP) Page 2 2 3 40 - 580 D	clay. Gravel is angular to rounded fine to co	ravelly sandy oarse flint and					D	3					
Stiff brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium finit. Sand is fine to coarse. Remedium gravel sized organic patches (LOWESTOFT FORMATION) Medium dense to dense browny orange sandy subangular to rounded fine to coarse. (KESGRAVE CATCHMENT SUBGROUP) REMARKS: 1. Engineer verified logged in general accordance to BS 5930-2010. 2. Area CAT scanned prior to excavation. 3. Groundwater encountered at 23.46m bgl. 4. Installed with HDPE standpipe to 30.00m bgl. All measurements in metres unless otherwise stated 10m/page Scale: 1.62.50 Coordinates to National Grid Ground Level to Ordnance Datum Page 1 of 4						(4.50)	D	4					
Stiff brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium finit. Sand is fine to coarse. River medium grave sized organic patches. (LOWESTOFT FORMATION) Medium dense to dense browny orange sandy subangular to rounded fine to coarse flint GRAVEL. Sand is fine to coarse. (KESGRAVE CATCHMENT SUBGROUP) REMARKS: 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Area CAT scanned prior to excavation. 3. Groundwater encountered at 23.46m bgl. 4. Installed with HDPE standpipe to 30.00m bgl. All measurements in metres unless otherwise stated Dando 2000. Coordinates (Level to Ordnance Datum) Page 1 of 4 Page 2 of 4 Page 3 of 4 Page 2 of 4 Page 3 of 4 Page 4 of 4							D	5		_			
angular to subrounded fine to medium finit. Sand is fine to coarse. Remedium gravel sized organic patches. (LOWESTOFT FORMATION) Medium dense to dense browny orange sandy subangular to rounded fine to coarse finit GRAVEL. Sand is fine to coarse. (KESGRAVE CATCHMENT SUBGROUP) REMARKS: 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Avea CAT scanned prior to excavation. 3. Groundwater encountered at 23.46m bgl. 4. Installed with HDPE standpipe to 30.00m bgl. All measurements in metres unless otherwise stated All measurements in metres unless otherwise stated 10m/page Scale: 1.62.50 Coordinates to National Grid Ground Level to Ordnance Datum Page 1 of 4						78.98 5.40	В	2	5.40 - 5.80				
REMARKS: 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Area CAT scanned prior to excavation. 3. Groundwater encountered at 23.46m bgl. 4. Installed with HDPE standpipe to 30.00m bgl. All measurements in metres unless otherwise stated All measurements in metres unless otherwise stated Plant Used: Dando 2000. Coordinates / Level (mXOD): Coordinates / Level (m	angular to subrounded fine to medium flint coarse. Rare medium gravel sized organic patches (LOWESTOFT FORMATION) Medium dense to dense browny orange sa	. Sand is fine to ndy subangular	00.00		(150mm)		D	6					
REMARKS: 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Area CAT scanned prior to excavation. 3. Groundwater encountered at 23.46m bgl. 4. Installed with HDPE standpipe to 30.00m bgl. All measurements in metres unless otherwise stated All measurements in metres unless otherwise stated Depth Depth Time Taken Date Time Water Standing Casing Depth Taken Date Time Water Standing Casing Depth Taken Date Time Water Standing Casing Depth To To Taken To To Taken Date Time Water Standing Casing Depth To Depth Taken Depth To Depth Taken Depth To Depth Taken Depth To Depth Taken Depth To Depth To To Taken To Depth Depth To Depth Depth To Depth To Depth To Depth Depth Depth To Depth Depth Depth To Depth Depth Depth Depth Depth Depth Depth Depth Depth To Depth D		ROUP)					D	7					
REMARKS: 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Area CAT scanned prior to excavation. 3. Groundwater encountered at 23.46m bgl. 4. Installed with HDPE standpipe to 30.00m bgl. BOREHOLE DIAMETER CASING DIAMETER DEPTH SEALED BOREHOLE DIAMETER CASING DIAMETER DEPTH SEALED 150mm to 30.00m 150mm to 11.80m All measurements in metres unless otherwise stated 10m/page Scale: 1:62.50 Coordinates / Level (mAOD): E-52/182 88 N: 2/3675 1						(5.90)	В	3					
1. Engineer verified logged in general accordance to BS 5930:2010. 2. Area CAT scanned prior to excavation. 3. Groundwater encountered at 23.46m bgl. 4. Installed with HDPE standpipe to 30.00m bgl. BOREHOLE DIAMETER CASING DIAMETER DEPTH SEALED All measurements in metres unless otherwise stated Depth Coordinates / Level (mAOD): From To Taken Date Time Strike Level Depth O8-10-14 23.46 Depth Depth Coordinates to National Grid Ground Level to Ordnance Datum Plant Used: Dando 2000 Coordinates / Level (mAOD): E- 52/182 88 N: 212675 1	REMARKS:		0						WATER LE				
3. Groundwater encountered at 23.46m bgl. 4. Installed with HDPE standpipe to 30.00m bgl. BOREHOLE DIAMETER CASING DIAMETER DEPTH SEALED All measurements in metres unless otherwise stated 10m/page Scale: 1:62.50 Coordinates to National Grid Ground Level to Ordnance Datum Plant Used: Dando 2000 Coordinates / Level (mAOD): E: 524182 88 N: 212675 1		ngineer verified logged in general accordance to BS 5930:2010.				To T	aken			ne Strike Level			
All measurements in metres unless otherwise stated Depth Sealed 150mm to 30.00m 150mm to 11.80m 150mm to 11.80m	Groundwater encountered at 23.46m bg	bgl. 00m bgl.			NO CHISELLING NO CHISELLING UNDERTAKEN:			1	08-10-14	23.46			
All measurements in metres unless otherwise stated 10m/page Scale: 1:62.50 Coordinates to National Grid Ground Level to Ordnance Datum Plant Used: Coordinates / Level (mAOD): Logged By: Checked By: Approved By:						EHOLE DIA	METE	R			ALED		
unless otherwise stated 10m/page Scale: 1:62.50 Ground Level to Ordnance Datum Page 1 of 4 Plant Used: Coordinates / Level (mAOD): Logged By: Checked By: Approved By:					1	50mm to 30).00m		150mm to 11.	80m			
Plant Used: Coordinates / Level (mAOD): Dando 2000 E : 52/1182 98 N: 212675 1 Logged By: Checked By: Approved By:	10m/nage Scale: 1:62 50			.50				Dage 1 of A					
Level: 84.38 WC WC SS	unless otherwise stated 10m/page Scale: 1:62.50 Plant Used: Coordinates / Level (mAOD): Dando 2000 E: 524182.88 N: 212675.1			75.1	Logge		iiiu Le\			um			



Broadwater Road, W	у	Project No: 2342.18				Hole ID: BH403						
CABLE PERCUSSION	N BOREHOLE L	_OG		Date From / 07/10/2	To: 2014 - 08/10	0/2014	Clie		n Hill De	evelopm	ents Ltd	
			œ.	CASING	REDUCED		Samp	ole Details		Test Re	sults	<u>≅</u> <u>s</u>
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thickness)	TYPE	REF	Depth	SP ⁻	T N Value	/Drive mm	Backfill Details
Medium dense to dense browny orange s to rounded fine to coarse flint GRAVEL. S coarse. (KESGRAVE CATCHMENT SUB-	and is fine to			44.00	70.50.44.0	D	8	10.50 - 10.9 10.50 - 10		CPT N 2,3/4,7		
Recovered as structureless CHALK compoccasional orange veins slightly gravelly sangular fine to medium extremely weak to Abundant angular to subangular flint grav Dm.(LEWES NODULAR/ SEAFORD CHAFORMATION).	silt. Gravel is w density chalk. el.Grade ALK		•	11.80	72.58 11.80 72.18 12.20	D	9	12.00 - 12.4 12.00 - 12	15	CPT N=50 10/13,19,	/200mm 18/50mm)	
Recovered as structureless CHALK compoccasional orange veins slightly sandy slig Gravel is angular to subangular fine to me weak low density cream. Occasional subrocoarse flint gravel.Grade Dm.(LEWES NO SEAFORD CHALK FORMATION).	ghtly gravelly silt. edium extremely ounded fine to					D	10	13.50 - 13.5 13.50 - 13		SPT N 1,2/3,2		
						D	11	15.00 - 15.4 15.00 - 15		SPT N 2,3/2,3		
						В	4	16.50 - 16.9 16.50 - 16		SPT N 8,6/5,5		
						D	12	18.00 - 18.4 18.00 - 18		SPT N 4,5/5,6		
					CHISELLING	D	13	19.50 - 19.9 19.50 - 19	9.95	SPT N 4,5/5,6		
REMARKS : 1. Engineer verified logged in general acc	ordance to BS 503	0.2010		Depth	Depth	Time		Date	Time	Water	Standing	Casing
Regineer verified logged in general acc 2. Area CAT scanned prior to excavation. Groundwater encountered at 23.46m b. Installed with HDPE standpipe to 30.00	gl.	0.2010.		From NC	TO 1	aken NG :N:	1	08-10-14		Strike 23.46	Level	Depth
				BOR	EHOLE DI	AMETE	R	CASING D			EPTH SE	ALED
				1:	50mm to 3	0.00m		150mm to	11.80n	n		
All measurements in metres unless otherwise stated	10m/nage Scale: 1:62 50							tes to National Grid evel to Ordnance Datum			Page 2 of 4	
Plant Used: Dando 2000	Coordinates / Level (mAOD):			Logged		ana Le	Checked By:			Approved By:		

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Broadwater Road, W	ity	Project No:	342.18	}		Hole ID: BH403						
CABLE PERCUSSION	N BOREHOLE L	LOG		Date From / 07/10/2	To: 014 - 08/10	/2014	Clie		Hill Deve	lopments l	_td	
			K.	CASING	REDUCED		Samp	ole Details	Т	est Results		
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thickness)	TYPE	REF	Depth	SPT N	Value/Drive ı	Backfill mu	
Recovered as structureless CHALK compoccasional orange veins slightly sandy slig Gravel is angular to subangular fine to me weak low density cream. Occasional subrocarse flint gravel.Grade Dm.(LEWES No SEAFORD CHALK FORMATION).(BH Co	ghtly gravelly silt. edium extremely ounded fine to ODULAR/				(17.80)	D	14	21.00 - 21.45 21.00 - 21.4		SPT N=30 5,7/5,7,9,9		
						D	15	22.50 - 22.95 22.50 - 22.9		N=50/220mi 9,15,16/70mi		
			<u>‡</u>			D	16	24.00 - 24.45 24.00 - 24.4		N=50/255mi 13,17,12/30m		
						D	17	25.50 - 25.95 25.50 - 25.9		N=35/255mı 7,10,12/30m		
						D D	18 19	27.00 - 27.45 27.00 - 27.4 27.50		SPT N=42 7/7,9,12,14		
						D	20	28.50 - 28.95 28.50 - 28.9		SPT N=43 /10,10,11,12		
					<i>54.38</i> 30.00	D	21	30.00 - 30.45				
EMARKS:	ordonos to DC EO2	0.2010		Depth		Time			imo M	SERVATION Standard	ding Ca	
Engineer verified logged in general acc Area CAT scanned prior to excavation. Groundwater encountered at 23.46m by Installed with HDPE standpipe to 30.00	al.	,v.2010.		From	JUSELLIN	aken	1	08-10-14		trike Lev 23.46	vel De	
					EHOLE DIA 50mm to 30		R	CASING DIA 150mm to 1		DEPTH	SEALE	
All measurements in metres unless otherwise stated	10m/page S	Scale: 1:62.	50					National Grid Ordnance D	atum	Page 3	of 4	
ant Used: Dando 2000	Coordinates / Level (mAC E: 524182.8 Leve		' 5.1	Logge		a LG		Checked By:	utuni	Approved By	r: SS	

Tel: +44 (0) 870 0400 012 Fax: +44 (0) 1522 698393 Email: info@deltasimons.com



Email: info@del											
Broadwater Road, W	ity	Project No:	342.18	3	Hol	le ID:	BH4	403			
CABLE PERCUSSION	N BOREHOLE L	.OG		Date From / 07/10/2	To: 2014 - 08/1	0/2014	Clie		II Deve	lopments Ltd	
DESCRIPTION OF STRATA		LEGEND	WATER	CASING DEPTH /	REDUCED LEVEL/		Sam	ple Details	Te	est Results	Backfill Details
DESCRIPTION OF STRATE	· ·	LEGEND	WA-	(Diam. mm)	DEPTH (Thickness)	TYPE	REF	· ·		Value/Drive mm	Bac Det
REMARKS: 1. Engineer verified logged in general according to the second	cordance to BS 593	0:2010.			CHISELLIN			30.00 - 30.45	VEL OE	N=5U/95mm //29,21/20mm) BSERVATION: /ater Standing trike Level	S Casing
 Area CAT scanned prior to excavation. Groundwater encountered at 23.46m b 	3. Groundwater encountered at 23.46m bgl.4. Installed with HDPE standpipe to 30.00m bgl.					AMETE	1 R	08-10-14 CASING DIAM 150mm to 11	2 IETER	DEPTH SE	Depth
All measurements in metres unless otherwise stated	10m/page S	cale: 1:62	2.50				es to National Grid vel to Ordnance Datum			Page 4 of 4	
Plant Used: Dando 2000	Coordinates / Level (mAC E: 524182.88 Level		375.1	Logge				Checked By:		Approved By:	



Email: info@deltasii										
Project: Broadwater Road, Welv	ity	7 20 12110				e ID:	BH404			
CABLE PERCUSSION BO	DREHOLE L	.og		Date From / 08/10/2	To: 2014 - 09/10	/2014	Clie		ill Developments	Ltd
			ER	CASING	REDUCED LEVEL/		Samp	ole Details	Test Results	ĮĮį
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	SPT N Value/Drive	Backfill
MADE GROUND: Asphalt.					84.31 0.15 84.16 0.30					
MADE GROUND: Concrete.	/				(0.80)	D	1	0.50		
MADE GROUND: Brown slightly sandy gravell Gravel is angular to rounded fine to coarse of ithologies predominantly flint with brick and co	mixed		-		(0.80) 83.36 1.10	В	1	1.00		
Stiff orangey brown slightly sandy slightly grav Gravel is angular to subrounded fine to coarse is fine to coarse.(LOWESTOFT FORMATION)	flint. Sand		_			D	2	1.50 - 2.00 1.50 - 1.95	SPT N=10 1,1/2,2,3,3	
						U	1	2.50 - 2.95	U=20/383mn	
						D	3	3.00		
					(4.80)	D	4	3.50 - 4.00 3.50 - 3.95	SPT N=11 1,1/2,2,3,4	
						U	2	4.50 - 4.95	U=35/383mn	,
			-			D	5	5.00		
Dense orangey brown slightly gravelly clayey fine to coarse SAND. Gravel is angular to rounded fine to coarse flint. Clay occurs in irregularly spaced irregularly sized pockets. Fine gravel sized organic speckling throughout.(POSSIBLE LOWESTOFT FORMATION)			-	(150mm)	78.56 5.90	B D	2 6	6.00 6.00 - 6.50 6.00 - 6.45	SPT N=32 5,6/8,8,8,8	
			-		(2.50)	D	7	7.50 - 8.00 7.50 - 7.95	CPT N=31 5,6/7,7,8,9	
Medium dense orange brown slightly sandy ar subangular fine to coarse flint GRAVEL. Sand	ngular to	0000			76.06 8.40	В	3	8.40		
coarse.(LOWESTOFT FORMATION)	is line to	0000	-		(1.30)	D	8	9.00 - 9.50 9.00 - 9.45	CPT N=28 5,6/6,7,7,8	
		0000			74.76 9.70	В	4	9.70		
REMARKS:					HISELLING			WATER LE	VEL OBSERVA	
EMARKS: Engineer verified logged in general accordance to BS 5930:2010. Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 40.00m bgl.				From		ime aken			me Water Sta Strike L TER ENCOUNTE	oval Dar
				BOREHOLE DIAMETER			R	CASING DIAN	IETER DEPT	H SEALE
				'	Jonnii 10 20	.00111		TOOMIN TO TO		
All measurements in metres unless otherwise stated	10m/page Scale: 1:62.50							National Grid Ordnance Da	tum Page	1 of 3
Plant Used: Coord Dando 2000	Coordinates / Level (mAOD): E: 524197.53 N: 212743.84 Level: 84.46			Logged By:				Checked By:	Approved	By: SS



Broadwater Road, W	ty Project No: 2342.18				Hol	e ID:	Е	3H40	4			
CABLE PERCUSSION				Date From /			Clie		n Hill I	Develop	ments Ltd	
			œ	CASING	REDUCED		Sam	ple Details		Test F	Results	≡ σ
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thickness)	TYPE	REF	Depth	S	SPT N Valu	ıe/Drive mm	Backfill Details
Stiff brown slightly sandy slightly gravelly (subrounded coarse flint. Sand is fine to coflint cobble.(LOWESTOFT FORMATION)(Medium dense to dense orangey brown groarse SAND. Gravel is angular to subroucoarse flint.(KESGRAVE CATCHMENT S	arse. Occasional BH Continued) ravelly fine to nded fine to				(0.80) 73.96 10.50	B D	5 9	10.50 10.50 - 11. 10.50 - 1			N=24 ,6,6,7	
	brown slightly sandy slightly gravelly CLAY. Gravel is				(2.70)			12.00 - 1	2.45		N=33 ,8,9,9	
Stiff brown slightly sandy slightly gravelly of subrounded coarse flint. Sand is fine to conflint cobble.(KESGRAVE CATCHMENT Structureless CHALK composite value of the structureless composite or substitution of the structure of th	arse. Occasional JBGROUP) osed of cream			13.40	71.26 13.20 71.06 13.40	B B D	6 7 10	13.20 13.40 13.50 - 14. 13.50 - 1			N=7 ,1,2,2	
is angular to subangular fine to medium elow density cream. Rare subrounded coar cobbles of rinded flint throughout.Grade D NODULAR/ SEAFORD CHALK FORMATI					D	11	15.00 - 15. 15.00 - 1			N=8 ,2,2,2		
				(6.60)	D	12	16.50 - 17. 16.50 - 1			N=32 7,8,10		
						D	13	18.00 - 18. 18.00 - 1			N=36 7,10,12	
					<i>64.46</i> 20.00	D	14	19.50 - 20. 19.50 - 1			N=50 5,15,20	
REMARKS:					HISELLING Depth 1	ime		WATER		Wate	RVATIONS r Standing	
 Engineer verified logged in general according. Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 40.00 	Engineer verified logged in general accordance to BS 5930:2010. Area CAT scanned prior to excavation. Borehole remained dry on completion.				To T	aken		Date	Time	Ctrile		Donth
Installed with HDPE standpipe to 40.00m bgl.				NC NC	CHISELLIN NDERTAKE	, , , , ,		NO	WATE	REIV		
				BOREHOLE DIAMI			₽	CASING D	DIAME	TER	DEPTH SE	ALED
				1	50mm to 20	.uum		150mm to	บ 13.4(um		
All measurements in metres unless otherwise stated	10m/page S	e Scale: 1:62.50			Coordinate Ground Le			National Gr		n F	Page 2 of 3	i
	Coordinates / Level (mAC E: 524197.53 Level	.84	Logged By:				Checked By:	/C		proved By:		

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Project: Broadwater Road, W	City	Project No:	2342.18		Hole	∍ ID:	Bł	1404			
CABLE PERCUSSIO				Date From /			Clien			velopments Ltd	
	7		H.	CASING	REDUCED	Τ	Samp	ole Details		Test Results	
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thickness)	TYPE	REF	Depth	SPT	N Value/Drive mm	Backfill Details
Borehole complete at 20.00m bgl.			F T								
		 	Ė								
	,	F	· I	1							
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	ļ		; I F	1							
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		 	Ė								
REMARKS :			<u> </u>	<u> </u>	CHISELLING	3		WATER	LEVEL	OBSERVATIONS	S
 Engineer verified logged in general acc Area CAT scanned prior to excavation. 	ordance to BS 5930	0:2010.			n Depth T	Time aken		Date	Time	Water Standing	g Casing
 Alea CAT scallined prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 40.00 					O CHISELLIA INDERTAKE	N:				Strike Level	*
	stalled with HDFE standpipe to 40.00m bgl.							NO	NATER	./4-	
			BOR	SEHOLE DIA	AMETE	R C	CASING D	IAIVIE I EF	DEPINSE	EALED	
									,		
All measurements in metres	10 /			Coor	s to N	National Gri	id	D == 0 =f(
unless otherwise stated Plant Used:	10m/page So	Scale: 1:62 DD):	50	Logged	Grou		vel to	Ordnance Checked By:		Page 3 of 3 Approved By:	3
Dando 2000	E: 524197.53		43.84		WC			W	C	SS	;

Level: 84.46

Delta-Simons 3 Henley Office Park, Doddington Road, Lincoln, LN6 3QR Tel: +44 (0) 870 0400 012



Broadwater Road, Welwyn Garden Cit				7 20 12110				e ID:		BH4	05		
CABLE PERCUSSION	BOREHOLE I	LOG	Date		02/10/2014		Clie		en Hill	l Develo	pment	s Ltd	
		<u> </u>	CA	ASING	REDUCED LEVEL/		Sam	ole Details		Tes	t Result	6	cfill ails
DESCRIPTION OF STRATA		LEGEND HE	DE (Diar	:PTH / m. mm)	DEDTH	TYPE	REF	Depth		SPT N V	alue/Driv	e mm	Backfill Details
MADE GROUND: Concrete. MADE GROUND: Orangey brown sandy gravel is angular to rounded fine to coarse brick. Sand is fine to coarse.					(3.30)	D D B	1 2 1	0.50 1.00 1.50 - 1.95 1.50 -	1 05	CPT N (4,6/10,13	=50/265 3,15,12/		
	gey brown slightly gravelly sandy CLAY. Gravel					D	3	2.50 - 2.95 2.50 -			T N=22 8/4,4,6,8		
Firm orangey brown slightly gravelly sandy is angular to rounded fine to coarse flint. S coarse. Rare flint cobbles. (LOWESTOFT)	and is fine to			<u>81.18 3.50</u>	D	4	3.50 - 3.95 3.50 -			T N=11 4/3,3,2,3			
	velly CLAY. Gravel is				(1.60) 79.58 5.10	D B	5	4.50 - 4.95 4.50 - 5.10 - 5.50	4.95		T N=11 /2,3,3,3		
Stiff brown slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to medium flint and rare sandstone. Rare fine gravel sized organic patches. (LOWESTOFT FORMATION) Medium dense orange sandy angular to rounded fine to coarse flint GRAVEL. Sand is fine to coarse. (KESGRAVE CATCHMENT SUBGROUP)					(0.80) 78.78 5.90 (4.30)	D D	7	6.00 - 6.45 6.00 - 7.50 - 7.95 7.50 -	6.45	3,3 CP	T N=23 3/4,5,6,8 T N=29 75,7,7,10		
					, ,	В	3	9.00 - 9.45 9.00 -			T N=22 8/3,5,6,8		
REMARKS:					HISELLING	ime				/EL OBS			Casing
Engineer verified logged in general accordance to BS 5930:2010. Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 20.00m bgl.			_	Depth From To Time Taken NO CHISELLING NO C			ER	NO CASING D	DIAME	ETER Stri	ke L	evel RED:	Donth
All measurements in metres unless otherwise stated	10m/page	Scale: 1:62.50)				National G Ordnance		um_	Page	1 of 3		
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: 524109.81 N: 212731.43 Level: 84.68			Logged By:			(Checked By:	/C		Approved	By: SS	



Broadwater Road, W	Broadwater Road, Welwyn Garden Cit					8		HOI	e ID:	ı	BH4	05	
CABLE PERCUSSION	N BOREHOLE L	_OG		Date:	02/10/2014	4		Clie		en Hill	Develo	pments Ltd	
			띪	CASING	REDUCEI LEVEL/			Samp	ole Details		Tes	t Results	≣ :
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	s) T	YPE	REF	Depth	;	SPT N Va	alue/Drive mm	Backfill
Recovered as structureless chalk compositare orange veins slightly gravelly slightly s angular fine to coarse extremely weak loream. Rare subrounded rinded flint cobbom.(LEWES NODULAR/ SEAFORD CHAFORMATION)	sandy silt. Gravel ow density les.Grade		-	10.20	74.48 10.2	20	D D	9	10.20 10.50 - 10. 10.50 - 1			T N=24 /2,4,8,10	
			-				D	10	12.00 - 12. 12.00 - 1			T N=15 2/4,5,3,3	
			-				U	1	13.50 - 13. 13.95 - 14.		U=10	00/225mm	
			-		(9.80)		D	12	15.00 - 15. 15.00 - 1			T N=12 /2,2,3,5	
			-				U D	2 13	16.50 - 16. 16.95 - 17.		U=1(00/180mm	
			-				D	14	18.00 - 18. 18.00 - 1	8.45		T N=20 //5,5,4,6	
					<i>64.68</i> 20.0		B D	4 15	19.50 - 19. 19.50 - 1	9.95	4,6	T N=34 /7,8,9,10	
REMARKS:	ordance to BS 503	0.2010		Depth	HISELLIN Depth	Tin			WATEF Date	Time	Wa	SERVATION ter Standin	g Casi
Engineer verified logged in general accordance to BS 5930:2010. Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 20.00m bgl.				From To Taken NO CHISELLING NO CHISELLING UNDERTAKEN:			3		ИО	WATE	RENC	OUNTEREC)*-
					EHOLE D			₹	CASING E 150mm t	JIAIVIE	IER	DEPTH S	EALED
All measurements in metres unless atherwise stated 10m/page Scale: 1:62.50				Coordinate							_	Page 2 of	3
unless otherwise stated lant Used: Dando 2000	Coordinates / Level (mAC E: 524109.81 Level	Ground Level Logged By: WC				Checked By:	Datu		Approved By:				

Delta-Simons 3 Henley Office Park, Doddington Road, Lincoln, LN6 3QR Tel: +44 (0) 870 0400 012

Fax: +44 (0) 1522 698393 Email: info@deltasimons.com



Broadwater Road, Welwyn Garden City					342.18		Hole	ID:	BH	1405	
CABLE PERCUSSION				Date:	02/10/2014		Clier		n Hill Dev	relopments Ltd	
			쏪	CASING	REDUCED LEVEL/		Samp	le Details		Test Results	iii si
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	DEPTH (Thickness)	TYPE	REF	Depth	SPT	N Value/Drive mm	Backfill Details
Borehole complete at 20.00m bgl.											
			-								
			- - -								
			-								
			-								
			-								
			-								
			-								
			-								
			- - -								
			- - -								
REMARKS:			-		HISELLING			WATER	LEVEL	DBSERVATION	S
Engineer verified logged in general acc Area CAT scanned prior to excavation.	ordance to BS 5930	0:2010.		From	To T	ime aken		Date		Water Standing Strike Level	
3. Borehole remained dry on completion.4. Installed with HDPE standpipe to 20.00		NC	CHISELLIN NDERTAKE	N:			ATERE	Strike Level			
					R (NO CASING D	IAMETER	R DEPTH SE	ALED		
		150mm to 20.00m				150mm to					
All measurements in metres unless otherwise stated		cale: 1:62	Coordinates Ground Leve			el to	Ordnance		Page 3 of 3	3	
Plant Used: Dando 2000	Coordinates / Level (mAO E: 524109.81		31.43	Logged	d By:		С	hecked By:	C	Approved By:	

Level: 84.68



Broadwater Road, We	ity	Project No: 2342.18				e ID:	BH4	106			
CABLE PERCUSSION I	BOREHOLE I	LOG		Date From / 03/10/2	To: 2014 - 06/10	/2014	Clie		Hill Deve	lopments Ltd	
			E	CASING	REDUCED LEVEL/		Samp	ole Details	Te	est Results	ils ils
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	SPT N	Value/Drive mm	Backfill Details
MADE GROUND: Concrete.			- -		<i>84.77</i> 0.20						
MADE GROUND: Stiff orangey brown sandy Gravel is angular to rounded fine to coarse of brick (no evidence of brick from 1.90 m bgl)	of flint and rare Sand is fine to		- - - -			D D	1 2	1.00			
coarse. Assumed to be reworked to 1.90 m l (LOWESTOFT FORMATION)	ogi.		- - - - - -			D	3	1.50 - 1.95 1.50 - 1.9		CPT N=33 ,6/7,7,9,10	
			-		(5.10)	В	1	2.50 - 2.95 2.50 - 2.9		CPT N=26 2,3/5,6,7,8	
			- - - - - - - -			D	4	3.50 - 3.95 3.50 - 3.9		CPT N=20 3,4/4,5,5,6	
						D	5	4.50 - 4.95 4.50 - 4.9		CPT N=13 ,2/2,3,4,4	
Stiff orangey brown slightly sandy slightly gra	- - - -	(150mm)	79.67 5.30	D	6	5.30					
Gravel is subangular to rounded fine to coar is fine to coarse.(LOWESTOFT FORMATION			- - - - - - - -			D	7	6.00 - 6.45 6.00 - 6.4		SPT N=33 4/5,6,10,12	
			: - - -		(3.30)						
			• • • •			U D	8	7.50 - 7.95 7.95 - 8.05	U=	100/405mm	
Very dense to medium orangey brown sandy angular to rounded fine to coarse flint GRAVEL. Sand is fine to coarse. Rare flint cobbles.(KESGRAVE CATCHMENT SUBGROUP)					76.37 8.60 (2.10)	В	2	9.00 - 9.45 9.00 - 9.4		N=50/265mm (4,17,13/40mm)	
		0000	-		 CHISELLING	i I		WATER I	FVFL OF	SERVATION	∐∷⊟ S
Engineer verified logged in general accord Area CAT scanned prior to excavation. Borehole remained dry on completion.						ime aken		Date 1	ime W	ater Standing	Casin
Installed with HDPE standpipe to 25.00m bgl.				NO CHISELLING UNDERTAKEN: UNDERTAKEN				NOW	ATER EN	COUNTERED COUNTERED	
				BOREHOLE DIAMETER 150mm to 25.00m				CASING DIA 150mm to 1		DEPTH SE	ALEU
All measurements in metres unless otherwise stated	10m/page S	Scale: 1:62	2.50	Coordinates Ground Leve					atum	Page 1 of 3	3
Plant Used: Co Dando 2000	Coordinates / Level (mAOD): E: 524122.39 N: 212763.62 Level: 84.97				Logged By:			Checked By: WC		Approved By:	i



Email: info@deit		Project No: Hole ID:									
Broadwater Road, W	Broadwater Road, Welwyn Garden Cit					7 20 12110				BH406	
CABLE PERCUSSION	BOREHOLE	LOG		Date From / 03/10/2	To: 2014 - 06/10	/2014	Clie		en Hill	Developments L	td
			ER	CASING	REDUCED LEVEL/		Sam	ple Details		Test Results	cfill ails
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	:	SPT N Value/Drive m	Backfill Details
Recovered as structureless CHALK compo with rare orange veins slightly gravelly silt. angular fine to medium extremely weak lov	Gravel is		-	10.70	74.27 10.70	D	9	10.50 - 10. 10.50 - 1		CPT N=27 4,6/8,6,6,7	
Bands of very thinly to thinly bedded fine to Grade Dm.(LEWES NODULAR/ SEAFOR FORMATION) Recovered as structureless CHALK composition rare orange veins slightly gravelly silt. subangular fine to medium extremely weal cream. Rare subangular to subrounded co	o coarse sand. D CHALK Dissect of cream Gravel is K low density		-		(1.20) 73.07 11.90	- D	10	12.00 - 12. 12.00 - 1		SPT N=10 8,6/4,2,2,2	
gravel and rinded flint cobbles. Slightly grebgl.Grade Dm.(LEWES NODULAR/ SEAF FORMATION)	y from 21.0 m		-			D	11	13.50 - 13. 13.50 - 1		SPT N=10 3,3/2,2,3,3	
		-			D	12	15.00 - 15. 15.00 - 1		SPT N=14 2,3/4,5,3,2		
			-			D	13	16.50 - 16. 16.50 - 1		SPT N=12 2,5/2,3,3,4	
			-		(13.10)	D	14	18.00 - 18. 18.00 - 1		SPT N=26 3,4/7,7,6,6	
			-			D B	15 3	19.50 - 19. 19.50 - 1 20.00 - 20.	9.95 50	SPT N=26 2,3/5,6,7,8	
REMARKS:	ordonos to DO 50	20,2040		Depth		ime		WATER	Time	Water Stand	ing Casing
Engineer verified logged in general accordance to BS 5930:2010. Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 25.00m bgl.				From NO U				NO CASING D	WATE	Strike Levi	1 5 0
All measurements in metres unless otherwise stated		ge Scale: 1:62.50			Coordinates Ground Leve			Ordnance		m Page 2 c	of 3
Plant Used: Dando 2000	Coordinates / Level (m/ E: 524122.3 Leve		63.62	62 Logged By: WC			(Checked By:	/C	Approved By:	SS



^{oject} Broadwater Road, Welwyn Garden Cit				Project No:	342.18	}	Hol	e ID:	BH4	106	
CABLE PERCUSSION	N BOREHOLE L	_OG		Date From / 03/10/2	то: :014 - 06/10	/2014	Clie		ill Devel	opments Ltd	
			H	CASING	REDUCED LEVEL/		Samp	ole Details	Te	est Results	fill ils
DESCRIPTION OF STRATA	·	LEGEND	WATER	DEPTH / (Diam. mm)	DEPTH (Thickness)	TYPE	REF	Depth	SPT N	Value/Drive mm	Backfill Details
Recovered as structureless CHALK comp with rare orange veins slightly gravelly sill subangular fine to medium extremely weat cream. Rare subangular to subrounded of gravel and rinded flint cobbles. Slightly gr bgl.Grade Dm.(LEWES NODULAR/ SEAL FORMATION)(BH Continued)	i. Gravel is ak low density oarse rinded flint ey from 21.0 m					D	16	21.00 - 21.45 21.00 - 21.45		PT N=32 8/7,8,7,10	
						D	17	22.50 - 22.95 22.50 - 22.95		N=50/235mm 2,20,10/10mm)	
					50.07.05.00	D	18	24.00 - 24.45 24.00 - 24.45		N=50/180mm 2,22,16/30mm)	
Borehole complete at 25.00m bgl.					59.97_25.00			WATER LE	VEL OE	SERVATIONS	
REMARKS: 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Installed with HDPE standpipe to 25.00m bgl.					Depth Depth Time From To Taken NO CHISELLING NO CHISELLIN			Date Ti	me WS1	ater Standing Level COUNTERED: DEPTH SE	Casing Depth
All measurements in metres unless otherwise stated						Coordinate Ground Lev			tum	Page 3 of 3	
Plant Used: Dando 2000	Coordinates / Level (mAC E: 524122.39 Leve		.62	Logged				Checked By:		Approved By:	



Eman: mio@den											
Project: Broadwater Road, W	ity	Project No:	342.18	}	Hole	e ID:	В	3H407			
CABLE PERCUSSION	N BOREHOLE L	_OG		Date:	01/10/2014		Clie		n Hill D	Developments Ltd	
			ER	CASING	REDUCED LEVEL/		Samp	ole Details		Test Results	dills
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	SF	PT N Value/Drive mm	Backfill Details
MADE GROUND: Brown sandy gravelly c angular to subrounded fine to coarse flint. coarse.						D	1	0.50			
			- -		(2.10)	D	2	1.00			
						D	3	1.50 - 1.95 1.50 -	195	CPT N=50/255mm 2,7/9,14,18,9/30mm)	
MADE GROUND: Brown sandy slightly gr Gravel is subangular to subrounded fine to ithologies including flint brick and concret coarse. Occasional anthropogenic materia	o coarse of mixed e. Sand is fine to				(0.90) 81.33 3.00	D	4	2.50 - 2.95 2.50 -	295	CPT N=50/265mm 9/10,13,14,13/40mm	
and glass. MADE GROUND: Firm sandy gravelly cla subangular to subrounded fine to coarse for to coarse.(POSSIBLY REWORKED LOW FORMATION)	flint. Sand is fine		-		(1.20)	D	5	3.50 - 3.95 3.50 -		CPT N=15 3,5/6,4,3,2	
Firm brown sandy gravelly CLAY. Gravel i rounded fine to coarse flint. Sand is fine to and gravel become slight at 6.45 m bgl.(L	coarse. Sand	parse Sand				D D	6 7	4.20 4.50 - 4.95 4.50 -		CPT N=12 1,2/2,3,3,4	
FORMATION)				(450)	(3.20)	U	1 8	6.00 - 6.45 6.45 - 6.55		U=32/405mm	
Soft orange brown sandy gravelly CLAY. 6 subangular to subrounded fine to coarse to coarse.(LOWESTOFT FORMATION)			. — — — — — — — — — — — — — — — — — — —	(150mm)	76.93 7.40 (1.00)		9	7.50 - 7.95 7.50 -		CPT N=31 3,4/6,7,9,9	
Loose to medium dense orange brown gra Gravel is subrounded to rounded fine to c s fine to coarse. (KESGRAVE CATCHME	oarse flint. Sand			75.93 8.40	D	10	9.00 - 9.45 9.00 -		CPT N=10 1,1/2,2,3,3		
REMARKS:		a . -		Depth	HISELLING Depth	G Fime				L OBSERVATION Water Standin	
Emgineer verified logged in general accordance to BS 5930:2010. Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 20.00m bgl.				From	To T	aken		Date NO	Time WATER	Strike Level	Dept
					EHOLE DIA 50mm to 20		R	CASING E 150mm t	NAMEI	ER DEPTH S	EALED
All measurements in metres unless otherwise stated	10m/page S	Coordinates Ground Leve						Page 1 of	3		
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: 524086.6 N: 212766.25 Level: 84.33				Logged By:			Checked By:	/C	Approved By:	3



Project: Broadwater Road, Welwyn Ga	arden City	7 20 .2				e ID:	BH407	
CABLE PERCUSSION BOREHOLE	LOG	Date:	01/10/2014		Clie		ill Developments Ltd	
	ER	CASING	REDUCED LEVEL/		Samp	ole Details	Test Results	fill ils
DESCRIPTION OF STRATA	LEGEND X	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	SPT N Value/Drive mm	Backfill Details
Loose to medium dense orange brown gravelly SAND. Gravel is subrounded to rounded fine to coarse flint. Sand is fine to coarse. (KESGRAVE CATCHMENT SUBGROUP)(BH Continued)			(5.40)	D	11	10.50 - 10.95 10.50 - 10.95	CPT N=15 1,2/2,4,4,5	
				D	12	12.00 - 12.45 12.00 - 12.45	CPT N=16 3,4/6,4,3,3	
Recovered as structureless CHALK composed of cream		13.80	70.53 13.80	D	13	13.50 - 13.95 13.50 - 13.95	CPT N=6 3,2/1,3,0,2	
with rare orange veins slightly gravelly silt. Gravel is subangular fine to medium extremely weak low density cream. Grade Dm. with approximatelly 50% loose fine to coarse SAND and angular to rounded fine to coarse flint GRAVEL occurring in irregularly sized and spaced pockets (POSSIBLE DISSOLUTION FEATURE)	S		(3.30)	D	14	16.00		
				B U	1 2	16.50 - 16.95	U=100/0mm	
Recovered as structureless CHALK of cream with rare orange veins composed of slightly sandy gravelly silt.			67.23 17.10	D	15	17.00 - 17.45 17.00 - 17.45	CPT N=13 2,2/4,3,3,3	
Gravel is angular fine to coarse extremely weak low densit cream.Sand is fine to coarse cream. Rare rinded flint cobble.Grade Dc.(LEWES NODULAR/ SEAFORD CHALK				U	3	18.00 - 18.45	U=51/405mm	
FORMATION			(2.90)	D	16	18.45 - 18.55		
			<i>64.33</i> 20.00		17	19.50 - 19.95 19.50 - 19.95	3,4/4,5,5,6	
REMARKS:		Depth	CHISELLING n Depth 1	ime			VEL OBSERVATIONS Water Standing	
 Engineer verified logged in general accordance to BS 5 Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 20.00m bgl. 	From	From To Ta			NOWA	Strike Level TER ENCOUNTERED:	Depth	
			BOREHOLE DIA 150mm to 20			CASING DIAM 150mm to 13	IETER DEPTH SE	ALED
All measurements in metres unless otherwise stated 10m/page	10m/page Scale: 1:62.50			I		National Grid Ordnance Dat	Page 2 of 3	3
Dando 2000 E: 524086	Coordinates / Level (mAOD): E: 524086.6 N: 212766.25 Level: 84.33			Logged By:			Approved By:	

Delta-Simons
3 Henley Office Park, Doddington Road,
Lincoln, LN6 3QR
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Broadwater Road, Welwyn Garden Cit				Project No: 2342.18				e ID:	BH	1407		
CABLE PERCUSSION				Date:	01/10/201		Clie		n Hill Dev	relopment	ts Ltd	
			α,		REDUCE	TD	Sam	ple Details		Test Result		= 0
DESCRIPTION OF STRATA		LEGEND	WATER	CASING DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thicknes			Depth	SPT	N Value/Dri		Backfill Details
Borehole complete at 20.00m bgl.		 										
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REMARKS:	: : DO 500				HISELLII Depth	Time			LEVEL (DBSERVA Water St	anding	Casing
 Engineer verified logged in general acc Area CAT scanned prior to excavation. Borehole remained dry on completion. 	ordance to BS 5930	J:2010.		From	To	Taken	+	Date		O4:1 1	1	D 41-
Installed with HDPE standpipe to 20.00	ım bgl.			MC	CHISEL NDERTAK	(EN:			MATERE	STIKE	E.	
ľ		BOR	EHOLE D	NAMETE	R	NO CASING D	IAMFTER	P DEP	TH SEA	∆I FD		
ľ							-11	150mm to			11102.	\LLD
1												
All measurements in metres	10m/page So	Scale: 1:62	 2.50	Coordinates						Page	e 3 of 3	
unless otherwise stated Plant Used:	Coordinates / Level (mAOI	DD):		Logged		ound Le		Ordnance Checked By:	Datum	Approve		
Dando 2000	E: 524086.6 Level:	N: 21276 I: 84.33	36.25		WC			W	'C		SS	



Broadwater Road, Welwyn Garden Cit				Project No:	342.18	3		e ID:	E	3H40	8	
CABLE PERCUSSION	CABLE PERCUSSION BOREHOLE LOG DESCRIPTION OF STRATA LEGEND				To: 2014 - 16/10)/2014	Clie		en Hill	Developr	nents Ltd	
			K.	CASING	REDUCED		Samp	ole Details		Test F	tesults	<u></u>
DESCRIPTION OF STRATA		LEGEND	F	DEPTH / Diam. mm)	LEVEL/ DEPTH (Thickness)	TYPE	REF	Depth	S	SPT N Valu	e/Drive mm	Backfill
MADE GROUND: Concrete.					<i>85.23</i> 0.40	D D	1	0.50				
MADE GROUND: Brown slightly sandy slig slay. Gravel is subangular to subrounded fi lint and brick. Sand is fine to coarse.	htly gravelly ne to coarse				(0.60) <i>84</i> .63 1.00		2	1.00				
tiff orange brown slightly sandy slightly gra Gravel is angular to subrounded fine to coa is fine to coarse.(LOWESTOFT FORMATIO	arse flint. Sand					D	3	1.50 - 2.00 1.50 -		CPT 2,3/4	N=15 ,4,3,4	
						B U	1	2.50 - 3.00 2.50 - 2.95		U=50	/0mm	
					(5.40)	D	4	3.50 - 4.00 3.50 -		CPT 2,3/2	N=13 ,3,4,4	
						U	2	4.50 - 4.95	;	U=40/3	383mm	
					D	5	5.00					
pose to medium dense orange brown sandy angular to		0000			79.23 6.40	D D B	6 2	6.00 - 6.50 6.00 - 6.40		SPT 2,3/4	N=25 6,6,9	
subrounded fine to coarse flint GRAVEL. S o coarse. Occasional flint cobbles.(KESGF CATCHMENT SUBGROUP)	and is medium		(150mm)		D	7	7.50 - 8.00 7.50 -		CPT 2,2/2	N=8 ,2,2,2	
						D	8	9.00 - 9.50 9.00 -			N=17 4,4,5	
REMARKS :		lo. ~ ~ ~ * f			HISELLING			WATER	R LEVE		RVATIONS	
Engineer verified logged in general acco. Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 20.00m	n bgl.	930:2010.		From	Depth Depth Time Take			Date Ti			Standing Level	
. Coordinates estimated due to no GPS signal	Coordinates estimated due to no GPS signal.							ИО	WATE			
				EHOLE DIA 50mm to 20		R	CASING E 150mm t	JIAIVIE	IEK I	DEPTH SE	ALED	
All measurements in metres unless otherwise stated	10m/page	Scale: 1:62.5	0				ates to National Grid			n F	Page 1 of 3	
	Coordinates / Level (mAOD):			Logge		and LE	Checked By:			Approved By:		



Broadwater Road, W	arden C	ity	Project No:	342.18	}	Hol	e ID:	BH	408		
CABLE PERCUSSION	ELOG		Date From / 15/10/2	To: 2014 - 16/10	/2014	Clie		Hill Deve	lopments Ltd		
			R	CASING	REDUCED LEVEL/		Sam	ole Details	Т	est Results	III SI
DESCRIPTION OF STRATA	A	LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	SPT N	Value/Drive mm	Backfill Details
Loose to medium dense orange brown sa subrounded fine to coarse flint GRAVEL. to coarse. Occasional flint cobbles.(KESC CATCHMENT SUBGROUP)(BH Continue	Sand is medium SRAVE	0 0 0 0			(8.50)	D	9	10.50 - 11.00 10.50 - 10.9	15	CPT N=20 3,4/4,5,5,6	
						D	10	12.00 - 12.50 12.00 - 12.	15	CPT N=23 1,4/5,5,6,7	
						D	11	13.50 - 14.00 13.50 - 13.	15	CPT N=17 8,4/4,5,4,4	
covered as structureless CHALK composed of cream rare orange veins sandy gravelly silt. Gravel is angular ubangular fine to medium extremely weak low density am. Sand is fine to coarse. Rare subrounded coarse vels and cobbles of rinded flint throughout.Grade Dm.		0000		14.90	70.73 14.90	B D	3 12	14.90 15.00 - 15.45 15.00 - 15.4		CPT N=3 1,0/1,0,2,0	
LEWES NODULAR/SEAFORD CHALK						D	13	16.50 - 17.00 16.50 - 16.	35	SPT N=7 1,1/1,2,2,2	
					(5.10)	D	14	18.00 - 18.50 18.00 - 18.	15	SPT N=10 1,1/2,2,3,3	
					65.63 20.00		15	19.50 - 20.00 19.50 - 19.9	95	SPT N=8 2,3/2,2,2,2	
REMARKS:	oordonoo to DC E	020-2010		Depth		Time			_{Timo} N	SSERVATION ater Standing	Casin
Engineer verified logged in general accordance to BS 5930:2010. Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 20.00m bgl. Coordinates estimated due to no GPS signal.			From To			R	NO W	ATEREN	trike Level	Dept	
				BOREHOLE DIAME 150mm to 20.00r				150mm to	14.90m		
All measurements in metres unless otherwise stated	10m/page	Scale: 1:62.	50				ates to National Grid Level to Ordnance Datum			Page 2 of 3	
ant Used: Dando 2000	Coordinates / Level (mAOD): E: 524161 N: 212906 Level: 85.63			Logge			Checked By: WC			Approved By:	



Project: Broadwater Road, W	Sity	Project No:	342.18	 8	Hole	ID:	BH	1408				
CABLE PERCUSSION				Date From /			Clien			velopments Ltd		
			<u> </u>	CASING	REDUCED		Samp	ole Details		Test Results		
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thickness	TYPE	REF	Depth	SPT	N Value/Drive mm	Backfill Details	
Borehole complete at 20.00m bgl.			Ē									
			: F					I				
			- E					I				
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REMARKS :					CHISELLIN Depth	NG Time	7		Time	DBSERVATION Water Standing		
 Engineer verified logged in general according Area CAT scanned prior to excavation. Borehole remained dry on completion. 	ordance to BS 5930):2010.		From	To '	Taken	+	Date				
Installed with HDPE standpipe to 20.00r Coordinates estimated due to no GPS s	m bgl. signal.			NC	O CHISELL NDERTAK	EN:			MATERE	Strike Level		
					EHOLE DI		R (NO CASING D	IAMETEF	R DEPTH SE	EALED	
				1/	50mm to 2	20.00m		150mm to	14.90m			
All measurements in metres unless otherwise stated	10m/page So	cale: 1:62	2.50				nates to National Grid Level to Ordnance Datum			Page 3 of 3		
Plant Used: Dando 2000	Coordinates / Level (mAOI E: 524161		06	Logged	d By:		Checked By:			Approved By:		



Broadwater Road, Welwy	7 20 121 10				Hole ID: BH409					
CABLE PERCUSSION BOR		Date From /	To: 2014 - 13/10	/2014	Clie		Hill Dev	elopments Ltd		
		H.	CASING	REDUCED		Samp	ole Details		Test Results	≣ s
DESCRIPTION OF STRATA	LEGEND	WATER	DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thickness)	TYPE	REF	Depth	SPT	N Value/Drive mm	Backfill Details
MADE GROUND: Concrete.				82.83 0.30						
Stiff orangey brown slightly sandy slightly gravelly Gravel is angular to subrounded fine to coarse flir is fine to coarse. Possibly reworked to 1.5 m bgl.	CLAY.				D D	1 2	1.00			
(LOWESTOFT FORMATION)	-				D	3	1.50 - 1.95		SPT N=5	
				(2.90)			1.50 - 1.	.95	1,0/1,0,2,2	<u> </u>
					U	1	2.50 - 2.95	ı	J=50/383mm	
				79.93 3.20	D B	4	3.00 3.20			
Vey to medium dense orange brown gravelly fine SAND. Gravel is subangular to rounded fine to co (KESGRAVE CATCHMENT SUBGROUP)	D. Gravel is subangular to rounded fine to coarse flint.				D	5	3.50 - 4.00 3.50 - 3.	.95	CPT N=12 1,2/2,3,3,4	
					D	6	4.50 - 5.00 4.50 - 4.		T N=50/155mm 3/17,23,10/5mm)	
				(5.20)	D	7	6.00 - 6.50 6.00 - 6.	.45	CPT N=32 4,6/7,7,9,9	
					D	8	7.50 - 8.00 7.50 - 7.	95	CPT N=36 5,7/8,8,10,10	
Recovered as structureless CHALK composed of			8.40	74.73 8.40	В	2	8.40			
with rare orange veins slightly gravelly silt. Gravel angular to subangular fine to medium extremely to weak low to medium density cream. Rare subrour coarse rinded flint gravel throughout grade Dm. (LNODULAR/SEAFORD CHALK FORMATION)	very III				D	9	9.00 - 9.50 9.00 - 9.	.45	SPT N=5 2,3/2,1,1,1	
REMARKS:	 			HISELLING			WATER		DBSERVATION: Water Standing	
1. Engineer verified logged in general accordance to BS 5930:2010. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Installed with HDPE standpipe to 20.00m bgl. 5. Coordinates estimated due to no GPS signal.			Depth From To Take NO CHISELLING UNDERTAKEN:					rime	Strike Level	Danth
		BOR	EHOLE DIA 50mm to 20	METE	R	CASING DIA	AMETER	DEPTH SE	EALED	
All measurements in metres unless otherwise stated 10m/p	age Scale: 1:62.50	0					lational Grid Ordnance [Page 1 of 3	3
Plant Used: Coordinate Dando 2000	es / Level (mAOD): E: 524255 N: 212891 Level: 83.13		Logge	d By: WC		C	checked By:	2	Approved By:	



Linaii: iiilo@dei	••										
Broadwater Road, W	arden C	ity	Project No:	342.18	}	Hole	e ID:	Bł	1409		
CABLE PERCUSSIO	CABLE PERCUSSION BOREHOLE LOG DESCRIPTION OF STRATA LEGEND)/2014	Clie		n Hill De	velopments Ltd	
			ER	CASING	REDUCED LEVEL/		Samp	ole Details		Test Results	cfill ails
DESCRIPTION OF STRATA	4	LEGEND	WATER	DEPTH / (Diam. mm)	DEPTH (Thickness)	TYPE	REF	Depth	SPT	N Value/Drive mm	Backfill Details
Recovered as structureless CHALK comy with rare orange veins slightly gravelly sil angular to subangular fine to medium extweak low to medium density cream. Rare coarse rinded flint gravel throughout grac NODULAR/SEAFORD CHALK FORMAT Continued)	t. Gravel is remely to very subrounded le Dm. (LEWES					D	10	10.50 - 11.0 10.50 - 10		SPT N=8 2,2/3,3,1,1	
						D	11	12.00 - 12.5 12.00 - 12		SPT N=13 2,3/4,3,3,3	
					(11.60)	D	12	13.50 - 14.0 13.50 - 13		SPT N=15 2,3/4,4,4,3	
					D	13	15.00 - 15.5 15.00 - 15		SPT N=16 3,3/4,4,4,4		
						D	14	16.50 - 17.0 16.50 - 16		SPT N=19 3,4/4,5,5,5	
						D	15	18.00 - 18.5 18.00 - 18		SPT N=15 3,4/4,3,4,4	
					63.13 20.00		16	19.50 - 20.0 19.50 - 19	9.95	SPT N=19 3,4/5,5,5,4	
REMARKS:				Depth	HISELLING Depth	G Time		WATER	LEVEL	OBSERVATION Water Standing	
 Engineer verified logged in general accordance to BS 5930:2010 Area CAT scanned prior to excavation. Borehole remained dry on completion. Installed with HDPE standpipe to 20.00m bgl. Coordinates estimated due to no GPS signal. 		930:2010.		From	TO TO TO TO CHISELLI	aken		Date NO	Time	Strike Level	D 41-
					EHOLE DIA 50mm to 20		R	CASING DI 150mm to	IAMETE	R DEPTH SE	ALED
All measurements in metres	10m/page	Scale: 1:62	2.50				rdinates to National Grid			Page 2 of 3	
unless otherwise stated	ess otherwise stated 10m/page Scale: 1:62.8				Logged By: Checked By:				Approved By: /C SS		



Email. illio@dei		Project No: Hole ID:									
Broadwater Road, Welwyn Garden City					342.18	3	Hole	e ID:	BH	409	
CABLE PERCUSSION	N BOREHOLE L	.OG		Date From / 10/10/2	To: :014 - 13/10)/2014	Clie		n Hill Deve	elopments Ltd	
			ËR	CASING	REDUCED LEVEL/		Samp	ole Details	Т	est Results	cfill ails
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	DEPTH (Thickness)	TYPE	REF	Depth	SPTN	Value/Drive mm	Backfill Details
Borehole complete at 20.00m bgl.			-								
			-								
			-								
			-								
			-								
			-								
REMARKS:		2 22 4 2	· · · · · ·	Depth		Гіте		WATER Date	T: V	BSERVATIONS Vater Standing	Casing
 Engineer verified logged in general acc Area CAT scanned prior to excavation. Borehole remained dry on completion. 	cordance to BS 5930	J:2010.		From		aken		Date	Tille S	Strike Level	Depth
4. Installed with HDPE standpipe to 20.005. Coordinates estimated due to no GPS	lm bgl. signal.			NC		N:		.,0	NATER EN	COUNTERED:	
				BOR	EHOLE DIA	METE	R (CASING D	IAMETER	DEPTH SE	ALED
				1:	50mm to 20).00m		150mm to	o 8.40m		
All measurements in metres					Coo	rdinator	anton to National Crid				
unless otherwise stated Plant Used:	10m/page S Coordinates / Level (mAC	cale: 1:62	2.50	Logged	Grou		tes to National Grid evel to Ordnance Datum Checked By:			Page 3 of 3 Approved By:	
Dando 2000	E: 524255		91	Logget	WC				'C	SS SS	



Broadwater Road, Welwyn C	τy		342.18					3H410	1		
CABLE PERCUSSION BOREHO	LE LOG		Date From / 16/10/2	To: 2014 - 20/10	/2014	Clie		n Hill C	Developm	ents Ltd	
		Ä	CASING	REDUCED		Samp	ole Details		Test Re	sults	<u>≡</u> ≝
DESCRIPTION OF STRATA	LEGEND	WATER	DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thickness)	TYPE	REF	Depth	SF	PT N Value	/Drive mm	Backfill Details
MADE GROUND: Asphalt.				84.79 0.15							
MADE GROUND: Brown sandy clayey gravel. Gravel is angular to rounded fine to coarse of mixed lithologies ncluding brick, concrete and flint. Sand is fine to coarse Frequent brick cobbles.				<u>84.49 0.45</u>	D D	2	1.00				
Stiff orangey brown sandy gravelly CLAY. Gravel is ang to subrounded fine to coarse flint. Sand is fine to coarse flint cobbles. (LOWESTOFT FORMATION)	jular				D	3	1.50 - 2.00 1.50 - 1	1.95	CPT N 2,2/3,3		
				(4.65)	D	4	2.50 - 3.00 2.50 - 2	2.95	CPT N 2,3/4,5		
					D	5	3.50 - 4.00 3.50 - 3	3.95	CPT N 3,3/4,4		
					D	6	4.50 - 5.00 4.50 - 4	1.95	CPT N 4,5/4,3		
				79.84 5.10	В	1	5.10				
Stiff orangey brown slightly sandy slightly gravelly CLAN Gravel is angular to subrounded fine to coarse flint. Sar s fine to coarse. (LOWESTOFT FORMATION)	/		(150mm)	(0.80) 79.04 5.90	В	2	6.00 - 6.50				
Medium dense to dense orangey brown slightly sandy angular to subrounded fine to coarse flint GRAVEL. Sar s fine to coarse. Occasional flint cobbles.(KESGRAVE CATCHMENT SUBGROUP)					D	7	7.50 - 8.00 7.50 - 7		CPT N 3,4/4,4 CPT N 4,5/6,6,	,5,6 =29	
				(5.80)	D	8	9.00 - 9.50 9.00 - §	9.45	CPT N 4,6/7,7		
REMARKS:			Depth	HISELLING Depth T	ime		WATER	LEVE	L OBSER	VATIONS	
Engineer verified logged in general accordance to BS Area CAT scanned prior to excavation. Groundwater encountered at 22.35m bgl.	5 5930:2010.		From	To Ta	aken	1	Date 20-10-14	Time	Strike 22.35	Level	Dep
Installed with HDPE standpipe to 25.00m bgl.			N	CHISELLIN NDERTAKE	<i>\\</i> :						
			BOR	EHOLE DIA 50mm to 25	METE	R	CASING D 150mm to			EPTH SE	ALEC
All measurements in metres unless otherwise stated 10m/page	Scale: 1:62.5	50				tes to National Grid Level to Ordnance Datum			Page 1 of 3		
nless otherwise stated nt Used: Dando 2000 Coordinates / Level (mAOD): E: 524279.09 N: 21297 Level: 84.94			Logged By:			Checked By:			Approved By:		

Delta-Simons
3 Henley Office Park, Doddington Road,
Lincoln, LN6 3QR
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Tel: +44 (0) 870 0400 012 Fax: +44 (0) 1522 698393 Email: info@deltasimons.com



Project No: Broadwater Road, Welwyn Garden City **BH410** 2342.18 Date From / To: Client CABLE PERCUSSION BOREHOLE LOG 16/10/2014 - 20/10/2014 Spen Hill Developments Ltd REDUCED Sample Details Test Results Backfill Details NATER CASING LEVEL/ DEPTH LEGEND **DESCRIPTION OF STRATA** (Diam. mm) REE TYPF SPT N Value/Drive mm Depth (Thickness) Medium dense to dense orangey brown slightly sandy 000 angular to subrounded fine to coarse flint GRAVEL. Sand 0000 D 9 10.50 - 11.00 CPT N=31 000 is fine to coarse. Occasional flint cobbles.(KESGRAVE 10.50 - 10.95 CATCHMENT SUBGROUP)(BH Continued) 4.6/7.7.8.9 00 0 0 00 000 11.70 73.24 11.70 В 3 11.70 Recovered as structureless CHALK composed of cream D 10 12.00 - 12.50 SPT N=2 with rare orange veins slightly gravelly silt. Gravel is 12.00 - 12.45 1.1/0.1.1.0 angular to subangular fine to medium extremely weak low density cream. Rare subrounded coarse gravels and cobbles of rinded flint throughout grade Dm. (LEWES NODULAR/SEAFORD CHALK FORMATION) 13.50 - 14.00 13.50 - 13.95 D SPT N=5 1,1/2,1,1,1 D 15.00 - 15.50 SPT N=7 15.00 - 15.45 1,2/2,1,2,2 D 13 16.50 - 17.00 SPT N=8 16.50 - 16.95 2.2/2.2.2.2 D 18.00 - 18.50 SPT N=13 18.00 - 18.45 2,2/3,3,3,4 (13.30)19.50 - 20.00 19.50 - 19.95 D 15 SPT N=16 3,4/3,3,4,6 CHISELLING WATER LEVEL OBSERVATIONS **REMARKS**: Depth Depth Time Water |Standing| Casing Date Time 1. Engineer verified logged in general accordance to BS 5930:2010. From To Taken Strike Level Depth Area CAT scanned prior to excavation. 20-10-14 22.35 ING 3. Groundwater encountered at 22.35m bgl. (EN: 4. Installed with HDPE standpipe to 25.00m bgl. UNDERTA **BOREHOLE DIAMETER** CASING DIAMETER **DEPTH SEALED** 150mm to 25.00m 150mm to 11.70m All measurements in metres Coordinates to National Grid 10m/page Scale: 1:62.50 Page 2 of 3 Ground Level to Ordnance Datum unless otherwise stated Checked By: Coordinates / Level (mAOD): Approved By: Plant Used: Logged By: Dando 2000 E: 524279.09 N: 212972.11 WC WC SS Level: 84.94



Email. imo@deit						Hole ID:						
Broadwater Road, W	City	Project No:	342.18	3	Hol	le ID:	ВІ	H410				
CABLE PERCUSSION	I BOREHOLE L	_OG		Date From / 16/10/2	To: 014 - 20/1	0/2014	Clie	ent: Sper	n Hill De	velopm	ents Ltd	
			ER	CASING	REDUCED LEVEL/		Sam	ple Details		Test Re	sults	III sii
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	SPT	ΓN Value/	Drive mm	Backfill Details
Recovered as structureless CHALK compwith rare orange veins slightly gravelly silt. angular to subangular fine to medium extraction density cream. Rare subrounded coarse gobbles of rinded flint throughout grade DINODULAR/SEAFORD CHALK FORMATIC Continued)	Gravel is emely weak low lravels and m. (LEWES					D	16	21.00 - 21.5 21.00 - 21		SPT N 4,4/6,6		
			<u></u> -			D	17	22.50 - 23.0 22.50 - 22		SPT N 3,4/5,6		
			-		<i>59.94</i> 25.0	D	18	24.00 - 24.5 24.00 - 24		SPT N 1,0/6,7,		
REMARKS: 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Area CAT scanned prior to excavation. 3. Groundwater encountered at 22.35m bgl.				Depth From		Time Γaken	1	WATER Date 20-10-14	LEVEL Time		VATIONS Standing Level	
4. Installed with HDPE standpipe to 25.00m bgl.				BOR	AMETE 5.00m	ETER CASING DIA		11.70m		EPTH SE	ALED	
All measurements in metres unless otherwise stated		Scale: 1:62	2.50		Gro		tes to National Grid evel to Ordnance Datum			ige 3 of 3	1	
Plant Used: Dando 2000	Coordinates / Level (mAC		Logged By: WC				Checked By: Approved WC			oved Bv:		



Email: info@deitasimoi										
Broadwater Road, Welwy	City	Project No:	342.18	 }_	Hole	e ID:	E	3H411		
CABLE PERCUSSION BORE	HOLE LOG		Date From / 21/10/2	To: 2014 - 22/10)/2014	Clie		en Hill	Developments Ltd	
		ËR	CASING	REDUCED LEVEL/		Samp	ole Details		Test Results	ejis
DESCRIPTION OF STRATA	LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	ı S	SPT N Value/Drive mm	Backfill Details
MADE GROUND: Asphalt.		}		83.77 0.15	i					
MADE GROUND: Brown slightly sandy gravelly cla Gravel is angular to subrounded fine to coarse brid flint. Sand is fine to coarse. Rare brick cobbles.				(1.05)	D D	1	0.50			
		\{ -		82.72 1.20		2	1.00			
Stiff brown slightly sandy slightly gravelly CLAY. Go angular to subrounded fine to coarse flint. Sand is coarse. (LOWESTOFT FORMATION)	fine to				D	3	1.50 - 2.00 1.50 -		CPT N=8 2,1/2,2,2,2	
		- 			D	4	2.50 - 3.00 2.50 -		CPT N=8 2,2/2,2,2,2	
					B U	1	3.50 - 4.00 3.50 - 3.95		U=35/0mm	
				D	5	4.50 - 5.00 4.50 -		SPT N=7 1,1/2,1,2,2		
			(150mm)	(8.10)	D	6	6.00 - 6.50 6.00 -		SPT N=7 1,0/1,2,2,2	
					D	7	7.50 - 8.00 7.50 -		SPT N=8 2,2/2,2,2,2	
Very demse brown slightly clayey sandy angular to subrounded fine to coarse flint GRAVEL. Sand is fooarse. (KESGRAVE CATCHMENT SUBGROUP)	ine to $ {}^{\varrho} \lozenge {}^{\cdot} {}^{\varrho} \langle$	rt −		74.62 9.30	D B	8 2	9.00 - 9.50 9.00 - 9.30		SPT N=20 1,2/2,4,7,7	
REMARKS:	· <i>U</i> & <i>U</i> ·	1	-	HISELLING			WATER	R LEVE	EL OBSERVATIONS	
Engineer verified logged in general accordance Area CAT scanned prior to excavation. Borehole remained dry on completion.		Depth From	To T	Time Taken		Date	Time	Water Standing Strike Level	1	
4. Installed with HDPE standpipe to 20.00m bgl.			NDEL.			ИО	WATE	Strike Level		
				EHOLE DIA 50mm to 20		R	CASING D	JIAME	TER DEPTH SE	ALED
All measurements in metres unless otherwise stated 10m/pa	age Scale: 1:6	32.50					National G Ordnance		n Page 1 of 3	
	Used: Coordinates / Level (mAOD):						Checked By:	۷C	Approved By:	

Tel: +44 (0) 870 0400 012 Fax: +44 (0) 1522 698393 Email: info@deltasimons.com



Project No: Broadwater Road, Welwyn Garden City **BH411** 2342.18 Date From / To: Client CABLE PERCUSSION BOREHOLE LOG 21/10/2014 - 22/10/2014 Spen Hill Developments Ltd REDUCED Sample Details Test Results Backfill Details CASING LEVEL/ LEGEND DESCRIPTION OF STRATA DEPTH (Diam. mm) TYPE REE SPT N Value/Drive mm Depth (Thickness) Very demse brown slightly clayey sandy angular to 000 subrounded fine to coarse flint GRAVEL. Sand is fine to 0.00 (2.20)D 9 10.50 - 11.00 CPT N=54/165mm coarse. (KESGRAVE CATCHMENT SUBGROUP)(BH 00 10.50 - 10.95 00 (7,12/14,18,22/15mm) Continued) 0. 0.0 0.0 11.50 В 72.42 11.50 3 11.50 Recovered as structureless CHALK composed of cream with rare orange veins sandy very gravelly silt. Gravel is D 10 12.00 - 12.50 12.00 - 12.45 SPT N=1 angular to subangular fine to medium extremely to very 1.0/0.1.0.0 weak low to medium density cream. Sand is fine to coarse. Rare subrounded coarse gravels and cobbles of rinded flint throughout. Grade Dm. (LEWES NODULAR/ SEAFORD CHALK FORMATION) 13.50 - 14.00 13.50 - 13.95 D 11 SPT N=4 1,0/1,1,1,1 D 15.00 - 15.50 SPT N=7 15.00 - 15.45 1,1/1,2,2,2 (8.50)D 13 16.50 - 17.00 SPT N=5 16.50 - 16.95 2.1/2.2.1.0 D 14 18.00 - 18.50 SPT N=9 18.00 - 18.45 2,2/2,2,2,3 19.50 - 20.00 19.50 - 19.95 D 15 SPT N=11 2,2/2,3,3,3 63.92 20.00 CHISELLING WATER LEVEL OBSERVATIONS **REMARKS**: Water Standing Depth Depth Time Casing Date Time 1. Engineer verified logged in general accordance to BS 5930:2010. From To Taken Strike Level Depth NO WATER ENCOUNTERED: Area CAT scanned prior to excavation. ING 3. Borehole remained dry on completion. EN: 4. Installed with HDPE standpipe to 20.00m bgl. **BOREHOLE DIAMETER** CASING DIAMETER **DEPTH SEALED** 150mm to 20.00m 150mm to 11.50m All measurements in metres Coordinates to National Grid 10m/page Scale: 1:62.50 Page 2 of 3 Ground Level to Ordnance Datum unless otherwise stated Checked By: Coordinates / Level (mAOD): Approved By: Plant Used: Logged By: Dando 2000 E: 524170.02 N: 213045.29 WC WC SS Level: 83.92



Email: iiilo@dei													
Broadwater Road, Welwyn Garden City				Project No:	342.18	3	Но	ole ID:	В	H41	1		
CABLE PERCUSSION	N BOREHOLE L	.OG		Date From / 21/10/2	To: :014 - 22/10)/2014	Cli	ent: Spe	n Hill De	evelop	ments Ltd		
			ËR	CASING	REDUCED LEVEL/		Sam	ple Details		Test F	Results	kfill ails	
DESCRIPTION OF STRATA	A	LEGEND	WATER	DEPTH / (Diam. mm)	DEPTH (Thickness)	TYPE	REF	Depth	SP	T N Valı	ue/Drive mm	Backfill Details	
Borehole complete at 20.00m bgl.													
			-										
			_										
			-										
			-										
			-										
			-										
			-										
			-										
			-										
			-										
			-										
REMARKS:			-	C	HISELLING	G		WATER	LEVEL	OBSE	RVATIONS	6	
Engineer verified logged in general acc Area CAT scanned prior to excavation.	cordance to BS 5930	0:2010.		Depth From	To T	Time aken		Date	Time	1 ~	er Standing e Level		
Borehole remained dry on completion. Installed with HDPE standpipe to 20.00.					CHISELLI	N:				ENCO	Level Level		
	J			NC NC	NDERTAKE			NO	WATER	Elv			
					EHOLE DIA 50mm to 20		R	CASING D	IAMETE	=K	DEPTH SE	ALED	
All measurements in metres	10m/page S	cale: 1:62	2.50				ates to National Grid			+	Page 3 of 3		
unless otherwise stated Plant Used: Dando 2000	Coordinates / Level (mAC	DD):		Logge	d By:	ınıd Lev	evel to Ordnance Datum Checked By:				Approved By:		
Dando 2000	E: 524170.02 Level	! N: 2130 : 83.92	45.29		WC		WC				SS		



Broadwater Road, Welwyn	Garden City	Project No:	2342.18		Hole	e ID:	BH	412	
CABLE PERCUSSION BOREH	OLE LOG	Date From /			Clie		Hill Deve	lopments Ltd	
	H. H.	CASING	REDUCED		Samp	ole Details	Ţ	est Results	<u>≡</u> ≅
DESCRIPTION OF STRATA	LEGEND X	DEPTH / (Diam. mm)	LEVEL/ DEPTH (Thickness)	TYPE	REF	Depth	SPT N	Value/Drive mm	Backfill Details
MADE GROUND: Asphalt.			84.75 0.10 84.45 0.40		4	0.50			
MADE GROUND: Reddy brown clayey sandy gravel. Gravel is angular to subangular fine to coarse brick. S is fine to coarse. Frequent brick cobbles.	Sand ———			D D	1 2	1.00			
Stiff orangey brown slightly gravelly sandy CLAY. Grangular to subrounded fine to coarse flint. Sand is fin coarse. (LOWESTOFT FORMATION)	avel ise to		(1.90)	D	3	1.50 - 1.95 1.50 - 1.9		SPT N=13 I,1/2,3,4,4	
Dense brown clayey gravelly fine to coarse SAND. Go is angular to subrounded fine to coarse flint.	ravel		82.55 2.30	В	1	2.50 - 2.95 2.50 - 2.9		CPT N=33 8,5/7,8,9,9	
(LOWESTOFT FORMATION)	0 5 - 0 5		(1.10) 81.45 3.40	· U	1	3.50 - 3.95	U:	-41/338mm	
Stiff orangey brown slightly sandy slightly gravelly CL Gravel is angular to subrounded fine to coarse flint. S is fine to coarse. (LOWESTOFT FORMATION)	and		(1.30)	D	4	3.95 - 4.05			
Very dense to dense orange brown gravelly fine to me		(150mm)	80.15 4.70	D	5	4.50 - 4.95 4.50 - 4.9		SPT N=48 5/8,10,14,16	
Recovered as structureless CHALK composed of cre with rare orange veins slightly gravelly silt. Gravel is angular to subangular fine to medium extremely weak density cream. Rare subrounded coarse gravels and	am	8.60	(3.90) 76.25 8.60	B D	6	6.00 - 6.45 6.00 - 6.4 7.50 - 7.95 7.50 - 7.9 9.00 - 9.45 9.00 - 9.4	95 CPT (11,14/3	CPT N=49 /11,12,12,14 N=50/85mm 0mm/41,9/10mm	
cobbles of rinded flint throughout. Grade Dm. (LEWE NODULAR/ SEAFORD CHALK FORMATION) REMARKS: 1. Engineer verified logged in general accordance to 2. Area CAT scanned prior to excavation.	Depth From	n To Ta	ime aken		Date	Time W	BSERVATION Vater Standing trike Level	g Casing	
3. Borehole remained dry on completion.4. Installed with HDPE standpipe to 20.00m bgl.			BOREHOLE DIAME 150mm to 20.00r			NO N CASING DIA 150mm to 8	METER DEPTH SEAL		EALED
All measurements in metres unless otherwise stated 10m/page	e Scale: 1:62.50					National Grid Ordnance D	Page 1 of 3		3
Plant Used: Coordinates / L Dando 2000 E: 524	evel (mAOD): 1118.88 N: 212945.31 Level: 84.85	Logge	ed By: WC		Checked By:			Approved By:	3

Tel: +44 (0) 870 0400 012 Fax: +44 (0) 1522 698393 Email: info@deltasimons.com



Project No: Broadwater Road, Welwyn Garden City **BH412** 2342.18 Date From / To: Client CABLE PERCUSSION BOREHOLE LOG 17/10/2014 - 20/10/2014 Spen Hill Developments Ltd REDUCED Sample Details Test Results Backfill Details NATER CASING DEPTH / LEVEL/ DEPTH LEGEND DESCRIPTION OF STRATA (Diam. mm) TYPE REE SPT N Value/Drive mm Depth (Thickness) Recovered as structureless CHALK composed of cream with rare orange veins slightly gravelly silt. Gravel is angular to subangular fine to medium extremely weak low D 10.50 - 10.95 8 SPT N=34 10.50 - 10.95 4.5/7.7.9.11 density cream. Rare subrounded coarse gravels and cobbles of rinded flint throughout. Grade Dm. (LEWES NODULAR/ SEAFORD CHALK FORMATION)(BH Continued) D 9 12.00 - 12.45 SPT N=21 12.00 - 12.45 2.3/5.6.4.6 D 10 14.00 (11.40)D 15.00 - 15.45 SPT N=27 15.00 - 15.45 3,2/3,6,10,8 D 12 16.50 - 16.95 SPT N=13 16.50 - 16.95 3.3/2.3.4.4 D 13 18.00 - 18.45 SPT N=50/235mm 18.00 - 18.45 (4,7/13,15,17,5/10mm) 19.50 - 19.95 19.50 - 19.95 D 14 SPT N=41 3,6/9,10,10,12 64.85 20.00 CHISELLING WATER LEVEL OBSERVATIONS **REMARKS**: Water Standing Casing Depth Depth Time Date Time 1. Engineer verified logged in general accordance to BS 5930:2010. From To Taken Strike Level Depth NO WATER ENCOUNTERED: Area CAT scanned prior to excavation. ING 3. Borehole remained dry on completion. EN: 4. Installed with HDPE standpipe to 20.00m bgl. **BOREHOLE DIAMETER** CASING DIAMETER **DEPTH SEALED** 150mm to 20.00m 150mm to 8.60m All measurements in metres Coordinates to National Grid 10m/page Scale: 1:62.50 Page 2 of 3 Ground Level to Ordnance Datum unless otherwise stated Checked By: Plant Used: Coordinates / Level (mAOD): Approved By: Logged By: Dando 2000 E: 524118.88 N: 212945.31 WC WC SS Level: 84.85

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Broadwater Road, Welwyn Garden City										1412		
CABLE PERCUSSION	N BOREHOLE L	.OG		Date From /			Clier		n Hill Dev	velopme	ents Ltd	
			띪	CASING	REDUCED LEVEL/		Samp	ple Details		Test Res	sults	ils
DESCRIPTION OF STRATA		LEGEND	WATER	DEPTH / (Diam. mm)	DEDTH	TYPE	REF	Depth	SPT	N Value/E	Drive mm	Backfill Details
REMARKS: 1. Engineer verified logged in general acc 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Installed with HDPE standpipe to 20.00		0:2010.		Depth From	CHISELLING	Time aken	- R	Date	Time NATER E	Water Strike	VATIONS Standing Level	Casing Depth
All measurements in metres unless otherwise stated	10m/page So	/page Scale: 1:62.50					nates to National Grid			Pa	Page 3 of 3	
Plant Used: Dando 2000	Coordinates / Level (mAO E: 524118.88		 45 31	Logged	d By:	ilu Lev	Level to Ordnance Datum Checked By:			Approved By:		
Dando 2000) IN. 2 I 2 34 I· 8 1 8 5	45.51		WC	WC		c ss				

Level: 84.85