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Site Plan

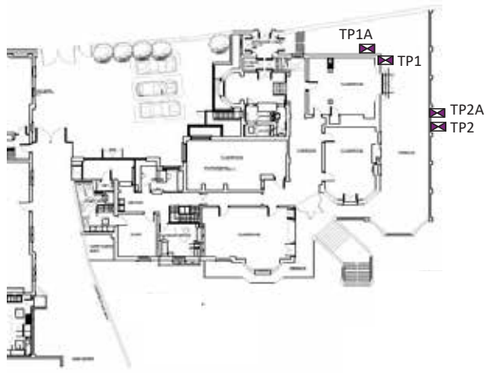
Site	Channing Junior School, Highgate High Street, N6 5JR
Client	Channing Junior School
Engineer	Heyne Tillett Steel

Job Number J17268

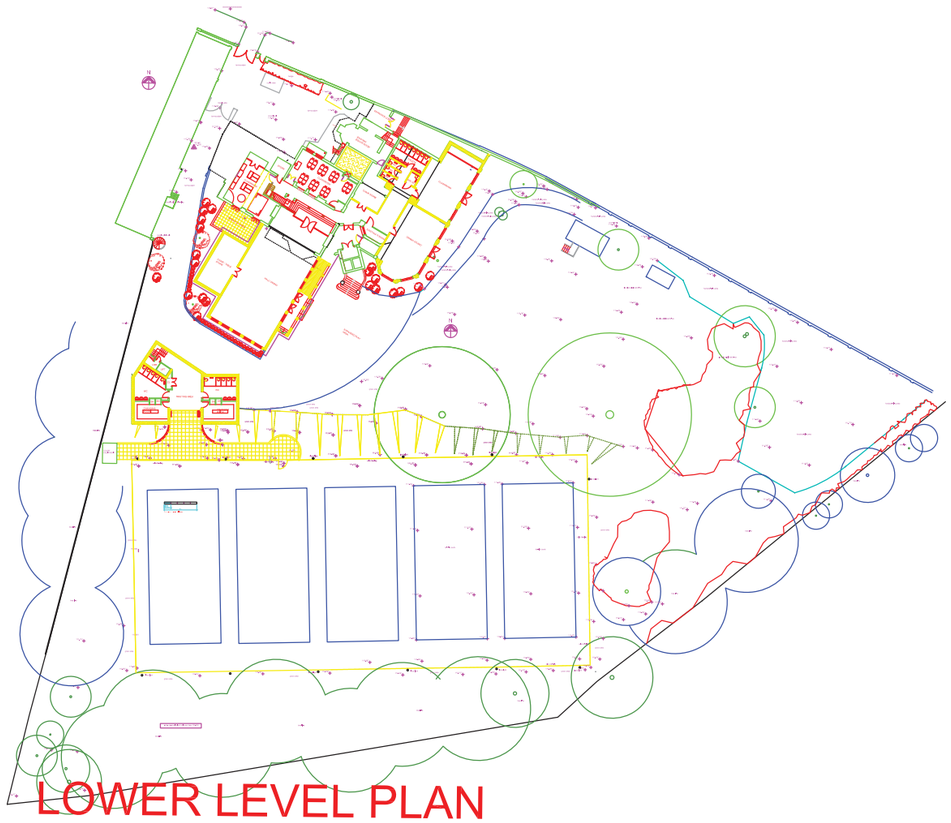
Sheet 2/ 3

Highgate High Street

EXISTING GROUND FLOOR - TRIAL PIT LOCATIONS



EXISTING SITE



LOWER LEVEL PLAN

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Widbury Barn | Widbury Hill | Ware | SG12 7QE

Site	Number
Channing Junior School, Highgate High Street, N6 5JR	BH01

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Open-drive sampler	118mm to 4.00m	114.50	Channing Junior School	J17268
	Location	**Dates** 24/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				114.38	0.12 (0.20)	MADE GROUND (green macadam, 40 mm thick, over black macadam, 40 mm thick)		
0.30	D1			114.18	0.32	MADE GROUND (brown slightly clayey gravelly sand with fragments of brick and ash)		
0.50	D2				(0.53)			
0.90	D3			113.65	0.85	Light brown slightly clayey fine to medium SAND with abundant medium to coarse subrounded to well rounded flint gravel and occasional cobbles (BAGSHOT FORMATION) ...between 0.60 m and 0.85 m, firm orange-brown laminated light brown and reddish brown very sandy clay		
1.00-1.45	SPT(C) N60=21		3,3/6,5,5,5		(0.65)			
1.40	D4			113.00	1.50	Medium dense light brown mottled orange-brown fine to medium SAND (BAGSHOT FORMATION) ...slightly clayey		
1.70	D5				(0.80)			
2.00	D6			112.20	2.30	Light brown fine to medium SAND with very rare medium well rounded flint gravel (BAGSHOT FORMATION) ...between 1.63 m and 1.65 m, firm laminated brown silty very sandy clay		
2.40	D7				(0.95)			
2.60	D8					Dense reddish brown medium to coarse SAND with occasional medium to coarse subrounded to well rounded flint gravel (BAGSHOT FORMATION) ...reddish brown medium to coarse sand with fragments of sandstone between 2.70 m and 2.75 m and 2.90 m and 3.20 m		
2.80	D9							
3.00-3.45	SPT(C) N60=44		17,18/14,14,9,7	111.25	3.25			
3.00	D10							
3.30	D11							
3.50	D12					Firm orange-brown laminated brown and greenish grey silty sandy CLAY with rare carbonaceous material (CLAYGATE MEMBER) ...soft layer between 3.40 m and 4.00 m		
4.00	D13				(1.85)			
4.50	D14					...becoming stiff		
5.00	D15			109.40	5.10	Light brown fine SAND with rare carbonaceous material (CLAYGATE MEMBER)		▽1
5.05	D16		Water strike(1) at 5.10m.					
5.50	D17				(0.90)			
				108.50	6.00	Complete at 6.00m		

Remarks
Hand-dug starter pit to a depth of 0.57 m
Standpipe installed to a depth of 6.00 m - response zone from 1.00 m to 6.00 m
Groundwater measured at a depth of 4.33 m on 25/10/2017 and 4.36 m on 16/11/2017

Scale (approx)	Logged By
1:50	HD

Figure No. J17268.BH01

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Site	Borehole Number
Channing Junior School, Highgate High Street, N6 5JR	BH02

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion	150mm cased to 12.00m	113.65	Channing Junior School	J17268
	Location	**Dates** 19/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							MADE GROUND (green macadam, 40 mm thick, over black macadam, 40 mm thick, overlying dark greyish brown sandy gravel with half bricks and occasional fragments of red brick)		
0.30	D1								
0.50-0.95	B2					(1.80)			
1.20-1.65	SPT(C) N60=12			1,2/2,3,5,2			...becoming orange-brown clayey sand with rare pockets of orange-brown silty sandy clay, rare medium to coarse subangular flint gravel and rare fragments of brick, burnt coal and concrete		
1.20-1.65	B3								
1.75	D4				111.85	1.80			
2.00-2.45	SPT N60=29			3,6/6,7,9,7		(0.70)	Medium dense orange-brown clayey fine to coarse SAND with rare fine to medium angular to rounded flint gravel (BAGSHOT FORMATION)		
2.00	D5				111.15	2.50			
2.75	D6						Medium dense orange-brown medium to coarse SAND with abundant fine to coarse subrounded to well rounded flint gravel (BAGSHOT FORMATION) ...abundant pockets of grey clay at a depth of 2.75 m		
3.00-3.45	SPT(C) N60=11			2,2/3,2,2,4					
3.00-3.45	B7					(1.50)			
3.75	D8								
4.00-4.45	SPT(C) N60=12			1,3/2,3,3,4	109.65	4.00	Medium dense orange-brown clayey medium to coarse SAND with rare carbonaceous material (CLAYGATE MEMBER)		
4.00-4.45	B9								
4.75	D10					(1.45)	...becoming orange-brown silty fine sand		
5.00-5.45	SPT(C) N60=12			1,3/2,3,3,4					
5.00	B11				108.20	5.45	Medium dense light brown silty fine SAND (CLAYGATE MEMBER)		
6.00	D12						...soft orange-brown silty sandy clay at 6.00 m		
6.50-6.95	SPT N60=14			1,1/3,3,4,4					
6.50	D13								
7.50	D14								
8.00-8.45	SPT N60=15			2,3/3,4,4,4					
8.00	D15					(6.10)			
9.00	D16								
9.50-9.95	SPT N60=21			2,4/4,5,6,6			..light brown mottled orange-brown clayey silty fine sand between 9.50 m and 9.95 m		
9.50	D17								
10.50	D18						...rare black specks noted at a depth of 10.50 m		
11.00	D19								
11.55-12.00	SPT N60=26			2,5/6,6,7,7	102.10	11.55	Soft light brown laminated orange-brown and pale grey silty sandy CLAY (water softened) (CLAYGATE MEMBER)		
11.55	D20					(0.45)			
					101.65	12.00	Complete at 12.00m		

Remarks
Hand-dug starter pit to a depth of 1.20 m
Overnight standing water level of 3.30 m
Standpipe installed to a depth of 6.00 m - response zone from 2.00 m to 6.00 m
Water added to assist drilling in granular soils
Groundwater measured at depths of 3.89 m on 23/10/2017, 4.15 m on 24/10/2017, 4.16 m on 25/10/2017 and 4.21 m on 16/11/2017

Scale (approx)	Logged By
1:50	HD

Figure No. J17268.BH02

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Site	Borehole Number
Channing Junior School, Highgate High Street, N6 5JR	BH02

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion	150mm cased to 12.00m	113.65	Channing Junior School	J17268
	Location	**Dates** 19/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 2/2

Remarks
Hand-dug starter pit to a depth of 1.20 m
Overnight standing water level of 3.30 m
Standpipe installed to a depth of 6.00 m - response zone from 2.00 m to 6.00 m
Water added to assist drilling in granular soils
Groundwater measured at depths of 3.89 m on 23/10/2017, 4.15 m on 24/10/2017, 4.16 m on 25/10/2017 and 4.21 m on 16/11/2017

Scale (approx)	Logged By
1:50	HD

Figure No. J17268.BH02

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Site
Channing Junior School, Highgate High Street, N6 5JR

Borehole Number
BH03

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion	200mm cased to 12.00m 150mm cased to 13.60m	114.00	Channing Junior School	J17268
	Location	**Dates**	**Engineer**	**Sheet**
		20/10/2017- 24/10/2017	Heyne Tillett Steel	1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.30	D1						MADE GROUND (grass over dark brown silty sandy clay with rare medium subangular flint gravel, roots and rare fragments of red brick and clinker)		
0.50-0.95	B2					(2.20)			
1.20-1.65 1.20	SPT(C) N60=11 B3			2,3/2,3,3,3					
1.75	D4								
2.00-2.45 2.00-2.45	SPT(C) N60=15 B5			2,6/4,4,3,4	111.80	2.20	Medium dense becoming dense orange-brown fine to coarse SAND with occasional fine to coarse well rounded to subangular flint gravel with rare pockets of grey clayey silty sand and rootlets (BAGSHOT FORMATION)		
2.75	D6					(1.40)			
3.00-3.45 3.00-3.45	SPT(C) N60=33 B7			3,6/7,9,10,7					
3.75	D8				110.40	3.60	Very dense reddish brown medium to coarse SAND with occasional fine to coarse subangular to subrounded flint gravel and rare sandstone nodules (BAGSHOT FORMATION)		
4.00-4.45 4.00-4.45	SPT(C) N60=50 B9			19,30/50		(1.40)			
4.75	D10								
5.00-5.45 5.00-5.45	SPT(C) N60=18 B11			4,8/6,4,4,4	109.00	5.00	Medium dense light brown medium to coarse SAND with occasional coarse subangular to subrounded flint gravel and rare pockets of firm orange-brown silty sandy clay and soft light greenish grey clay (BAGSHOT FORMATION)		
						(0.60)			
					108.40	5.60	Soft brown mottled pale grey and orange-brown silty sandy CLAY with rare medium subangular flint gravel and rare carbonaceous material (water softened) (CLAYGATE MEMBER)		
6.00	D12					(0.90)			
6.50-6.95 6.50	SPT N60=11 D13			2,2/2,3,3,3	107.50	6.50	Medium dense light brown silty fine SAND (CLAYGATE MEMBER)		
7.50	D14								
8.00-8.45 8.00	SPT N60=16 D15			2,3/3,4,4,5			...light brown mottled orange-brown silty fine sand with rare carbonaceous material		
						(3.90)			
9.00	D16								
9.50-9.95 9.50	SPT N60=21 D17			2,4/4,5,6,6					

Remarks
Groundwater measured at a depth of 4.28 m on 25/10/2017
Hand-dug starter pit to a depth of 1.20 m
Standpipe installed to a depth of 8.00 m - response zone from 2.50 m to 8.00 m
Water added to assist drilling within granular soils

Scale (approx) 1:50
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Figure No. J17268.BH03

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Site
Channing Junior School, Highgate High Street, N6 5JR

Borehole Number
BH03

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion	200mm cased to 12.00m 150mm cased to 13.60m	114.00	Channing Junior School	J17268
	Location	**Dates**	**Engineer**	**Sheet**
		20/10/2017- 24/10/2017	Heyne Tillett Steel	2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					103.60	10.40			
						(0.20)	Soft brown mottled silty CLAY - water softened (CLAYGATE MEMBER)		
10.50	D18				103.40	10.60			
11.00-11.45 11.00	SPT N60=23 D19			2,4/5,5,6,7			Medium dense grey mottled brown clayey silty fine SAND (CLAYGATE MEMBER)		▽1
						(1.60)			
12.00	D20								
12.50-12.95 12.50	SPT N60=16 D21			2,4/3,4,4,5	101.80	12.20	Stiff high strength dark grey silty CLAY with abundant specklings of mica and rare partings of light grey and dark grey fine sand and silt (CLAYGATE MEMBER)		
13.50	D22						...soft dark grey very silty CLAY with specklings of mica		
14.00-14.45	U23					(5.25)			
15.00	D24								
15.50	D25			Water strike(1) at 15.50m, rose to 11.00m in 20 mins.			...slightly fissured		▽1
15.50-15.95	SPT N60=20			2,3/4,5,5,6					
16.50-16.95 16.50	SPT N60=22 D26			3,4/6,5,5,6			...firm grey very silty CLAY with occasional mottling of dark greenish grey		
17.00-17.45 17.00	SPT N60=26 D27			5,5/5,7,7,7			..very rare shell fragments		
					96.55	17.45	Complete at 17.45m		

Remarks
Groundwater measured at a depth of 4.28 m on 25/10/2017
Hand-dug starter pit to a depth of 1.20 m
Standpipe installed to a depth of 8.00 m - response zone from 2.50 m to 8.00 m
Water added to assist drilling within granular soils

Scale (approx) 1:50
Logged By HD
Figure No. J17268.BH03

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Site
Channing Junior School, Highgate High Street, N6 5JR

Borehole Number
BH04

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion	150mm cased to 8.00m	114.21	Channing Junior School	J17268
	Location	**Dates** 20/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.30)	MADE GROUND (grass over light brown mottled orange-brown silty sandy clay with rare medium to coarse subangular to well rounded lfint and fragments of red brick)		
0.30	D1				113.91	0.30			
						(0.90)	MADE GROUND (light brown silty fine sand with rare coarse subrounded flint gravel, rare pockets of grey clay, occasional cemented sand, rare fragments of brick and roots)		
1.20-1.65	SPT(C) N60=27			5,10/12,5,5,5	113.01	1.20	Medium dense orange-brown mottled light brown fine to coarse SAND with occasional fine to coarse subangular to rounded flint gravel and rare pockets of soft grey clay (BAGSHOT FORMATION)		
1.20-1.65	B2								
1.75	D3								
2.00-2.45	SPT(C) N60=25			10,12/10,5,5,5		(1.90)			
2.00-2.45	B4								
2.75	D5								
3.00-3.45	SPT(C) N60=27			5,17/8,6,6,7	111.11	3.10	...dark reddish brown medium to coarse SAND with abundant fine to coarse subangular to subrounded flint gravel with fragments of sandstone		
3.00-3.45	B6								
						(0.90)	Soft orange-brown silty sandy CLAY with fine to medium subagular flint gravel and rare cobbles - water softened (BAGSHOT FORMATION)		
3.75	D7								
4.00-4.45	SPT(C) N60=13			1,1/3,3,3,4	110.21	4.00	Firm light brown mottled pale grey and orange-brown silty CLAY with occasional orange-brown fine sand and silt - water softened in places (CLAYGATE MEMBER)		
4.00	D8								
4.75	D9						...very rare medium subangular flint gravel at 4.75 m		
5.00-5.45	SPT N60=13			1,2/2,3,3,5					
5.00	D10								
						(3.50)			
6.00	D11								
6.50-6.95	SPT N60=18			4,2/4,4,5,5			..between 6.50 m and 6.95 m, medium dense light brown silty fine sand		
6.50	D12								
7.50	D13				106.71	7.50	Medium dense light brown mottled pale grey silty fine SAND (CLAYGATE MEMBER)		
8.00-8.45	SPT N60=23			1,4/5,7,6,5					
8.00	D14								
9.00	D15						...slightly clayey from a depth of 9.00 m		
9.50-9.95	SPT N60=23			2,4/6,6,7,4					
9.50	D16					(4.50)			

Remarks
Hand-dug starter pit to a depth of 1.20 m
Water added to assist drilling within granular soils
Standpipe installed to a depth of 6.00 m - response zone from 1.50 m to 6.00 m
Groundwater measured at a depth of 4.77 m on 23/10/2017, 4.78 m on 24/10/2017, 4.77 m on 25/10/2017 and 4.80 m on 16/11/2017
Water standing at a depth of 4.20 m on completion of borehole

Scale (approx) 1:50
Logged By HD
Figure No. j17268.BH04

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Site
Channing Junior School, Highgate High Street, N6 5JR

Borehole Number
BH04

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion	150mm cased to 8.00m	114.21	Channing Junior School	J17268
	Location	**Dates** 20/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.50	D17								
11.55-12.00	SPT(C) N60=26			1,3/5,6,7,8					
11.55-12.00	B18								
					102.21	12.00	Complete at 12.00m		

Remarks
Hand-dug starter pit to a depth of 1.20 m
Water added to assist drilling within granular soils
Standpipe installed to a depth of 6.00 m - response zone from 1.50 m to 6.00 m
Groundwater measured at a depth of 4.77 m on 23/10/2017, 4.78 m on 24/10/2017, 4.77 m on 25/10/2017 and 4.80 m on 16/11/2017
Water standing at a depth of 4.20 m on completion of borehole

Scale (approx) 1:50
Logged By HD
Figure No. j17268.BH04

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Site	Number
Channing Junior School, Highgate High Street, N6 5JR	BH05

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in window sampler		116.90	Channing Junior School	J17268
	Location	**Dates** 24/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				116.83	0.07	MADE GROUND (green macdam, 30 mm thick, overlying black macadam, 40 mm thick)		
						MADE GROUND (brown clayey sand with rare flint gravel and fragments of brick and ash)		
1.50	D1				(2.83)			
				114.00	2.90			
3.00	D2				(0.60)	Orange-brown fine to medium SAND with occasional fine to medium subrounded flint gravel (BAGSHOT FORMATION)		
3.50	D3			113.40	3.50			
						Complete at 3.50m		

Remarks
Hand-dug starter pit to a depth of 1.05 m
Groundwater not encountered

Scale (approx)	Logged By
1:50	HD

Figure No. J17268.BH05

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Site	Number
Channing Junior School, Highgate High Street, N6 5JR	BH06

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Open-drive sampler	118mm to 3.00m	113.65	Channing Junior School	J17268
	Location	**Dates** 24/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				113.54	0.11	MADE GROUND (green macadam, 30 mm thick overlying black macadam, 80 mm thick)		
				113.35	(0.19) 0.30	MADE GROUND (type one sub-base)		
0.80	D1				(1.15)	MADE GROUND (greyish brown gravelly sandy clay with fragments of brick and ash) ...flint gravel at 0.70 m		
1.50	D2			112.20	1.45	Medium dense orange-brown mottled brown fine to medium SAND with rare medium well rounded flint gravel (BAGSHOT FORMATION)		
2.00-2.45	SPT(C) N60=24		5,5/6,5,6,7			...slightly clayey from 1.90 m		
2.00	D3				(1.55)			
2.30	D4							
2.60	D5							
3.00	D6			110.65	3.00	Reddish brown fine to medium SAND with occasional medium to coarse well rounded flint gravel (BAGSHOT FORMATION)		
3.50	D7				(0.73)	...carbonaceous material at 3.50 m		
3.72	D8			109.92	3.73	...fragments of reddish brown mottled black sandstone from 3.70 m to 3.73 m		▽1
3.90	D9				(0.27)			
4.00-4.45	SPT(C) N60=19		Water strike(1) at 4.00m. 4,4/5,5,4,5	109.65	4.00	Medium dense orange-brown clayey fine SAND with rare fine to medium well rounded flint gravel (BAGSHOT FORMATION)		
4.50	D10				(1.00)	Soft orange-brown mottled grey silty sandy CLAY (CLAYGATE MEMBER)		
5.00	D11			108.65	5.00			
						Complete at 5.00m		

Remarks
Standpipe installed to a depth of 5.00 m - slotted pipe GL to 5.00 m
Groundwater measured at a depth of 4.50 m on 25/10/2017 and dry to a depth of 4.34 m on 16/11/2017
Falling head test carried out on 25/10/2017 - see separate sheet for results

Scale (approx)	Logged By
1:50	HD

Figure No. J17268.BH06

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Site	Number
Channing Junior School, Highgate High Street, N6 5JR	BH07

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in window sampler		116.99	Channing Junior School	J17268
	Location	**Dates** 24/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				116.90	0.09	MADE GROUND (green macadam, 20 mm thick, over black macadam, 70 mm thick)		
				116.80	0.19	MADE GROUND (brick)		
					(1.31)	MADE GROUND (light brown silty sandy clay with fragments of brick)		
				115.49	1.50			
1.70	D1				(0.60)	Orange-brown fine to coarse SAND with occasional fine to coarse well rounded flint gravel (BAGSHOT FORMATION)		
				114.89	2.10	Complete at 2.10m		

Remarks
Borehole carried out through base of Trial Pit No 1A
Made ground is damp

Scale (approx)	Logged By
1:50	

Figure No. J17268.BH07

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Site	Number
Channing Junior School, Highgate High Street, N6 5JR	BH08

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in window sampler		116.93	Channing Junior School	J17268
	Location	**Dates** 24/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				116.83	0.10	MADE GROUND (green macadam, 50 mm thick, overlying black macadam, 50 mm thick)		
0.60	D1				(1.90)	MADE GROUND (brown clayety silty sand with half bricks and fragments of brick) ...mottled orange-brown		
2.00	D2			114.93	2.00			
				114.83	2.10	Orange-brown fine to coarse SAND with occasional fine to coarse well rounded flint gravel (BAGSHOT FORMATION)		
						Complete at 2.10m		

Remarks
Made ground is damp
Hand-dug starter pit to a depth of 1.15 m

Scale (approx)	Logged By
1:50	HD

Figure No. J17268.BH08

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Excavation Method Drive-in window sampler	**Dimensions**	**Ground Level (mOD)** 114.70	**Client** Channing Junior School
	Location	**Dates** 24/10/2017	**Engineer** Heyne Tillett Steel

Site
Channing Junior School, Highgate High Street, N6 5JR

Number
BH09

Job Number
J17268

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.50)	TOPSOIL (dark brown silty sand with flint gravel and roots)		
				114.20	0.50			
					(0.20)	MADE GROUND (orange-brown mottled brown silty sand with flint gravel and fragments of brick)		
				114.00	0.70			
					(0.30)	Orange-brown fine to coarse SAND with occasional fine to coarse well rounded flint gravel (BAGSHOT FORMATION)		
				113.70	1.00	Complete at 1.00m		

Remarks
Borehole carried out through base of Trial Pit No 2A
Groundwater not encountered

Scale (approx)
1:50

Logged By

Figure No.
J17268.BH09

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Excavation Method Open-drive sampler	**Dimensions** 118mm to 3.00m	**Ground Level (mOD)** 114.14	**Client** Channing Junior School
	Location	**Dates** 24/10/2017	**Engineer** Heyne Tillett Steel

Site
Channing Junior School, Highgate High Street, N6 5JR

Number
BH10

Job Number
J17268

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				114.03	0.11	MADE GROUND (green macadam, 40 mm thick, overlying black macadam, 70 mm thick)		
					(0.37)			
				113.66	0.48	MADE GROUND (type one sub-base)		
					(0.32)			
0.60	D1			113.34	0.80	MADE GROUND (greyish brown gravelly sandy clay wth fragments of brick and ash. Hessian matting noted at a depth of 0.50 m		
1.00	D2				(0.75)	MADE GROUND (orange-brown mottled brown and greenish grey very clayey sand with rare fragments of brick)		
				112.59	1.55			
1.80	D3			112.54	1.60	MADE GROUND (brown silty sandy clay with fragments of brick and ash)		
					(0.80)	Orange-brown mottled brown fine to medium SAND (BAGSHOT FORMATION)		
				111.74	2.40			
2.60	D4				(0.50)	Orange-brown medium to coarse SAND with with occasional medium to coarse well rounded flint gravel (BAGSHOT FORMATION)		
2.95	D5			111.24	2.90			
				111.14	3.00	Reddish brown clayey fine to medium SAND with rare fine to coarse well rounded flint gravel (BAGSHOT FORMATION)		
						Complete at 3.00m		

Remarks
Groundwater not encountered

Scale (approx)
1:50

Logged By
HD

Figure No.
J17268.BH10

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Site	Number
Channing Junior School, Highgate High Street, N6 5JR	BH11

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in window sampler		111.90	Channing Junior School	J17268
	Location	**Dates** 24/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.90)	MADE GROUND (brown clayey silty sand with rare flint gravel and fragments of brick. Rootlets noted to a depth of 0.25 m)		
				111.00	0.90			
					(0.80)	MADE GROUND (orange-brown gravelly sand with rare fragments of red brick)		
				110.20	1.70			
1.80	D1				(0.30)	Orange-brown fine to medium SAND (BAGSHOT FORMATION)		
				109.90	2.00	Complete at 2.00m		

Remarks
Groundwater not encountered

Scale (approx)	Logged By
1:50	HD

Figure No. J17268.BH11

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Site	Number
Channing Junior School, Highgate High Street, N6 5JR	BH12

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Open-drive sampler	118mm to 3.00m	113.30	Channing Junior School	J17268
	Location	**Dates** 24/10/2017	**Engineer** Heyne Tillett Steel	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.85)	MADE GROUND (dark grey / black silty sandy clay with flint gravel and fragments of brick and ash)		
0.50	D1			112.45	0.85			
					(0.35)	MADE GROUND (orange-brown mottled grey clayey silty sand with fragments of brick and ash)		
1.00	D2			112.10	1.20			
					(0.60)	MADE GROUND (orange-brown gravelly sand)		
1.50	D3			111.50	1.80			
				111.45	1.85	MADE GROUND (grey silty sandy clay with fragments of brick and ash)		
2.00	D4				(0.40)			
				111.05	2.25	Light brown fine to medium SAND with occasional medium well rounded flint gravel (BAGSHOT FORMATION)		
2.50	D5				(0.75)	Reddish brown fine to coarse SAND with occasional medium to coarse well rounded flint gravel and fragments of sandstone (BAGSHOT FORMATION)		
				110.30	3.00	Complete at 3.00m		

Remarks
Standpipe installed to a depth of 3.00 m - slotted pipe from GL to 3.00 m
Standpipe recorded to be dry to a depth of 2.80 m on 25/10/2017 and dry to a depth of 2.74 m on 16/11/2017
Groundwater not encountered
Falling head test carried out - see separate sheet for results

Scale (approx)	Logged By
1:50	HD

Figure No. J17268.BH12

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Standard Penetration Test Results

Site : Channing Junior School, Highgate High Street, N6 5JR

Client : Channing Junior School

Engineer : Heyne Tillett Steel

Job Number J17268

Sheet 1 / 1

Borehole Number	Base of Borehole (m)	End of Seating Drive (m)	End of Test Drive (m)	Test Type	Seating Blows per 75mm		Blows for each 75mm penetration				Result	Comments
					1	2	1	2	3	4		
BH01	1.00	1.15	1.45	CPT	3	3	6	5	5	5	N60=21	
BH01	3.00	3.15	3.45	CPT	17	18	14	14	9	7	N60=44	
BH02	1.20	1.35	1.65	CPT	1	2	2	3	5	2	N60=12	
BH02	2.00	2.15	2.45	SPT	3	6	6	7	9	7	N60=29	
BH02	3.00	3.15	3.45	CPT	2	2	3	2	2	4	N60=11	
BH02	4.00	4.15	4.45	CPT	1	3	2	3	3	4	N60=12	
BH02	5.00	5.15	5.45	CPT	1	3	2	3	3	4	N60=12	
BH02	6.50	6.65	6.95	SPT	1	1	3	3	4	4	N60=14	
BH02	8.00	8.15	8.45	SPT	2	3	3	4	4	4	N60=15	
BH02	9.50	9.65	9.95	SPT	2	4	4	5	6	6	N60=21	
BH02	11.55	11.70	12.00	SPT	2	5	6	6	7	7	N60=26	
BH03	1.20	1.35	1.65	CPT	2	3	2	3	3	3	N60=11	
BH03	2.00	2.15	2.45	CPT	2	6	4	4	3	4	N60=15	
BH03	3.00	3.15	3.45	CPT	3	6	7	9	10	7	N60=33	
BH03	4.00	4.15	4.45	CPT	19	30	50				N60=50	Refusal
BH03	5.00	5.15	5.45	CPT	4	8	6	4	4	4	N60=18	
BH03	6.50	6.65	6.95	SPT	2	2	2	3	3	3	N60=11	
BH03	8.00	8.15	8.45	SPT	2	3	3	4	4	5	N60=16	
BH03	9.50	9.65	9.95	SPT	2	4	4	5	6	6	N60=21	
BH03	11.00	11.15	11.45	SPT	2	4	5	5	6	7	N60=23	
BH03	12.50	12.65	12.95	SPT	2	4	3	4	4	5	N60=16	
BH03	15.50	15.65	15.95	SPT	2	3	4	5	5	6	N60=20	
BH03	16.50	16.65	16.95	SPT	3	4	6	5	5	6	N60=22	
BH03	17.00	17.15	17.45	SPT	5	5	5	7	7	7	N60=26	
BH04	1.20	1.35	1.65	CPT	5	10	12	5	5	5	N60=27	
BH04	2.00	2.15	2.45	CPT	10	12	10	5	5	5	N60=25	
BH04	3.00	3.15	3.45	CPT	5	17	8	6	6	7	N60=27	
BH04	4.00	4.15	4.45	CPT	1	1	3	3	3	4	N60=13	
BH04	5.00	5.15	5.45	SPT	1	2	2	3	3	5	N60=13	
BH04	6.50	6.65	6.95	SPT	4	2	4	4	5	5	N60=18	
BH04	8.00	8.15	8.45	SPT	1	4	5	7	6	5	N60=23	
BH04	9.50	9.65	9.95	SPT	2	4	6	6	7	4	N60=23	
BH04	11.55	11.70	12.00	CPT	1	3	5	6	7	8	N60=26	
BH06	2.00	2.15	2.45	CPT	5	5	6	5	6	7	N60=24	
BH06	4.00	4.15	4.45	CPT	4	4	5	5	4	5	N60=19	

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Trial Pit No 1

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

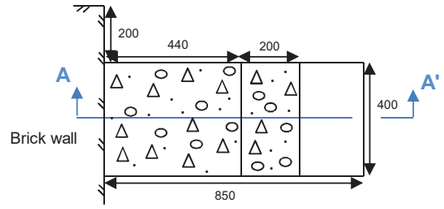
Job Number J17268

Sheet 1/1

Dates 24/10/2017

Excavation Method	Dimensions	Ground Level (mOD)	Location
Manual	850 x 400 x 900		

Plan: -



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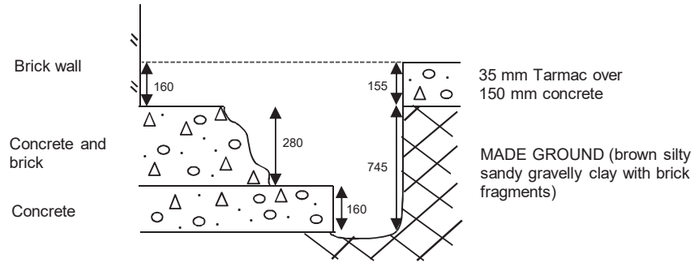

Remarks:

All dimensions in millimetres

Sides of trial pit remained stable during excavation

Ground water not encountered

Scale: 1:20

Logged by: HD

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Trial Pit No 1

Site	Channing Junior School, Highgate High Street, N6 5JR	**Job Number** J17268
Client	Channing Junior School	**Sheet**
Engineer	Heyne Tillett Steel	

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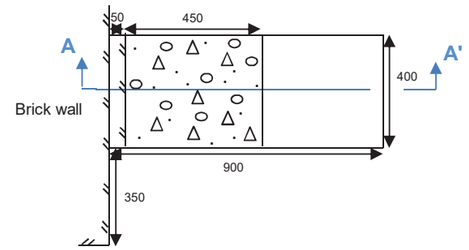
Trial Pit No 1A

Site Channing Junior School, Highgate High Street, N6 5JR		**Job Number** J17268
Client Channing Junior School		**Sheet** 1/1
Engineer Heyne Tillett Steel		**Dates** 24/10/2017

Excavation Method	Dimensions	Ground Level (mOD)	Location
Manual	900 x 400 x 880		

Plan: -



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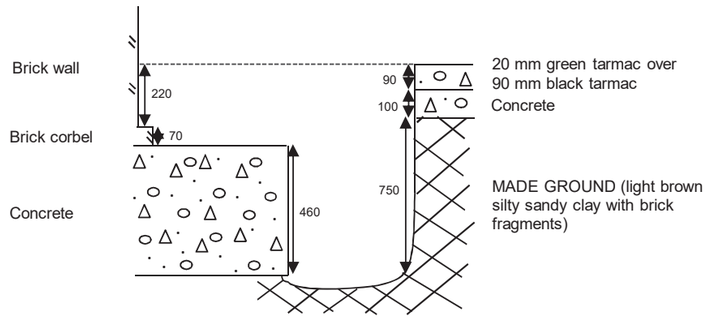

Remarks:	Scale:
All dimensions in millimetres	1:20
Sides of trial pit remained stable during excavation	Logged by:
Ground water not encountered	HD

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Trial Pit No 1A

Site	Channing Junior School, Highgate High Street, N6 5JR	**Job Number** J17268
Client	Channing Junior School	**Sheet**
Engineer	Heyne Tillett Steel	

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Trial Pit No 2

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

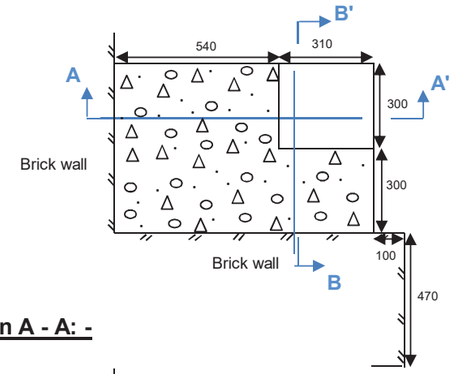
Job Number J17268

Sheet 1/1

Dates 23/10/2017

Excavation Method	Dimensions	Ground Level (mOD)	Location
Manual	850 x 600 x 1300		

Plan: -



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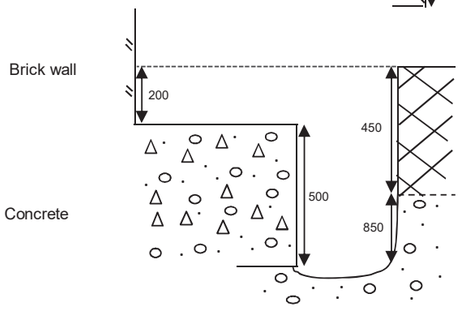
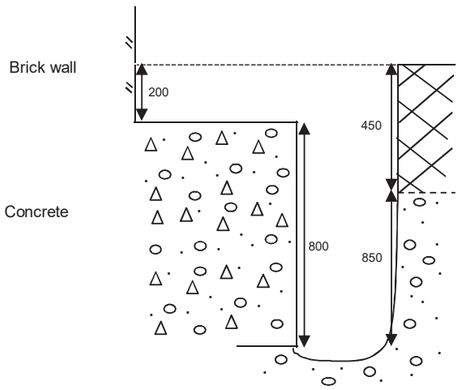


Section B - B: -



Remarks:

All dimensions in millimetres

Sides of trial pit remained stable during excavation

Ground water not encountered

Scale: 1:20

Logged by: HD

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Trial Pit No 2

Site	Channing Junior School, Highgate High Street, N6 5JR	**Job Number** J17268
Client	Channing Junior School	**Sheet**
Engineer	Heyne Tillett Steel	

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Trial Pit No 2A

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

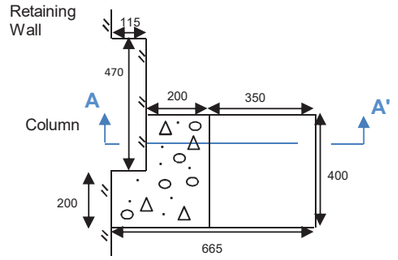
Job Number J17268

Sheet 1/1

Dates 23/10/2017

Excavation Method	Dimensions	Ground Level (mOD)	Location
Manual	665 x 400 x 650		

Plan: -



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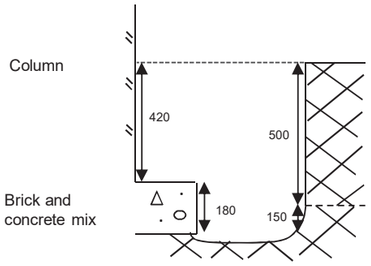

TOPSOIL (dark brown silty sand with roots and flint gravel

MADE GROUND (orange-brown mottled brown silty sand with red brick fragments and flint gravel)

Remarks:	Scale:
All dimensions in millimetres	1:20
Sides of trial pit remained stable during excavation	Logged by:
Ground water not encountered	HD

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Trial Pit No 2A

Site	Channing Junior School, Highgate High Street, N6 5JR	**Job Number** J17268
Client	Channing Junior School	**Sheet**
Engineer	Heyne Tillett Steel	

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Trial Pit No 3

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

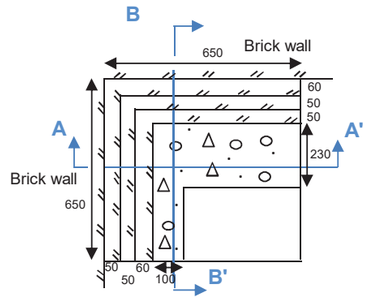
Job Number J17268

Sheet 1/1

Dates 23/10/2017

Excavation Method	Dimensions	Ground Level (mOD)	Location
Manual	650 x 650 x 350		Bolier Room

Plan: -



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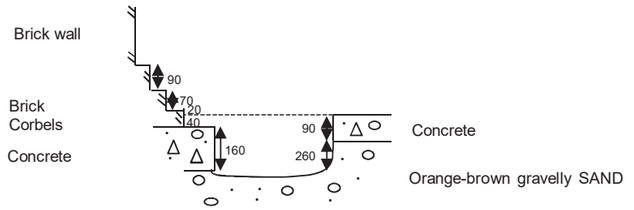

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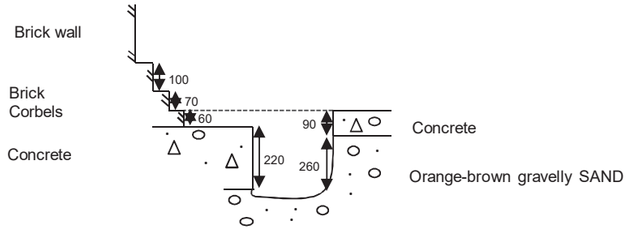

Remarks:

All dimensions in millimetres

Sides of trial pit remained stable during excavation

Ground water not encountered

Scale: 1:20

Logged by: HD

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Trial Pit No 3

Site	Channing Junior School, Highgate High Street, N6 5JR	**Job Number** J17268
Client	Channing Junior School	**Sheet**
Engineer	Heyne Tillett Steel	

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Trial Pit No 4

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

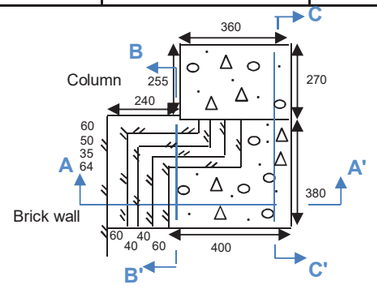
Job Number J17268

Sheet 1/2

Dates 23/10/2017

Excavation Method	Dimensions	Ground Level (mOD)	Location
Manual	600 x 650 x 710		

Plan: -



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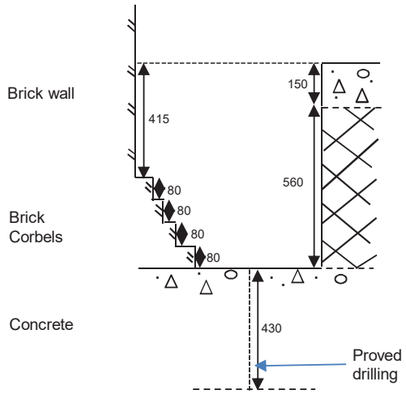
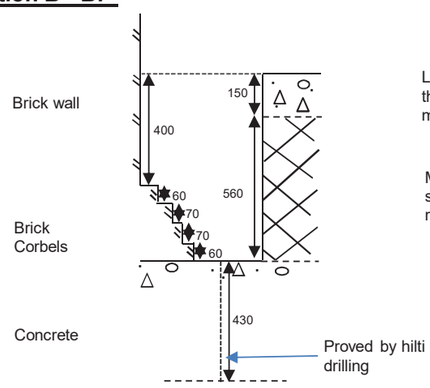


Lino over concrete, with 5 mm thick rebar and damp proof membrane at base

MADE GROUND (brown silty sand with flint gravel and well rounded cobbles)

Section B - B: -



Lino over concrete, with 5 mm thick rebar and damp proof membrane at base

MADE GROUND (brown silty sand with flint gravel and well rounded cobbles)

Remarks:	Scale:
All dimensions in millimetres	1:20
Sides of trial pit remained stable during excavation	Logged by:
Ground water not encountered	HD

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Trial Pit No 4

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

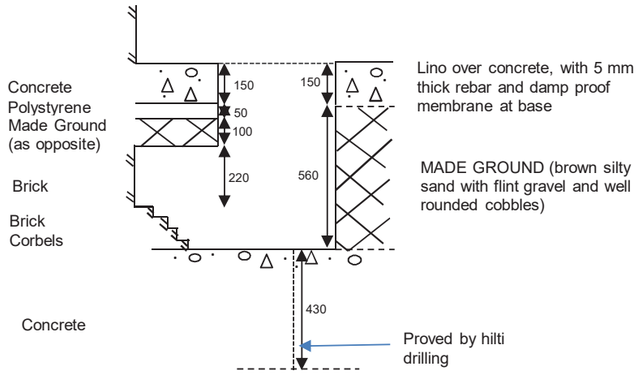
Job Number J17268

Sheet 2/2

Dates 23/10/2017

Excavation Method	Dimensions	Ground Level (mOD)	Location
Manual	600 x 650 x 710		

Section C - C: -



Remarks:	Scale:
All dimensions in millimetres	1:20
Sides of trial pit remained stable during excavation	Logged by:
Ground water not encountered	HD

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Trial Pit No 4

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

Job Number J17268

Sheet

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Trial Pit No 5

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

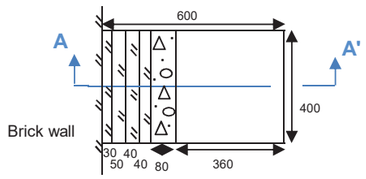
Job Number J17268

Sheet 1/1

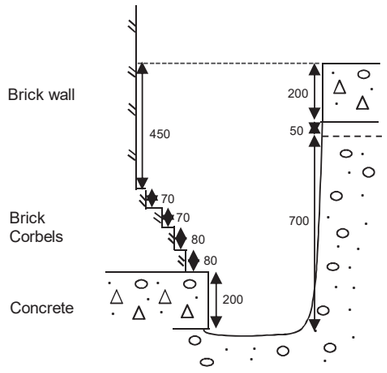
Dates 23/10/2017

Excavation Method	Dimensions	Ground Level (mOD)	Location
Manual	600 x 400 x 950		

Plan: -



Section A - A: -



Lino over concrete, with 5 mm thick rebar at base and damp proof membrane
DPM over polystyrene

Orange-brown gravelly SAND

Remarks:	Scale:
All dimensions in millimetres	1:20
Sides of trial pit remained stable during excavation	Logged by:
Ground water not encountered	HD

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Herts | 01727 824666 Notts | 01509 674888

Trial Pit No 5

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

Job Number J17268

Sheet

GEA

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Herts | 01727 824666 Notts | 01509 674888

Trial Pit No

6

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

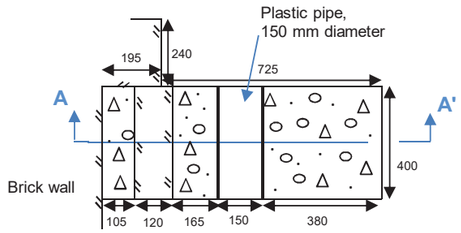
Job Number J17268

Sheet 1/1

Dates 23/10/2017

Excavation Method	Dimensions	Ground Level (mOD)	Location
Manual	920 x 400 x 500		

Plan: -



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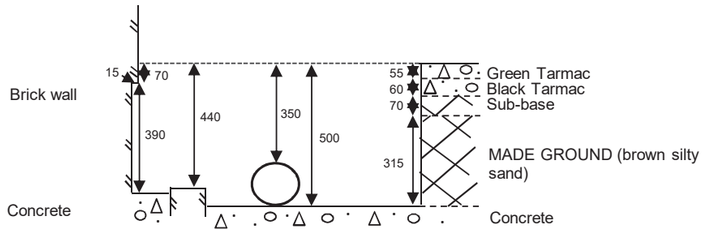

Remarks:

All dimensions in millimetres

Sides of trial pit remained stable during excavation

Ground water not encountered

Scale: 1:20

Logged by: HD

GEA

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Trial Pit No 6

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

Job Number J17268

Sheet

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Trial Pit No 6A

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

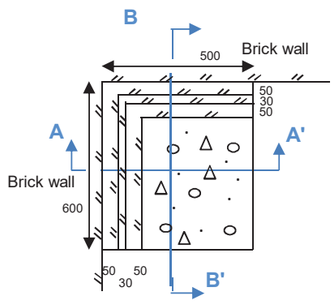
Job Number J17268

Sheet 1/1

Dates 24/10/2017

Excavation Method	Dimensions	Ground Level (mOD)	Location
Manual	500 x 600 x 750		

Plan: -



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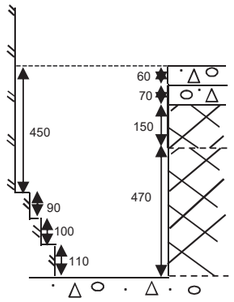

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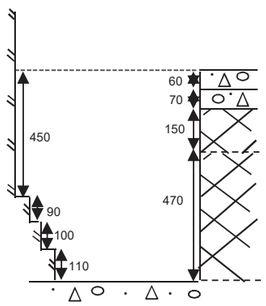

Remarks:	Scale:
All dimensions in millimetres	1:20
Sides of trial pit remained stable during excavation	Logged by:
Ground water not encountered	HD

GEA

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Herts | 01727 824666 Notts | 01509 674888

Trial Pit No 6A

Site Channing Junior School, Highgate High Street, N6 5JR

Client Channing Junior School

Engineer Heyne Tillett Steel

Job Number J17268

Sheet

GEA

Borehole Soakage Test

Site	Channing Junior School, Highgate High Street, N6 5JR	**Job Number**	J17268
Client	Channing Junior School	**Sheet**	1/1
Engineer	Heyne Tillett Steel		

Borehole No: 6
Test No: 1

Date: 25 October 2017

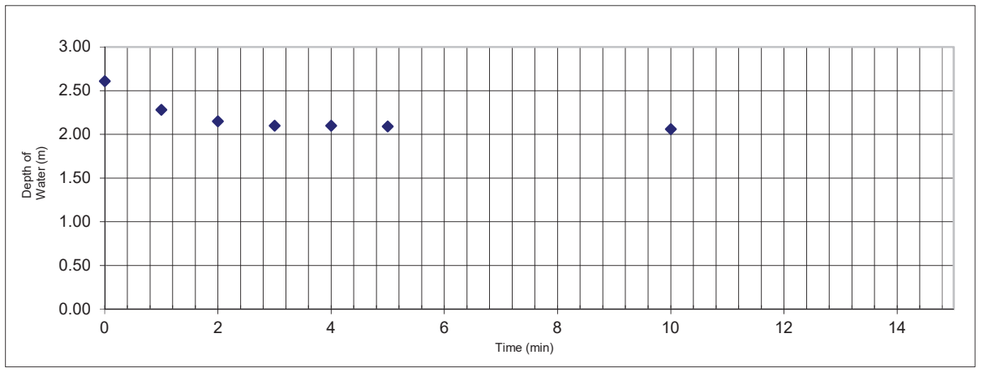
Test Data

	Start of test:	End of test:
Borehole depth (m):	4.50	4.50
Casing depth (m):	0.00	0.00
Water level (m):	1.89	2.79

Time (mins)	Depth to Water (m)	Depth of Water (m)
0	1.89	2.61
1	2.22	2.28
2	2.35	2.15
3	2.40	2.10
4	2.40	2.10
5	2.41	2.09
10	2.44	2.06
70	3.98	0.52
140	4.31	0.19

Soakage Calculation

Borehole Diameter (m)		0.050
Borehole Area (m^2)		0.002
Borehole Perimeter (m)		0.157
From Plot:	D1 (m)	1.00
	D2 (m)	0.30
	T1 (min)	35
	T2 (min)	105
Soakage Volume (m^3)		0.001
Soakage Area (m^2)		0.104
Time (min)		70
Soakage rate (m/sec)		3.14E-06
Soakage rate (m/day)		0.27



REMARKS
Falling head test carried out at a depth of 2.80 m

GEA

Borehole Soakage Test

Site	Channing Junior School, Highgate High Street, N6 5JR	**Job Number**	J17268
Client	Channing Junior School	**Sheet**	1/1
Engineer	Heyne Tillett Steel		

Borehole No: 12
Test No: 1

Date: 25 October 2017

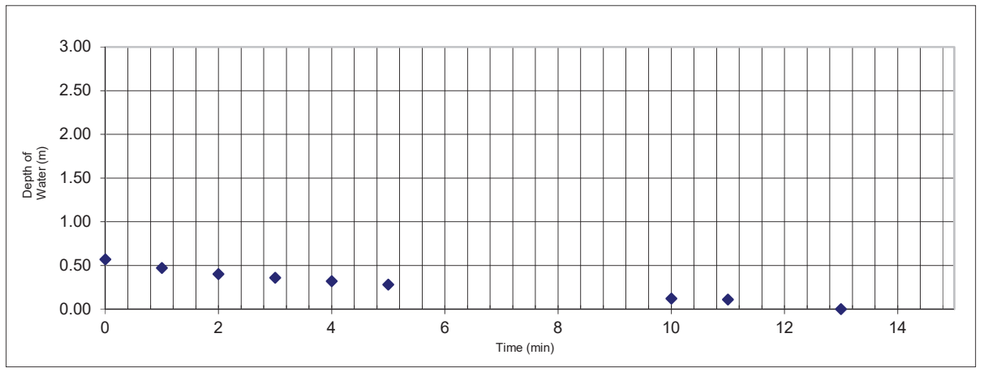
Test Data

	Start of test:	End of test:
Borehole depth (m):	2.80	2.80
Casing depth (m):	0.00	0.00
Water level (m):	2.23	DRY

Time (mins)	Depth to Water (m)	Depth of Water (m)
0	2.23	0.57
1	2.33	0.47
2	2.40	0.40
3	2.44	0.36
4	2.48	0.32
5	2.52	0.28
10	2.68	0.12
11	2.69	0.11
13	2.80	0.00

Soakage Calculation

Borehole Diameter (m)		0.050
Borehole Area (m^2)		0.002
Borehole Perimeter (m)		0.157
From Plot:	D1 (m)	0.36
	D2 (m)	0.16
	T1 (min)	3
	T2 (min)	9
Soakage Volume (m^3)		0.000
Soakage Area (m^2)		0.043
Time (min)		6
Soakage rate (m/sec)		2.55E-05
Soakage rate (m/day)		2.20



REMARKS
Falling head test carried out at a depth of 2.80 m

GEA

Borehole Soakage Test

Site	Channing Junior School, Highgate High Street, N6 5JR	**Job Number**	J17268
Client	Channing Junior School	**Sheet**	1/1
Engineer	Heyne Tillett Steel		

Borehole No: 12
Test No: 2

Date: 25 October 2017

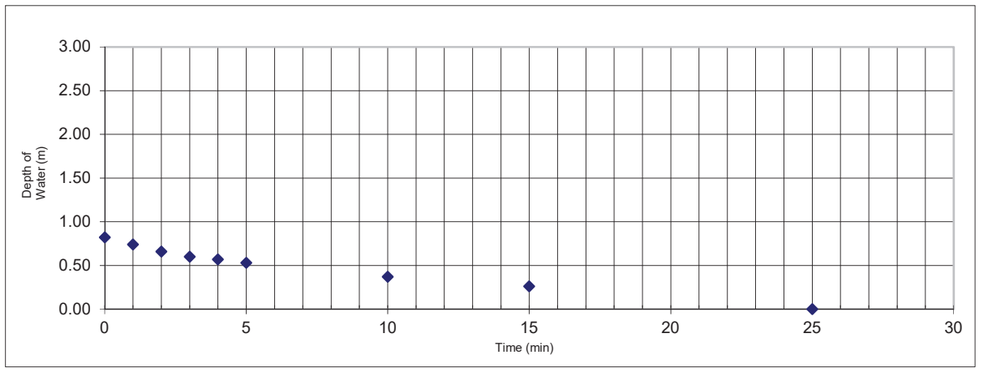
Test Data

	Start of test:	End of test:
Borehole depth (m):	2.80	2.80
Casing depth (m):	0.00	0.00
Water level (m):	1.98	DRY

Time (mins)	Depth to Water (m)	Depth of Water (m)
0	1.98	0.82
1	2.06	0.74
2	2.14	0.66
3	2.20	0.60
4	2.23	0.57
5	2.27	0.53
10	2.43	0.37
15	2.54	0.26
25	2.80	0.00

Soakage Calculation

Borehole Diameter (m)		0.050
Borehole Area (m^2)		0.002
Borehole Perimeter (m)		0.157
From Plot:	D1 (m)	0.48
	D2 (m)	0.21
	T1 (min)	6
	T2 (min)	18
Soakage Volume (m^3)		0.001
Soakage Area (m^2)		0.056
Time (min)		12
Soakage rate (m/sec)		1.31E-05
Soakage rate (m/day)		1.13



REMARKS
Falling head test carried out at a depth of 2.80 m

GEA

Borehole Soakage Test

Site	Channing Junior School, Highgate High Street, N6 5JR	**Job Number**	J17268
Client	Channing Junior School	**Sheet**	1/1
Engineer	Heyne Tillett Steel		

Borehole No: 12
Test No: 3

Date: 25 October 2017

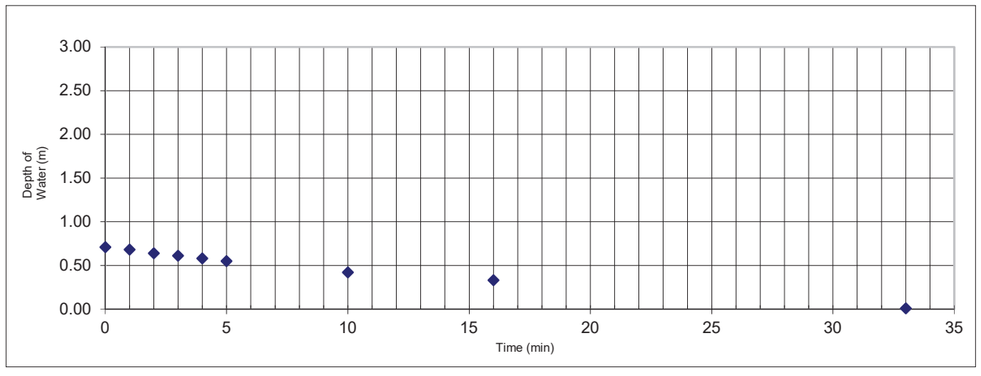
Test Data

	Start of test:	End of test:
Borehole depth (m):	2.80	2.80
Casing depth (m):	0.00	0.00
Water level (m):	2.09	2.79

Time (mins)	Depth to Water (m)	Depth of Water (m)
0	2.09	0.71
1	2.12	0.68
2	2.16	0.64
3	2.19	0.61
4	2.22	0.58
5	2.25	0.55
10	2.38	0.42
16	2.47	0.33
33	2.79	0.01

Soakage Calculation

Borehole Diameter (m)		0.050
Borehole Area (m^2)		0.002
Borehole Perimeter (m)		0.157
From Plot:	D1 (m)	0.37
	D2 (m)	0.21
	T1 (min)	8
	T2 (min)	24
Soakage Volume (m^3)		0.000
Soakage Area (m^2)		0.048
Time (min)		16
Soakage rate (m/sec)		6.89E-06
Soakage rate (m/day)		0.60



REMARKS
Falling head test carried out at a depth of 2.80 m

Summary of Natural Moisture Content, Liquid Limit and Plastic Limit Results

Job No.	Project Name	Programme	
23607	Channing School	Samples received	27-10-2017
		Schedule received	03-11-2017
Project No.	Client	Project started	4/11/20.17
23607	GEA	Testing Started	10-11-17

Hole No.	Sample				Soil Description	NMC	Passing 425µm	LL	PL	PI	Remarks
	Ref	Top	Base	Type		%	%	%	%	%	
BH01	11	3.30		D	Brown slightly sandy silty CLAY with occasional pockets of orange sand and black carbonaceous deposits	19	99	29	19	10	
BH01	15	5.00		D	Orangish brown mottled greyish brown and grey slightly sandy silty CLAY	25	100	62	26	36	
BH03	12	10.50		D	Brown, orangish brown and grey mottled slightly sandy silty CLAY	37	100	48	21	27	
BH03	13	11.00		D	Brown slightly clayey silty SAND with rare fine sub-angular gravel	31	100	34	27	7	
BH03	1	14.00		U	High strength grey silty CLAY with occasional sandy clay pockets	29	100	55	24	31	
BH06	10	4.50		D	Orangish brown slightly mottled greyish brown and brown slightly sandy silty CLAY	27	100	36	20	16	

Test Methods: BS1377: Part 2: 1990:
Natural Moisture Content : clause 3.2
Atterberg Limits: clause 4.3 and 5.0

Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
Watford Herts WD18 9RU

Tel: 01923 711 288
Email: James@k4soils.com

Checked and Approved
Initials kp
Date: 16-11-17

2519 Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr) MSF-5-R1(b)

Sulphate Content (Gravimetric Method) for 2:1 Soil: Water Extract and pH Value - Summary of Results
Tested in accordance with BS1377 : Part 3 : 1990, clause 5.3 and clause 9

Job No.	Project Name	Programme	
23607	Channing School	Samples received	27-10-2017
		Schedule received	3/11/207
Project No.	Client	Project started	04-11-2017
23607	GEA	Testing Started	16-11-2017

Hole No.	Sample				Soil description	Dry Mass passing 2mm	SO3 Content	SO4 Content	pH	Remarks
	Ref	Top	Base	Type		%	g/l	g/l		
BH01	4	1.40		D	Light brown silty SAND	100	0.16	0.20	7.50	
BH01	13	4.00		D	Orangish brown silty CLAY	100	0.25	0.30	7.53	
BH02	3	2.00		D	Orangish brown clayey gravelly SAND (gravel is fm and angular to rounded)	88	0.13	0.16	7.60	
BH03	1	14.00		U	High strength grey silty CLAY with occasional sandy clay pockets	100	0.46	0.55	7.35	
BH12	5	2.50		D	Brown slightlyclayey very gravelly SAND (gravel is fmc and sub-angular to rounded)	62	0.17	0.21	7.50	

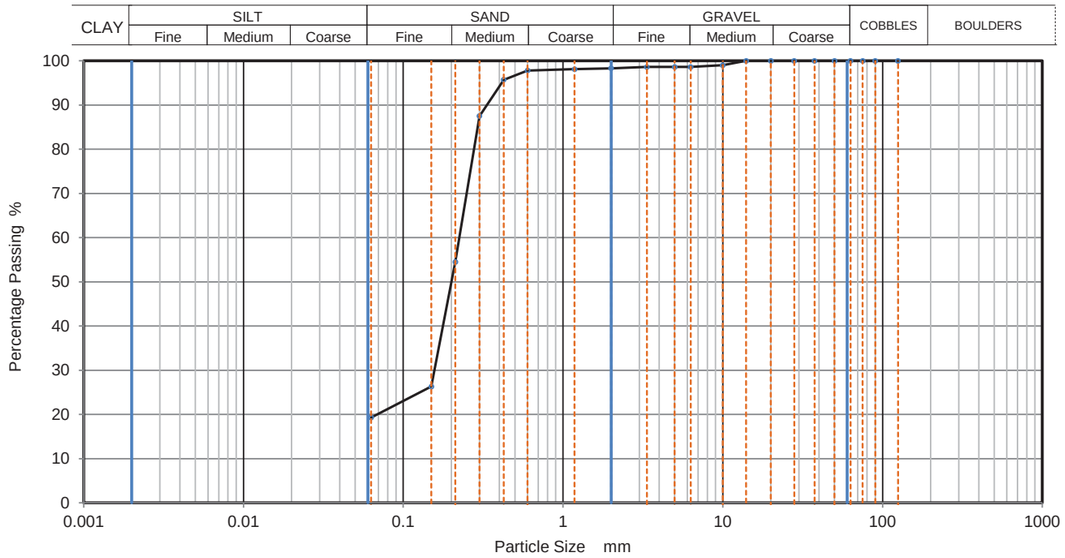
Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
Watford Herts WD18 9RU
Tel: 01923 711 288
Email: James@k4soils.com

Checked and Approved
Initials kp
Date: 16-11-2017

2519 Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr) MSF-5-R29

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH01
Project No.	23607	Client	GEA	Sample No.	3
				Depth Top	0.90 m
Soil Description	Light brown clayey SAND with rare fm sub-angular gravel			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-09-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	99		
3.35	99		
2	98		
1.18	98		
0.6	98		
0.425	96		
0.3	88		
0.212	55		
0.15	26		
0.063	19		

Dry Mass of sample, g: 262

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	1.7
Sand	79.0
Fines <0.063mm	19.3

Grading Analysis		
D100	mm	
D60	mm	0.225
D30	mm	0.157
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS1377 unless noted below

K4 Soils Laboratory
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Tel: 01923 711288

Checked and Approved
Initials: kp
Date: 16-11-17

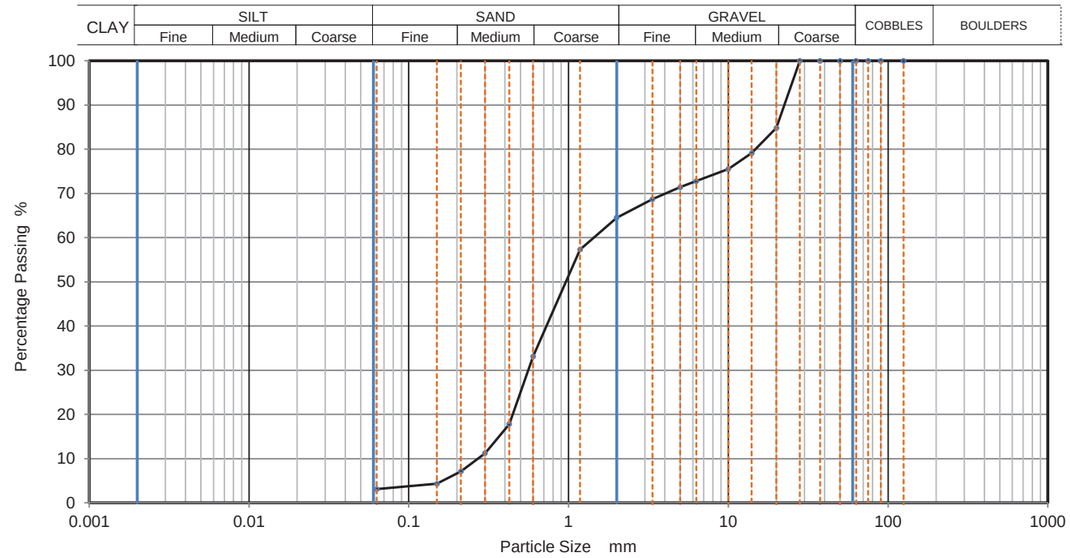
UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH01
Project No.	23607	Client	GEA	Sample No.	7
				Depth Top	2.40 m
Soil Description	Orangish brown slightly clayey gravelly SAND (gravel is fmc and sub-rounded to rounded)			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	85		
14	79		
10	76		
6.3	73		
5	71		
3.35	69		
2	65		
1.18	57		
0.6	33		
0.425	18		
0.3	11		
0.212	7		
0.15	4		
0.063	3		

Dry Mass of sample, g: 577

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	35.5
Sand	61.4
Fines <0.063mm	3.1

Grading Analysis		
D100	mm	
D60	mm	1.44
D30	mm	0.559
D10	mm	0.271
Uniformity Coefficient		5.3
Curvature Coefficient		0.8

Remarks

Preparation and testing in accordance with BS1377 unless noted below

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Checked and Approved
Initials: kp
Date: 16-11-17

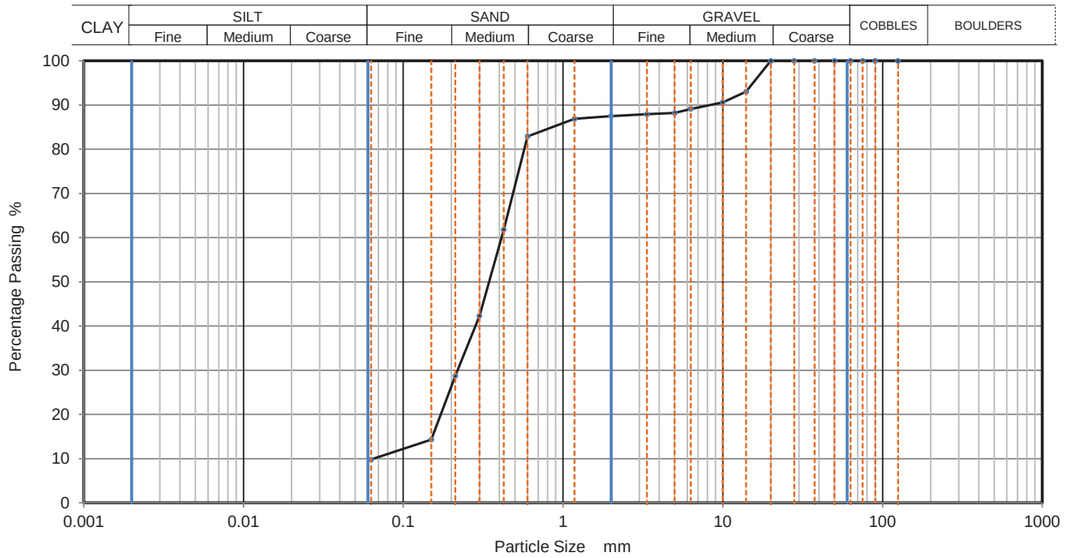
UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH02
Project No.	23607	Client	GEA	Sample No.	3
				Depth Top	2.00 m
Soil Description	Orangish brown clayey gravelly SAND (gravel is fm and angular to rounded)			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	93		
10	91		
6.3	89		
5	88		
3.35	88		
2	88		
1.18	87		
0.6	83		
0.425	62		
0.3	42		
0.212	29		
0.15	14		
0.063	10		

Dry Mass of sample, g: 154

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	12.5
Sand	77.7
Fines <0.063mm	9.8

Grading Analysis		
D100	mm	
D60	mm	0.411
D30	mm	0.219
D10	mm	0.0661
Uniformity Coefficient		6.2
Curvature Coefficient		1.8

Remarks

Preparation and testing in accordance with BS1377 unless noted below

K4 Soils Laboratory
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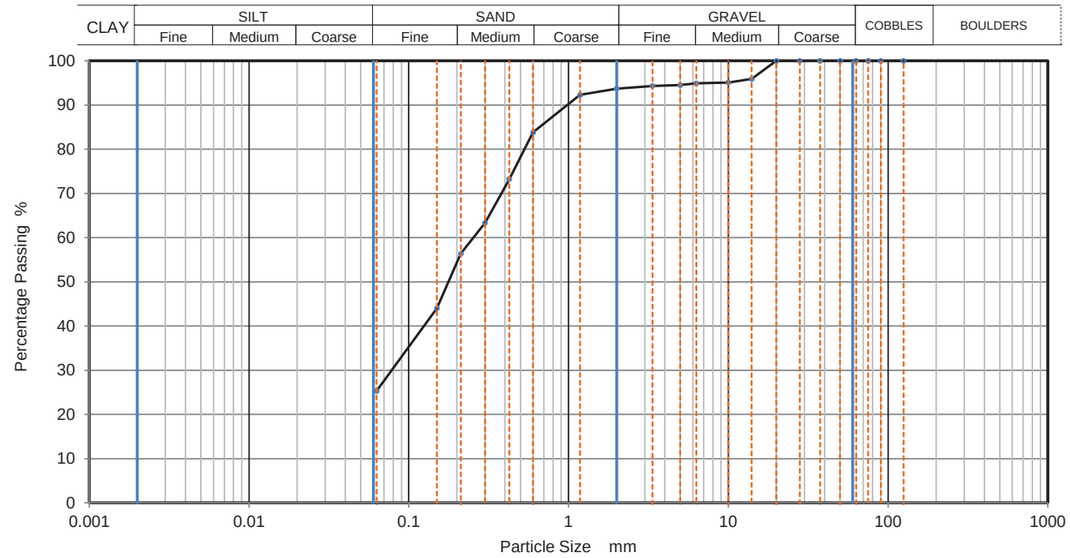
Checked and Approved
Initials: kp
Date: 16-11-17

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH02
Project No.	23607	Client	GEA	Sample No.	3
				Depth Top	3.00 m
Soil Description	Orangish brown slightly gravelly clayey SAND (gravel is fm and sub-angular to rounded)			Depth Base	- m
				Sample Type	B
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	96		
10	95		
6.3	95		
5	95		
3.35	94		
2	94		
1.18	92		
0.6	84		
0.425	73		
0.3	63		
0.212	56		
0.15	44		
0.063	25		

Dry Mass of sample, g: 683

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	6.3
Sand	68.4
Fines <0.063mm	25.3

Grading Analysis		
D100	mm	
D60	mm	0.254
D30	mm	0.0784
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS1377 unless noted below

K4 Soils Laboratory
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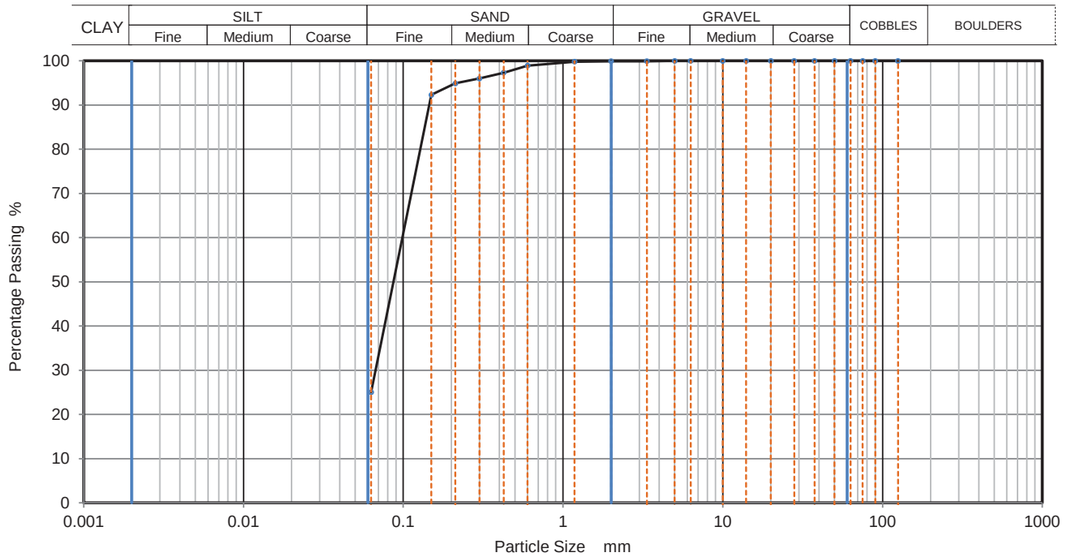
Checked and Approved
Initials: kp
Date: 16-11-17

UKAS TESTING 2519
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)
MSF-5-R3

	PARTICLE SIZE DISTRIBUTION			Job Ref	23607
				Borehole/Pit No.	BH02
Site Name	Channing School			Sample No.	8
Project No.	23607	Client	GEA	Depth Top	6.50 m
Soil Description	Orangish brown silty SAND			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	97		
0.3	96		
0.212	95		
0.15	92		
0.063	25		

Dry Mass of sample, g: 144

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	0.1
Sand	74.9
Fines <0.063mm	25.0

Grading Analysis		
D100	mm	
D60	mm	0.0989
D30	mm	0.0672
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS1377 unless noted below

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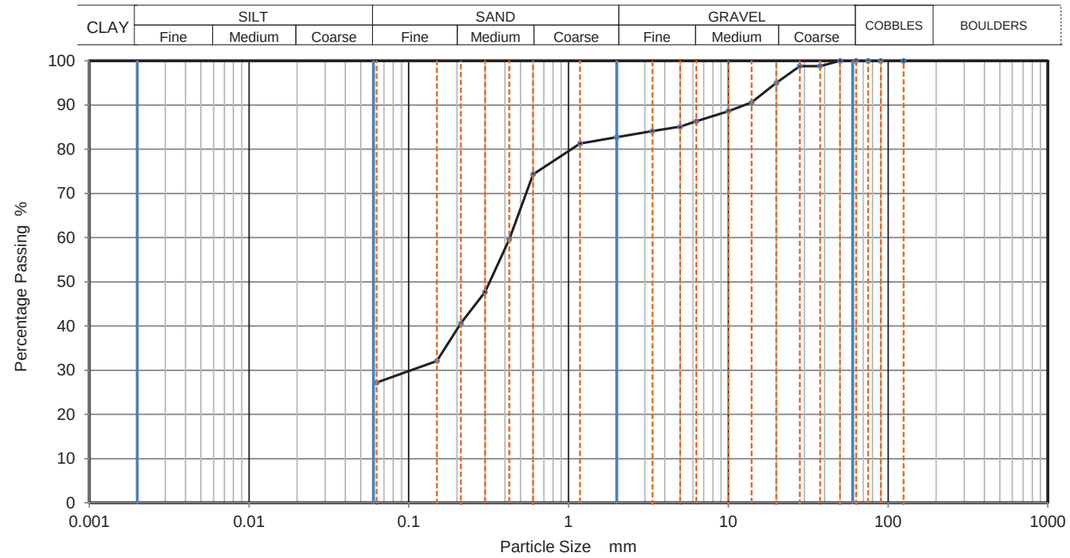
Checked and Approved
Initials: kp
Date: 16-11-17

UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R3

	PARTICLE SIZE DISTRIBUTION			Job Ref	23607
				Borehole/Pit No.	BH03
Site Name	Channing School			Sample No.	4
Project No.	23607	Client	GEA	Depth Top	3.00 m
Soil Description	Brown clayey gravelly SAND with sandstone fragments (gravel is fmc and sub-rounded to rounded)			Depth Base	- m
				Sample Type	B
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	13-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	99		
28	99		
20	95		
14	91		
10	89		
6.3	86		
5	85		
3.35	84		
2	83		
1.18	81		
0.6	74		
0.425	60		
0.3	48		
0.212	41		
0.15	32		
0.063	27		

Dry Mass of sample, g: 3459

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	17.3
Sand	55.5
Fines <0.063mm	27.2

Grading Analysis		
D100	mm	
D60	mm	0.429
D30	mm	0.103
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

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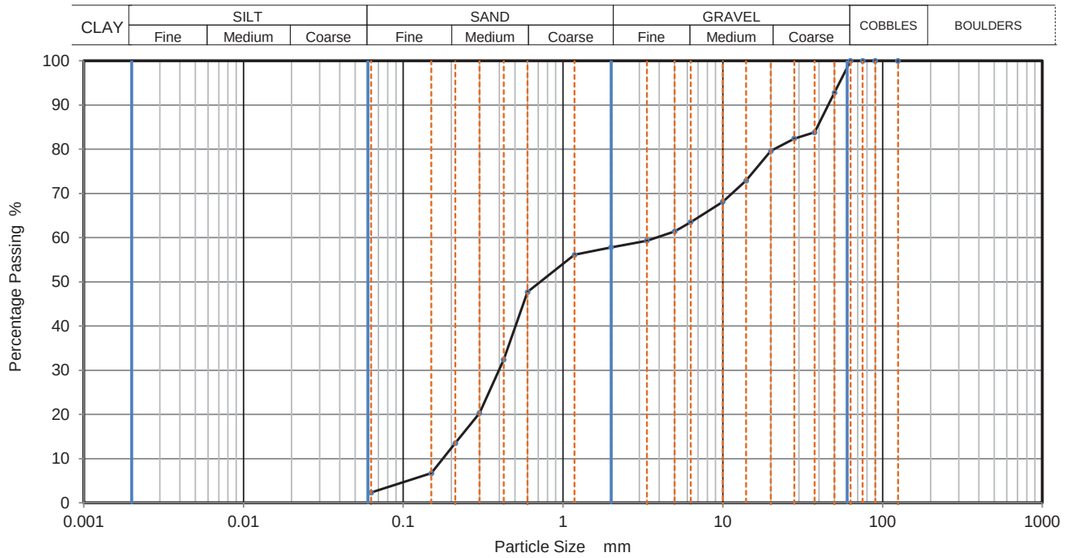
MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH03
Project No.	23607	Client	GEA	Sample No.	5
				Depth Top	4.00 m
Soil Description	Brown slightly clayey very sandy GRAVEL with sandstone fragments (gravel is fmc and sub-angular to rounded)			Depth Base	- m
				Sample Type	B
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	13-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	93		
37.5	84		
28	82		
20	80		
14	73		
10	68		
6.3	64		
5	61		
3.35	59		
2	58		
1.18	56		
0.6	48		
0.425	32		
0.3	20		
0.212	14		
0.15	7		
0.063	2		

Dry Mass of sample, g: 4581

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	42.2
Sand	55.5
Fines <0.063mm	2.3

Grading Analysis		
D100	mm	
D60	mm	3.85
D30	mm	0.397
D10	mm	0.178
Uniformity Coefficient		22
Curvature Coefficient		0.23

Remarks

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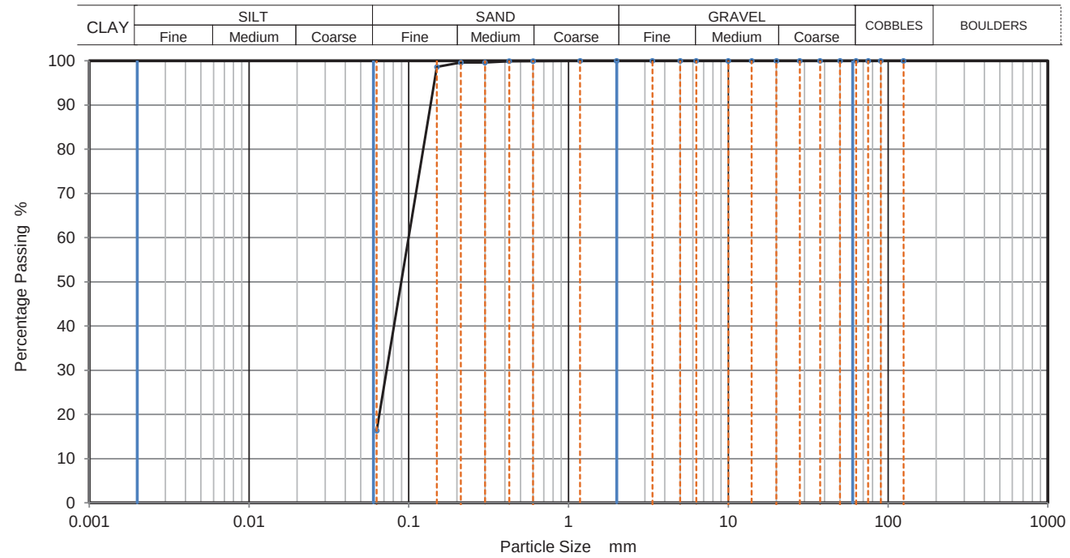
MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH03
Project No.	23607	Client	GEA	Sample No.	7
				Depth Top	6.50 m
Soil Description	Light brown silty SAND			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	99		
0.063	16		

Dry Mass of sample, g: 116

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	0.0
Sand	83.7
Fines <0.063mm	16.3

Grading Analysis		
D100	mm	
D60	mm	0.0998
D30	mm	0.0728
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

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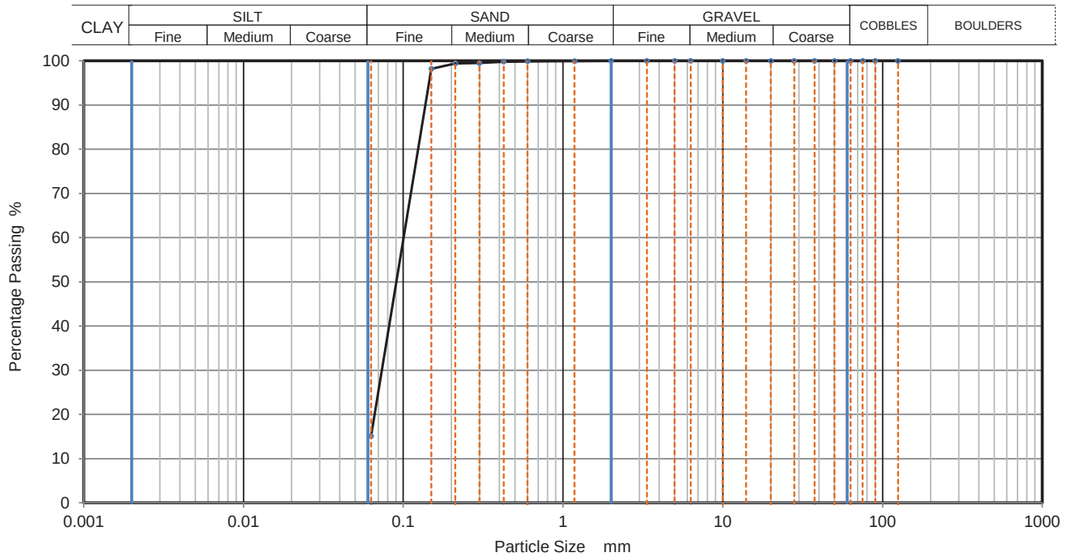
MSF-5-R3

	PARTICLE SIZE DISTRIBUTION			Job Ref	23607
				Borehole/Pit No.	BH03
Site Name	Channing School			Sample No.	11
Project No.	23607	Client	GEA	Depth Top	9.50 m
Soil Description	Light brown silty SAND			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	99		
0.15	98		
0.063	15		

Dry Mass of sample, g: 184

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	0.0
Sand	84.9
Fines <0.063mm	15.1

Grading Analysis		
D100	mm	
D60	mm	0.101
D30	mm	0.0736
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

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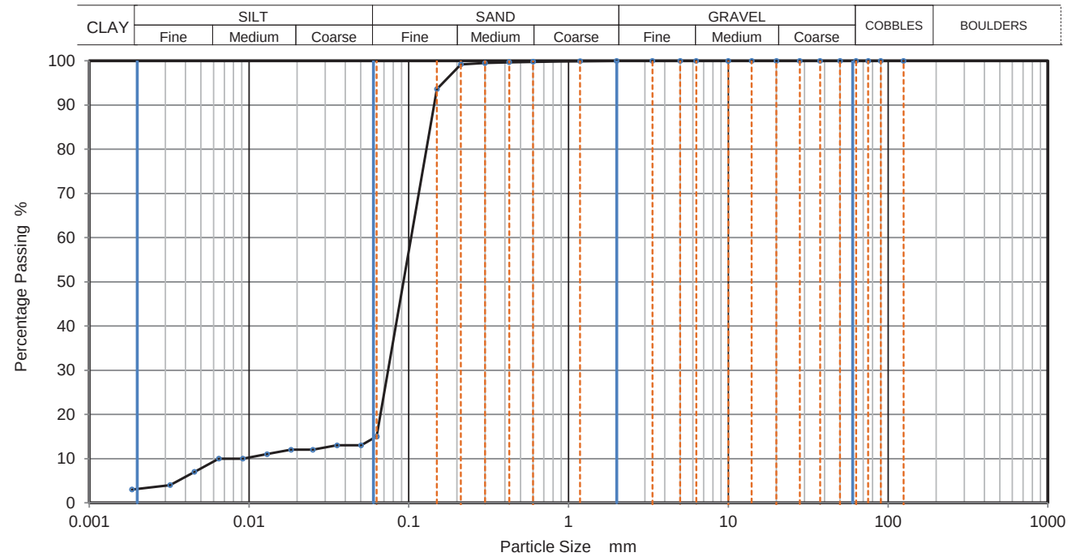
MSF-5-R3

	PARTICLE SIZE DISTRIBUTION			Job Ref	23607
				Borehole/Pit No.	BH03
Site Name	Channing School			Sample No.	13
Project No.	23607	Client	GEA	Depth Top	11.00 m
Soil Description	Brown slightly clayey silty SAND with rare fine sub-angular gravel			Depth Base	m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	15
90	100	0.0503	13
75	100	0.0355	13
63	100	0.0251	12
50	100	0.0183	12
37.5	100	0.0130	11
28	100	0.0091	10
20	100	0.0065	10
14	100	0.0046	7
10	100	0.0032	4
6.3	100	0.0019	3
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100	Particle density (assumed)	
0.425	100	2.70 Mg/m3	
0.3	100		
0.212	99		
0.15	94		
0.063	15		

Dry Mass of sample, g: 118

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	0.0
Sand	85.0
Silt	11.9
Clay	3.1

Grading Analysis		
D100	mm	
D60	mm	0.104
D30	mm	0.0743
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

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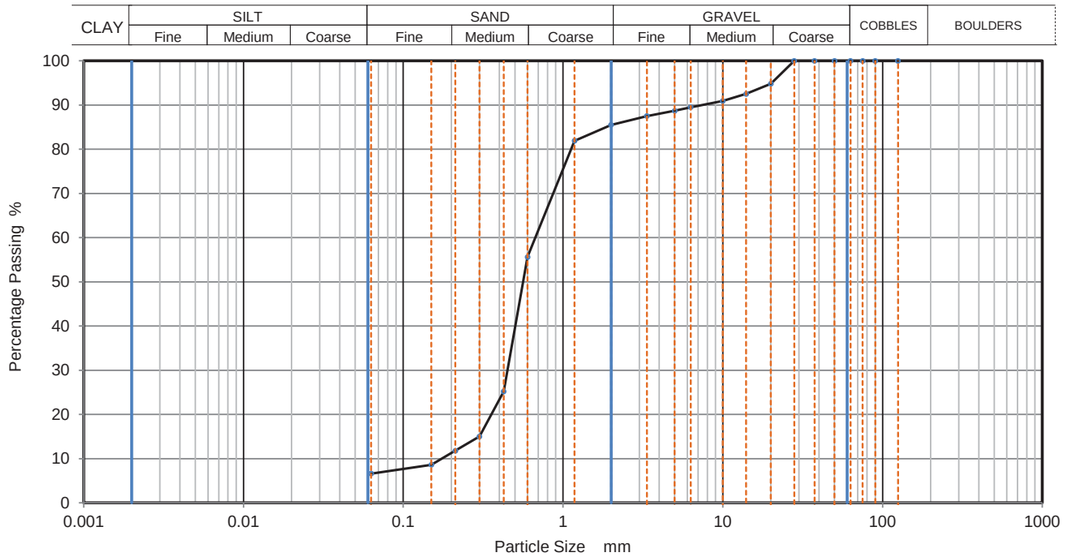
MSF-5-R3

	PARTICLE SIZE DISTRIBUTION			Job Ref	23607
				Borehole/Pit No.	BH04
Site Name	Channing School			Sample No.	2
Project No.	23607	Client	GEA	Depth Top	2.00 m
Soil Description	Orangish brown and light brown clayey gravelly SAND with rare brown sandy clay lumps (gravel is fmc and rounded)			Depth Base	- m
				Sample Type	B
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	95		
14	93		
10	91		
6.3	90		
5	89		
3.35	88		
2	86		
1.18	82		
0.6	56		
0.425	25		
0.3	15		
0.212	12		
0.15	9		
0.063	7		

Dry Mass of sample, g: 2519

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	14.5
Sand	78.9
Fines <0.063mm	6.6

Grading Analysis		
D100	mm	
D60	mm	0.671
D30	mm	0.449
D10	mm	0.175
Uniformity Coefficient		3.8
Curvature Coefficient		1.7

Remarks

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2519
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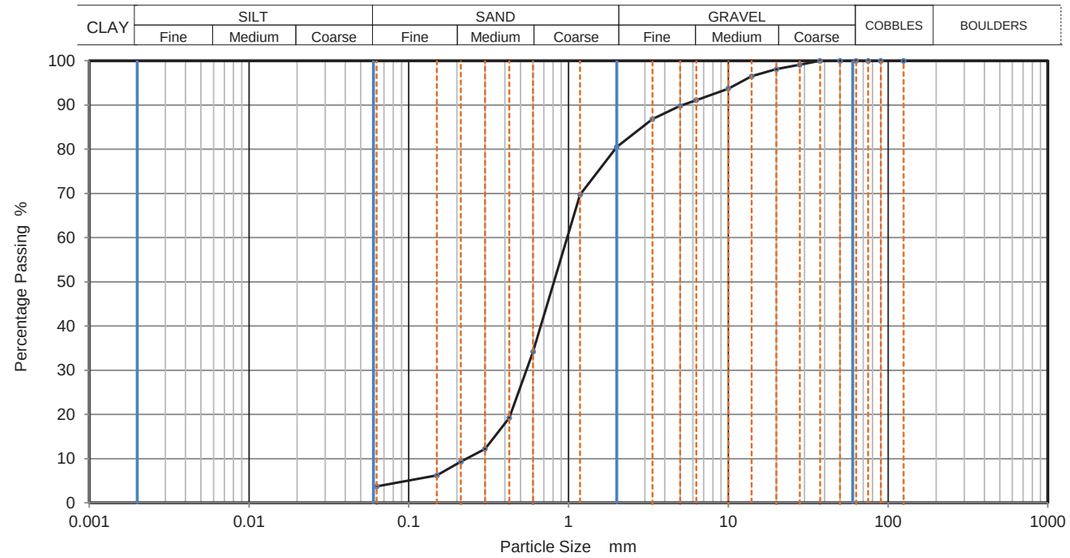
MSF-5-R3

	PARTICLE SIZE DISTRIBUTION			Job Ref	23607
				Borehole/Pit No.	BH04
Site Name	Channing School			Sample No.	3
Project No.	23607	Client	GEA	Depth Top	3.00 m
Soil Description	Brown slightly clayey very gravelly SAND with sandstone fragments (gravel is fm and sub-angular to rounded)			Depth Base	- m
				Sample Type	B
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	13-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	99		
20	98		
14	97		
10	94		
6.3	91		
5	90		
3.35	87		
2	81		
1.18	70		
0.6	34		
0.425	19		
0.3	12		
0.212	9		
0.15	6		
0.063	4		

Dry Mass of sample, g: 3520

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	19.5
Sand	76.8
Fines <0.063mm	3.7

Grading Analysis		
D100	mm	
D60	mm	0.982
D30	mm	0.545
D10	mm	0.231
Uniformity Coefficient		4.3
Curvature Coefficient		1.3

Remarks

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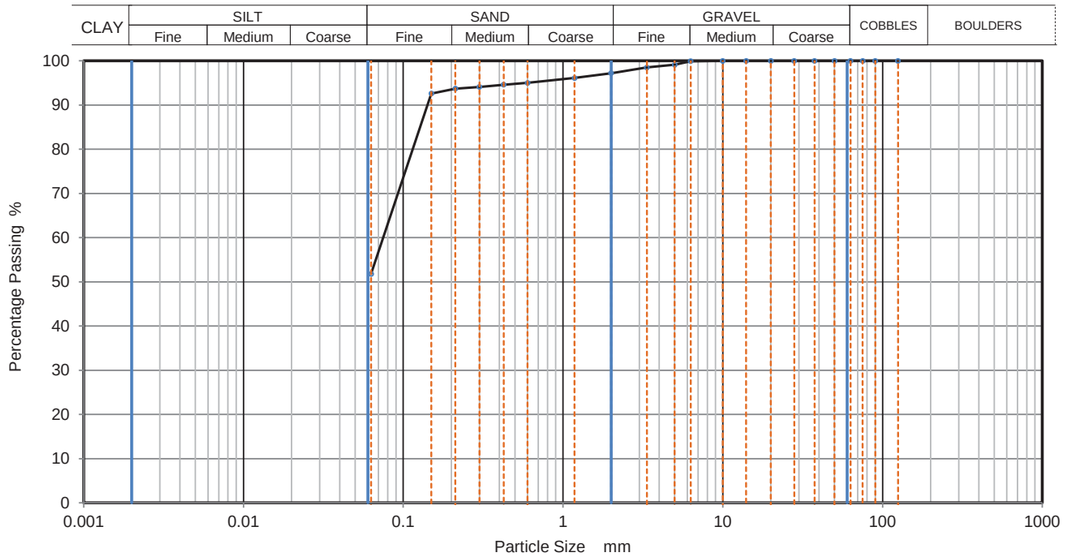
MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH04
Project No.	23607	Client	GEA	Sample No.	7
				Depth Top	5.00 m
Soil Description	Orangish brown mottled grey sandy silty CLAY			Depth Base	- m
				Sample Type	B
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	99		
2	97		
1.18	96		
0.6	95		
0.425	95		
0.3	94		
0.212	94		
0.15	93		
0.063	52		

Dry Mass of sample, g: 76

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	2.8
Sand	45.3
Fines <0.063mm	51.8

Grading Analysis		
D100	mm	
D60	mm	0.0749
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

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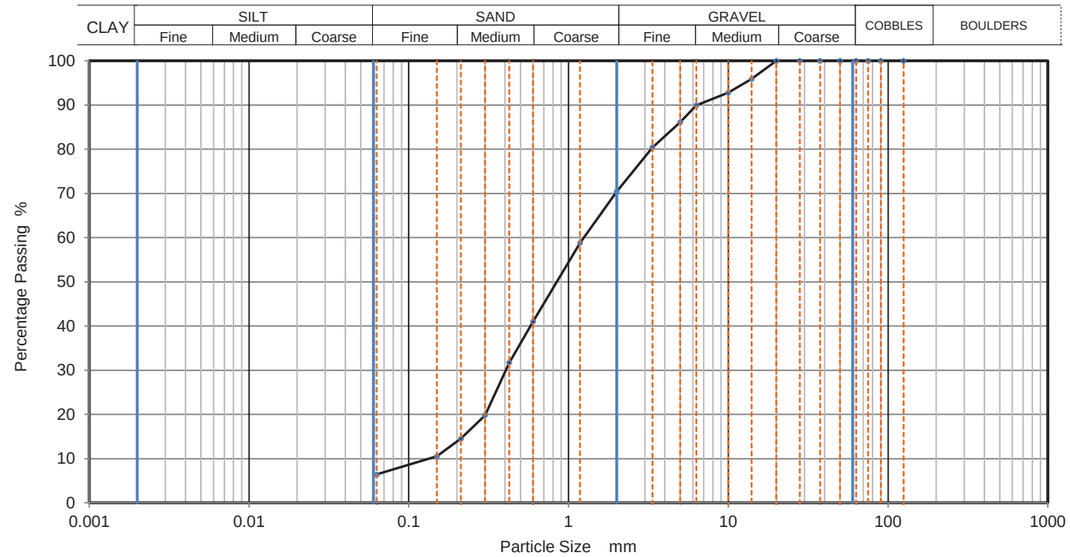
MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH05
Project No.	23607	Client	GEA	Sample No.	2
				Depth Top	3.00 m
Soil Description	Brown clayey gravelly SAND (gravel is fm and sub-angular to rounded)			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	96		
10	93		
6.3	90		
5	86		
3.35	80		
2	70		
1.18	59		
0.6	41		
0.425	32		
0.3	20		
0.212	15		
0.15	11		
0.063	6		

Dry Mass of sample, g: 165

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	29.6
Sand	64.0
Fines <0.063mm	6.4

Grading Analysis		
D100	mm	
D60	mm	1.25
D30	mm	0.404
D10	mm	0.135
Uniformity Coefficient		9.2
Curvature Coefficient		0.97

Remarks

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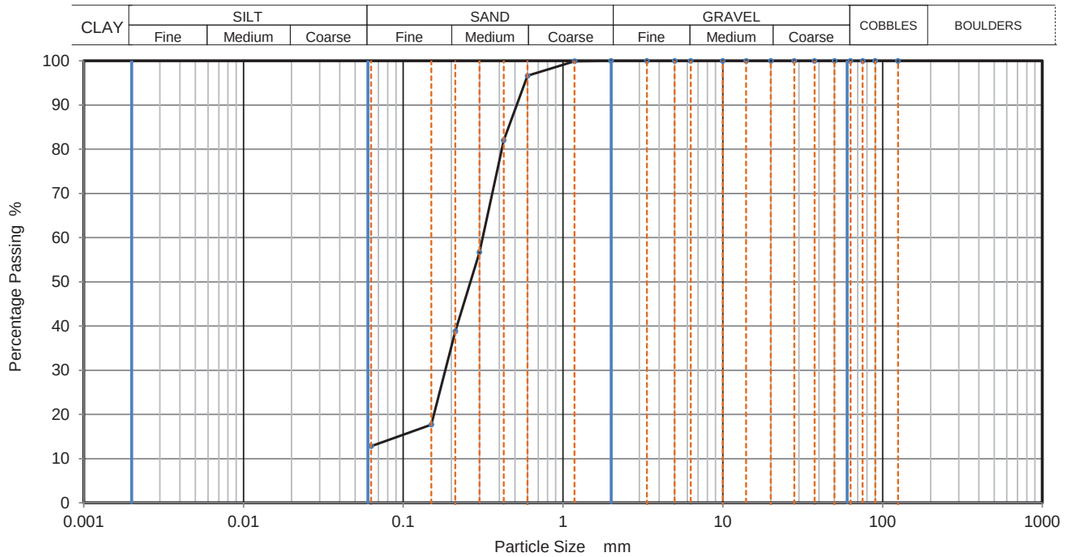
MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH06
Project No.	23607	Client	GEA	Sample No.	3
				Depth Top	2.00 m
Soil Description	Orangish brown clayey SAND			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	97		
0.425	82		
0.3	57		
0.212	39		
0.15	18		
0.063	13		

Dry Mass of sample, g: 337

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	0.0
Sand	87.2
Fines <0.063mm	12.8

Grading Analysis		
D100	mm	
D60	mm	0.314
D30	mm	0.183
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

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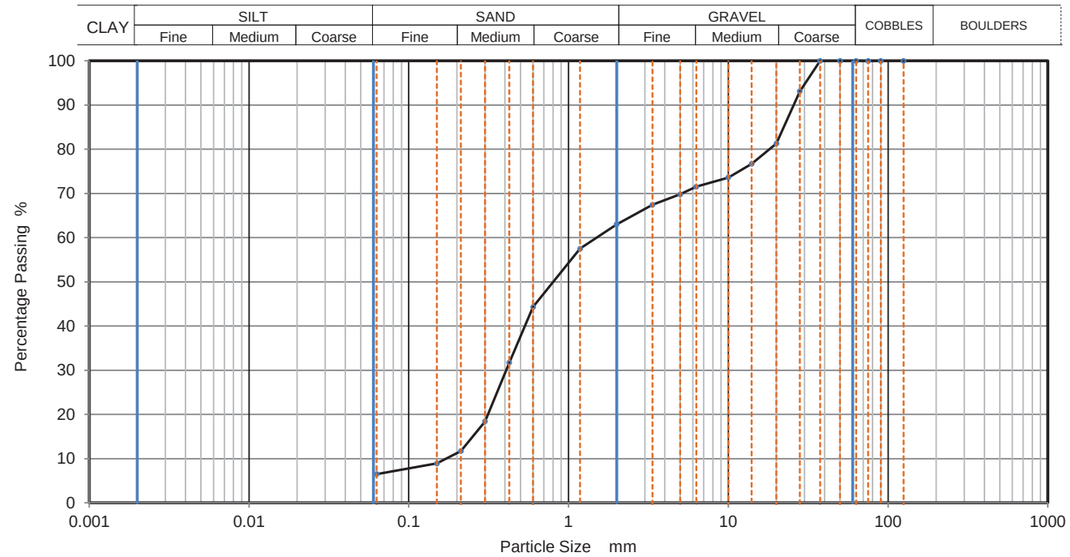
MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH07
Project No.	23607	Client	GEA	Sample No.	1
				Depth Top	1.70 m
Soil Description	Brown clayey very gravelly SAND (gravel is fmc and sub-rounded to rounded)			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	93		
20	81		
14	77		
10	74		
6.3	72		
5	70		
3.35	67		
2	63		
1.18	58		
0.6	44		
0.425	32		
0.3	18		
0.212	12		
0.15	9		
0.063	7		

Dry Mass of sample, g: 1259

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	37.0
Sand	56.5
Fines <0.063mm	6.5

Grading Analysis		
D100	mm	
D60	mm	1.5
D30	mm	0.407
D10	mm	0.171
Uniformity Coefficient		8.8
Curvature Coefficient		0.64

Remarks

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K4 Soils Laboratory
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Email: james@k4soils.com
Tel: 01923 711288

Checked and Approved
Initials: kp
Date: 16-11-17

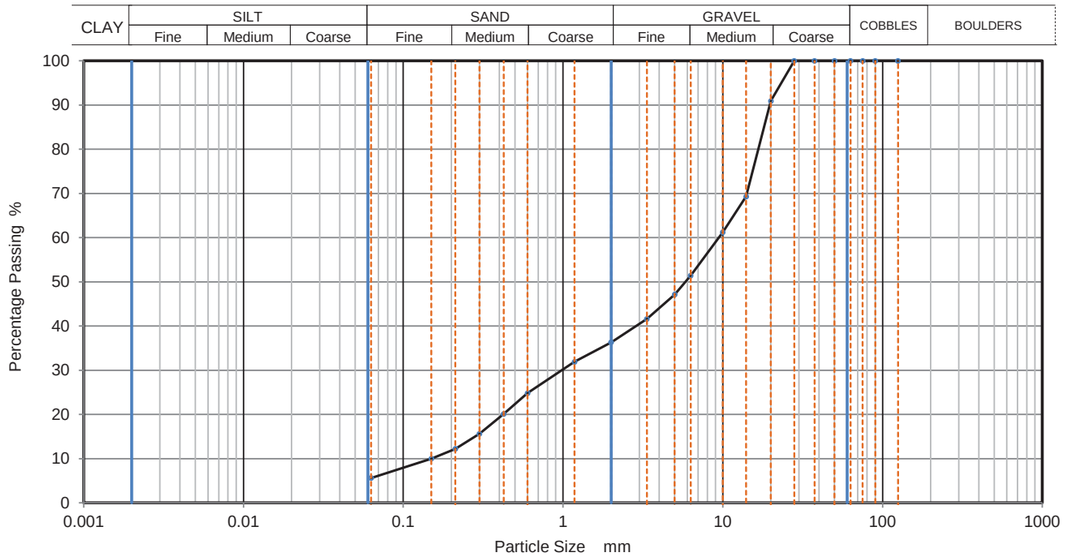
UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH08
Project No.	23607	Client	GEA	Sample No.	2
				Depth Top	2.00 m
Soil Description	Greyish brown clayey very sandy GRAVEL (gravel is fmc and angular to rounded)			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	91		
14	69		
10	61		
6.3	51		
5	47		
3.35	42		
2	36		
1.18	32		
0.6	25		
0.425	20		
0.3	16		
0.212	12		
0.15	10		
0.063	6		

Dry Mass of sample, g: 294

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	63.7
Sand	30.7
Fines <0.063mm	5.6

Grading Analysis		
D100	mm	
D60	mm	9.43
D30	mm	0.985
D10	mm	0.149
Uniformity Coefficient		63
Curvature Coefficient		0.69

Remarks

Preparation and testing in accordance with BS1377 unless noted below

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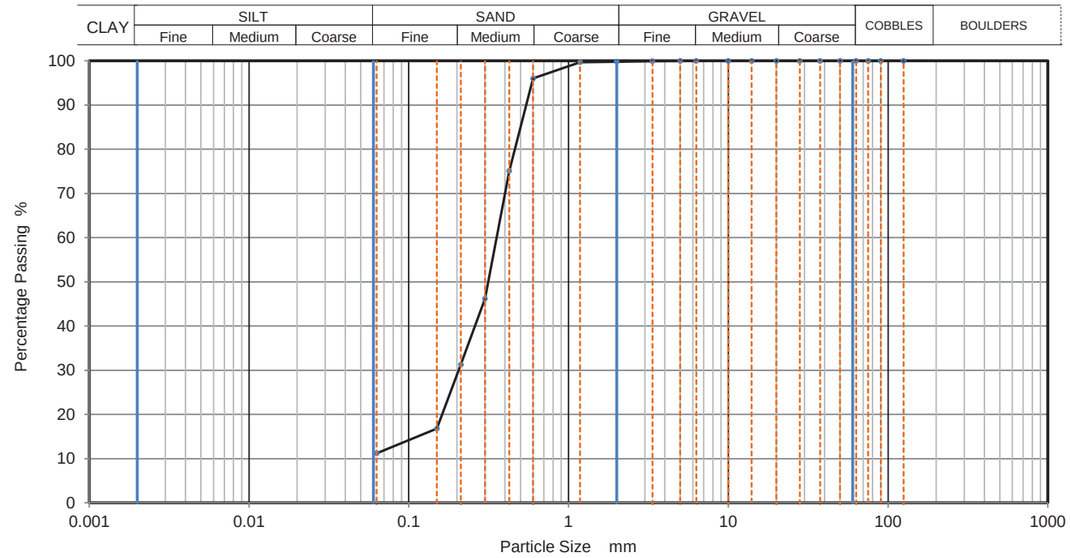
MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH10
Project No.	23607	Client	GEA	Sample No.	3
				Depth Top	1.80 m
Soil Description	Orangish brown clayey SAND			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	96		
0.425	75		
0.3	46		
0.212	31		
0.15	17		
0.063	11		

Dry Mass of sample, g: 383

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	0.2
Sand	88.6
Fines <0.063mm	11.2

Grading Analysis		
D100	mm	
D60	mm	0.354
D30	mm	0.206
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

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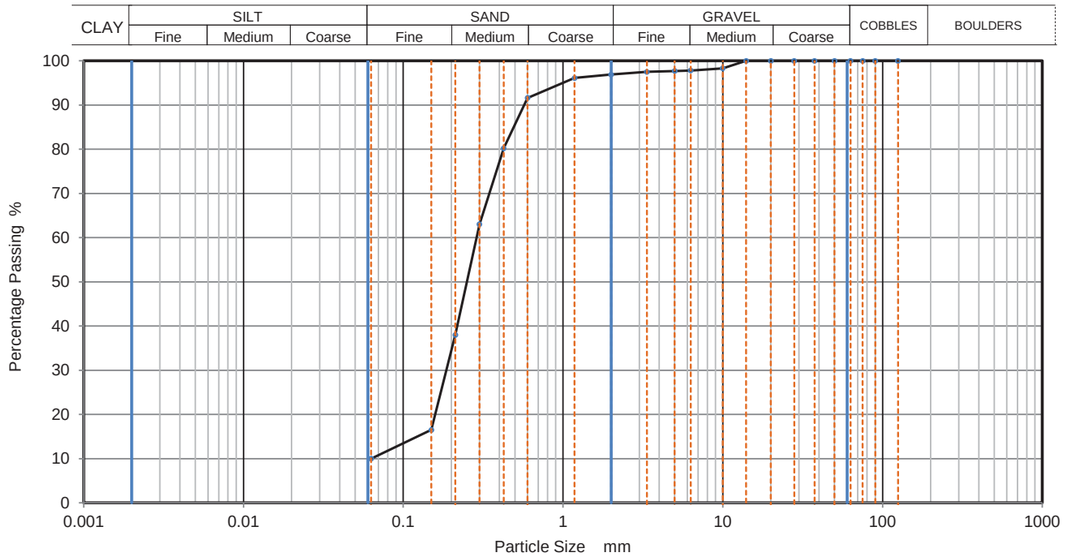
MSF-5-R3

	PARTICLE SIZE DISTRIBUTION			Job Ref	23607
				Borehole/Pit No.	BH11
Site Name	Channing School			Sample No.	1
Project No.	23607	Client	GEA	Depth Top	1.80 m
Soil Description	Brown clayey SAND with rare medium rounded gravel			Depth Base	- m
				Sample Type	D
				Samples received	27-10-2017
				Schedules received	27-10-2017
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	98		
6.3	98		
5	98		
3.35	98		
2	97		
1.18	96		
0.6	92		
0.425	80		
0.3	63		
0.212	38		
0.15	17		
0.063	10		

Dry Mass of sample, g: 196

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	3.1
Sand	86.8
Fines <0.063mm	10.0

Grading Analysis		
D100	mm	
D60	mm	0.288
D30	mm	0.186
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS1377 unless noted below

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Checked and Approved
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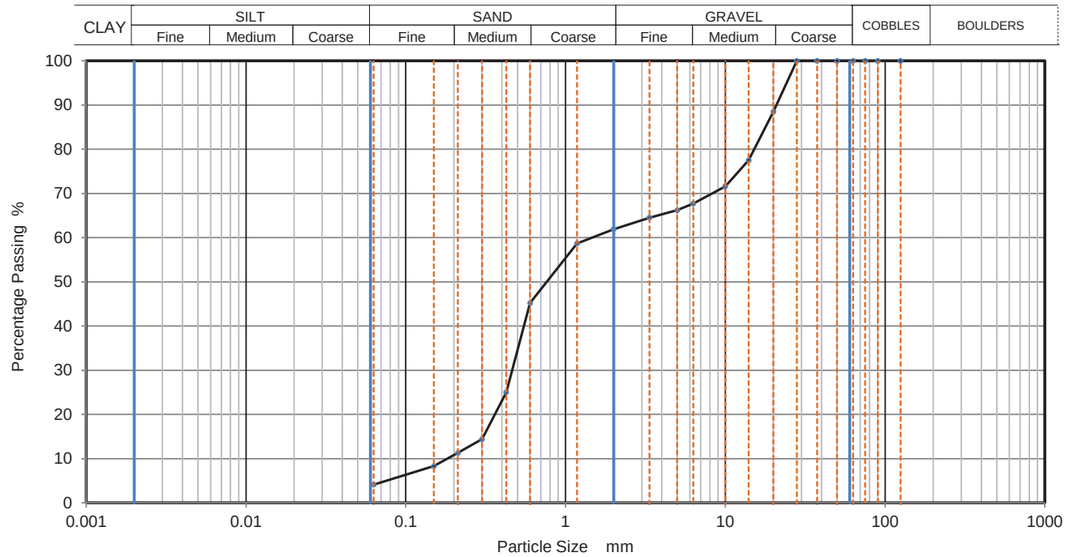
Date: 16-11-17

UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R3

	PARTICLE SIZE DISTRIBUTION			Job Ref	23607
				Borehole/Pit No.	BH12
Site Name	Channing School			Sample No.	5
Project No.	23607	Client	GEA	Depth Top	2.50 m
Soil Description	Brown slightlyclayey very gravelly SAND (gravel is fmc and sub-angular to rounded)			Depth Base	- m
				Sample Type	D
				Samples received	
				Schedules received	00-01-1900
Test Method	BS1377:Part 2: 1990, clause 9.0			Project started	06-11-2017
				Date tested	14-11-2017



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	89		
14	78		
10	72		
6.3	68		
5	66		
3.35	65		
2	62		
1.18	59		
0.6	45		
0.425	25		
0.3	14		
0.212	11		
0.15	8		
0.063	4		

Dry Mass of sample, g: 1633

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	38.1
Sand	57.8
Fines <0.063mm	4.1

Grading Analysis		
D100	mm	
D60	mm	1.46
D30	mm	0.463
D10	mm	0.182
Uniformity Coefficient		8
Curvature Coefficient		0.81

Remarks

Preparation and testing in accordance with BS1377 unless noted below

K4 Soils Laboratory
Unit 8, Olds Close, Watford, Herts, WD18 9RU
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Checked and Approved
Initials: kp
Date: 16-11-17

UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R3

Unconsolidated Undrained Triaxial Compression tests without measurement of pore pressure
Summary of Results

Tests carried out in accordance with BS1377:Part 7 : 1990 clause 8 or 9 as appropriate to test

Job No.	Project Name	Programme	
23607	Channing School	Samples received	27-10-2017
		Schedule received	03-01-2017
Project No.	Client	Project started	04-11-2017
23607	GEA	Testing Started	12-11-2017

Hole No.	Sample Ref	Sample Top	Sample Base	Sample Type	Soil Description	Test Type	Density bulk Mg/m3	Density dry Mg/m3	w %	Length mm	Diameter mm	σ3 kPa	At failure: Axial strain %	At failure: σ1 - σ3 kPa	At failure: cu kPa	At failure: Mode	Remarks
BH03	1	14.00		U	High strength grey silty CLAY with occasional sandy clay pockets	UU	2.02	1.56	29	198	102	280	20.2	166	83	P	

Legend
UU - single stage test (single and multiple specimens)
UUM - Multistage test on a single specimen
suffix R - remoulded or recompacted
σ3 Cell pressure
σ1 - σ3 Maximum corrected deviator stress
cu Undrained shear strength, ½ (σ1 - σ3)
Mode of failure ; B - Brittle, P - Plastic, C - Compound

Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
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Checked and Approved
Initials: kp
Date: 16-11-17

2519 Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr) MSF-5-R7b

Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

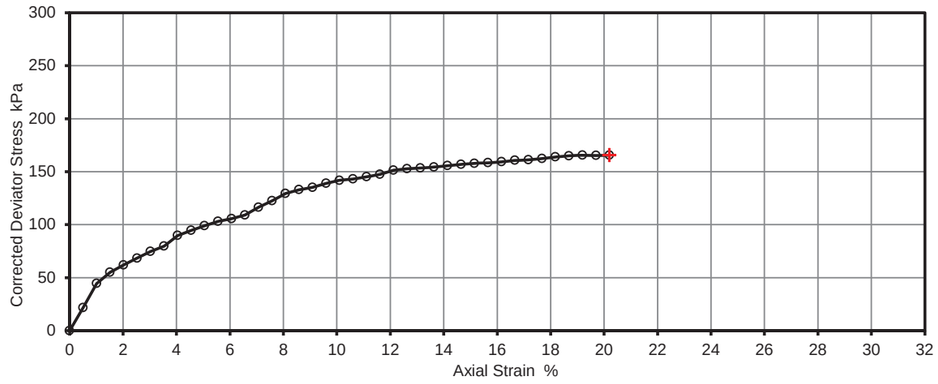
Site Name	Channing School			Job Ref	23607
				Borehole/Pit No.	BH03
Project No.	23607	Client	GEA	Sample No.	1
Soil Description	High strength grey silty CLAY with occasional sandy clay pockets			Depth Top	14.00 m
				Depth Base	- m
				Sample Type	U
				Samples received	27-10-2017
				Schedules received	03-11-2017
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	15-11-2017

Remarks

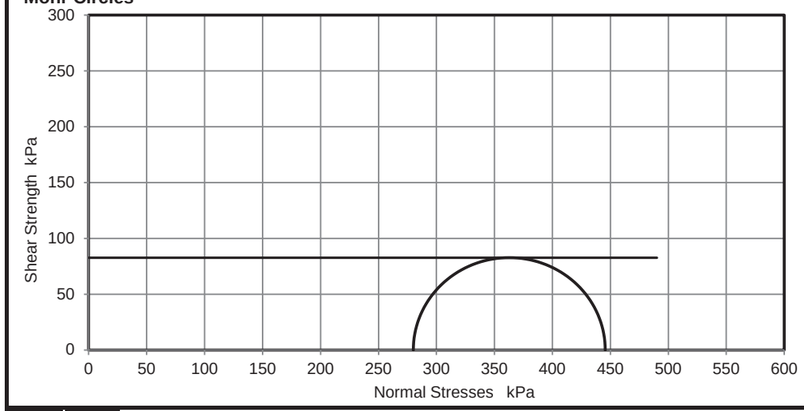
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	2.02	Mg/m3
Moisture Content	29	%
Dry Density	1.56	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	280	kPa
Axial Strain	20.2	%
Deviator Stress, (σ1 - σ3)f	166	kPa
Undrained Shear Strength, cu	83	kPa ½(σ1 - σ3)f
Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
Watford Herts WD18 9RU
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Email: James@k4soils.com

Checked and Approved
Initials: kp
Date 16-11-17

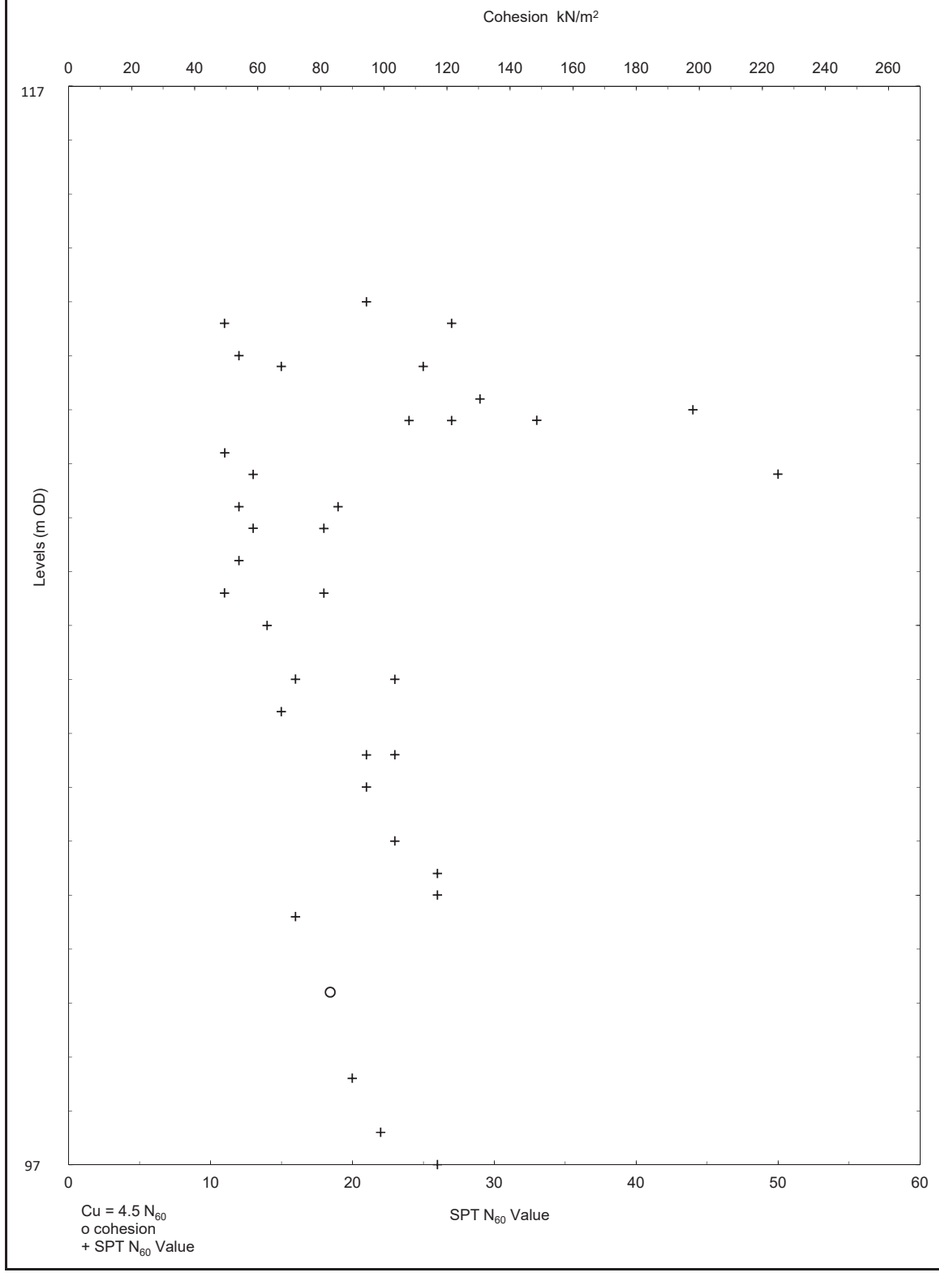
2519 *Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)* MSF-5 R7

GEA

www.gea-ltd.co.uk
Herts | 01727 824666 Notts | 01509 674888

SPT & Cohesion / Depth Graph

Site	Channing Junior School, Highgate High Street, N6 5JR	**Job Number**	J17268
Client	Channing Junior School	**Sheet**	1 / 1
Engineer	Heyne Tillett Steel		



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Analytical Report Number : 17-65415

Project / Site name:	Channing Junior School, Highgate High Street, N6 5JR	**Samples received on:**	26/10/2017
Your job number:	J17268	**Samples instructed on:**	26/10/2017
Your order number:	J17268	**Analysis completed by:**	03/11/2017
Report Issue Number:	1	**Report issued on:**	03/11/2017
Samples Analysed:	12 soil samples		

Signed:

Vineetha Meethale Vettil
Senior Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 17-65415

Project / Site name: Channing Junior School, Highgate High Street, N6 5JR
Your Order No: J17268

Lab Sample Number				845027	845028	845029	845030	845031
Sample Reference				TP2	BH1	BH5	BH6	BH8
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.30	1.50	0.80	0.60
Date Sampled				23/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	9.9	9.1	9.6	9.9	9.6
Total mass of sample received	kg	0.001	NONE	1.1	1.2	1.3	1.4	1.7
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.8	7.8	8.5	8.0	8.4
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	580	430	230	290	140
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.076	0.020	0.026	0.0075	0.011
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	15	4.6	7.5	4.8	3.2
Total Organic Carbon (TOC)	%	0.1	MCERTS	3.3	1.8	0.4	1.2	0.4
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.20	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.54	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.46	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.25	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.25	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.31	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.20	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.26	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	2.47	< 0.80	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	10	8.6	14	28
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	22	16	15	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	39	44	15	94	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	310	260	120	260	230
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.8	1.4	< 0.3	1.4	0.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	9.1	6.2	11	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	51	21	89	39
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	14	500	< 10	< 10	< 10
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	1.2	12	< 1.0	< 1.0	< 1.0

Analytical Report Number: 17-65415

Project / Site name: Channing Junior School, Highgate High Street, N6 5JR
Your Order No: J17268

Lab Sample Number				845027	845028	845029	845030	845031
Sample Reference				TP2	BH1	BH5	BH6	BH8
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.30	1.50	0.80	0.60
Date Sampled				23/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
TPH (C21 - C35)	mg/kg	1	MCERTS	13	250	< 1.0	< 1.0	< 1.0

Iss No 17-65415-1 Channing Junior School, Highgate High Street, N6 5JR J17268
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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 17-65415

Project / Site name: Channing Junior School, Highgate High Street, N6 5
Your Order No: J17268

Lab Sample Number				845032	845033	845034	845035	845036
Sample Reference				BH10	BH11	TP1A	BH12	TP1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.50	0.40	0.50	0.40
Date Sampled				24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	7.5	15	10	12
Total mass of sample received	kg	0.001	NONE	1.4	1.3	1.5	1.5	1.3
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.9	7.9	8.4	7.8	9.2
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	2	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	270	220	320	490	640
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.023	0.0088	0.065	0.021	0.062
Sulphide	mg/kg	1	MCERTS	1.6	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	8.3	2.8	8.4	4.4	4.6
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.9	1.1	0.3	2.3	0.7
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.17	0.35
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.45	0.75
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.42	0.71
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.26	0.39
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.20	0.34
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.28	0.39
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.21	0.29
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.25	0.41
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.20
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.23
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	2.24	4.06
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	9.2	18	23	48
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	16	25	18	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	31	26	18	38	38
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150	110	42	360	1200
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.7	0.5	0.7	0.8	0.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	8.4	7.1	11	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	54	38	31	68	110
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	89	45
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	5.3	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	27	5.7

Analytical Report Number: 17-65415

Project / Site name: Channing Junior School, Highgate High Street, N6 5
Your Order No: J17268

Lab Sample Number				845032	845033	845034	845035	845036
Sample Reference				BH10	BH11	TP1A	BH12	TP1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.50	0.40	0.50	0.40
Date Sampled				24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
TPH (C21 - C35)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	55	23

Analytical Report Number: 17-65415

Project / Site name: Channing Junior School, Highgate High Street, N6 5
Your Order No: J17268

Lab Sample Number				845037	845048			
Sample Reference				TP6	TP4			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.30	0.50			
Date Sampled				23/10/2017	23/10/2017			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	28			
Moisture Content	%	N/A	NONE	10	5.3			
Total mass of sample received	kg	0.001	NONE	1.3	1.3			
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected			
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	9.9	9.2			
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Total Sulphate as SO_4	mg/kg	50	MCERTS	1400	1100			
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.16	0.39			
Sulphide	mg/kg	1	MCERTS	< 1.0	3.7			
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	7.3	24			
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.7	0.6			
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.31			
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Phenanthrene	mg/kg	0.05	MCERTS	0.23	0.67			
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.12			
Fluoranthene	mg/kg	0.05	MCERTS	0.53	0.50			
Pyrene	mg/kg	0.05	MCERTS	0.50	0.39			
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.31	0.20			
Chrysene	mg/kg	0.05	MCERTS	0.23	0.15			
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.24	< 0.05			
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.26	< 0.05			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.32	< 0.05			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	2.62	2.34			
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	8.2			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	14			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	20			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	480	180			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	10	8.0			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	64	27			
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	120	< 10			
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0			
TPH (C16 - C21)	mg/kg	1	MCERTS	3.5	< 1.0			

Analytical Report Number: 17-65415

Project / Site name: Channing Junior School, Highgate High Street, N6 5
Your Order No: J17268

Lab Sample Number				845037	845048			
Sample Reference				TP6	TP4			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.30	0.50			
Date Sampled				23/10/2017	23/10/2017			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
TPH (C21 - C35)	mg/kg	1	MCERTS	56	< 1.0			

Analytical Report Number : 17-65415

Project / Site name: Channing Junior School, Highgate High Street, N6 5JR

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
845027	TP2	None Supplied	0.30	Brown loam and sand with gravel and vegetation.
845028	BH1	None Supplied	0.30	Brown loam and sand with gravel.
845029	BH5	None Supplied	1.50	Brown clay and sand with gravel.
845030	BH6	None Supplied	0.80	Brown loam and clay with gravel.
845031	BH8	None Supplied	0.60	Brown sandy clay with gravel.
845032	BH10	None Supplied	0.60	Brown sandy clay with gravel.
845033	BH11	None Supplied	0.50	Brown loam and clay with gravel and vegetation.
845034	TP1A	None Supplied	0.40	Brown clay and sand with gravel and brick.
845035	BH12	None Supplied	0.50	Brown loam and clay with gravel.
845036	TP1	None Supplied	0.40	Brown sandy clay with gravel.
845037	TP6	None Supplied	0.30	Brown loam and clay with gravel.
845048	TP4	None Supplied	0.50	Brown sand with stones and brick.

Analytical Report Number : 17-65415

Project / Site name: Channing Junior School, Highgate High Street, N6 5JR

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests. 2:1 extraction.	L082-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L076-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

GEA

Widbury Barn
Widbury Hill
Ware
Herts SG12 7QE

Generic Risk-Based Soil Screening Values

Site	Channing Junior School, Highgate High Street, N6 5JR
Client	Channing Junior School
Engineer	Heyne Tillett Steel

Job Number J17268

Sheet 1 / 1

Proposed End Use Residential without plant uptake

Soil pH 8

Soil Organic Matter content % 6.0

Contaminant	Screening Value mg/kg	Data Source
Metals		
Arsenic	40	C4SL
Cadmium	149	C4SL
Chromium (III)	3000	LQM/CIEH
Chromium (VI)	21	C4SL
Copper	2,330	LQM/CIEH
Lead	310	C4SL
Elemental Mercury	1.02	SGV
Inorganic Mercury	235	SGV
Nickel	99	LQM/CIEH
Selenium	595	SGV
Zinc	3,750	LQM/CIEH
Hydrocarbons		
Benzene	3.3	C4SL
Toluene	610	SGV
Ethyl Benzene	350	SGV
Xylene	230	SGV
Aliphatic C5-C6	110	LQM/CIEH
Aliphatic C6-C8	370	LQM/CIEH
Aliphatic C8-C10	110	LQM/CIEH
Aliphatic C10-C12	540	LQM/CIEH
Aliphatic C12-C16	3000	LQM/CIEH
Aliphatic C16-C35	76,000	LQM/CIEH
Aromatic C6-C7	See Benzene	LQM/CIEH
Aromatic C7-C8	See Toluene	LQM/CIEH
Aromatic C8-C10	151	LQM/CIEH
Aromatic C10-C12	346	LQM/CIEH
Aromatic C12-C16	593	LQM/CIEH
Aromatic C16-C21	770	LQM/CIEH
Aromatic C21-C35	1230	LQM/CIEH
PRO (C_5 –C_{10})	1354	Calc
DRO (C_{12} –C_{28})	80,363	Calc
Lube Oil (C_{28} –C_{44})	77,230	Calc
TPH	**1000**	Trigger for speciated testing

Contaminant	Screening Value mg/kg	Data Source
Anions		
Soluble Sulphate	500 mg/l	Structures
Sulphide	50	Structures
Chloride	400	Structures
Others		
Organic Carbon (%)	6	Methanogenic potential
Total Cyanide	140	WRAS
Total Mono Phenols	520	SGV
PAH		
Naphthalene	13.10	C4SL exp & LQM/CIEH
Acenaphthylene	3,870	LQM/CIEH
Acenaphthene	3,910	LQM/CIEH
Fluorene	2,870	LQM/CIEH
Phenanthrene	970	LQM/CIEH
Anthracene	23,300	LQM/CIEH
Fluoranthene	1,000	LQM/CIEH
Pyrene	2,400	LQM/CIEH
Benzo(a) Anthracene	9.4	C4SL exp & LQM/CIEH
Chrysene	15	C4SL exp & LQM/CIEH
Benzo(b) Fluoranthene	11.2	C4SL exp & LQM/CIEH
Benzo(k) Fluoranthene	15.8	C4SL exp & LQM/CIEH
Benzo(a) pyrene	5.30	C4SL
Indeno(1 2 3 cd) Pyrene	6.7	C4SL exp & LQM/CIEH
Dibenzo(a h) Anthracene	1.41	C4SL exp & LQM/CIEH
Benzo (g h i) Perylene	72	C4SL exp & LQM/CIEH
Screening value for PAH	**75.7**	B(a)P / 0.15
Chlorinated Solvents		
1,1,1 trichloroethane (TCA)	57.9	LQM/CIEH
tetrachloroethane (PCA)	15.3	LQM/CIEH
tetrachloroethene (PCE)	6.58	LQM/CIEH
trichloroethene (TCE)	0.673	LQM/CIEH
1,2-dichloroethane (DCA)	0.016	LQM/CIEH
vinyl chloride (Chloroethene)	0.00447	LQM/CIEH
tetrachloromethane (Carbon tetra	0.18	LQM/CIEH
trichloromethane (Chloroform)	7.52	LQM/CIEH

Notes

Concentrations measured below the above values may be considered to represent 'uncontaminated conditions' which pose 'LOW' risk to human health. Concentrations measured in excess of these values indicate a potential risk which require further, site specific risk assessment.

SGV - Soil Guideline Value, derived from the CLEA model and published by Environment Agency 2009

LQM/CIEH - Generic Assessment Criteria for Human Health Risk Assessment 2nd edition (2009)derived using CLEA 1.04 model 2009

C4SL - Defra Category 4 Screening value based on Low Level of Toxicological Risk

C4SL exp & LQM/CIEH calculated using C4SL revisions to exposure assessment but LQM/CIEH health criteria values

Calc - sum of nearest available carbon range specified including BTEX for PRO fraction

B(a)P / 0.15 - GEA experience indicates that Benzo(a) pyrene (one of the most common and most carcinogenic of the PAHs) rarely exceeds 15% of the total PAH concentration, hence this Total PAH threshold is regarded as being conservative

1ST LINE DEFENCE

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Express Preliminary UXO Risk Assessment

Client	GEA Ltd
Project	Channing Junior School
Site Address	1 Highgate High St, Highgate, London, N6 5JR
Report Reference	EP5503-00
Date	13/10/17
Originator	CB

Assessment Objective

This preliminary risk assessment is a qualitative screening exercise to assess the likely potential of encountering unexploded ordnance (UXO) at Channing Junior School. The assessment involves the consideration of the basic factors that affect the potential for UXO to be present at a site as outlined in Stage One of the UXO risk management process.

Background

This assessment uses the sources of information available in-house to 1st Line Defence Ltd to enable the placement of a development site in context with events that may have led to the presence of German air-delivered or Allied military UXO. The report will identify any immediate necessity for risk mitigation or additional research in the form of a Detailed UXO Risk Assessment. It makes use of 1st Line Defence's extensive historical archives, library and unique geo-databases, as well as internet resources, and is researched and compiled by UXO specialists and graduate researchers.

The assessment directly follows CIRIA C681 guidelines "Unexploded Ordnance, a Guide for the Construction Industry". The document will therefore assess the following factors:

- Basic Site Data
- Previous Military Use
- Indicators of potential aerial delivered UXO threat
- Consideration of any Mitigating Factors
- Extent of Proposed Intrusive Works
- Any requirement for Further Work

It should be noted that the vast majority of construction sites in the UK will have a low or negligible risk of encountering UXO and should be able to be screened out at this preliminary stage. The report is meant as a common sense 'first step' in the UXO risk management process. The content of the report and conclusions drawn are based on basic, preliminary research using the information available to 1st Line Defence at the time this report was produced. It should be noted that the only way to entirely negate risk from UXO to a project would be to support the works proposed with appropriate UXO risk mitigation measures. It is rarely possible to state that there is absolutely 'no' risk from UXO to a project.

Risk Assessment Considerations	
Site location and description/current use	The site is located in Highgate in the borough of Haringey, north London. The site is an irregular parcel of land currently occupied by Channing Junior School, associated outbuildings and areas of open greenfield in use as playing fields. The site is bound to the north by Highgate High Street and to the east, south and west by Sir Sydney Waterlow park. The site is approximately centred on the OS grid reference: □□ □□□□□□□□□□. 
Are there any indicators of current/historical military activity on/close to the site□	There are no indicators of any current or historical military activity within the site boundary or in the area immediately surrounding it. The closest recorded point of historical military interest is in the form of a HAA battery, now removed, approximately 1.31km south-west of the site boundary in the vicinity of Highgate Ponds.
What was the pre- and post-WWII history of the site□	Pre-war historical OS mapping from 1915 indicates the site to have been predominantly open ground. A structure labelled as *Fairseat House* is situated in the north-west corner of the boundary. Pathways intersect the site at various points □ this is due to the site being encompassed by Sir Sydney Waterlow park. Later pre-war historical OS mapping from 1935 indicates no significant changes within the site boundary. Post-war historical OS mapping from 1952-1953 indicates no obvious changes within the site boundary or its immediate surrounding area following the culmination of WWI□ *Fairseat House* remains intact and the pathways remain the same. Later post-war historical OS mapping from 1967-1968 indicate some minor changes within the site boundary, a section of pathway in the south and west of the site have been removed and replaced with a tennis court and an area of open ground.
Was the area subject to bombing during WWII□	During WWII the site was situated in the Metropolitan Borough of St Pancras, and was located immediately south of the Municipal Borough of Hornsey. St Pancras, a borough of 2,69□ acres, was subject to 6□1 HE (high explosive) bombs, eight parachute mines, 1□ oil bombs, 11 phosphorous bombs, 20 V-1 flying bombs and two V2 long range rockets. This totalled 696 incidents, an average of 258 items of ordnance recorded per 1,000 acres, which gave St Pancras a high bombing density in comparison to other areas of London. London bomb census mapping indicates that the site was subject to one bombing incident in the form of an incendiary bomb 'shower' in □ebruary 1□□1. A □-1 flying bomb is also recorded in close proximity to the site, approximately 200m to the south-west. Anecdotal reports refer to Channing School being badly damaged by a parachute mine during WWII□however, this was thought to have been at the school's original site, to the north of Highgate High Street.
Is there any evidence of bomb damage on/close to the site□	Due to the lack of structures within the site boundary it is not possible to account for evidence of bomb damage for the entire site. However, *Fairseat House* is indicated on LCC (London County Council) bomb damage mapping as not having suffered any level of damage from bombing campaigns during WWII. High resolution aerial photography would be required in order to gain a better idea of the damage sustained and the composition of the site immediately post-war.
To what degree would the site have been subject to access□	The area of the site occupied by *Fairseat House* and its immediate surroundings are anticipated to have been accessed frequently and regularly during WWII should it have been in use. However, despite being encompassed by Sir Sydney Waterlow park, it is unlikely that access levels would have been regular and frequent in the areas of the site predominantly occupied by open ground of a vegetated nature, and that post-raid checks would have been made for UXO in areas of open ground.
To what degree has the site been developed post-WWII□	The site has seen some development post-war. Channing Junior School moved to the site in 1955 □ the original building remains in place, whilst other school buildings and areas of hard standing ground have been constructed. The risk of encountering UXO is considered partially mitigated down to the depths and in the specific locations of post-war excavations. It is not possible to confirm the location or depths of any previous post-war intrusive works at this stage.
What is the nature and extent of the intrusive works proposed□	The nature and extent of works proposed was not available at the time of writing.

Summary and Conclusions

The site was located in the Metropolitan Borough of St Pancras during WWII. St Pancras, a borough of 2,69□ acres, was subject to a high bomb density□an average of 258 items of ordnance were recorded per 1,000 acres. The high bombing density can be attributed to the site's location in proximity to the centre of London. Historical mapping indicates that the site was predominantly occupied by open ground of a vegetated nature, with a single structure labelled as *Fairseat House* situated in the north-west corner of the boundary. The site was bordered on three sides by Sir Sydney Waterlow park. London bomb census mapping indicates the presence of an incendiary bomb 'shower' over the site as well as a V-1 flying bomb recorded approximately 200m to the south-west of the boundary. LCC (London County Council) bomb damage mapping indicates that *Fairseat House* survived the war intact, with no significant damage recorded in the immediate surrounding area. Whilst high resolution post-war aerial photography would provide a better idea of the composition of the site immediately following the war, it is unlikely to alter the findings of this preliminary report.

Recommendations

Given the findings of this preliminary report, due to the fact that no significant damage is recorded as having occurred within the site boundary and no evidence can be found to suggest that the risk of encountering UXO is elevated above that of the regular level for this area of the country, it is recommended that **no furt□er action** be taken.

If the client has any anecdotal or empirical evidence of UXO risk on site, please contact 1st Line Defence.

Su Connor
Geotechnical & Environmental Associates
Widbury Barn
Widbury Hill
Ware
Herts
SG12 7QE

National Gas Emergency Number:
0800 111 999*

National Grid Electricity Emergency Number:
0800 40 40 90*
* Available 24 hours, 7 days/week.
Calls may be recorded and monitored.

www.cadentgas.com

Date: 09/10/2017
Our Ref: NL_TE_Z5_3WWX_579013
Your Ref: J17268
RE: Scheduled Works, Channing Jnr School

Thank you for your enquiry which was received on 09/10/2017.
Please note this response and any attached map(s) are valid for 28 days.

An assessment has been carried out with respect to Cadent Gas Ltd, National Grid Electricity Transmission plc's and National Grid Gas plc's apparatus. Please note it does not cover the items listed in the section "Your Responsibilities and Obligations", including gas service pipes and related apparatus.
For details of Network areas please see the Cadent website (http://cadentgas.com/Digging-safely/Dial-before-you-dig) or the enclosed documentation.

Are My Works Affected?

Your proposal **is in proximity to the Cadent and/or National Grid apparatus** specified within the "Assessment" section, which may impact, and possibly prevent, your proposed activities for safety and/or legal reasons.

You must not commence any work until you have complied with all of the guidance provided and been contacted by all of the teams (if any) listed in the Contact Requirements section.

As set out in the table in the "Assessment" section of this response; in respect of **all** the apparatus listed you must read and follow all the guidance provided when planning or undertaking any activities at this location. Additionally, for apparatus assessed as having a high potential to be affected, a member of the respective team will contact you within **7** working days.

The details contained within this enquiry are valid for 28 days. If the scheduled work is not completed within this time, or should the location, date or nature of your activities change, you must submit another enquiry.

Your Responsibilities and Obligations

The "Assessment" Section below outlines the detailed requirements that must be followed when planning or undertaking your scheduled activities at this location.

It is your responsibility to ensure that the information you have submitted is accurate and that all relevant documents including links are provided to all persons (either direct labour or contractors) working for you near Cadent and/or National Grid's apparatus, e.g. as contained within the Construction (Design and Management) Regulations.

This assessment solely relates to Cadent Gas Ltd, National Grid Electricity Transmission plc (NGET) and National Grid Gas plc (NGG) and apparatus. This assessment does **NOT** include:

- Cadent and/or National Grid's legal interest (easements or wayleaves) in the land which restricts activity in proximity to Cadent and/or National Grid's assets in private land. You must obtain details of any such restrictions from the landowner in the first instance and if in doubt contact Plant Protection.
- Gas service pipes and related apparatus
- Recently installed apparatus
- Apparatus owned by other organisations, e.g. other gas distribution operators, local electricity companies, other utilities, etc.

It is **YOUR** responsibility to take into account whether the items listed above may be present and if they could be affected by your proposed activities. Further "Essential Guidance" in respect of these items can be found on the National Grid Website (http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=8589934982).

This communication does not constitute any formal agreement or consent for any proposed development work; either generally or with regard to Cadent and/or National Grid's easements or wayleaves nor any planning or building regulations applications.

Cadent Gas Ltd, NGG and NGET or their agents, servants or contractors do not accept any liability for any losses arising under or in connection with this information. This limit on liability applies to all and any claims in contract, tort (including negligence), misrepresentation (excluding fraudulent misrepresentation), breach of statutory duty or otherwise. This limit on liability does not exclude or restrict liability where prohibited by the law nor does it supersede the express terms of any related agreements.

If you require further assistance please contact the Plant Protection team via e-mail (click here) or via the contact details at the top of this response.

Yours faithfully

Plant Protection Team

ASSESSMENT

Affected Apparatus
The apparatus that has been identified as being in the vicinity of your proposed works is:

- Low or Medium pressure (below 2 bar) gas pipes and associated equipment. (As a result it is highly likely that there are gas services and associated apparatus in the vicinity)
- Electricity Transmission underground cables and associated equipment

Requirements

E ORE carrying out any work you must:
(N.B. Works only to be undertaken when contact has been made as per the Contact Requirements section)

- **Refer to the attached cable profile drawings (if any) which provide details about the location of National Grid s high voltage underground cables.**
- Carefully read these requirements including the attached guidance documents and maps showing the location of apparatus.
- Contact the landowner and ensure any proposed works in private land do not infringe Cadent and/or National Grid's legal rights (i.e. easements or wayleaves). If the works are in the road or footpath the relevant local authority should be contacted.
- Ensure that all persons, including direct labour and contractors, working for you on or near Cadent and/or National Grid's apparatus follow the requirements of the HSE Guidance Notes HSG47 - 'Avoiding Danger from nderground Services' and GS6 'Avoidance of danger from overhead electric power lines'. This guidance can be downloaded free of charge at http://www.hse.gov.uk
- In line with the above guidance, verify and establish the actual position of mains, pipes, cables, services and other apparatus on site before any activities are undertaken.
- Ensure that you have been in contact with **all** of the teams listed in the **Contact Requirements** section and complied with any additional guidance provided.

DUR NG any work you must:

- Ensure that no mechanical excavation takes place above or within 0.5m of the Cadent buried medium and low pressure gas pipes and associated equipment.
- Comply with all guidance for working within the vicinity of Electricity nderground Cables as detailed within the guidance documents listed below.
- Comply with all guidance relating to general activities and any specific guidance for each asset type as specified in the Guidance Section below.
- Ensure that access to Cadent and/or National Grid apparatus is maintained at all times.
- Prevent the placing of heavy construction plant, equipment, materials or the passage of heavy vehicles over Cadent and/or National Grid apparatus unless specifically agreed with Cadent and/or National Grid in advance.
- Exercise extreme caution if slab (mass) concrete is encountered during excavation works as this may be protecting or supporting Cadent and/or National Grid apparatus.
- Maintain appropriate clearances between gas apparatus and the position of other buried plant.

lease refer to the General Guidance or contact the lant rotection Team for further information regarding the above.

Contact Requirements

Searches based on your enquiry have identified that the following apparatus types may be affected by your enquiry and further consultation may be required. Please use the boxes provided to record the details of the consultation (where applicable).

Apparatus	Team or Guidance	Contact Details and Ref	Date of Contact
Low or Medium pressure gas pipes	Cadent Maintenance Team		
Electricity Transmission underground cables and associated equipment	Local nderground Cable Engineers		

Each team will endeavour to contact you directly within **7** working days from the date of this response to undertake a more detailed assessment. Please contact Plant Protection if you have not had a response within this period. This may also have an impact on any preparatory works.

GU DANCE

Working Near National Grid Electricity Transmission equipment:
If you are carrying out any work in proximity to an overhead line or any excavation that may be near an underground cable then please consult National Grid Technical Guidance Note 287 that can be found at http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=8589935533 Further guidance related to underground cables can also be found at http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=8589936512

Excavating Safely Avoiding in ury when working near gas pipes:
http://www.nationalgrid.com/NR/rdonlyres/2D2EEA97-B213-459C-9A26-18361C6E0B0D/25249/Digsafe_leaflet3e2finalamends061207.pdf

Standard Guidance

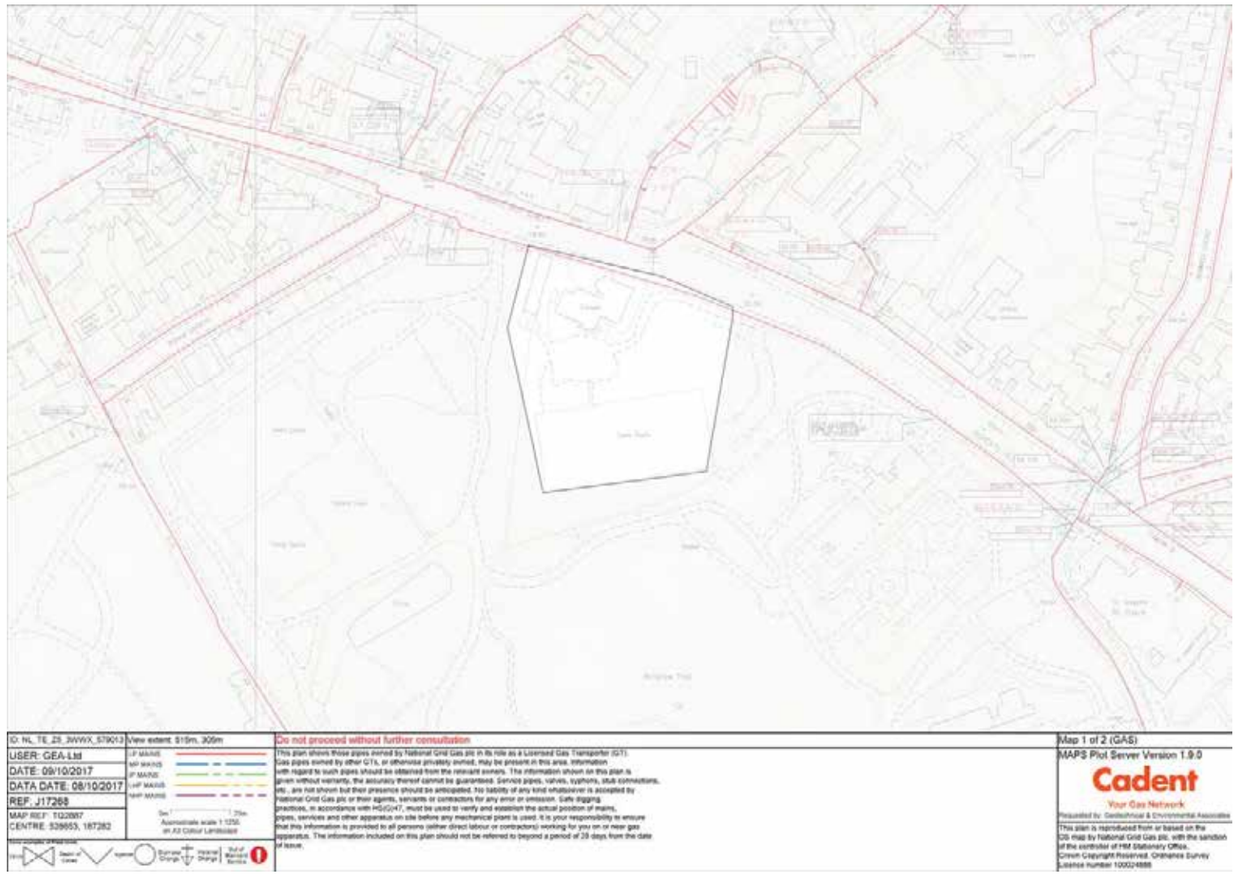
Essential Guidance document:
http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=8589934982

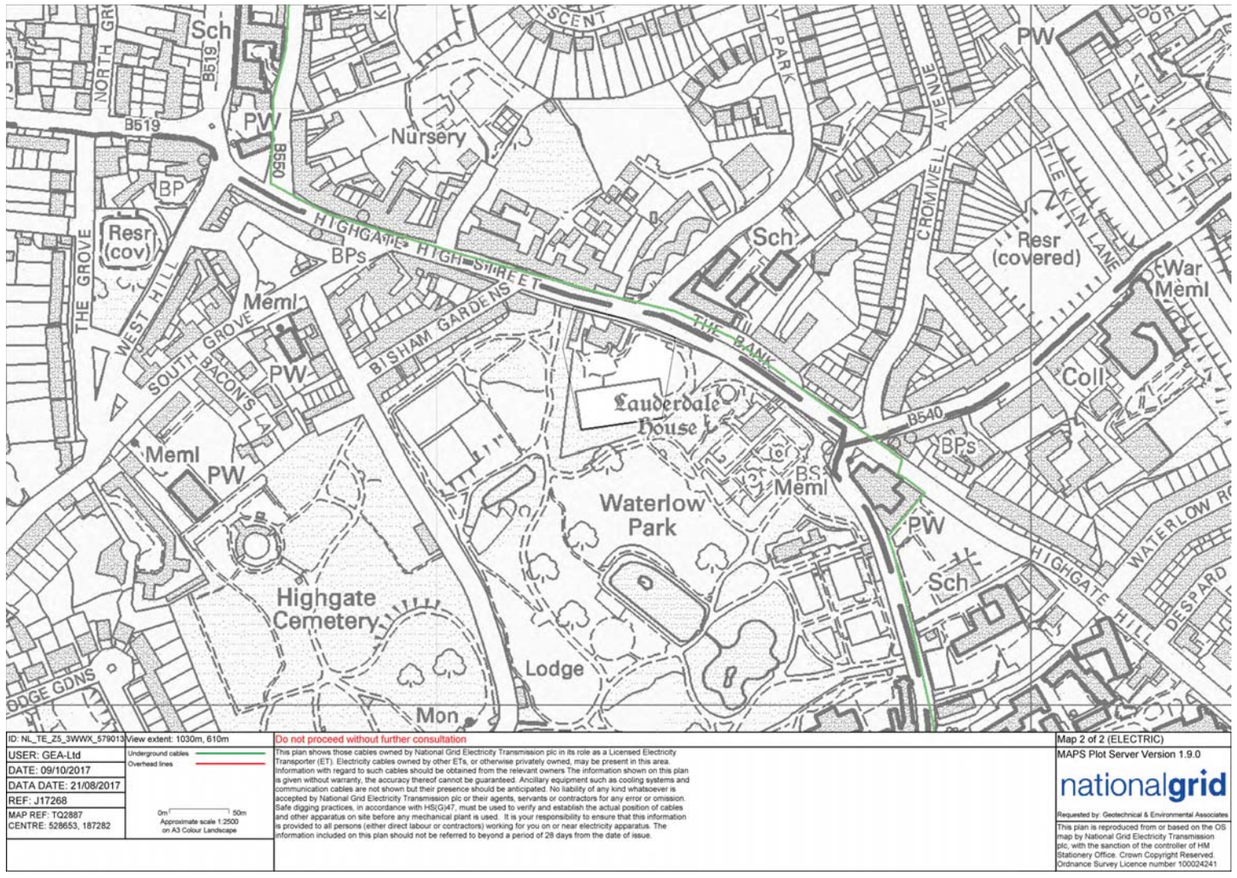
General Guidance document:
http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=35103

Excavating Safely in the vicinity of gas pipes guidance (Credit card):
http://www.nationalgrid.com/NR/rdonlyres/A3D37677-6641-476C-9DDA-E89949052829/44257/ExcavatingSafelyCreditCard.pdf

Excavating Safely in the vicinity of electricity cables guidance (Credit card):
http://www.nationalgrid.com/NR/rdonlyres/35DDEC6D-D754-4BA5-AF3C-D607D05A25C2/44858/ExcavatingSafelyCreditCardelectricitycables.pdf

Copies of all the Guidance Documents can also be downloaded from the National Grid Website:
http://www.nationalgrid.com/uk/Gas/Safety/work/downloads/





EN U RY SUMMARY

Received Date
09/10/2017

Your Reference
J17268

Location
Centre Point: 528653, 187282
X Extent: 95
Y Extent: 104
Postcode: N6 5JR
Location Description: Channing Jnr School

Map Options
Paper Si e: A3
Orientation: LANDSCAPE
Requested Scale: 500
Actual Scale: 1:1250 (GAS), 1:2500 (ELECTRIC)
Real World Extents: 515m x 305m (GAS), 1030m x 610m (ELECTRIC)

Start Date
16/10/2017

Recipients
tacita gea-ltd.co.uk

Enquirer Details
Organisation Name: Geotechnical & Environmental Associates
Contact Name: Su Connor
Email Address: tacita gea-ltd.co.uk
Telephone: 1727824666 (441727824666)
Address: Widbury Barn, Widbury Hill, Ware, Herts, SG12 7QE

Description of Works
Borhole drilling to a maximum depth of 25m

Enquiry Type
Scheduled Works

Activity Type
General Excavation

Work Types
Work Type: Deep Excavation (greater than or equal to 0.3m)
Work Type: Fencing
Work Type: Boring/Moling/Hori ontal Drilling greater than 300mm

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Our Ref: 11378560 Your Ref: J17268 - Channing School

Monday, 09 October 2017

Su Connor
Widbury Barn Widbury Hill
Ware
Hertfordshire
SG12 7QE

Dear Su Connor

Thank you for contacting us regarding UK Power Networks equipment at the above site. I have enclosed a copy of our records which show the electrical lines and/or electrical plant. I hope you find the information useful.

I have also enclosed a fact sheet which contains important information regarding the use of our plans and working around our equipment. Safety around our equipment is our number one priority so please ensure you have completed all workplace risk assessments before you begin any works.

Should your excavation affect our Extra High Voltage equipment (6.6 KV, 22 KV, 33 KV or 132 KV), please contact us to obtain a copy of the primary route drawings and associated cross sections.

If you have any further queries do not hesitate to contact us.

Plan Provision
0800 056 5866

Registered Office:
Newington House
237 Southwark Bridge Road
London SE1 6NP

Registered in England and Wales No: 3870728

Company:
UK Power Networks (Operations) Limited

This information is made available to you on the terms set out below. If you do not accept the terms of use set out in this fact sheet please do not use the plans and return them to UK Power Networks.

1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.

2. UK Power Networks does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person where such death or personal injury is caused by its negligence.

3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise how for any loss, damage, costs, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.

4. The information about UK Power Networks electrical plant and/or electric lines provided to you belongs to and remains the property of UK Power Networks. You must not alter it in any respect.

5. The information provided to you about the electrical plant and/or electric lines depicted on the plans may NOT be a complete record of such apparatus belonging to UK Power Networks. The information provided relates to electric lines and/or electrical plant belonging to UK Power Networks that it believes to be present but the plans are not definitive: other electric lines and/or electrical plant may be present and that may or may not belong to UK Power Networks.

6. Other apparatus not belonging to UK Power Networks is not shown on the plan. It is your responsibility to make your own enquiries elsewhere to discover whether apparatus belonging to others is present. It would be prudent to assume that other apparatus is present.

7. You are responsible for ensuring that the information made available to you is passed to those acting on your behalf and that all such persons are made aware of the contents of this letter.

8. Because the information provided to you may not be accurate, you are recommended to ascertain the presence of UK Power Networks electric lines and/or electrical plant by the digging of trial holes. Trial holes should be dug by hand only.

   Excavations must be carried out in line with the Health and Safety Executive guidance document HSG 47. We will not undertake this work. A copy of HSG 47 can be obtained from the Health and Safety Executives website.

   All electric lines discovered must be considered LIVE and DANGEROUS at all times and must not be cut, resited, suspended, bent or interfered with unless specially authorised by UK Power Networks.

   The electric line and electrical plant belonging to UK Power Networks remains so even when made dead and abandoned and any such electric line and/or electrical plant exposed shall be reported to UK Power Networks.

   Where your works are likely to affect our electric lines and/or electrical plant an estimate of the price of any protective /diversionary works can be prepared by UK Power Networks Branch at Metropolitan House, Darkes Lane, Potters Bar, Herts. , EN6 1AG, telephone no. 0845 2340040

Registered Office:
Newington House
237 Southwark Bridge Road
London SE1 6NP

Registered in England and Wales No: 3870728

Company:
UK Power Networks (Operations)
Limited

9 Any work near to any overhead electricity lines must be carried out by you in accordance with the Health and Safety Executive guidance document GS6 and the Electricity at Work Regulations.

The GS6 Recommendations may be purchased from HSE Books or downloaded from the Energy Networks Association's website.

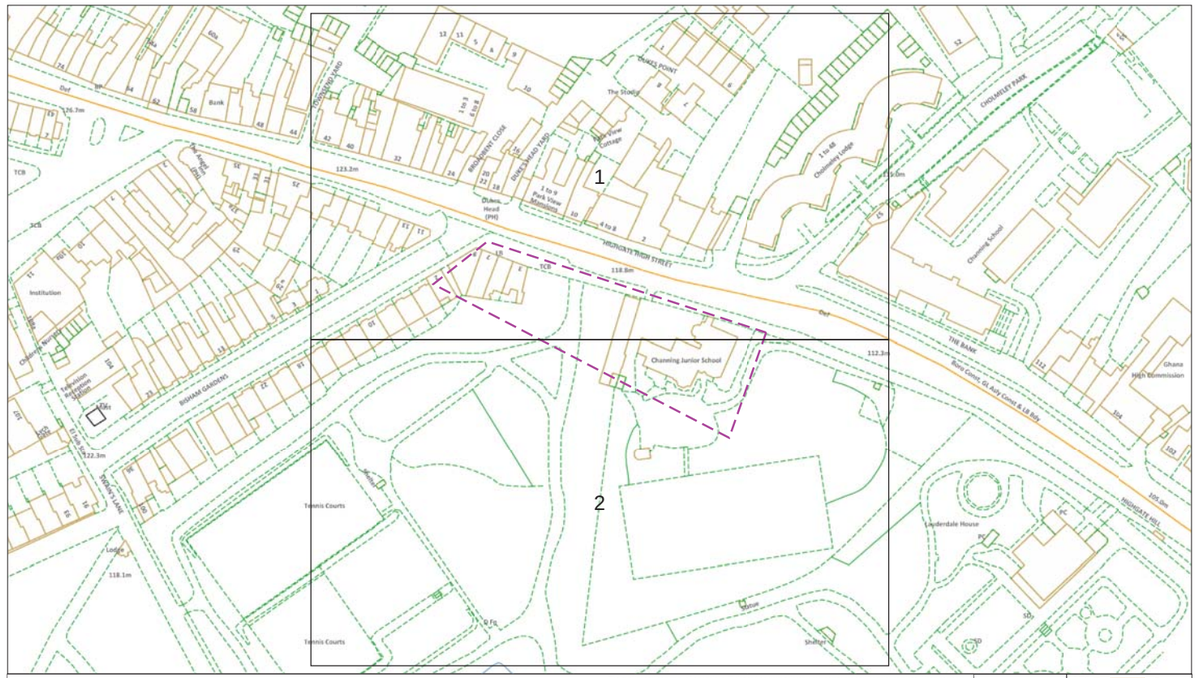
If given a reasonable period of prior notice UK Power Networks will attend on site without charge to advise how and where "goal posts" should be erected. If you wish to use this service, in the first instance please telephone: 0845 6014516 between 08:30 and 17:00 Monday to Friday.

10. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.

11. If in carrying out work on land in, on, under or over which is installed an electric line and/or electrical plant that belongs to UK Power Networks you and/or anyone working on your behalf damages (however slightly) that apparatus you must inform immediately UK Power Networks by our emergency 24 hour three digit telephone number **105** providing;

- your name, address and telephone number;
- the date, time and place at which such damage was caused;
- a description of the electric line and/or electrical plant to which damage was caused;
- the name of the person whom it appears to you is responsible for that damage;
- the nature of the damage.

12. The expression "UK Power Networks" includes UK Power Networks (EPN) plc, UK Power Networks (LPN) plc, UK Power Networks (SEPN) plc, UK Power Networks and any of their successors and predecessors in title.



The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.

This plan must be used with the attached 'Symbols' document.

Date Requested: 09/10/2017
Job Reference: 11378560
Site Location: 528525 187250
Requested by:
Mrs Su Connor
Your Scheme/Reference: J17268 - Channing School
Scale: 1:1025 (When plotted at A3)

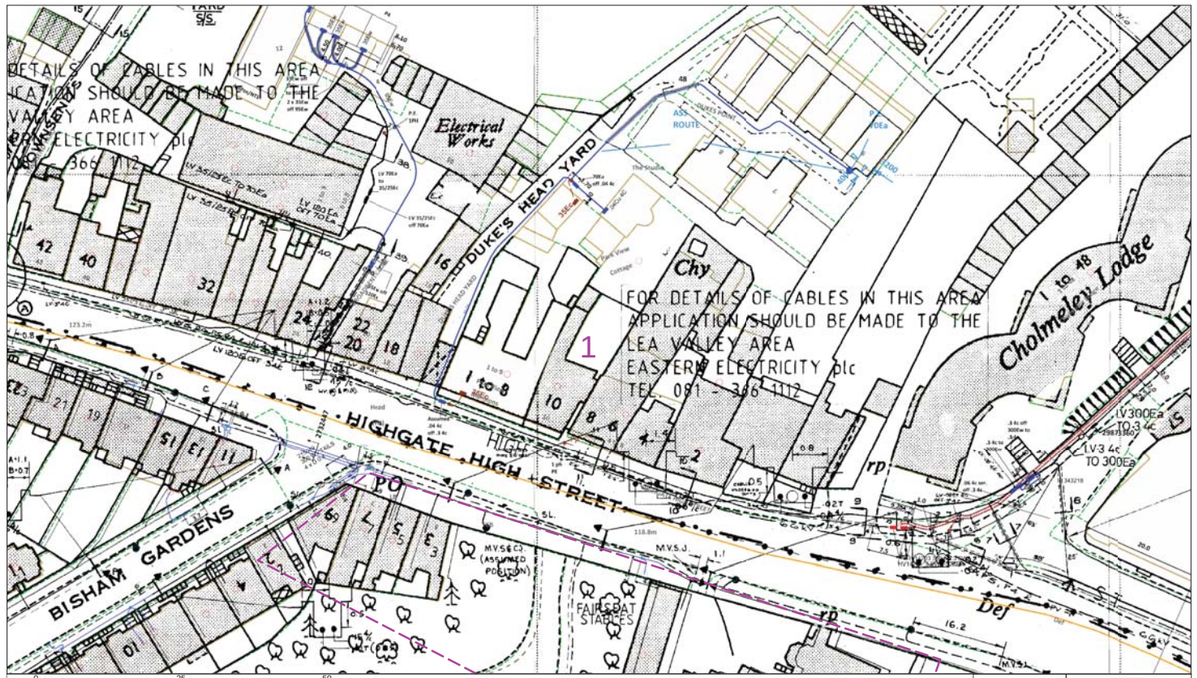
1. The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered since the apparatus was installed.
2. The exact position of the apparatus should be verified - use approved cable avoidance tools prior to excavation using suitable hand tools.
3. It is essential that trial holes are carefully made avoiding the use of mechanical tools or picks until the exact location of all the cables have been determined.
4. It must be assumed that there is a service cable into each property, lamp column and street sign, etc.
5. All cables must be treated as being live unless proved otherwise by UK Power Networks.
6. The information proved must be given to all people working near UK Power Networks plant and equipment. Do not use plans more than 3 months after the issue date for excavation purposes.
7. Please be aware that electric cables/lines belonging to other owners of licensed electricity distribution systems may be present and it is your responsibility to identify their location.

1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.
2. UK Power Networks does not exclude or limit its liability if it causes the death of any persons or causes personal injury to a person.
3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise for any loss, damage, cost, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
4. This plan has been provided to you on the basis of the terms of use set out in the covering letter that accompanies this plan. If you do not accept and/or do not understand the terms of use set out in the covering letter you must not use the plan and must return it to the sender of the letter.
5. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.

IF IN DOUBT - ASK! PHONE 0800 056 5866 EMERGENCY - If you damage a cable or line Phone 0800 783 8838 (24hrs) URGENTLY

ALWAYS LOOK UP BEFORE YOU START WORK Refer to HSE Guidance note G56

Maps produced at 1:2500 scale are Geo-Schematics which show LV mains cables and service runs (in some cases all voltages). Prior to carrying out excavations you must refer to the PAS128 records to determine the location of all known underground plant and equipment.



Dig Sites Area: Line:

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.

This plan must be used with the attached 'Symbols' document.

Date Requested: 09/10/2017
Job Reference: 11378560
Site Location: 528525 187250
Requested by:
Mrs Su Connor
Your Scheme/Reference: J17268 - Channing School
Scale: 1:500 (When plotted at A3)

1. The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered since the apparatus was installed.
2. The exact position of the apparatus should be verified - use approved cable avoidance tools prior to excavation using suitable hand tools.
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5. All cables must be treated as being live unless proved otherwise by UK Power Networks.
6. The information proved must be given to all people working near UK Power Networks plant and equipment. Do not use plans more than 3 months after the issue date for excavation purposes.
7. Please be aware that electric cables/lines belonging to other owners of licensed electricity distribution systems may be present and it is your responsibility to identify their location.

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3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise for any loss, damage, cost, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
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IF IN DOUBT - ASK!
PHONE 0800 056 5866
EMERGENCY - If you damage a cable or line
Phone 0800 783 8838 (24hrs) URGENTLY

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Refer to HSE Guidance note G56

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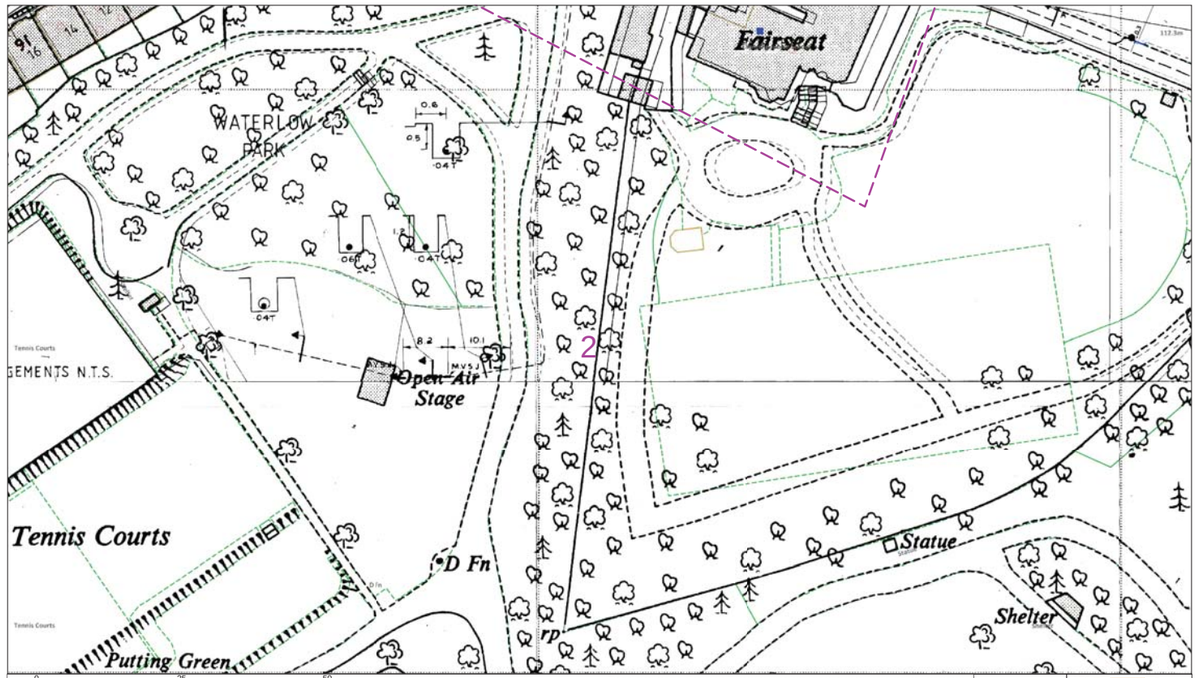

Dig Sites Area: Line:

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Job Reference: 11378560
Site Location: 528525 187250
Requested by:
Mrs Su Connor
Your Scheme/Reference: J17268 - Channing School
Scale: 1:500 (When plotted at A3)

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EMERGENCY - If you damage a cable or line
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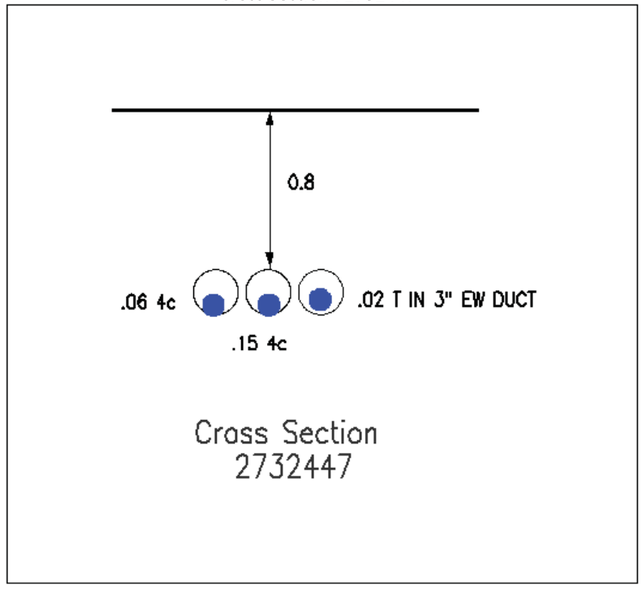
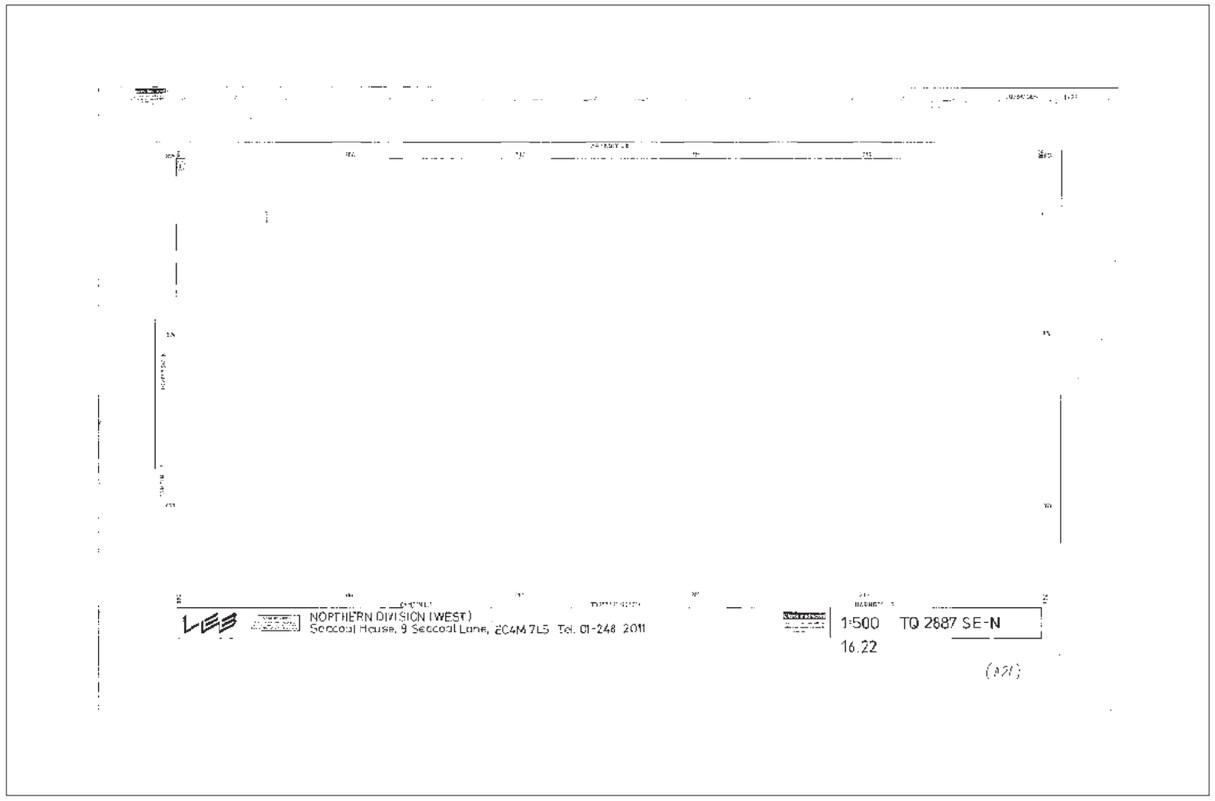
Refer to HSE Guidance note G56

Maps produced at 1:2500 scale are Geo-Schematics which show LV mains cables and overhead lines (in some cases all voltages). Prior to carrying out excavations you must refer to the 1:500 records to determine the location of all known underground plant and equipment.

Cross Section : 2732447



Cross Section
2732447



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IF IN DOUBT - ASK! PHONE 0800 056 3366
EMERGENCY - If you damage a cable or line Phone 0800 783 8838 (24hrs) URGENTLY

UK Power Networks

ALWAYS LOOK UP BEFORE YOU START WORK
Refer to HSE Guidance note GS6

Maps produced at 1:2500 scale are Geo-Schematic which show LV mains cables and overhead lines (in some cases all voltages). Prior to carrying out excavations you must refer to the 1:500 records to determine the location of all known underground plant and equipment.

Plans generated by DIGDAT Pro™ software provided by Linesearch Beforeudig.