PROPERTY ASSURANCE
Giving our all

SITE INVESTIGATION
FACTUAL REPORT

Report No:	246119
Client:	Crawford Claims Management
Site:	4B Hampstead Hill Gardens, Hampstead
Client Ref:	SU1404491-
Date of Visit:	13/02/2015

ISO 9001 REGISTERED FIRM
ISO 14001 REGISTERED FIRM
OHSAS 18001 REGISTERED FIRM
Link-up Qualified via Audit
SAFECONTRACTOR APPROVED
CHAS Accredited Contractor
constructionline

Unit E2 First Floor Suite, Boundary Court
Willow Farm Business Park, Castle Donington
Leicestershire, DE74 2NN

☎ 0843 2272362
✉ enquiries@cet-uk.com
💻 www.cet-uk.com

Investigation Layout Plan

Sheet: 1 of 1

Job No: 246119E

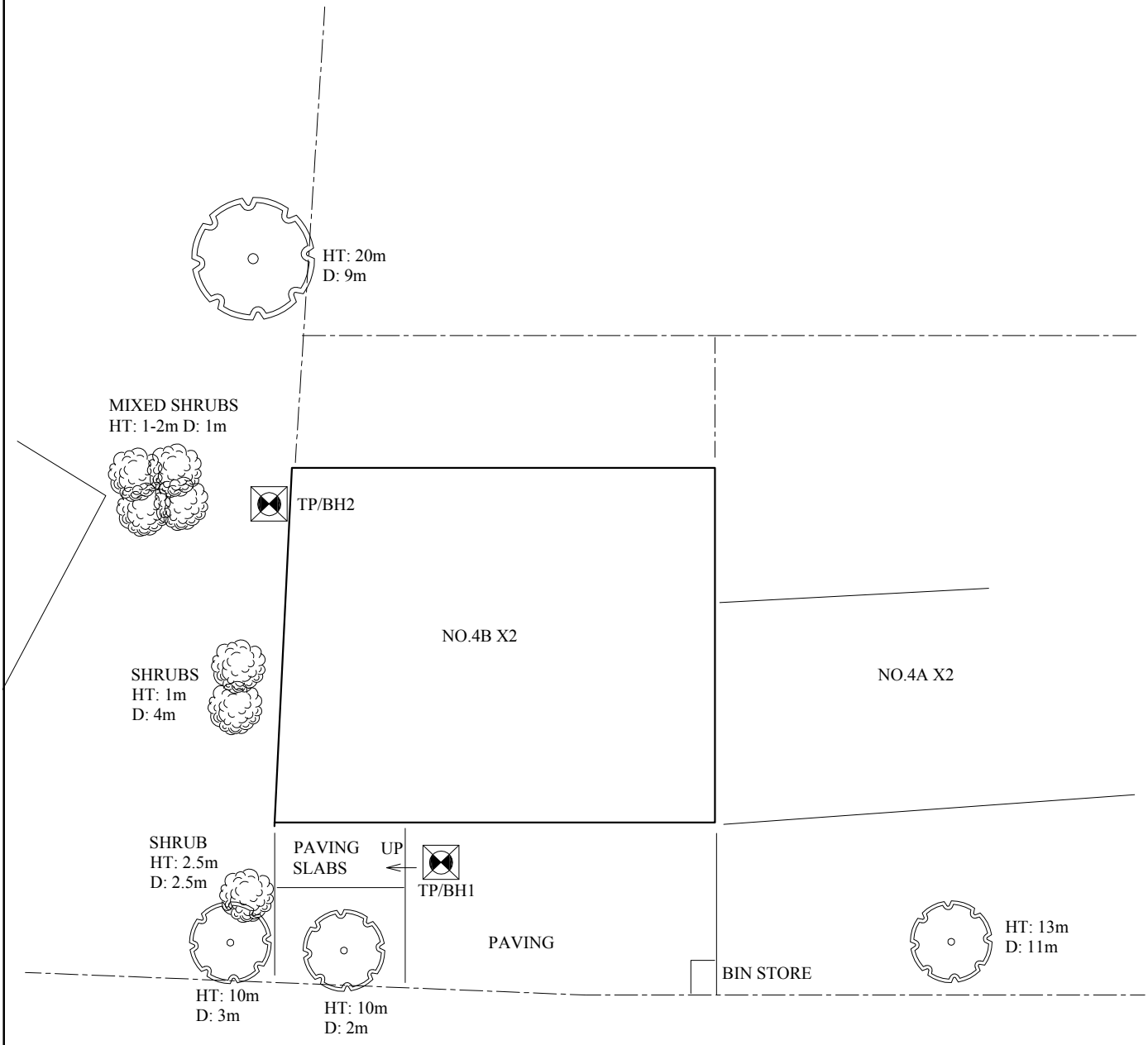
Date: 13/02/2015

Site: 4B Hampstead Hill Gardens, NW3

Work carried out for: Crawford Claims MGMT SUS

SP	SE	AR
(SI)	(Checked)	(Drawn)

Weather: Dry



Remarks:

Scale: N.T.S.

Key:

Combined Gulley	RWWG
Manhole	MH
Rain Water Pipe	RWP
Rain Water Gulley	RWG
Soil Vent Pipe	SVP
Waste Gulley	WG
Waste Pipe	WP

Surface Water Drain

Foul Water Drain

Tree / Bush (approx. ht in m)

Trial Pit

Borehole

O/D - Open Discharge

Drainage Layout Plan

Sheet: 1 of 1

Job No: 246119E

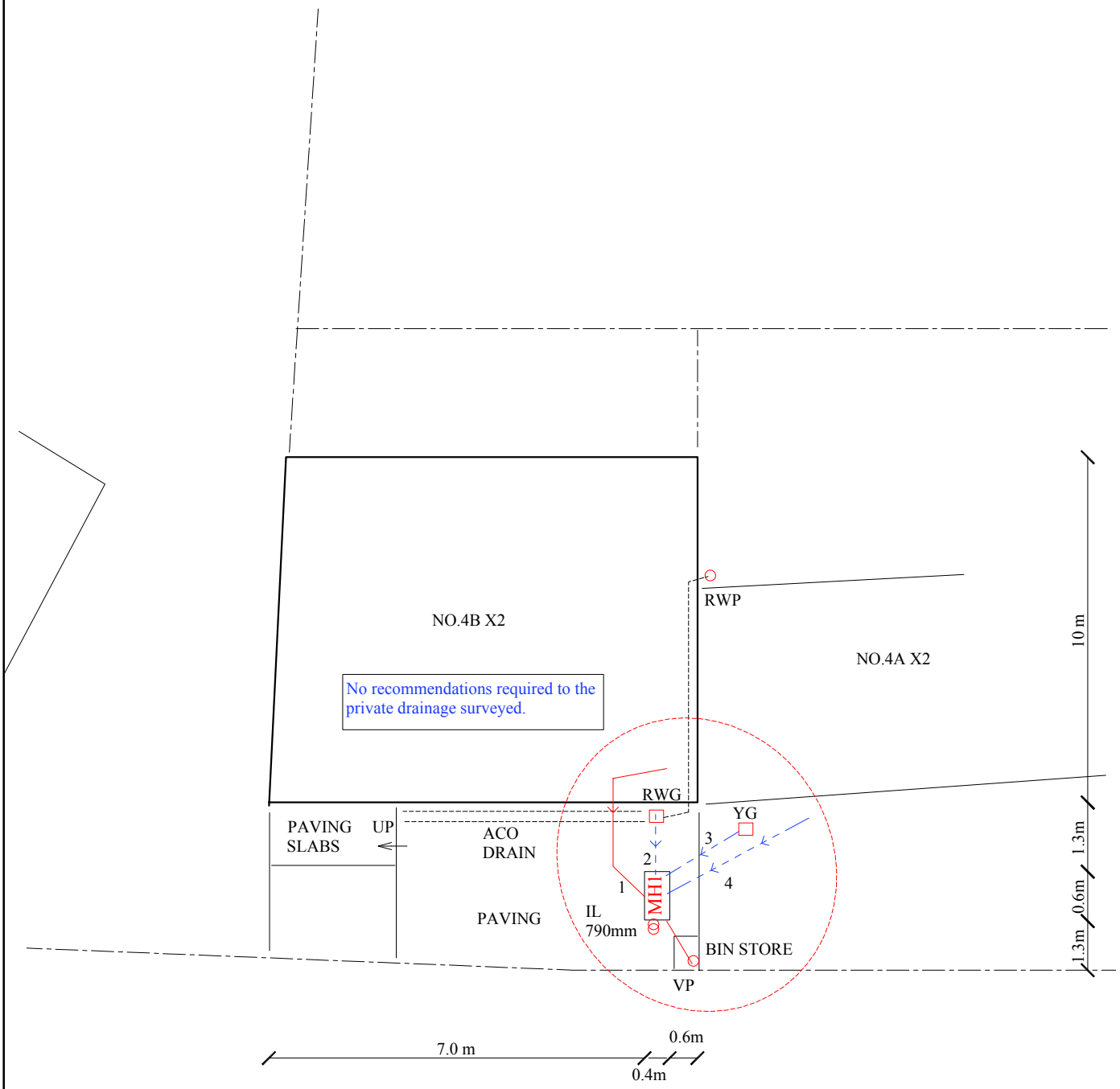
Date: 13/02/2015

Site: 4B Hampstead Hill Gardens, NW3

Work carried out for: Crawford Claims MGMT SUS

SP	MD	AR
(SI)	(Checked)	(Drawn)

Weather: DRY



ON SITE TREE IDENTIFICATION FOR GUIDANCE ONLY. NOT AUTHENTICATED.

Remarks:

Scale: N.T.S.

Key:

Combined Gulley	RWWG
Manhole	MH
Rain Water Pipe	RWP
Rain Water Gulley	RWG
Soil Vent Pipe	SVP
Waste Gulley	WG
Waste Pipe	WP

Surface Water Drain

Foul Water Drain

Tree / Bush (approx. ht in m)

Trial Pit

Borehole

O/D - Open Discharge

Trial Pit No: 1

Sheet: 1 of 1

Job No: 246119E

Date: 13.02.15

Site: 4b Hampstead Hill Gardens, London NW3

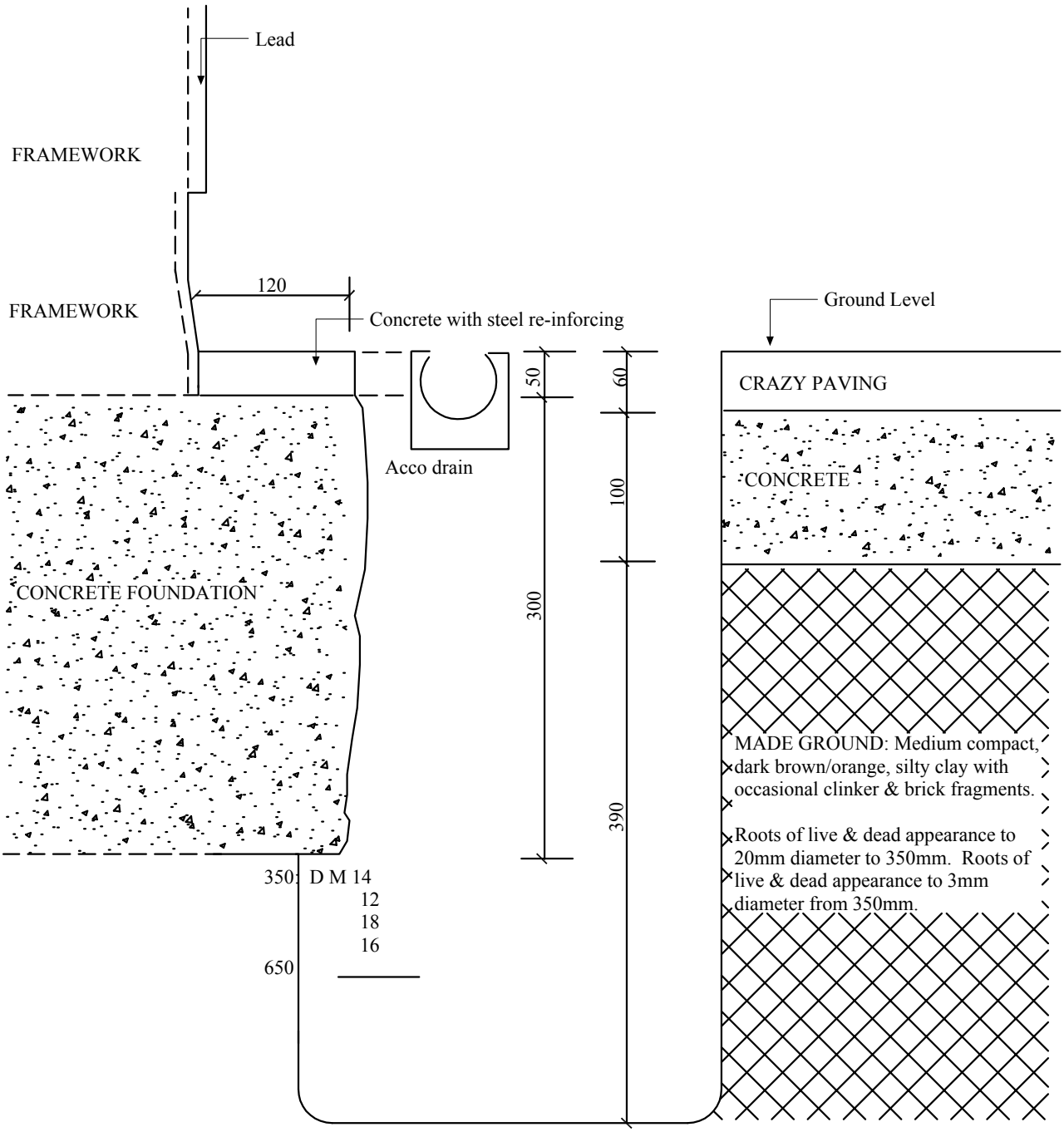
Work carried out for: Crawford Claims Management Ltd

Excavation Method: Hand Tools

Drawn by: DVC

Weather: DRY

Ground Level mOD:



FOR STRATA BELOW 550mm SEE BH LOG 1

Remarks: All measurements in millimetres.

Key:

D	Small disturbed sample	J	Jar sample
B	Bulk disturbed sample	V	Pilcon Vane (kPa)
W	Water sample	M	Mackintosh probe
TDTD	Too dense to drive		

Logged: SP | Checked: SE | Approved: | Scale: N.T.S.

Trial Pit No: 2

Sheet: 1 of 1

Job No: 246119E

Date: 13.02.15

Site: 4b Hampstead Hill Gardens, London NW3

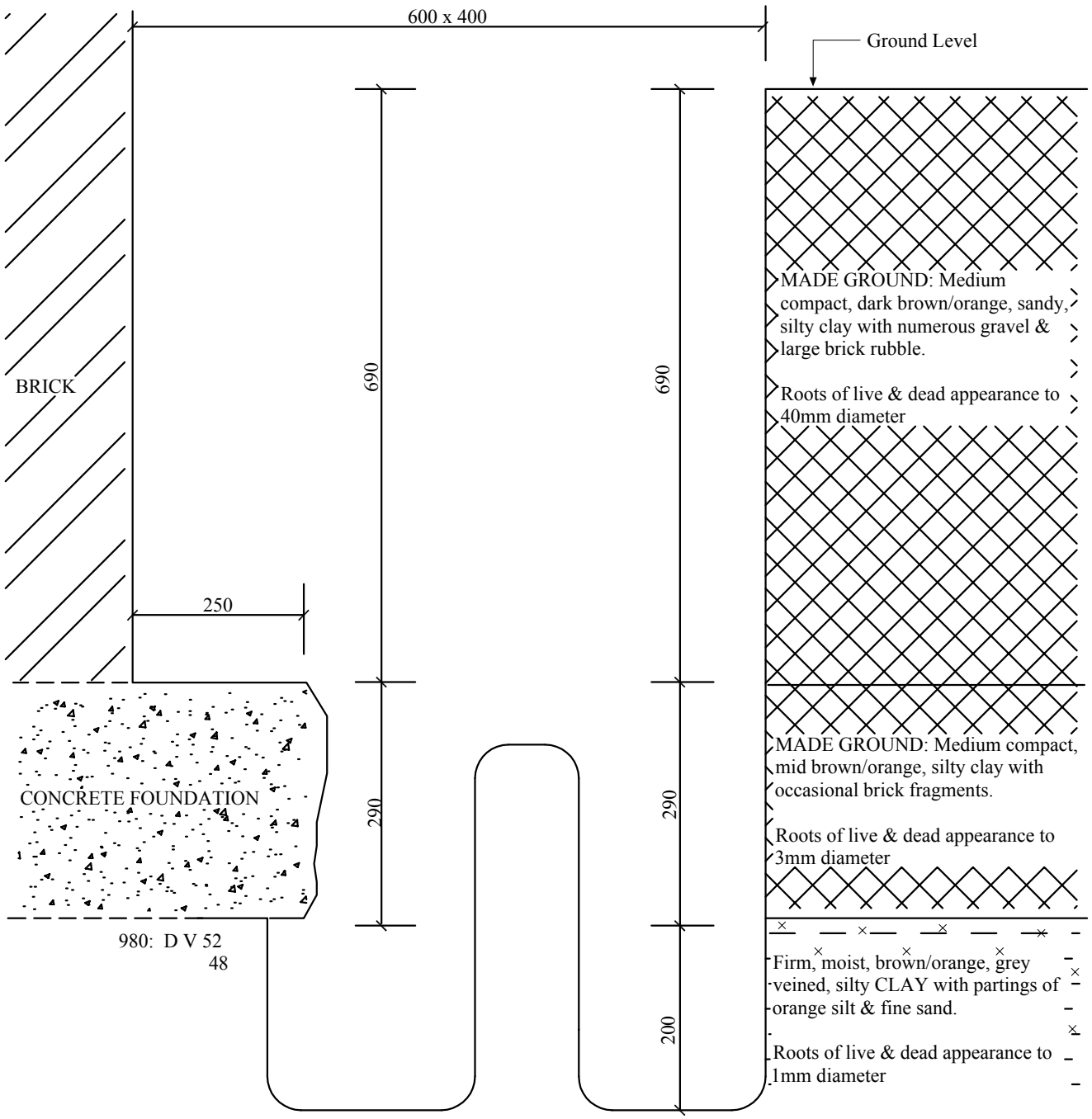
Work carried out for: Crawford Claims Management Ltd

Excavation Method: Hand Tools

Drawn by: DVC

Weather: DRY

Ground Level mOD:



FOR STRATA BELOW 1180mm SEE BH LOG 2

Remarks: All measurements in millimetres.

Water strike at 980mm. Standing water level at 1140mm in Trial Pit on completion. Borehole augered at rear of Trial Pit to avoid water

Key:

D	Small disturbed sample	J	Jar sample
B	Bulk disturbed sample	V	Pilcon Vane (kPa)
W	Water sample	M	Mackintosh probe
TDTD	Too dense to drive		

Logged: SP | Checked: SE | Approved: | Scale: N.T.S.

Borehole No: 1

Sheet: 1 of 1

Job No: 246119E

Site: 4b Hampstead Hill Gardens, London

Boring Method: Hand Auger

Date: 13/02/2015

Diameter: 80mm

Coordinates:

Ground Level mOD:

Work Carried out for: Crawford Claims Management Ltd

Depth (m)	Description of Strata	Thick-ness (m)	Legend	Sample	Test Type	Test Result	Depth (m)	Field Records/Comments	Depth to water (m)
	As Trial Pit 1	0.55							
0.55	MADE GROUND: Medium compact, dark brown/orange, silty clay with occasional clinker & brick fragments.	0.25						Roots of live & dead appearance to 2mm diameter to 2m	
0.80	Firm, mid brown/orange, grey veined, silty CLAY with partings of orange silt & fine sand.	0.70		D	V	70 68	1.00		
1.50	Very stiff, mid brown/orange, grey veined, silty CLAY with partings of orange silt & fine sand with occasional crystals.	0.80		D	V	140+ 140+	1.50		
				D	V	140+ 140+	2.00	No roots observed below 2m	
2.30	Borehole ends at 2.3m Obstruction - Too dense to hand auger								

Remarks:

Borehole dry and open on completion

Key: T.D.T.D. Too Dense to Drive

D Small disturbed sample J Jar sample

B Bulk disturbed sample V Pilcon Vane (kPa)

W Water sample M Mackintosh Probe

Logged: SP Checked: SE Typed by: DVC Scale: NTS Weather: DRY

Borehole No: 2

Sheet: 1 of 1

Job No: 246119E

Site: 4b Hampstead Hill Gardens, London

Boring Method: Hand Auger

Date: 13/02/2015

Diameter: 80mm

Coordinates:

Ground Level mOD:

Work Carried out for: Crawford Claims Management Ltd

Depth (m)	Description of Strata	Thick-ness (m)	Legend	Sample	Test Type	Test Result	Depth (m)	Field Records/Comments	Depth to water (m)
	As Trial Pit 2	1.16							
1.16	Firm, mid brown/orange, grey veined, silty CLAY with partings of orange silt & fine sand.	0.04						Ropots of live & dead appearance to 1mm diameter to 1.4m	
1.20	Stiff, mid brown/orange, grey veined, silty CLAY with partings of orange silt & fine sand with occasional crystals.	1.80		D	V	86 88	1.50	Hair & fibrous roots to 2.6m	
				D	V	92 98	2.00		
				D	V	120 116	2.50	No roots observed below 2.6m	
3.00	Borehole ends at 3m			D	V	110 112	3.00		

Remarks: Borehole dry and open on completion

Key: T.D.T.D. Too Dense to Drive

D Small disturbed sample J Jar sample

B Bulk disturbed sample V Pilcon Vane (kPa)

W Water sample M Mackintosh Probe

Logged: SP Checked: SE Typed by: DVC Scale: NTS Weather: DRY

Our Ref : 246119

Laboratory Testing Results

Date Sampled: 13/02/2015

Location : 4B, Hampstead Hill Gardens, NW3

Date Received : 16/02/2015

Work carried out for: Crawford Claims Management

Date Tested : 16/02/2015

Date of Report : 23/02/2015

Sample Ref TP/BH No	Sample Ref Depth (m)	Type	Moisture Content (%) *[1]*	Soil Fraction > 0.425mm (%) *[2]*	Liquid Limit (%) *[3]*	Plastic Limit (%) *[4]*	Plasticity Index (%) *[5]*	Liquidity Index *[5]*	Modified Plasticity Index (%) [6	Soil Class *[7]*	Filter Paper Contact Time (h) *[8]*	Soil Sample Suction (kPa)	In situ Shear Vane Strength (kPa) *[9]*	Organic Content (%)*[10]*	pH Value *[11]*	Sulphate Content (g / l) SO_3 *[12]*	Sulphate Content (g / l) SO_4 *[13]*	Class *[14]*
1	0.35(U/S)	D	26	22	48	20	28	0.20	22	CI	Not Suitable For Suction Testing (Made Ground)							
	1.0	D	26	<5							168	105	69					
	1.5	D	23	<5	73	24	49	-0.01	49	CV	168	624	> 140					
	2.0	D	28	<5	75	25	50	0.07	50	CV	168	589	> 140					

Test Methods / Notes

[1] BS 1377 : Part 2 : 1990, Test No 3.2

[2] Estimated if <5%, otherwise measured

[3] BS 1377 : Part 2 : 1990, Test No 4.4

[4] BS 1377 : Part 2 : 1990, Test No 5.3

[5] BS 1377 : Part 2 : 1990, Test No 5.4

[6] BRE Digest 240 : 1993

[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils

[8] In-house method S9a adapted from BRE IP 4/93

[9] Values of shear strength were determined in situ by CET using a Pilcon hand vane or Geonor vane (GV).

[10] BS 1377 : Part 3 : 1990, Test No 4

[11] BS 1377 : Part 2 : 1990, Test No 9

[12] BS 1377 : Part 3 : 1990, Test No 5.6

[13] $SO_4 = 1.2 \times SO_3$

[14] BRE Special Digest One (Concrete in Aggressive Ground) August 2005

Note that if the SO_4 content falls into the DS-4 or DS-5 class, it would be prudent to consider the sample as falling into the DS-4m or DS-5m class respectively unless water soluble magnesium testing is undertaken to prove otherwise

Key

D	Disturbed sample (small)
B	Disturbed sample (bulk)
U	Undisturbed sample
W	Groundwater sample
ENP	Essentially Non-Plastic by inspection
U/S	Underside of Foundation

Our Ref : 246119

Laboratory Testing Results

Date Sampled : 13/02/2015

Location : 4B, Hampstead Hill Gardens, NW3

Date Received : 16/02/2015

Work carried out for: Crawford Claims Management

Date Tested : 16/02/2015

Date of Report : 23/02/2015

Sample Ref. TP/BH No.	Sample Ref. Depth (m)	Type	Moisture Content (%) *[1]*	Soil Fraction > 0.425mm (%) *[2]*	Liquid Limit (%) *[3]*	Plastic Limit (%) *[4]*	Plasticity Index (%) *[5]*	Liquidity Index *[5]*	Modified Plasticity Index (%) [6	Soil Class *[7]*	Filter Paper Contact Time (h) *[8]*	Soil Sample Suction (kPa)	In situ Shear Vane Strength (kPa) *[9]*	Organic Content (%)*[10]*	pH Value *[11]*	Sulphate Content (g / l) SO_3 *[12]*	Sulphate Content (g / l) SO_4 *[13]*	Class *[14]*
2	0.98(U/S)	D	35	<5	77	28	49	0.14	49	CV	168	72.3	50					
	1.5	D	27	<5							168	381	87					
	2.0	D	34	<5	74	27	47	0.15	47	CV	168	335	95					
	2.5	D	33	<5							168	358	118					
	3.0	D	33	<5	77	30	47	0.07	47	CV	168	326	111					

Test Methods / Notes

[1] BS 1377 : Part 2 : 1990, Test No 3.2

[2] Estimated if <5%, otherwise measured

[3] BS 1377 : Part 2 : 1990, Test No 4.4

[4] BS 1377 : Part 2 : 1990, Test No 5.3

[5] BS 1377 : Part 2 : 1990, Test No 5.4

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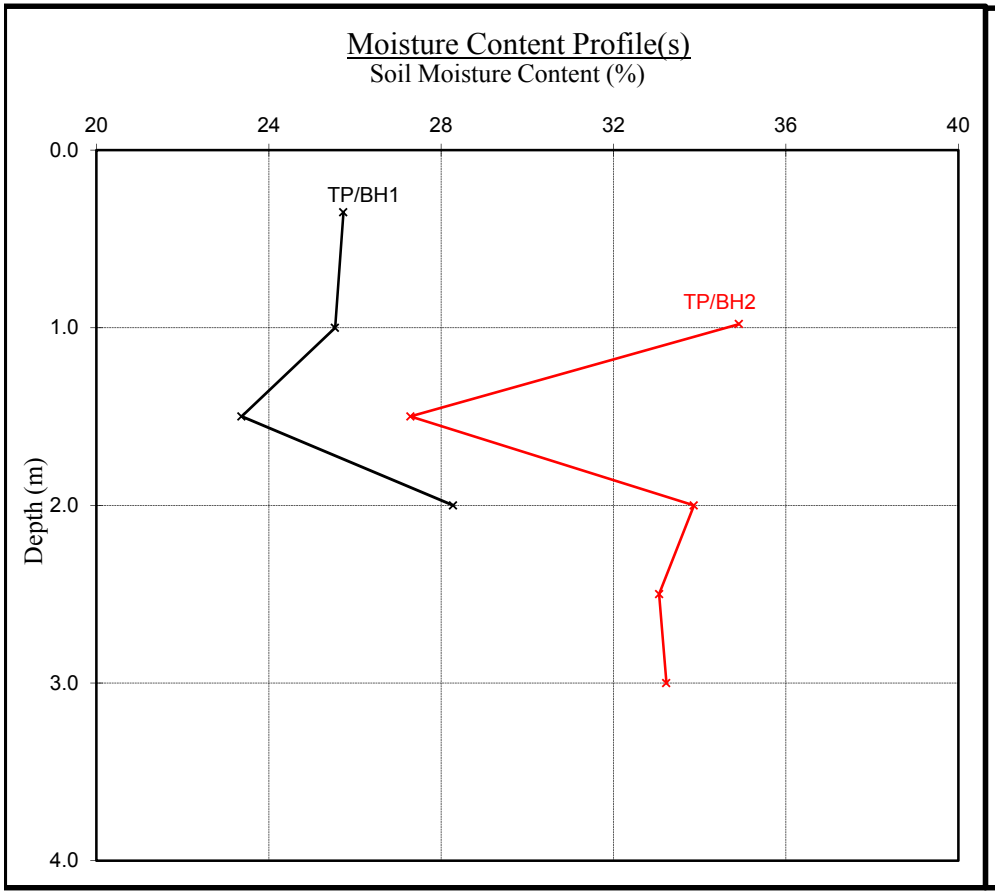
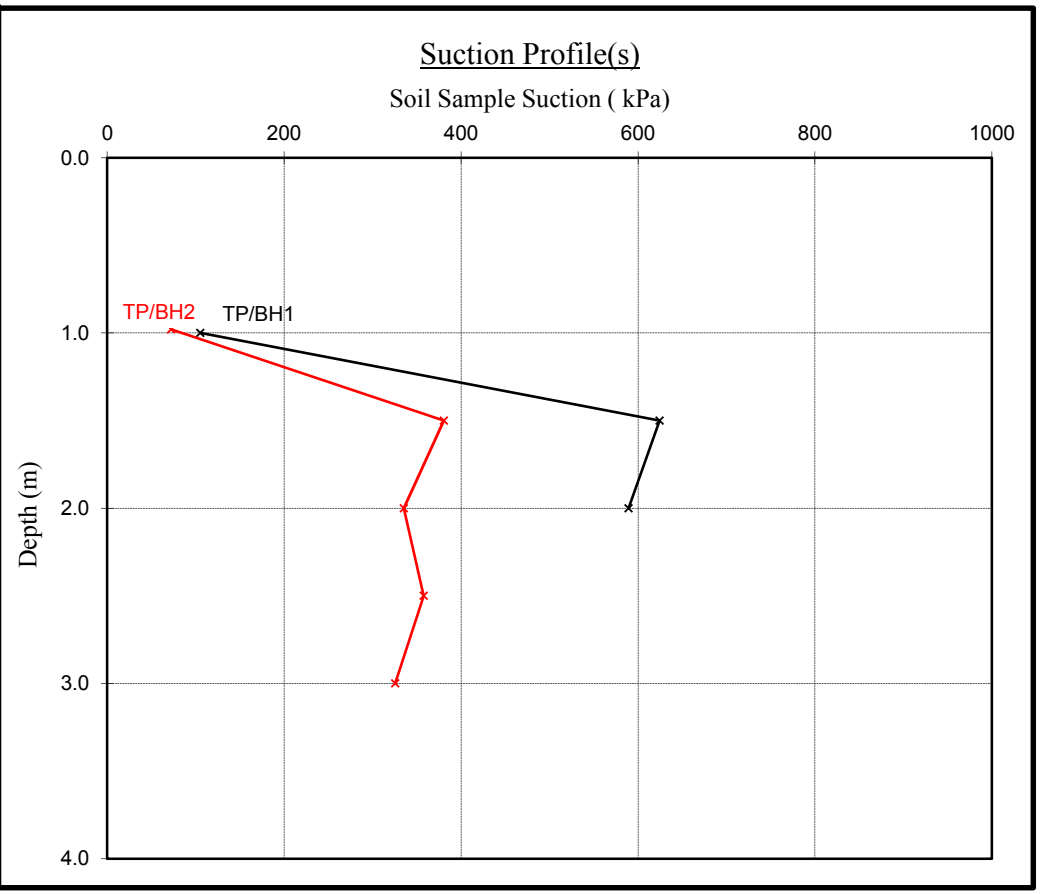
B	Disturbed sample (bulk)
U	Undisturbed sample
W	Groundwater sample
ENP	Essentially Non-Plastic by inspection
U/S	Underside of Foundation

Moisture Content and Suction Profiles

Our Ref :	246119		Date Sampled : 13/02/2015
Location :	4B, Hampstead Hill Gardens, NW3		Date Received : 16/02/2015
Work carried out for:	Crawford Claims Management	Note : Unless specifically noted the profiles have not been related to a site datum.	Date Tested : 16/02/2015
			Date of Report : 23/02/2015





Notes

1. If plotted, 0.4 LL and PL+2 (after Driscoll, 1983) should only be applied to London Clay (and similarly overconsolidated clays) at shallow depths.

Note

When shown, the theoretical equilibrium suction profiles are based on conventional assumptions associated with London Clay (and similarly overconsolidated clays) at shallow depths. Note that the sample disturbance component is dependant on the method of sampling and any subsequent recompaction. The above plots show this to be 100kPa which is the value suggested by the BRE on the basis of their limited number of tests on recompacted samples. This may or may not be appropriate in this instance and judgement should be exercised.

Moisture Content and Shear Strength Profiles

Our Ref : 246119

Location : 4B, Hampstead Hill Gardens, NW3

Work carried out for: Crawford Claims Management

Note : Unless specifically noted the profiles have not been related to a site datum.

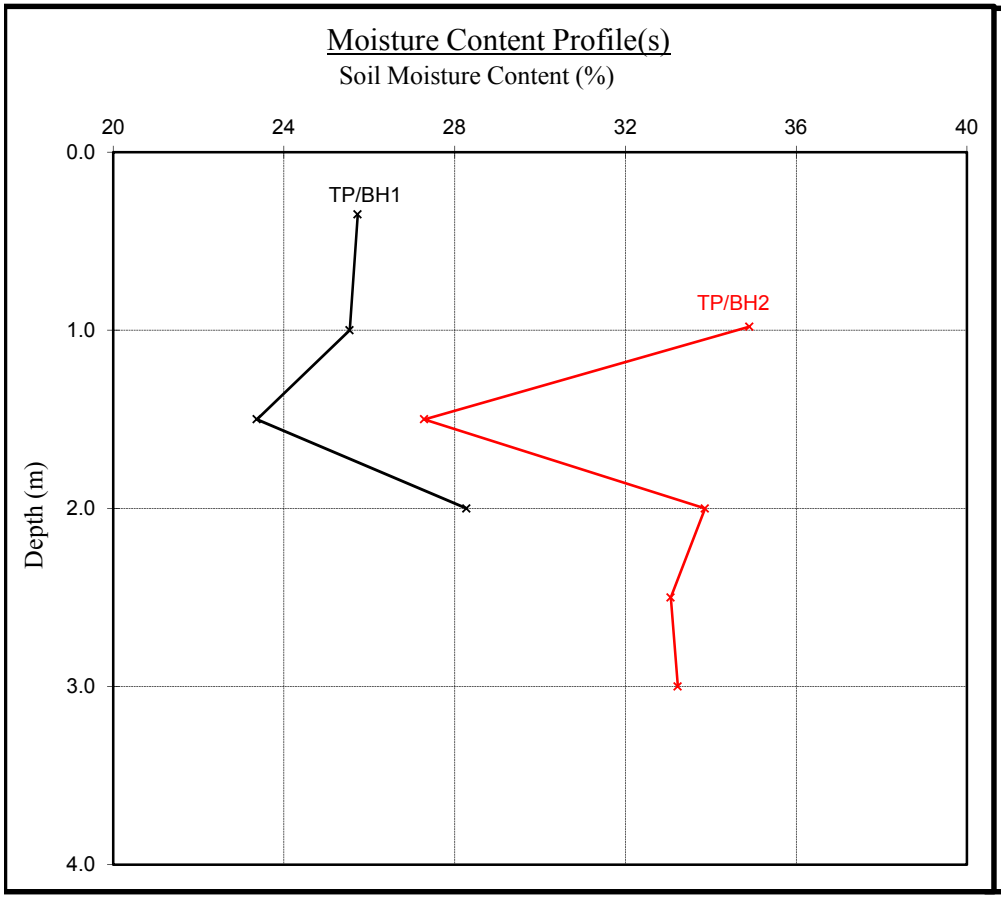
Date Sampled : 13/02/2015

Date Received : 16/02/2015

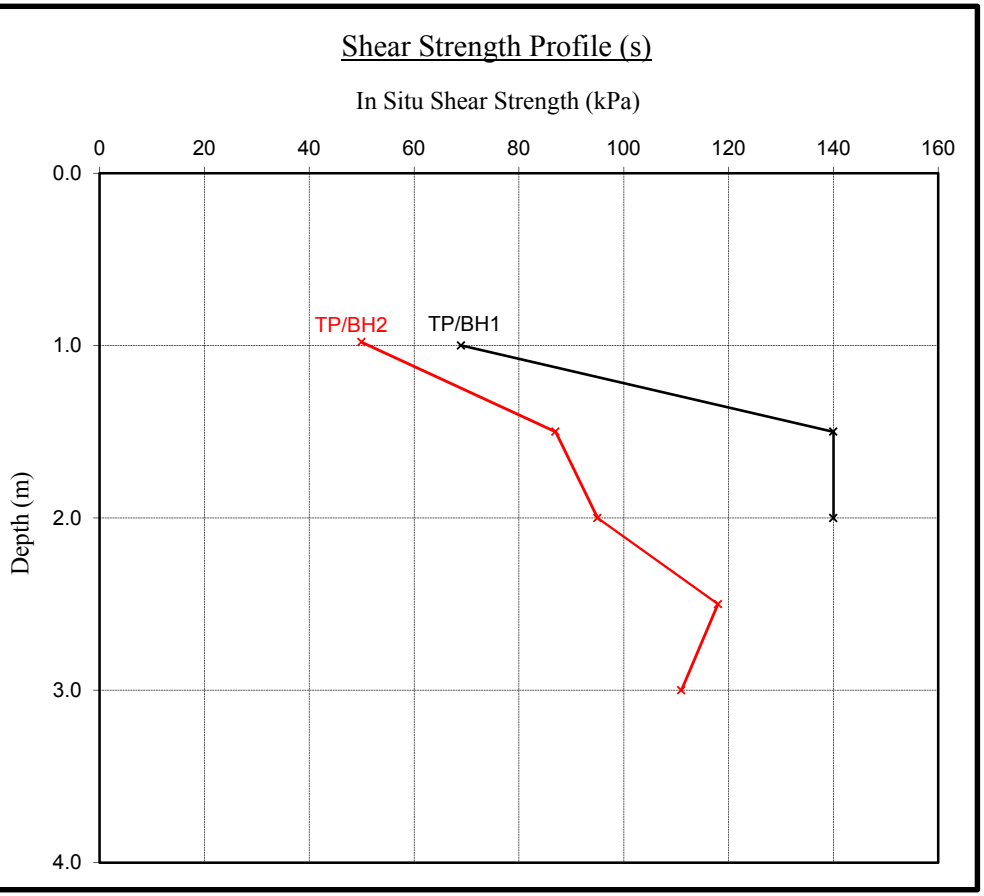
Date Tested : 16/02/2015

Date of Report : 23/02/2015

Moisture Content Profile(s)



Shear Strength Profile (s)



Notes

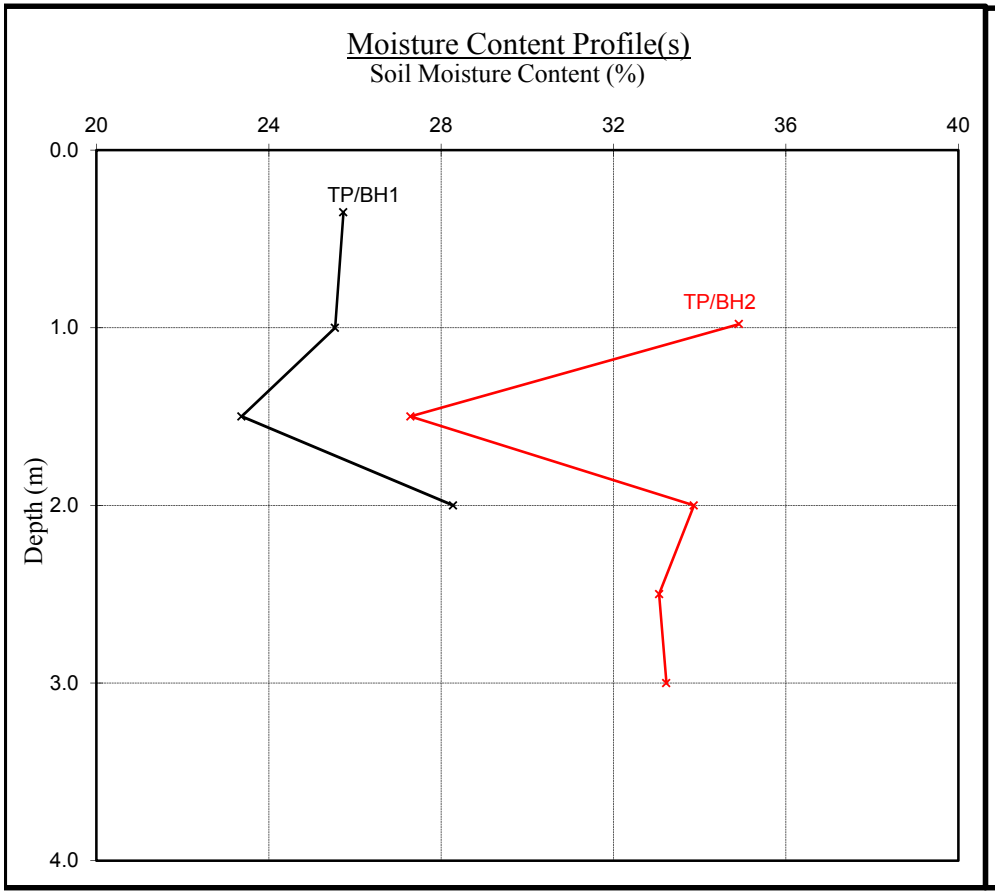
1. If plotted, 0.4 LL and PL+2 (after Driscoll, 1983) should only be applied to London Clay (and similarly overconsolidated clays) at shallow depths.

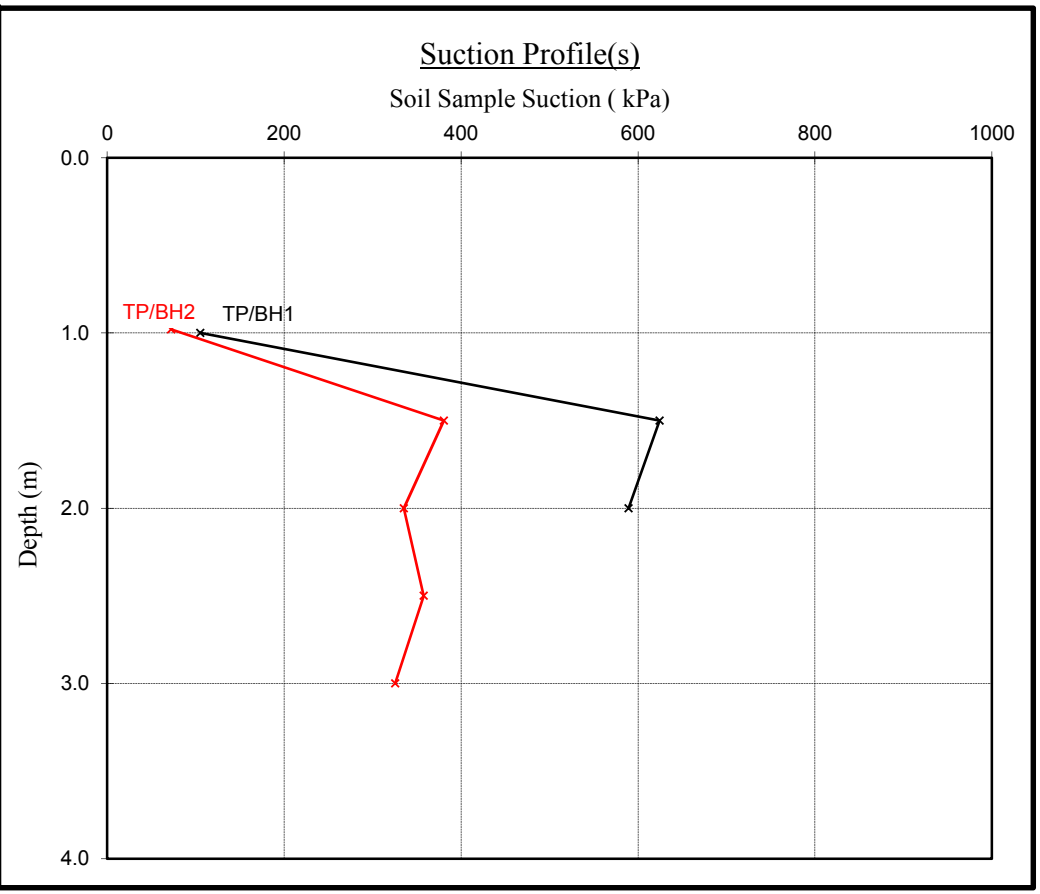
Note

Unless otherwise stated, values of Shear Strength were determined in situ by CET using a Pilcon Hand Vane the calibration of which is limited to a maximum reading of 140 kPa.

Moisture Content and Suction Profiles

Our Ref :	246119		Date Sampled : 13/02/2015
Location :	4B, Hampstead Hill Gardens, NW3		Date Received : 16/02/2015
Work carried out for:	Crawford Claims Management	Note : Unless specifically noted the profiles have not been related to a site datum.	Date Tested : 16/02/2015
			Date of Report : 23/02/2015





Notes

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Note

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EPSL
European Plant Science Laboratory

Sheet: 1 of 1

Job No: **246119**
Date: **19/02/2015**
Order No: **670026**

EPSL Ref: **R11000**

Site: **4B Hampstead Hill Gardens, Hampstead,**

Work carried out for: **Crawford Claims MGMT SUS**

Certificate of Analysis

The following work was commissioned by CET on behalf of their client. Root samples were obtained in sealed packets from the above site with no reference given as to the types of tree or shrub from which they may have originated.
The results were as follows -

Trial pit/ Borehole number	Root diameter (mm)	Tree, shrub or climber from which root originates	Result of starch test
TP1 (USF)	3 mm	Carpinus spp. 5 roots	Positive
BH1 (to 2m)	2 mm	Carpinus spp. 5 roots	Positive
TP2 (USF)	1 mm	Carpinus spp.	Positive
TP2 (USF)	1 mm	Leguminosae spp. 3 roots	Positive
BH2 (to 1.4m)	<1 mm	Carpinus spp. 2 roots	Positive
BH2 (to 1.4m)	<1 mm	Leguminosae spp.	Positive

Carpinus spp. are hornbeams.
Leguminosae spp. include laburnum, Robinia (false acacia or locust), broom, the pagoda tree and the climber wisteria.

MDM

Address for correspondence: EPSL, Intec, Parc Menai, Bangor, Gwynedd, North Wales, LL57 4FG
Telephone: 01248 672 652
e-mail: lab@innovation-environmental.co.uk
Head of Laboratory Services : M D Mitchell B.Sc. (Hons), M.Phil.
Plant Anatomist : Dr G S Turner B.Sc. (Hons), M.Sc., Ph.D
Plant Anatomist : Dr D P Aebischer B.Sc. (Hons), M.Sc., Ph.D
Consultant: Dr M P Denne B.Sc. (Hons), M.Sc., Ph.D
Registered in England. No 3256771, Registered Office:Yarmouth House, 1300 Parkway, Solent Business Park, Hampshire, PO15 7AE

To:	**Crawford Claims Management**	Client Ref:	SU1404491
Ftao: Gordon McEwan		Job No.	246119
		Claim No:	
Site:	**4B Hampstead Hill Gardens**	Date:	16-Feb-15

ESTIMATE

Item		Amount
	No recommendations required to the private drainage surveyed.	
	Manhole 1 & the main run at the front of the property is shared, therefore owned by the water authority. Repairs may be the responsibility of the water authority.	

Notes
Repairs to shared runs and off boundary pipe-work may be the responsibility of the water authority.

Condition Grade
A - Structurally sound with no leakage evident.
B - Cracks and fractures observed.
C - Structurally unsound

Total	£0.00
plus VAT @20%	£0.00
Total + VAT	**£0.00**

Quotation is binding only if accepted within 28 days from date of issue and is subject to our Standard Terms and Conditions
The price qualification notes, stated on the drainage solutions schedule of rates, apply to this quotation.
CET Structures Ltd undertakes to return to site free of charge to carry out remedial work to the drainage repairs set out above for a period of 2 months from the date of this invoice. The company standard charge rates will apply to the visit should the work requested be unrelated to the said repairs.

Underground Drainage Report	Sheet: 1 of 2 Job No: 246119 Date: 13-Feb-15	Site: 4B Hampstead Hill Gardens Work carried out for: Crawford Claims Management

MANHOLE DETAILS

Manhole	Depth to Invert	Condition
MH1	790mm	As built

CCTV Survey:-

1. Drainage Run:

From manhole 1 run 1 to upstream - 100mm clay foul water - upstream (not shared)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Paving for 1.5m
0.4	LR	Line right	then under building
2.2	LR	Line right	
2.8	LU	Line up	
2.8	FH	Finish - reached U/S INT SVP	

Water test: Nowhere to bung

2 Drainage Run:

From manhole 1 run 2 to rain water gully 1 - 100mm clay surface water - upstream (not shared)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Paving
0.0	WL	Water level 5%	
1.0	LU	Line up	
1.6	FH	Finish - reached RWG1	

Gully condition: As built

Water Test Grade:

0 - Unable to fill
1 - Heavy Loss
2 - Medium Loss over 2 minutes
3 - Slow Loss over 5 minutes
4 - No Loss

Underground Drainage Report	Sheet: 2 of 2 Job No: 246119 Date: 13-Feb-15	Site: 4B Hampstead Hill Gardens Work carried out for: Crawford Claims Management

3 Drainage Run:

From manhole 1 run 3 to upstream - 100mm clay surface water - upstream (shared off boundary)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Paving for 1m
0.2	WL	Water level 10%	then off boundary
0.4	RFJ	Roots fine at joint	
0.8	DES	Debris silt 30%	
1.4	JDM	Joint displaced medium	
2.4	FH	Finish - reached YG off boundary	

Water test: Run off boundary

4 Drainage Run:

From manhole 1 run 4 to upstream - 100mm clay surface water - upstream (shared off boundary)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Paving for 1m
3.0	FH	Finish - reached U/S off boundary	then off boundary

Water test: Run off boundary

- End of Survey -

Our assessment of the drainage system is based on our visual inspection and on information collated at the time of the survey. Where assumptions have been made these are based on our experience and do not constitute any form of guarantee, nor do we guarantee that further deterioration will not occur following this survey. CCTV video records will be stored for a period of 3 months from date of inspection and then destroyed.

Water Test Grade:

0 - Unable to fill
1 - Heavy Loss
2 - Medium Loss over 2 minutes
3 - Slow Loss over 5 minutes
4 - No Loss

Water Authority Sewer Condition Codes

B	Broken pipe at… (or from… to..) o'clock
BR	Branch Major
CC	Crack circumferential from… to… o'clock
CL	Crack longitudinal @… o'clock
CM	Cracks multiple from… to… o'clock
CN	Connection at… o'clock, diameter… mm
CNI	Connection at… o'clock, diameter… mm, intrusion… r
CU	Camera under water
CX	Connection defective at… o'clock
CXI	Connection defective at… o'clock, diameter… mm, intrusion… mm
D	Deformed sewer… %
DB	Displaced bricks at (or from.. to..) o'clock
DC	Dimension of sewer changes at this point
DE	Debris (non silt/grease)… % cross-sectional loss
DEG	Debris grease… % cross-sectional area loss
DES	Debris silt… % cross-sectional area loss
DI	Dropped invert, gap… mm
EHJ	Encrustation heavy from.. to.. o'clock % cross-sectional area loss (at joint)
ELJ	Encrustation light from.. to.. o'clock%
EMJ	Encrustation medium from.. to.. o'clock %, cross-secti area loss (at joint)
ESH	Scale heavy… % cross-sectional area loss from... to.. o'clock
ESL	Scale light from… to… o'clock
ESM	Scale medium… % cross-sectional area loss from… t o'clock
FC	Fracture circumferential from… to… o'clock
FL	Fracture longitudinal at… o'clock
FM	Fractures multiple from… to… o'clock
GO	General observation at this point
GP	General photograph number… taken at this point
H	Hole in sewer at… o'clock
IDJ	Infiltration dripper at (or from… to…) o'clock (at joint)
IGJ	Infiltration gusher at (or from… to…) o'clock (at joint)
IRJ	Infiltration runner at (or from… to…) o'clock (at joint)
ISJ	Infiltration seeper at (or from… to…) o'clock (at joint)
JDM	Joint displaced medium
JDL	Joint displaced large
JN	Junction at…o'clock, diameter…mm
JX	Junction defective at.. o'clock, diameter.. mm
LC	Lining of sewer changes/starts/finishes at this point
LD	Line of sewer deviates down
LL	Line of sewer deviates left
LN	Line defect at (or from.. to..) o'clock
LR	Line of sewer deviates right
LU	Line of sewer deviates up
MB	Missing bricks at.. (or from.. to..) o'clock
MC	Material of sewer changes at this point
MH	Manhole/node
MM	Mortar missing medium at.. (or from.. to..) o'clock
MS	Mortar missing surface at.. (or from.. to..) o'clock
MT	Mortar missing total at.. (or from.. to..) o'clock
OB	Obstruction… % height/diameter loss
OJL	Open joint large
OJM	Open joint medium
PC	Length of pipe forming sewer changes at this point, new length…mm
RFJ	Roots fine (at joint)
RMJ	Roots mass… % cross-sectional area loss (at joint)
RTJ	Roots tap (at joint)
SA	Survey abandoned
SC	Shape of sewer changes at this point
SSL	Surface damage, spalling large at (or from.. to..) o'clock
SSM	Surface damage, spalling medium at (or from.. to..) o'clock
SSS	Surface damage, spalling slight at (or from.. to..) o'clock
SWL	Surface damage, wear large at… (or from.. to..) o'clock
SWM	Surface damage, wear medium at… (or from.. to..) o'clock
SWS	Surface damage, wear slight at.. (or from.. to..) o'clock
V	Vermin (rats and mice)
WL	Water level… % height/diameter
X	Sewer collapsed… % cross-sectional area loss
FH	End of survey

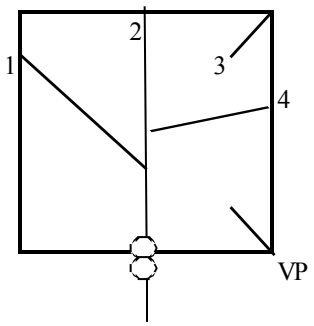
Contract: 246119

Date: 13-Feb-15

Operative Initial: SP

Site Address: 4B Hampstead Hill Gardens

M/H: 1 **Depth:** 790mm



Chamber Dimension (mm):

Depths of run if different to invert level:-

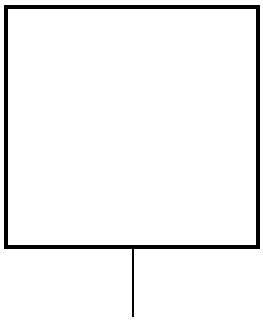
Run 3 - 250mm

VP - 250mm

Manhole Condition

As built

M/H: **Depth:**



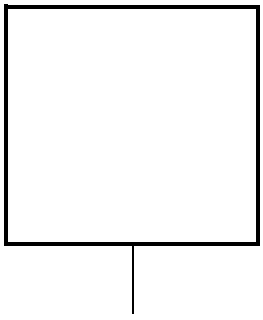
Chamber Dimension (mm):

Depths of run if different to invert level:-

Run

Manhole Condition

M/H: **Depth:**



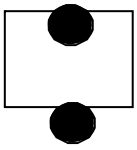
Chamber Dimension (mm):

Depths of run if different to invert level:-

Run

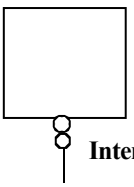
Manhole Condition

KEY….



Internal Back Drop

External Back Drop



Interceptor

Water Pressure Test Results

From: To: Pass / Fail