



FACTUAL REPORT

OF

INVESTIGATION

AT:- 55 Shirlock Road, London

ON:- 18/09/2012

FOR:- CRAWFORD CLAIMS MGMT SUS

REF:- SU1203736-Mr Martin Jourdan

JOB NO:- 134039

SITE INVESTIGATION DIVISION

Issuing office: Lawness Barns, Mountnessing Road, Billericay, Essex CM12 0TS

Tel: 0845 4504573 Fax: 01332 814750 email: enquiries@cetsafehouse.com



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

Home Emergency Services - Site Investigation - Drainage Services - Construction Materials Testing

WWW.CETSAFEHOUSE.COM

Investigation Layout Plan

Sheet: 1 of 1
Job No: 134039E
Date: 18/09/12

Site: 55 Shirlock Road, NW3

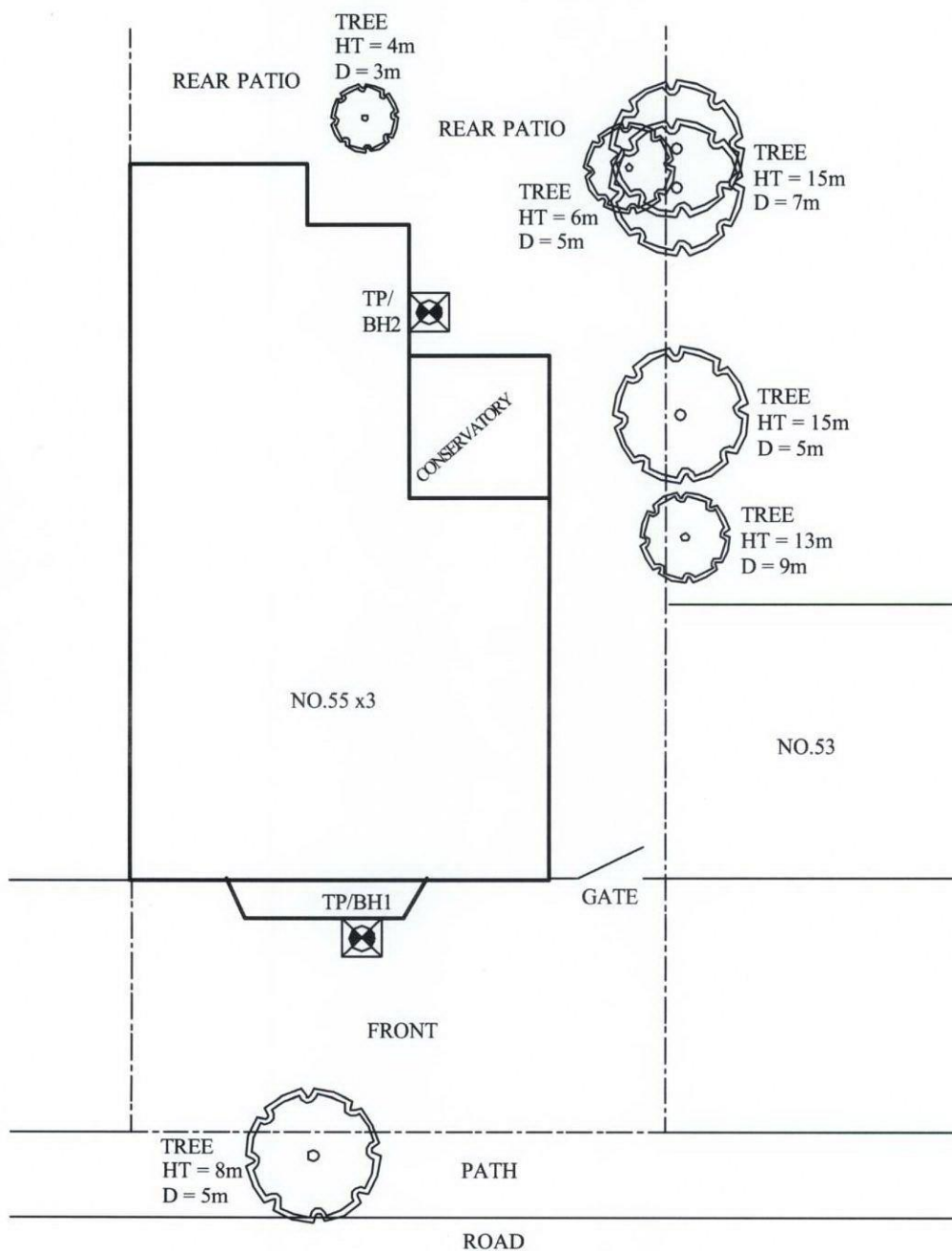
PM
(SI)

PS
(Checked)

MG
(Drawn)

Weather: Dry

Work carried out for: Crawford Claims MGMT SUS



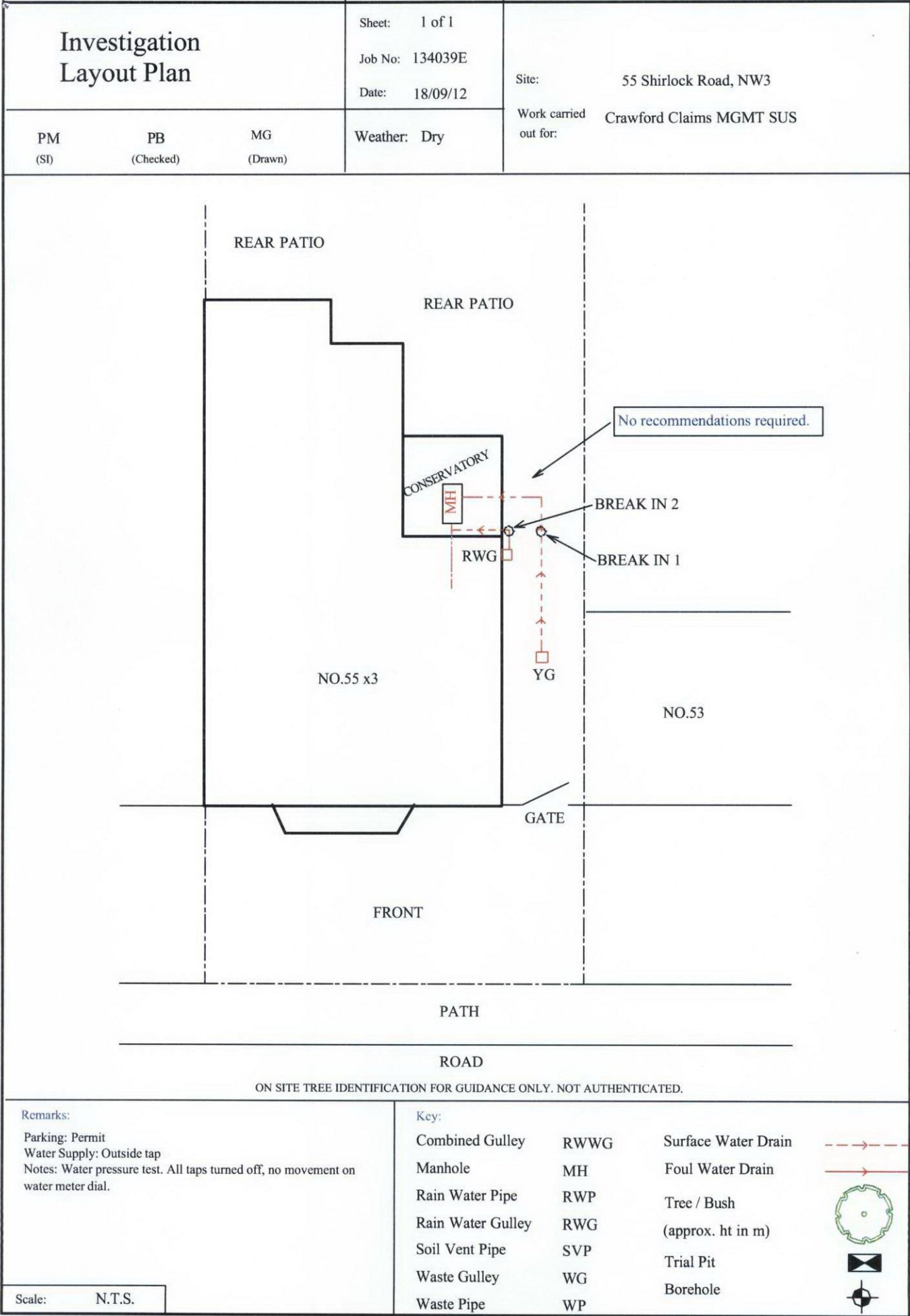
ON SITE TREE IDENTIFICATION FOR GUIDANCE ONLY. NOT AUTHENTICATED.

Remarks:
Trial pit/borehole 2 relocated as agreed with engineer.

Key:

Combined Gully	RWWG	Surface Water Drain	---
Manhole	MH	Foul Water Drain	---
Rain Water Pipe	RWP	Tree / Bush	(approx. ht in m)
Rain Water Gully	RWG	Trial Pit	
Soil Vent Pipe	SVP	Borehole	
Waste Gully	WG		
Waste Pipe	WP		

Scale: N.T.S.



Trial Pit No: 1		Sheet: 1 of 1	Site: 55 Shirlock Road, NW3
		Job No: 134039E	
Excavation Method: Hand tools		Date: 18/09/12	Work carried out for: Crawford Claims MGMT SUS
Weather: Dry		Drawn by: MG	
		Ground Level mOD:	

500 x 500

BRICK

RENDER

BRICK

50 50 150

350 80 70 200

CRUSHED BRICK FOUNDATION

D V 84
80

PP 1.6

Ground Level

PAVING SLABS

SAND

MADE GROUND - Medium compact, mid brown, sandy, silty clay with brick and yorkstone pieces.
Roots of live appearance to 12mmØ.

— Stiff, mid brown, mottled orange, grey veined, silty CLAY with partings of orange silt and fine sand.
Roots of live appearance to 2mmØ.

— Stiff, mid brown, mottled orange, grey veined, silty CLAY with partings of orange silt and fine sand and occasional crystals.
Hair and fibrous roots

50 150 300 200 150

FOR STRATA BELOW 850mm SEE BH LOG 1

Remarks: All measurements in millimetres.		Key:	
		D Small disturbed sample B Bulk disturbed sample W Water sample TDTD Too dense to drive	PP Kg / Cm ² V Pilcon Vane (kPa) M Mackintosh probe
Logged: PM	Checked: PS	Approved:	Scale: N.T.S.

Trial Pit No: 2

Sheet: 1 of 1

Job No: 134039E

Date: 18/09/12

Site: 55 Shirlock Road, NW3

Excavation Method: Hand tools

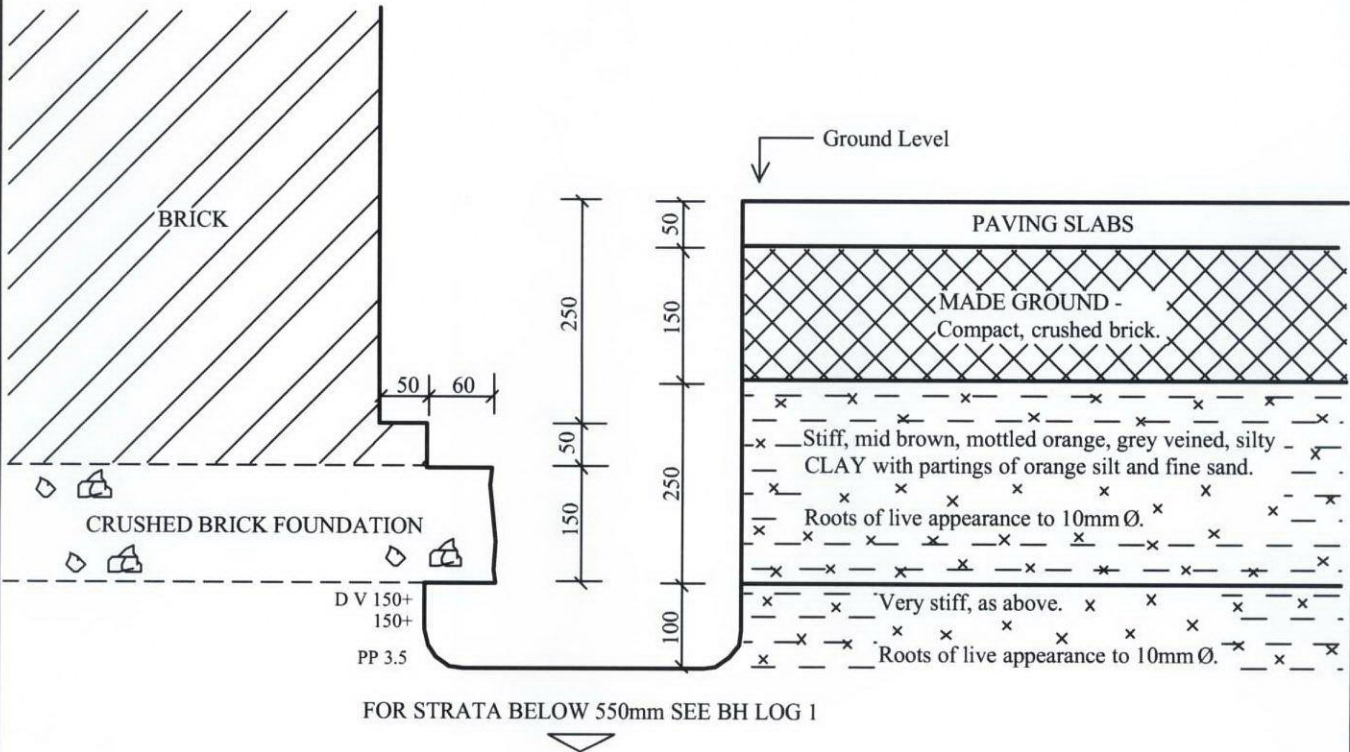
Drawn by: MG

Work carried

out for: Crawford Claims MGMT SUS

Weather: Dry

Ground Level
mOD:



Remarks: All measurements in millimetres.

Key:

D Small disturbed sample

B Bulk disturbed sample

W Water sample

TDTD Too dense to drive

PP Kg / CM²

V Picon Vane (kPa)

M Mackintosh probe

Logged: PM

Checked: PS

Approved:

Scale: N.T.S.

Borehole No: 1			Sheet: 1 of 1		Site: 55 Shirlock Road, NW3					
Boring Method: Hand Auger			Job No: 134039E							
Diameter: 75mm			Date: 18/09/2012							
Coordinates:			Ground Level mOD:		Work Carried out for: Crawford Claims MGMT SUS					
Depth (m)	Description of Strata	Thick-ness (m)	Legend	Sample	Test Type	Result	Depth (m)	Field Records/Comments	Depth to water (m)	
0.85	As trial pit 1.	0.85								
3.00	Stiff, mid brown/orange, grey veined, silty CLAY with partings of orange silt and fine sand and crystals.	2.15	— .x	D	V	80	1.50	No roots observed		
			—			86				
			—			PP 1.8				
			— .x		D	V	98			2.00
			—				102			
			—				PP 2.3			
			—		D	V	98			2.50
			—				106			
			—				PP 02			
			— .x		D	V	110			3.00
—	118									
— .x	PP 2.2									
	Borehole ends at 3m.									
Remarks: Borehole dry and open on completion.					Key: T.D.T.D. Too Dense to Drive D Small disturbed sample PP Kg / Cm ² B Bulk disturbed sample V Pilcon Vane (kPa) W Water sample M Mackintosh Probe					
Logged: PM	Checked: PS	Drawn by: MG	Scale: NTS		Weather: Dry					

Borehole No: 2		Sheet: 1 of 1		Site: 55 Shirlock Road, NW3					
Boring Method: Hand Auger		Job No: 134039E							
Diameter: 75mm		Date: 18/09/2012							
Coordinates:		Ground Level mOD:		Work Carried out for: Crawford Claims MGMT SUS					
Depth (m)	Description of Strata	Thickness (m)	Legend	Sample	Test Type	Result	Depth (m)	Field Records/Comments	Depth to water (m)
0.55	As trial pit 2.	0.55							
1.00	Very stiff, mid brown/orange, grey veined, silty CLAY with partings of orange silt and fine sand.	0.45	—x		D	V 140 142 PP 3.1	1.00	From 0.55m to 1.5m roots of live appearance to 0.5mm diameter.	
1.50	Very stiff, mid brown/orange, grey veined, silty CLAY with partings of orange silt and fine sand, claystone nodules and crystals.	0.50	—x		D	V 114 114 PP 1.9	1.50	From 1.5m to 2.3m, dead and decomposing root fragments.	
3.00	Stiff, as above.	1.50	x —		D	V 112 120 PP 2.1	2.00		
			—x		D	V 126 130 PP 2.7	2.50	From 2.3m to 3m, no roots observed.	
			—x		D	V 130 130 PP 2.3	3.00		
	Borehole ends at 3m.								
Remarks: Borehole dry and open on completion.					Key: T.D.T.D. Too Dense to Drive D Small disturbed sample PP Kg / Cm ² B Bulk disturbed sample V Pilcon Vane (kPa) W Water sample M Mackintosh Probe				
Logged: PM	Checked: PS	Drawn by: MG	Scale: NTS		Weather: Dry				

Our Ref : 134039

Location : 55 Shirlock Road, NW3

Work carried

out for: CRAWFORD CLAIMS MGMT SUS

Laboratory Testing Results

Date Sampled: 18/09/2012

Date Received : 28/09/2012

Date Tested : 29.09-17.10.12

Date of Report : 01/11/2012

Sample Ref		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]	Oedometer Strain [8]	Estimated Heave Potential (Dd) (mm) [9]	In situ Shear Vane Strength (kPa) [10]	Organic Content (%) [11]	pH Value [12]	Sulphate Content (g/l)		Class [15]
TP/BH No	Depth (m)															SO ₃ [13]	SO ₄ [14]	
1	0.70(U/S)	D	30	0.2	72	23	50	0.16	49	CV	0.0258	3.5	82					
	1.5	D	29								0.0256	4.0	83					
	2.0	D	30	0.6	70	25	45	0.13	45	CH	0.0212	2.5	100					
	2.5	D	33								0.0232	2.5	102					
	3.0	D	34	0.9	73	26	48	0.18	47	CV	0.0230	2.5	114					

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 Test Procedure S17a: One Dimensional Swell/Strain Test

[9] Estimated Heave Potential (Dd)

[10] Values of shear strength were determined in situ by CET Group using

a Pilcon hand vane or Geonor vane (GV).

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

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

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

[14] SO₄ = 1.2 x SO₃

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

Note that if the SO₄ 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 : 134039

Location : 55 Shirlock Road, NW3

Work carried

out for: CRAWFORD CLAIMS MGMT SUS

Laboratory Testing Results

Date Sampled : 18/09/2012

Date Received : 28/09/2012

Date Tested : 29.09-17.10.12

Date of Report : 01/11/2012

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TP/BH No.	Depth (m)															SO ₃ [13]			SO ₄ [14]	
2	0.45(U/S)	D	25	0.4	70	20	50	0.09	49	CH	0.0539	2.3	> 150							
	1.0	D	25								0.0253	2.8	141							
	1.5	D	30								0.0245	2.5	114							
	2.0	D	30	1.2	72	24	49	0.12	48	CV	0.0005	2.5	116							
	2.5	D	32								0.0045	2.5	128							
	3.0	D	34	0.9	76	27	49	0.13	48	CV	0.0227	2.5	130							
Test Methods / Notes																				

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 Test Procedure S17a: One Dimensional Swell/Strain Test

[9] Estimated Heave Potential (Dd)

[10] Values of shear strength were determined in situ by CET Group using

a Pilcon hand vane or Geonor vane (GV).

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

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

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

[14] SO₄ = 1.2 x SO₃

[15] BRE Digest 363 : 1991, Table 1. Reference should also be made to Table 2 which depending on the pH and exposure conditions may require the class to be advanced by 1 or 2.

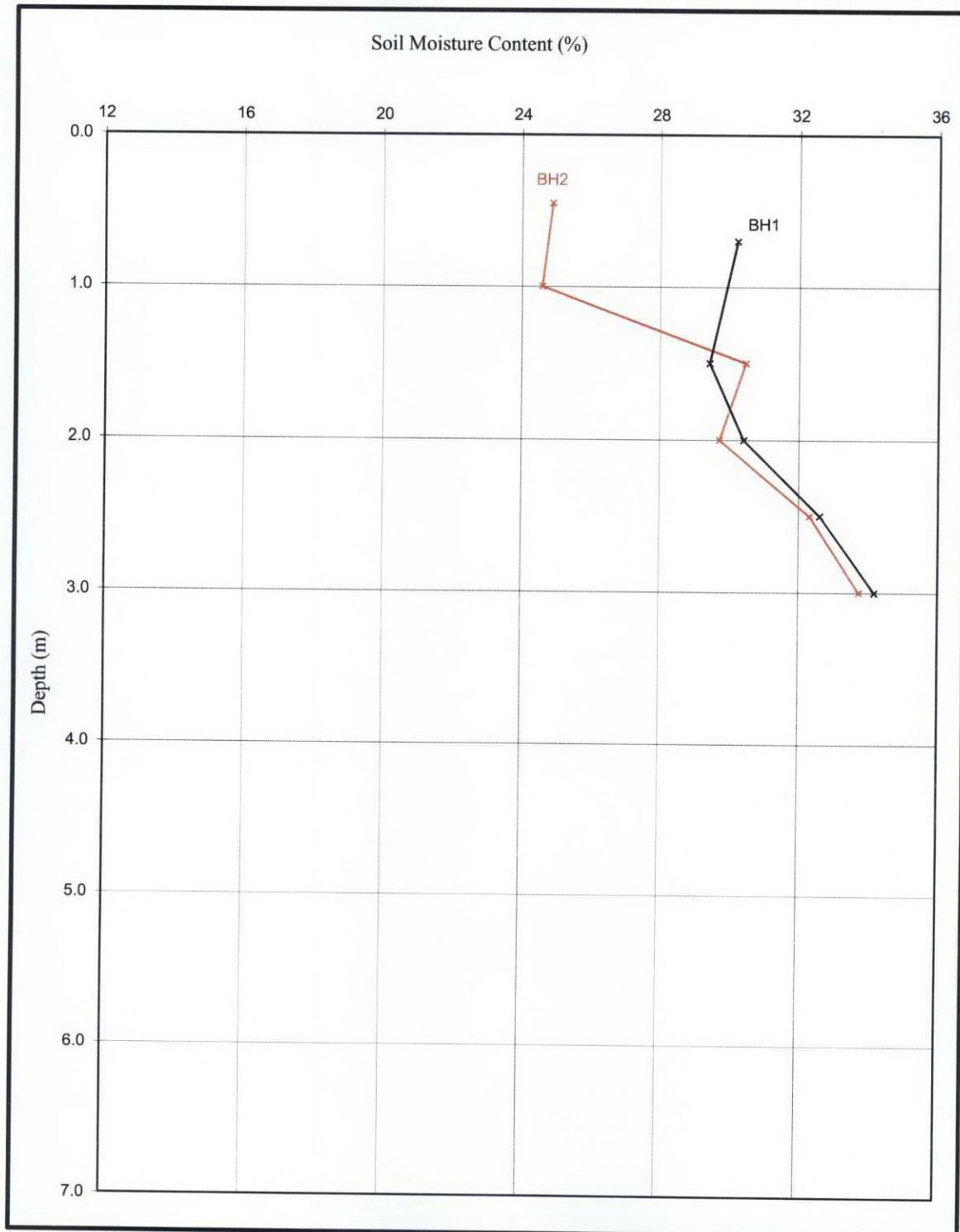
Key

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

Moisture Content Profiles

Our Ref : 134039
Location : 55 Shirlock Road, NW3
Work carried out for:
CRAWFORD CLAIMS MGMT SUS

Date Sampled : 18/09/2012
Date Received : 28/09/2012
Date Tested : 29.09-17.10.12
Date of Report : 01/11/2012



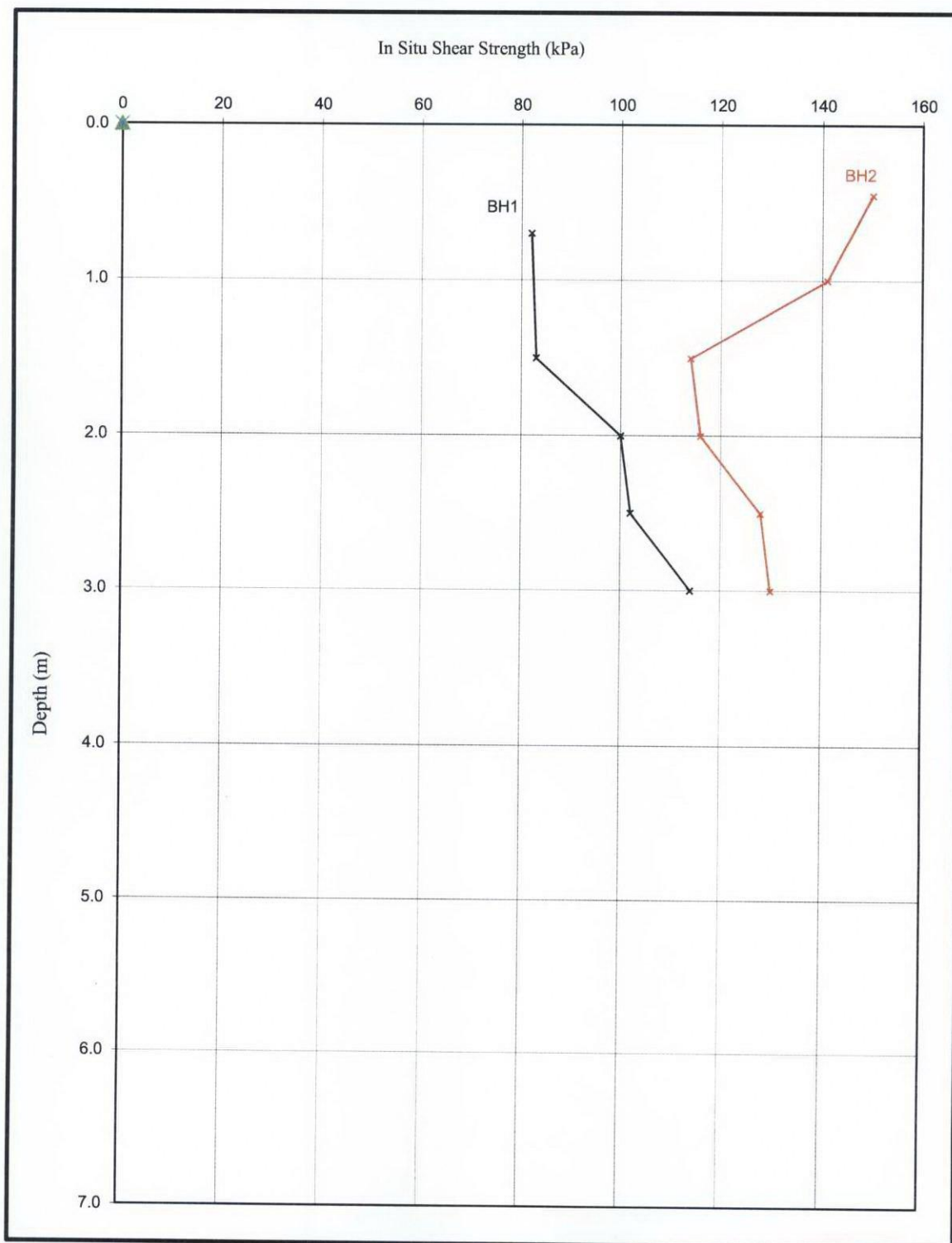
Notes

1. If the Soil Fraction $> 0.425\text{mm}$ exceeds 5% the Equivalent Moisture Content of the remainder (calculated in accordance with BS 1377: Part 2 : 1990, cl.3.2.4 note 1) is also plotted and the alternative profile additionally shown as an appropriately coloured broken line.
2. 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.
3. Unless specifically noted the profiles have not been related to a site datum.

Shear Strength Profiles

Our Ref : 134039
Location : 55 Shirlock Road, NW3
Work carried out for:

Date Sampled : 18/09/2012
Date Received : 28/09/2012
Date Tested : 29.09-17.10.12
Date of Report : 01/11/2012



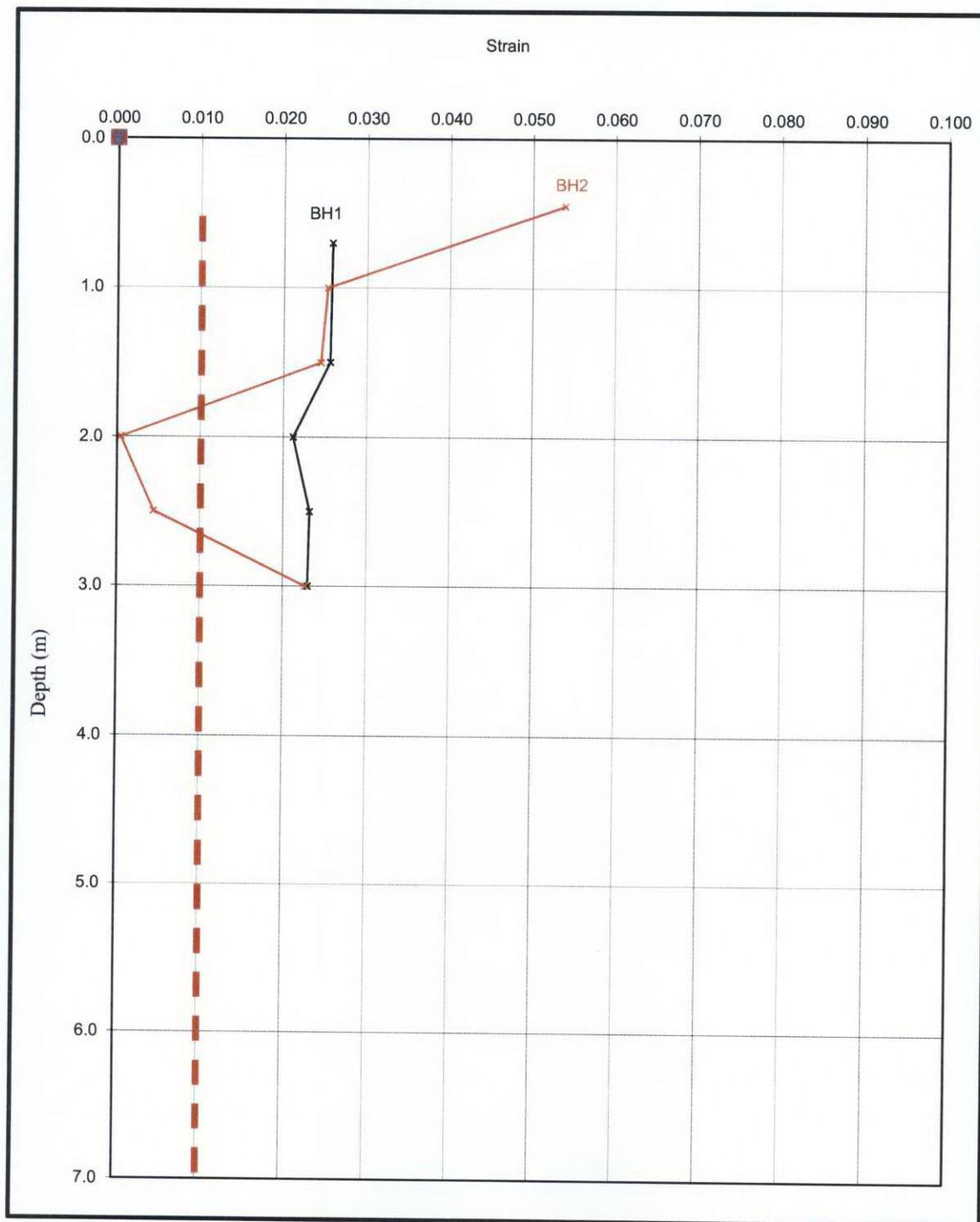
Note

1. Unless otherwise stated, values of Shear Strength were determined in situ by CET Group using a Pilcon Hand Vane the calibration of which is limited to a maximum reading of 150 kPa.
2. Unless specifically noted the profiles have not been related to a site datum.

Oedometer Strain Profiles

Our Ref : 134039
 Location : 55 Shirlock Road, NW3
 Work carried out for:
 CRAWFORD CLAIMS MGMT SUS

Date Sampled : 18/09/2012
 Date Received : 28/09/2012
 Date Tested : 29.09-17.10.12
 Date of Report : 01/11/2012



--- Remoulding Disturbance

Assumptions

1. Soil Bulk Density (moist unit weight) is equal to 2039kg/m³
2. The water table is assumed as 1.0m below ground level.
3. Shrinkage Factor (sf) of 2 has been applied to the predicted heave, where applicable
4. Any possible surcharge stresses due to construction are not considered

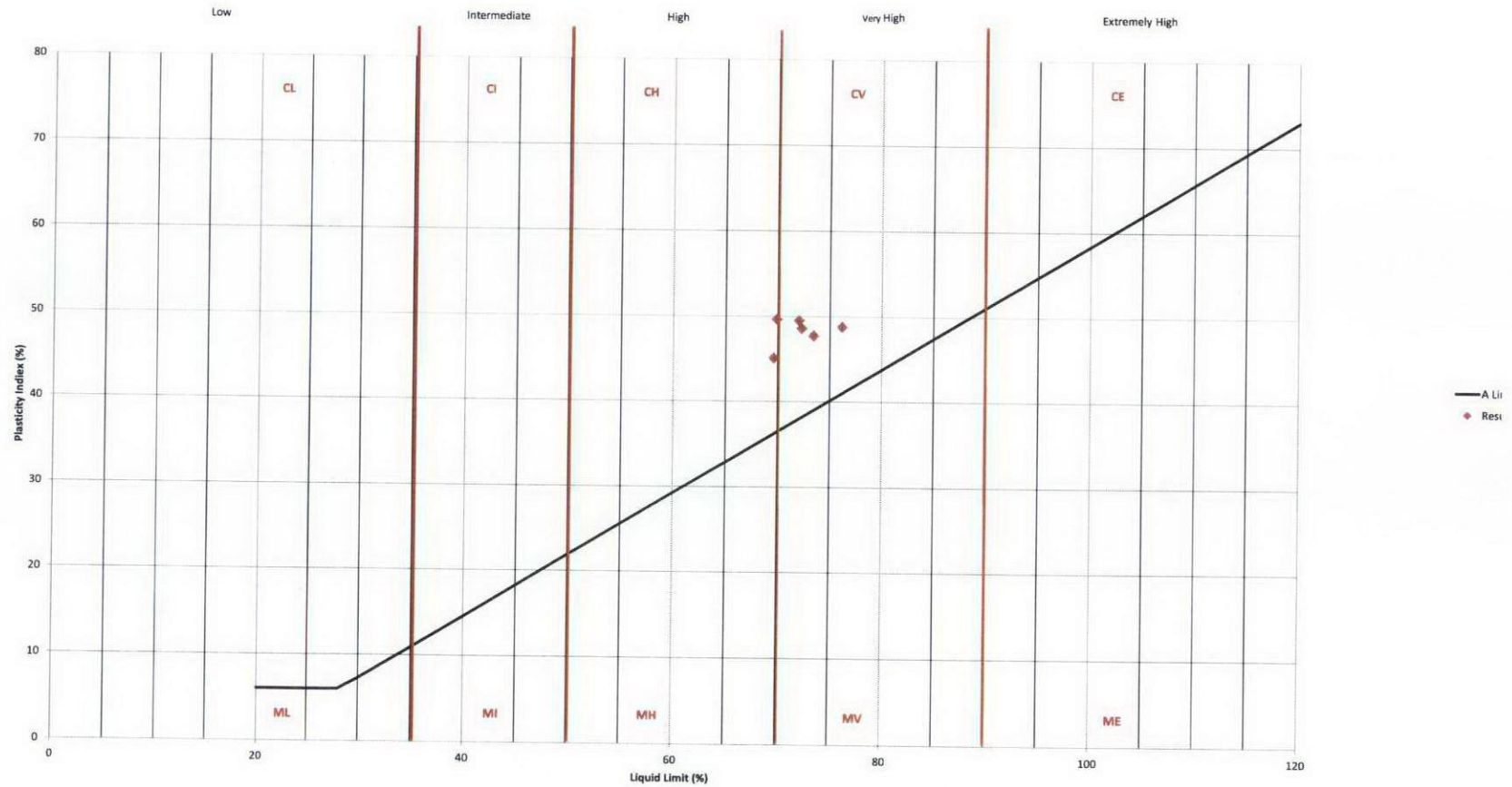
Notes

1. Sample prepared in accordance with BS1377: Part 1: 1990 clause 7.7 at Natural (as received) Moisture
2. Unless specifically noted the profiles have not been related to a site datum.

Plasticity Chart

Our Ref : 134039
Location : 55 Shirlock Road, NW3
Work carried out for: CRAWFORD CLAIMS MGMT SUS

Date Sampled : 18/09/2012
Date Received : 28/09/2012
Date Tested : 29.09-17.10.12
Date of Report : 01/11/2012



Tree Root Identification Ltd

Sheet: 1 of 1

Job No: 134039
Date: 20/09/2012
Order No: 415281
Our Ref: CET200912

Site: 55 Shirlock Road,
London.
Work carried
out for: Crawford Claims MGMT SUS

Certificate of Analysis

The following work was commissioned by CET Safehouse Limited 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 -

<u>Trial pit/ Borehole number</u>	<u>Root diameter (mm)</u>	<u>Tree, shrub or climber from which root originates</u>	<u>Result of starch test#</u>
TP1 (underside)	thread-like	too immature to analyse (3 roots)	—
TP2 (underside)	10.0	<u>Tilia</u> (lime) (4 roots)	positive
BH2 (depth: 1.5m)	<0.5	<u>Tilia</u> (lime) (2 roots)	positive

The presence of starch indicates that the root was alive in the recent past.

DR RONALD D MACLEOD
Principal Scientist

Address for correspondence: 3 Langley Drive, Kinnoull Hill, Perth, PH2 7XA.

Telephone: 01738 630873

e-mail: rdmmacleod@btconnect.com web site : www.treerootidentification.com

Principal Scientist: R.D. MacLeod, B.Sc., Ph.D.,

Accounts/Quality Manager: Fiona M. Sinclair, H.N.C. (Management)

Registered in Scotland, No. 358068. Registered Office: "Mandaya", Highfield Place, Bankfoot, PH1 4AX.

CET SAFEHOUSE, Unit E2, Boundary Court, Willow Farm Business Park, Castle Donington. DE74 2NN
Telephone - 01332 813700 Fax - 01332 814750 E-mail - drainage.solutions@cetsafehouse.com

To: **CRAWFORD CLAIMS MGMT SUS**
Flat: M Onofrio
Site: **55 Shirlock Road, NW3**

Client Ref: **SU1203736**
Job No. **134039**
Claim No: **12NU602854**
Date: **21-Sep-12**

ESTIMATE

Item	Amount
------	--------

No recommendations required.

Notes

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

Total	£0.00
-------	-------

Condition Grade

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

plus VAT @20%	£0.00
---------------	-------

Total + VAT	£0.00
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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.
The SubsNet 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	Site: 55 Shirlock Road, NW3
	Job No: 134039	Work carried out for: CRAWFORD CLAIMS MGMT SUS
	Date: 18-Sep-12	

MANHOLE DETAILS

Manhole	Depth to Invert	Condition
N/A	N/A	N/A

CCTV Survey:-

1. Drainage Run:

Break in 1 to yard gully - 100mm clay surface water - Upstream (not shared)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Concrete
0.5	DEG	10%	
2.4	DEG	20%	
3.2	GO	Reached yard gully	
Gully Condition: As built			

2. Drainage Run:

Break in 2 to manhole 1 - 100mm clay surface water - Downstream (not shared)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Concrete
0.2	DEG	80%	
2.1	LL		Slabs
2.7	FH	Reached manhole 1	

Water Test Grade:

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

Underground Drainage Report

Sheet: 2 of 2

Job No: 134039

Date: 18-Sep-12

Site: 55 Shirlock Road, NW3

Work carried out for: CRAWFORD CLAIMS MGMT SUS

3. Drainage Run:

Break in 2 to rain water gully - 100mm clay surface water - Upstream (not shared)

Metres: Code: Observations:

Surface Material/
Condition:

0.0 Start

0.3 FH Reached rain water gully 1

Gully Condition: As built

4. Drainage Run:

Break in 2 to downstream - 100mm clay surface water - Downstream (not shared)

Metres: Code: Observations:

Surface Material/
Condition:

0.0 Start

0.1 LR

0.3 DE 25%

0.5 LL

0.7 FH

Unable to push camera, reached main run from manhole

Concrete

Under conservatory

- 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	JN Junction at...o'clock, diameter...mm
BR Branch Major	JX Junction defective at.. o'clock, diameter.. mm
CC Crack circumferential from... to... o'clock	LC Lining of sewer changes/starts/finishes at this point
CL Crack longitudinal @... o'clock	LD Line of sewer deviates down
CM Cracks multiple from... to... o'clock	LL Line of sewer deviates left
CN Connection at... o'clock, diameter... mm	LN Line defect at (or from.. to..) o'clock
CNI Connection at... o'clock, diameter... mm, intrusion... r	LR Line of sewer deviates right
CU Camera under water	LU Line of sewer deviates up
CX Connection defective at... o'clock	MB Missing bricks at.. (or from.. to..) o'clock
CXI Connection defective at... o'clock, diameter... mm, intrusion... mm	MC Material of sewer changes at this point
D Deformed sewer... %	MH Manhole/node
DB Displaced bricks at (or from.. to..) o'clock	MM Mortar missing medium at.. (or from.. to..) o'clock
DC Dimension of sewer changes at this point	MS Mortar missing surface at.. (or from.. to..) o'clock
DE Debris (non silt/grease)... % cross-sectional loss	MT Mortar missing total at.. (or from.. to..) o'clock
DEG Debris grease... % cross-sectional area loss	OB Obstruction... % height/diameter loss
DES Debris silt... % cross-sectional area loss	OJL Open joint large
DI Dropped invert, gap... mm	OJM Open joint medium
EHJ Encrustation heavy from.. to.. o'clock % cross-sectional area loss (at joint)	PC Length of pipe forming sewer changes at this point, new length...mm
ELJ Encrustation light from.. to.. o'clock%	RFJ Roots fine (at joint)
EMJ Encrustation medium from.. to.. o'clock %, cross-sectional area loss (at joint)	RMJ Roots mass... % cross-sectional area loss (at joint)
ESH Scale heavy... % cross-sectional area loss from... to... o'clock	RTJ Roots tap (at joint)
ESL Scale light from... to... o'clock	SA Survey abandoned
ESM Scale medium... % cross-sectional area loss from... to... o'clock	SC Shape of sewer changes at this point
FC Fracture circumferential from... to... o'clock	SSL Surface damage, spalling large at (or from.. to..) o'clock
FL Fracture longitudinal at... o'clock	SSM Surface damage, spalling medium at (or from.. to..) o'clock
FM Fractures multiple from... to... o'clock	SSS Surface damage, spalling slight at (or from.. to..) o'clock
GO General observation at this point	SWL Surface damage, wear large at... (or from.. to..) o'clock
GP General photograph number... taken at this point	SWM Surface damage, wear medium at... (or from.. to..) o'clock
H Hole in sewer at... o'clock	SWS Surface damage, wear slight at.. (or from.. to..) o'clock
IDJ Infiltration dripper at (or from... to...) o'clock (at joint)	V Vermin (rats and mice)
IGJ Infiltration gusher at (or from... to...) o'clock (at joint)	WL Water level... % height/diameter
IRJ Infiltration runner at (or from... to...) o'clock (at joint)	X Sewer collapsed... % cross-sectional area loss
ISJ Infiltration seep at (or from... to...) o'clock (at joint)	FH End of survey
JDM Joint displaced medium	
JDL Joint displaced large	

Contract: 134039

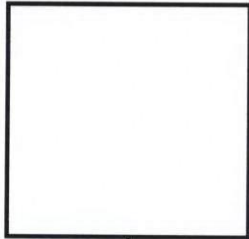
Date: 21-Sep-12

Site Address: 55 Shirlock Road, NW3

Operative Initial:

Page: 1 of 1

M/H: Depth:



Chamber Dimension (mm):

Depths of run if
different to invert level:-

A _____
B _____
C _____
D _____
E _____
F _____
G _____
H _____

Manhole Condition

M/H: Depth:



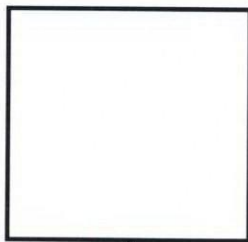
Chamber Dimension (mm):

Depths of run if
different to invert level:-

A _____
B _____
C _____
D _____
E _____
F _____
G _____
H _____

Manhole Condition

M/H: Depth:



Chamber Dimension (mm):

Depths of run if
different to invert level:-

A _____
B _____
C _____
D _____
E _____
F _____
G _____
H _____

Manhole Condition

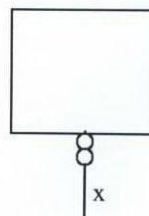
KEY...



Internal Back Drop.



External Back Drop.



Interceptor