SITE INVESTIGATION
FACTUAL REPORT

Report No: 408281

Client: Cunningham Lindsey - Maidstone

Site: 32 South Villas

Client Ref: 6353138-[redacted]

Date of Visit: 13/03/17

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

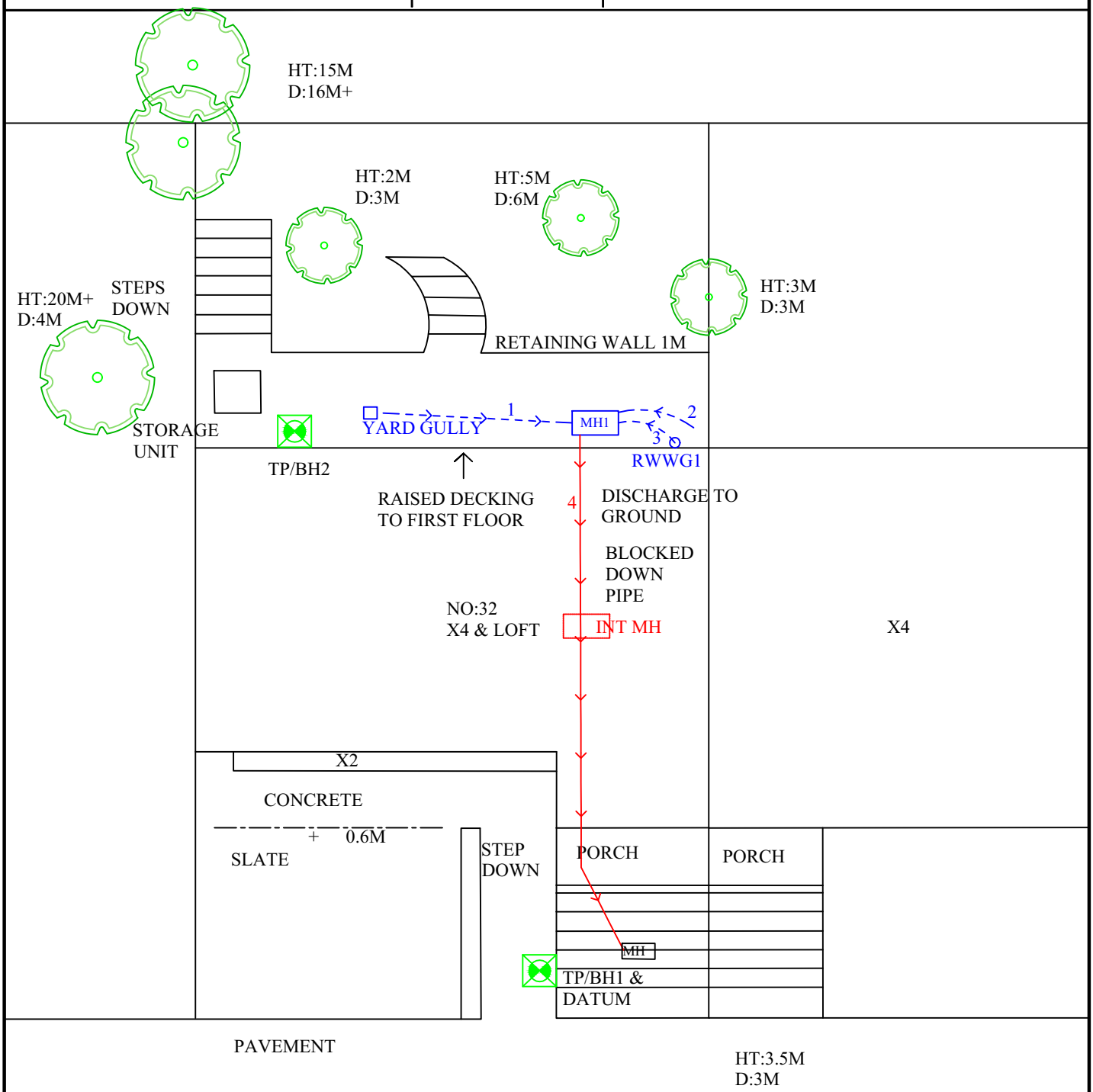
Investigation Layout Plan

Sheet: 1 of 1
Job No: 408281
Date: 13/03/2017

Site: 32 South Villas, NW11
Work carried out for: Cunningham Lindsey

SP (SI) | SA (Checked) | SK (Drawn)

Weather: DRY



ON SITE TREE IDENTIFICATION FOR GUIDANCE ONLY. NOT AUTHENTICATED.

Remarks:

Difficult access through house down steep steps. MH under stairs under bikes difficult to access

Water supply- Yes
Power- Yes
Parking- Yes

Scale: N.T.S.

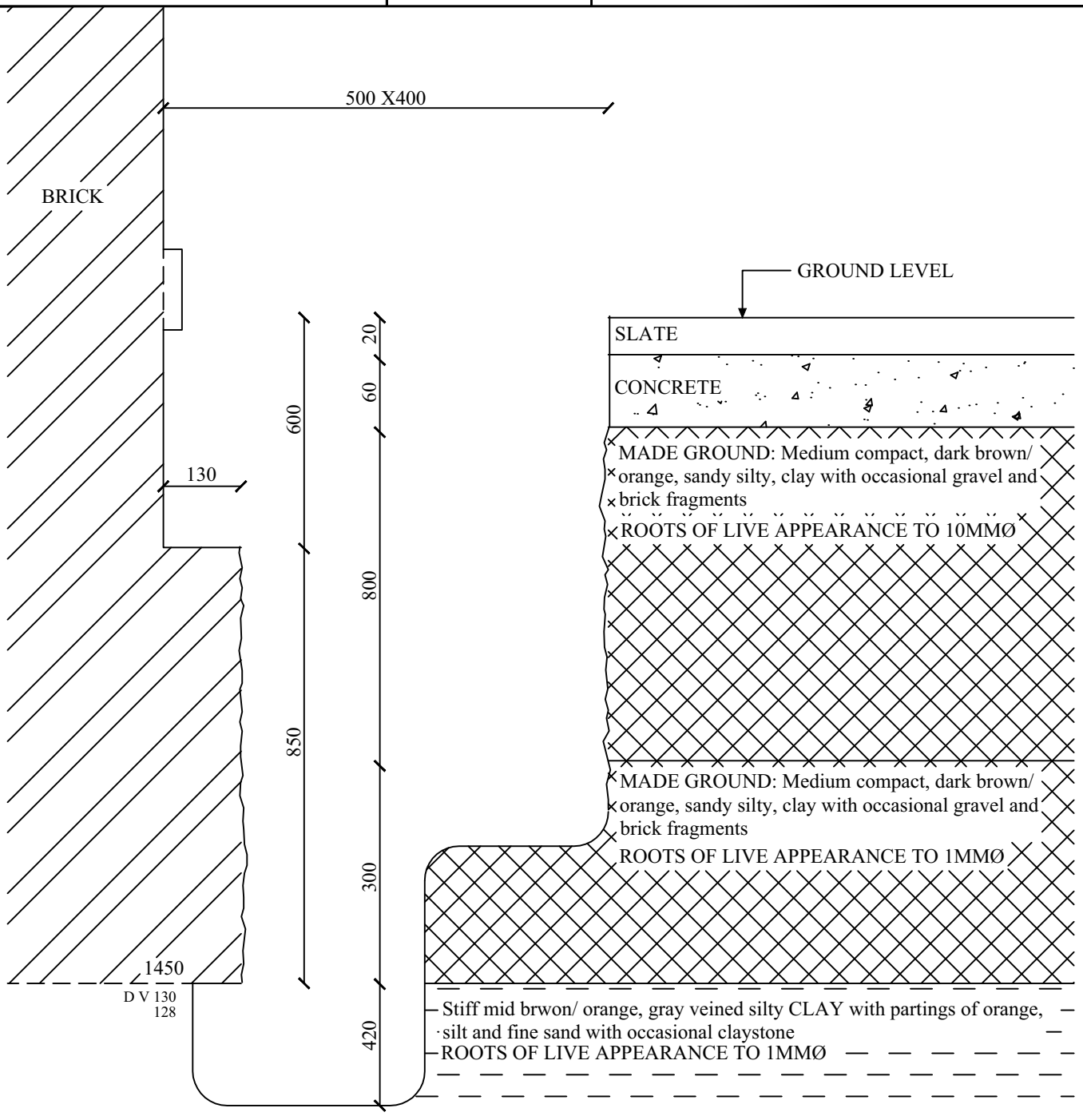
Key:

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: 408281	Site:	32 South Villas
Date: 13/03/2017	Work carried out for:	Cunningham Lindsey
Hand Tools	Drawn by: PS	
Weather: DRY	Ground Level mOD:	



FOR STRATA BELOW 1600 mm SEE BH LOG 1

Remarks: TP excavaved to 1200mm them extended with the aid of plate auger to 1600mm steel curved pin driven 200mm under brick at 1450mm below ground level

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:	Checked:	Approved:	Scale:
SP	SA		N.T.S.

Borehole

1 + datu		Sheet:	1 of 1	Site:	32 South Villas
		Job No:	408281		
		Date:	13/03/2017		
Boring Method:	Hand Auger	Ground Level:		Client:	Cunningham Lindsey - Maidstone
Diameter (mm):	75	Weather:			

Depth (m)	Soil Description	Thickness	Legend	Samples and Tests: Depth	Type	Result
0.00	See Trial Pit	1.60				
1.60	Stiff mid brown-orange grey veined silty CLAY with partings of orange silt and fine sand and occasional claystone nodules.	0.40				
2.00	Very Stiff orange-brown silty CLAY with ocassional claystone nodules	2.00		2.00	DV	140+
						140+
				2.50	DV	140+
						140+
				3.00	DV	140+
						140+
				3.50	DV	140+
						140+
4.00	End of BH			4.00	DV	140+
						140+

Remarks:
BH ends at 4.0m.Obstruction thought to be claystone.too dense to hand auger.BH dry and open on completion.No roots observed below 2.5m.Unable to use drill limited working room.Datum installed at 4.0m.

Key:

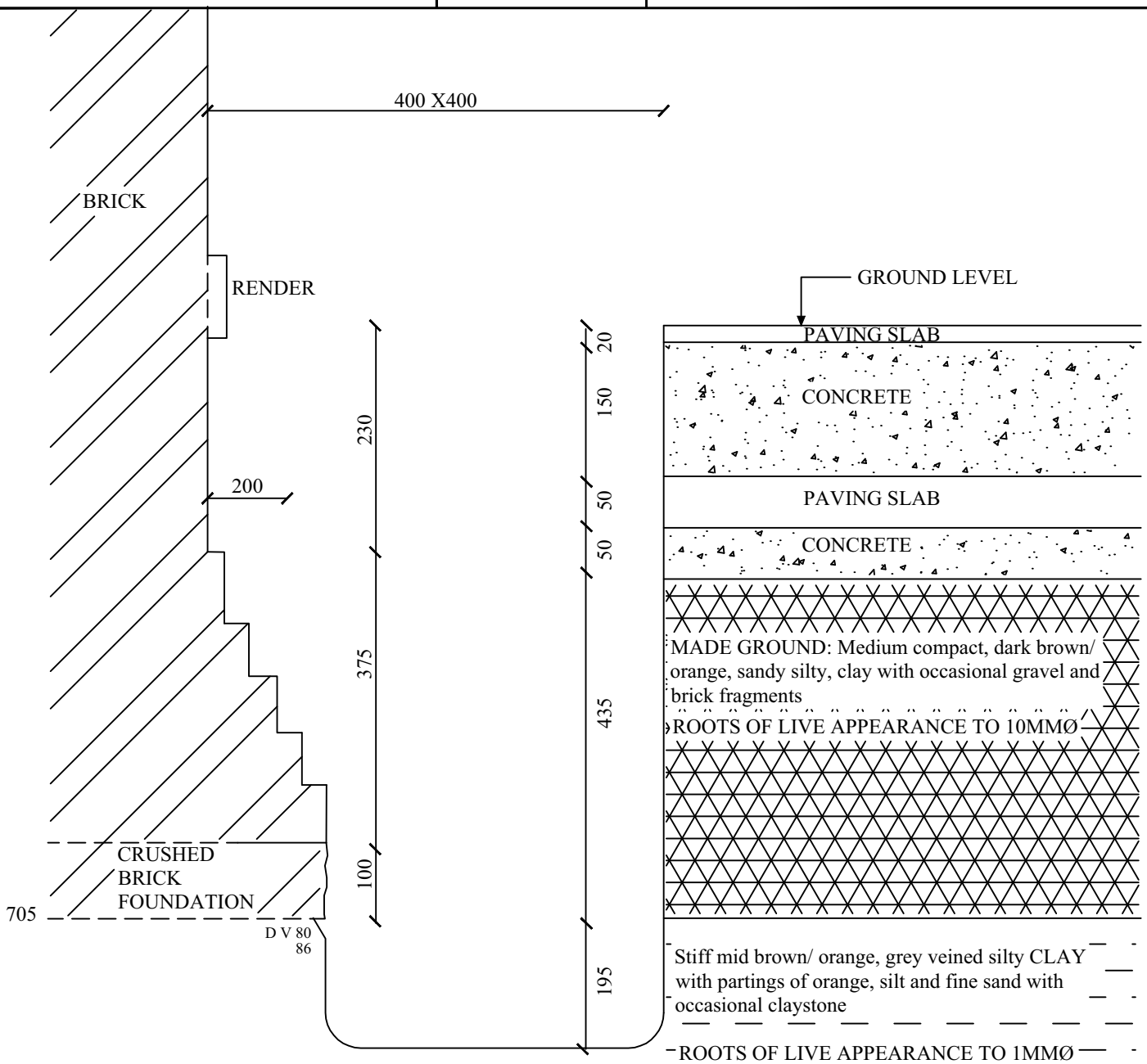
		To Depth (m)	Max Dia (mm)
D - Disturbed Sample			
B - Bulk Sample			
W - Water Sample	Roots	2.50	1
J - Jar Sample	Roots		
V - Pilcon Shear Vane (kPa	Roots		
M - Mackintosh Probe	Depth to Water (m)		

TDTD - Too Dense To Drive

Logged:	sp	SA	Checked:	Approved:	Version	V1.0 28/01/16	N.T.S.

Trial Pit No: 2

Sheet: 1 of 1	Site: 32 South Villas	
Job No: 408281		
Date: 13/03/2017	Work carried out for: Cunningham Lindsey	
Hand Tools	Drawn by: PS	
Weather: DRY	Ground Level mOD:	



FOR STRATA BELOW 900mm SEE BH LOG 2

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:	Checked:	Approved:	Scale:
SP	SA		N.T.S.

Borehole 2

Sheet:	1 of 1	Site:	32 South Villas
Job No:	408281		
Date:	13/03/2017		
Boring Method:	Hand Auger	Ground Level:	
Client:	Cunningham Lindsey - Maidstone		
Diameter (mm):	75	Weather:	dry

Depth (m)	Soil Description	Thickness	Legend	Samples and Tests: Depth	Type	Result
0.00	See Trial Pit	0.90				
0.90	Very Stiff orange-brown silty CLAY with numerous claystone nodules	0.80		1.00	DV	140+
						140+
				1.50	DV	140+
						140+
1.70	Very Stiff orange-brown silty CLAY with ocassional claystone nodules	3.30		2.00	DV	140+
						140+
				2.50	DV	140+
						140+
				3.00	DV	140+
						140+
				3.50	DV	140+
						140+
				4.00	DV	140+
						140+
				4.50	DV	140+
						140+
				5.00	DV	140+
5.00	End of BH					140+

Remarks:
Bhends at 5.0m.BH dry and open on completion.No roots observed below 2.0m.

Key:

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
J - Jar Sample
V - Pilcon Shear Vane (kPa
M - Mackintosh Probe
TDTD - Too Dense To Drive

Roots
Roots
Roots
Depth to Water (m)

To Depth (m)	Max Dia (mm)
2.00	1

Logged:	sp	SA	Checked:	Approved:	Version	V1.0 28/01/16	N.T.S.

Laboratory Summary Results

Our Ref : 408281

Location : 32 South Villas, London, NW1 9BT

Client: Cunningham Lindsey - Maidstone

Address: 4 North Court, South Park Business Village, Armstrong Road, ME15 6JZ

Date Sampled: 13/03/17

Date Received : 15/03/17

Date Tested : 16/03/17

Date of Report : 28/03/17

Sample Ref TP/BH No	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)	Soil Sample Suction (kPa) [8]	Oedometer Strain [9]	Estimated Heave Potential (Dd) (mm)[10]	In situ * Shear Vane Strength (kPa) [11]	Organic * Content (%)[12]	pH * Value [13]	Sulphate Content * (g / l) SO_3 [14]	Sulphate Content * (g / l) SO_4 [15]	* Class [16]
1	U/S 1.45	D	26	<5	77	24	53	0.05	53	CV	168	944			129					
	2.0	D	14	<5	79	25	54	-0.20	54	CV	168	1871			> 140					
	2.5	D	27	<5											> 140					
	3.0	D	28	<5	77	26	51	0.04	51	CV	168	1175			> 140					
	3.5	D	29	<5											> 140					
	4.0	D	28	<5							168	1051			> 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] In-house Test Procedure S17a: One Dimensional Swell/Strain Test

[10] Estimated Heave Potential (Dd)

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

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

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

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

[15] $SO_4 = 1.2 \times SO_3$

[16] 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 soluable magnesium testing is undertaken to prove otherwise.

* These tests are not UKAS accredited
Full reports can be provided upon request

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

UKAS TESTING
8618

Version: 5BH V1.4 - 11/05/15

Our Ref : 408281

Laboratory Testing Results

Date Sampled : 13/03/17

Location : 32 South Villas, London, NW1 9BT

Date Received : 15/03/17

Client: Cunningham Lindsey - Maidstone

Date Tested : 16/03/17

Address: 4 North Court, South Park Business Village, Armstrong Road, ME15 6JZ

Date of Report : 28/03/17

Sample Ref.		Type	Moisture Content	Soil Fraction > 0.425mm	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity * Index	Modified * Plasticity Index	Soil * Class	Filter Paper Contact Time	Soil Sample Suction	Oedometer Strain	Estimated Heave Potential (Dd)	In situ * Shear Vane Strength	Organic * Content	pH * Value	Sulphate Content * (g/l)		* Class
TP/BH No.	Depth (m)		(%) *[1]*	(%) *[2]*	(%) *[3]*	(%) *[4]*	(%) *[5]*	*[5]*	(%) [6]	*[7]*	(h)	(kPa) [8]	*[9]*	*(mm)[10]*	(kPa) *[11]*	(%)*[12]*	*[13]*	SO_3 *[14]*	SO_4 *[15]*	*[16]*
2	U/S 0.71	D	29	<5	76	27	49	0.05	49	CV	168	377			83					
	1.0	D	25	<5	76	26	50	-0.02	50	CV	168	1819			> 140					
	1.5	D	24	<5											> 140					
	2.0	D	29	<5	76	25	51	0.08	51	CV	168	1253			> 140					
	2.5	D	30	<5											> 140					
	3.0	D	30	<5	77	27	50	0.07	50	CV	168	1093			> 140					
	3.5	D	29	<5											> 140					
	4.0	D	29	<5							168	626			> 140					
	4.5	D	29	<5											> 140					
	5.0	D	29	<5							168	1112			> 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] In-house Test Procedure S17a: One Dimensional Swell/Strain Test

[10] Estimated Heave Potential (Dd)

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

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

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

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

[15] $SO_4 = 1.2 \times SO_3$

[16] 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 soluable magnesium testing is undertaken to prove otherwise.

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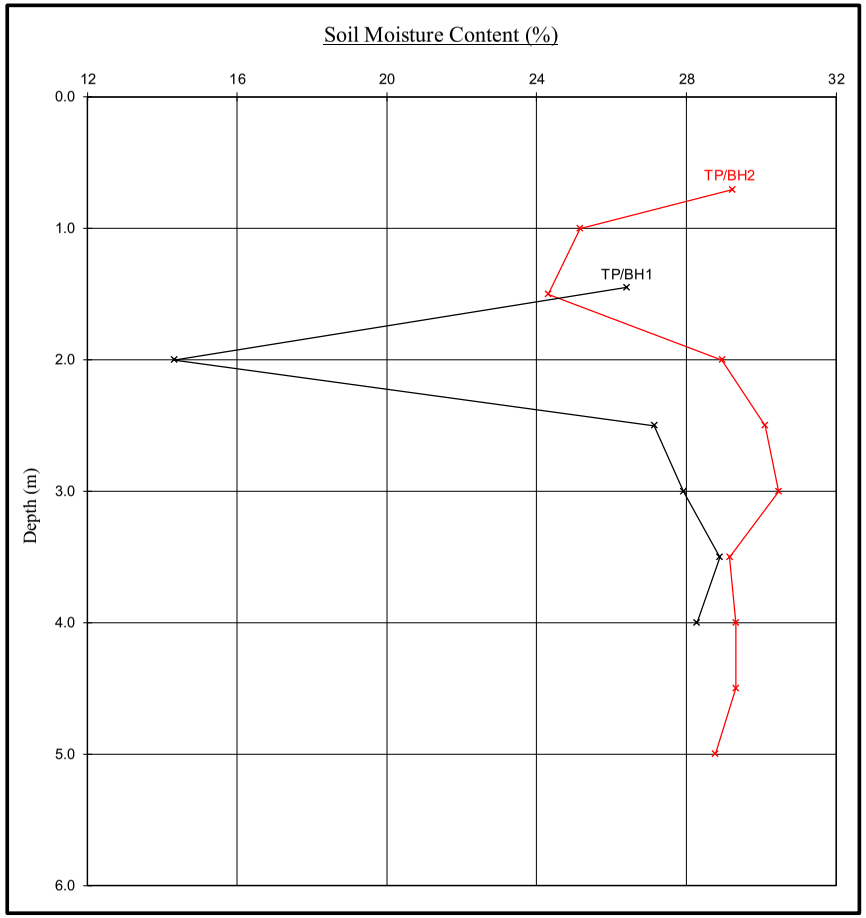
UKAS TESTING

8618

Version: 5BH V1.4 - 11/05/15

Moisture Content Profiles

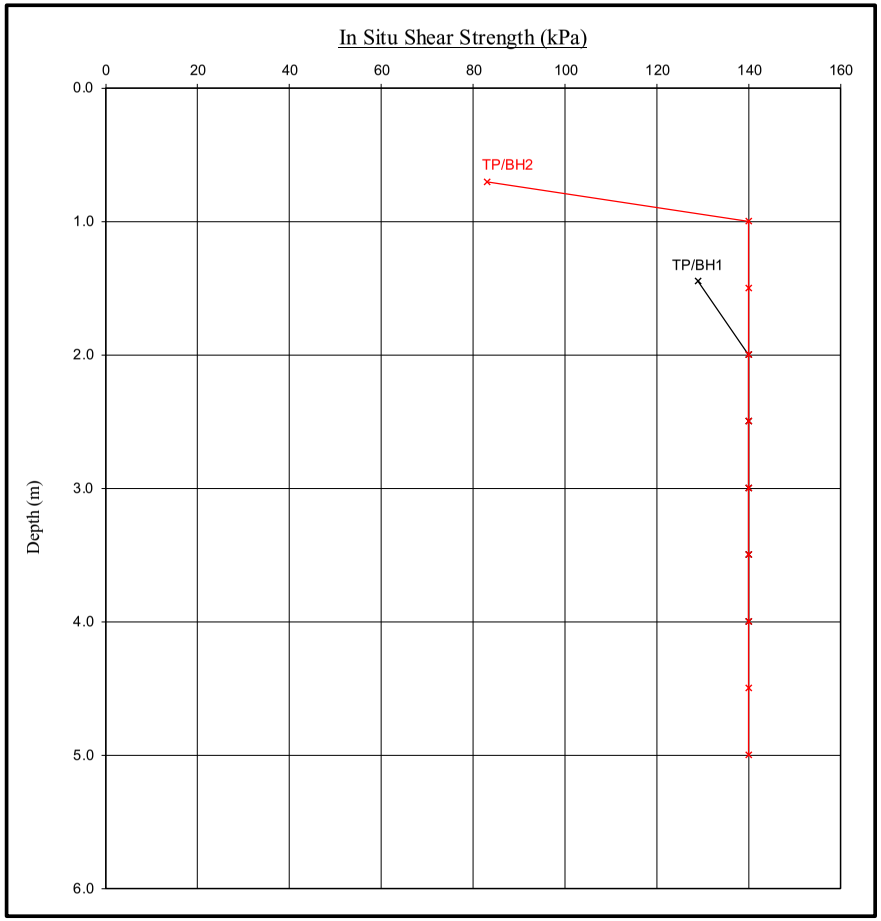
Our Ref : 408281
Location : 32 South Villas, London, NW1 9BT
Work carried out for: Cunningham Lindsey - Maidstone



Notes
1. If plotted, 0.4 LL and PL+2 (after Driscoll, 1983) should only be applied to London Clay (and similarly overconsolidated clay) at shallow depths.
2. Unless specifically noted the profiles have not been related to a site datum.

Shear Strength Profiles

Date Sampled : 13/03/17
Date Received : 15/03/17
Date Tested : 16/03/17
Date of Report : 28/03/17



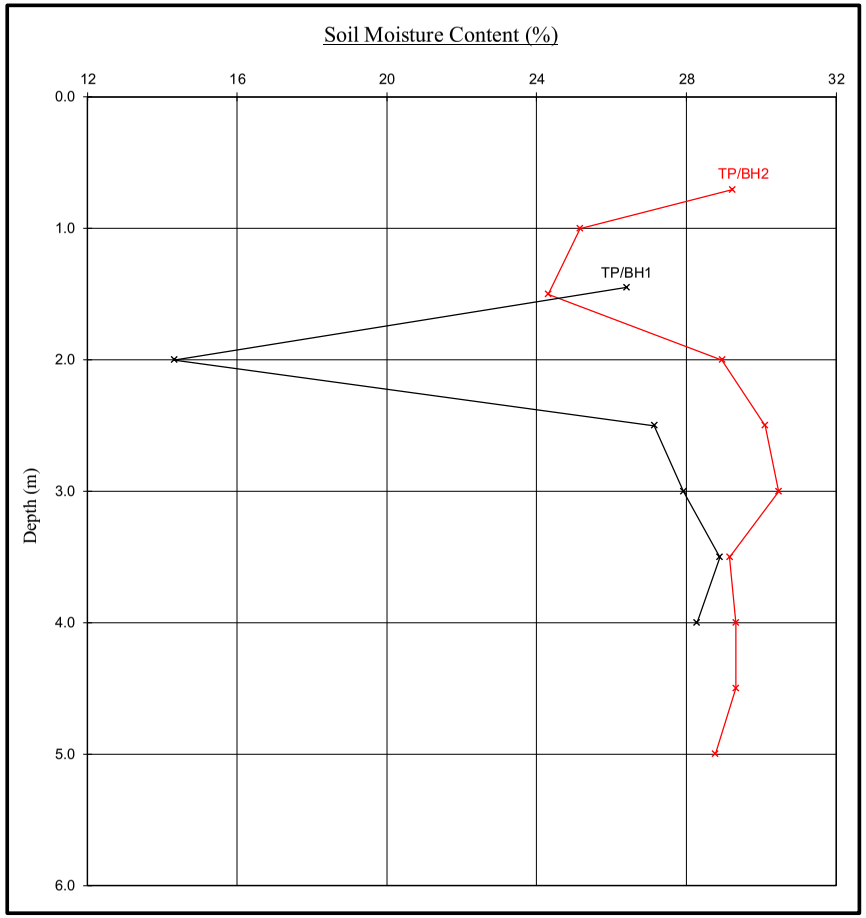
Note
1. Unless otherwise stated, values of Shear Strength were determined in situ by CET using a Pilcon Hand Vane the calibration of which is limited to a maximum reading of 140 kPa.
2. Unless specifically noted the profiles have not been related to a site datum.

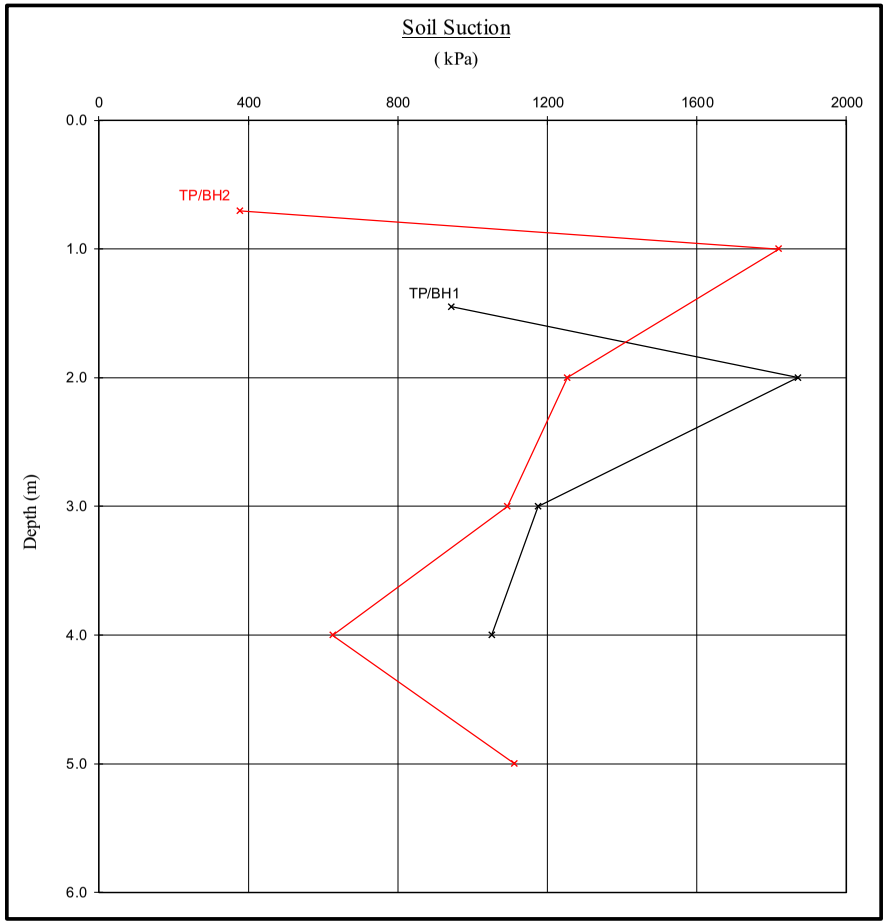
Moisture Content Profiles

Soil Suction Profiles

Our Ref : 408281
Location : 32 South Villas, London, NW1 9BT
Work carried out for: Cunningham Lindsey - Maidstone

Date Sampled : 13/03/17
Date Received : 15/03/17
Date Tested : 16/03/17
Date of Report : 28/03/17





Notes
1. If plotted, 0.4 LL and PL+2 (after Driscoll, 1983) should only be applied to London Clay (and similarly overconsolidated clay) at shallow depths.
2. Unless specifically noted the profiles have not been related to a site datum.

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.

EPSL ***European Plant Science Laboratory***	Sheet: 1 of 1 Job No: **408281** Date: **16/03/2017** Order No: **960032** EPSL Ref: **R18240**	Site: **32 South Villas, London,** Work carried out for: **Cunningham Lindsey**

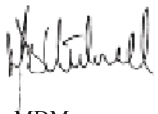
Certificate of Analysis

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)	1 mm	Pomoideae gp. 4 roots	Positive
TP1 (USF)	1 mm	Prunus spp.	Positive
BH1 (to 2.5m)	1 mm	Pomoideae gp. 4 roots	Positive
BH1 (to 2.5m)	1 mm	probably Prunus spp. *	Positive
TP2 (USF)	<1 mm	Fraxinus spp.	Positive
BH2 (to 2m)	<1 mm	broadleaved species, too juvenile for positive identification ** 3 roots	Positive

* In poor condition, lacking bark.
** Possibly Fraxinus spp.

Pomoideae gp include apple, cotoneaster, hawthorn, pear, pyracantha, quince, rowan, snowy mespil and whitebeam.
Prunus spp. include blackthorn, cherry, cherry-laurel, Portuguese laurel, peach, plum, and related species.
Fraxinus spp. include common ash.



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: Cunningham Lindsey - Maidstone
4 North Court
South Park Business Village
Armstrong Road
Kent
ME15 6JZ

Ftao: Yiu-Shan Wong

Our Ref: **408281**

Your Ref: **6353138**

Date: **20-Apr-17**

ESTIMATE

Site:- 32 South Villas

Item			Amount
1.0	Location	**MH 1 upstream to YG 1 - Run 1.**	£275.00
	Shared System	No	
	Condition Grade	B	
	Drain Serviceability	Unserviceable	
	Work Spec	From manhole excavate replace 1 metre of pipe work upstream and then complete cctv, repair as necessary. If findings or repair exceptional then discuss with engineer before repair.	
2.0	Location	**MH 1 upstream to RWG 1 - Run 3.**	£415.00
	Shared System	No	
	Condition Grade	B	
	Drain Serviceability	Unserviceable	
	Work Spec	Excavate and replace gully plus pipe work downstream to manhole.	
3.0	Location	**MH 1 downstream(150mm) - Run 4.**	£670.00
	Shared System	No	
	Condition Grade	B	
	Drain Serviceability	Unserviceable	
	Work Spec	From manhole high pressure water jet to clear debris and then line run downstream 4 metres(150mm liner).	

Item 1 - Any further repair that may be required will be done on agreed rates, terms and conditions.

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	£1,360.00
plus VAT @20%	£272.00
Total + VAT	£1,632.00

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.

ESTIMATING & COSTING SHEET - DOMESTIC DRAINAGE

Site:- **32 South Villas**

Client :- **Cunningham Lindsey - Maidstone**
Attention of:- **Yiu-Shan Wong**

Client ref	6353138
Job Number :-	408281
Insurer	[redacted]
Date:-	20-Apr-17
Recommendation	1

Item No	Description MH 1 upstream to YG 1 - Run 1.	Unit	Quantity	Rate (£)	Price (£)
1.0	**Emergency Drain Blockage Clearance**				
1.1	Unblock drain 8am-6pm - First 1/2 Hour	Item		**£70.00**	£0.00
1.2	Unblock drain 8am-6pm- Subsequent 1/2 Hour	Item		**£30.00**	£0.00
1.3	Unblock drain 6pm-midnight	Item		**£100.00**	£0.00
1.4	Unblock drain 6pm-midnight - Subsequent 1/2 hour	Item		**£35.00**	£0.00
2.1	**CCTV Surveys**				
2.2	Undertake CCTV survey 8am-6pm (up to 3 hours)	Item	1	**£130.00**	£130.00
2.3	Additional 1/2 hr survey charge	Item		**£30.00**	£0.00
3.0	**Replacing Underground Drainage**				
3.1	**Gullies**				
3.2	Take out and replace gulley (100mm outlet)	Item		**£130.00**	£0.00
3.3	Take out and replace rodding point (100mm outlet)	Item		**£90.00**	£0.00
3.4	**Bends/junctions**				
3.5	Excavate and replace rest bend (100mm outlet)	Item		**£90.00**	£0.00
3.6	Excavate and replace rest bend (150mm outlet)	Item		**£120.00**	£0.00
3.7	Excavate and replace junction/bend (100mmØ), Excavation depth 0-1m.	Item		**£70.00**	£0.00
3.8	Excavate and replace junction/bend (150mmØ), Excavation depth 0-1m	Item		**£70.00**	£0.00
3.9	Excavate and replace junction/bend (100mmØ), Excavation depth 1-1.5m.	Item		**£70.00**	£0.00
3.10	Excavate and replace junction/bend (150mmØ), Excavation depth 1-1.5m.	Item		**£70.00**	£0.00
3.11	Excavate and replace junction/bend (100mmØ), Excavation depth 1.5-2.0m.	Item		**£70.00**	£0.00
3.12	Excavate and replace junction/bend (150mmØ), Excavation depth 1.5-2.0m.	Item		**£70.00**	£0.00
3.13	**Pipes**				
3.14	Excavate trench and replace 100mmØ pipework, Excavation depth 0-1m, First 10m.	m	1	**£95.00**	£95.00
3.15	Excavate trench and replace 150mmØ pipework, Excavation depth 0-1m, First 10m.	m		**£120.00**	£0.00
3.16	Excavate trench and replace 100mmØ pipework, Excavation depth 0-1m.	m		**£95.00**	£0.00
3.17	Excavate trench and replace 150mmØ pipework, Excavation depth 0-1m.	m		**£120.00**	£0.00
3.18	Excavate trench and replace 100mmØ pipework, Excavation depth 1-1.5m, First 10m.	m		**£150.00**	£0.00
3.19	Excavate trench and replace 150mmØ pipework, Excavation depth 1-1.5m, First 10m.	m		**£160.00**	£0.00
3.20	Excavate trench and replace 100mmØ pipework, Excavation depth 1-1.5m.	m		**£150.00**	£0.00
3.21	Excavate trench and replace 150mmØ pipework, Excavation depth 1-1.5m.	m		**£160.00**	£0.00
3.22	Excavate trench and replace 100mmØ pipework, Excavation depth 1.5-2.0m, First 10m.	m		**£270.00**	£0.00
3.23	Excavate trench and replace 150mmØ pipework, Excavation depth 1.5-2.0m, First 10m.	m		**£290.00**	£0.00
3.24	Excavate trench and replace 100mmØ pipework, Excavation depth 1.5-2.0m.	m		**£250.00**	£0.00
3.25	Excavate trench and replace 150mmØ pipework, Excavation depth 1.5-2.0m.	m		**£270.00**	£0.00
3.26	**Surface Reinstatement of Trenches**				
3.27	Excavate through and reinstate turf.			**£0.00**	£0.00
3.28	Excavate through and replace concrete paving slabs	m	1	**£30.00**	£30.00
3.29	Excavate through and replace block paving	m		**£50.00**	£0.00
3.30	Excavate through and reinstate plain concrete, maximum thickness 100mm.	m		**£47.00**	£0.00
3.31	Excavate through and reinstate plain concrete, thickness 100- 200mm.	m		**£95.00**	£0.00
3.32	Excavate through and reinstate reinforced concrete, maximum thickness 100mm.	m		**£90.00**	£0.00
3.33	Excavate through and reinstate reinforced concrete, thickness 100-200mm.	m		**£115.00**	£0.00
3.34	Excavate through and reinstate Tarmac - Cold rolled	m		**£48.00**	£0.00
3.35	Excavate through and reinstate Tarmac - Hot rolled	m		**POA**	
3.36	Reinstatement of crazy paving	m		**£75.00**	£0.00
4.0	**Lining**				
4.1	Set up lining rig for drain lining including first 3m of lining per run, for 100mm or 150mm	Item		**£290.00**	£0.00
4.2	Line 100mmØ drain	m		**£50.00**	£0.00
4.3	Line 150mmØ drain	m		**£70.00**	£0.00
4.4	Post lining CCTV survey	no		**£100.00**	£0.00
4.5	Minimum lining charge	Item		**£290.00**	£0.00
4.6	Root cutting of drain prior to lining	hr		**£65.00**	£0.00
4.7	Set up lining rig for patch lining	Item		**£0.00**	£0.00
4.8	Patch line 100mmØ drain	no		**£250.00**	£0.00
4.9	Patch line 150mmØ drain	no		**£280.00**	£0.00
4.10	Post patch lining CCTV survey	Item		**£100.00**	£0.00
4.11	Minimum patch lining charge	Item		**£250.00**	£0.00
4.12	Re-open lateral branch up to 2m length, pipe up to 150mm	no		**£190.00**	£0.00
4.13	Re-open lateral branch over 2m length, pipe up to 150mm	no		**£280.00**	£0.00
5.0	**Miscellaneous**				
5.1	Excavation and backfill of soakaway (1m3) with stone	Item		**£400.00**	£0.00
5.2	% Uplift on disbursements and suppliers charges	%		**1.25**	£0.00
5.3	Daywork - Hourly labour rate	hr		**£30.00**	£0.00
5.4	Minimum project value	Item		**£346.50**	£0.00
5.5					£0.00
5.6					£0.00
5.7					£0.00
5.8					£0.00
6.0	**Additional items**				
6.1	De-scaling (fat/grime)	hr		**£65.00**	£0.00
6.2	De-scaling (scale using chain flails)	hr		**£90.00**	£0.00
6.3	Gully surround	item		**£30.00**	£0.00
6.4	Manhole works (up to 1.2m)	item		**£80.00**	£0.00
6.6	Oversize soakaway (1.5m3)	item		**£600.00**	£0.00
6.7	Soakaway >1.5m3	item		**POA**	
6.8	Waste disposal	m	1	**£20.00**	£20.00
6.9	Shoring	m		**£40.00**	£0.00
	Total Estimate Price For Recommendation Number		1.0		£275.00
	Subject to discount		**0.00**		£0.00
	Total subject to VAT @ 20%				£275.00

Note: Subject to the attached Terms and Condtions
A - When calculating prices, all measurements are rounded up
B - Depths are taken to the base of excavations
C - Every effort will be made to match existing surfaces where disturbed although this cannot be guaranteed
D - All rates exclude VAT
G - Daywork rates do not include for materials that are charged at cost plus 25%
F - The above rates are subject to re-measurement
KEY: ne = not exceeding, eo = extra over rate, m = linear metre, nr = number, hr = hour
E - Depths are taken to the base of excavations

ESTIMATING & COSTING SHEET - DOMESTIC DRAINAGE

Site:- **32 South Villas**

Client :- **Cunningham Lindsey - Maidstone**
Attention of:- **Yiu-Shan Wong**

Client ref	6353138
Job Number :-	408281
Insurer	[redacted]
Date:-	20-Apr-17
Recommendation	2

Item No	Description MH 1 upstream to RWG 1 - Run 3.	Unit	Quantity	Rate (£)	Price (£)
1.0	**Emergency Drain Blockage Clearance**				
1.1	Unblock drain 8am-6pm - First 1/2 Hour	Item		**£70.00**	£0.00
1.2	Unblock drain 8am-6pm- Subsequent 1/2 Hour	Item		**£30.00**	£0.00
1.3	Unblock drain 6pm-midnight	Item		**£100.00**	£0.00
1.4	Unblock drain 6pm-midnight - Subsequent 1/2 hour	Item		**£35.00**	£0.00
2.1	**CCTV Surveys**				
2.2	Undertake CCTV survey 8am-6pm (up to 3 hours)	Item		**£130.00**	£0.00
2.3	Additional 1/2 hr survey charge	Item		**£30.00**	£0.00
3.0	**Replacing Underground Drainage**				
3.1	**Gullies**				
3.2	Take out and replace gulley (100mm outlet)	Item	1	**£130.00**	£130.00
3.3	Take out and replace rodding point (100mm outlet)	Item		**£90.00**	£0.00
3.4	**Bends/junctions**				
3.5	Excavate and replace rest bend (100mm outlet)	Item		**£90.00**	£0.00
3.6	Excavate and replace rest bend (150mm outlet)	Item		**£120.00**	£0.00
3.7	Excavate and replace junction/bend (100mmØ), Excavation depth 0-1m.	Item	2	**£70.00**	£140.00
3.8	Excavate and replace junction/bend (150mmØ), Excavation depth 0-1m	Item		**£70.00**	£0.00
3.9	Excavate and replace junction/bend (100mmØ), Excavation depth 1-1.5m.	Item		**£70.00**	£0.00
3.10	Excavate and replace junction/bend (150mmØ), Excavation depth 1-1.5m.	Item		**£70.00**	£0.00
3.11	Excavate and replace junction/bend (100mmØ), Excavation depth 1.5-2.0m.	Item		**£70.00**	£0.00
3.12	Excavate and replace junction/bend (150mmØ), Excavation depth 1.5-2.0m.	Item		**£70.00**	£0.00
3.13	**Pipes**				
3.14	Excavate trench and replace 100mmØ pipework, Excavation depth 0-1m, First 10m.	m	1	**£95.00**	£95.00
3.15	Excavate trench and replace 150mmØ pipework, Excavation depth 0-1m, First 10m.	m		**£120.00**	£0.00
3.16	Excavate trench and replace 100mmØ pipework, Excavation depth 0-1m.	m		**£95.00**	£0.00
3.17	Excavate trench and replace 150mmØ pipework, Excavation depth 0-1m.	m		**£120.00**	£0.00
3.18	Excavate trench and replace 100mmØ pipework, Excavation depth 1-1.5m, First 10m.	m		**£150.00**	£0.00
3.19	Excavate trench and replace 150mmØ pipework, Excavation depth 1-1.5m, First 10m.	m		**£160.00**	£0.00
3.20	Excavate trench and replace 100mmØ pipework, Excavation depth 1-1.5m.	m		**£150.00**	£0.00
3.21	Excavate trench and replace 150mmØ pipework, Excavation depth 1-1.5m.	m		**£160.00**	£0.00
3.22	Excavate trench and replace 100mmØ pipework, Excavation depth 1.5-2.0m, First 10m.	m		**£270.00**	£0.00
3.23	Excavate trench and replace 150mmØ pipework, Excavation depth 1.5-2.0m, First 10m.	m		**£290.00**	£0.00
3.24	Excavate trench and replace 100mmØ pipework, Excavation depth 1.5-2.0m.	m		**£250.00**	£0.00
3.25	Excavate trench and replace 150mmØ pipework, Excavation depth 1.5-2.0m.	m		**£270.00**	£0.00
3.26	**Surface Reinstatement of Trenches**				
3.27	Excavate through and reinstate turf.			**£0.00**	£0.00
3.28	Excavate through and replace concrete paving slabs	m	1	**£30.00**	£30.00
3.29	Excavate through and replace block paving	m		**£50.00**	£0.00
3.30	Excavate through and reinstate plain concrete, maximum thickness 100mm.	m		**£47.00**	£0.00
3.31	Excavate through and reinstate plain concrete, thickness 100- 200mm.	m		**£95.00**	£0.00
3.32	Excavate through and reinstate reinforced concrete, maximum thickness 100mm.	m		**£90.00**	£0.00
3.33	Excavate through and reinstate reinforced concrete, thickness 100-200mm.	m		**£115.00**	£0.00
3.34	Excavate through and reinstate Tarmac - Cold rolled	m		**£48.00**	£0.00
3.35	Excavate through and reinstate Tarmac - Hot rolled	m		**POA**	
3.36	Reinstatement of crazy paving	m		**£75.00**	£0.00
4.0	**Lining**				
4.1	Set up lining rig for drain lining including first 3m of lining per run, for 100mm or 150mm	Item		**£290.00**	£0.00
4.2	Line 100mmØ drain	m		**£50.00**	£0.00
4.3	Line 150mmØ drain	m		**£70.00**	£0.00
4.4	Post lining CCTV survey	no		**£100.00**	£0.00
4.5	Minimum lining charge	Item		**£290.00**	£0.00
4.6	Root cutting of drain prior to lining	hr		**£65.00**	£0.00
4.7	Set up lining rig for patch lining	Item		**£0.00**	£0.00
4.8	Patch line 100mmØ drain	no		**£250.00**	£0.00
4.9	Patch line 150mmØ drain	no		**£280.00**	£0.00
4.10	Post patch lining CCTV survey	Item		**£100.00**	£0.00
4.11	Minimum patch lining charge	Item		**£250.00**	£0.00
4.12	Re-open lateral branch up to 2m length, pipe up to 150mm	no		**£190.00**	£0.00
4.13	Re-open lateral branch over 2m length, pipe up to 150mm	no		**£280.00**	£0.00
5.0	**Miscellaneous**				
5.1	Excavation and backfill of soakaway (1m3) with stone	Item		**£400.00**	£0.00
5.2	% Uplift on disbursements and suppliers charges	%		**£1.25**	£0.00
5.3	Daywork - Hourly labour rate	hr		**£30.00**	£0.00
5.4	Minimum project value	Item		**£346.50**	£0.00
5.5				**£0.00**	£0.00
5.6				**£0.00**	£0.00
5.7				**£0.00**	£0.00
5.8				**£0.00**	£0.00
6.0	**Additional items**				
6.1	De-scaling (fat/grime)	hr		**£65.00**	£0.00
6.2	De-scaling (scale using chain flails)	hr		**£90.00**	£0.00
6.3	Gully surround	item		**£30.00**	£0.00
6.4	Manhole works (up to 1.2m)	item		**£80.00**	£0.00
6.6	Oversize soakaway (1.5m3)	item		**£600.00**	£0.00
6.7	Soakaway >1.5m3	item		**POA**	
6.8	Waste disposal	m	1	**£20.00**	£20.00
6.9	Shoring	m		**£40.00**	£0.00
	Total Estimate Price For Recommendation Number		2.0		£415.00
	Subject to discount		**0.00**		£0.00
	Total subject to VAT @ 20%				£415.00

Note: Subject to the attached Terms and Condtions
A - When calculating prices, all measurements are rounded up
B - Depths are taken to the base of excavations
C - Every effort will be made to match existing surfaces where disturbed although this cannot be guaranteed
D - All rates exclude VAT
G - Daywork rates do not include for materials that are charged at cost plus 25%
F - The above rates are subject to re-measurement
KEY: ne = not exceeding, eo = extra over rate, m = linear metre, nr = number, hr = hour
E - Depths are taken to the base of excavations

ESTIMATING & COSTING SHEET - DOMESTIC DRAINAGE

Site:- **32 South Villas**

Client :- **Cunningham Lindsey - Maidstone**
Attention of:- **Yiu-Shan Wong**

Client ref	6353138
Job Number :-	408281
Insurer	[redacted]
Date:-	20-Apr-17
Recommendation	3

Item No	Description MH 1 downstream(150mm) - Run 4.	Unit	Quantity	Rate (£)	Price (£)
1.0	**Emergency Drain Blockage Clearance**				
1.1	Unblock drain 8am-6pm - First 1/2 Hour	Item		**£70.00**	£0.00
1.2	Unblock drain 8am-6pm- Subsequent 1/2 Hour	Item		**£30.00**	£0.00
1.3	Unblock drain 6pm-midnight	Item		**£100.00**	£0.00
1.4	Unblock drain 6pm-midnight - Subsequent 1/2 hour	Item		**£35.00**	£0.00
2.1	**CCTV Surveys**				
2.2	Undertake CCTV survey 8am-6pm (up to 3 hours)	Item		**£130.00**	£0.00
2.3	Additional 1/2 hr survey charge	Item		**£30.00**	£0.00
3.0	**Replacing Underground Drainage**				
3.1	**Gullies**				
3.2	Take out and replace gulley (100mm outlet)	Item		**£130.00**	£0.00
3.3	Take out and replace rodding point (100mm outlet)	Item		**£90.00**	£0.00
3.4	**Bends/junctions**				
3.5	Excavate and replace rest bend (100mm outlet)	Item		**£90.00**	£0.00
3.6	Excavate and replace rest bend (150mm outlet)	Item		**£120.00**	£0.00
3.7	Excavate and replace junction/bend (100mmØ), Excavation depth 0-1m.	Item		**£70.00**	£0.00
3.8	Excavate and replace junction/bend (150mmØ), Excavation depth 0-1m	Item		**£70.00**	£0.00
3.9	Excavate and replace junction/bend (100mmØ), Excavation depth 1-1.5m.	Item		**£70.00**	£0.00
3.10	Excavate and replace junction/bend (150mmØ), Excavation depth 1-1.5m.	Item		**£70.00**	£0.00
3.11	Excavate and replace junction/bend (100mmØ), Excavation depth 1.5-2.0m.	Item		**£70.00**	£0.00
3.12	Excavate and replace junction/bend (150mmØ), Excavation depth 1.5-2.0m.	Item		**£70.00**	£0.00
3.13	**Pipes**				
3.14	Excavate trench and replace 100mmØ pipework, Excavation depth 0-1m, First 10m.	m		**£95.00**	£0.00
3.15	Excavate trench and replace 150mmØ pipework, Excavation depth 0-1m, First 10m.	m		**£120.00**	£0.00
3.16	Excavate trench and replace 100mmØ pipework, Excavation depth 0-1m.	m		**£95.00**	£0.00
3.17	Excavate trench and replace 150mmØ pipework, Excavation depth 0-1m.	m		**£120.00**	£0.00
3.18	Excavate trench and replace 100mmØ pipework, Excavation depth 1-1.5m, First 10m.	m		**£150.00**	£0.00
3.19	Excavate trench and replace 150mmØ pipework, Excavation depth 1-1.5m, First 10m.	m		**£160.00**	£0.00
3.20	Excavate trench and replace 100mmØ pipework, Excavation depth 1-1.5m.	m		**£150.00**	£0.00
3.21	Excavate trench and replace 150mmØ pipework, Excavation depth 1-1.5m.	m		**£160.00**	£0.00
3.22	Excavate trench and replace 100mmØ pipework, Excavation depth 1.5-2.0m, First 10m.	m		**£270.00**	£0.00
3.23	Excavate trench and replace 150mmØ pipework, Excavation depth 1.5-2.0m, First 10m.	m		**£290.00**	£0.00
3.24	Excavate trench and replace 100mmØ pipework, Excavation depth 1.5-2.0m.	m		**£250.00**	£0.00
3.25	Excavate trench and replace 150mmØ pipework, Excavation depth 1.5-2.0m.	m		**£270.00**	£0.00
3.26	**Surface Reinstatement of Trenches**				
3.27	Excavate through and reinstate turf.			**£0.00**	£0.00
3.28	Excavate through and replace concrete paving slabs	m		**£30.00**	£0.00
3.29	Excavate through and replace block paving	m		**£50.00**	£0.00
3.30	Excavate through and reinstate plain concrete, maximum thickness 100mm.	m		**£47.00**	£0.00
3.31	Excavate through and reinstate plain concrete, thickness 100- 200mm.	m		**£95.00**	£0.00
3.32	Excavate through and reinstate reinforced concrete, maximum thickness 100mm.	m		**£90.00**	£0.00
3.33	Excavate through and reinstate reinforced concrete, thickness 100-200mm.	m		**£115.00**	£0.00
3.34	Excavate through and reinstate Tarmac - Cold rolled	m		**£48.00**	£0.00
3.35	Excavate through and reinstate Tarmac - Hot rolled	m		**POA**	
3.36	Reinstatement of crazy paving	m		**£75.00**	£0.00
4.0	**Lining**				
4.1	Set up lining rig for drain lining including first 3m of lining per run, for 100mm or 150mm	Item	1	**£290.00**	£290.00
4.2	Line 100mmØ drain	m		**£50.00**	£0.00
4.3	Line 150mmØ drain	m	1	**£70.00**	£70.00
4.4	Post lining CCTV survey	no	1	**£100.00**	£100.00
4.5	Minimum lining charge	Item		**£290.00**	£0.00
4.6	Root cutting of drain prior to lining	hr		**£65.00**	£0.00
4.7	Set up lining rig for patch lining	Item		**£0.00**	£0.00
4.8	Patch line 100mmØ drain	no		**£250.00**	£0.00
4.9	Patch line 150mmØ drain	no		**£280.00**	£0.00
4.10	Post patch lining CCTV survey	Item		**£100.00**	£0.00
4.11	Minimum patch lining charge	Item		**£250.00**	£0.00
4.12	Re-open lateral branch up to 2m length, pipe up to 150mm	no		**£190.00**	£0.00
4.13	Re-open lateral branch over 2m length, pipe up to 150mm	no		**£280.00**	£0.00
5.0	**Miscellaneous**				
5.1	Excavation and backfill of soakaway (1m3) with stone	Item		**£400.00**	£0.00
5.2	% Uplift on disbursements and suppliers charges	%		**£1.25**	£0.00
5.3	Daywork - Hourly labour rate	hr		**£30.00**	£0.00
5.4	Minimum project value	Item		**£346.50**	£0.00
5.5				**£0.00**	£0.00
5.6				**£0.00**	£0.00
5.7				**£0.00**	£0.00
5.8				**£0.00**	£0.00
6.0	**Additional items**				
6.1	De-scaling (fat/grime)	hr	2	**£65.00**	£130.00
6.2	De-scaling (scale using chain flails)	hr		**£90.00**	£0.00
6.3	Gully surround	item		**£30.00**	£0.00
6.4	Manhole works (up to 1.2m)	item	1	**£80.00**	£80.00
6.6	Oversize soakaway (1.5m3)	item		**£600.00**	£0.00
6.7	Soakaway >1.5m3	item		**POA**	
6.8	Waste disposal	m		**£20.00**	£0.00
6.9	Shoring	m		**£40.00**	£0.00
	Total Estimate Price For Recommendation Number		3.0		£670.00
	Subject to discount		**0.00**		£0.00
	Total subject to VAT @ 20%				£670.00

Note: Subject to the attached Terms and Condtions
A - When calculating prices, all measurements are rounded up
B - Depths are taken to the base of excavations
C - Every effort will be made to match existing surfaces where disturbed although this cannot be guaranteed
D - All rates exclude VAT
G - Daywork rates do not include for materials that are charged at cost plus 25%
F - The above rates are subject to re-measurement
KEY: ne = not exceeding, eo = extra over rate, m = linear metre, nr = number, hr = hour
E - Depths are taken to the base of excavations

Coding Sheet

Sheet:		Site:	32 South Villas	
Job No.:	408281			
Date:	13/03/17	Client:	Cunningham Lindsey - Maidstone	

Run: 1

From:	MH1	Invert Level:	950	Direction:	U/S
To:	YARD GULLY 1	Invert Level:		Function:	S/W
Pipe Material:	VC	Pipe Dia:	100		
Water/Pressure Test:		Drain Break-In:	No	Gully Condition:	As Built
				Shared Run:	Yes
				If Shared How:	With flats

Distance (m)	Code	Clock Ref at	Clock Ref to	Dia mm	Intrusion %	Intrusion mm	Remarks	Surface Material	Length (m)
0.00	ST								
0.10	DES				30		Debris silt		
0.10	CM	12	12				Cracks multiple		
0.10	JDM						Joint displaced medium		
0.10	RTJ						Roots tap at joint	PAVING SLABS	
0.50	JDL						Joint displaced large		
0.50	SA						UNABLE TO PUSH		

Comments:

Run: 2

From:	MH1	Invert Level:	950	Direction:	U/S
To:	U/S	Invert Level:		Function:	S/W
Pipe Material:	VC	Pipe Dia:	100		
Water/Pressure Test:		Drain Break-In:	No	Gully Condition:	
				Shared Run:	Yes
				If Shared How:	With flats

Distance (m)	Code	Clock Ref at	Clock Ref to	Dia mm	Intrusion %	Intrusion mm	Remarks	Surface Material	Length (m)
0.00	ST								
0.00	LR						slight		
0.50	LU						Line deviates up		
0.70	OJL						Open joint large	PAVING SLABS	
0.70	JDL						Joint displaced large		
0.70	SA						UNABLE TO PUSH		

Comments:

DIS-USED RUN

Run: 3

From:	MH1	Invert Level:	500	Direction:	U/S
To:	RWG1	Invert Level:		Function:	S/W
Pipe Material:	VC	Pipe Dia:	100		
Water/Pressure Test:		Drain Break-In:	No	Gully Condition:	UNDER PAVING SLABS
				Shared Run:	Yes
				If Shared How:	With flats

Distance (m)	Code	Clock Ref at	Clock Ref to	Dia mm	Intrusion %	Intrusion mm	Remarks	Surface Material	Length (m)
0.00	ST								
0.20	OJL						Open joint large	PAVING SLABS	
0.20	JDL						Joint displaced large		
0.20	SA						UNABLE TO PUSH		

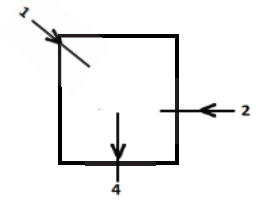
Comments:

Run:	**4**								
From:		MH1		Invert Level:		950	Direction:	D/S	
To:		D/S		Invert Level:			Function:	Comb	
Pipe Material:		VC		Pipe Dia:		150			
Water/Pressure Test:				Drain Break-In:		No	Gully Condition:		
Distance (m)	Code	Clock Ref at	to	Dia mm	Intrusion %	mm	Shared Run: / If Shared How:	Yes / With flats	
0.00	ST						Remarks	Surface Material	Length (m)
0.00	WL				40		Water level		
0.20	DE				40		Debris	continuous for 3 metres	
0.20	OJM						Open joint medium		
3.30	CC	12	12				Crack circumferential		
4.80	MH						INTERNAL	UNDER BUILDING	
10.00	JN	3		150			UNKNOWN		
12.20	JN	3		100			UNKNOWN		
12.90	JN	9		150			UNKNOWN		4
13.60	JN	9		100			UNKNOWN		
14.00	JDM						Joint displaced medium		
14.70	LL						SLIGHT		
15.70	LR						Line deviates right		
15.70	MH						Manhole		
Comments:									

Manhole Details

	Sheet:		Site:	32 South Villas
	Job No.:	408281		
	Date:	13/03/17	Client:	Cunningham Lindsey - Maidstone

MH:- MH1 Depth:- 950 (mm)



Depths of run if different to invert level:-

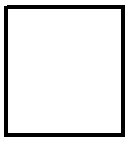
Run	Depth (mm)
3	500

Manhole Condition:- Good

Reasons for poor condition.

Chamber Dimension:- / (mm)

MH:- Depth:- (mm)



Depths of run if different to invert level:-

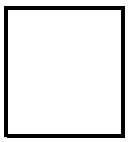
Run	Depth (mm)

Manhole Condition:-

Reasons for poor condition.

Chamber Dimension:- / (mm)

MH:- Depth:- (mm)



Depths of run if different to invert level:-

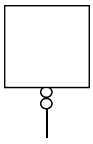
Run	Depth (mm)

Manhole Condition:-

Reasons for poor condition.

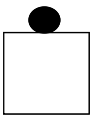
Chamber Dimension:- / (mm)

Key



Interceptor

Internal Back Drop.



External Back Drop.

Additional Comments for Poor Condition