

Appendix B

Topographic Survey and As-built Drainage Survey



Symbol & Abbreviation Key			
	BARBED WIRE FENCE		KERB
	POST & RAIL FENCE		DROPPED KERB
	CLOSE BOARD FENCE		GULLY CHANNEL
	RAILINGS		TOP - BOTTOM OF BANK
	CHAIN LINK FENCE		FOLIAGE
	OTHER FENCE		DITCH
	KERB		VERGE
	OVERHEAD CABLES		GATE
	HEDGE		TREE - BROAD LEAVED
	TREE - CONIFEROUS		BUSH
	BUILDING		BOREHOLE
	SURVEY STATION		ORDNANCE SURVEY BENCH MARK
A/C	AIR CONDITIONING UNIT	KO	KERB OFFLET
AV	AIR VALVE	LC	LIGHTING COLUMN
BOL	BOLLARD	LP	LAMP POST
BH	BOREHOLE	NP	NAME PLATE
BL	BED LEVEL	NB	NOTICE BOARD
BM	BENCH MARK	PR	PIPE RISER
BT	BRITISH TELECOM	RP	RODDING POINT
CTV	CABLE TV	RS	ROAD SIGN
CL	COVER LEVEL	SP	SIGN POST
CR	CABLE RISER	SV	STOP VALVE
DP	DOWN PIPE	TL	TRAFFIC LIGHT
EN	EARTH ROD	TP	TELEGRAPH POLE
EP	ELECTRICITY POLE	TOP	TOP OF FENCE
EM	ELECTRICITY MARKER	TOH	TOP OF HEDGE
FB	FUSE BOX	TOR	TOP OF RAILINGS
FH	FIRE HYDRANT	TOS	SERVICE LEVEL
FP	FENCE POST	TOW	TOP OF WALL
FL	FLOOR LEVEL	UTL	UNABLE TO LIFT
GV	GAS VALVE	VM	VALVE MARKER
GM	GAS MARKER	VP	VENT PIPE
GU	GULLY	WL	WATER LEVEL
HM	HYDRANT MARKER	WM	WATER MARKER
L	INVERT LEVEL	WO	WASH OUT

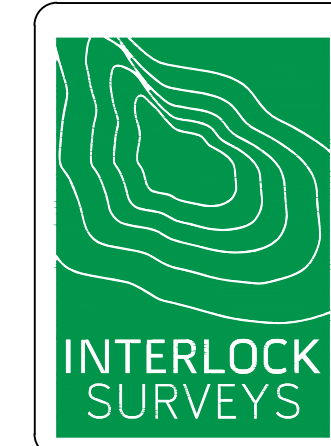
General.
This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.
All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.
Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore size should be regarded as approximate.
Some detail may have been omitted due to parked vehicles.

Notes.
Coordinates related to OS National Grid from ST10 by GPS (No scale factor added).
Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	25/02/15	RET	25/02/15	RET	25/02/15



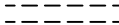
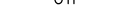
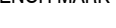
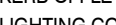
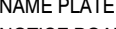
Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOLIHULL PARKWAY
BIRMINGHAM
B37 7WY

Title.
TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX

Symbol & Abbreviation Key.

	BARRED WIRE FENCE		BARRED WIRE FENCE
	POST & RAIL FENCE		POST & RAIL FENCE
	CLOSE BOARD FENCE		CLOSE BOARD FENCE
	RAILINGS		RAILINGS
	CHAIN LINK FENCE		CHAIN LINK FENCE
	OTHER FENCE		OTHER FENCE
	KERN		KERN
	DROPPED KERN		DROPPED KERN
	GULLY CHANNEL		GULLY CHANNEL
	TOP / BOTTOM OF BANK		TOP / BOTTOM OF BANK
	FOLIAE		FOLIAE
	ETCH		ETCH
	VERGE		VERGE
	UNDER CABLES		UNDER CABLES
	GATE		GATE
	HEISE		HEISE
	TREE - BROAD LEAVED		TREE - BROAD LEAVED
	TREE - CONIFEROUS		TREE - CONIFEROUS
	BUSH		BUSH
	BUILDING		BUILDING
	BOREHOLE		BOREHOLE
	SURVEY STATION		SURVEY STATION
	ORDNANCE SURVEY BENCHMARK		ORDNANCE SURVEY BENCHMARK

AC	AIR CONDITION UNIT	KO	KERN OPLET
AV	AIR VALVE	LC	LIGHTING COLUMN
BO	BOILER	LP	LAND POST
BH	BOREHOLE	NP	NATIVE NAME
BL	BLIND	NB	NOTICE BOARD
BN	BENCH MARK	PR	PRIE RISSER
BT	BRITISH TELECOM	RP	RODING POST
CTV	CABLE TV	RS	ROAD SIGN
CL	COVER LEVEL	SP	SIGN POST
CR	CABLE RISER	SV	STOP VALVE
DP	DOWN PIPE	TH	THANK LIGHT
ER	EARTH ROD	TOF	TOPOGRAPHIC POLE
EP	ELECTRICITY POLE	TOP	TOP OF FENCE
EM	ELECTRICITY METER	TOH	TOP OF HEDGE
FP	FUSE BOX	TOR	TOP OF RAILINGS
FH	FIRE HYDRANT	TSL	SERVICE LEVEL
FM	FENCE POST	TOW	TOP OF WALL
FL	FLOOD LEVEL	UTL	UNABLE TO LIFT
GV	GV VALVE	VLM	VALVE MARKER
GM	GAS MANNER	VPT	VENT PIPE
GU	GULLY	WL	WATER LEVEL
HM	HIGH POINT MARKER	WV	WATER MANNER
IL	INVERT LEVEL	WOL	WASH OUT

General.

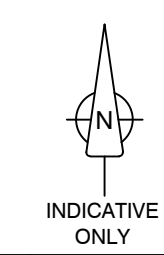
This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore sizes should be regarded as approximate.

Some detail may have been omitted due to parked vehicles.

Notes.
Coordinates related to OS National Grid from ST10 by GPS (No scale factor added).
Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RW	25/02/15	RGT	25/02/15	RGT	25/02/15



Client.

BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOLIHULL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX

Dwg No. **141025 3D** Sheet **43 of 77**

Scale 1:200 A0 Sheet Rev. -



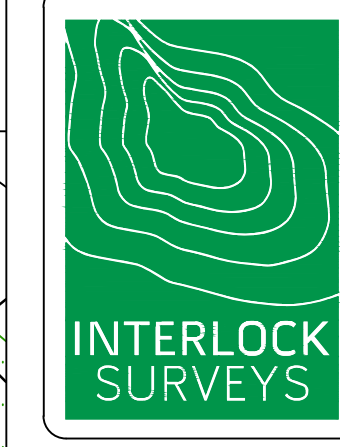
Symbol & Abbreviation Key			
	BARBED WIRE FENCE		KERB
	POST & RAIL FENCE		DROPPED KERB
	CLOSE BOARD FENCE		GULLY CHANNEL
	RAILINGS		TOP / BOTTOM OF BANK
	CHAIN LINK FENCE		FOULAGE
	OTHER FENCE		DITCH
	KERB		VERGE
	OVERHEAD CABLES		GATE
	HEDGE		TREE - BROAD LEAVED
	TREE - CONIFEROUS		BUSH
	BUILDING		BOREHOLE
	SURVEY STATION		ORDNANCE SURVEY BENCHMARK
	A/C		KERB OFFSET
	AV		LIGHTING COLUMN
	BOL		LAMP POST
	BH		NAME PLATE
	BL		NOTICE BOARD
	BM		PIPE RISER
	BT		ROAD SIGN
	CTV		ROAD SIGN
	CL		SIGN POST
	CR		STOP VALVE
	DP		TRAFFIC LIGHT
	ER		TELEGRAPH POLE
	EP		TOP OF FENCE
	EM		TOP OF HEDGE
	FB		TOP OF RAILINGS
	FH		SERVICE LEVEL
	FP		TOP OF WALL
	FL		UNABLE TO LIFT
	GV		VALVE MARKER
	GM		VENT PIPE
	GU		WATER LEVEL
	HM		WATER MARKER
	L		WASH OUT

General.
This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.
All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.
Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore size should be regarded as approximate.
Some detail may have been omitted due to parked vehicles.

Notes.
Coordinates related to OS National Grid from ST10 by GPS (No scale factor added).
Levels related to GPS.

Details of Revision				Drawn	Date
Rev					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					

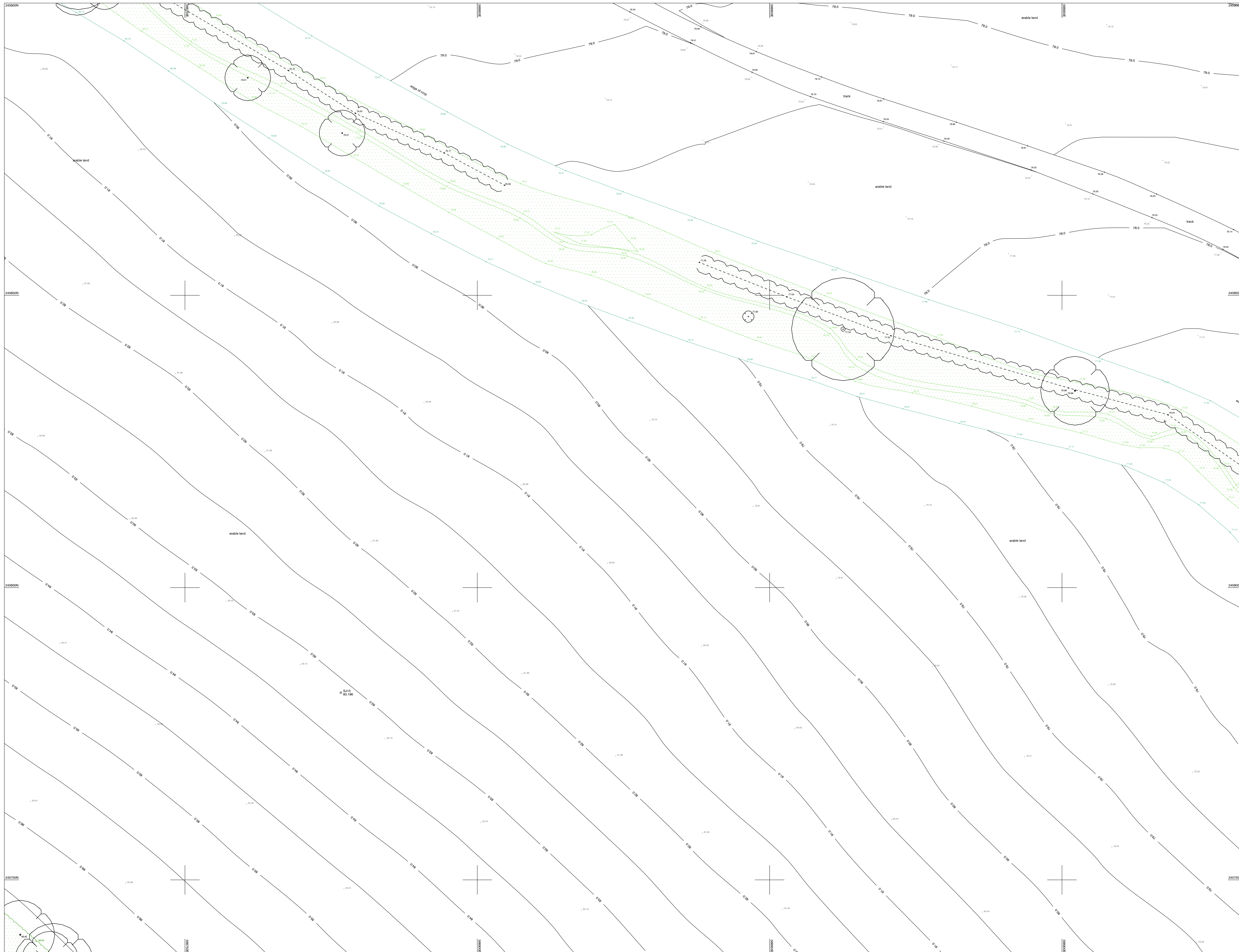
Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	26/02/15	RET	26/02/15	RET	26/02/15



Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF
T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOUTHILL PARKWAY
BIRMINGHAM
B37 7WY

Title.
TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX



Symbol & Abbreviation Key.

	BARBED WIRE FENCE		KERB
	POST & RAIL FENCE		CLOSE BOARD FENCE
	RAILINGS		CHARLTON FENCE
	OTHER FENCE		DROPPED KERB
	GULLY CHANNEL		TOP / BOTTOM OF TRAFFIC LIGHT
	FOULAGE		DITCH
	VERGE		OVERHEAD CABLES
	GATE		HEDGE
	TREE - BROAD LEAVED		TREE - CONIFEROUS
	BUSH		BUILDING
	BOREHOLE		SURVEY STATION
	ORDNANCE SURVEY BENCHMARK		

AC	AIR CONDITIONING UNIT	KO	KERB OPLEFT
AR	ARRIVALE	LC	LIGHTING COLUMN
BO	BOLLARD	LP	LAMP POST
BH	BOREHOLE	NP	NAME PLATE
BL	BEVELLED LINE	NS	NOTICE BOARD
BT	BENCH MARK	PR	PRIER
BM	BENCH TELECOM	PP	POSSIBLE POINT
CTV	CABLE TV	RS	ROAD SIGN
CL	CABLE LEVEL	SV	SIGN POST
CR	COVER RECESS	ST	STOP PLATE
DN	DOWN PIPE	TL	TRAFFIC LIGHT
ER	EARTH ROD	TP	TELEGRAPH POLE
EP	ELECTRICITY POLE	TO	TOP OF FENCE
EM	ELECTRICITY MANNER	TOH	TOP OF HEDGE
FI	FIRE BOX	TOR	TOP OF RAILINGS
FH	FIRE HYDRANT	TSS	SERVICE LEVEL
FM	FENCE POST	TOW	TOP OF WALL
FL	FLOOR LEVEL	UTL	UNABLE TO LIFT
GV	GAS VALVE	VL	VALVE MARKER
GM	GAS MANHOLE	VP	VERT PILE
GU	GULLY	WL	WATER LEVEL
HM	HYDRANT MANHOLE	WM	WATER MARKER
I	INVERT	WO	WASH OUT

General.

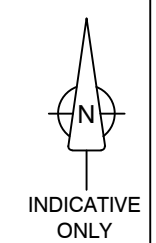
This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore sizes should be regarded as approximate.

Some detail may have been omitted due to parked vehicles.

Notes.
Coordinates related to OS National Grid from ST10 by GPS (No scale factor added).
Levels related to GPS.



Rev	Details of Revision				Drawn	Date
ET	R/W	25/02/15	RGT	25/02/15	RGT	25/02/15



Client.

BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOLIHULL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX

Dwg No. **141025 3D** Sheet **46 of 77**

Scale 1:200 A0 Sheet Rev. -



Symbol & Abbreviation Key			
	BARBED WIRE FENCE		KERB
	POST & RAIL FENCE		DROPPED KERB
	CLOSE BOARD FENCE		GULLY CHANNEL
	RAILINGS		TOP / BOTTOM OF BANK
	CHAIN LINK FENCE		FOULAGE
	OTHER FENCE		DITCH
	KERB		VERGE
	DROPPED KERB		OVERHEAD CABLES
	GULLY CHANNEL		GATE
	TOP / BOTTOM OF BANK		HEDGE
	FOULAGE		TREE - BROAD LEAVED
	DITCH		TREE - CONIFEROUS
	VERGE		BUSH
	OVERHEAD CABLES		BUILDING
	GATE		BOREHOLE
	HEDGE		SURVEY STATION
	TREE - BROAD LEAVED		ORDNANCE SURVEY BENCH MARK
	TREE - CONIFEROUS		
	BUSH		
	BUILDING		
	BOREHOLE		
	SURVEY STATION		
	ORDNANCE SURVEY BENCH MARK		

General.

This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore size should be regarded as approximate.

Some detail may have been omitted due to parked vehicles.

Notes.

Coordinates related to OS National Grid from ST10 by GPS (No scale factor added). Levels related to GPS.



Rev	Details of Revision	Drawn	Date
ET	RM	25/02/15	25/02/15

Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.

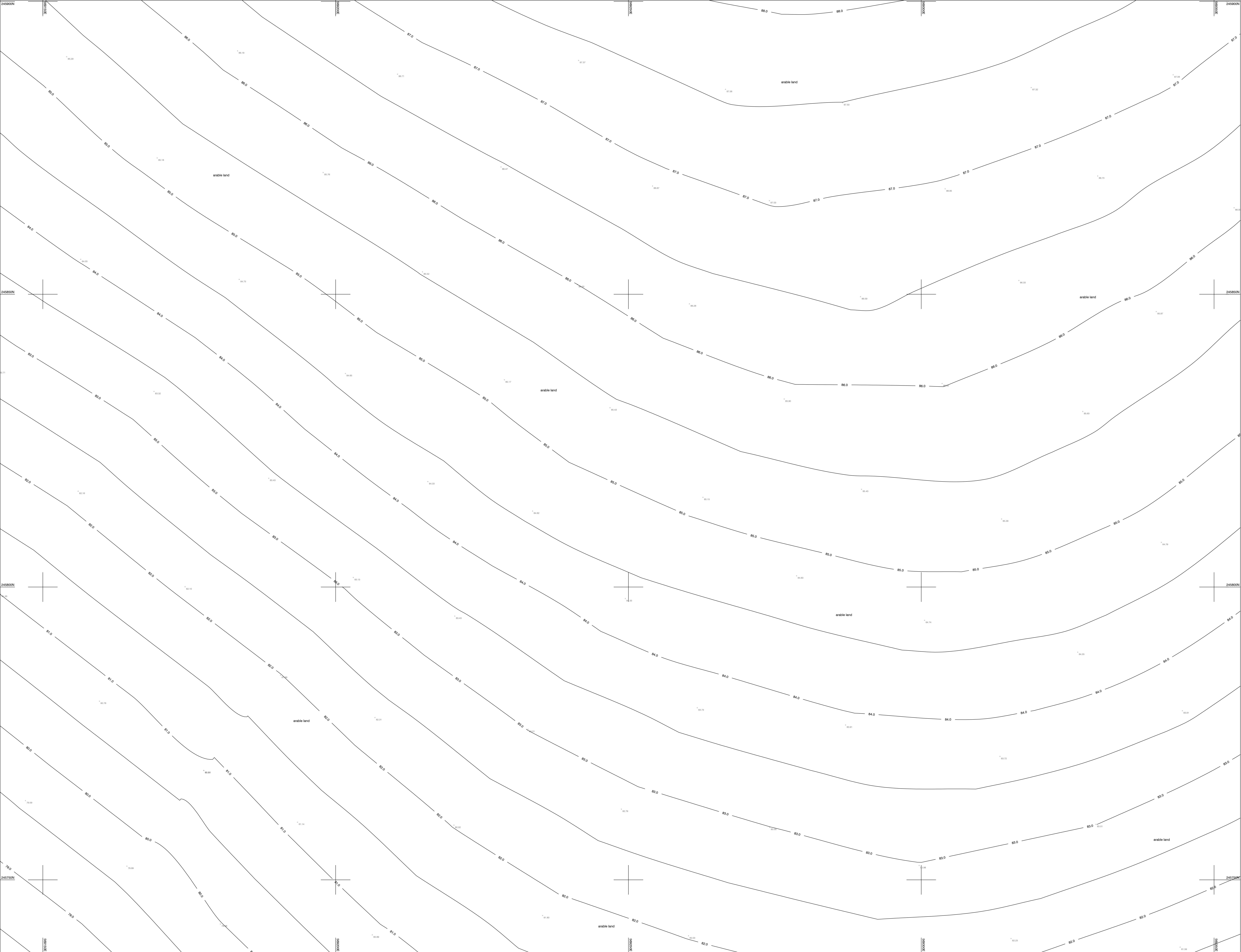
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOUTHILL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX

Dwg No. **141025 3D** Sheet **47 of 77**

Scale 1:200 A0 Sheet Rev. -



Symbol & Abbreviation Key			
	BARBED WIRE FENCE		
	POST & RAIL FENCE		
	CLOSE BOARD FENCE		
	RAILINGS		
	CHAIN LINK FENCE		
	OTHER FENCE		
	KERB		
	DROPPED KERB		
	GULLY CHANNEL		
	TOP / BOTTOM OF BANK		
	FOULAGE		
	DITCH		
	VERGE		
	OVERHEAD CABLES		
	GATE		
	HEDGE		
	TREE - BROAD LEAVED		
	TREE - CONIFEROUS		
	BUSH		
	BUILDING		
	BOREHOLE		
	SURVEY STATION		
	ORDNANCE SURVEY BENCH MARK		
A/C	AIR CONDITIONING UNIT	KO	KERB OFFSET
AV	AIR VALVE	LC	LIGHTING COLUMN
BOL	BOLLARD	LP	LAMP POST
BH	BOREROLE	NP	NAME PLATE
BL	BED LEVEL	NB	NOTICE BOARD
BM	BENCH MARK	PR	PIPE RISER
BT	BRITISH TELECOM	RP	ROAD SIGN
CTV	CABLE TV	RS	ROAD SIGN
CL	COVER LEVEL	SP	SIGN POST
CR	CABLE RISER	SV	STOP VALVE
DP	DOWN PIPE	TL	TRAFFIC LIGHT
ER	EARTH ROD	TP	TELEGRAPH POLE
EP	ELECTRICITY POLE	TOF	TOP OF FENCE
EM	ELECTRICITY MARKER	TOH	TOP OF HEDGE
FB	FUSE BOX	TOR	TOP OF RAILINGS
FH	FIRE HYDRANT	TOS	SERVICE LEVEL
FP	FENCE POST	TOW	TOP OF WALL
FL	FLOOR LEVEL	UTL	UNABLE TO LIFT
GV	GAS VALVE	VM	VALVE MARKER
GM	GAS MARKER	VP	VENT PIPE
GU	GULLY	WL	WATER LEVEL
HM	HYDRANT MARKER	WM	WATER MARKER
L	INVERT LEVEL	WO	WASH OUT

General.

This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore sizes should be regarded as approximate.

Some detail may have been omitted due to parked vehicles.

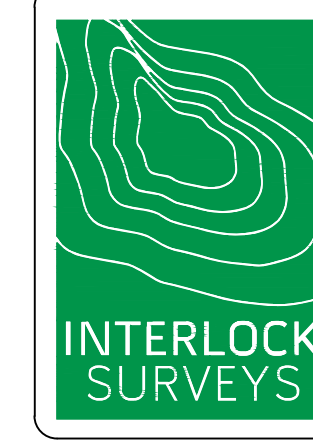
Notes.

Coordinates related to OS National Grid from ST 10 by GPS (No scale factor added). Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	26/02/15	RG	26/02/15	RG	26/02/15



Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.

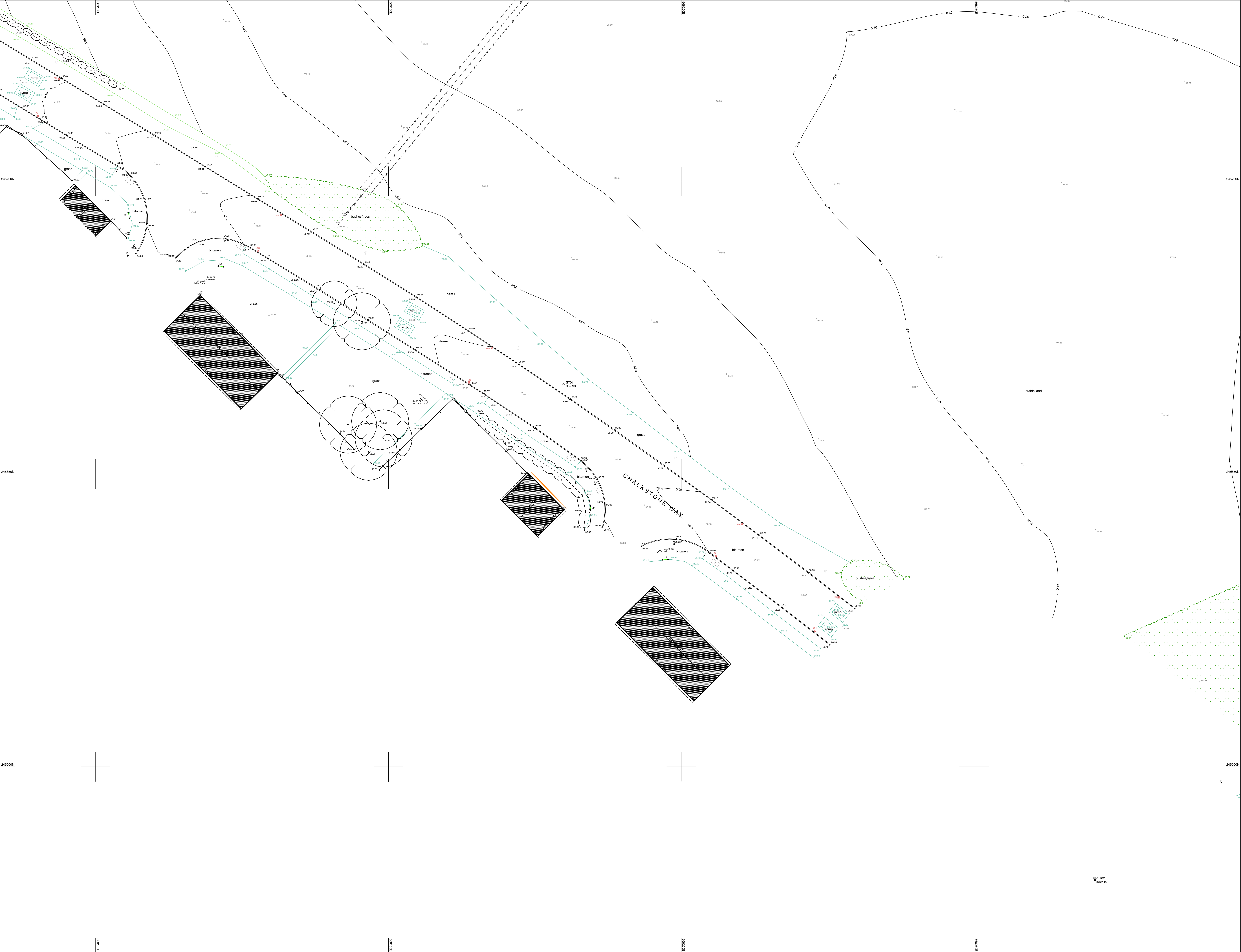
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOLIHULL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX

Dwg No. **141025 3D** Sheet **48 of 77**

Scale 1:200 A0 Sheet Rev. -



Symbol & Abbreviation Key			
[Symbol]	BARBED WIRE FENCE	[Symbol]	KO
[Symbol]	POST & RAIL FENCE	[Symbol]	LC
[Symbol]	CLOSE BOARD FENCE	[Symbol]	LP
[Symbol]	RAILINGS	[Symbol]	NP
[Symbol]	CHAIN LINK FENCE	[Symbol]	NB
[Symbol]	OTHER FENCE	[Symbol]	PR
[Symbol]	KERB	[Symbol]	RP
[Symbol]	DROPPED KERB	[Symbol]	RS
[Symbol]	GULLY CHANNEL	[Symbol]	SP
[Symbol]	TOP / BOTTOM OF BANK	[Symbol]	SV
[Symbol]	FOLIAGE	[Symbol]	TL
[Symbol]	DITCH	[Symbol]	TP
[Symbol]	VERGE	[Symbol]	TOF
[Symbol]	OVERHEAD CABLES	[Symbol]	TOH
[Symbol]	GATE	[Symbol]	TOR
[Symbol]	HEDGE	[Symbol]	TOS
[Symbol]	TREE - BROAD LEAVED	[Symbol]	TOW
[Symbol]	TREE - CONIFEROUS	[Symbol]	UTL
[Symbol]	BUSH	[Symbol]	VM
[Symbol]	BUILDING	[Symbol]	VP
[Symbol]	SCORPHOLE	[Symbol]	WL
[Symbol]	SURVEY STATION	[Symbol]	WM
[Symbol]	ORDNANCE SURVEY BENCH MARK	[Symbol]	WVO

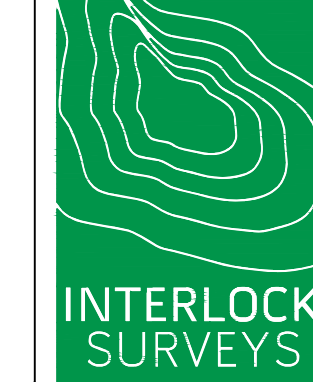
General.
This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.
All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.
Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore size should be regarded as approximate.
Some detail may have been omitted due to parked vehicles.

Notes.
Coordinates related to OS National Grid from ST10 by GPS (No scale factor added).
Levels related to GPS.

INDICATIVE ONLY			

Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	25/02/15	RET	25/02/15	RET	25/02/15



Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF
T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOLIHULL PARKWAY
BIRMINGHAM
B37 7WY

Title.
TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX



Symbol & Abbreviation Key	
	BARBED WIRE FENCE
	POST & RAIL FENCE
	CLOSE BOARD FENCE
	RAILINGS
	CHAIN LINK FENCE
	OTHER FENCE
	KERB
	DROPPED KERB
	GULLY CHANNEL
	TOP / BOTTOM OF BANK
	FOULAGE
	DITCH
	VERGE
	OVERHEAD CABLES
	GATE
	HEDGE
	TREE - BROAD LEAVED
	TREE - CONIFEROUS
	BUSH
	BUILDING
	BOREHOLE
	SURVEY STATION
	ORDNANCE SURVEY BENCH MARK
A/C	AIR CONDITIONING UNIT
AV	AIR VALVE
BOL	BOLLARD
BH	BOREHOLE
BL	BED LEVEL
BM	BENCH MARK
BT	BRITISH TELECOM
CTV	CABLE TV
CL	COVER LEVEL
CR	CABLE RISER
DP	DOWN PIPE
EN	EARTH POLE
EP	ELECTRICITY POLE
EM	ELECTRICITY MARKER
FB	FUSE BOX
FI	FIRE HYDRANT
FP	FENCE POST
FL	FLOOR LEVEL
GV	GAS VALVE
GM	GAS MARKER
GU	GULLY
HM	HYDRANT MARKER
L	INVERT LEVEL
KO	KERB OFFSET
LC	LIGHTING COLUMN
LP	LAMP POST
NP	NAME PLATE
NB	NOTICE BOARD
PP	PIPE RISER
RP	RODDING POINT
RS	ROAD SIGN
SP	SIGN POST
SV	STOP VALVE
TL	TRAFFIC LIGHT
TP	TELEGRAPH POLE
TOF	TOP OF FENCE
TOH	TOP OF HEDGE
TOR	TOP OF RAILINGS
TOS	SERVICE LEVEL
TOW	TOP OF WALL
U/L	UNABLE TO LIFT
VM	VALVE MARKER
VP	VENT PIPE
WM	WATER MARKER
WO	WASH OUT

General.

This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore size should be reported as approximate.

Some detail may have been omitted due to parked vehicles.

Notes.

Coordinates related to OS National Grid from ST10 by GPS (No scale factor added)

Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	25/02/15	ROT	25/02/15	ROT	25/02/15

Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.

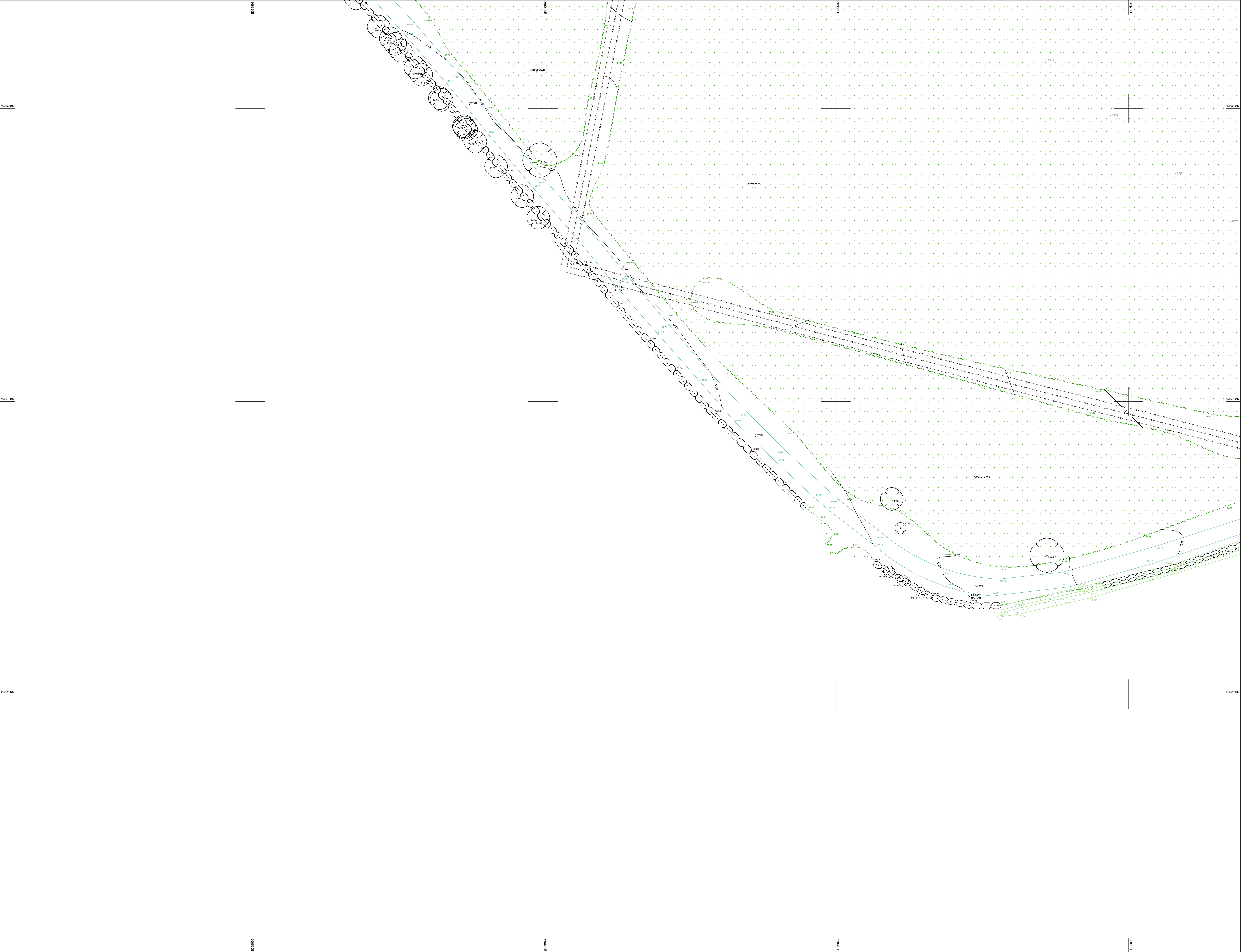
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOUTHILL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
SUFFOLK
CB9 0LX

Dwg No. **141025 3D** Sheet **51 of 77**

Scale 1:200 A0 Sheet Rev. -



Symbol & Abbreviation Key			
	BARBED WIRE FENCE		KERB
	POST & RAIL FENCE		DROPPED KERB
	CLOSE BOARD FENCE		GULLY CHANNEL
	RAILINGS		TOP - BOTTOM OF BANK
	CHAIN LINK FENCE		FOULAGE
	OTHER FENCE		DITCH
	VERGE		OVERHEAD CABLES
	GATE		HEDGE
	TREE - BROAD LEAVED		TREE - CONIFEROUS
	BUSH		BUILDING
	BOREHOLE		SURVEY STATION
	ORDNANCE SURVEY BENCH MARK		A/C
	AIR VALVE		KERB OFFSET
	BOLLARD		LAMP POST
	BOREHOLE		NAME PLATE
	BED LEVEL		NOTICE BOARD
	BENCH MARK		PIPE RISER
	BRITISH TELECOM		ROAD SIGN
	CABLE TV		RODDING POINT
	COVER LEVEL		SIGN POST
	CABLE RISER		STOP VALVE
	DOWN PIPE		TRAFFIC LIGHT
	EARTH ROD		TELEGRAPH POLE
	ELECTRICITY POLE		TOP OF FENCE
	ELECTRICITY MARKER		TOP OF HEDGE
	FUSE BOX		TOP OF RAILINGS
	FIRE HYDRANT		SERVICE LEVEL
	FENCE POST		TOP OF WALL
	FLOOR LEVEL		UNABLE TO LIFT
	GAS VALVE		VALVE MARKER
	GAS MARKER		VENT PIPE
	HYDRANT MARKER		WATER MARKER
	INVERT LEVEL		WASH OUT

General.

This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore sizes should be regarded as approximate.

Some detail may have been omitted due to parked vehicles.

Notes.

Coordinates related to OS National Grid from ST 10 by GPS (No scale factor added). Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	26/02/15	RET	26/02/15	RET	26/02/15



Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.

BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOLIHULL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX

Dwg No. **141025 3D** Sheet **52 of 77**

Scale 1:200 A0 Sheet Rev. -



Symbol & Abbreviation Key	
	BARBED WIRE FENCE
	POST & RAIL FENCE
	CLOSE BOARD FENCE
	RAILINGS
	CHAIN LINK FENCE
	OTHER FENCE
	KERB
	DROPPED KERB
	GULLY CHANNEL
	TOP / BOTTOM OF BANK
	FOLIAGE
	DITCH
	VERGE
	OVERHEAD CABLES
	GATE
	HEDGE
	TREE - BROAD LEAVED
	TREE - CONIFEROUS
	BUSH
	BUILDING
	SPORCH
	SURVEY STATION
	ORDNANCE SURVEY BENCH MARK
A/C	AIR CONDITIONING UNIT
AV	AIR VALVE
BOL	BOLLARD
BH	BOREROLE
BL	BED LEVEL
BM	BENCH MARK
BT	BRITISH TELECOM
CTV	CABLE TV
CL	COVER LEVEL
CR	CABLE RISER
DP	DOWN PIPE
EN	EARTH ROD
EP	ELECTRICITY POLE
EM	ELECTRICITY MARKER
FB	FUSE BOX
FI	FIRE HYDRANT
FP	FENCE POST
FL	FLOOR LEVEL
GV	GAS VALVE
GM	GAS MARKER
GU	GULLY
HM	HYDRANT MARKER
L	INVERT LEVEL
KO	KERB OFFSET
LC	LIGHTING COLUMN
LP	LAMP POST
NP	NAME PLATE
NB	NOTICE BOARD
PR	PIPE RISER
RP	RODDING POINT
RS	ROAD SIGN
SP	SIGN POST
SV	STOP VALVE
TL	TRAFFIC LIGHT
TP	TELEGRAPH POLE
TOF	TOP OF FENCE
TOH	TOP OF HEDGE
TOR	TOP OF RAILINGS
TOS	SERVICE LEVEL
TOW	TOP OF WALL
UTL	UNABLE TO LIFT
VM	VALVE MARKER
VP	VENT PIPE
WM	WATER MARKER
WO	WASH OUT

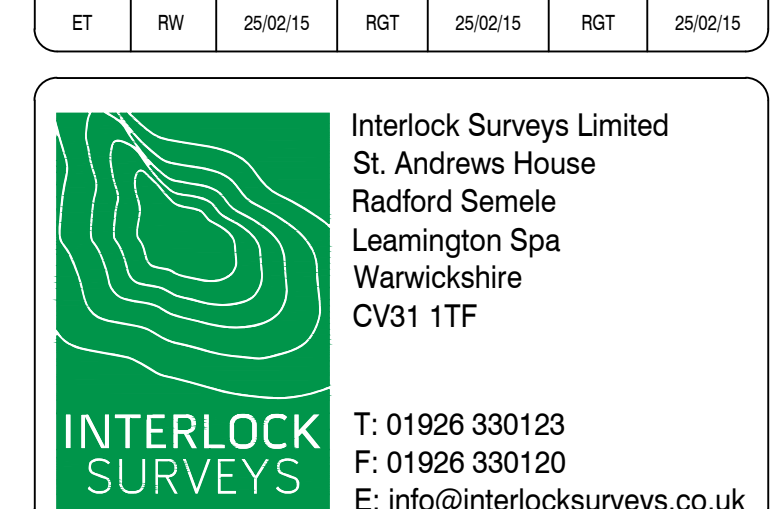
General.
This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.
All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.
Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore sizes should be regarded as approximate.
Some detail may have been omitted due to parked vehicles.

Notes.
Coordinates related to OS National Grid from ST10 by GPS (No scale factor added).
Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	26/02/15	RET	26/02/15	RET	26/02/15

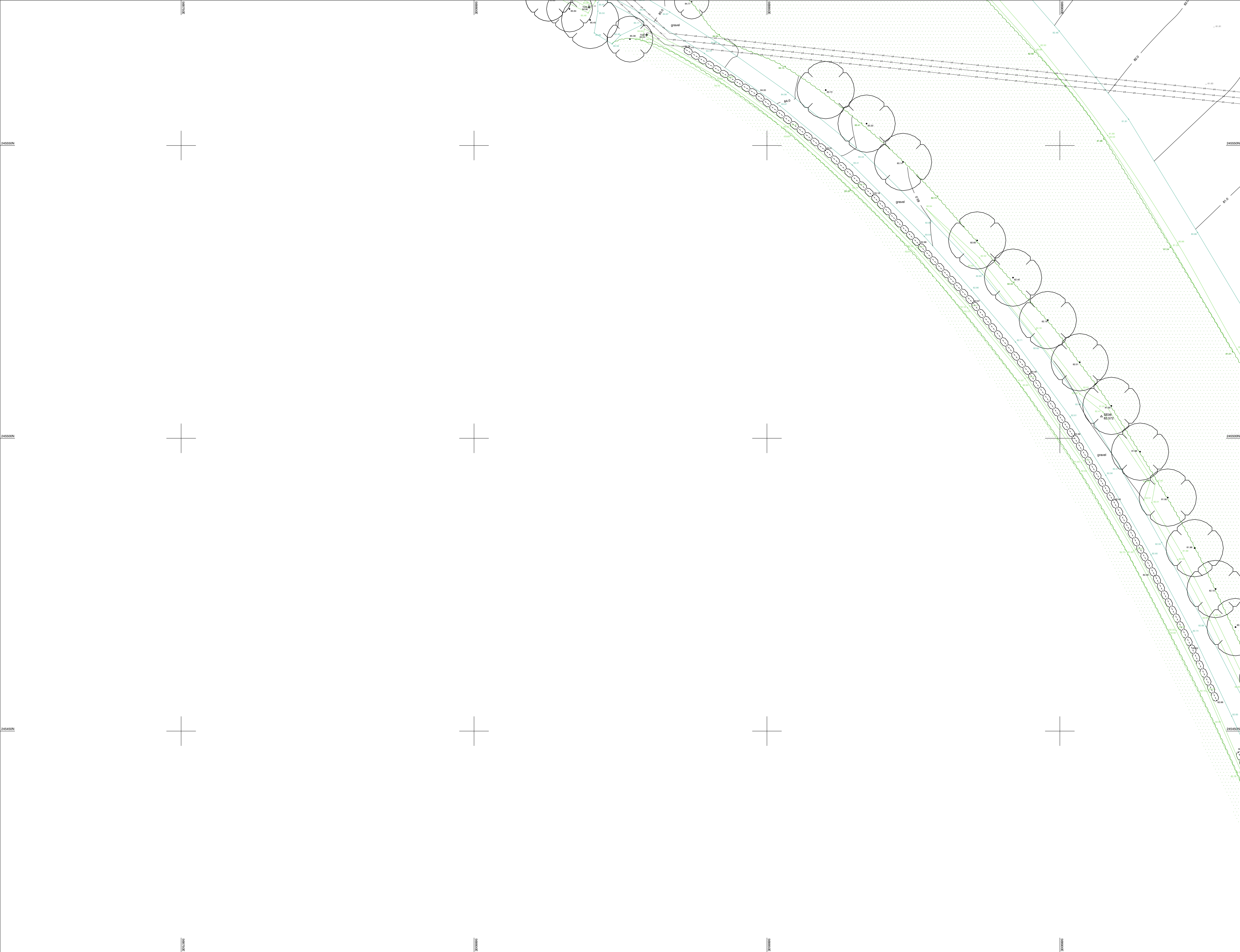


Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOUTHILL PARKWAY
BIRMINGHAM
B37 7WY

Title.
TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX



Symbol & Abbreviation Key			
	BARBED WIRE FENCE		KERB
	POST & RAIL FENCE		DROPPED KERB
	CLOSE BOARD FENCE		GULLY CHANNEL
	RAILINGS		TOP - BOTTOM OF BANK
	CHAIN LINK FENCE		FOULAGE
	OTHER FENCE		DITCH
	VERGE		OVERHEAD CABLES
	GATE		HEDGE
	TREE - BROAD LEAVED		TREE - CONIFEROUS
	BUSH		BUILDING
	BOREHOLE		SURVEY STATION
	ORDNANCE SURVEY BENCH MARK		
A/C	AIR CONDITIONING UNIT	KO	KERB OFFLET
AV	AIR VALVE	LC	LIGHTING COLUMN
BOL	BOLLARD	LP	LAMP POST
BH	BOREROLE	NP	NAME PLATE
BL	BED LEVEL	NB	NOTICE BOARD
BM	BENCH MARK	PR	PIPE RISER
BT	BRITISH TELECOM	RP	ROAD SIGN
CL	COVER LEVEL	RS	ROAD SIGN
CL	CABLE RISER	SP	STOP POST
CR	CABLE RISER	SV	STOP VALVE
DP	DOWN PIPE	TL	TRAFFIC LIGHT
EN	EARTH ROD	TP	TELEGRAPH POLE
EP	ELECTRICITY POLE	TOF	TOP OF FENCE
EM	ELECTRICITY MARKER	TOH	TOP OF HEDGE
FB	FUSE BOX	TOR	TOP OF RAILINGS
FI	FIRE HYDRANT	TOS	SERVICE LEVEL
FP	FENCE POST	TOW	TOP OF WALL
FL	FLOOR LEVEL	UTL	UNABLE TO LIFT
GV	GAS VALVE	VM	VALVE MARKER
GM	GAS MARKER	VP	VENT PIPE
GU	GULLY	WL	WATER LEVEL
HM	HYDRANT MARKER	WM	WATER MARKER
L	INVERT LEVEL	WO	WASH OUT

General.

This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore size should be regarded as approximate.

Some detail may have been omitted due to parked vehicles.

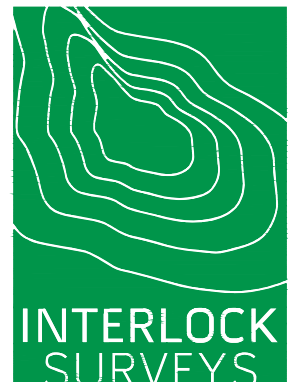
Notes.

Coordinates related to OS National Grid from ST 10 by GPS (No scale factor added). Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	26/02/15	RET	26/02/15	RET	26/02/15



Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

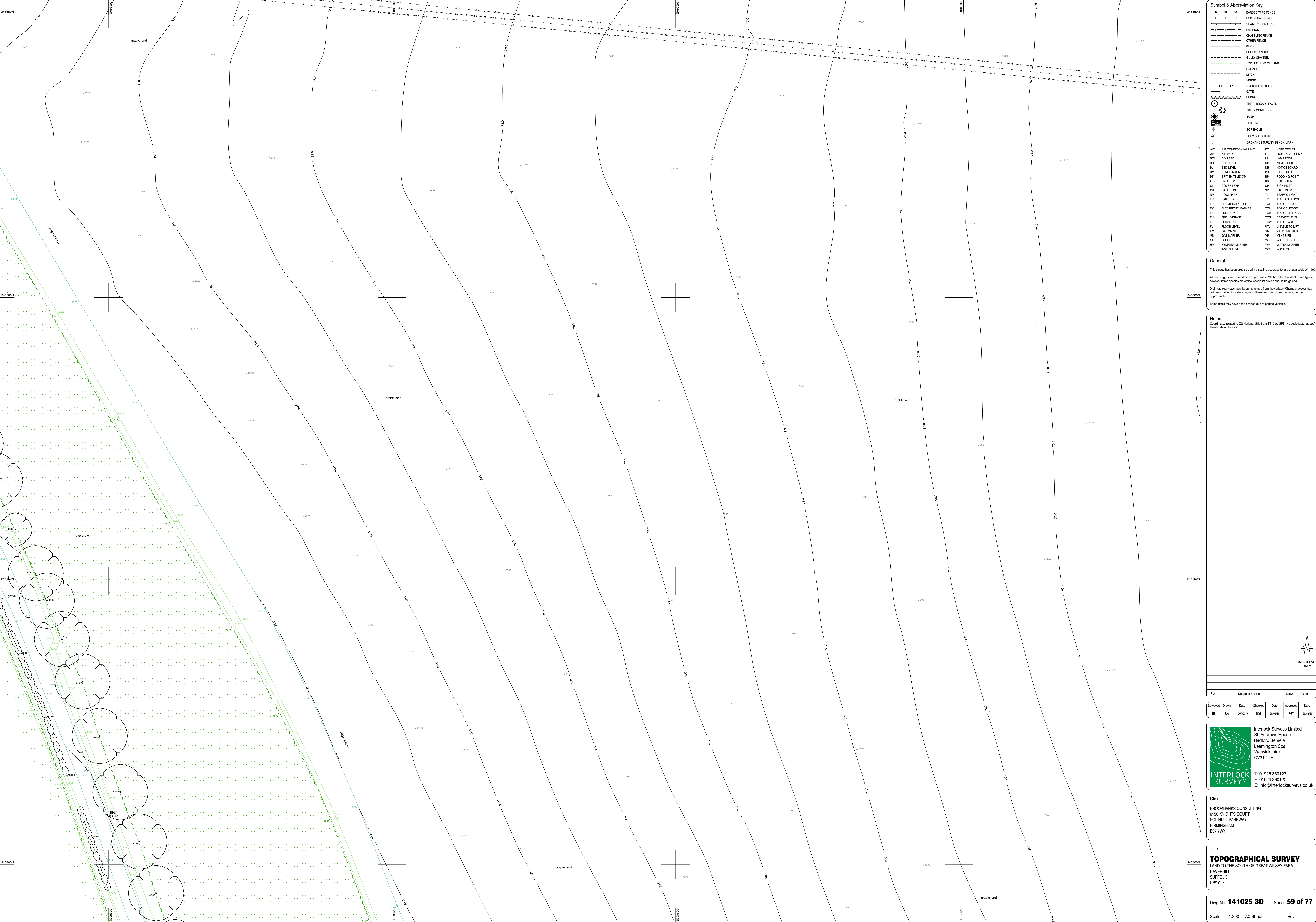
T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.

BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOLIHULL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX



Symbol & Abbreviation Key			
	BARBED WIRE FENCE		KERB
	POST & RAIL FENCE		DROPPED KERB
	CLOSE BOARD FENCE		GULLY CHANNEL
	RAILINGS		TOP / BOTTOM OF BANK
	CHAIN LINK FENCE		FOULAGE
	OTHER FENCE		DITCH
	KERB		VERGE
	OVERHEAD CABLES		GATE
	HEDGE		TREE - BROAD LEAVED
	TREE - CONIFEROUS		BUSH
	BUILDING		BOREHOLE
	SURVEY STATION		ORDNANCE SURVEY BENCH MARK
A/C	AIR CONDITIONING UNIT	KO	KERB OFFLET
AV	AIR VALVE	LC	LIGHTING COLUMN
BOL	BOLLARD	LP	LAMP POST
BH	BORSHOLE	NP	NAME PLATE
BL	BED LEVEL	NB	NOTICE BOARD
BM	BENCH MARK	PR	PIPE RISER
BT	BRITISH TELECOM	RP	RODDING POINT
CL	COVER LEVEL	SP	SIGN POST
CR	CABLE RISER	SV	STOP VALVE
DP	DOWN PIPE	TL	TRAFFIC LIGHT
EN	EARTH ROD	TP	TELEGRAPH POLE
EP	ELECTRICITY POLE	TOF	TOP OF FENCE
EM	ELECTRICITY MARKER	TOH	TOP OF HEDGE
FB	FUSE BOX	TOR	TOP OF RAILINGS
FI	FIRE HYDRANT	TOS	SERVICE LEVEL
FP	FENCE POST	TOW	TOP OF WALL
FL	FLOOR LEVEL	UTL	UNABLE TO LIFT
GV	GAS VALVE	VM	VALVE MARKER
GM	GAS MARKER	VP	VENT PIPE
GU	GULLY	WL	WATER LEVEL
HM	HYDRANT MARKER	WM	WATER MARKER
L	INVERT LEVEL	WO	WASH OUT

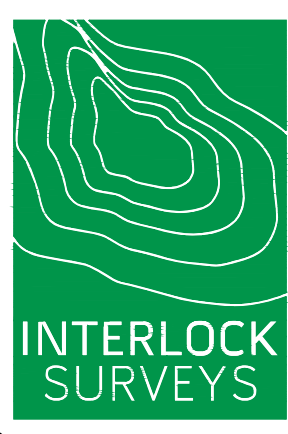
General.
This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.
All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.
Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore size should be regarded as approximate.
Some detail may have been omitted due to parked vehicles.

Notes.
Coordinates related to OS National Grid from ST10 by GPS (No scale factor added).
Levels related to GPS.



Rev	Details of Revision			Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	26/02/15	ROT	26/02/15	ROT	26/02/15



Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

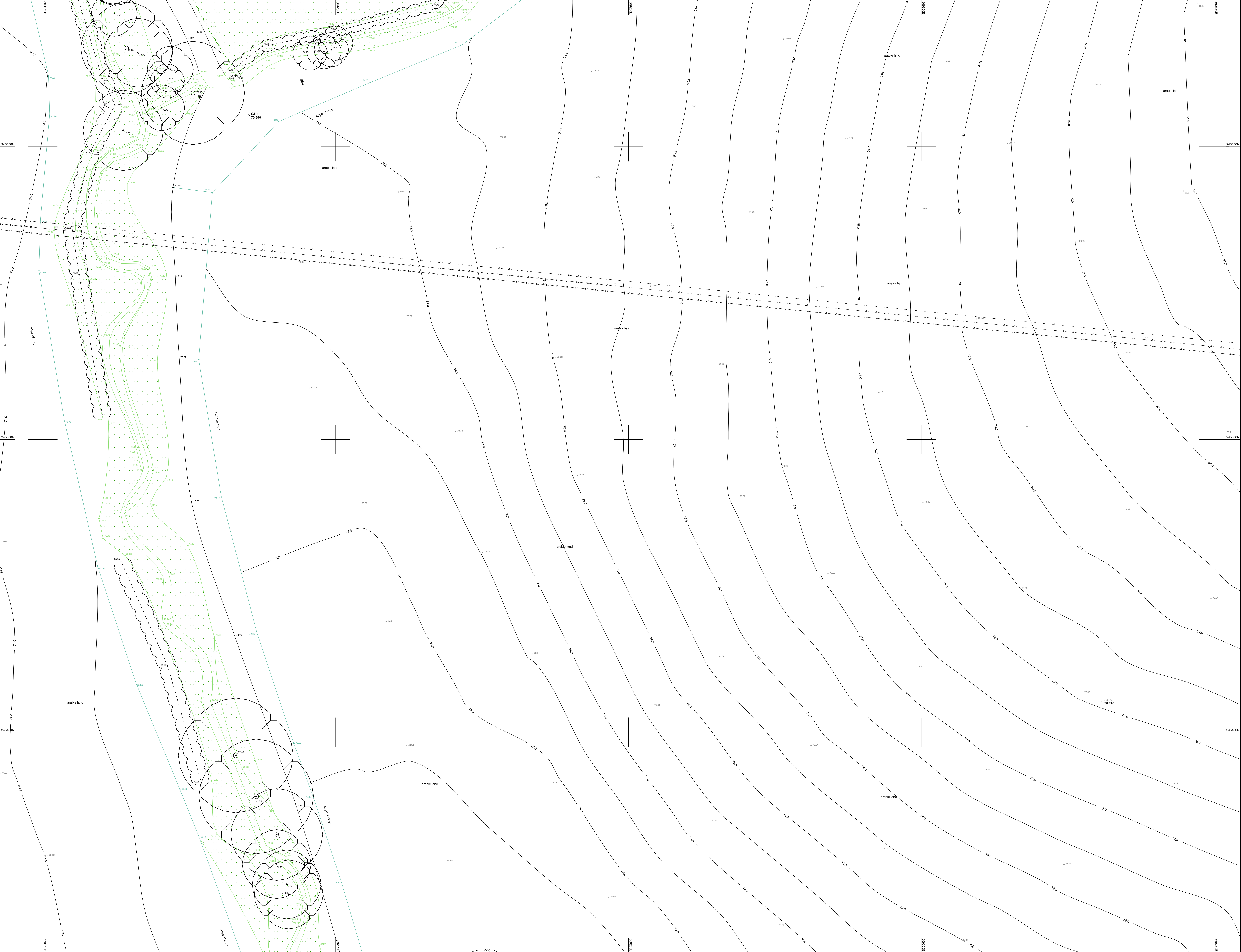
T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOLIHULL PARKWAY
BIRMINGHAM
B37 7WY

Title.
TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX

Dwg No. **141025 3D** Sheet **59 of 77**

Scale 1:200 A0 Sheet Rev. -



Symbol & Abbreviation Key	
	BARBED WIRE FENCE
	POST & RAIL FENCE
	CLOSE BOARD FENCE
	RAILINGS
	CHAIN LINK FENCE
	OTHER FENCE
	KERB
	DROPPED KERB
	GULLY CHANNEL
	TOP OF BANK
	FOULAGE
	DITCH
	VERGE
	OVERHEAD CABLES
	GATE
	HEDGE
	TREE - BROAD LEAVED
	TREE - CONIFEROUS
	BUSH
	BUILDING
	BOREHOLE
	SURVEY STATION
	ORDNANCE SURVEY BENCH MARK
A/C	AIR CONDITIONING UNIT
AV	AIR VALVE
BOL	BOLLARD
BH	BOREHOLE
BL	BED LEVEL
BM	BENCH MARK
BT	BRITISH TELECOM
CTV	CABLE TV
CL	COVER LEVEL
CR	CABLE RISER
DP	DOWN PIPE
EP	ELECTRICITY POLE
EM	ELECTRICITY MARKER
FB	FUSE BOX
FH	FIRE HYDRANT
FP	FENCE POST
FL	FLOOR LEVEL
GV	GAS VALVE
GM	GAS METER
GU	GULLY
HM	HYDRANT MARKER
L	INVERT LEVEL
KO	KERB OFFSET
LC	LIGHTING COLUMN
LP	LAMP POST
NP	NAME PLATE
NB	NOTICE BOARD
PR	PIPE RISER
RP	RODDING POINT
RS	ROAD SIGN
SP	SIGN POST
SV	STOP VALVE
TL	TRAFFIC LIGHT
TP	TELEGRAPH POLE
TOF	TOP OF FENCE
TOH	TOP OF HEDGE
TOR	TOP OF RAILINGS
TOS	SERVICE LEVEL
TOW	TOP OF WALL
U/L	UNABLE TO LIFT
VM	VALVE MARKER
VP	VENT PIPE
WL	WATER LEVEL
WM	WATER MARKER
WO	WASH OUT

General.

This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore sizes should be regarded as approximate.

Some detail may have been omitted due to parked vehicles.

Notes.

Coordinates related to OS National Grid from ST10 by GPS (No scale factor added). Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	26/02/15	ROT	26/02/15	ROT	26/02/15

Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.

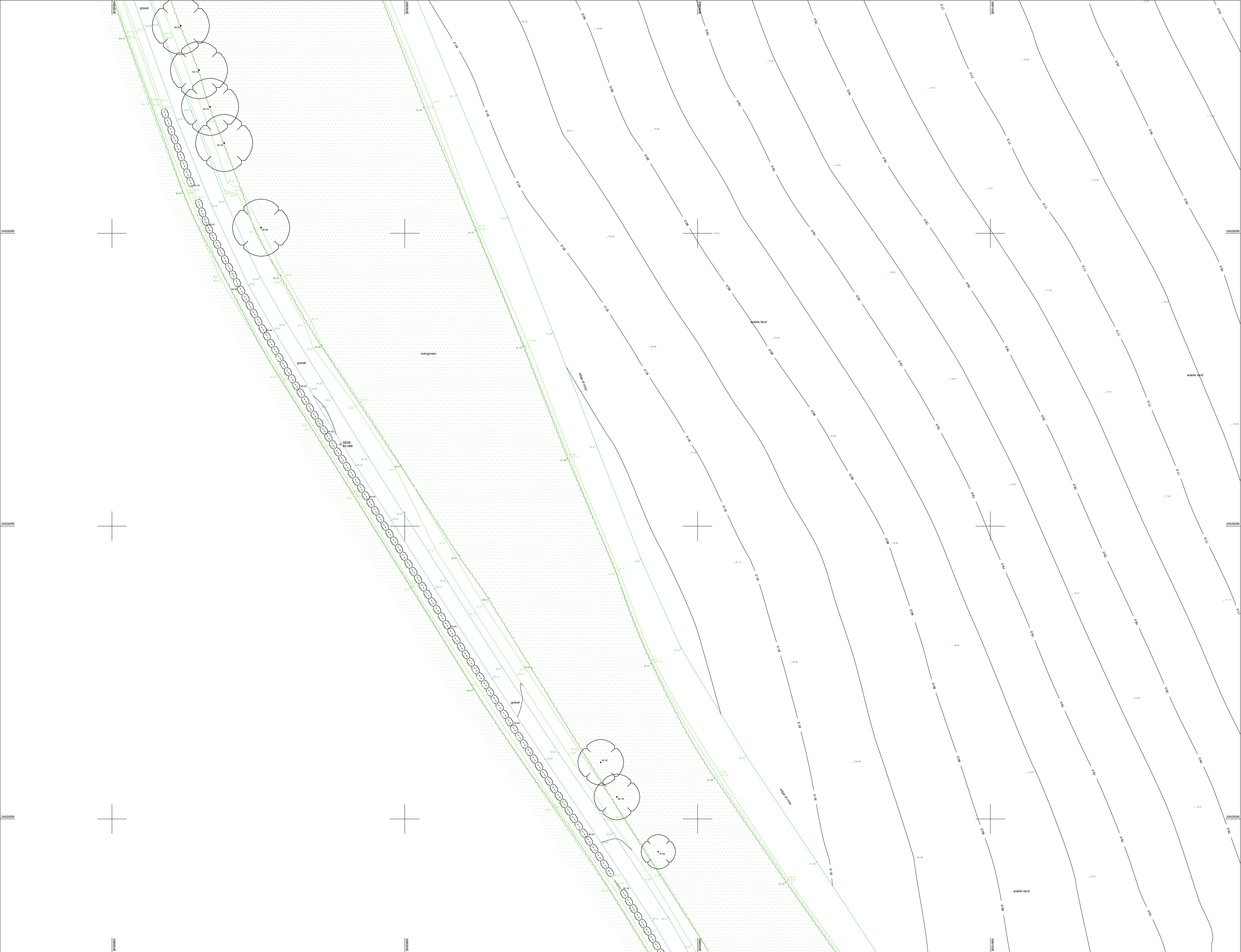
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOUTHILL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX

Dwg No. **141025 3D** Sheet **60 of 77**

Scale 1:200 A0 Sheet Rev. -



Symbol & Abbreviation Key			
	BARBED WIRE FENCE		
	POST & RAIL FENCE		
	CLOSE BOARD FENCE		
	RAILINGS		
	CHAIN LINK FENCE		
	OTHER FENCE		
	KERB		
	DROPPED KERB		
	GULLY CHANNEL		
	TOP / BOTTOM OF BANK		
	FOULAGE		
	DITCH		
	VERGE		
	OVERHEAD CABLES		
	GATE		
	HEDGE		
	TREE - BROAD LEAVED		
	TREE - CONIFEROUS		
	BUSH		
	BUILDING		
	BOREHOLE		
	SURVEY STATION		
	ORDNANCE SURVEY BENCH MARK		
A/C	AIR CONDITIONING UNIT	KO	KERB OFFLET
AV	AIR VALVE	LC	LIGHTING COLUMN
BOL	BOLLARD	LP	LAMP POST
BH	BOREHOLE	NP	NAME PLATE
BL	BED LEVEL	NB	NOTICE BOARD
BM	BENCH MARK	PR	PIPE RISER
BT	BRITISH TELECOM	RP	RODDING POINT
CTV	CABLE TV	RS	ROAD SIGN
CL	COVER LEVEL	SP	SIGN POST
CR	CABLE RISER	SV	STOP VALVE
DP	DOWN PIPE	TL	TRAFFIC LIGHT
ER	EARTH ROD	TP	TELEGRAPH POLE
EP	ELECTRICITY POLE	TOF	TOP OF FENCE
EM	ELECTRICITY MARKER	TOH	TOP OF HEDGE
FB	FUSE BOX	TOR	TOP OF RAILINGS
FH	FIRE HYDRANT	TOS	SERVICE LEVEL
FP	FENCE POST	TOW	TOP OF WALL
FL	FLOOR LEVEL	UTL	UNABLE TO LIFT
GV	GAS VALVE	VM	VALVE MARKER
GM	GAS MARKER	VP	VENT PIPE
GU	GULLY	WL	WATER LEVEL
HM	HYDRANT MARKER	WM	WATER MARKER
L	INVERT LEVEL	WO	WASH OUT

General.

This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore sizes should be regarded as approximate.

Some detail may have been omitted due to parked vehicles.

Notes.

Coordinates related to OS National Grid from ST10 by GPS (No scale factor added). Levels related to GPS.

Rev		Details of Revision		Drawn		Date	
ET	RM	25/02/15	RG	25/02/15	RG	25/02/15	

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	25/02/15	RG	25/02/15	RG	25/02/15

Rev		Details of Revision		Drawn		Date	
ET	RM	25/02/15	RG	25/02/15	RG	25/02/15	

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	25/02/15	RG	25/02/15	RG	25/02/15



Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

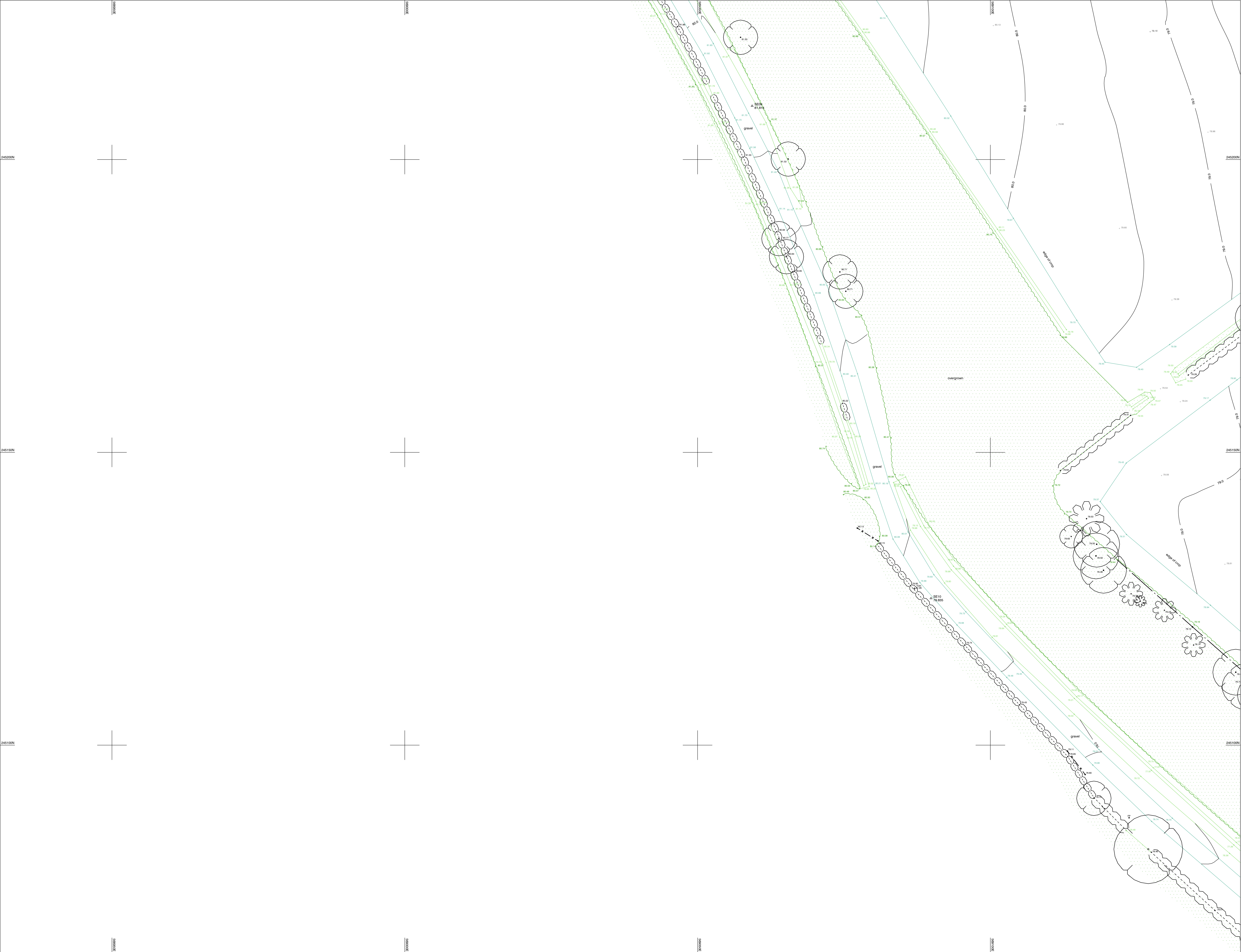
T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.

BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOUTHILL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX



Symbol & Abbreviation Key			
	BARBED WIRE FENCE		KERB
	POST & RAIL FENCE		DROPPED KERB
	CLOSE BOARD FENCE		GULLY CHANNEL
	RAILINGS		TOP / BOTTOM OF BANK
	CHAIN LINK FENCE		FOLIAGE
	OTHER FENCE		DITCH
	KERB		VERGE
	DROPPED KERB		OVERHEAD CABLES
	GULLY CHANNEL		GATE
	TOP / BOTTOM OF BANK		HEDGE
	FOLIAGE		TREE - BROAD LEAVED
	DITCH		TREE - CONIFEROUS
	VERGE		BUSH
	OVERHEAD CABLES		BUILDING
	GATE		BOREHOLE
	HEDGE		SURVEY STATION
	TREE - BROAD LEAVED		ORDNANCE SURVEY BENCH MARK
	TREE - CONIFEROUS		
	BUSH		
	BUILDING		
	BOREHOLE		
	SURVEY STATION		
	ORDNANCE SURVEY BENCH MARK		
A/C	AIR CONDITIONING UNIT	KO	KERB OFFLET
AV	AIR VALVE	LC	LIGHTING COLUMN
BOL	BOLLARD	LP	LAMP POST
BH	BOREHOLE	NP	NAME PLATE
BL	BED LEVEL	NB	NOTICE BOARD
BM	BENCH MARK	PR	PIPE RISER
BT	BRITISH TELECOM	RP	RODDING POINT
CTV	CABLE TV	RS	ROAD SIGN
CL	COVER LEVEL	SP	SIGN POST
CR	CABLE RISER	SV	STOP VALVE
DP	DOWN PIPE	TL	TRAFFIC LIGHT
ER	EARTH ROD	TP	TELEGRAPH POLE
EP	ELECTRICITY POLE	TOF	TOP OF FENCE
EM	ELECTRICITY MARKER	TOH	TOP OF HEDGE
FB	FUSE BOX	TOR	TOP OF RAILINGS
FI	FIRE HYDRANT	TOS	SERVICE LEVEL
FP	FENCE POST	TOW	TOP OF WALL
FL	FLOOR LEVEL	UTL	UNABLE TO LIFT
GV	GAS VALVE	VM	VALVE MARKER
GM	GAS MARKER	VP	VENT PIPE
GU	GULLY	WL	WATER LEVEL
HM	HYDRANT MARKER	WM	WATER MARKER
L	INVERT LEVEL	WO	WASH OUT

General.

This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore size should be regarded as approximate.

Some detail may have been omitted due to parked vehicles.

Notes.

Coordinates related to OS National Grid from ST10 by GPS (No scale factor added). Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	26/02/15	ROT	26/02/15	ROT	26/02/15

Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

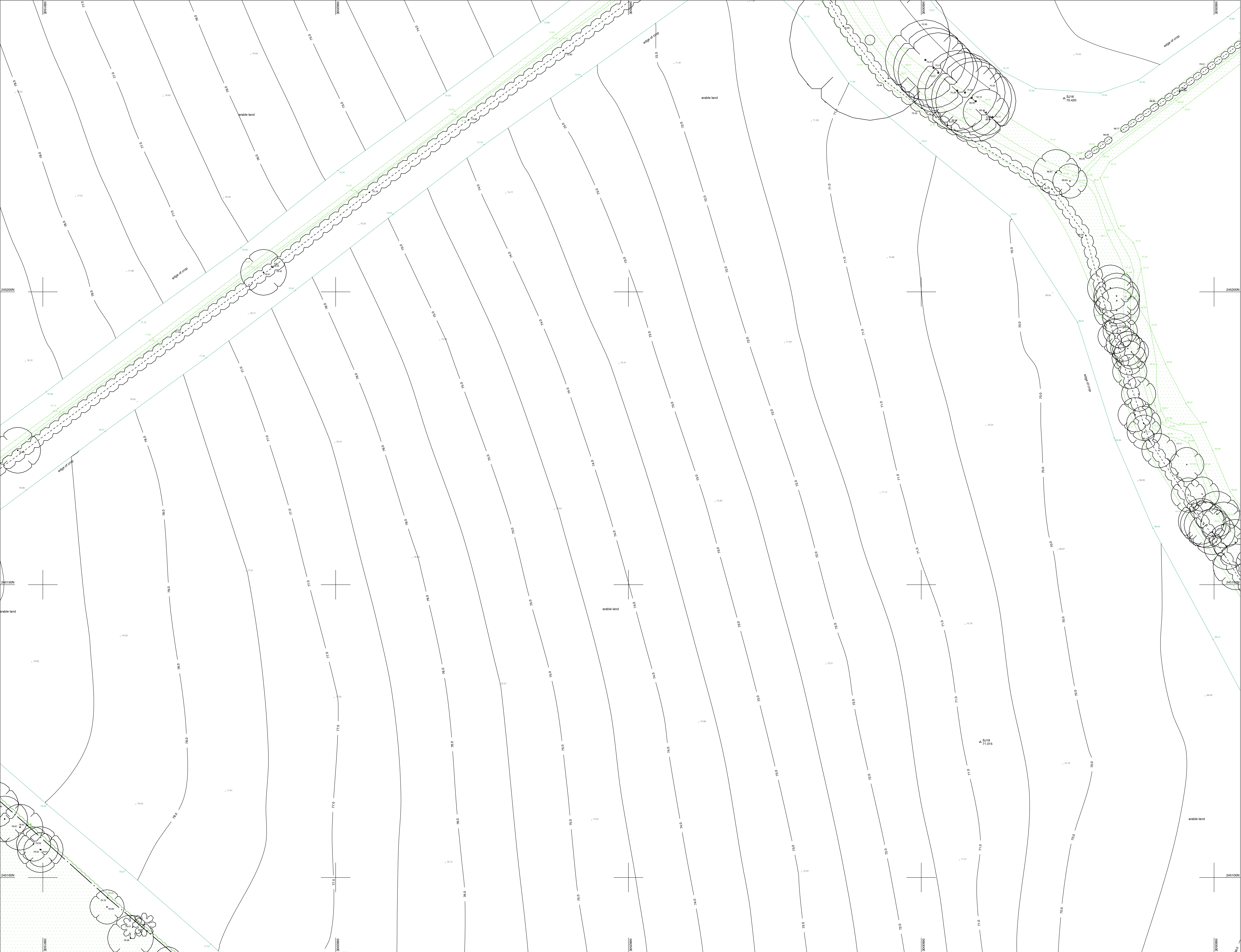
T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.

BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOLIHULL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX



Symbol & Abbreviation Key	
	BARBED WIRE FENCE
	POST & RAIL FENCE
	CLOSE BOARD FENCE
	RAILINGS
	CHAIN LINK FENCE
	OTHER FENCE
	KERB
	DROPPED KERB
	GULLY CHANNEL
	TOP / BOTTOM OF BANK
	FOULAGE
	DITCH
	VERGE
	OVERHEAD CABLES
	GATE
	HEDGE
	TREE - BROAD LEAVED
	TREE - CONIFEROUS
	BUSH
	BUILDING
	BENCHHOLE
	SURVEY STATION
	ORDNANCE SURVEY BENCHMARK
A/C	AIR CONDITIONING UNIT
AV	AIR VALVE
BOL	BOLLARD
BH	BOREROLE
BL	BED LEVEL
BM	BENCH MARK
BT	BRITISH TELECOM
CTV	CABLE TV
CL	COVER LEVEL
CR	CABLE RISER
DP	DOWN PIPE
EN	EARTH ROD
EP	ELECTRICITY POLE
EM	ELECTRICITY MARKER
FB	FUSE BOX
FI	FIRE HYDRANT
FP	FENCE POST
FL	FLOOR LEVEL
GV	GAS VALVE
GM	GAS MANNER
GU	GULLY
HM	HYDRANT MARKER
L	INVERT LEVEL
KO	KERB OFFSET
LC	LIGHTING COLUMN
LP	LAMP POST
NP	NAME PLATE
NB	NOTICE BOARD
PR	PIPE RISER
RP	RODDING POINT
RS	ROAD SIGN
SP	SIGN POST
SV	STOP VALVE
TL	TRAFFIC LIGHT
TP	TELEGRAPH POLE
TOP	TOP OF FENCE
TOH	TOP OF HEDGE
TOR	TOP OF RAILINGS
TOS	SERVICE LEVEL
TOW	TOP OF WALL
U/L	UNABLE TO LIFT
VM	VALVE MARKER
VP	VENT PIPE
WM	WATER MARKER
WO	WASH OUT

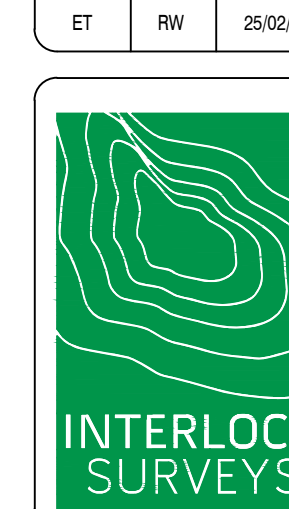
General.
This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.
All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.
Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore sizes should be regarded as approximate.
Some detail may have been omitted due to parked vehicles.

Notes.
Coordinates related to OS National Grid from ST10 by GPS (No scale factor added). Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	26/02/15	RG	26/02/15	RG	26/02/15



Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

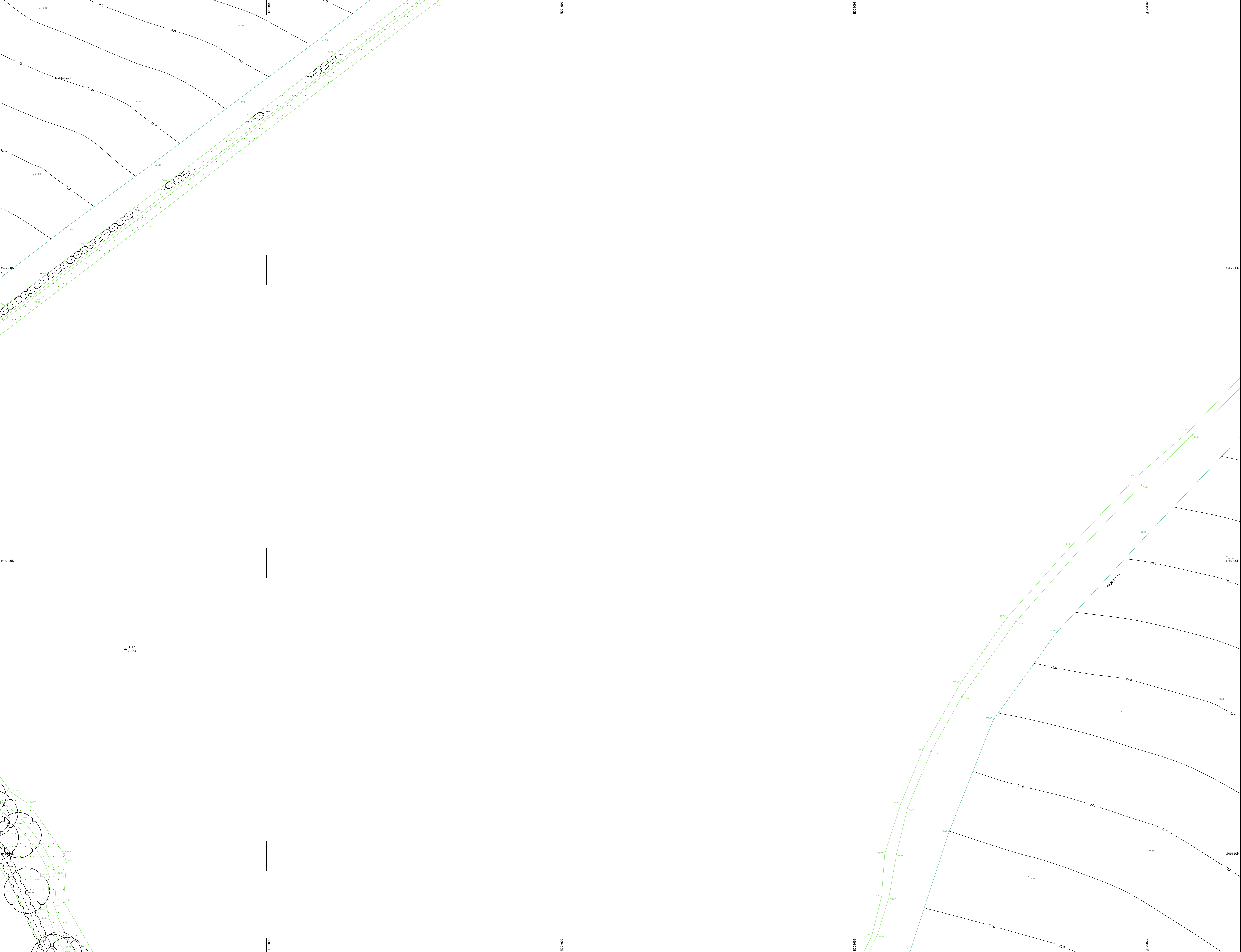
T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOUTHILL PARKWAY
BIRMINGHAM
B37 7WY

Title.
TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX

Dwg No. **141025 3D** Sheet **66 of 77**

Scale 1:200 A0 Sheet Rev. -



Symbol & Abbreviation Key	
	BARBED WIRE FENCE
	POST & RAIL FENCE
	CLOSE BOARD FENCE
	RAILINGS
	CHAIN LINK FENCE
	OTHER FENCE
	KERB
	DROPPED KERB
	GULLY CHANNEL
	TOP / BOTTOM OF BANK
	FOLIAGE
	DITCH
	VERGE
	OVERHEAD CABLES
	GATE
	HEDGE
	TREE - BROAD LEAVED
	TREE - CONIFEROUS
	BUSH
	BUILDING
	BOREHOLE
	SURVEY STATION
	ORDNANCE SURVEY BENCH MARK
A/C	AIR CONDITIONING UNIT
AV	AIR VALVE
BOL	BOLLARD
BH	BOREHOLE
BL	BED LEVEL
BM	BENCH MARK
BT	BRITISH TELECOM
CTV	CABLE TV
CL	COVER LEVEL
CR	CABLE RISER
DP	DOWN PIPE
ER	EARTH ROD
EP	ELECTRICITY POLE
EM	ELECTRICITY MARKER
FB	FUSE BOX
FH	FIRE HYDRANT
FP	FENCE POST
FL	FLOOR LEVEL
GV	GAS VALVE
GM	GAS MARKER
GU	GULLY
HM	HYDRANT MARKER
L	INVERT LEVEL
KO	KERB OFFSET
LC	LIGHTING COLUMN
LP	LAMP POST
NP	NAME PLATE
NB	NOTICE BOARD
PR	PIPE RISER
RP	RODDING POINT
RS	ROAD SIGN
SP	SIGN POST
SV	STOP VALVE
TL	TRAFFIC LIGHT
TP	TELEGRAPH POLE
TOF	TOP OF FENCE
TOH	TOP OF HEDGE
TOR	TOP OF RAILINGS
TOS	SERVICE LEVEL
TOW	TOP OF WALL
U/L	UNABLE TO LIFT
VM	VALVE MARKER
VP	VENT PIPE
WM	WATER MARKER
WO	WASH OUT

General.

This survey has been prepared with a scaling accuracy for a plot at a scale of 1:200.

All tree heights and spreads are approximate. We have tried to identify tree types, however if tree species are critical specialist advice should be gained.

Drainage pipe sizes have been measured from the surface. Chamber access has not been gained for safety reasons, therefore sizes should be regarded as approximate.

Some detail may have been omitted due to parked vehicles.

Notes.

Coordinates related to OS National Grid from ST10 by GPS (No scale factor added). Levels related to GPS.



Rev	Details of Revision	Drawn	Date

Surveyed	Drawn	Date	Checked	Date	Approved	Date
ET	RM	26/02/15	ROT	26/02/15	ROT	26/02/15

Interlock Surveys Limited
St. Andrews House
Radford Semele
Leamington Spa
Warwickshire
CV31 1TF

T: 01926 330123
F: 01926 330120
E: info@interlocksurveys.co.uk

Client.

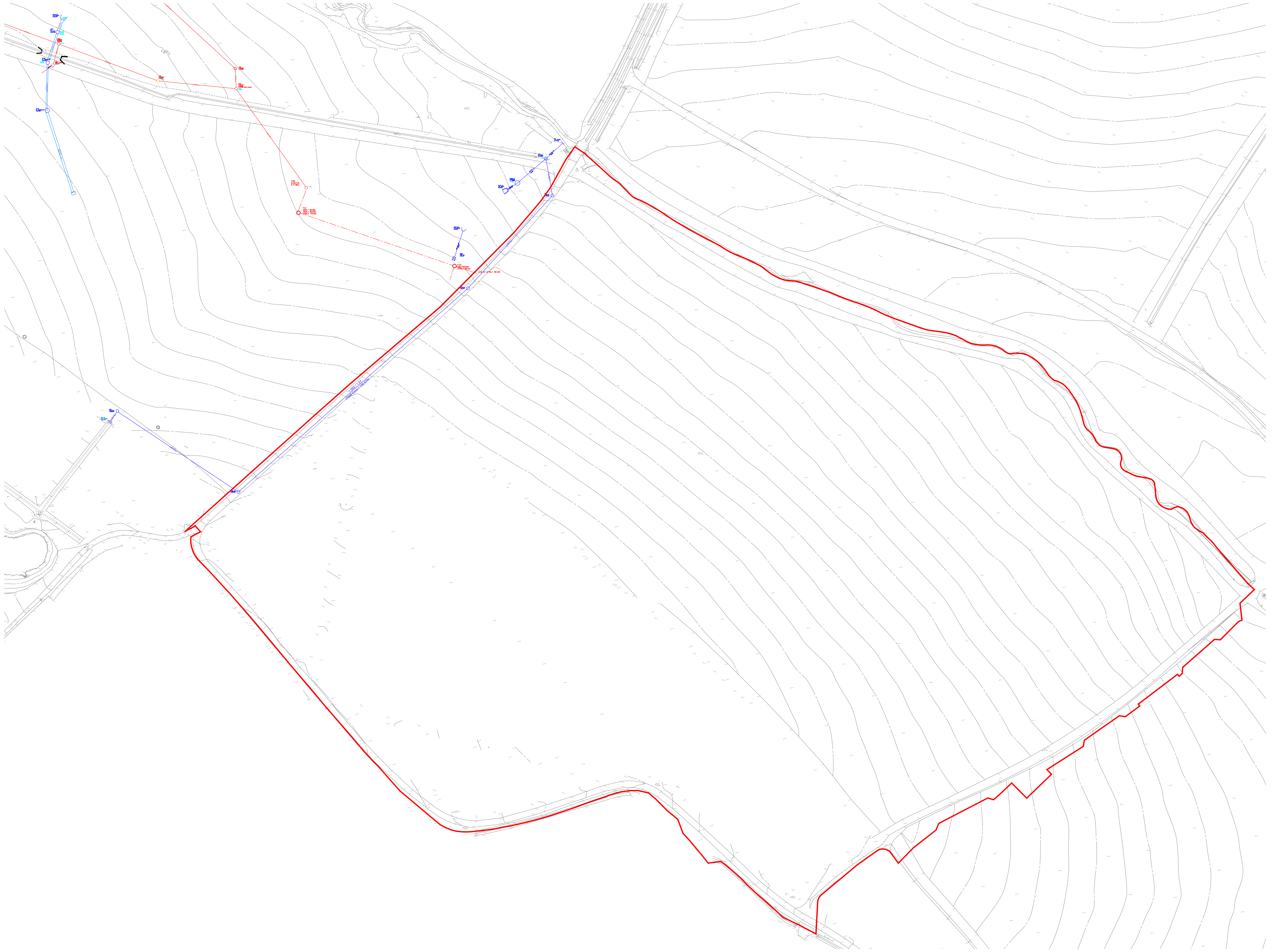
BROOKBANKS CONSULTING
6150 KNIGHTS COURT
SOLIHULL PARKWAY
BIRMINGHAM
B37 7WY

Title.

TOPOGRAPHICAL SURVEY
LAND TO THE SOUTH OF GREAT WILSEY FARM
HAVERHILL
SUFFOLK
CB9 0LX

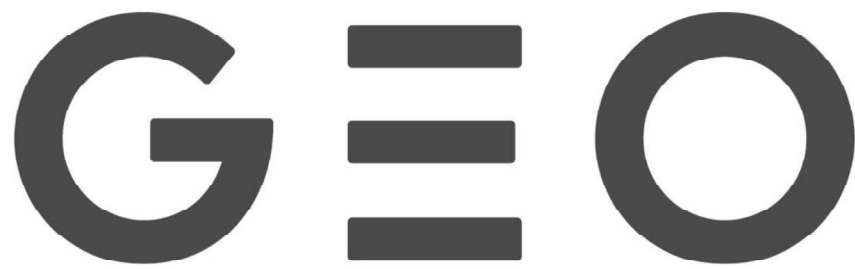
Dwg No. **141025 3D** Sheet **67 of 77**

Scale 1:200 A0 Sheet Rev. -



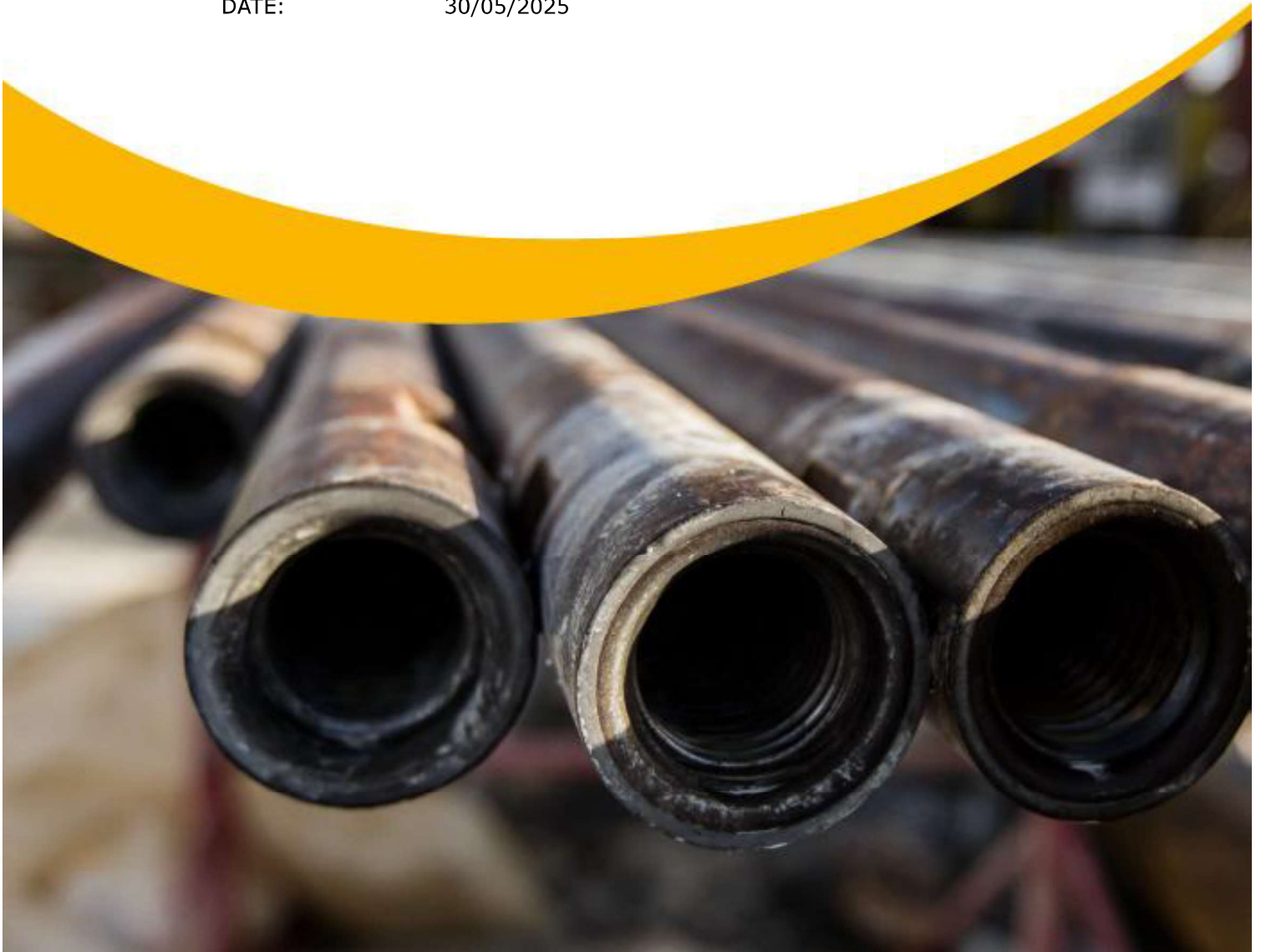
Appendix C

Geotechnical Information and Infiltration Tests



GEOSPHERE ENVIRONMENTAL

REPORT TYPE: Phase 1 and Phase 2 – Site Investigation
REPORT NUMBER: 9081,GI,SITEINV,JK,HS,PD,30-05-25,V1
SITE: Great Wilsey Park, Haverhill, Suffolk
DATE: 30/05/2025



DOCUMENT CONTROL SHEET

Report Number: 9081,GI,SITEINV,JK,HS,PD,30-05-25,V1
Client: Mrs H J Pelly, The H.J Pelly 2010 Settlement Trust, and Hallam Land Management
c/o Cannon Consulting Engineers
Project Name: Great Wilsey Park, Haverhill, Suffolk
Project Number: 9081,GI
Report Type: Phase 1 and Phase 2 – Site Investigation
Status: Final
Date of Issue: 30/05/2025

Issued By:

Geosphere Environmental Ltd, Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP10 0BJ.
T: 01603 298 076 / 01473 353 519. W: www.geosphere-environmental.co.uk

Confidentiality, Copyright and Reproduction:

This document has been prepared by Geosphere Environmental Ltd in connection with a contract to supply goods and / or services and is submitted only on the basis of strict confidentiality. The contents must not be disclosed to third parties other than in accordance with the terms of the contract. Geosphere Environmental Ltd accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.

Time Limit of Reliance:

This report is based upon the site findings at the time of the associated walkover / site investigation works and information provided by the client at the time of writing. Should site conditions alter or development proposals alter, a reassessment of the enclosed findings should be undertaken. Refer to Appendix 1 for full details of report limitations.

VERSION RECORD

Version:	Date:	Details:	Author(s):	Reviewed By:	Authorised By:
1	30/05/25	Original version	Jonathan Khan Geoenvironmental Consultant	Harry Sparkes Principal Geoenvironmental Engineer	Paul Davies Director

Executive Summary

DESK STUDY DATA REVIEW	
Introduction	Geosphere Environmental Ltd was commissioned by Cannon Consulting Engineers on behalf of the Clients, Mrs H J Pelly, The H.J Pelly 2010 Settlement Trust, and Hallam Land Management to undertake a Phase 1 Desk Study and Phase 2 Ground Investigation for a proposed residential development at Great Wilsey Park, Haverhill, Suffolk. It was understood that the site will become a residential housing development of approximately 345 plots, with associated soft landscaping, parking and private garden areas.
Site Location	The subject site was situated in the town of Haverhill and may be located by National Grid Reference (NGR) TL 690 456.
Site Description	A site walkover was undertaken on 23 January 2025. The site was roughly rectangular in shape and covered an area of approximately 22.3 hectares (ha). The topography of site sloped downward from southwest to northeast. The estimated elevations of the site were 89m AOD in the southwest and 74m AOD in the northeast. The majority of site comprised several large open agricultural fields with an area of woodland running along the southern part of site. There was a small stream that spanned the length of the northern site boundary and a track that made up the west and southern boundaries. The eastern boundary was not physically defined and bisected another larger field. The immediate surrounding area comprised an active housing development to the west, residential housing to the south and agricultural land to the north and east. The wider surrounding area predominantly comprised agricultural land to the north and east with the Town of Haverhill to the south and west.
Preliminary Conceptual Site Model	The preliminary risk assessment has identified potential sources that may pose a risk to receptors at the site, including: - Onsite: Made Ground associated with historical construction and demolition activities (Moderate Risk). - Onsite: Agricultural land use (Low to Moderate Risk)
SITE INVESTIGATION DATA REVIEW	
Site Works	Site works were carried out between 3 February 2025 and 21 February 2025 and comprised the following: - Formation of thirty window sample boreholes (WS101 – WS130) to a maximum depth of 5.00m below ground level (bgl). - Installation of five wells for ground gas and groundwater monitoring, within selected boreholes (WS101, WS108, WS112, WS119, and WS130). - Formation of forty-five mechanically excavated trial pits (TP01 – TP35 and SK01 – SK10) to a maximum depth of 2.00mbgl. - Subsequent infiltration testing to BRE365 within ten of the trial pits (SK01 – SK10). - Formation of six light cable percussive (LCP) boreholes (BH01 – BH06) to a maximum depth of 20.00mbgl.

	- Six return monitoring visits for gas and groundwater. - Associated soil logging, sampling, and environmental and geotechnical laboratory testing.
Ground Conditions	Topsoil was encountered in all exploratory hole locations to a maximum depth of 0.45mbgl, underlain by superficial deposits of the Lowestoft Formation (diamicton) to a maximum depth of 20.0mbgl. Granular deposits were identified within the Lowestoft Formation, ranging in depth between 0.3mbgl and 5.0mbgl. Chalk bedrock was identified in one location (BH03) from 12.5mbgl to 20.0mbgl. Groundwater was encountered during the intrusive investigation in 21 exploratory hole locations. However, it has been inferred that this was in the form of perched water within the cohesive soil strata. Water was recorded at depths between 0.5mbgl and 1.77mbgl during subsequent monitoring visits.
Soil Screening	Of the 51 (no.) soil samples analysed, exceedances of the screening criteria for the protection of human health were identified in eight samples from five exploratory hole locations: - WS101, E2, 0.5mbgl – beryllium. - WS116, E3, 0.8mbgl and E5, 2.5mbgl – naphthalene. - WS118, E2, 1.5mbgl – naphthalene and - WS121, E1, 0.1mbgl and E2, 0.4mbgl – naphthalene. - WS109, E1, 0.1mbgl – cyanide. - WS116, E1, 0.2mbgl – cyanide. For cyanide, the adopted target value (Dutch target and intervention values) is 5mg/kg, meaning that soils that record concentrations below this level are fit for all purposes. The intervention value is 20mg/kg, meaning soils recording values above this level indicate serious soil contamination with unacceptable risks for health and / or the environment, requiring remediation. The two exceedances fall between these two values, indicating soils of fair quality that do not require remediation but may not be suitable for all potential uses. Therefore, a low risk has been attributed to these soils and any associated contamination. If these soils are to be reused onsite, further investigation may be required to determine suitability for potential use.
Ground Gas Assessment	Based upon the six rounds of gas monitoring, the site has been placed in Characteristic Situation CS1 and no special gas protection measures are required.
Updated Conceptual Model	The Updated Conceptual Site Model revised the risks associated with the potential sources of contamination to: - Onsite: Made Ground associated with historical construction and demolition activities (Low Risk) - Onsite: Agricultural land use (Moderate Risk)
Environmental Conclusions	Elevated contaminant concentrations (beryllium and naphthalene) were reported above the adopted screening criteria in six samples from four exploratory hole locations (WS101, WS116, WS118 and WS121). Therefore a moderate risk to human health receptors has been assigned to these soils.

	Due to the quality of soils encountered in certain areas of site, there is the potential for contamination to pose a low to moderate risk to controlled waters. This is most applicable to the elevated levels of naphthalene identified in WS116, WS118, and WS121. Given the groundwater levels recorded during the monitoring visits to site, and the nearby surface water features, namely the stream spanning the northern site boundary, it may be prudent for some ground / surface water sampling and chemical analysis to take place to further understand the potential risks to controlled waters. Based upon the results, the site has been placed in Characteristic Situation CS1 and no special gas protection measures are required. No significant source of ground gas was discovered during the ground investigation and no additional monitoring is recommended at this time.
Foundation Considerations	The results of the geotechnical classification testing indicated the underlying soils are of low to high plasticity and low to medium volume change potential, therefore, excavations for conventional trench fill foundations should be extended to a minimum of 0.9mbgl. Based on the assessment of desiccation, it is considered that conventional foundations at minimum foundation depths may be suitable, however, it is recommended that the advice of a qualified and experienced structural engineer is sought to confirm the requirements for any deeper foundation design based on the influence of trees. A Net Allowable Bearing Pressure (NABP) of 100kN/m² would be considered appropriate within the Lowestoft Formation, based upon the results of in-situ testing. The NABP, is the permissible strength of the soil above existing overburden pressure, which may be calculated on the basis of a soil density of 21kg/m³. Based on information obtained from the deeper cable percussion boreholes (BH01 – BH06), preliminary advice for piles across site has been provided within illustrative calculations provided within Table 13. Where foundations are located in the vicinity of trees, their design should be in accordance with the guidance provided within NHBC Chapter 4.2.
Construction Considerations	It is expected that excavations within the cohesive Lowestoft Formation soils will be stable in the short-term. However, where excavations are required to remain stable in the medium or long-term, they should be suitably supported or side slopes battered back to a safe angle of repose. In view of the presence of soils of low to medium volume-change potential, it is recommended that ground floors be suspended for all sensitive structures. Laboratory analysis on samples of soil indicated plasticity indices to range from 4% to 32% and therefore in reference of these values an estimated CBR ranging from 4% to 5%. Soakaway testing was undertaken in ten locations at the site and was undertaken in accordance with the guidance provided within BRE Digest 365 'Soakaway Design', 2016

	(ref. R.13). In all testing locations across site infiltration did not reach 75% after 24 hours and was therefore ceased. As per BRE Special Digest 1 (ref. R.20) A Design Sulphate, (DS), class of DS-1 is considered applicable, with an accompanying ACEC classification of AC-1s.
Further Works	The soil quality across the majority of site is acceptable. However, in several locations, poor quality soil was encountered. As such, remediation of soils in these locations is recommended. A Remediation Method Statement (RMS) will be required to detail how these risks will be addressed in the final development in order to mitigate the risks to end users, construction workers, and controlled waters. As stated above, it may be prudent for some ground / surface water sampling and chemical analysis to take place to further understand the potential risks to controlled waters from the contaminants identified in onsite soils. There may be further contamination onsite that was not encountered during these works. A discovery strategy should be implemented throughout the development of the site and any suspected contaminants be subject to assessment by a suitably qualified and experienced geo-environmental engineer. See Appendix 13 for more details. Any site investigation should be designed in general accordance with CLR 4, (ref. R.5) undertaken in compliance with BS 10175:2011+A2:2017, (ref. R.3) and BS 5930:2015+A1:2020, (ref. R.4). It is recommended that this report be submitted to the Local Authority as part of the planning submission for the site.
This Executive Summary only provides a summary of the site data and its assessment. It does not provide a definitive engineering analysis and is for guidance only. It is recommended that the reader reviews the report in its entirety and any material referenced therein.	

CONTENTS

	Page No.
EXECUTIVE SUMMARY	3
1. INTRODUCTION	10
1.1 Objectives of Phase 1 – Desk Study	10
1.2 Objectives of Phase 2 – Ground Investigation	10
2. SITE SETTINGS	12
2.1 Site Location	12
2.2 Site Description	12
2.3 Geological Setting	12
2.3.1 Superficial Deposits	13
2.3.2 Bedrock Geology	13
2.3.3 Geohazards and Ground Workings	13
2.4 Hydrogeological Setting	13
2.4.1 Underlying Aquifers	13
2.4.2 Groundwater Vulnerability	14
2.4.3 Source Protection Zones	14
2.4.4 Groundwater	14
2.5 Hydrological Setting	14
2.6 Radon	14
2.7 Nitrate Vulnerable Zone	14
3. ENVIRONMENTAL SEARCHES	16
3.1 Environmental Searches Summary	16
4. SITE HISTORY	17
4.1 Historical Maps	17
5. PRELIMINARY CONCEPTUAL SITE MODEL	19
5.1 Hazard Identification: Onsite	19
5.2 Hazard Identification: Offsite	19
5.3 Risk Assessment	20
6. PHASE 2 - SITE WORKS	22
6.1 Methodology	22
6.2 Scope	22
6.3 Ground Conditions Encountered	22
6.4 Groundwater	23
6.5 Visual and Olfactory Evidence of Contamination	24
7. LABORATORY TESTING	25
7.1 Methodology	25
7.2 Environmental Testing Suite	25
7.2.1 Quality Control	25
7.2.2 Environmental Testing Suite – Soils	25
7.3 Geotechnical Testing	26
8. MONITORING	27

CONTENTS

	Page No.
8.1	27
8.2	27
9.	29
RISK ASSESSMENT	
9.1	29
9.1.1	29
9.1.2	29
9.1.3	29
9.1.4	31
9.1.5	31
9.2	32
9.3	32
9.4	33
9.5	33
9.6	34
10.	36
GEOTECHNICAL CONSIDERATIONS	
10.1	36
10.2	36
10.3	36
10.3.1	36
10.3.2	38
10.3.2.1	38
10.3.2.2	39
10.3.3	41
10.3.4	41
10.4	42
10.5	42
10.6	43
10.7	44
11.	46
CONCLUSIONS AND RECOMMENDATIONS	
11.1	46
11.2	47
11.3	48
11.4	48

APPENDICES

APPENDIX 1 – REPORT LIMITATIONS AND CONDITIONS

APPENDIX 2 – REFERENCES

APPENDIX 3 – DRAWINGS

APPENDIX 4 – ENVIROCHECK DATA SEARCH REPORT

CONTENTS

Page No.

APPENDIX 5 – ENVIROCHECK HISTORICAL MAPS	
APPENDIX 6 – COMPARISON OF CONSEQUENCES AGAINST PROBABILITY	
APPENDIX 7 – EXPLORATORY HOLE LOGS	
APPENDIX 8 – INFILTRATION TEST RESULTS	
APPENDIX 9 – GAS AND GROUNDWATER MONITORING DATA	
APPENDIX 10 – ENVIRONMENTAL LABORATORY TEST RESULTS	
APPENDIX 11 – GEOTECHNICAL LABORATORY TEST RESULTS	
APPENDIX 12 – PHOTOGRAPHS	
APPENDIX 13 – DISCOVERY STRATEGY	

TABLES

Page No.

Table 1 – Geohazards and Ground Workings	13
Table 2 – Environmental Searches Summary	16
Table 3 – Historical Summary	17
Table 4 – Preliminary Conceptual Site Model	21
Table 5 – Ground Conditions	22
Table 6 – Depth of Groundwater Strikes	23
Table 7 – Ground Gas Monitoring Results Summary	27
Table 8 – Groundwater Monitoring Results	28
Table 9 – Summary of Soil Analyses and Comparison with Current Screening Values	30
Table 10 – Ground Gas Screening Values (GSV)	33
Table 11 – Updated Conceptual Site Model	35
Table 12 – Comparison of Soil Moisture and Onset of Desiccation within Soil Samples	37
Table 13 – Preliminary Factored Pile Capacities (kN)	40
Table 14 – CBR Derived from PI (%)	42
Table 15 – Infiltration Testing Results (m/s)	43

1. INTRODUCTION

Geosphere Environmental Ltd was commissioned by Cannon Consulting Engineers on behalf of the Clients, Mrs H J Pelly, The H.J Pelly 2010 Settlement Trust, and Hallam Land Management to undertake a Phase 1 Desk Study and Phase 2 Ground Investigation for a proposed residential development at Great Wilsey Park, Haverhill, Suffolk.

It was understood that the site will become a residential housing development of approximately 345 plots, with associated soft landscaping, parking and private garden areas.

1.1 Objectives of Phase 1 – Desk Study

The primary objectives of the desk study were to:

- Provide an assessment of environmental sensitivity at the site and the surrounding area in relation to any suspected or known contamination which may significantly affect the site and the proposed development.
- Indicate whether further works are required, and the nature of the works, to enable a more complete assessment of the site.

These were achieved by:

- Undertaking a walkover of the site.
- Researching and assessing the available information regarding the current site status, including recorded geology, hydrogeology and hydrology of the site and surrounding area, and the history of the site.
- Developing a Preliminary Conceptual Site Model.

1.2 Objectives of Phase 2 – Ground Investigation

The primary objectives of this ground investigation were to:

- Assess the ground conditions at the site.
- Assess the potential risk to human health and the environment based upon the findings of the investigation.

These were achieved by:

- Undertaking an intrusive investigation of the site, based upon the findings of previous site data, the proposed development layout and the scope agreed with the client.
- Logging and sampling the soils on the site and noting any visual or olfactory evidence of contamination.
- Installing monitoring wells with subsequent ground gas and groundwater level monitoring.
- Undertaking laboratory chemical analysis of selected soil samples to assess soil quality at the site.
- Undertaking laboratory geotechnical testing of selected soil samples to assess ground conditions at the site.
- Updating the Conceptual Site Model and defining suitable remedial / mitigating and verification actions.

A Proposed Site Layout Plan, Drawing ref. 24.2068.1000 Rev D produced by FINC Architects Ltd, is provided within Appendix 3.

2. SITE SETTINGS

2.1 Site Location

The subject site was situated in the town of Haverhill and may be located by National Grid Reference (NGR) TL 690 456.

2.2 Site Description

A site walkover was undertaken on 23 January 2025. The site was roughly rectangular in shape and covered an area of approximately 22.3 hectares (ha). The topography of the site sloped downward from southwest to northeast. The estimated elevations of the site were 89m AOD in the southwest and 74m AOD in the northeast.

The majority of site comprised several large open agricultural fields with an area of woodland running along the southern part of site. There was a small stream that spanned the length of the northern site boundary and a track that made up the west and southern boundaries. The eastern boundary was not physically defined and bisected another larger field.

The immediate surrounding area comprised an active housing development to the west, residential housing to the south and agricultural land to the north and east.

The wider surrounding area predominantly comprised agricultural land to the north and east with the Town of Haverhill to the south and west.

A Proposed Site Layout Plan, and Exploratory Hole location Plan are included within Appendix 3 as Drawing refs. 24.2068.1000 Rev D produced by FINC Architects Ltd and 9081,GI/001/Rev0 respectively.

Photographic records from the walkover are presented in Appendix 12 of this report.

2.3 Geological Setting

Details of the geology underlying the site have been obtained from the British Geological Survey (BGS) digital mapping at a scale of 1:50,000, which is provided within the Envirocheck Report included in Appendix 4.

2.3.1 Superficial Deposits

The geological map indicated the majority of site to be underlain by superficial deposits of the Lowestoft Formation (diamicton) with an area of Head deposits (clay, silt, sand and gravel) running along the northern site boundary.

2.3.2 Bedrock Geology

The geological map indicated bedrock Geology underlying the site comprised Lewes Nodular, Seaford, Newhaven and Culver Chalk Formations.

2.3.3 Geohazards and Ground Workings

Table 1 below, summarises the factors that may have a potential impact upon the engineering of the proposed development:

Table 1 – Geohazards and Ground Workings			
Potential Hazard	Recorded Risk [m] / [Direction]		Comments
	Onsite	Within 250m	
Non-Coal Mining Areas of Great Britain	Rare	Rare – 76m/S	
Collapsible Ground	Very Low	Very Low – 76m/S	
Compressible Ground	No Hazard	No Hazard – 76m/S	
Ground Dissolution	Low and Very Low	Low – 24m/N Very Low – 76m/S	
Landslide	Very Low	Very Low – 76m/S	
Running Sand	Very Low	Very Low – 76m/S	
Shrinking or Swelling Clay	Low and Very Low	Low – 76m/S and 240m/E Very Low – 217m/S No Hazard – 204m/E and 243m/E	

2.4 Hydrogeological Setting

2.4.1 Underlying Aquifers

The hydrogeological data provided within the Envirocheck Report indicate Secondary Undifferentiated Aquifers overlying a bedrock Principal Aquifer (Lewes Nodular, Seaford, Newhaven, and Culver Chalk Formations).

2.4.2 Groundwater Vulnerability

The aquifers underlying the site have a groundwater vulnerability of medium and an intermediate pollutant speed.

2.4.3 Source Protection Zones

The site was located within a 'Zone III' (Total Catchment) groundwater source protection zone i.e. it was within the total area required to support the discharge from a protected groundwater source.

There were no groundwater abstraction wells within 1km of the site. The closest well was situated approximately 1,578m to the west of the site and was used for Industrial/Commercial/Public Services: General Use.

2.4.4 Groundwater

The Envirocheck data indicates the site is within an area with limited potential to groundwater flooding to occur. There was a small area in the east of site with the potential for groundwater flooding of property situated below ground level.

2.5 Hydrological Setting

The nearest surface watercourse or feature was the stream that ran along the northern site boundary.

There were no surface water abstractions located within 2km of the site.

2.6 Radon

The site is indicated to lie within an area where there is a probability of <1% of present or future homes being above the action level of 200Bq/m³. As such, the site is not classified as a Radon Affected Area.

2.7 Nitrate Vulnerable Zone

The site was located within an area designated as a nitrate vulnerable zone (NVZ) for groundwater (Sandlings and Chelmsford) and surface water (Lower Stour).

The Nitrates Directive, (ref. **R.2**) defines a NVZ as:

- Surface freshwater which contains or could contain, if preventative action is not taken, nitrate concentrations greater than 50mg/l.
- Groundwater which contains or could contain, if preventative action is not taken, nitrate concentrations greater than 50mg/l.
- Natural freshwater lakes or other freshwater bodies, estuaries, coastal waters and marine waters, which are eutrophic or may become so in the near future if protective action is not taken.

3. ENVIRONMENTAL SEARCHES

3.1 Environmental Searches Summary

The environmental searches are detailed fully within the Envirocheck Report presented within Appendix 4. Table 2 below, summarises the most relevant findings:

Table 2 – Environmental Searches Summary				
Activity	Distance from the Site			Comments [m] / [direction]
	Onsite	Within 250m	250m to 500m	
1. Incidents and Registers				
Discharge Consents	-	-	1	371m/S – Discharge of other matter surface water
Pollution Incidents to Controlled Waters	-	1	2	183m/SE – Cat 2 significant incident 406m/SE – Cat 3 minor incident 500m/SE – Cat 3 minor incident
2. Flooding				
BGS Groundwater Flooding Susceptibility	2	18	6	Onsite – Limited potential for groundwater flooding to occur Onsite – Potential for groundwater flooding of property situated below ground level
3. Landfills and Waste Treatment / Disposal Sites				
Potentially Infilled Land (Water)	-	1	1	44m/NE – Unknown filled ground (pond, marsh, river, stream, dock, etc) 260m/E – Unknown filled ground (pond, marsh, river, stream, dock, etc)
4. Contemporary Trade Entries of Concern				
Contemporary Trade Directory Entries		3	4	121m/SE – 3 x Printers (inactive) 274m/NW – Joinery manufacturers 439m/W – Domestic appliances (inactive) 484m/NW – Cleaning services (inactive) 486m/NW – Cleaning services (inactive)
Manufacturing and Production	-	1	-	233m/SE – Tanks (generic)
Recreational and Environmental	-	3	3	138m/E, 139m/E, 184m/NW, 469m/W, 489m/W, 500m/W – Playgrounds

Where no relevant or significant data records exist for an activity, it is removed from the summary table. All data is included within Appendix 4.

4. SITE HISTORY

4.1 Historical Maps

A review of the history of the site has been conducted based upon the historical maps included within the Envirocheck report included in Appendix 5.

The relevant changes of the subject site and immediate surrounding area from the mapping are detailed in Table 3 below:

Table 3 – Historical Summary		
Date	Potentially Contaminative Land Uses / Significant Changes	
	Onsite	Offsite [distance / direction]
1876 (1:2,500) 1880 (1:10,560)	- Site formed part of a series of fields. - Small structure located near the northern site boundary adjacent to Little Wilsey. - Track through site from Little Wilsey in the north to the southern site boundary.	- Surrounding area predominantly agricultural land. - Stream running adjacent to northern site boundary. - Track running adjacent to western and southern site boundaries. 0-20m/N - Series of structures labelled as Little Wilsey with associated well. 5m/S, 50m/N x2, - Ponds. 115m/S - Woodland Nursery.
1886 (1:2,500)	No significant changes.	75m/W - Structure.
1904 (1:2,500) 1905 (1:10,560)	Additional structure near the northern site boundary adjacent to Little Wilsey.	50m/N - Pond adjacent to Little Wilsey. 75m/W - Structure labelled as Saw Pit.
1926 (1:2,500) 1924 (1:10,560)	No significant changes.	No significant changes.
1938-1951 (1:10,560)	No significant changes.	No significant changes.
1959 (1:2,500) 1960 (1:10,000)	No significant changes.	75m/W - Saw Pit no longer visible.
1978 (1:2,500) 1981-1982 (1:10,000)	Woodland area in the west of site and running along the southern site boundary.	- Increased development to the south and west of site. Predominantly residential. 0-20m/N - Little Wilsey and associated structures no longer visible, inferred demolished. 50m/N - Two of the ponds no longer visible, inferred infilled.
1991 (1:10,000)	No significant changes.	- Increased development to the south and west of site. 50m/N - Pond no longer visible, inferred infilled.

Table 3 – Historical Summary

Date	Potentially Contaminative Land Uses / Significant Changes	
	Onsite	Offsite [distance / direction]
1999 Aerial (1:2,500) 1999 (1:10,000)	No significant changes.	Increased development to the south and west of site.
2006 (1:10,000)	No significant changes.	Increased development to the south and west of site.
2024 (1:10,000)	No significant changes.	Increased development to the south and east of site.
Notes: - The dates of the maps do not always correspond with the time of the surveys. - Where no significant factors or changes occur within a map edition(s) it is summarised with "No significant changes". - The alignment and extent of the detailed site area in early map editions is often mis-aligned compared to modern mapping due to variation in mapping / digitisation processes; this is compensated for where possible within the interpretation.		

5. PRELIMINARY CONCEPTUAL SITE MODEL

The risk assessment methodology is based upon current guidelines and legislation (refs. **R.1**).

The current guidance requires that a conceptual site model (CSM) be formulated, based upon the findings of the research. The CSM aims to identify and assess potential 'hazards'; the potential 'receptors' that may be affected and the anticipated 'pathways' by which the hazard may negatively impact the receptors. Where there is reasonable potential for all three components to be present at a site, then they constitute a potential pollutant linkage (PPL) and have been included in the CSM below. The CSM is limited at this stage to the identification and assessment of potential 'hazards', identified or suspected from the results of the research. The findings are summarised in the following subsections.

The guidance proposes a four-stage approach for the assessment of contamination and the associated risks. The four stages are listed below:

- Hazard Identification.
- Hazard Assessment.
- Risk Estimation.
- Risk Evaluation.

Should a complete PPL be present which is deemed to pose a potential risk to identified receptors, then further investigation works are likely to be recommended.

5.1 Hazard Identification: Onsite

The desk-based research and historical review identified the following potential hazards onsite that may impact upon the site:

- Made Ground associated with historical construction and demolition activities.
- Agricultural land use – including chemical, fertiliser, pesticide / herbicide use.

5.2 Hazard Identification: Offsite

The desk-based research and historical review identified the following potential hazards offsite that may impact upon the site:

- Made Ground associated with historical construction and demolition activities.
- Potentially Infilled Ponds.
- Saw Pit.

Any risks associated with Made Ground from offsite sources are likely to be indifferentiable from onsite sources. As such, this has been discounted from consideration within the Conceptual Site Model (CSM).

The risks associated with the potentially infilled ponds located approximately 50m/N of the site have been considered, however, due to their size, age, and relative distance from site these have been discounted from consideration within the CSM.

Similarly, the risks associated with the Saw Pit located approximately 75m/W of site have been considered, however, due to due to age and relative distance from site these have been discounted from consideration within the CSM.

5.3 Risk Assessment

The preliminary risk assessment has identified potential sources may pose a risk to receptors at the site. Potential pollutant linkages that require further consideration are presented in Table 4 shown overleaf:

Table 4 – Preliminary Conceptual Site Model

RECEPTORS:																																
PATHWAYS:																																
Sources	Root Uptake				Direct Contact				Ingestion				Respiration		Gas Accumulation		Plants		End Users		Structures (Concrete)		Services/Utilities		Construction Workers		Controlled Waters		Risk Rating	Comments		
	L		L		L		L		L		L		L		L		L		M		L		L		M		L				MR	The extent of the Made Ground onsite is likely to be localised to the location of the former structures associated with Little Wilsey, however, the content of this Made Ground is unknown and will require further investigation to quantify the risks to receptors. Due to the nature of the site, a range of chemicals may be present including, but not limited to, fertilisers, herbicides, pesticides etc. Further investigation, sitewide, is recommended to quantify the risks to receptors.
	U		U		U		U		U		U		U		U		M		M		L		M		M		LR-MR					
	Probability:												Consequence (Severity):												Risk Rating:							
	Negligible (N)												Negligible (N)												Very High Risk		VH					
Unlikely (U)												Mild/Low (L)												High Risk		HR						
Likely (L)												Moderate (M)												Moderate Risk		MR						
Highly Likely (H)												Severe (S)												Moderate/Low Risk		ML						
																								Low Risk		LR						
																								Negligible Risk		NR						

6. PHASE 2 - SITE WORKS

6.1 Methodology

This site investigation was carried out in accordance with the practices set out in BS 10175:2011+A2:2017, (ref. **R.3**) and BS 5930:2015+A1:2020 (ref. **R.4**). The locations of exploratory holes have been planned, where possible, to give the best possible coverage within budgetary constraints, whilst targeting any locations highlighted in the desk study and / or site walkover.

6.2 Scope

Site works were carried out between 3 February 2025 and 21 February 2025 and comprised the following:

- Formation of thirty window sample boreholes (WS101 – WS130) to a maximum depth of 5.00m below ground level (bgl).
- Installation of five wells for ground gas and groundwater monitoring, within selected boreholes (WS101, WS108, WS112, WS119, and WS130).
- Formation of forty-five mechanically excavated trial pits (TP01 – TP35 and SK01 – SK10) to a maximum depth of 2.00mbgl.
- Subsequent infiltration testing to BRE:365 within ten of the trial pits (SK01 – SK10).
- Formation of six light cable percussive (LCP) boreholes (BH01 – BH06) to a maximum depth of 20.00mbgl.
- Six subsequent return visits for gas and groundwater monitoring.
- Associated soil logging, sampling, and environmental and geotechnical laboratory testing.

6.3 Ground Conditions Encountered

The sequence of the strata encountered during the investigation generally confirmed the anticipated geology as interpreted from the British Geological Survey (BGS) digital mapping, at a scale of 1:50,000.

The sequence and indicative thickness of the strata encountered are provided in Table 5 below:

Table 5 – Ground Conditions				
Strata	Depth Encountered (mbgl)		Strata Thickness (m)	Extent / Composition
	From	To		
Topsoil / Made Ground	0.00	0.10 – 0.45	0.10 – 0.45	Dark brown sandy gravelly organic clay. Gravel of fine to coarse flint and chalk. Brick fragments found in WS111, SK03, SK04, & SK05.

Table 5 – Ground Conditions

Strata	Depth Encountered (mbgl)		Strata Thickness (m)	Extent / Composition
	From	To		
Granular Deposits	0.30 – 3.80	1.10 – 5.00	0.40 – 4.3	Brown gravelly clayey fine sand. Gravel of fine to coarse flint and chalk. and Brown sandy clayey gravel. Gravel of fine to coarse flint, chalk and quartzite.
Cohesive Deposits	0.10 – 0.35	1.00 – 20.00	0.90 - >19.70	Brown mottled grey and dark grey sandy gravelly silty clay. Gravel of fine to coarse flint and chalk.
Chalk	15.50	20.00	>7.50	Soft white structureless chalk, recovered as chalk gravel in a putty chalk matrix.

6.4 Groundwater

Groundwater strikes were encountered in 21 (no.) exploratory hole locations during the site investigation. The locations and relative depth are shown in Table 6 below.

Table 6 – Depth of Groundwater Strikes

Windowless Sampler Borehole Number	Depth of Water (mbgl)
WS101	1.10
WS115	3.00
WS119	2.00
WS127	2.00
TP01	0.90
TP05	0.50
TP07	1.00
BH01	4.20 & 6.20
BH02	18.10
BH03	2.00
BH05	19.00
SK01	1.00 & 1.90
SK02	1.80
SK03	1.20 & 1.45
SK04	1.64 & 1.95
SK05	1.64 & 1.90

Table 6 – Depth of Groundwater Strikes

Windowless Sampler Borehole Number	Depth of Water (mbgl)
SK06	1.85 & 2.00
SK07	1.78 & 1.90
SK08	1.80
SK09	1.52 & 1.80
SK10	1.46 & 1.50

Based on the information in the table above and given the ground conditions across the site, it has been inferred that the majority, if not all, of these water strikes were in pockets of perched water within the predominantly cohesive underlying soils.

6.5 Visual and Olfactory Evidence of Contamination

Occasional brick fragments were noted in topsoil in several locations across site; however, no significant evidence of gross contamination (olfactory or visual) was encountered during the site works.

7. LABORATORY TESTING

7.1 Methodology

Representative disturbed and undisturbed soil samples were taken at the depths shown on the exploratory hole records and despatched to the laboratory. The exploratory hole logs are included in Appendix 7.

Samples were collected for environmental purposes in amber glass jars and sealed plastic pots and kept in a cool box with cooling aid.

Geotechnical samples were recovered in plastic bulk bags or sealed plastic pots and undisturbed U100 liners.

7.2 Environmental Testing Suite

7.2.1 Quality Control

The environmental laboratory used (Eurofins Chemtest) is an accredited laboratory by the United Kingdom Accreditation Service (UKAS), and at least 50% of individual parameters are from methods pending accreditation to the Environment Agency Monitoring Certification Scheme (MCERTS) for the range of analyses undertaken as part of this investigation. The MCERTS performance standard for the chemical testing of soil is an application of ISO 17025: 2005, specifically for the chemical testing of soil.

7.2.2 Environmental Testing Suite – Soils

The suite of chemical analyses was based upon the findings of the Phase 1 desk study and site walkover, the conceptual model and observations onsite. The chemical analyses were carried out on 51 samples of soil. The nature of the analyses is detailed below:

- Metals screen - arsenic, cadmium, chromium, lead, mercury, selenium, boron (water soluble), beryllium, copper, nickel, vanadium and zinc.
- Organic screen - total petroleum hydrocarbons (TPH) – with specific carbon banding; benzene, toluene, ethylbenzene and xylenes (BTEX); polycyclic aromatic hydrocarbons (PAH) – USEPA 16 suite.
- Inorganics screen - cyanide (total), sulphate (water soluble).
- Others - pH, organic matter, asbestos.

A copy of the laboratory test results is included in Appendix 10.

7.3 Geotechnical Testing

The geotechnical testing has been chosen based on the soils encountered during the site investigation and was undertaken at a UKAS accredited laboratory.

The following tests were undertaken:

- Moisture content determination.
- Plasticity testing.
- pH and soluble sulphate testing.
- Particle size distribution testing.
- Determination of undrained shear strength.
- Determination of California Bearing Ratio.

A copy of the laboratory test results is included in Appendix 11.

8. MONITORING

Five monitoring wells were installed as part of the current investigation. The wells were installed with 63mm HDPE pipework with a gravel filter pack, bentonite seal and bung / gas tap. Monitoring wells were installed to locations to give best coverage across the site.

8.1 Ground Gas

Ground gas monitoring was undertaken by a suitably qualified environmental consultant, using a GFM436 landfill gas analyser and a MultiRaeLite Photo-ionisation detector (PID). The main determinants recorded were methane (CH₄), carbon dioxide (CO₂), oxygen (O₂), volatile organic compounds (VOCs) and the flow rate.

Ground gas monitoring was carried out in accordance with current guidance (ref. **R.13**). Six consecutive monitoring visits were undertaken over a period of six weeks including falling barometric pressure conditions.

The results of ground gas monitoring are included in Appendix 9 and a summary is presented in Table 7 below:

Table 7 – Ground Gas Monitoring Results Summary									
Location	Range of Recorded Concentrations						Flow Rate (l/hr)	VOC (ppm)	Atmospheric Pressure (mb)
	Methane (CH ₄) [% v/v]		Carbon Dioxide (CO ₂) [% v/v]		Oxygen (O ₂) [% v/v]				
	(Min)	(Max)	(Min)	(Max)	(Min)	(Max)	(Range)	(Max)	(Range)
WS101	<0.1	<0.1	0.5	1.1	16.1	19.9	0.1	<1	991 - 1012
WS108	<0.1	<0.1	0.4	0.6	16.9	20.5	0.1	<1	993 - 1012
WS112	<0.1	<0.1	0.1	0.3	16.8	20.6	0.1	<1	993 - 1012
WS119	<0.1	<0.1	0.5	1.2	15.7	19.5	0.1	<1	994 - 1014
WS130	<0.1	<0.1	0.4	0.7	16.2	19.9	0.1	<1	993 - 1013

8.2 Groundwater

The measured groundwater levels were recorded using a dipmeter and the results of monitoring are presented in Table 8 overleaf:

Table 8 – Groundwater Monitoring Results

Monitoring Well	Depth of Monitoring Well (mbgl)	Groundwater Encountered at (mbgl)					
		Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
		10/03/25	20/03/25	25/03/25	02/04/25	10/04/25	14/04/25
WS101	4.2	0.50	0.70	0.80	0.96	1.10	1.11
WS108	4.0	0.76	0.87	0.93	1.02	1.10	1.06
WS112	4.5	1.25	1.46	1.42	1.54	1.77	1.67
WS119	3.5	0.67	0.76	0.81	0.80	0.90	0.85
WS130	4.0	0.89	0.90	0.94	0.86	0.91	0.86
Notes: Dry - no groundwater encountered n/m – not measured							

9. RISK ASSESSMENT

9.1 Risk to Human Health

9.1.1 Methodology

Following the approach set out in Section 5, with the formulation of a preliminary conceptual site model, this is updated with the results of the intrusive investigation.

9.1.2 Soil Quality Screening Values

The results of the soil analyses have been compared to soil quality screening values where deemed applicable, including:

- The LQM/CIEH S4ULs for Human Health Risk Assessment, (ref. **R.7**).
- Defra/CL:AIRE Final C4SLs, (ref. **R.6**).
- RIVM – Dutch Target and Intervention Values (ref. **R.26**).

Where the concentrations reported by the laboratory analysis (and thus determined onsite) are at or below the respective screening concentrations, they are considered not to pose a risk and are removed from further consideration, unless otherwise stated in the following sections.

9.1.3 Soil Quality Assessment

The locations, depths and other relevant information of the elevated concentrations of the specific analytes are summarised in Table 9 overleaf and assessed in more details where necessary.

The composition and resulting soil organic matter (SOM) values of the soils was generally consistent across the site. Some of the samples tested report results below the applied soil screening value, however, there were some elevated concentrations. Where the SOM dependent criteria exist for a contaminant, they have been initially screened against the most conservative (1%) criteria. Where a contaminant concentration exceeds this criteria, the sample-specific SOM has been used to determine if a less conservative screening criteria could be applied.

Similarly, these results have been compared against the screening values for a residential with plant uptake land use scenario. Where a less conservative land use scenario is more appropriate, this has been applied.

Table 9 – Summary of Soil Analyses and Comparison with Current Screening Values

Analyte	Analyte Concentration Range (mg/kg)		Screening Value (mg/kg) for Land Use	Number of Elevated Concentrations
	Minimum	Maximum	Residential With Plant Uptake (1% SOM Assumed)	
Arsenic	7.8	28	37	0
Beryllium	<0.50	2.4	1.7	1 WS101, E2, 0.5mbgl
Boron	<0.40	1.9	290	0
Cadmium	<0.10	0.56	11	0
Chromium	20	84	910	0
Chromium VI	<0.50	<0.50	6	0
Copper	10	41	2400	0
Cyanide (total)	<0.50	6.9	5 (20)	2 WS109, E1, 0.1mbgl & WS116, E1, 0.2mbgl.
Lead	8.7	98	200	0
Mercury	<0.05	0.17	40	0
Nickel	21	86	180	0
Selenium	0.35	1.4	250	0
Zinc	35	130	3700	0
Naphthalene	<0.10	51	2.3	5 WS116, E3, 0.8mbgl, WS116, E5, 2.50mbgl, WS118, E2, 1.5mbgl, WS121, E1, 0.1mbgl, WS121, E2, 0.4mbgl
Benzo(b)fluoranthene	<0.10	1.2	2.6	0
Benzo(a)pyrene	<0.10	0.95	2.2	0
Dibenz(a,h)anthracene	<0.10	<0.10	0.24	0
Total VPH >C5-C10	<0.50	<0.50	Banded	0
Total EPH >C10-C40	<10	43	Banded	0

Of the 51 (no.) soil samples analysed, exceedances of the screening criteria for the protection of human health (residential with plant uptake pathway) were identified in eight samples from five exploratory hole locations.

Elevated levels of beryllium were identified in WS101, E2, 0.5mbgl (2.4mg/kg) which exceeded the screening value in a residential with plant uptake scenario (1.7mg/kg).

The levels of cyanide (total) identified in WS109, E1, 0.1mbgl (6.2mg/kg) and WS116, E1, 0.2mbgl (6.9mg/kg) exceeded the screening value in a residential with plant uptake scenario (5mg/kg). In the absence of S4UL/C4SL guidance values for cyanide contamination, the Dutch target and intervention values (RIVM) have been adopted. For cyanide, the target value is 5mg/kg, meaning that soils that record concentrations below this level are fit for all purposes. The intervention value is 20mg/kg, meaning soils recording values above this level indicate serious soil contamination with unacceptable risks for health and / or the environment, requiring remediation. The two exceedances fall between these two values, indicating soils of fair quality that do not require remediation but may not be suitable for all potential uses. Therefore, a low risk has been attributed to these soils and any associated contamination. If these soils are to be reused onsite, further investigation may be required to determine suitability for potential use.

Elevated levels of naphthalene were identified in WS116, E3, 0.8mbgl (2.9mg/kg), WS116, E5, 2.5mbgl (4.6mg/kg), WS118, E2, 1.5mbgl (7.5mg/kg), WS121, E1, 0.1mbgl (6.9mg/kg), and WS121, E2, 0.4mbgl (51mg/kg). These contaminant concentrations exceeded the screening value in a residential with plant uptake scenario (2.3mg/kg).

The source of the naphthalene (and cyanide) contamination is as yet unknown, but given the agricultural land use, could have been introduced to site by the use of certain chemicals such as herbicides / pesticides.

9.1.4 Asbestos in Soils

The chemical analysis of soils included a screening for the presence of asbestos.

None of the samples screened returned positive identification of asbestos within the soil matrix. Therefore, on the basis of the testing undertaken to date, it is envisaged that a low risk from asbestos in soils exists at the site.

However, a Discovery Strategy should be implemented throughout the development of the site and any suspected asbestos be subject to assessment by a suitably qualified and experienced person.

9.1.5 Risk to Construction Workers

As discussed above, elevated levels of contaminants have been identified in natural soils onsite, including beryllium, cyanide, and naphthalene. With the exception of naphthalene identified in WS121, E2, 0.4mbgl (51mg/kg), the exceedances are not significantly elevated, therefore, at the concentrations reported, the contaminants are deemed to pose a low risk to construction workers assuming that suitable PPE is worn and good hygiene practices are adhered to during earthworks at the site.

To mitigate the risk at WS121, it is recommended that workers are made aware of the potential contamination and further good practices such as dampening down are undertaken when working with

these soils to minimise dust generation, inhalation and accidental ingestion pathways. It is the responsibility of the principal contractor to ensure that the risk to workers health is appropriately managed and further controls may be advised within the Health and Safety Plan.

This assessment may need to be reconsidered if further contamination is encountered during the construction phase of development. At this point, additional screening to further detail the risks to construction workers and determine appropriate mitigation measures may be required.

9.2 Risk via Services – Potable Water Pipes

An initial comparison of the laboratory results has been made against the Contaminated Land Assessment Guidance, published by Water UK (ref. **R.8**), also often termed the “UKWIR Guidance”. Note, the full range of thresholds given in this guidance have not specifically been tested for within the scope of this investigation; further soil sampling and analysis may be required by the water providing company or designers.

It is advised that the UK Water Industry Research Guidance (ref. **R.9**) is adopted and consultation with the local water company is sought prior to laying any services. In addition, as part of any Discovery Strategy for soil disturbance works, if suspected poor quality or contaminated soils are encountered where potable water pipes are to be laid, further assessment is likely to be required.

The soils analysis available indicates no specific alteration from standard PE pipework and fittings is necessary for the majority of the site. However, no TPH, SVOC (other than PAHs), VOC or BTEX analysis was undertaken at WS121 where elevated naphthalene concentrations have subsequently been identified. As such, further testing and / or the precautionary use of barrier pipework in this area of the site is advised.

9.3 Risk to Controlled Waters

The hydrogeology setting at the site comprised Secondary Undifferentiated Aquifers (Lowestoft Formation and Head) overlying a bedrock Principal Aquifer (Lewes Nodular, Seaford, Newhaven, and Culver Chalk Formations) within a SPZ III. The closest surface water feature was the stream that rang along the northern site boundary.

The risks to Controlled Waters have been assessed qualitatively using the available soil quality data only, as groundwater or leachate analysis was outside the scope of this investigation.

Due to the quality of soils encountered in certain areas of site, there is the potential for contamination to pose a low to moderate risk to controlled waters. This is most applicable to the elevated levels of naphthalene identified in WS116, WS118, and WS121.

Given the groundwater levels recorded during the monitoring visits to site, and the nearby surface water features, namely the stream spanning the northern site boundary, it may be prudent for some ground / surface water sampling and chemical analysis to take place to further understand the potential risks to controlled waters.

9.4 Risk to Plants

A review of the commonly occurring phytotoxic chemicals copper, nickel and zinc, has been undertaken based the criteria set out in BS3882 standard for topsoil. These criteria are pH dependant and, based on the sampled soils all having a pH <6.0 / 6.0 - 7.0 / >7, are as follows:

- Copper - 100 / 135 / 200 mg/kg.
- Nickel - 60 / 75 / 110 mg/kg.
- Zinc - 200 / 200 / 300 mg/kg.

Concentrations of metals were recorded at concentrations below the thresholds considered to have phytotoxic effects. As a result of which, the risk to plants is assessed to be low. This is notwithstanding the quality of the soil utilised within areas of planting; soil quality in terms of nutrients and suitability for the applied planting is outside of the scope of this assessment and specialist advice may need to be sought along with utilising suitable quality landscaping materials.

9.5 Ground Gas

The results of the soil gas monitoring have been compared with current guidance (ref. **R.18**). The results show no detectable methane generation within soils, and limited generation of carbon dioxide. No detectable gas flow was detected within the wells across the site.

A Gas Screening Value (GSV) has equated for each of the monitoring points during each of the monitoring visits by multiplying the recorded flow rate with the recorded carbon dioxide or methane concentration. The highest calculated GSV for each monitoring locations is presented in Table 10 below:

Table 10 – Ground Gas Screening Values (GSV)

Location	Recorded Values			Gas Screening Values	
	Methane (CH ₄) [% v/v]	Carbon Dioxide (CO ₂) [% v/v]	Flow Rate (l/hr)	Methane lCH ₄ /hr	Carbon Dioxide lCO ₂ /hr
WS101	0.1	1.1	0.1	0.0001	0.0011
WS108	0.1	0.6	0.1	0.0001	0.0006
WS112	0.1	0.3	0.1	0.0001	0.0003

Table 10 – Ground Gas Screening Values (GSV)

Location	Recorded Values			Gas Screening Values	
	Methane (CH ₄) [% v/v]	Carbon Dioxide (CO ₂) [% v/v]	Flow Rate (l/hr)	Methane ICH ₄ /hr	Carbon Dioxide ICO ₂ /hr
WS119	0.1	1.2	0.1	0.0001	0.0012
WS130	0.1	0.7	0.1	0.0001	0.0007

Notes: -

- Where no detectable flow has been recorded, the limit of detection of the apparatus (0.1l/hr) has been used.
- Where no detectable Carbon Dioxide or Methane has been recorded, the limit of detection of the apparatus (0.1%CO₂ and 0.1%CH₄) has been used.

The proposed development is considered to be best represented by a Type A development. Type A developments are fully defined in BS8485, but in summary comprise:

Type A building - Private residential property with no building management controls e.g. conventional private housing.

Based upon the results, the site has been placed in Characteristic Situation CS1 and no special gas protection measures are required. No significant source of ground gas was discovered during the ground investigation and no additional monitoring is recommended at this time.

9.6 Updated Conceptual Site Model

Following the findings of the site investigation the Preliminary Conceptual Site Model for the site has been reviewed and the conclusions are presented in the Updated Conceptual Site Model in Table 11 overleaf:

Table 11 – Updated Conceptual Site Model

Sources	PATHWAYS:				RECEPTORS:							Risk Rating	Comments	
	Root Uptake	Direct Contact	Ingestion	Respiration	Gas Accumulation	Plants	End Users	Structures (Concrete)	Services/Utilities	Construction Workers	Controlled Waters			
Onsite: Made Ground associated with historical construction and demolition activities	U	U	U	U	U	L	L	L	L	L	L	LR	No significant evidence of Made Ground was encountered during the intrusive investigation, as such, a low risk can be attributed to these soils.	
Onsite: Agricultural land use	L	L	L	L	U	L	M	L	L	M	M	MR	Elevated levels of naphthalene were identified in several locations across the site. Given the depth and potential mobility of the contamination, further investigation may be required to assess to risks to groundwater, buried services and nearby surface water features.	
Legend:- See Comparison of Consequence Against Probability within Appendix 6 for Key to Legend.	Probability:				Consequence (Severity):							Risk Rating:		
	Negligible (N)				Negligible (N)							Very High Risk		
	Unlikely (U)				Mild/Low (L)							High Risk		
	Likely (L)				Moderate (M)							Moderate Risk		
	Highly Likely (H)				Severe (S)							Moderate/Low Risk		
												Low Risk		
											Negligible Risk		NR	