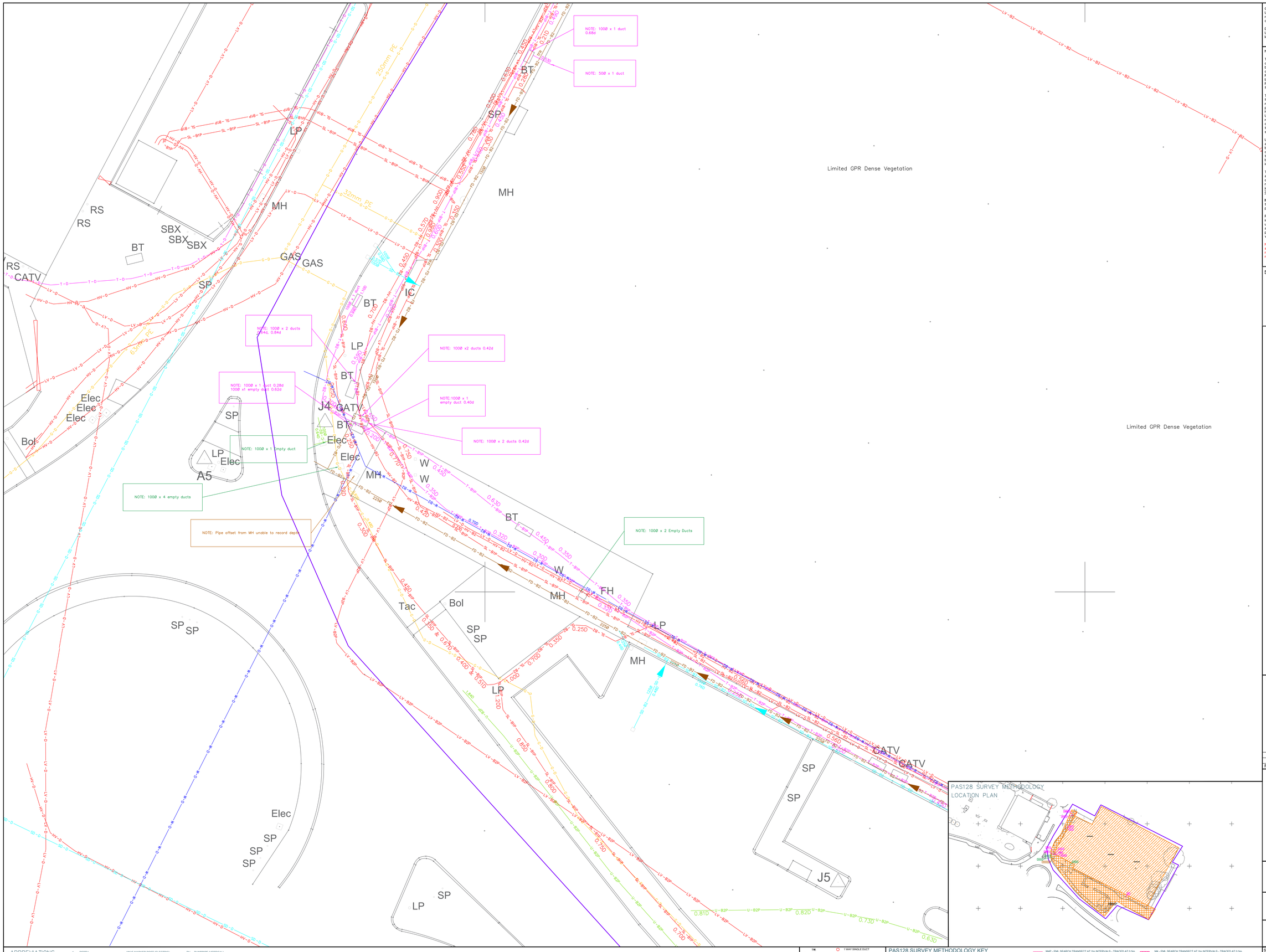

Grid: OS National Grid
Using the OS GPS Network and applying OSTN15 Transformation and then removing the scale factor for true distances with a one-step transformation centred on "*[coordinate]*"

Datum: OS Level datum
Using the OS GPS Network and applying OSGM15 National Geoid Model to obtain local area corrections

NOTES

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No utility mapping survey can be considered a 100% accurate depiction of the sub-surface environment, and the use of these drawings does not remove the requirement for the use of safe digging techniques at all times, in line with the requirements of HSG47 and current CDM regulations.

Station Listing

SUB-SURFACE KEY

COMBINED HEATING AND POWER	
DISTRICT HEATING	
DRAINAGE COMBINED *	
DRAINAGE FOUL*	
DRAINAGE SURFACE*	
DRAINAGE UNIDENTIFIED*	
[* FLOW DIRECTION DENOTED BY ARROW (+) or (-) IF KNOWN.]	
ELECTRIC	
ELECTRIC LV	
ELECTRIC HV	
ELECTRIC STREET LIGHTING	
GAS	
OILFUEL PIPELINE	
STREET FURNITURE CABLES	
TELECOMS	
TELECOMS - FIBRE OPTIC	
TELECOMS - BT	
TELECOMS - VIRGIN MEDIA	
TRAFFIC CONTROL	
WATER	
UNIDENTIFIED UTILITY	
UNIDENTIFIED CABLES	
UNIDENTIFIED EMPTY DUCT	
GPR LINEAR FEATURE	
GPR AREA ANOMALY	
GPR AREA ANOMALY - REBAR	
CHAMBER EXTENTS	
MEASURED DEPTH BGL TO PIPE/CABLE/DUCT	0.65d
INVERT LEVEL OF PIPE/DUCT/CABLE (TO OS DATUM)	IL 12.34
SOFFIT LEVEL OF PIPE/DUCT/CABLE (TO OS DATUM)	SL 45.67
COVER LEVEL OF INSPECTION CHAMBER (TO OS DATUM)	CL 78.90
DIAMETER OF PIPE/DUCT IN MILLIMETERS [BGL - BELOW GROUND LEVEL]	150Ø
AREA UNABLE TO BE SURVEYED DUE TO SURFACE OBSTRUCTIONS, VEGETATION OR LACK OF ACCESS	
TRENCH SCAR / SURFACE SCAR	
EXTENT OF SURVEY - BOUNDARY	

(* STATE SPECIFIC LEGEND)

UTILITY CONFIDENCE LEVELS (Listed from High to Low)

(A)	HORIZONTAL AND VERTICAL POSITION VERIFIED VISUALLY (Accuracy: Horizontal ±(25mm) Vertical±50mm)
(B1P)	HORIZONTAL AND VERTICAL POSITION DETECTED BY MULTIPLE METHODS WITH POST PROCESSING OF GPR DATA (Estimated Accuracy: ±150mm OR ±15% of detected depth)
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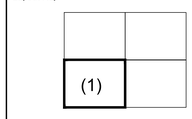
Layout Key



Rev	Date	Description	Check
-	--/--/----		--

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Tel: 01928 734473
Email: surveyors@powersuk.com
www.powersuk.com

Client
REDSUN_DEVELOPMENTS
LOCATION_OF_CLIENT_OFFICE

Site
SOUTH_BOUNDARY_ROAD
KNOWSLEY_INDUSTRIAL_PARK
KNOWSLEY
L33_7YE

Title
UNDERGROUND_UTILITY_DETECTION_SURVEY

Survey by	CS	Drawn by	CS
Check by	PB	Date	10/06/22
Scale [A0 Sheet] 1:100	DWG Reference/number* 5612/UGS001	Status FINAL	
Project/Job No 5612		Revision REV_ID	

ABBREVIATIONS

AR	ASSUMED ROUTE	d	DEPTH	MKG	MARKER POST (ELECTRIC)
AV	AIR VALVE	DIA	DIAMETER	MKG	MARKER POST (GAS)
BD	BACKDROP	EIC	ELECTRIC INSPECTION COVER	MKT	MARKER POST (TELECOM)
BTIC	BRITISH TELECOM CHAMBER	EOR	END OF RECORDS	MKW	MARKER POST (WATER)
CAP	CAPPED PIPE END	EOT	END OF TRACE	NL	NOT LOCATED
CB	CONTROL BOX	EP	ELECTRICITY POLE	OSA	OUTSIDE SURVEY AREA
CI	CAST IRON	FH	FIRE HYDRANT	OHCA	OVERHEAD CABLE
CL	COVER LEVEL	GIP	GAS INLET PIPE	OHCA	OH CABLE (UNIDENTIFIED)
CO	CONCRETE	LH	LAMP HOLE	OHE	OVERHEAD CABLE (ELECTRIC)
CP	CABLE PIT	LP	LAMP POST	OHP	OVERHEAD PIPE
CulP	CULVERT PIPE	LV	LOW VOLTAGE	OHT	OVERHEAD CABLE (TELECOM)
		MH	MANHOLE	OP	OUTLET PIPE
		MKr	MARKER POST	PR	PIPE RISER

PV	PUMPPIPE (VERTICAL)
RE	RODDING EYE
SA	SURVEY ABANDONED
SL	SOFFIT LEVEL
SIL	SILT LEVEL (TOP)
SV	STOP VALVE
TP	TEST PITS / PIPE
TIC	TELECOM CHAMBER COVER
TRF	TAKEN FROM RECORDS
WM	WATER METER
WO	WASH OUT VALVE

DUCT FORMATION

1W:	1 WAY SINGLE DUCT
2W:	2 WAY FLAT
2W:1/2	2 WAY: 1 WIDE, 2 DEEP
4W:2/2	4 WAY: 2 WIDE, 2 DEEP
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12W:4/3	12 WAY: 4 WIDE, 3 DEEP

NB: TO BE ADAPTED TO FOR EACH CHAMBER

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ELECTROMAGNETIC DETECTION	GROUND PENETRATING RADAR	TOTAL STATION	GPS/GNSS
Equipment name	Equipment name	Equipment name	Equipment name
Equipment name	Equipment name	Equipment name	Equipment name
Equipment name	Equipment name	Equipment name	Equipment name

- M4P - EML SEARCH TRANSECT AT 2m INTERVALS - TRACED AT 0.5m INTERVALS. GPR SURVEY GRID AT 0.5m INTERVALS OR HIGH DENSITY ARRAY. POST PROCESSING OF GPR DATA.
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- M2P - EML SEARCH TRANSECT AT 5m INTERVALS - TRACED AT 2m INTERVALS. GPR SURVEY GRID AT 2m INTERVALS OR HIGH DENSITY ARRAY. POST PROCESSING OF GPR DATA.
- M1P - EML SEARCH TRANSECT AT 10m INTERVALS - TRACED AT 5m INTERVALS. GPR SURVEY AS APPROPRIATE. POST PROCESSING OF GPR DATA.
- M4 - EML SEARCH TRANSECT AT 2m INTERVALS - TRACED AT 0.5m INTERVALS. GPR SURVEY GRID AT 0.5m INTERVALS. GPR MARK-UP ON SITE.
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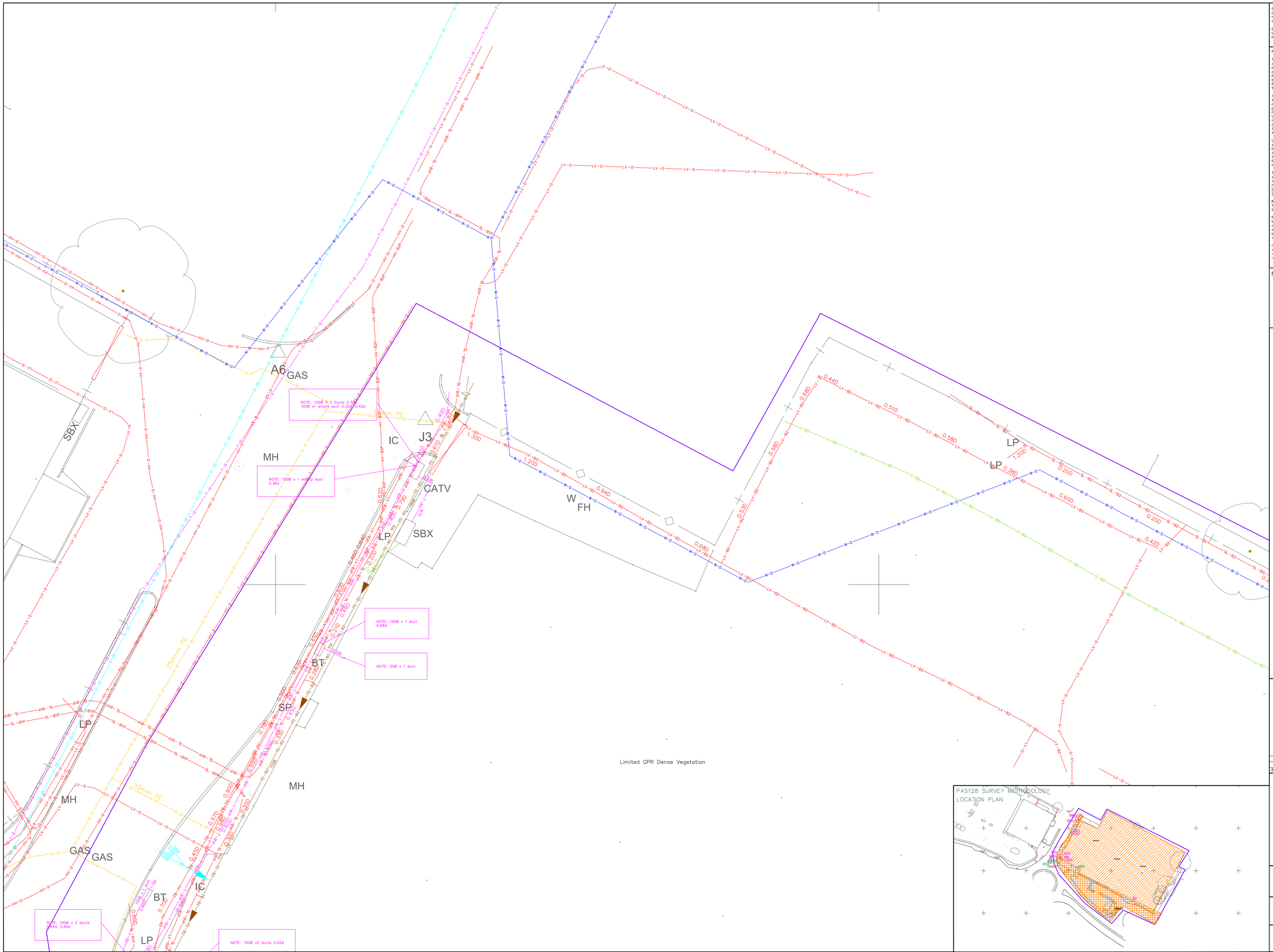

Grid: OS National Grid
Using the OS GPS Network and applying OSTN15 Transformation and then removing the scale factor for true distances with a one-step transformation centred on ""[coordinate]""

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Using the OS GPS Network and applying OSGM15 National Geoid Model to obtain local area corrections

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Station Listing

SUB-SURFACE KEY

- COMBINED HEATING AND POWER
- DISTRICT HEATING
- DRAINAGE COMBINED *
- DRAINAGE FOUL*
- DRAINAGE SURFACE*
- DRAINAGE UNIDENTIFIED*

[* FLOW DIRECTION DENOTED BY ARROW (+) or (-) IF KNOWN]

- ELECTRIC
- ELECTRIC LV
- ELECTRIC HV
- ELECTRIC STREET LIGHTING
- GAS
- OILFUEL PIPELINE
- STREET FURNITURE CABLES
- TELECOMS
- TELECOMS - FIBRE OPTIC
- TELECOMS - BT
- TELECOMS - VIRGIN MEDIA
- TRAFFIC CONTROL
- WATER
- UNIDENTIFIED UTILITY
- UNIDENTIFIED CABLES
- UNIDENTIFIED EMPTY DUCT
- GPR LINEAR FEATURE
- GPR AREA ANOMALY
- GPR AREA ANOMALY - REBAR
- CHAMBER EXTENTS

MAIN UTILITIES SCHEMATIC

MEASURED DEPTH BGL TO PIPE/CABLE/DUCT	0.65d
INVERT LEVEL OF PIPE/DUCT/CABLE (TO OS DATUM)	IL 12.34
SOFFIT LEVEL OF PIPE/DUCT/CABLE (TO OS DATUM)	SL 45.67
COVER LEVEL OF INSPECTION CHAMBER (TO OS DATUM)	CL 78.90
DIAMETER OF PIPE/DUCT IN MILLIMETERS	150Ø
[BGL - BELOW GROUND LEVEL]	

- AREA UNABLE TO BE SURVEYED DUE TO SURFACE OBSTRUCTIONS, VEGETATION OR LACK OF ACCESS
- TRENCH SCAR / SURFACE SCAR
- EXTENT OF SURVEY - BOUNDARY

UTILITY CONFIDENCE LEVELS (Listed from High to Low)

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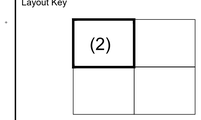

Rev	Date	Description	Check
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Tel: 01928 734473
Email: surveyors@powersuk.com
www.powersuk.com

Client
REDSUN_DEVELOPMENTS
LOCATION_OF_CLIENT_OFFICE

Site
SOUTH_BOUNDARY_ROAD
KNOWSLEY_INDUSTRIAL_PARK
KNOWSLEY
L33_7YE

Title
UNDERGROUND_UTILITY_DETECTION_SURVEY

ABBREVIATIONS

AR	ASSUMED ROUTE	d	DEPTH	MKrE	MARKER POST (ELECTRIC)
AV	AIR VALVE	DIA	DIAMETER	MKrG	MARKER POST (GAS)
BH	BOREHOLE	EIC	ELECTRIC INSPECTION COVER	MKrT	MARKER POST (TELECOM)
BTIC	BRITISH TELECOM CHAMBER	EOR	END OF RECORDS	MKrW	MARKER POST (WATER)
CATV	CABLE TV COVER	EP	ELECTRIC PIPE	MH	MANHOLE (STOP)
CB	CONTROL BOX	EP	ELECTRICITY POLE	OSA	OUTSIDE SURVEY AREA
CI	CAST IRON	ER	EARTH ROD	OGP	OVERGROUND PIPE
CL	CLEAR SPAN	GIP	GAS INLET PIPE	OHCL	OH CABLE (UNIDENTIFIED)
CO	CONCRETE	LH	LAMP HOLE	OHE	OVERHEAD CABLE (ELECTRIC)
CP	CABLE PIT	LP	LAMP POST	OHP	OVERHEAD PIPE
CuP	CULVERT PIPE	LV	LOW VOLTAGE	OHT	OVERHEAD CABLE (TELECOM)
		MH	MANHOLE	PE	PIPE END
		MKr	MARKER POST	PR	PIPE RISER
				PV	PUMPPIPE (VERTICAL)
				RE	RODDING EYE
				SA	SURVEY ABANDONED
				SL	SOFFIT LEVEL
				SP	SOIL STACK PIPE
				SV	STOP VALVE
				SVP	SOIL VENT PIPE
				TEL	TELECOM CHAMBER COVER
				TRF	TAKEN FROM RECORDS
				WM	WATER METER
				WO	WASH OUT VALVE

DUCT FORMATION

1W:	1 WAY SINGLE DUCT
2W:	2 WAY FLAT
2W:1/2	2 WAY : 1 WIDE, 2 DEEP
4W:2/2	4 WAY: 2 WIDE, 2 DEEP
6W:3/2	6 WAY: 3 WIDE, 2 DEEP
12W:4/3	12 WAY: 4 WIDE, 3 DEEP

NB. TO BE ADAPTED TO FOR EACH CHAMBER

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NB. PLEASE SEE ACCOMPANYING REPORT FOR FULL DETAILS.

ELECTROMAGNETIC DETECTION	GROUND PENETRATING RADAR	TOTAL STATION	GPS/GNSS
Active Sweep	Active Sweep	Reflectorless	Real-time Kinematic
Passive Sweep	Passive Sweep	Reflector	Post-processed

- M4IP - EML SEARCH TRANSECT AT 2m INTERVALS - TRACED AT 0.5m INTERVALS. GPR SURVEY GRID AT 0.5m INTERVALS OR HIGH DENSITY ARRAY. POST PROCESSING OF GPR DATA.
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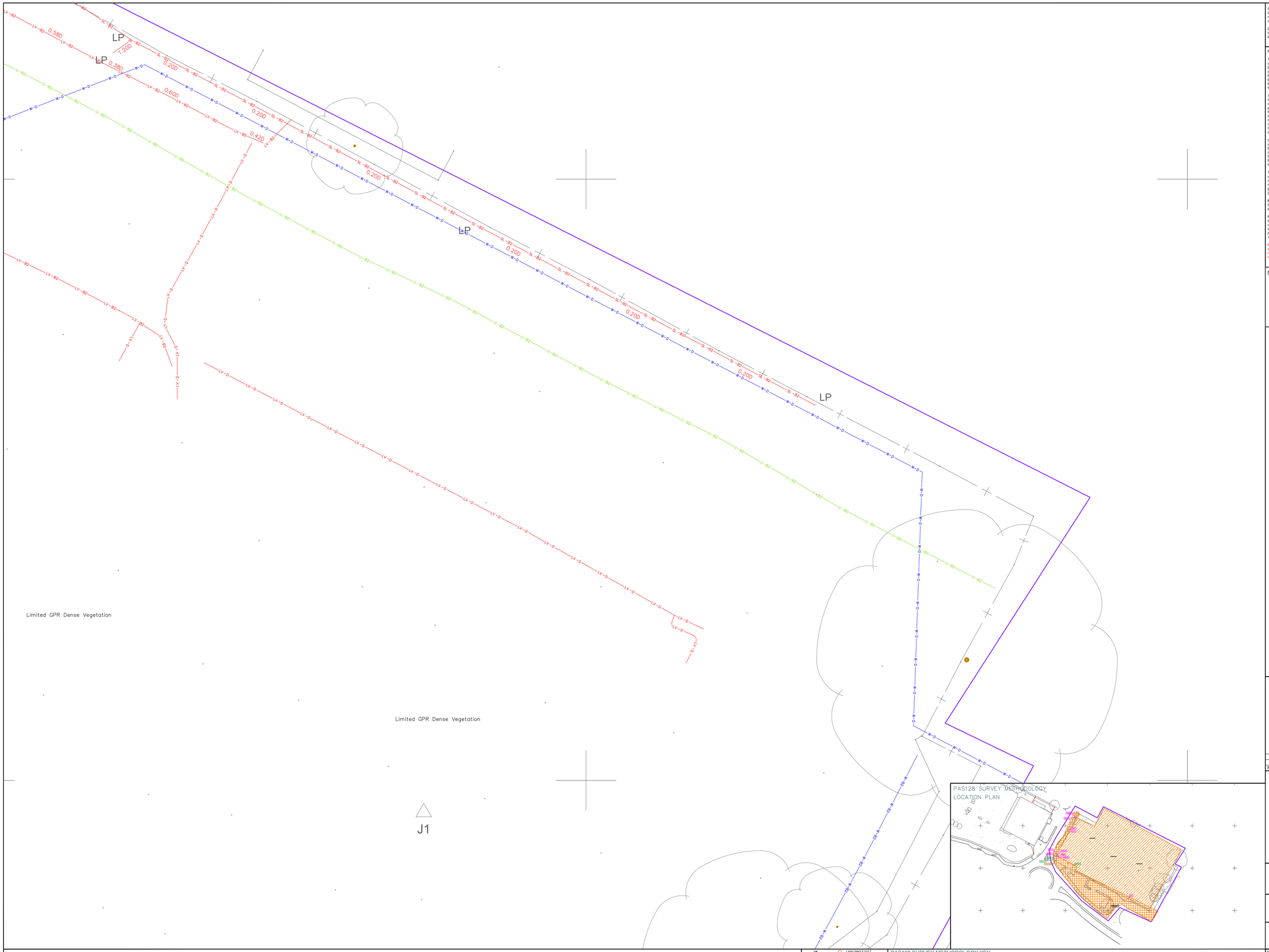
PAS128 SURVEY METHODOLOGY
LOCATION PLAN

Survey by	CS	Drawn by	CS
Check by	PB	Date	10/06/22
Scale [A0 Sheet] 1:100	DWG Reference/number* 5612/UGS001	Status FINAL	
Project/Job No 5612		Revision REV_ID	



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ELECTRIC STREET LIGHTING	
GAS	
OIL/FUEL PIPELINE	
STREET FURNITURE CABLES	
TELECOMS	
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TELECOMS - BT	
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DIAMETER OF PIPE/DUCT IN MILLIMETERS	150Ø
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AREA UNABLE TO BE SURVEYED DUE TO SURFACE OBSTRUCTIONS, VEGETATION OR LACK OF ACCESS	
TRENCH SCAR / SURFACE SCAR	
EXTENT OF SURVEY - BOUNDARY	

STATS19 SPONSORS CONFIRMED

UTILITY CONFIDENCE LEVELS (Listed from High to Low)

(A) HORIZONTAL AND VERTICAL POSITION VERIFIED VISUALLY (Accuracy: Horizontal ±25mm) Vertical(±50mm)

(B1P) HORIZONTAL AND VERTICAL POSITION DETECTED BY MULTIPLE METHODS WITH POST PROCESSING OF GPR DATA (Estimated Accuracy: ±150mm OR ±15% of detected depth)

(B1) HORIZONTAL AND VERTICAL POSITION DETECTED BY MULTIPLE METHODS (Estimated Accuracy: ±150mm OR ±15% of detected depth)

(B2P) HORIZONTAL AND VERTICAL POSITION DETECTED VIA POST-PROCESSED GPR (Estimated Accuracy: ±250mm OR ±40% of detected depth)

(B2) HORIZONTAL AND VERTICAL POSITION DETECTED BY A SINGLE METHOD (Estimated Accuracy: ±250mm OR ±40% of detected depth)

(B3P) HORIZONTAL POSITION DETECTED VIA POST-PROCESSED GPR (Estimated Accuracy: ±500mm in the Horizontal - Depth is undefined)

(B3) HORIZONTAL POSITION DETECTED BY A SINGLE METHOD (Estimated Accuracy: ±500mm in the Horizontal - Depth is undefined)

(C) ROUTE TRANSCRIBED FROM UTILITY ASSET PLANS AND CORRELATED TO VISUAL INDICATORS AND SURFACE FEATURES (Accuracy Undefined)

(D) ROUTE TRANSCRIBED FROM UTILITY ASSET PLANS (Accuracy Undefined)

Layout Key

	(3)

Rev	Date	Description	Check
-	--/--/----		--

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Client

REDSUN_DEVELOPMENTS
LOCATION_OF_CLIENT_OFFICE

Site

SOUTH_BOUNDARY_ROAD
KNOWSLEY_INDUSTRIAL_PARK
KNOWSLEY
L33_7YE

Title

UNDERGROUND_UTILITY_DETECTION_SURVEY

ABBREVIATIONS

AR	ASSUMED ROUTE	d	DEPTH	MkE	MARKER POST (ELECTRIC)	PV	PUMPPIPE (VERTICAL)
AV	AIR VALVE	DIA	DIAMETER	MkG	MARKER POST (GAS)	RE	RODDING EYE
BD	BACKDROP	EIC	END OF INSPECTION COVER	MkO	MARKER POST (UNKNOWN)	RM	REMAINDER
BTC	BRITISH TELECOM CHAMBER	EOR	END OF RECORDS	MkW	MARKER POST (WATER)	SL	SOFFIT LEVEL
CATV	CABLE TV COVER	EOT	END OF TRACE	NL	NOT LOCATED	SIL	SILT LEVEL(TOP)
CB	CONTROL BOX	EP	ELECTRICITY POLE	OSA	OUTSIDE SURVEY AREA	SV	STOP VALVE
CL	CAST IRON	ER	EARTH ROD	OGP	OVERGROUND PIPE	SVP	SOIL VENT PIPE
CO	COVER LEVEL	GIP	GAS INLET PIPE	OHCI	OH CABLE (UNIDENTIFIED)	TBL	TARMACADAM CHAMBER COVER
CO	CONCRETE	LH	LAMP HOLE	OHE	OVERHEAD CABLE (ELECTRIC)	TRF	TRANSFORM RECORDS
CP	CABLE PIT	LP	LAMP POST	OHT	OVERHEAD CABLE (TELECOM)	WM	WATER METER
CuP	CULVERT PIPE	LV	LOW VOLTAGE	OHT	OVERHEAD CABLE (TELECOM)	WO	WASH-OUT VALVE
		MH	MANHOLE	OP	OUTLET PIPE		
		MKr	MARKER POST	PR	PIPE RISER		

DUCT FORMATION

1W:	1 WAY SINGLE DUCT
2W:	2 WAY FLAT
2W:1/2	2 WAY: 1 WIDE, 2 DEEP
4W:2/2	4 WAY: 2 WIDE, 2 DEEP
6W:3/2	6 WAY: 3 WIDE, 2 DEEP
12W:4/3	12 WAY: 4 WIDE, 3 DEEP

NB: TO BE ADAPTED TO FOR EACH CHAMBER

PAS128 SURVEY METHODOLOGY KEY

THIS SURVEY HAS BEEN CARRIED OUT IN ACCORDANCE WITH THE PAS128 SPECIFICATION FOR UNDERGROUND UTILITY DETECTION, VERIFICATION AND LOCATION. THIS SPECIFICATION CALLS FOR A RANGE OF TECHNIQUES AND METHODS OF VARYING INTENSITY TO BE DEPLOYED. THE COLOUR CODED SCHEME INDICATES WHERE DIFFERENT SURVEY METHODOLOGIES HAVE BEEN USED ON SITE, AND THE LIST BELOW IDENTIFIES EQUIPMENT USED TO OBTAIN THE SURVEY RESULTS.
NB: PLEASE SEE ACCOMPANYING REPORT FOR FULL DETAILS.

ELECTROMAGNETIC DETECTION	GROUND PENETRATING RADAR	TOTAL STATION	GPS/GNSS
Equipment name	Equipment name	Equipment name	Equipment name
Equipment name	Equipment name	Equipment name	Equipment name
Equipment name	Equipment name	Equipment name	Equipment name

MAP - EML SEARCH TRANSECT AT 2m INTERVALS - TRACED AT 0.5m INTERVALS. GPR SURVEY GRID AT 0.5m INTERVALS& OR HIGH DENSITY ARRAY. POST PROCESSING OF GPR DATA.

MSP - EML SEARCH TRANSECT AT 2m INTERVALS - TRACED AT 1m INTERVALS. GPR SURVEY GRID AT 1m INTERVALS& OR HIGH DENSITY ARRAY. POST PROCESSING OF GPR DATA.

MZP - EML SEARCH TRANSECT AT 5m INTERVALS - TRACED AT 2m INTERVALS. GPR SURVEY GRID AT 2m INTERVALS& OR HIGH DENSITY ARRAY. POST PROCESSING OF GPR DATA.

MYP - EML SEARCH TRANSECT AT 10m INTERVALS - TRACED AT 5m INTERVALS. GPR SURVEY AS APPROPRIATE. POST PROCESSING OF GPR DATA.

M4 - EML SEARCH TRANSECT AT 2m INTERVALS - TRACED AT 0.5m INTERVALS. GPR SURVEY GRID AT 0.5m INTERVALS. GPR MARK-UP ON SITE

M3 - EML SEARCH TRANSECT AT 2m INTERVALS - TRACED AT 1m INTERVALS. GPR SURVEY GRID AT 1m INTERVALS. GPR MARK-UP ON SITE.

M2 - EML SEARCH TRANSECT AT 5m INTERVALS - TRACED AT 2m INTERVALS. GPR SURVEY GRID AT 2m INTERVALS. GPR MARK-UP ON SITE.

M1 - EML SEARCH TRANSECT AT 10m INTERVALS - TRACED AT 5m INTERVALS. GPR SURVEY AS APPROPRIATE. GPR MARK-UP ON SITE

Survey by	CS	Drawn by	CS
Check by	PB	Date	10/06/22
Scale [A0 Sheet]	DWG Reference/number*		Status
1:100	5612/UGS001		FINAL
Project/Job No	5612		Revision REV_ID

Grid: OS National Grid
Using the OS GPS Network and applying OSTN15 Transformation and then removing the scale factor for true distances with a one-step transformation centred on "*[coordinate]*"

Datum: OS Level datum
Using the OS GPS Network and applying OSGM15 National Geoid Model to obtain local area corrections

NOTES

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The data presented in this drawing have been collected using a combination of the following: consultation of utility asset information, visual survey & inspection of manholes and inspection chambers; electromagnetic location techniques; ground penetrating radar, and, where applicable, trial hole excavations. These techniques have been deployed in accordance with the BSI PAS128 Specification for Underground Utility Detection, Verification and Location using the search methodologies indicated below and described in the accompanying report. This drawing should be used in conjunction with the accompanying report which details the limitations of these techniques and any hindering factors encountered during this survey.

Unless otherwise stated, all utilities shown on this plan have been surveyed using approved detectors and the connections between inspection chambers, if unable to be detected, are generally assumed to be direct unless there are indications to the contrary. The detection confidence for each utility segment is depicted in line with the PAS128 scheme outlined below. Information depicted as QL-C or QL-D cannot be guaranteed as it is based on historic utility records which can be inaccurate and incomplete.

The utility routes depicted may reflect the routes of multiple cables or pipes. It is not always possible to differentiate between buried construction features, utilities and other subsurface linear features therefore it is possible that some features shown are not utility related, and due to the limitations of electromagnetic techniques all utility identifications should be treated with caution and verified prior to use during design/building works.

If the location or depth of utilities and features is of particular importance to a project then it is recommended that discussions are held with Powers Uk Ltd regarding any possible limitations or anomalies.

Please note that not all buried pipes, cables and ducts can be detected and mapped in consideration of their depth, location, material type, geology and proximity to other utilities. Even an appropriate and professionally executed survey may not be able to achieve a 100% detection rate, Where an area of utilities is likely to affect client project requirements, it is strongly recommended that a PAS128 Quality Level A verification survey is carried out

No utility mapping survey can be considered a 100% accurate depiction of the sub-surface environment, and the use of these drawings does not remove the requirement for the use of safe digging techniques at all times, in line with the requirements of HSG47 and current CDM regulations.

Station Listing

SUB-SURFACE KEY

- COMBINED HEATING AND POWER
- DISTRICT HEATING
- DRAINAGE COMBINED *
- DRAINAGE FOUL*
- DRAINAGE SURFACE*
- DRAINAGE UNIDENTIFIED*
- [* FLOW DIRECTION DENOTED BY ARROW (+) or (-) IF KNOWN.]
- ELECTRIC
- ELECTRIC LV
- ELECTRIC HV
- ELECTRIC STREET LIGHTING
- GAS
- OILFUEL PIPELINE
- STREET FURNITURE CABLES
- TELECOMS
- TELECOMS - FIBRE OPTIC
- TELECOMS - BT
- TELECOMS - VIRGIN MEDIA
- TRAFFIC CONTROL
- WATER
- UNIDENTIFIED UTILITY
- UNIDENTIFIED CABLES
- UNIDENTIFIED EMPTY DUCT
- GPR LINEAR FEATURE
- GPR AREA ANOMALY
- GPR AREA ANOMALY - REBAR
- CHAMBER EXTENTS

(STATS19 CODINGS)

MEASURED DEPTH BGL TO PIPE/CABLE/DUCT	0.65d
INVERT LEVEL OF PIPE/DUCT/CABLE (TO OS DATUM)	IL 12.34
SOFFIT LEVEL OF PIPE/DUCT/CABLE (TO OS DATUM)	SL 45.67
COVER LEVEL OF INSPECTION CHAMBER (TO OS DATUM)	CL 78.90
DIAMETER OF PIPE/DUCT IN MILLIMETERS	150Ø

[BGL - BELOW GROUND LEVEL]

- AREA UNABLE TO BE SURVEYED DUE TO SURFACE OBSTRUCTIONS, VEGETATION OR LACK OF ACCESS
- TRENCH SCAR / SURFACE SCAR
- EXTENT OF SURVEY - BOUNDARY

UTILITY CONFIDENCE LEVELS (Listed from High to Low)

(A)	HORIZONTAL AND VERTICAL POSITION VERIFIED VISUALLY (Accuracy: Horizontal ±20mm; Vertical±50mm)
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Rev	Date	Description	Check
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Client: REDSUN_DEVELOPMENTS LOCATION_OF_CLIENT_OFFICE

Site: SOUTH_BOUNDARY_ROAD KNOWSLEY_INDUSTRIAL_PARK KNOWSLEY L33_7YE

Title: UNDERGROUND_UTILITY_DETECTION_SURVEY

Survey by	CS	Drawn by	CS
Check by	PB	Date	10/06/22
Scale [A0 Sheet] 1:100	DWG Reference/number* 5612/UGS001	Status	FINAL
Project/Job No 5612		Revision	REV_ID

ABBREVIATIONS

AR	ASSUMED ROUTE
BD	BOREDOWN
BO	BACKDROP
BTIC	BRITISH TELECOM CHAMBER
CATV	CABLE TV COVER
CB	CONTROL BOX
CI	CAST IRON
CL	COVER LEVEL
CP	CONTROL PIT
CP	CABLE PIT
CuP	CULVERT PIPE
d	DEPTH
DIA	DIAMETER
EIC	ELECTRIC INSPECTION COVER
EOT	END OF TRACE
EOT	END OF TRENCH
EP	ELECTRICITY POLE
ER	EARTH ROD
GIP	GAS INLET PIPE
LH	LAMP HOLE
LP	LAMP POST
LP	LAMPPOST/GAGE
MH	MANHOLE
MKr	MARKER POST
MKrE	MARKER POST (ELECTRIC)
MKrG	MARKER POST (GAS)
MKrT	MARKER POST (TELECOM)
MKrW	MARKER POST (WATER)
NL	NOT LOCATED
OBA	OBSTRUCTED AREA
OGP	OVERGROUND PIPE
OHCu	OH CABLE (UNIDENTIFIED)
OHE	OVERHEAD CABLE (ELECTRIC)
OHP	OVERHEAD PIPE
OHT	OVERHEAD CABLE (TELECOM)
OP	OUTLET PIPE
PR	PIPE RISER
PV	PUMPPIPE (VERTICAL)
RE	RODDING EYE
SA	SURVEY ABANDONED
SL	SOFFIT LEVEL
SL	SILT LEVEL (TOP)
SV	SOL VALVE
SVP	SOIL VENT PIPE
TEL	TELECOM CHAMBER COVER
TRF	TAKEN FROM RECORDS
WM	WATER METER
WO	WASH OUT VALVE

DUCT FORMATION

1W	1 WAY SINGLE DUCT
2W	2 WAY FLAT
2W 1/2	2 WAY: 1 WIDE, 2 DEEP
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NB: PLEASE SEE ACCOMPANYING REPORT FOR FULL DETAILS

ELECTROMAGNETIC DETECTION	GROUND PENETRATING RADAR	TOTAL STATION	OPTICAL
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Equipment name	Equipment name	Equipment name	Equipment name

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- MOP - EML SEARCH TRANSECT AT 2m INTERVALS - TRACED AT 1m INTERVALS. GPR SURVEY GRID AT 1m INTERVALS OR HIGH DENSITY ARRAY. POST PROCESSING OF GPR DATA.
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