

1ST LINE DEFENCE

UXO SOLUTIONS



Report on Unexploded Ordnance (UXO) Intrusive Magnetometer Survey

Project Name	Connell Brother Demo Site, Echo Street		
Client	Vinci		
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Distribution

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Annexes

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Annex A	Site Location Maps
Annex B	Recent Aerial Photographs of Site Area
Annex C	Table Showing Survey Results
Annex D	Drawing Showing Survey Results

1st Line Defence Limited

Report on Unexploded Ordnance (UXO) Intrusive Magnetometer Survey

Site: Connell Brother Demo Site, Echo Street
Client: Vinci

1. Introduction

1.1. Background

Vinci commissioned 1st Line Defence to carry out an Intrusive UXO Survey in connection with their proposed IQ Student Accommodation that will feature towers of 25, 20 and 14 storeys to accommodate nearly 500 co-living units.

1st Line Defence Limited has carried out a Detailed UXO Risk Assessment, which concluded that there is a low-medium risk from UXO across the site. As a consequence, Vinci appointed 1st Line Defence to provide risk mitigation services for the medium risk areas.

1.2. Site Location

The site is located in the county borough of Manchester in Lancashire, north-west England. It is bordered by Granby Row to the north, Echo Street to the east, a section of railway and Altrincham Road to the south and Granby Row/Cobourg Street to the west. The site is located approximately 210m south-west of Manchester Piccadilly station and approximately 870m south-east of Manchester city centre.

The site is centred on the approximate OS grid reference: **ST 8466597703**.

Site location maps and a recent aerial photograph of the site can be seen in **Annex A** and **Annex B**.

1.3. Aim

The aim of the intrusive survey was to minimise the risk that magnetic anomalies, which may have indicated the presence of unexploded ordnance, were located at proposed pile positions.

2. Intrusive Magnetometer Survey

2.1. Survey System

1st Line Defence's intrusive magnetometer survey system is capable of detecting underground anomalies in the earth's magnetic field that are the result of variations in the geological strata, electrical fields or man-made ferromagnetic objects, including unexploded ordnance.

The magnetometer survey system used at this site employed sensitive fluxgate magnetometer sensors inserted into the ground through a pre-drilled hole.

The system is capable of detecting the magnetic field from a 50kg WWII air-dropped bomb at a distance of up to a 2m radius from the sensor in a clean magnetic environment, but at a lesser distance in magnetically contaminated ground. The magnetic field data is interpreted using software that is able to model the source of any magnetic anomalies and identify those that originate from discrete objects. In addition, in clean magnetic environments, the software is able to provide an estimate of the object's mass and this information is then used to assess the risk that the object is ordnance and to recommend appropriate actions.

2.2. Survey Methodology

The method statement for the intrusive survey was approved by Vinci prior to the commencement of works on site.

2.3. Scope

Vinci provided 1st Line Defence with piling layout plans and these were used to scope the survey scheme, which required a total of 100 surveys.

2.4. Marking Out

1st Line Defence provided a marked up drawing and coordinates of the survey locations required and the client marked out the survey positions on the ground.

2.5. Permit to Excavate and Service Clearance

The client carried out service clearance and issued Permits to Work.



2.6. The Survey

The surveys were carried out between the 17th and 21st February 2020 using a single survey rig and a drilling rig.

Survey data was initially assessed on site by the 1st Line Defence's Survey Operator with the data being further analysed and subject to Quality Assurance checks at 1st Line Defence head office each day.

2.7. Variations

There were no variations to the works carried out on site.

2.8. Summary of Survey Results

Survey results are shown in the table at **Annex C** and on the drawings at **Annex D**.

A total of 100 positions were surveyed. The average depth of the surveys was 5.10m below ground level.

No magnetic anomalies with the characteristics expected from German WWII air-dropped bombs of 50kg and above were detected within the specified clearance radii.



3. Summary and Conclusions

A total of 100 positions have been surveyed, with no evidence to indicate the presence of WWII German High Explosive bombs of 50kg and above. Piling may be carried out on all pile locations within the UXO survey locations indicated as clear within the clearance table (**Annex C**). The clearance drawing can be seen in **Annex D**.

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4th March 2020

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Client: **Vinci** — Approximate site boundary

Project: **Connell Brother Demo Site, Echo Street**

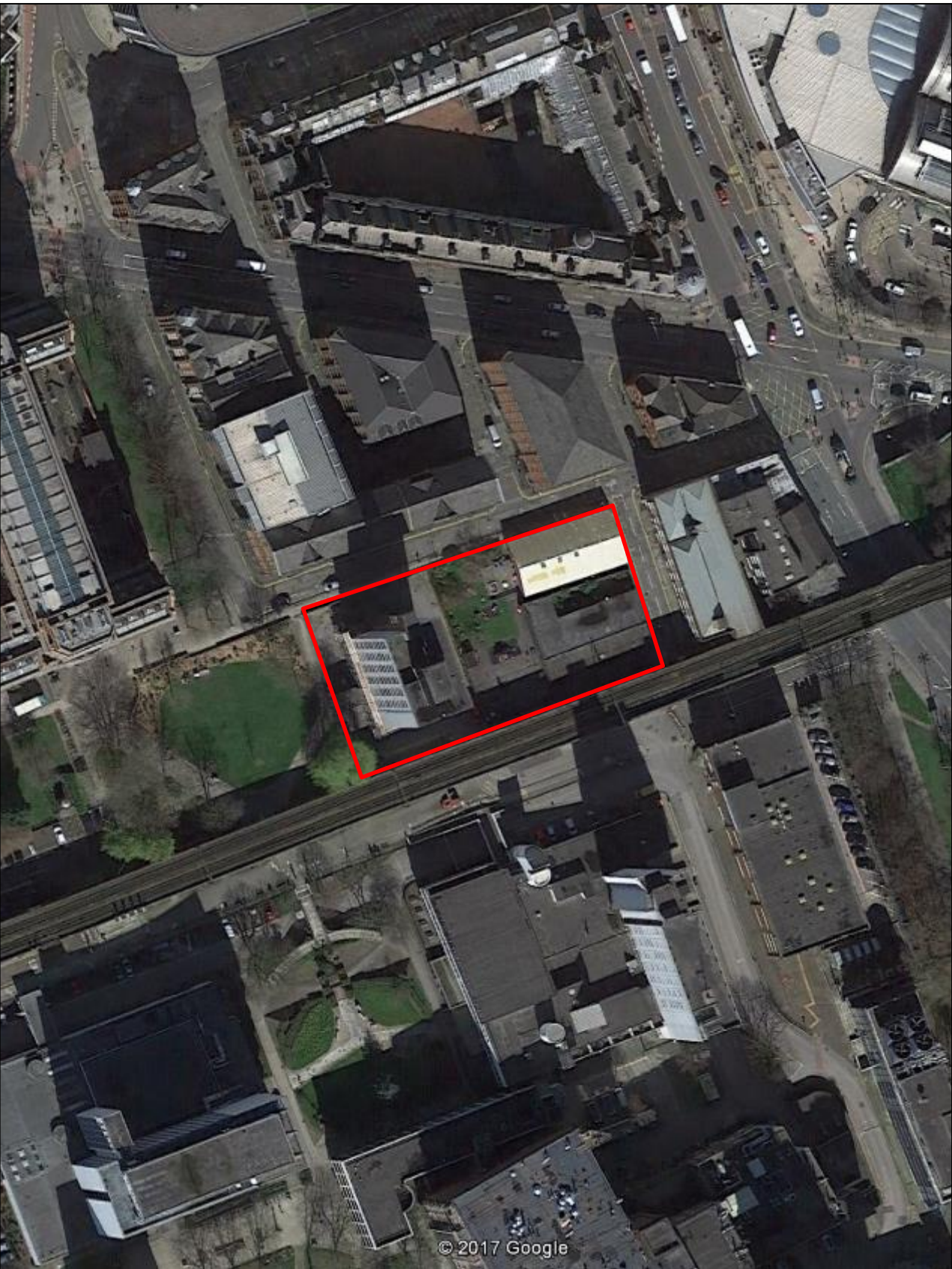
Reference: **OPN4989C** Source: Google Maps

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Client:	Vinci	 Approximate site boundary	
Project:	Connell Brother Demo Site, Echo Street		
Reference:	OPN4989C		Source: Google Earth™ Mapping Services
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INTRUSIVE UXO MAGNETOMETRY CLEARANCE REPORT
16.2.29B-Ed01-July18

Client : Vinci Construction Site : Connell Brother Demo Site OPN : 4989c

Section of site	Survey reference	Survey Information		Date of Survey	Depth of survey (m)	Clearance Information						Comments / Notes
		Co-ordinates				Pile (or borehole) nos. encompassed by clearance radius	Actual Clearance radius (m)	Clearance	All piles cleared? (Y/N)	Interpretation		
		Co-ord system: Eastings (m)	OSGB Northings (m)							By	Date	
Piles												
Main Site	1	384669.902	397724.466	17/02/2020	6.46	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	2	384673.201	397725.658	17/02/2020	8.30	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	3	384676.492	397726.848	17/02/2020	8.28	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	4	384679.790	397728.040	17/02/2020	4.96	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	5	384683.081	397729.229	17/02/2020	4.92	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	6	384686.380	397730.421	17/02/2020	4.82	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	7	384689.681	397731.605	17/02/2020	4.42	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	8	384692.972	397732.794	17/02/2020	4.63	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	9	384696.270	397733.986	17/02/2020	4.82	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	10	384699.561	397735.176	17/02/2020	4.84	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	11	384702.169	397733.066	21/02/2020	4.58	N/A	2.0	Yes	Y	1LD	21/02/2020	
Main Site	12	384698.878	397731.877	17/02/2020	4.32	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	13	384695.580	397730.685	17/02/2020	4.86	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	14	384692.281	397729.493	17/02/2020	4.82	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	15	384688.987	397728.311	17/02/2020	4.82	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	16	384685.689	397727.119	17/02/2020	4.90	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	17	384682.398	397725.930	17/02/2020	4.92	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	18	384679.099	397724.738	17/02/2020	4.92	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	19	384675.809	397723.549	17/02/2020	5.04	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	20	384672.510	397722.357	17/02/2020	5.34	N/A	2.0	Yes	Y	1LD	18/02/2020	
Main Site	21	384671.805	397719.095	18/02/2020	4.98	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	22	384675.098	397720.276	18/02/2020	5.04	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	23	384678.397	397721.468	18/02/2020	5.20	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	24	384681.688	397722.657	18/02/2020	5.30	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	25	384684.987	397723.850	18/02/2020	5.04	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	26	384688.285	397725.042	18/02/2020	4.84	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	27	384691.576	397726.231	18/02/2020	4.78	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	28	384694.877	397727.415	18/02/2020	4.90	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	29	384698.266	397728.639	18/02/2020	4.64	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	30	384701.467	397729.796	18/02/2020	4.64	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	31	384704.187	397727.826	21/02/2020	4.90	N/A	2.0	Yes	Y	1LD	21/02/2020	
Main Site	32	384700.897	397726.637	18/02/2020	5.82	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	33	384697.598	397725.444	18/02/2020	4.90	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	34	384694.307	397724.255	18/02/2020	5.40	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	35	384691.006	397723.071	18/02/2020	4.88	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	36	384687.707	397721.879	18/02/2020	5.22	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	37	384684.416	397720.690	18/02/2020	4.86	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	38	384681.118	397719.498	18/02/2020	4.96	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	39	384677.827	397718.309	18/02/2020	5.18	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	40	384674.528	397717.117	18/02/2020	5.10	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	41	384673.745	397713.872	18/02/2020	5.24	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	42	384677.038	397715.053	18/02/2020	5.10	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	43	384680.337	397716.245	18/02/2020	4.98	N/A	2.0	Yes	Y	1LD	19/02/2020	
Main Site	44	384683.636	397717.437	19/02/2020	5.02	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	45	384686.927	397718.627	19/02/2020	4.72	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	46	384690.225	397719.819	19/02/2020	4.98	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	47	384693.516	397721.008	19/02/2020	5.34	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	48	384696.817	397722.192	19/02/2020	5.02	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	49	384700.108	397723.381	19/02/2020	4.90	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	50	384703.407	397724.573	19/02/2020	4.98	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	51	384706.187	397722.588	21/02/2020	5.42	N/A	2.0	Yes	Y	1LD	21/02/2020	
Main Site	52	384702.885	397721.404	19/02/2020	5.22	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	53	384699.587	397720.212	19/02/2020	4.98	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	54	384696.296	397719.023	19/02/2020	5.24	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	55	384692.997	397717.830	19/02/2020	4.32	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	56	384689.706	397716.641	19/02/2020	4.82	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	57	384686.408	397715.449	19/02/2020	4.94	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	58	384683.106	397714.265	19/02/2020	4.90	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	59	384679.816	397713.076	19/02/2020	4.98	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	60	384676.517	397711.884	19/02/2020	6.22	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	61	384675.940	397708.641	19/02/2020	5.12	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	62	384679.239	397709.833	19/02/2020	5.24	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	63	384682.530	397711.022	19/02/2020	5.22	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	64	384685.828	397712.214	19/02/2020	5.06	N/A	2.0	Yes	Y	1LD	20/02/2020	
Main Site	65	384689.119	397713.403	19/02/2020	5.04	N/A	2.0	Yes	Y	1LD	20/02/2020	

Location Cleared

Location not Surveyed

Anomaly Detected





INTRUSIVE UXO MAGNETOMETRY CLEARANCE REPORT
16.2.29B-Ed01-July18

Client : Vinci Construction Site : Connell Brother Demo Site OPN : 4989c

Section of site	Survey reference	Survey information		Date of Survey	Depth of survey (m)	Clearance Information					Interpretation		Comments / Notes
		Co-ordinates				Pile (or borehole) nos. encompassed by clearance radius	Actual Clearance radius (m)	Clearance	All piles cleared? (Y/N)	By	Date		
		Eastings (m)	Northings (m)										
Piles													
Main Site	66	384692.421	397714.587	19/02/2020	5.12	N/A	2.0	Yes	Y	1LD	20/02/2020		
Main Site	67	384695.719	397715.779	20/02/2020	5.16	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	68	384699.010	397716.969	17/02/2020	5.13	N/A	2.0	Yes	Y	1LD	18/02/2020		
Main Site	69	384702.309	397718.161	17/02/2020	5.16	N/A	2.0	Yes	Y	1LD	18/02/2020		
Main Site	70	384705.599	397719.350	17/02/2020	5.44	N/A	2.0	Yes	Y	1LD	18/02/2020		
Main Site	71	384708.092	397717.235	21/02/2020	5.12	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	72	384704.793	397716.043	20/02/2020	5.12	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	73	384701.494	397714.851	20/02/2020	4.94	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	74	384698.204	397713.662	20/02/2020	5.10	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	75	384694.905	397712.470	20/02/2020	5.30	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	76	384691.614	397711.281	20/02/2020	4.92	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	77	384688.313	397710.097	20/02/2020	4.92	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	78	384685.014	397708.904	20/02/2020	4.84	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	79	384681.723	397707.715	20/02/2020	5.10	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	80	384678.425	397706.523	20/02/2020	5.10	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	81	384677.680	397703.247	20/02/2020	4.96	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	82	384680.970	397704.436	20/02/2020	5.12	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	83	384684.269	397705.628	20/02/2020	5.15	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	84	384687.560	397706.818	20/02/2020	5.42	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	85	384690.861	397708.002	20/02/2020	4.92	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	86	384694.152	397709.191	20/02/2020	5.10	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	87	384697.451	397710.383	20/02/2020	5.06	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	88	384700.749	397711.575	20/02/2020	4.72	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	89	384704.040	397712.764	20/02/2020	5.08	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	90	384707.339	397713.956	21/02/2020	4.76	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	91	384710.037	397711.618	21/02/2020	5.30	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	92	384706.717	397710.715	21/02/2020	5.12	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	93	384703.418	397709.523	21/02/2020	5.00	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	94	384700.127	397708.334	21/02/2020	5.00	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	95	384696.828	397707.142	21/02/2020	4.88	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	96	384693.538	397705.953	21/02/2020	4.98	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	97	384690.236	397704.768	21/02/2020	5.06	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	98	384686.938	397703.576	20/02/2020	4.98	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	99	384683.647	397702.387	20/02/2020	5.10	N/A	2.0	Yes	Y	1LD	21/02/2020		
Main Site	100	384680.348	397701.195	20/02/2020	5.60	N/A	2.0	Yes	Y	1LD	21/02/2020		

Location Cleared

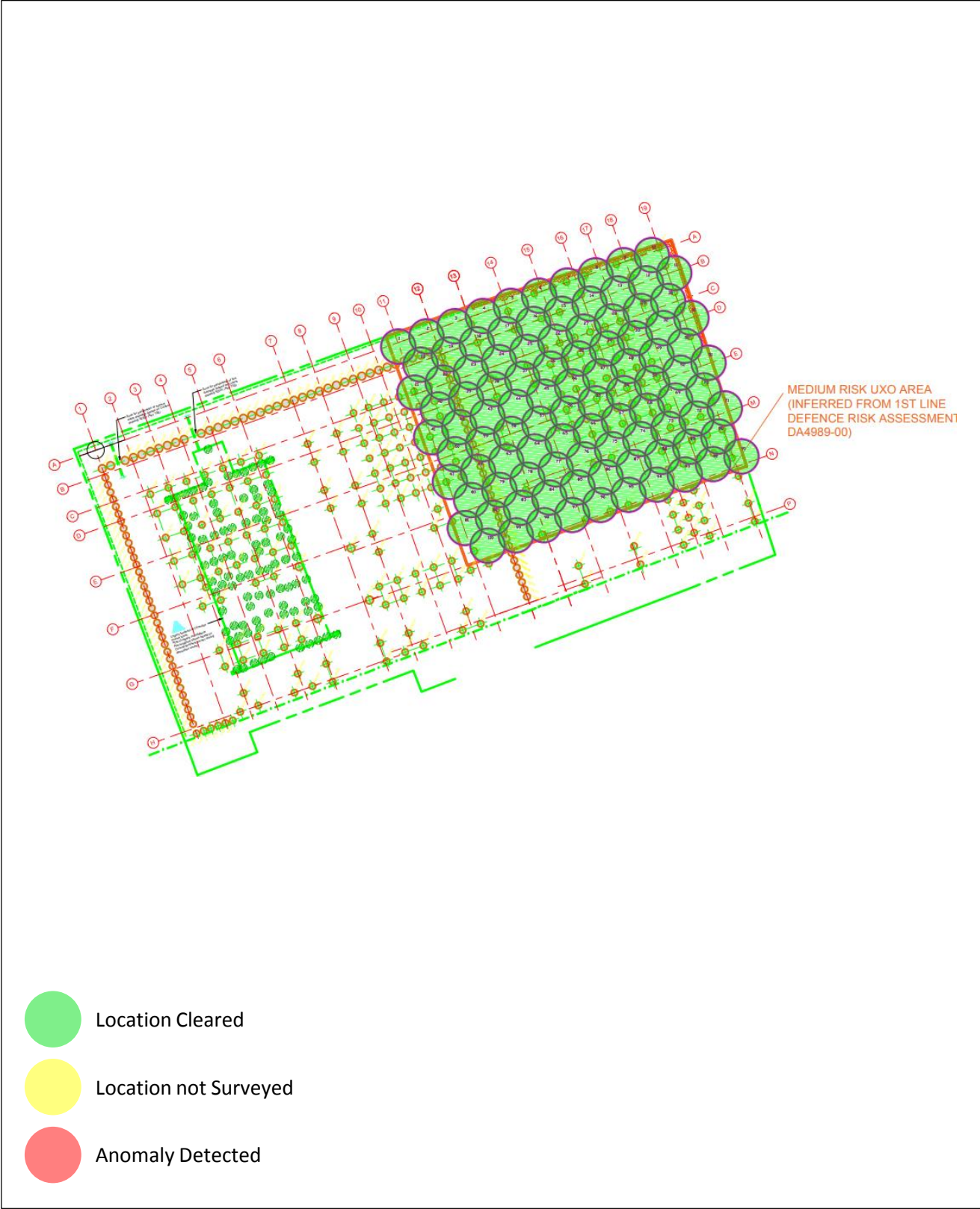
Location not Surveyed

Anomaly Detected



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Project:	Connell Brother Demo Site, Echo Street		
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