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  - In ideal conditions these spatial accuracies for the underground utilities are +/- 5% for the R10000 and +/- 10% of depth for the GPR to 2.5m deep. However, variations within the subsurface may alter this estimated accuracy.
  - Although all reasonable steps have been taken to locate all features, there is no guarantee that all will be shown on the drawing as some above ground features may have obstructed the survey.
  - GPR surveying operates best within high resistivity material. Clay overburden can impair GPR surveying.
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  - The depth penetration and quality of the data depends on the ground conditions on the site. Poor data may be a result of areas with high conductivity. Also, high reflective materials close to the surface i.e. rebar may hide deeper anomalies.
  - It is not always possible to trace the entire length of each underground service.
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  - Unless otherwise stated, all services and sub surface structures shown on Murphy Geospatial Limited plan drawings have been surveyed using approved detectors and the connections between manholes, if in fact, are assumed to run straight.
  - Plan accuracies of the order of +/- or +/- 100mm may be achieved but this figure will depend on the depth of the service below ground level. Where similar services run on close proximity, separation may be impossible. Successful tracing of non metallic pipes may be limited.
  - 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.
  - Services which have been untraceable are shown from Records where possible.
  - DP represents distance from the surface level to the top of the service/radar.

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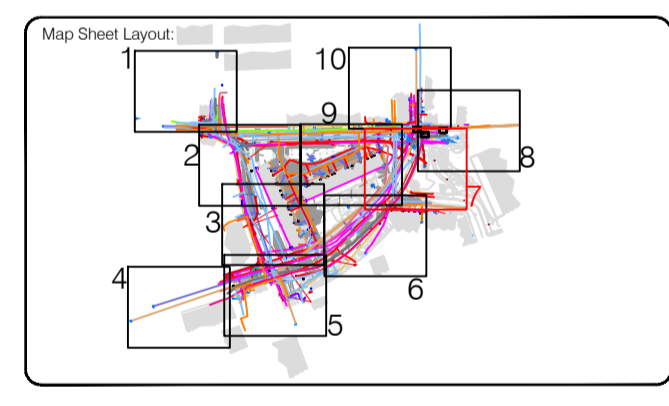
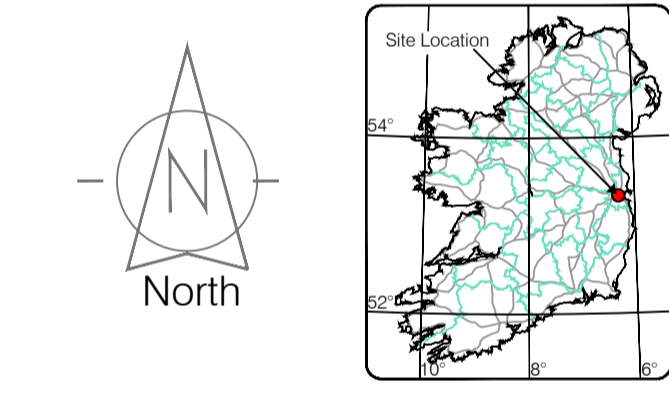
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- Fibre optic cables (except where laid with a standard communications cable or built in tracer wire or similar conductor system) or can be clearly located using ground penetrating radar.
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- Allow ground services unless specifically requested.
- Lifting manhole covers which require longer than 10 minute effort using standard heavy duty lifting apparatus.
- Services positioned directly below other pipes or cables etc (i.e. making signals) - intrusive verification options available on request.
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Surveyed by: MGS	Date: Jun 2024	Datum: Main	Grid System: IRI 11
Drawn by: DC	Date: 19.02.2024	Scale: 1:100	Grid System: Irish National Grid
Checked by: DS	Date: 19.02.2024	Scale: 1:100	Grid System: IRI 11

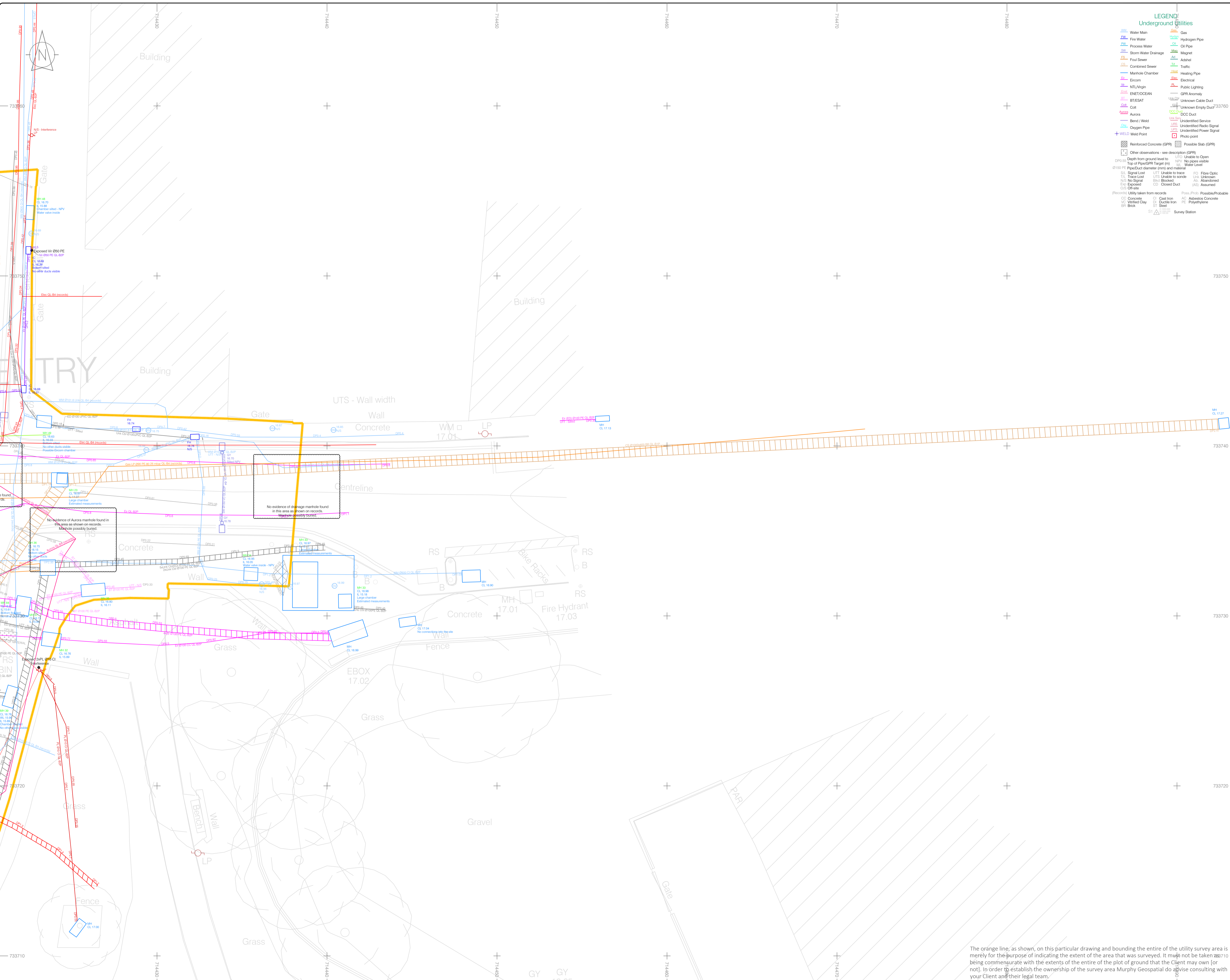


**Kildare Cork Dublin Belfast Glasgow Manchester London**

**Head Office**  
 Global House Phone: (+353) 045 484040  
 Kilkenny Business Campus Fax: (+353) 045 484004  
 Kilkenny Co. Kildare, Ireland Email: info@murphyge.ie

<b>Client:</b>	Metropolitan Workshop
<b>Project:</b>	DCC School Street
<b>Date:</b>	19.02.2024
<b>Scale:</b>	1:100@A1
<b>Description:</b>	Utility Survey Sheet 7 of 10
<b>Drawing Number:</b>	<b>MGS55818_U</b>

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**LEGEND: Utilities**

Water Main	Gas
Fire Water	Hydrogen Pipe
Process Water	Oil Pipe
Storm Water Drainage	Magnet
Road Sewer	Asphalt
Combined Sewer	Traffic
Manhole Chamber	Heating Pipe
Electric	Public Lighting
ENET/OCEAN	GPR Anomaly
BT/ESAT	Unknown Cable Duct
Cable	Unknown Empty Duct
Aurora	DCC Duct
Band Wall	Undersized Service
Open Pipe	Undersized Radio Signal
Weld Point	Undersized Power Signal
Photo point	

**Other observations - see description (GPR)**

Depth from ground level to Top of Pipe (GPR Target) (m)	UTS	Shade to Open
Signal Lost	NPV	No pipes visible
Trace Lost	UTS	Unable to trace
No Signal	Blue Blocked	UK
Exposed	CD	Closed Duct
Offsite		

**Other observations - see description (GPR)**

Concrete	Cast Iron	Possible/Probable
Visited City	Steel	Asbestos Concrete
Black		Polyethylene

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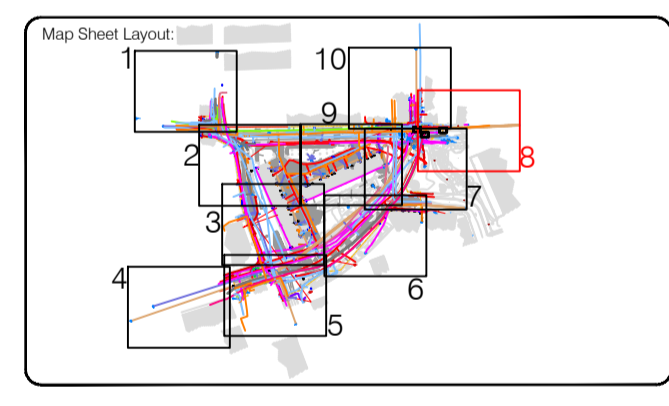
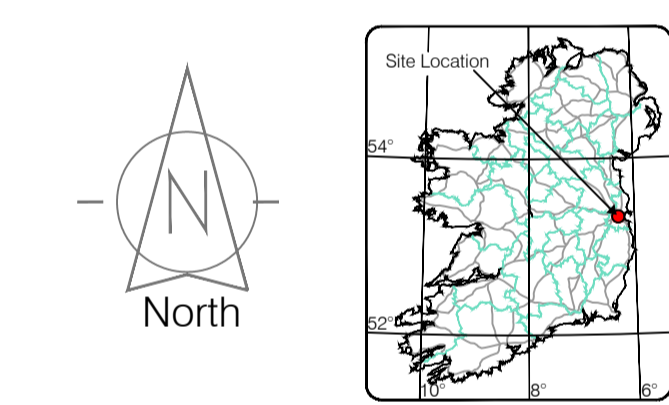
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Kildare Cork Dublin Belfast Glasgow Manchester London

**Head Office**  
 Global House  
 Kiltullen Business Campus  
 Kiltullen Co. Kildare, Ireland

Phone: (+353) 045 484040  
 Fax: (+353) 045 484004  
 Email: info@murphyge.ie

<b>Client:</b>	Metropolitan Workshop
<b>Project:</b>	DCC School Street
<b>Date:</b>	19.02.2024
<b>Description:</b>	Utility Survey Sheet 8 of 10
<b>Scale:</b>	1:100@A1
<b>Drawing Number:</b>	MGS55818_U

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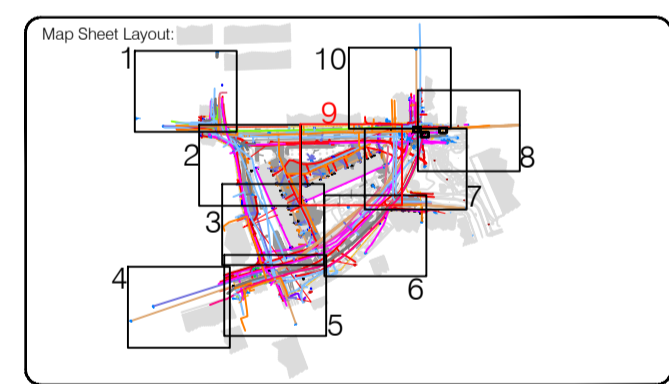
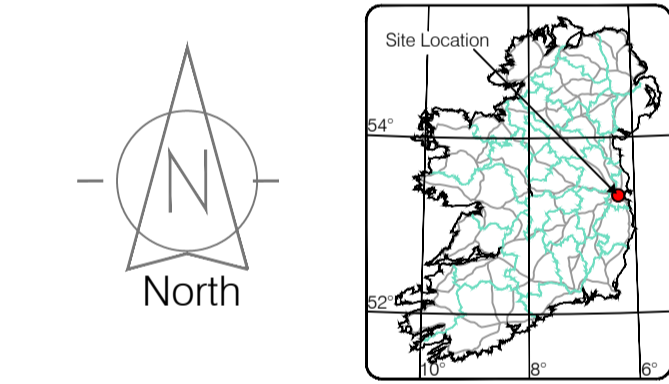
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- Above ground services unless specifically requested.
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Surveyed by: MGS	Date: Jan 2024	Drawn by: DC	Date: 18.02.2024	Checked by: DS	Date: 19.02.2024
Drawn by: DC		Date: 18.02.2024		Checked by: DS	
Date: 19.02.24		Description: Field Drawing		Revisions:	
0		19.02.24		Field Drawing	

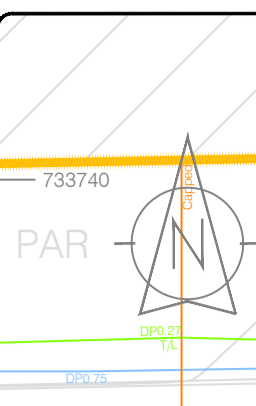
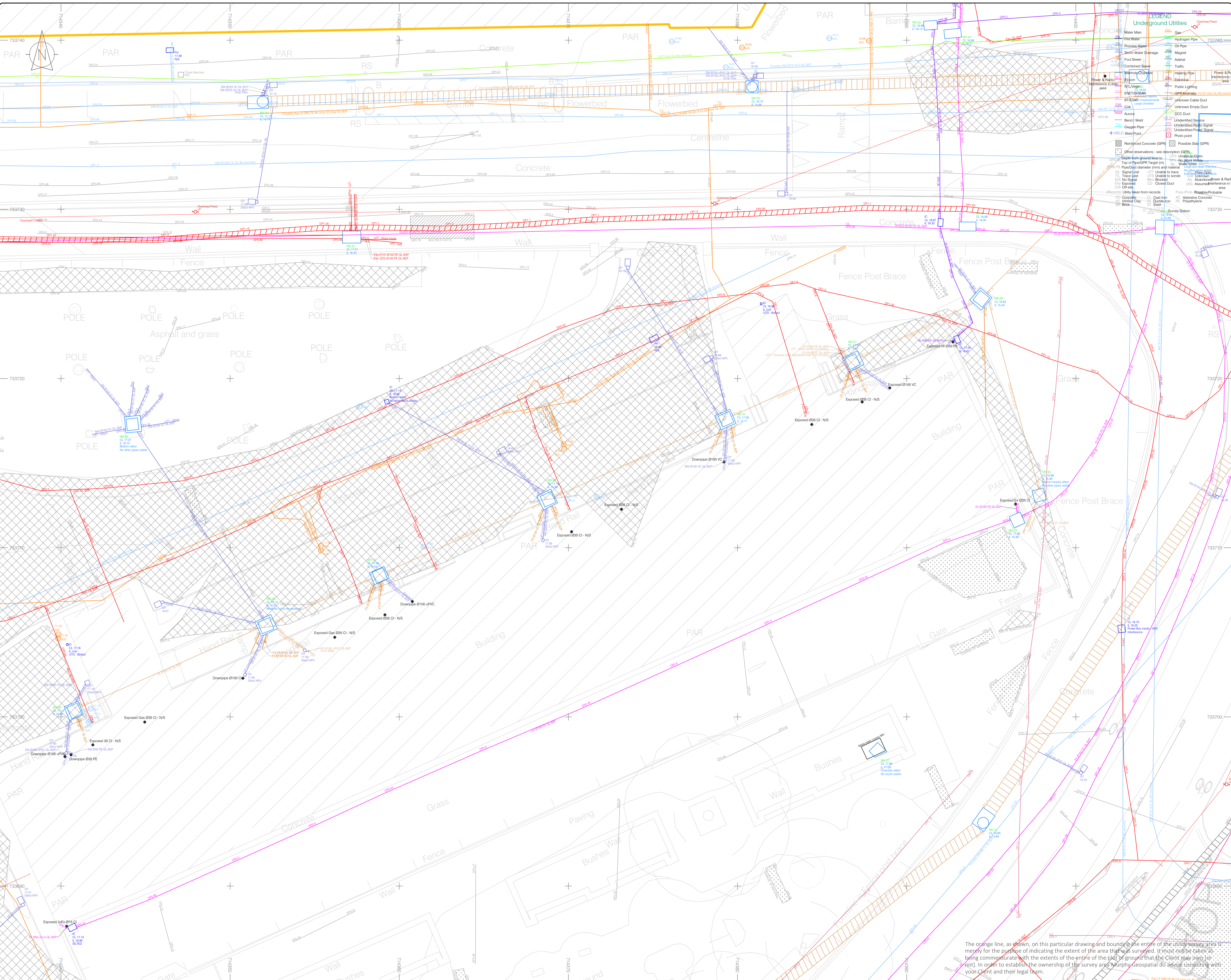


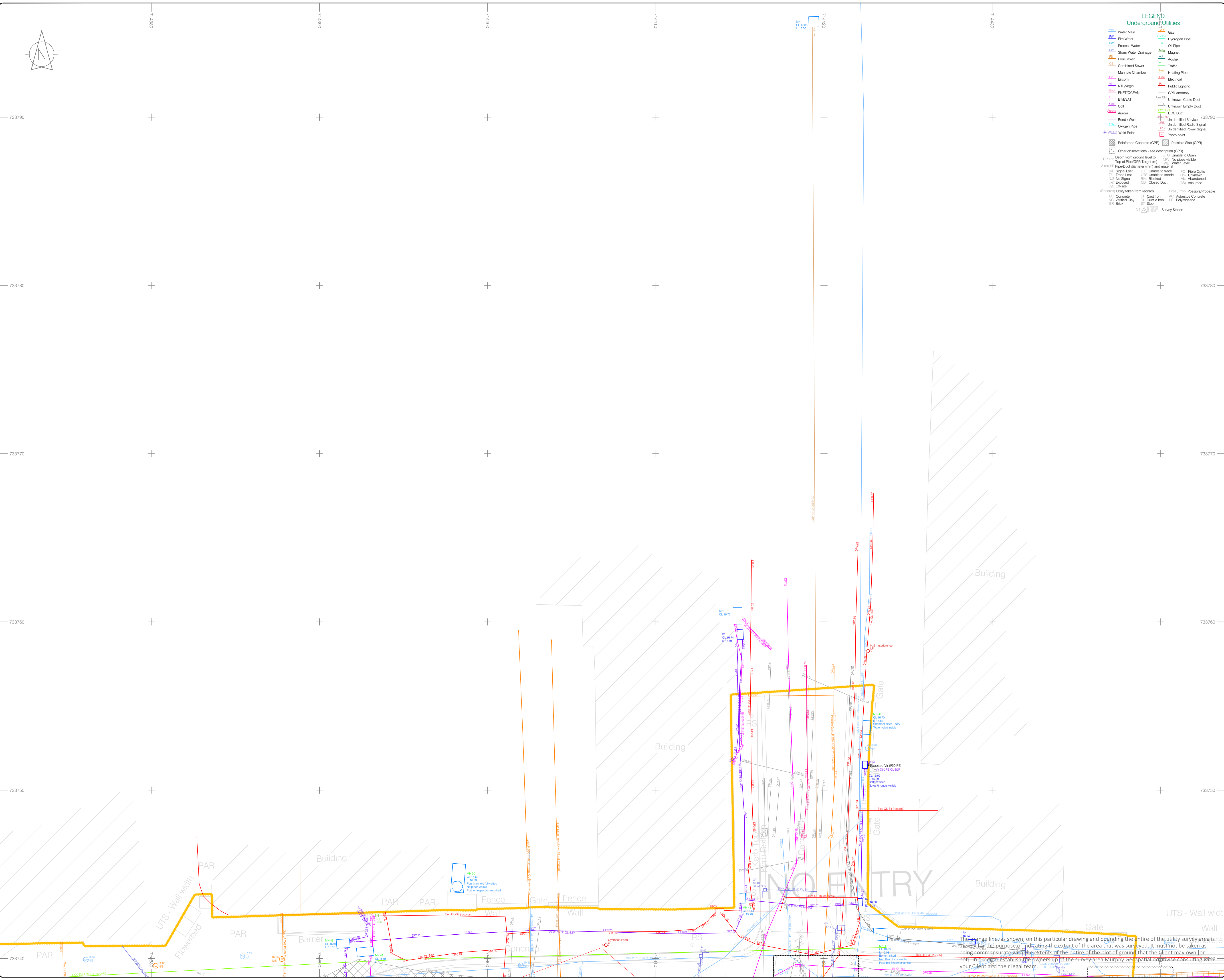
**Head Office**  
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**Client:** Metropolitan Workshop  
**Project:** DCC School Street  
**Date:** 19.02.2024 **Scale:** 1:100@A1  
**Description:** Utility Survey  
 Sheet 9 of 10  
**Drawing Number:** MGS55818\_U

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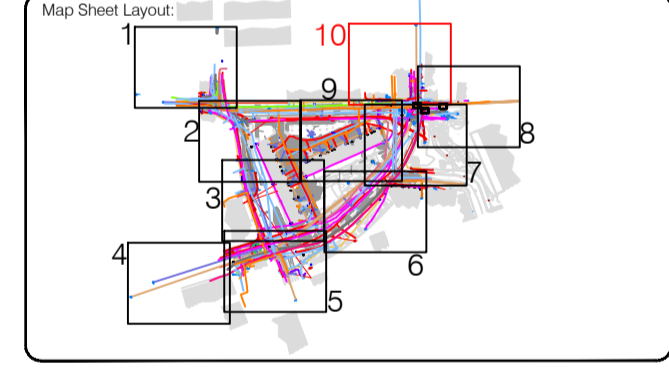
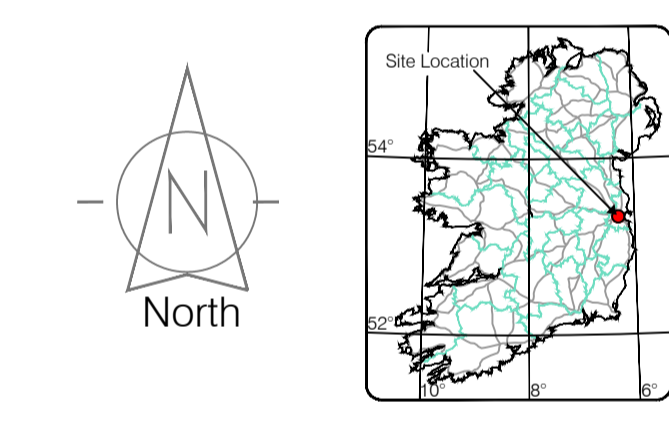
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Drawn by: DC	Date: 18.02.2024	Grid System:
Checked by: DS	Date: 19.02.2024	Irish National Grid <input type="checkbox"/> UTM <input checked="" type="checkbox"/>

Ref	Date	Description	Revisions
0	19.02.24	Final Drawing	



**Murphy GEOSPATIAL**

Topographic surveys, Measured Building Surveys, Setting Out, As-Built Surveys, Hydrographic Surveys, Legal Mapping, Pipeline Surveys, Services Location, Ground Penetrating Radar, Laser Scanning, Rectified Photogrammetry

**Kildare Cork Dublin Belfast Glasgow Manchester London**

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**Client:** Metropolitan Workshop

**Project:** DCC School Street

**Date:** 19.02.2024 **Scale:** 1:100@A1

**Description:** Utility Survey  
 Sheet 10 of 10

**Drawing Number:** MGS55818\_U

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