

# TOBIN

**Pobail Le Cheile  
Regeneration Project  
Ballymahon, Co. Longford  
Engineering Services Report**



**BUILT ON KNOWLEDGE**

| Document Control Sheet |                                  |
|------------------------|----------------------------------|
| Document Reference     | TR01 Engineering Services Report |
| Client:                | Longford County Council          |
| Project Reference      | 11560                            |

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# 1. INTRODUCTION

## 1.1 BACKGROUND

TOBIN have been commissioned by Longford County Council to provide Civil & Structural consultancy services for the rehabilitation and regeneration of three buildings and subsequent sites in the town of Ballymahon, Co. Longford.

## 1.2 ADMINISTRATION JURISDICTION

The site is located within the jurisdiction of Longford County Council, whose offices are located at Áras an Chontae, great Water Street, Longford, N39 NH56.



Figure 1-1: Site Location drawing 11560-2000

The project is located at three existing sites within the centre of Ballymahon town. Two of the sites are located on the southern side of the R392 and the final site is located on the western side of the Church View street.

The first site is an old School house building. The site is bounded by a car park to the Northwest, the R392 to the Northeast, residential property to the Southeast and agricultural land to the southwest.

The second site is an old library bounded to the Northwest by an access lane, to the Northeast by the R392, to the Southeast by residential property and to the Southwest by agricultural land.



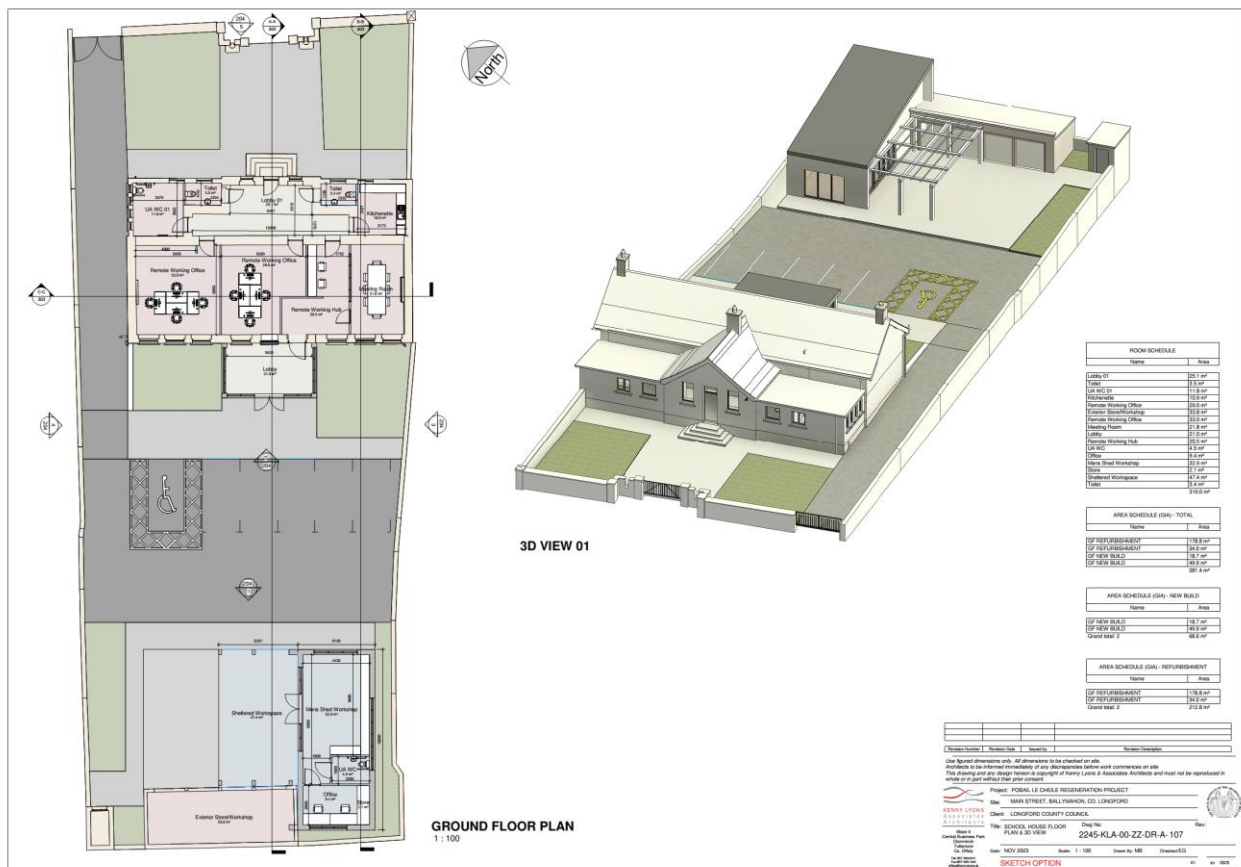
The final is an old convent building located behind the existing St Matthews Catholic church and LWETB College of Furth Education and Training. Access to the site is off the Church View street located to the west of the site. The site is bounded to the Northeast by residential properties and to the Southeast by the Mercy Secondary School.

**1.3 PROPOSED DEVELOPMENTS**

It is proposed to regenerate the existing buildings on the three sites to bring them into use for today’s requirements. There will be some minor demolition works to each site, removing existing retaining walls, ramps and not fit for purpose extensions.

**1.3.1 School House**

The school house regeneration work involves the breaking up of existing hardstanding surfacing, demolition of existing retaining walls, refurbishing of existing buildings, construction of a new extension to the southeast of the site attached to the existing out buildings and upgrading of subsequent vehicular access and drainage.



**Figure 1-2: School House. drawing 2245-KLA-00-ZZ-DR-A-107**

**1.3.2 Old Library**

The old library regeneration work involves the demolition of the existing extension to the rear of the building, breaking out of existing hardstanding surfacing, construction of a new rear extension, refurbishing of existing building and upgrading of subsequent vehicular access and drainage infrastructure.

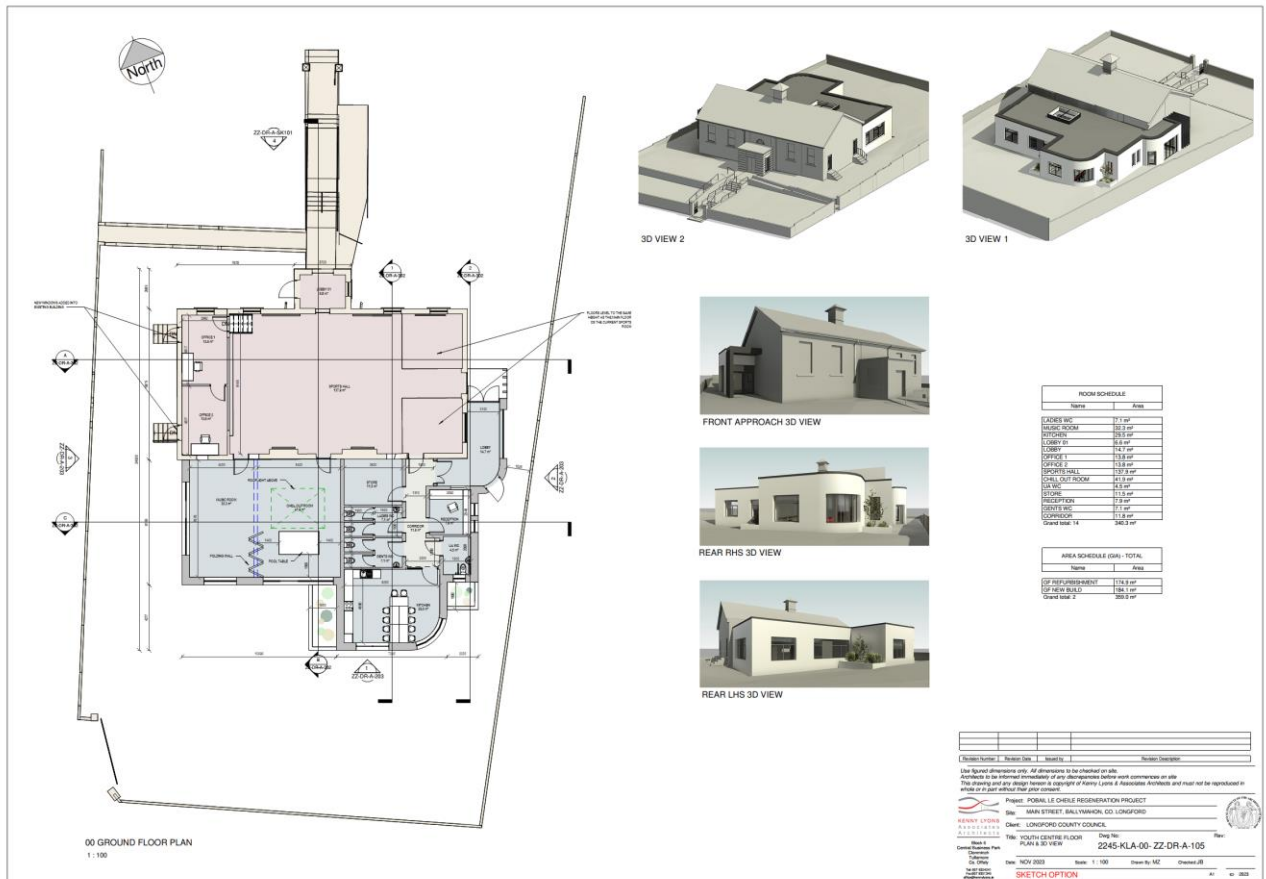


Figure 1-3: Library Building. drawing 2245-KLA-00-ZZ-DR-A-105

### 1.3.3 Convent Building

The convent building regeneration works involves the demolition of two existing extensions, construction of two new extensions, new car parking facilities, a new stand alone building and upgrading of drainage infrastructure.





Figure 1-4: Convent building, drawing 2245-KLA-00-ZZ-DR-A-101

## 1.4 PURPOSE OF REPORT

The purpose of this report is to address the proposed service infrastructural requirements for the development. In the coming sections Potable Water, Wastewater and Surface Water proposals will be detailed with the designed layouts showcased.

The design principles adopted will be those of best engineering practices and standards used will be the most recent applicable publications.





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## 2. INVESTIGATIONS

### 2.1 INTRODUCTION

At the time of writing, the site investigation works have not been completed on site. Once the results are received TOBIN will review them against the proposed service infrastructure and will make any changes necessary while liaising with the planning authority and subsequent sections throughout.

Topographical survey was completed on all three sites and its outcome drawings can be found in Appendix B.

A Ground Penetrating Radar (GPR) survey was completed on all three sites and adjacent roads. These outcome drawings can be seen in Appendix B.



### 3. POTABLE WATER SUPPLY

#### 3.1 INTRODUCTION

Uisce Eireann’s records indicate a 180mm HDPE and 125mm HDPE pipes traversing beneath the R392 and a 50mm uPVC travelling through the Convent House site.

There is currently potable water already serving the three sites. Further investigations is required discover the location of the existing connection and its size.



Figure 3-1: Uisce Eireann's Potable Water Records

For further information please refer to Appendix A for record maps and Appendix B for GPR survey drawings.

#### 3.2 PROPOSAL

It is proposed to maintain the existing potable water connections on all three sites, therefore no new connections are required.

A pre-connection enquiry will be made to Uisce Eireann to confirm there is capacity in the existing infrastructure for the rehabilitation of the sites. As these will be communal buildings and potable water requirements will be low, this is not foreseen as a risk to the project.





Figure 3-2: Watermain Layout, drawing 11560-2020



## 4. WASTEWATER INFRASTRUCTURE

### 4.1 INTRODUCTION

Uisce Eireann’s records indicate the presence of an existing 150mm Concrete pipe traversing underneath the R392 road.

Presently both the school house and library discharge foul and surface water runoff to the foul pipe located within the R392 road.

The convent building from review of the GPR maps, discharges both its foul and surface water through the boundary wall located at the Northeast corner. Possibly discharging into the 150mm foul concrete pipe located within Mercy Secondary School’s land.



Figure 4-1: Uisce Eireann's Wastewater Records

For further information please refer to Appendix A for record maps and Appendix B for GPR survey drawings.

### 4.2 PROPOSAL

It is proposed to lay new collector and carrier pipes internally on all sites. These new pipes will only collect wastewater discharge from the buildings. Once collected, the underground pipes will convey the wastewater effluent into the existing discharge manhole on the site and will reuse the existing foul connection pipe, thus discharging the wastewater into the existing Uisce Eireann infrastructure, with the exception of the Convent House.

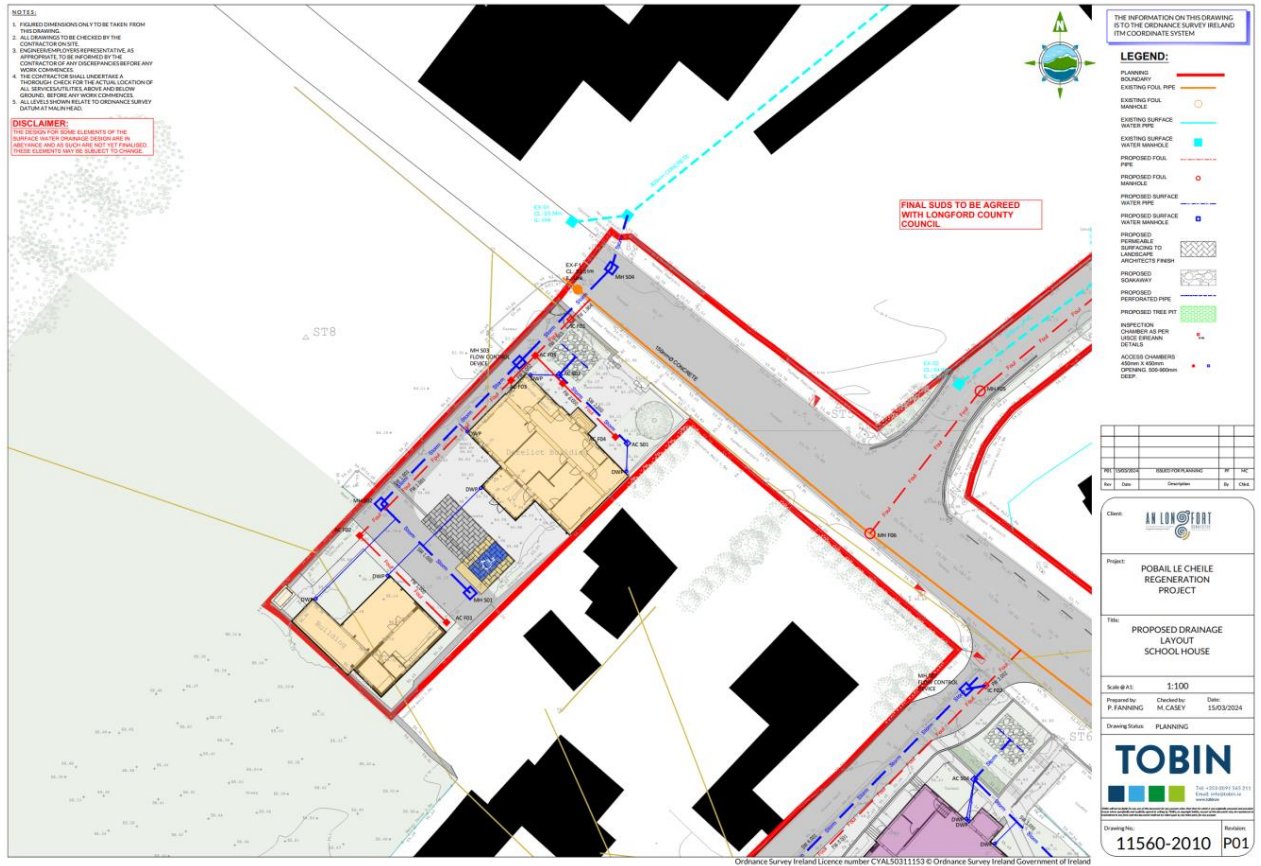


Figure 4-2: Proposed School House Drainage, drawing 11560-2010

It is proposed to construct a new discharge public pipe along the Church View road for the convent House to discharge the wastewater effluent into the 150mm Concrete pipe located in the R392.

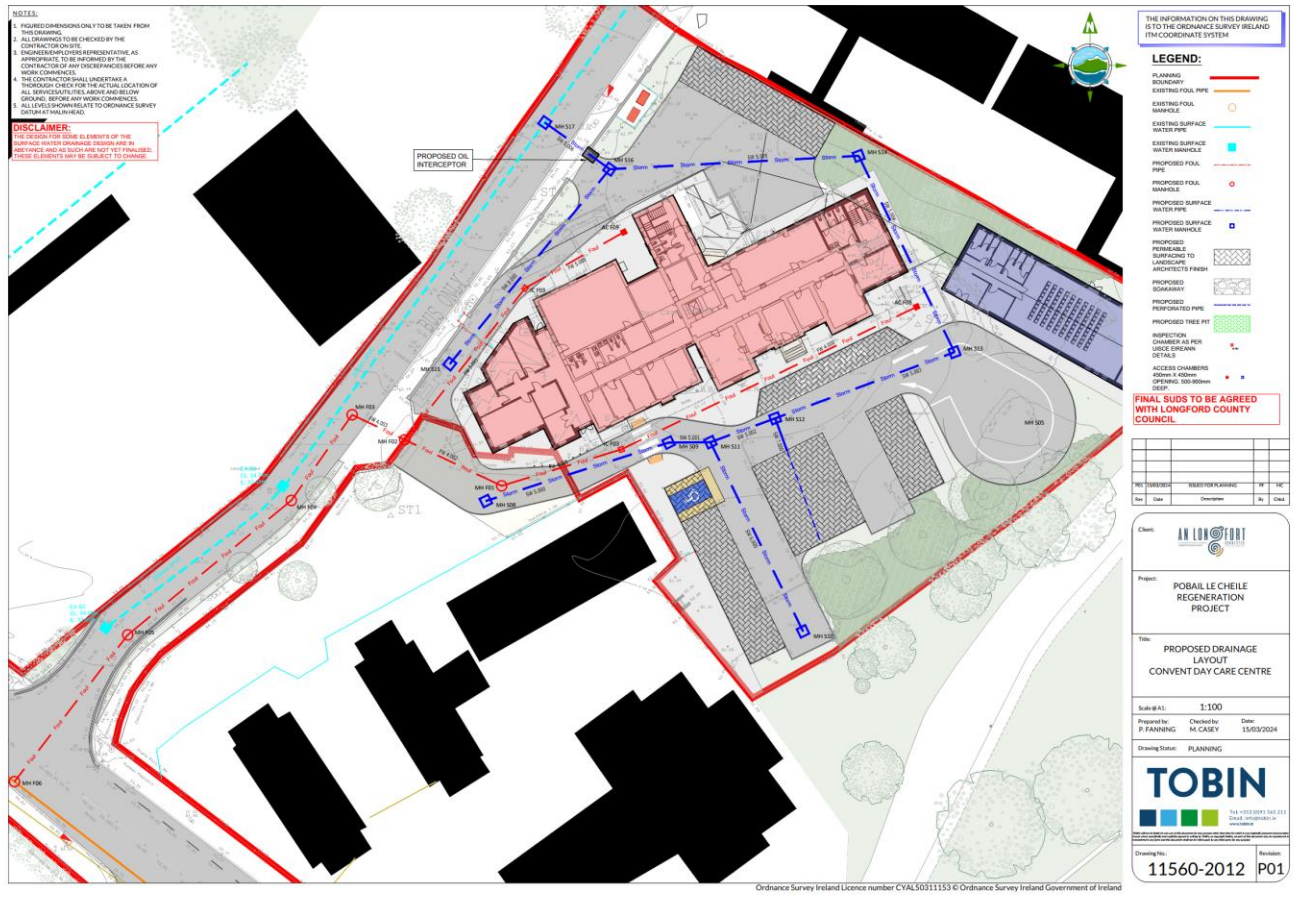


Figure 4-3: Proposed Convent Drainage, drawing 11560-2012

With the exception of the library building, it is not proposed to discharge surface water into the Uisce Eireann infrastructure. There is no public surface water infrastructure within the vicinity of the library site. Surface water will be collected separately internally on the library site but it will discharge into the final manhole on the site before discharging to Uisce Eireann's infrastructure.

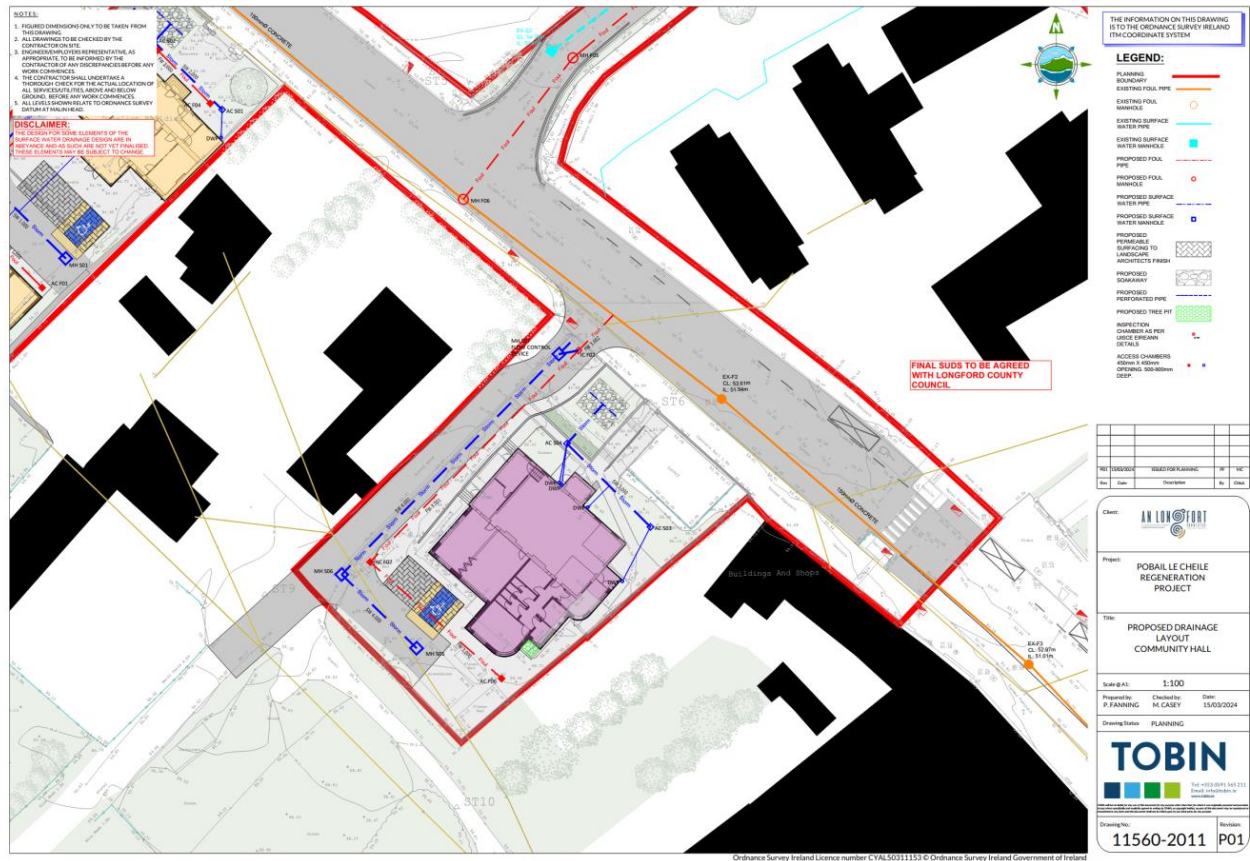


Figure 4-4: Proposed Library Drainage, drawing 11560-2011

A pre-connection enquiry will be made to Uisce Eireann to confirm there is capacity in the existing infrastructure for the rehabilitation of the sites. As these will be communal buildings and wastewater discharge will be low, this is not foreseen as a risk to the project.

For further information on the proposed Wastewater layout please refer to drawings 11560-2010, 11560-2011 and 11560-2012.

## 5. SURFACE WATER INFRASTRUCTURE

### 5.1 INTRODUCTION

Longford County Council's records indicate the presence of a 300mm Concrete public surface water pipe traversing through the existing garage across from the School House site and appears to continue falling Northeasterly. The records also indicate a 225mm uPVC pipe traversing along church View, which continues falling Northeasterly.

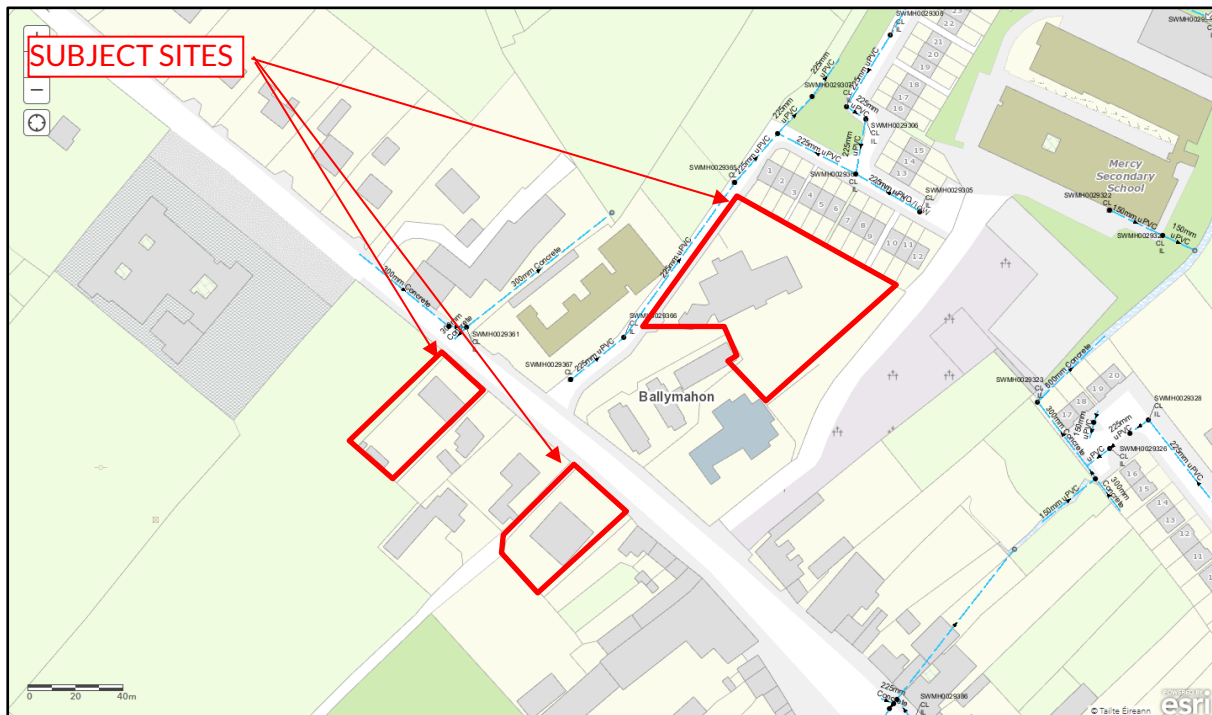


Figure 5-1: Longford County Council's Surface Water Record Maps

For further information please refer to Appendix A for record maps and Appendix B for GPR survey drawings.

### 5.2 DESIGN PRINCIPLES

The design and management of the Surface Water for the proposed development will comply with the policies and guidelines outlined in the following.

- The Greater Dublin Strategic Drainage Study (GDSDS).
- Longford County Council's Development Plan, 2021-2027
- Recommendations for Site Development Works for Housing Areas published by the Department of the Environment.
- Greater Dublin Regional Code of Practice for Drainage Works.
- The SuDs Manual (2015).

The key design principles of the Surface Water drainage are as follows.

1. The flow from the development to the existing Surface Water Infrastructure is designed to equal the natural greenfield runoff in accordance with the GDSDS and sustainable drainage best practice.
2. The flow of surface water from the sites will be reduced compared to the current brownfield site runoff.



- The site will incorporate the use of soft SuDs measures to slow the flow of surface water from the site.

### 5.3 PROPOSAL

It is proposed to construct new collector and conveyance pipes internally on all sites. The infrastructure will be entirely separate from the wastewater system and will only cater for the surface water runoff from rainfall events.

It is proposed to discharge the School House site into the existing 300mm concrete public pipe located in the R392 road.

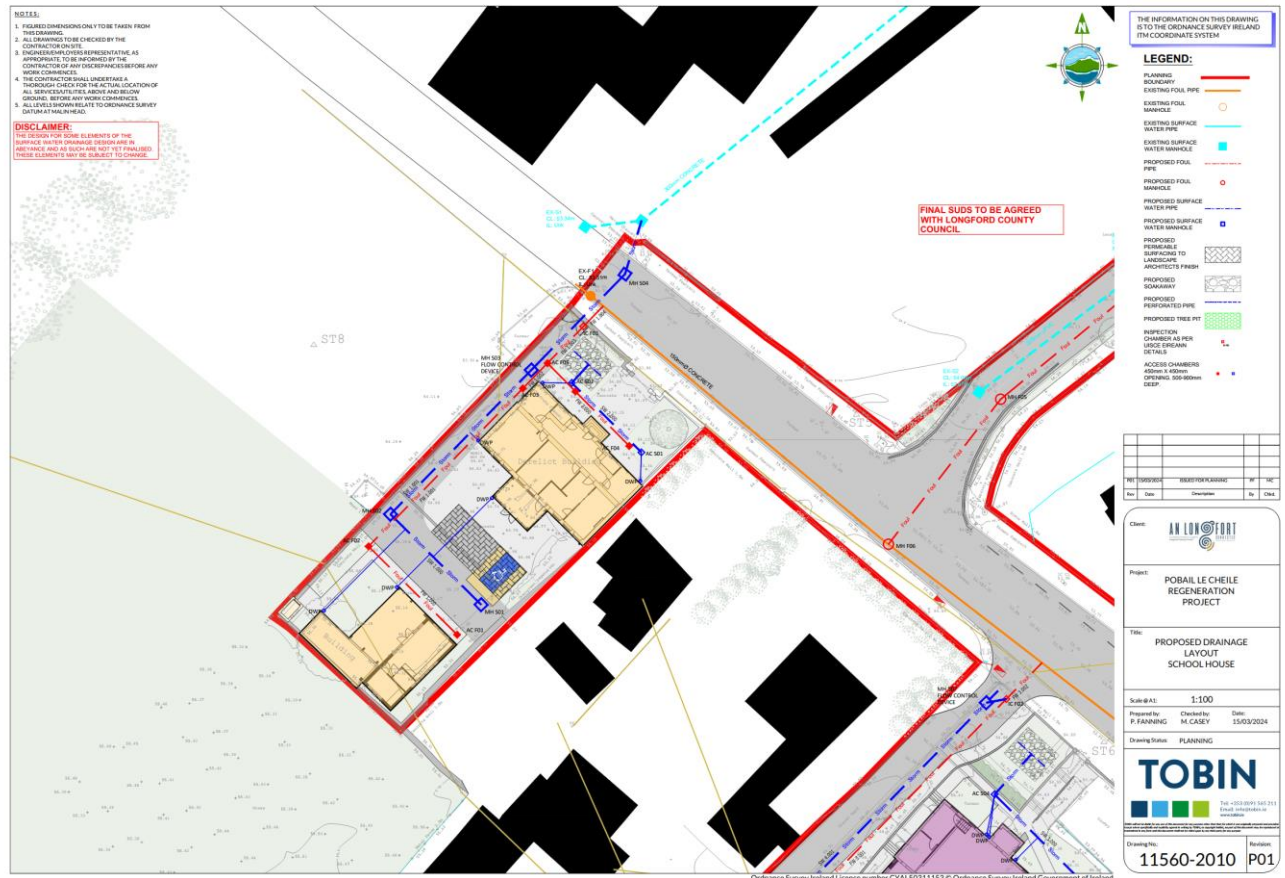


Figure 5-2: Proposed School House Drainage, drawing 11560-2010

It is proposed to discharge the Convent house site into the existing 225mm uPVC pipe, located within the Church View road.

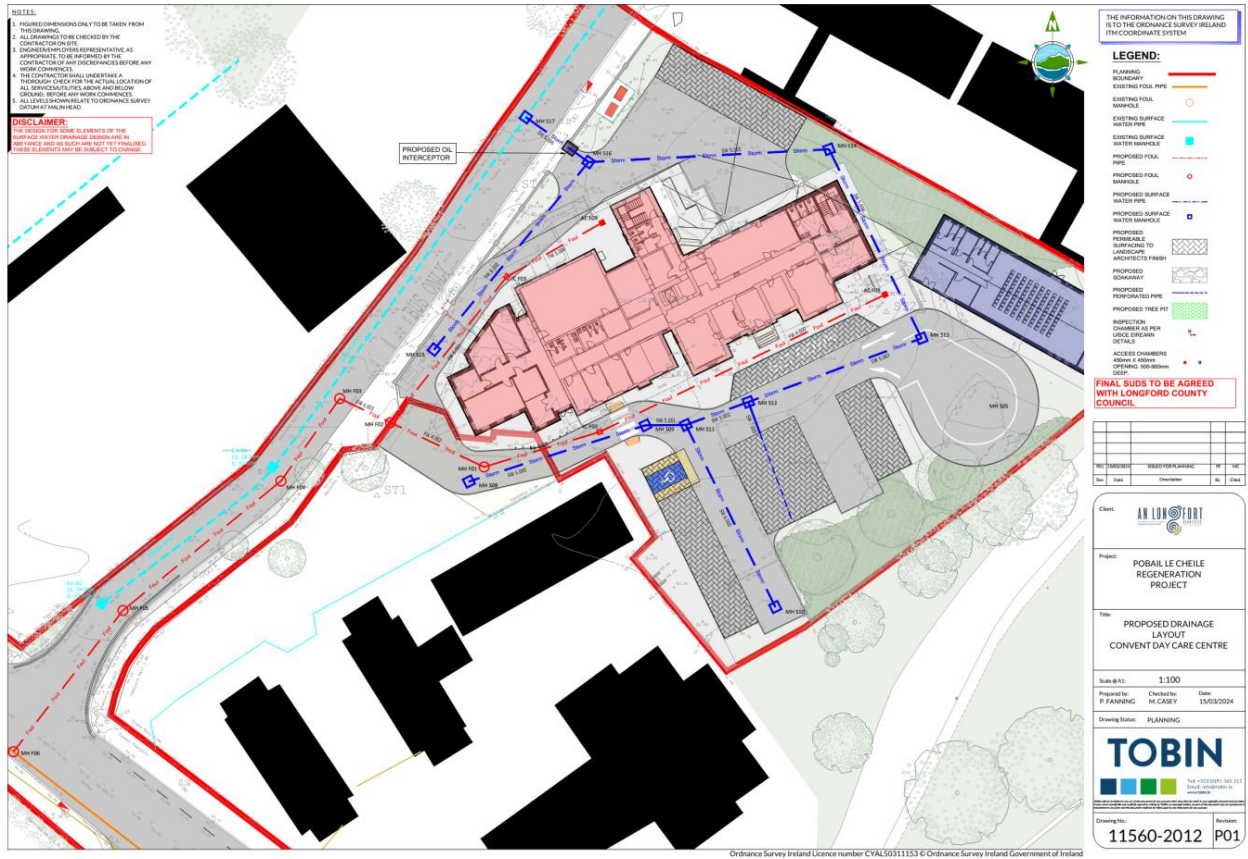


Figure 5-3: Proposed Convent Drainage, drawing 11560-2012

It is proposed to construct a discharge surface water manhole on the Library site, with a pipe extended out past the manhole for connection into a future public surface water pipe. The surface water will however temporarily discharge into the foul pipe located in the R392 road until such time as a connection can be made.

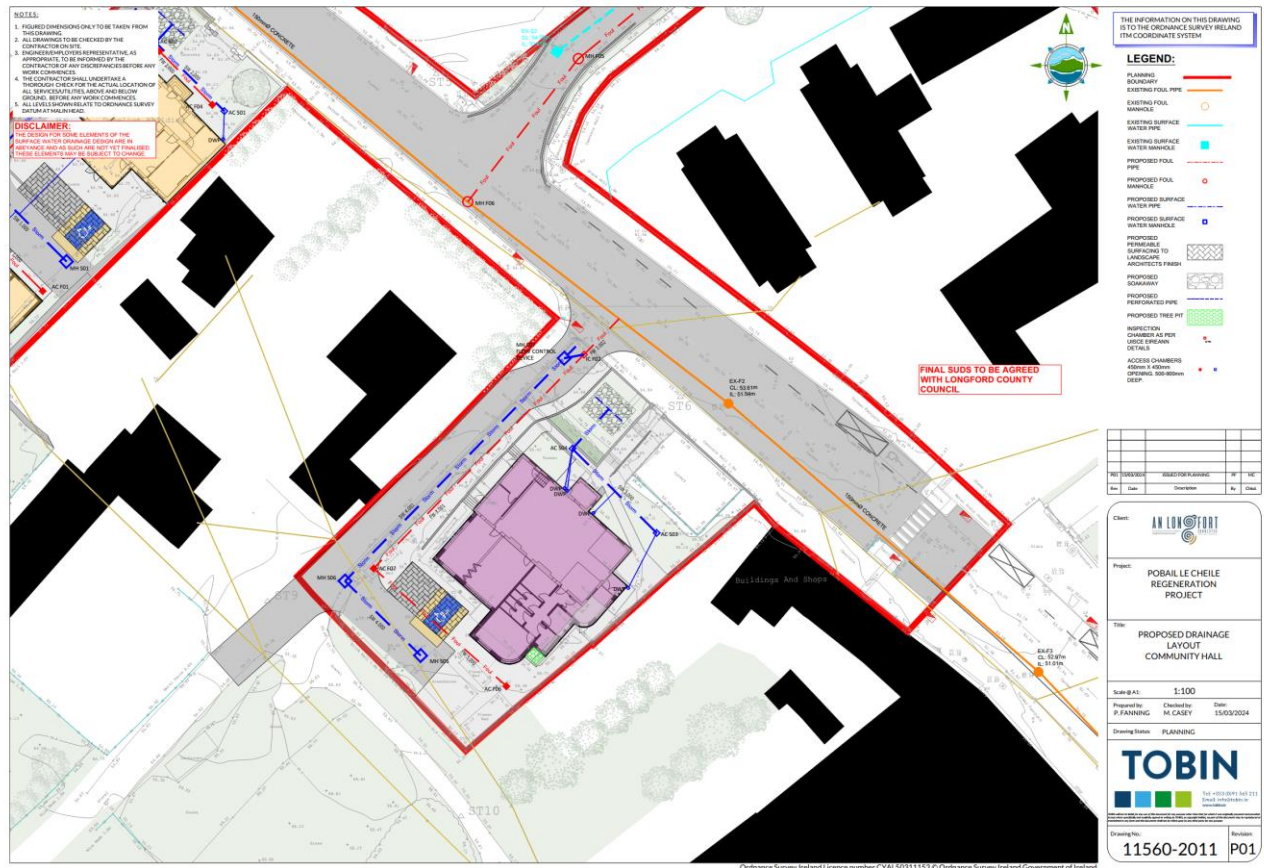


Figure 5-4: Proposed Library Drainage, drawing 11560-2011

## 5.4 SuDs (SUSTAINABLE URBAN DRAINAGE SYSTEMS)

A number of SuDs features have been proposed as part of the surface water drainage system in accordance with the GSDs. SuDs are incorporated to attenuate runoff and volumes; reduce pollutant concentrations in surface water and to replicate the natural characteristics of surface water run off for the site in its pre-developed state.

The following SuDs features are proposed:

### 5.4.1 Permeable Surfacing

It is proposed to install permeable surfacing within the car parking areas of the sites. The water, once permeated into the pavement, will be allowed to infiltrate into the ground. The inclusion of the permeable paving will slow the surface water run off at source, treat the surface water runoff and provide storage. Refer to figure below.

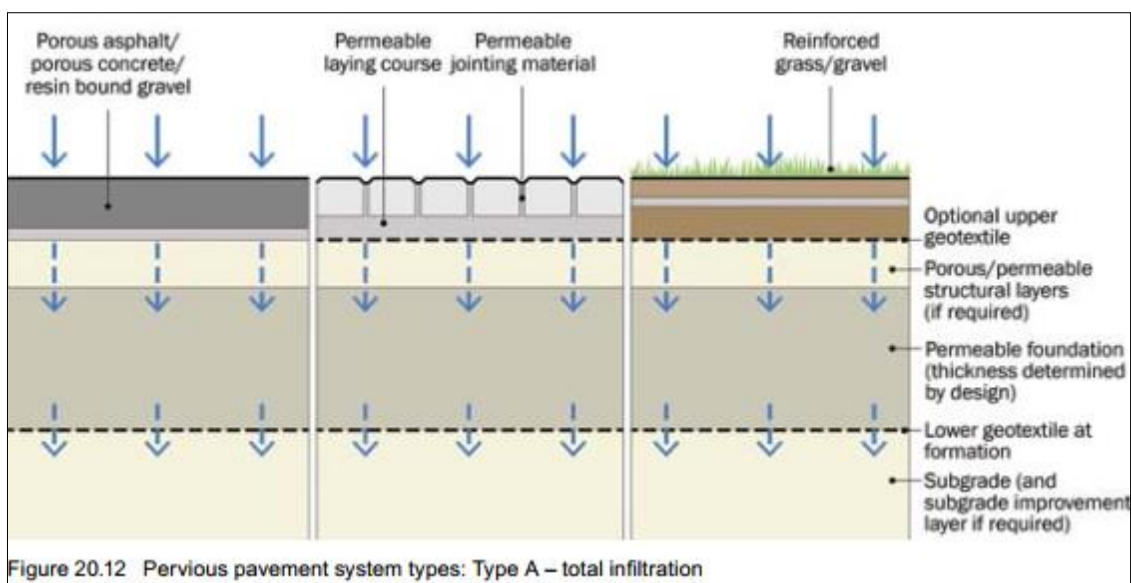


Figure 5-5: Typical Cross Section of infiltration permeable paving (Extract from CIRA SuDs Manual)

### 5.4.2 Petrol Interceptor

It is proposed to flow all the surface water collected on the convent site through a petrol interceptor before discharging to the existing infrastructure to ensure a certain level of treatment is provided to the runoff and to act as a final treatment process before discharge.

### 5.4.3 Soakaway

It is proposed to construct soakaways on the School house and Library sites, which will cater for surface water runoff from half of the existing roof and the entire front hardstanding areas. The surface water will be collected through downpipes, underground pipes and directed to a perforated pipe within the soakaway. The collected water will be allowed to infiltrate into the groundwater.

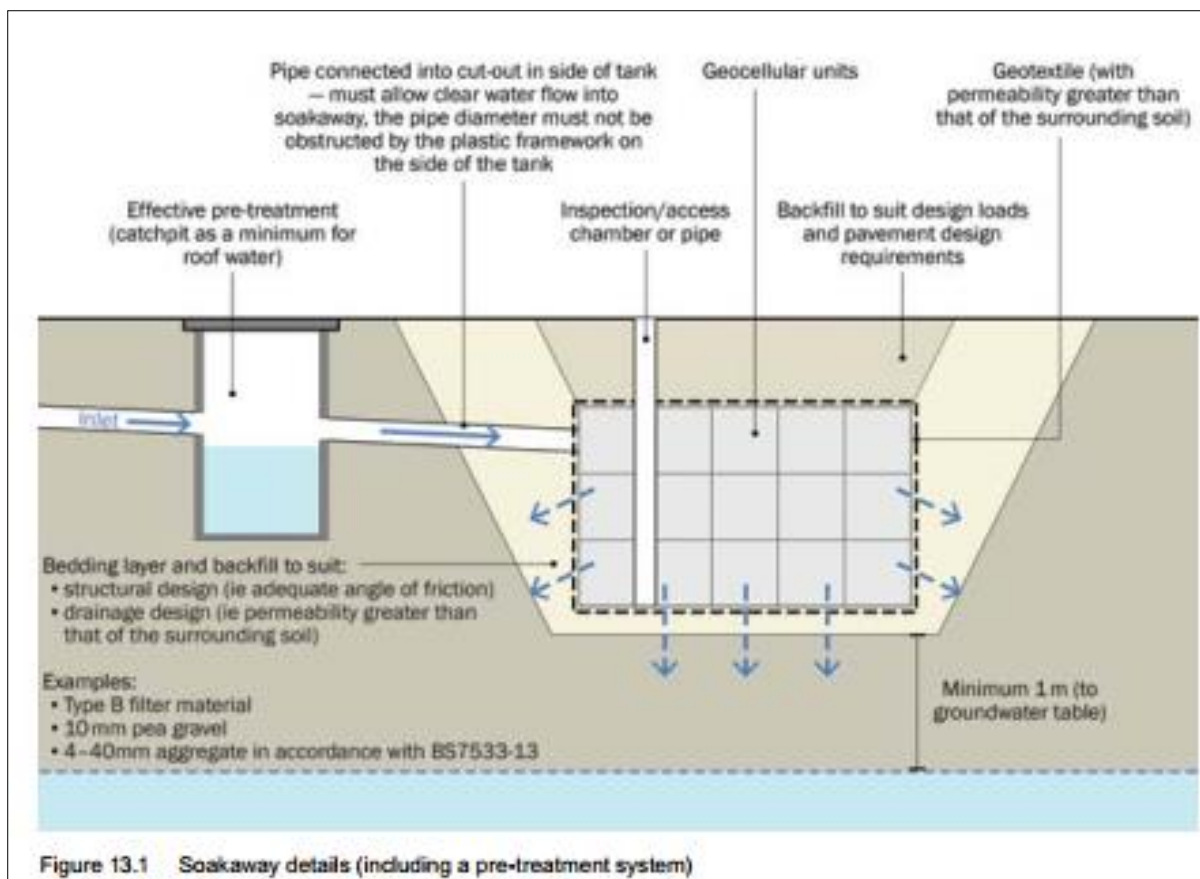


Figure 5-6: Typical Cross Section of a Soakaway (Extract from CIRA SuDs Manual)

### 5.4.4 Treatment Train

Through the SuDs measures described above, the surface water management (treatment train) approach has been incorporated into the development in accordance with the GSDSDS. This will assure the surface water runoff quantity and quality issues are addressed.

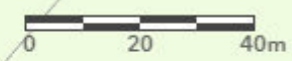
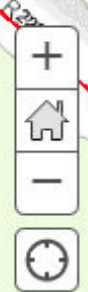
In accordance with the GSDSDS, the following four objectives of the treatment train provide an integrated and balanced approach to help mitigate the changes in surface water runoff flows that occur as land is urbanised and to help mitigate the impacts of surface water quality on receiving systems:

1. **Pollution Prevention:** spill prevention (protection provided by Petrol Interceptor, permeable surfacing and soakaways), recycling, public awareness, and participation.
2. **Source Control:** conveyance and infiltration of runoff (provided by the proposed surface water network, soakaways, permeable surfacing and Petrol Interceptor).
3. **Site Control:** reduction in volume and rate of surface water runoff, with some additional treatment provided (provided by soakaways, Petrol Interceptor and Permeable surfacing).
4. **Regional Control:** Interception of runoff downstream of all source and on-site controls to provide follow-up flow management and water quality treatment (provided by the Existing Surface Water infrastructure).

The above measures ensure a suitable treatment train is provided in accordance with GSDSDS.

## Appendix A RECORD MAPS



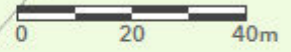
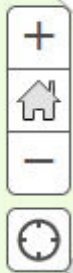


Ballymahon

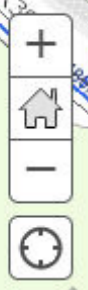
Church View

Mercy  
Secondary  
School

150 Precast Concrete







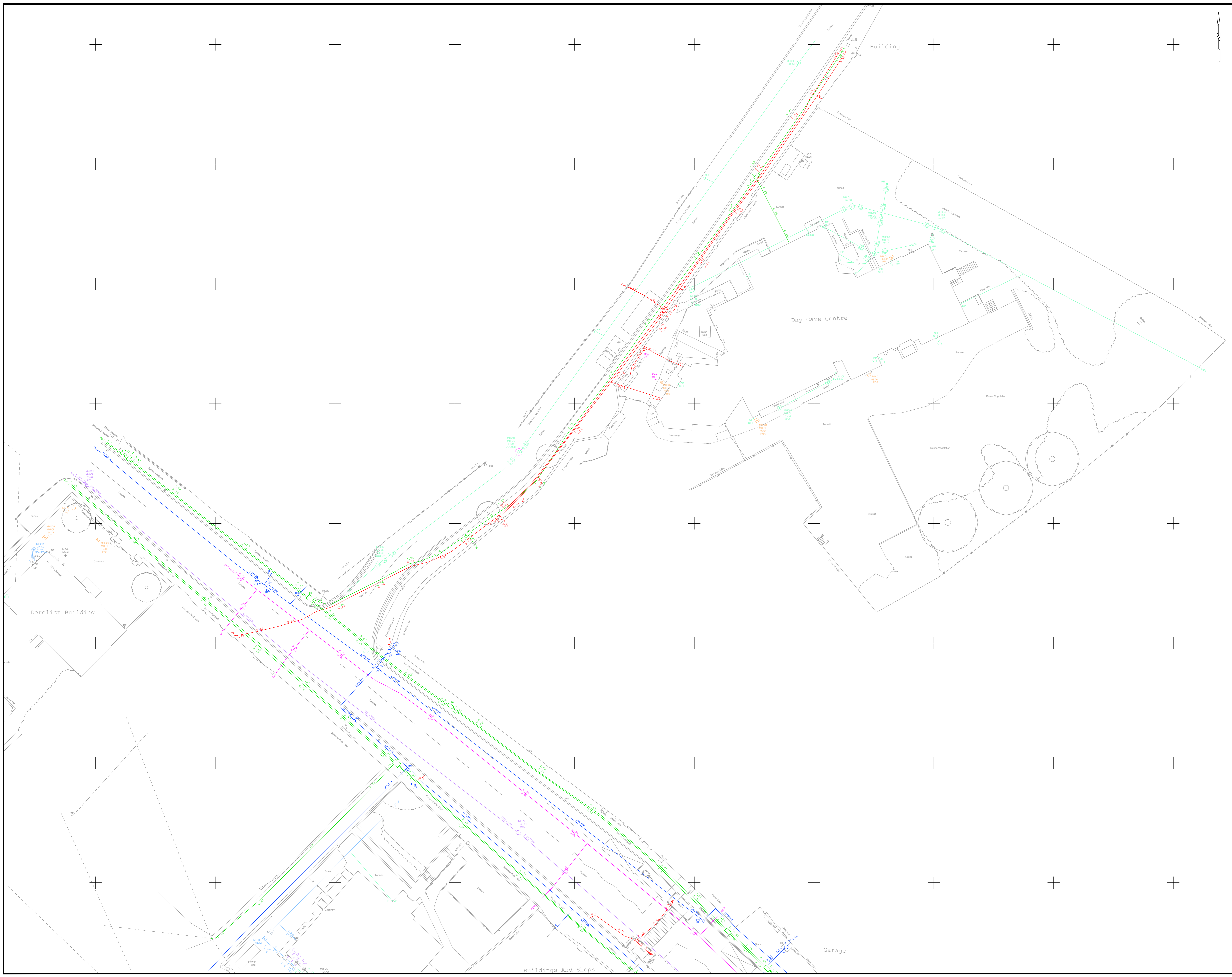
Mercy Secondary School

Ballymahon

Craighill Way



## Appendix B SURVEY DRAWINGS



**Legend**

|                 |              |                 |                |                  |         |                  |                 |             |             |           |                     |                |                   |                    |
|-----------------|--------------|-----------------|----------------|------------------|---------|------------------|-----------------|-------------|-------------|-----------|---------------------|----------------|-------------------|--------------------|
| —CATV— Cable TV | —E— Electric | —F— Fibre Optic | —FU— Fuel Line | —H— Heating Pipe | —G— Gas | —RM— Rising Main | —S— Storm Water | —T— Telecom | —U— Unknown | —W— Water | —C— Chamber Extents | —E— Empty Duct | —S— Survey Extent | —P— Photo Location |
|-----------------|--------------|-----------------|----------------|------------------|---------|------------------|-----------------|-------------|-------------|-----------|---------------------|----------------|-------------------|--------------------|

AVG Above Ground  
 AR Assumed Route  
 B/D Back Drop  
 BL/D Blocked  
 BR/N Broken  
 DOB Depth of Bottom  
 DDC Depth of Cover  
 EOS End of Splice  
 EOT End of Trace  
 FOS Full of Soil  
 FOW Full of Water  
 GPR Ground Penetration Radar  
 LKD Locked  
 MAR Man Access Required  
 NDV No Ducts Visible  
 NVV No Incoming Visible  
 NOV No Outfall Visible  
 TRR Taken from Records  
 UPI Underground Enclosed Pipe  
 UTL Unable To Lift  
 UTS Unable to Splice  
 UTSV Unable to Survey

- (A) Horizontal and Vertical Position verified Visually  
(Accuracy: Horizontal (30mm) Vertical (50mm))
- (B1) Horizontal and Vertical Position detected by Multiple Methods  
(Estimated Accuracy: ±150mm or ±40% of detected depth)
- (B2) Horizontal and Vertical Position detected by Single Method  
(Estimated Accuracy: ±225mm or ±40% of detected depth)
- (B3) Horizontal Position detected by Single Method  
(Estimated Accuracy: ±400mm in the Horizontal - Depth is uncertain)
- (C) Route Transcribed from Utility Asset Plans and correlated to visual indications and surface features  
(Accuracy Uncertain)
- (D) Route Transcribed from Utility Asset Plans  
(Accuracy Uncertain)

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**Control Stations**

- Notes:**
- All dimensions are in metres unless otherwise stated.
  - All survey levels are related to Mean Head Datum.
  - For further details with regards to the above information please contact Geo-Info Ltd.
  - Manholes have been lifted where possible using manual methods. Invert levels and pipe sizes have been measured using surface inspection only and should be treated as indicative.
  - Tree dimensions should be treated as approximate only.

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|----------|------------|----------|----------|-----|
| Survived | Drawn      | Checked  | Approved |     |
| JS       | JS         | DMC      | JC       |     |
| Date     | Date       | Date     | Date     |     |
| 18/05/23 | 21/06/23   | 03/07/23 | 03/07/23 |     |
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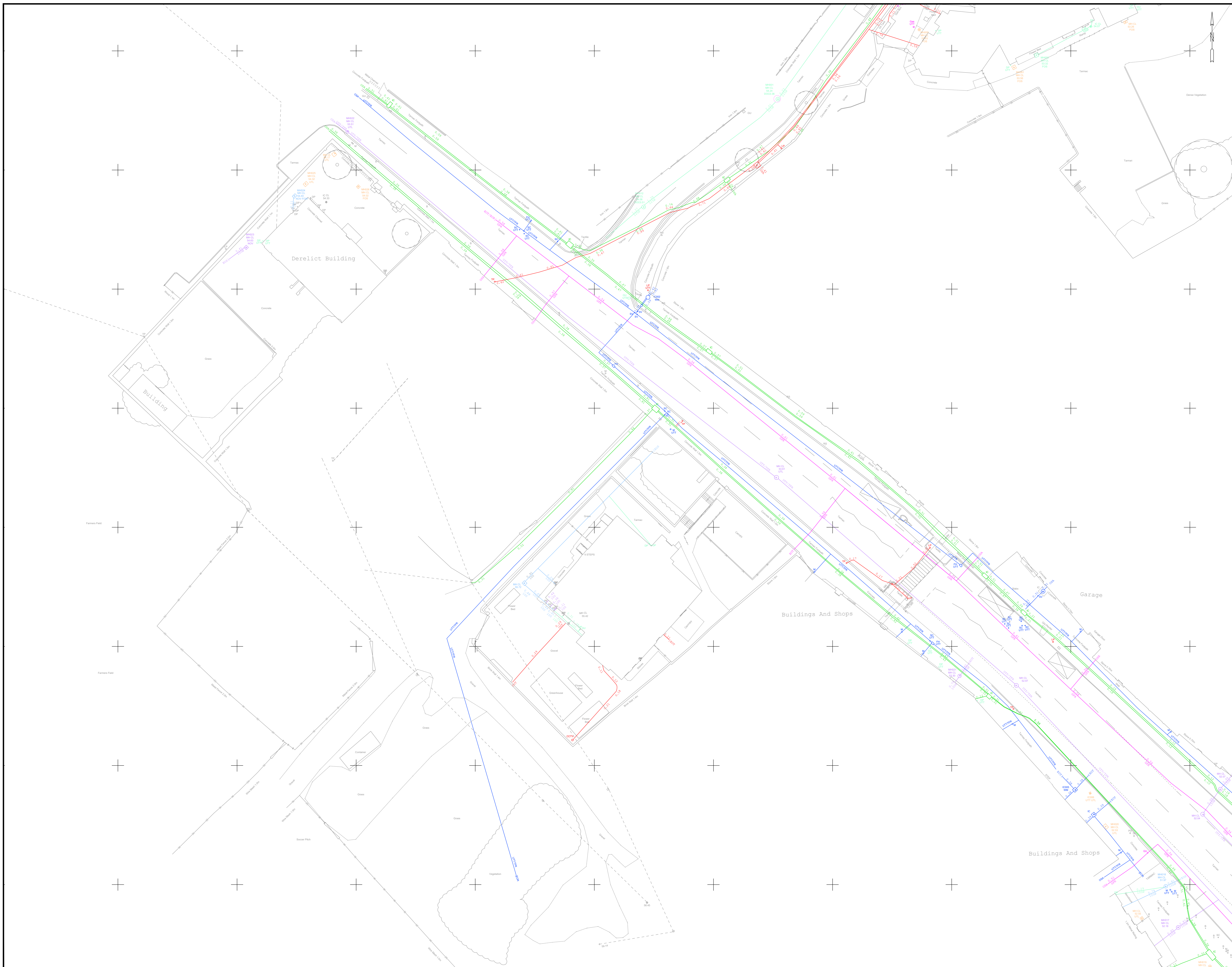
**Underground Services (2D)**  
 Poball Le Cheile  
 Ballymahon  
 Co. Longford

Kenny Lyons & Associates  
 Block 6, Central Business Park  
 Gayfield  
 Tullamore Co. Offaly



Liberty House  
 13 Clontarf Gardens, (Royston European)  
 Royston, KY11 2TB  
 Tel: 01283 45550  
 Email: enquiries@geo-info.info

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| DRAWING No.         | REV. |
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**Legend**

|                  |                   |
|------------------|-------------------|
| — Cable TV       | — Storm Water     |
| — Combined Water | — Telecom         |
| — Electric       | — Unknown         |
| — Fibre Optic    | — Water           |
| — Foul Water     | — Chamber Extents |
| — Fuel Line      | — Empty Duct      |
| — Heating Pipe   | — Survey Extent   |
| — Gas            | — Photo Location  |
| — Rising Main    |                   |

|                     |                               |
|---------------------|-------------------------------|
| AVG Above Ground    | GPR Ground Penetration Radar  |
| AR Assumed Route    | LKD Locked                    |
| B/D Back Drop       | MAR Man Access Required       |
| BLKD Blocked        | NDV No Ducts Visible          |
| BRN Broken          | NOV No Incoming Visible       |
| DOB Depth of Bottom | NOV No Outfall Visible        |
| DOC Depth of Cover  | TRR Taken from Records        |
| EOS End of Splice   | UTL Underground Enclosed Pipe |
| EOT End of Trace    | UTL Unable To Lift            |
| FS Full of Soil     | UTS Unable to Scope           |
| FW Full of Water    | UTSV Unable to Survey         |

- (A) Horizontal and Vertical Position verified Visually  
(Accuracy: Horizontal 0.05m; Vertical 0.05m)
- (B1) Horizontal and Vertical Position detected by Multiple Methods  
(Estimated Accuracy: ±150mm or ±4% of detected depth)
- (B2) Horizontal and Vertical Position detected by Single Method  
(Estimated Accuracy: ±225mm or ±6% of detected depth)
- (B3) Horizontal Position detected by Single Method  
(Estimated Accuracy: ±400mm in the Horizontal - Depth is uncertain)
- (C) Route Transferred from Utility Asset Plans and correlated to visual indications and surface features  
(Accuracy: Unclassified)
- (D) Route Transferred from Utility Asset Plans  
(Accuracy: Unclassified)

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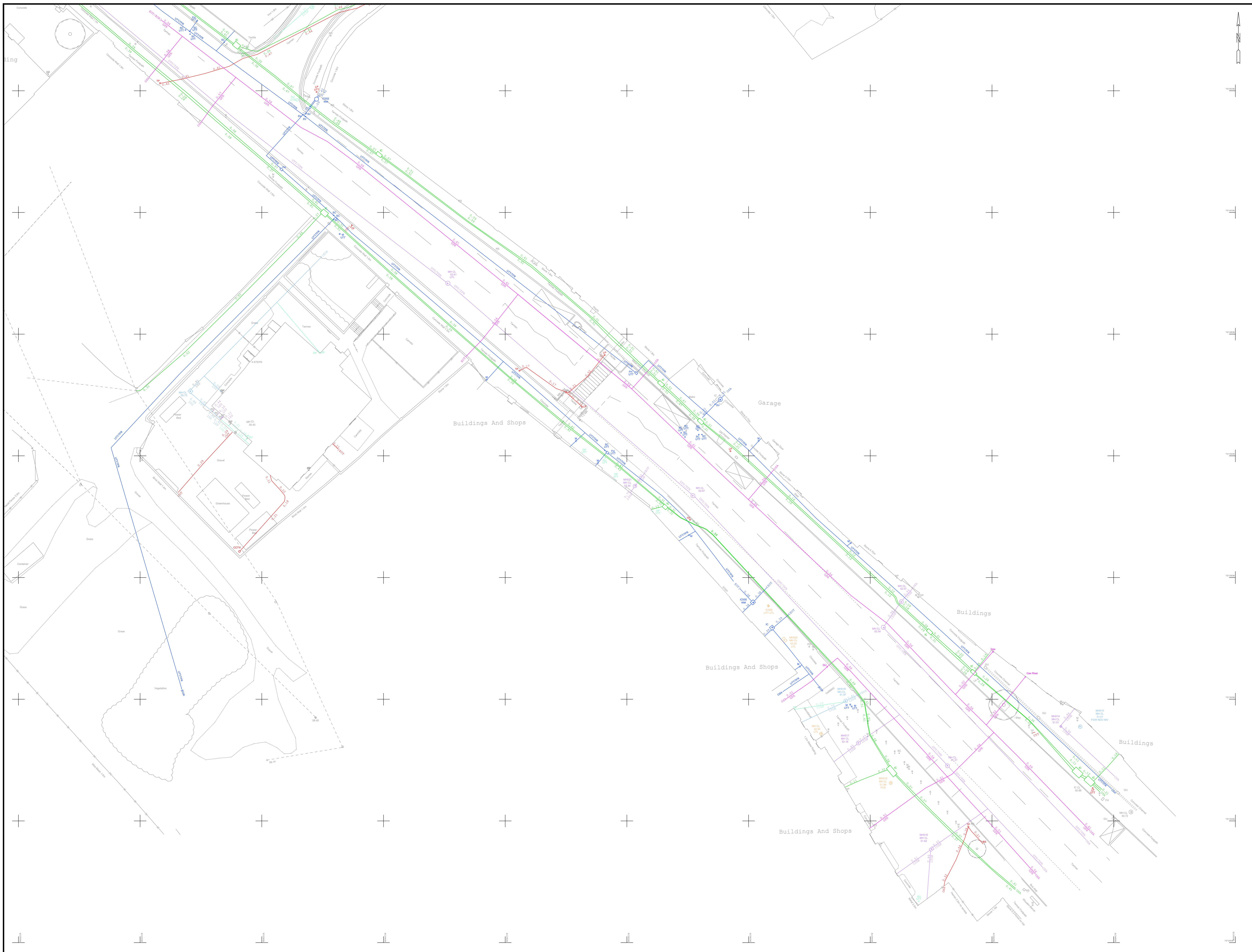
| 1        | Text annots for utils move to separate layers | 14/08/23 | AH       | JC  |
|----------|---|----------|----------|-----|
| Rev      | Amendments                                    | Date     | Dwn      | Chk |
| Survived | Drawn   | Checked  | Approved |     |
| JS       | JS  | DMC      | JC       |     |
| Date     | Date  | Date     | Date     |     |
| 18/05/23 | 21/06/23                                      | 03/07/23 | 03/07/23 |     |
| Scale    | Size  |          |          |     |
| 1:200    | A0  |          |          |     |

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Liberty House  
 13 Cherryfield, Rosyth, KY11 2TB  
 Tel: 01253 455500  
 Email: enquiries@geo-info.info



**Legend**

|                |                 |
|----------------|-----------------|
| Cable TV       | Storm Water     |
| Combined Water | Telecom         |
| Electric       | Unknown         |
| Fibre Optic    | Water           |
| Foul Water     | Chamber Extents |
| Fuel Line      | Empty Duct      |
| Heating Pipe   | Survey Extent   |
| Gas            | Photo Location  |
| Rising Main    |                 |

|                     |                               |
|---------------------|-------------------------------|
| AVG Above Ground    | GPR Ground Penetration Radar  |
| AR Assumed Route    | LKD Locked                    |
| B/D Back Drop       | MAR Man Access Required       |
| BLKD Blocked        | NDV No Ducts Visible          |
| BRN Broken          | NOV No Incoming Visible       |
| DOB Depth of Bottom | NOV No Outfall Visible        |
| DOC Depth of Cover  | TRR Taken from Records        |
| EOS End of Spool    | UPL Underground Enclosed Pipe |
| EOT End of Trace    | UTL Unable To Lift            |
| FS Full of Soil     | UTS Unable to Spool           |
| FW Full of Water    | UTSV Unable to Survey         |

- (A) Horizontal and Vertical Position verified Visually  
(Accuracy: Historical (Other) unless stated)
- (B1) Horizontal and Vertical Position detected by Multiple Methods  
(Estimated Accuracy: ±150mm or ±4% of detected depth)
- (B2) Horizontal and Vertical Position detected by Single Method  
(Estimated Accuracy: ±225mm or ±6% of detected depth)
- (B3) Horizontal Position detected by Single Method  
(Estimated Accuracy: ±400mm in the Horizontal - Depth is uncertain)
- (C) Route Transcribed from Utility Asset Plans and correlated to visual indications and surface features  
(Accuracy: Uncertain)
- (D) Route Transcribed from Utility Asset Plans  
(Accuracy: Uncertain)

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**Control Stations**

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

- Notes**
1. All dimensions are in metres unless otherwise stated.
  2. All survey levels are related to Main Head Datum.
  3. For further details with regards to the above information please contact Geo-Info Ltd.
  4. Manholes have been lifted where possible using manual methods. Invert levels and pipe sizes have been measured using surface inspection only and should be treated as indicative.
  5. Tree dimensions should be treated as approximate only.

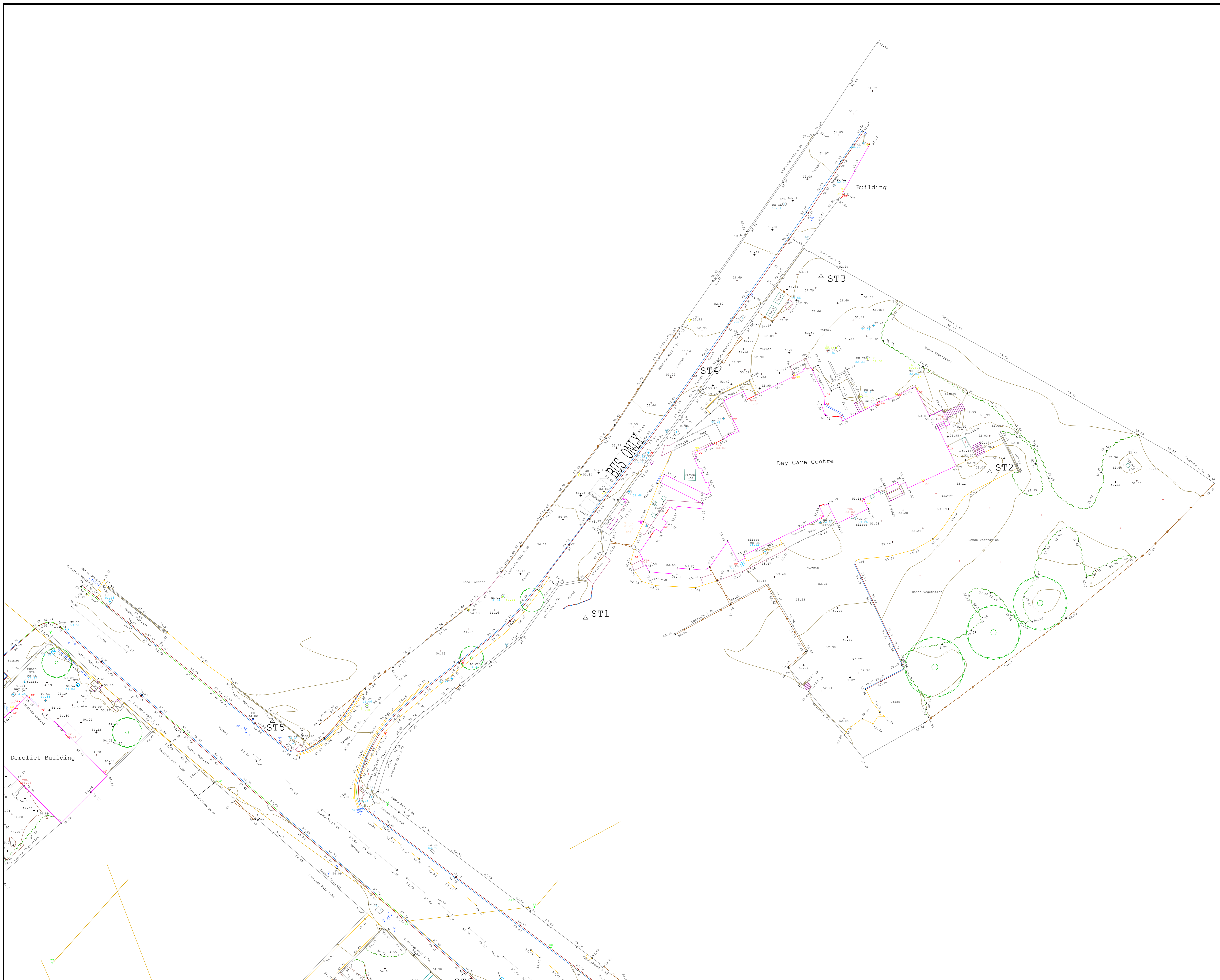
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| 1        | Text annots for utils move to separate layers | 14/08/23 | AH       | JC  |
|----------|---|----------|----------|-----|
| Rev      | Amendments                                    | Date     | Dwm      | Chk |
| Survived | Drawn   | Checked  | Approved |     |
| JS       | JS  | DMC      | JC       |     |
| Date     | Date  | Date     | Date     |     |
| 18/05/23 | 21/06/23                                      | 03/07/23 | 03/07/23 |     |
| Scale    | Size  |          |          |     |
| 1:200    | A0  |          |          |     |

**Underground Services (2D)**  
 Pobail Le Cheile  
 Ballymahon  
 Co. Longford

**Kenny Lyons & Associates**  
 Block 6, Central Business Park  
 Gayfield  
 Tullamore Co. Offaly





- Legend**
- A Guy Wire Anchor
  - AV Air Valve
  - AWIS Automatic Warning System
  - BH Borehole
  - BN Bench
  - BM Benchmark
  - BS Bus Stop
  - B Bolt
  - BT British Telecom Cover
  - CATV Cable TV Cover
  - CB Call Box
  - CCTV Camera
  - CM Cart Marker
  - CN Crossing Node
  - COL Column
  - CL Cover Level
  - DP Down Pipe
  - DR Drain
  - DS Drain Sump
  - E Electric Point
  - EJ Expansion Joint
  - EL Eave Level
  - EP Electric Pole
  - ER Earth Road
  - FH Fire Hydrant
  - FW Fire Wreck
  - GB Gradient Board
  - GC Greater Gun
  - GP Gate Post
  - GS Gas Sign
  - GU Gully
  - GV Gas Valve
  - HS Hook Switches
  - IC Inspector Cover
  - I Insulated Joint
  - L Laser Sweep Position
  - IL Invert Level
  - JBox Junction Box
  - KO Kerb Outlet
  - LP Lamp Post
  - LSP Lateral Resistance Plate
  - LT Lined Telephone
  - M Master Cover
  - MC Manhole Cover
  - MP Marker Post
  - MFB Mail Box
  - MP Message Post
  - MS Mast
  - P Pole
  - PO Post
  - PT Trial Pit
  - RE Recessing Eye
  - RL Ridge Level
  - RP Railway Point
  - RS Road Sign
  - SC Stop Cock
  - SCF Soffit Level
  - SP Signal Post
  - SPT Signal Post Telephone
  - S Tree Stump
  - SB Stop Sign
  - SV Stop Valve
  - THL Threshold Level
  - TOE Switch Top
  - TL Traffic Light
  - TP Telegraph Pole
  - TPHS Train Protection Warning System
  - TV Cable TV
  - TT Tree Trunk
  - TW Thermal Weld
  - TWL Top of Wall
  - VP Vent Pipe
  - WL Water Level
  - WM Water Meter

- Bush
- Tree
- Photo Location
- Wet Area
- Samplings
- Adjustment Switch
- Artrespass Mat
- Ballast Bottom
- Ballast Top
- BB
- Bottom of Bank
- Top of Bank
- Building
- Bus Stop
- Cable
- Cable Trough
- Canopy
- Catchpit
- Channel
- Change of Surface
- Check Rails
- Concrete
- Conductor Rail
- Cosh Barrier
- Crossover Khukkie
- Ditch
- Door
- Edge of Platform
- Fence
- Footpath
- French Drain
- Gabions
- Gate
- Garder
- Handrail
- Hedge
- Impedance Bands
- Low Kerb
- Top of Kerb
- Level Crossing Limits
- Magnet
- Metal Base
- Miscellaneous
- OLE Mast
- Open Sided Building
- Orange Pipe Crossing
- Overhang
- Overhead Line
- Overhead Line Clarity
- Pipe
- Pyton
- Rail Buffer
- Railway Line
- Retaining Wall
- Road Markings
- Road Sign
- Road Verge
- Rock Face
- Safety Kerb
- Scrap Rail
- Seat
- Shelter
- Signal Gantry
- Sleeper
- Steps
- Switch Equipment
- Switch Healer
- Switch
- Switch Motor
- Timber Sleeper
- Traffic Light Sensor
- Verge
- Wall
- Water Edge
- Water Course Bottom

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**Control Stations**

| STN  | Easting (m) | Northing(m) | Height (mAOD) |
|------|-------------|-------------|---------------|
| ST1  | 615384.4438 | 757448.2790 | 53.8860       |
| ST2  | 615451.4292 | 757472.4940 | 53.0652       |
| ST3  | 615423.4813 | 757504.8744 | 52.8532       |
| ST4  | 615402.5470 | 757488.5480 | 53.3490       |
| ST5  | 615332.5550 | 757431.1690 | 53.8730       |
| ST6  | 615364.3140 | 757399.1640 | 53.6700       |
| ST7  | 615419.6260 | 757358.8600 | 53.0530       |
| ST8  | 615262.9930 | 757440.1080 | 54.1830       |
| ST9  | 615310.8020 | 757362.6250 | 55.4240       |
| ST10 | 615335.7860 | 757334.6630 | 55.3440       |

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  - All survey co-ordinates are related to ITH Grid.
  - All survey levels are related to Mean Head Datum.
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| Rev            | Amendments                      | Date           | Dwn            | Chk |
|----------------|---------------------------------|----------------|----------------|-----|
| 1              | Invert levels to Manholes added | 14/08/23       | AH             | JC  |
| Survived       | Drawn                           | Checked        | Approved       |     |
| CF,JS,LP       | CF                              | LP             | JC             |     |
| Date: 18/05/23 | Date: 30/05/23                  | Date: 05/07/23 | Date: 05/07/23 |     |
| Scale: 1:200   | Size: A0                        |                |                |     |

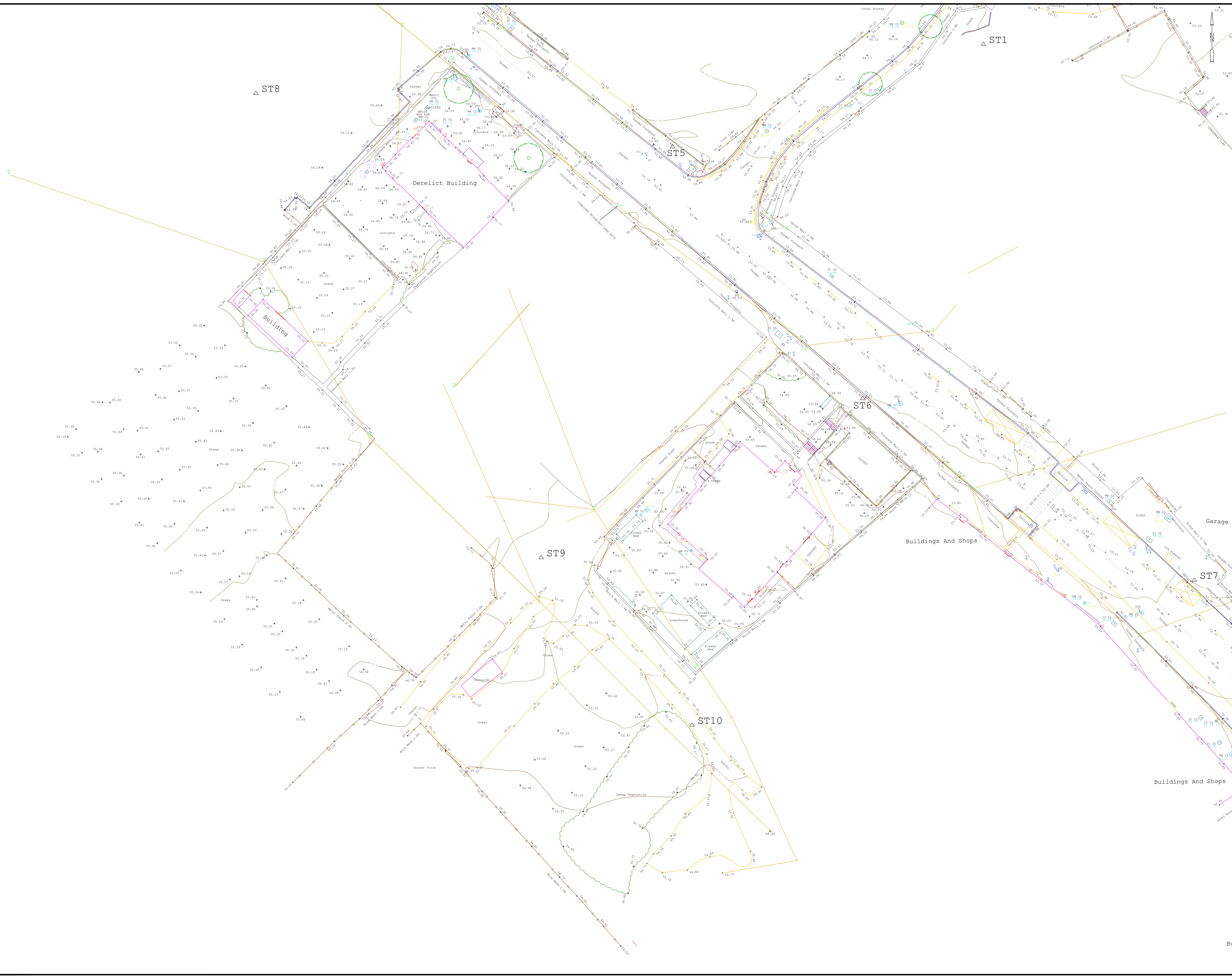
**Topographic Survey (2D)  
at 'Pobail le Cheile'  
Ballymahon**

**KENNY LYONS  
Associates  
Architects**

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**geo info**  
Specialist Surveyors

Liberty House  
13 County Centre, Rosyth European  
Rosyth, KY11 2TB  
Tel: 01263 45690  
Email: enquiries@geo-info.ie



**Legend**

|     |                          |     |                                 |
|-----|--------------------------|-----|---------------------------------|
| A   | Guy Wire Anchor          | IL  | Invert Level                    |
| AV  | Air Valve                | JOB | Junction Box                    |
| AW  | Automatic Warning System | KO  | Kerb Outlet                     |
| BH  | Borehole                 | LP  | Lateral Resistance Plate        |
| BN  | Bus Stop                 | LT  | Landscape Telephone             |
| B   | Bollard                  | M   | Manhole                         |
| BS  | British Telecom Cover    | MC  | Marker Post                     |
| CB  | Call Box                 | MFB | Manhole Box                     |
| CC  | Cable TV Cover           | MP  | Message Post                    |
| CM  | Cart Marker              | MS  | Manhole                         |
| CO  | Crossing Hole            | P   | Pole                            |
| COL | Column                   | PQ  | Post                            |
| CP  | Cover Level              | RE  | Rising Eye                      |
| CP  | Down Pipe                | RL  | Ridge Level                     |
| DR  | Drain                    | RP  | Railway Point                   |
| DS  | Drain Bump               | RS  | Road Sign                       |
| E   | Electric Point           | SC  | Stop Cock                       |
| EJ  | Expansion Joint          | SCF | Soft Level                      |
| EL  | Electric Level           | SPT | Signal Post Telephone           |
| EP  | Electric Pole            | S   | Tree Stump                      |
| ER  | Earth Road               | SS  | Cable Stop                      |
| EV  | Electric Valve           | ST  | Stop Valve                      |
| EW  | Earth Wall               | TH  | Threshold Level                 |
| FW  | Fire Hydrant             | TL  | Traffic Light                   |
| GC  | Gradient Board           | TL  | Top of Wall                     |
| GG  | Greater Gun              | TP  | Telephone Pole                  |
| GP  | Gate Post                | TPS | Train Protection Warning System |
| GS  | Gas Sign                 | TT  | Tree Trunk                      |
| GU  | Gully                    | TV  | Cable TV                        |
| GV  | Gas Valve                | TW  | Thermal Well                    |
| HS  | Hook Switches            | TW  | Top of Wall                     |
| IC  | Inspector Cover          | VP  | Vent Pipe                       |
| I   | Insulated Joint          | WL  | Water Level                     |
| L   | Laser Sweep Position     | WM  | Water Meter                     |

|                   |                       |
|-------------------|-----------------------|
| Adjustment Switch | Top of Kerb           |
| Arttresspass Mat  | Level Crossing Units  |
| Ballast Bottom    | Magnet                |
| Ballast Top       | Metal Base            |
| Bottom of Bank    | Miscellaneous         |
| Top of Bank       | OLE Mast              |
| Building          | Open Skid Building    |
| Bus Stop          | Orange Pipe Crossing  |
| Cable             | Overhang              |
| Cable Trough      | Overhead Line         |
| Canopy            | Overhead Line Clarity |
| Catchpit          | Pipe                  |
| Channel           | Pylon                 |
| Change of Surface | Rail Buffer           |
| Check Rails       | Railway Line          |
| Concrete          | Retaining Wall        |
| Conductor Rail    | Road Sign             |
| Cross Barrier     | Road Verge            |
| Crossover Khukkie | Road Face             |
| Ditch             | Safety Kerb           |
| Door              | Scrap Rail            |
| Edge of Platform  | Seat                  |
| Fence             | Shelter               |
| Footpath          | Signal Gantry         |
| French Drain      | Sleeper               |
| Gabions           | Steps                 |
| Gate              | Switch Equipment      |
| Garder            | Switch Heater         |
| Handrail          | Switch Motor          |
| Hedge             | Timber Sleeper        |
| Impedance Bonds   | Traffic Light Sensor  |
| Low Kerb          | Verge                 |
|                   | Wall                  |
|                   | Water Edge            |
|                   | Water Course Bottom   |

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**Control Stations**

| STN  | Easting (m) | Northing(m) | Height (mAOD) |
|------|-------------|-------------|---------------|
| ST1  | 615384.4438 | 757448.2790 | 53.8860       |
| ST2  | 615451.4292 | 757472.4940 | 53.0532       |
| ST3  | 615423.4813 | 757504.8744 | 52.8532       |
| ST4  | 615402.5470 | 757488.5480 | 53.3490       |
| ST5  | 615332.5550 | 757431.1690 | 53.8730       |
| ST6  | 615364.2040 | 757399.1640 | 53.6700       |
| ST7  | 615419.6260 | 757358.8600 | 53.0530       |
| ST8  | 615262.9930 | 757440.1080 | 54.1830       |
| ST9  | 615310.6020 | 757362.6290 | 55.4240       |
| ST10 | 615335.7860 | 757334.6630 | 55.3440       |

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| Rev      | Amendments                      | Date     | Dwn      | Chk |
|----------|---------------------------------|----------|----------|-----|
| 1        | Invert levels to Manholes added | 14/08/23 | AH       | JC  |
| Survised | Drawn                           | Checked  | Approved |     |
| CF,JS,LP | CF                              | LP       | JC       |     |
| Date     | Date                            | Date     | Date     |     |
| 18/05/23 | 30/05/23                        | 05/07/23 | 05/07/23 |     |
| Scale    | Size                            |          |          |     |
| 1:200    | A0                              |          |          |     |

**Topographic Survey (2D)  
at 'Pobail le Cheile'  
Ballymahon**

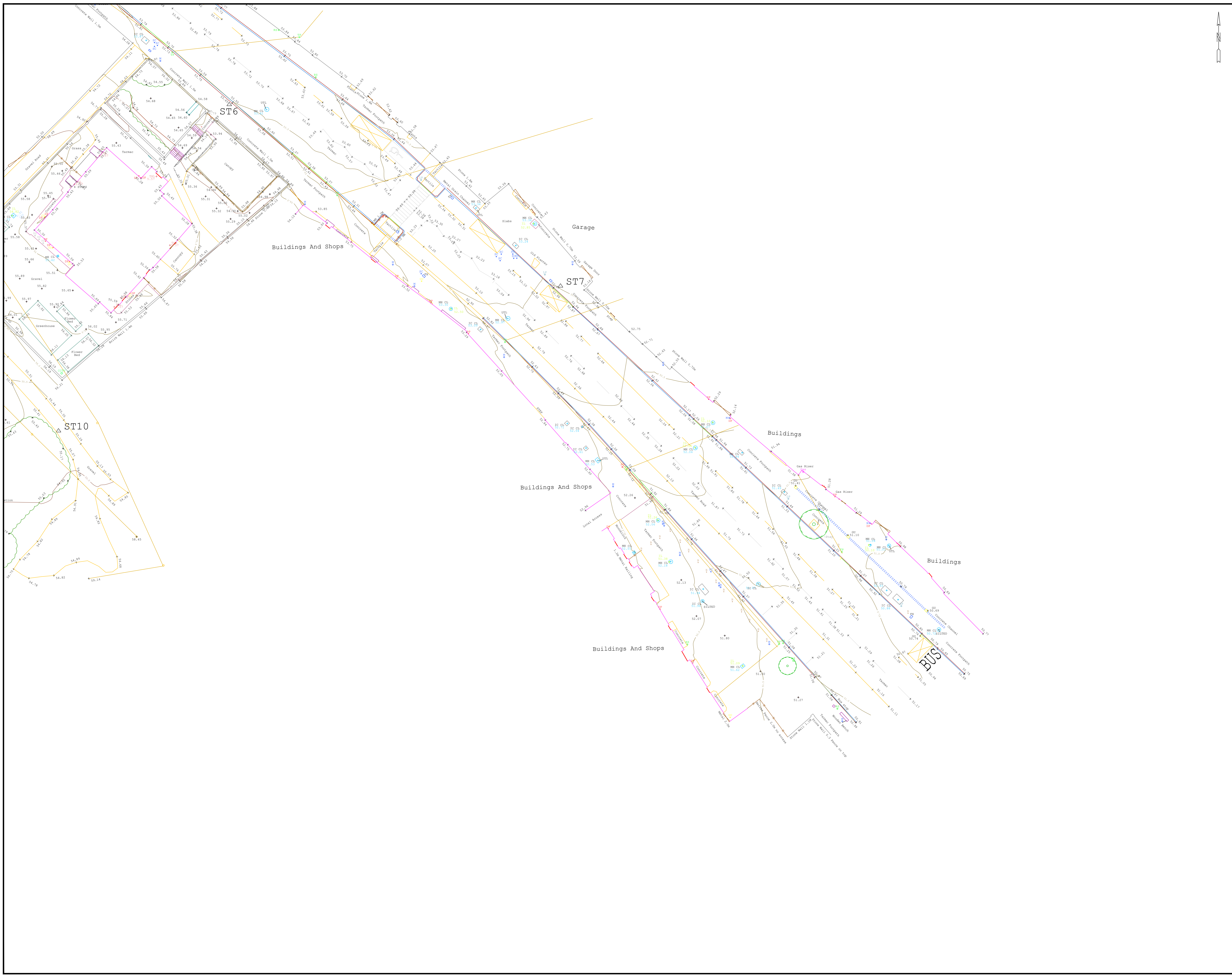
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Liberty House  
13 County Centre, Rosyth Europe  
Rosyth, KY11 2TB  
Tel: 01283 45990  
Email: enquiries@geo-info.info



**Legend**

|     |                          |      |                                 |
|-----|--------------------------|------|---------------------------------|
| A   | Guy Wire Anchor          | IL   | Invert Level                    |
| AV  | Air Valve                | JBox | Junction Box                    |
| AW  | Automatic Warning System | KO   | Kerb Outlet                     |
| BH  | Borehole                 | LP   | Lamp Post                       |
| BN  | Benchmark                | LFP  | Label Resistance Plate          |
| BL  | Bed Level                | LT   | Line Telephone                  |
| B   | Bollard                  | M    | Manhole Cover                   |
| BS  | Bus Stop                 | MC   | Marker Post                     |
| BT  | British Telecom Cover    | MFB  | Mail Box                        |
| CB  | Call Box                 | MP   | Message Post                    |
| CC  | Canopy                   | MS   | Manhole                         |
| CM  | Cart Marker              | P    | Post                            |
| CN  | Crossing Node            | PQ   | Post                            |
| COL | Column                   | RE   | Ridge Level                     |
| CL  | Cover Level              | RF   | Railway Point                   |
| CP  | Down Pipe                | RS   | Road Sign                       |
| DR  | Drain                    | SC   | Stop Cock                       |
| DS  | Drain Bump               | SCF  | Soft Level                      |
| E   | Electric Point           | SP   | Signal Post                     |
| EL  | Event Level              | SPT  | Signal Post Telephone           |
| EP  | Electric Pole            | S    | Tree Slump                      |
| ER  | Earth Road               | SS   | Street Stop                     |
| EH  | Fire Hydrant             | SV   | Stop Valve                      |
| EW  | Flame Wind               | TH   | Threshold Level                 |
| GB  | Gradient Board           | TL   | Traffic Light                   |
| GC  | Greater Gun              | TOE  | Top of Edge                     |
| GP  | Gate Post                | TP   | Telegraph Pole                  |
| GS  | Grass Strip              | TPHS | Train Protection Warning System |
| GU  | Gully                    | TT   | Tree Trunk                      |
| GV  | Gas Valve                | TW   | Thermal Well                    |
| HS  | Hook Switches            | TWL  | Top of Wall                     |
| I   | Inspector Cover          | VP   | Vent Pipe                       |
| LI  | Insulated Joint          | WL   | Water Level                     |
| L   | Laser Sweep Position     | WM   | Water Meter                     |

|  |                   |  |                     |  |                       |  |                     |
|--|-------------------|--|---------------------|--|-----------------------|--|---------------------|
|  | Bush              |  | Tree                |  | Photo Location        |  | Wet Area            |
|  | Adjustment Switch |  | Top of Kerb         |  | Level Crossing Limits |  | Magnet              |
|  | Antitrespass Mat  |  | Metal Base          |  | Miscellaneous         |  | Open Sided Building |
|  | Ballast Bottom    |  | OLE Mast            |  | Orange Pipe Crossing  |  | Overhang            |
|  | Ballast Top       |  | Overhead Line       |  | Overhead Line Clarity |  | Pipe                |
|  | Bottom of Bank    |  | Retaining Wall      |  | Pylon                 |  | Rail Buffer         |
|  | Building          |  | Road Sign           |  | Rail Line             |  | Road Verge          |
|  | Bus Stop          |  | Road Face           |  | Safety Kerb           |  | Scrap Rail          |
|  | Cable             |  | Seat                |  | Signal Gantry         |  | Shed                |
|  | Cable Trough      |  | Steps               |  | Sleeper               |  | Switch Equipment    |
|  | Canopy            |  | Switch Header       |  | Switch Motor          |  | Top of Wall         |
|  | Catchpit          |  | Timber Sleeper      |  | Traffic Light Sensor  |  | Verges              |
|  | Channel           |  | Top of Wall         |  | Wall                  |  | Water Edge          |
|  | Change of Surface |  | Water Course Bottom |  |                       |  |                     |
|  | Check Rails       |  |                     |  |                       |  |                     |
|  | Concrete          |  |                     |  |                       |  |                     |
|  | Conductor Rail    |  |                     |  |                       |  |                     |
|  | Curb Bar          |  |                     |  |                       |  |                     |
|  | Crossover Knuckle |  |                     |  |                       |  |                     |
|  | Ditch             |  |                     |  |                       |  |                     |
|  | Door              |  |                     |  |                       |  |                     |
|  | Edge of Platform  |  |                     |  |                       |  |                     |
|  | Fence             |  |                     |  |                       |  |                     |
|  | Foliage           |  |                     |  |                       |  |                     |
|  | Foothpath         |  |                     |  |                       |  |                     |
|  | French Drain      |  |                     |  |                       |  |                     |
|  | Gabions           |  |                     |  |                       |  |                     |
|  | Gate              |  |                     |  |                       |  |                     |
|  | Girder            |  |                     |  |                       |  |                     |
|  | Handrail          |  |                     |  |                       |  |                     |
|  | Hedge             |  |                     |  |                       |  |                     |
|  | Impedance Bands   |  |                     |  |                       |  |                     |
|  | Inset             |  |                     |  |                       |  |                     |
|  | Low Kerb          |  |                     |  |                       |  |                     |

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| 1        | Invert levels to Manholes added | 14/08/23 | AH       | JC  |
|----------|---------------------------------|----------|----------|-----|
| Rev      | Amendments                      | Date     | Dwn      | Chk |
| Survived | Drawn                           | Checked  | Approved |     |
| CF,JS,LP | CF                              | LP       | JC       |     |
| Date     | Date                            | Date     | Date     |     |
| 18/05/23 | 30/05/23                        | 05/07/23 | 05/07/23 |     |
| Scale    | Size                            |          |          |     |
| 1:200    | A0                              |          |          |     |

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[www.tobin.ie](http://www.tobin.ie)