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Engineering Services Report

Church Glen,

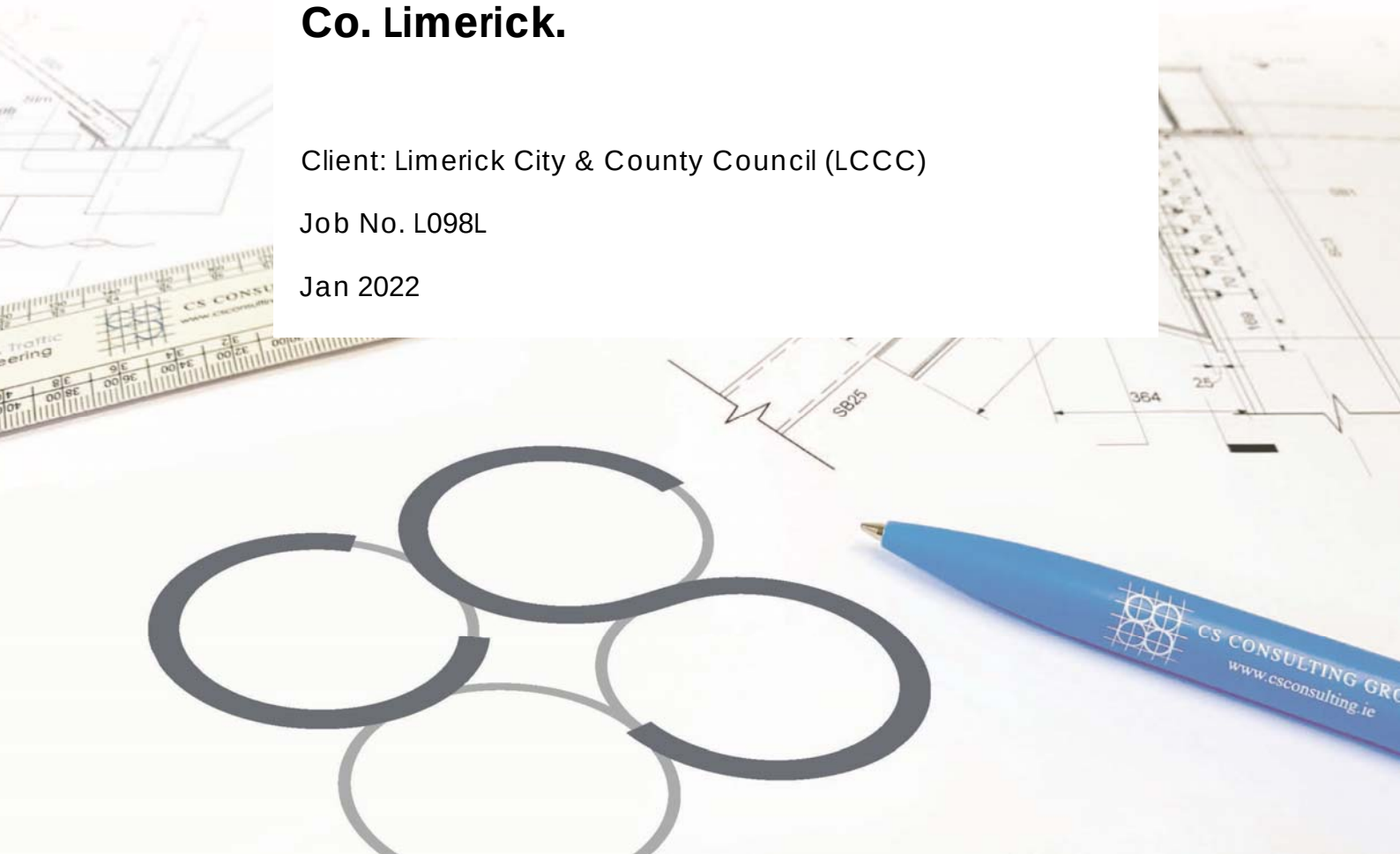
Ballylanders,

Co. Limerick.

Client: Limerick City & County Council (LCCC)

Job No. L098L

Jan 2022



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ENGINEERING SERVICES REPORT

CHURCH GLEN, BALLYLANDERS, CO. LIMERICK.

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Document;	**Engineering Services Report - Church Glen, Ballylanders, Co. Limerick.**

Job Ref.	Author	Reviewed By	Authorised By	Issue Date	Rev. No.
L098L	KC	GC	GC	Jan 2022	0

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1.0 INTRODUCTION

Cronin Sutton Cotter Consulting Engineers have been commissioned by Limerick City & County Council to prepare an Engineering Services Report for the proposed build 9no. new dwellings in Church Glen, Ballylanders, Co. Limerick. In preparing this report Cronin Sutton Cotter Consulting Engineers have made reference to the following:

- Ordnance Survey of Ireland (OSI) historic maps,
- Topographical Survey of the site,
- Irish Water Drainage Records provided by Limerick City and County Council (LCCC),
- Office of Public Works (OPW) Historic Flood Mapping & CFRAM study mapping available on www.floodinfo.ie.

2.0 SCOPE

Refer to the planning and architectural reports submitted as part of this application for a detailed description of the proposed works.

This report addresses the practical implications for the development of the subject lands. Addressed within is a review of the site's drainage/water supply/flood risk/traffic and a desk top review of past land uses and services in the area.

3.0 SITE DESCRIPTION

The proposed site is located in Ballylanders, approximately 42km from Limerick City on the R513. The subject lands are directly adjacent to the rest of Church Glen, Ballylanders, Co. Limerick which is located to the east of the proposed site. The site's topography is on a descending slope. See topographical survey attached within Appendix A.

The subject lands have never been developed before and appear to have been a greenfield site going back as far as historic OSI mapping is available from.

The subject lands are located in the administrative jurisdiction of Limerick City and County Council. See Fig 1.0 below for site location in red.

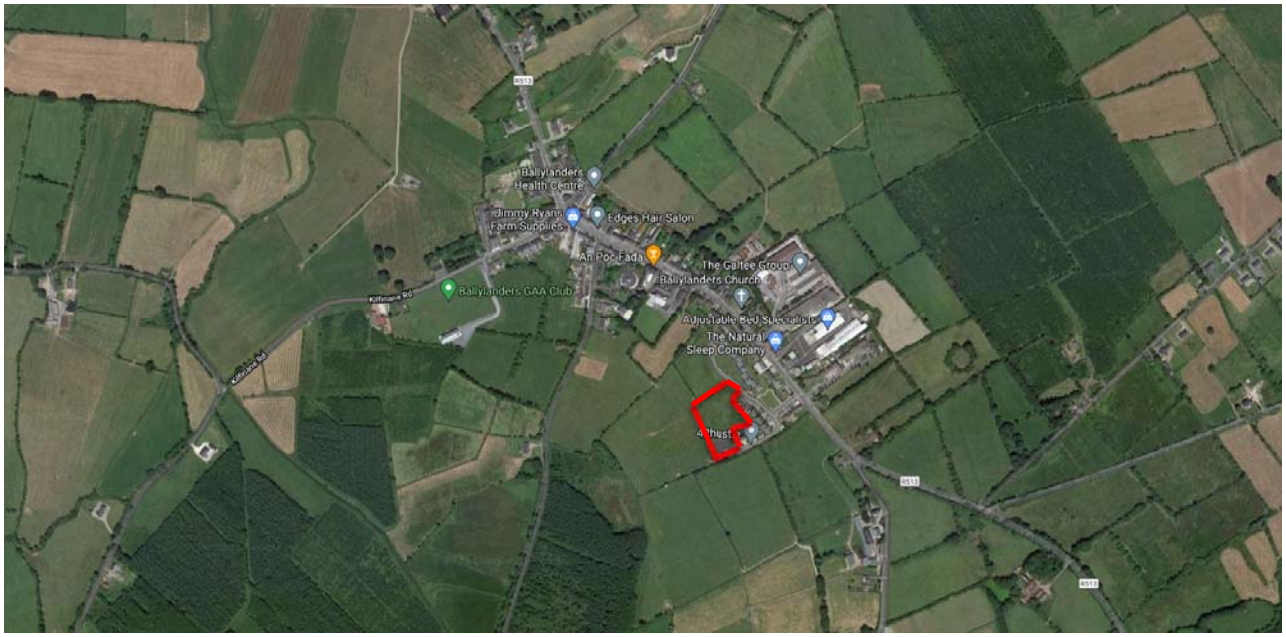

Fig 1.0 – Site Location in red (Source Google Maps).

4.0 FOUL DRAINAGE

4.1 Existing Foul Infrastructure

According to the GPR Survey, provided by LCCC (attached within Appendix B), the existing development is serviced by local authority foul sewer and is a 150mm uPVC Ø.

The existing main foul sewer system, running parallel to the storm sewer system, is located to the south of the site, adjacent to the proposed new vehicular entrance. This system outfalls into a pump chamber immediately adjacent to the south west corner of the site. This is shown in drawing MSL32978_U_Rev.1 in Appendix B (foul sewer shown in an orange colour). Foul and storm systems also run along the western boundary of the site and appear to service other areas of the town. The foul line also appears to outfall to the pump chamber.

4.2 Proposed Foul Infrastructure

It is proposed to connect each new dwelling into a new150mm Ø foul sewer located along the frontage of the new houses and outfall into the existing manhole in the south west corner. 100mm Ø connections will be made at each connection point. Note that backdrop manholes will be required in places. See Appendix C for site plan showing existing network & proposed connections.

All design and construction works will be in accordance with the requirements of Irish Water for Drainage Works, including the outfall manholes. A Pre-connection Enquiry has been deemed to be feasible by Irish Water for the proposed development. The pre-connection approval is attached within Appendix D.

5.0 STORM DRAINAGE

5.1 Existing Storm Water Infrastructure

According to the GPR Survey, provided by LCCC (attached within Appendix B), the existing site is serviced by local authority storm sewer and is a 225mm uPVC Ø.

The existing main storm sewer system, running parallel to the foul sewer system, is located to the south of the site, adjacent to the proposed new vehicular entrance. This system appears to outfall into an attenuation/percolation chamber immediately adjacent to the south west corner of the site. This is shown in drawing MSL32978_U_Rev.1 in Appendix B (storm sewer shown in a dark blue colour). Foul and storm systems also run along the western boundary of the site and appear to service other areas of the town. The storm line also appears to outfall to the attenuation/percolation chamber.

5.2 Proposed Storm Water Infrastructure

It is proposed to connect each new dwelling into a new 225mm Ø storm sewer located along the frontage of the new houses and outfall into the existing manhole in the south west corner. 100mm Ø connections will be made at each

connection point. Note that backdrop manholes will be required in places. See Appendix C for site plan showing existing network & proposed connections.

6.0 POTABLE WATER SUPPLY

According to the GPR Survey, provided by LCCC (attached within Appendix B), The existing section of Church Glen is serviced by local authority watermain which runs along the R513 Road (runs into Church Glen at the 'T' junction) and is unconfirmed size. It is unclear from the drawing what material these pipes are. See drawing attached within Appendix C.

It is proposed to connect the proposed watermain into the existing public watermain which is located outside and to the south of the site boundary. The proposed 100mm PE80 SDR Watermain is proposed to run through the site (descending) from south to north, parallel to the proposed 9no. dwellings. See Appendix C for site plan showing existing & proposed watermain.

Hydrants will be located in accordance with Technical Guidance Document B of the Building Regulations and as per the Limerick City & County Council Fire Officer's requirement.

Rainwater Harvesting will not be provided.

It is also noted that an Irish Water Pre-Connection Enquiry has been submitted and the site deemed suitable by Irish Water. This approval for this pre-connection enquiry is attached within Appendix D.

7.0 FLOODING

The site is not expected to flood as it is located on a descending slope. The topographical survey, attached within Appendix A, shows a steady and constant

fall from the R513 direction to the end of the western site boundary line and beyond.

According to floodmaps.ie, there has been no past flooding incidents in this area. See extract below from floodinfo.ie.

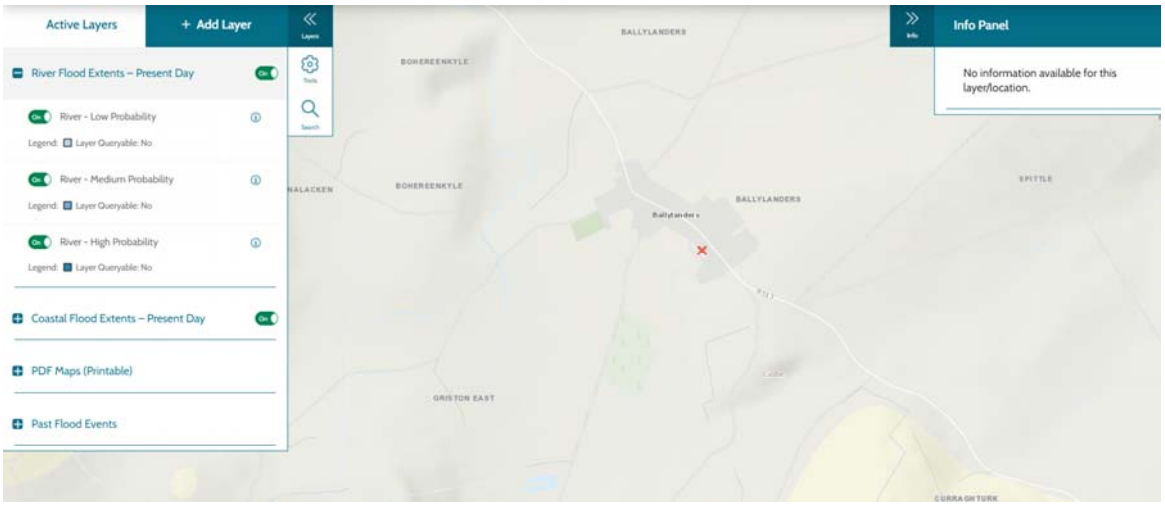

Fig 2.0 – Flood Events map (Source floodinfo.ie)

8.0 TRAFFIC MANAGEMENT

Occupants living within the Church Glen scheme will enter the estate via the R513. The roadway will be a two-way system, which will extend into the new extension of the overall development.

It is proposed that there will be 11no. end to end car parking spaces along the roadway outside the properties and 1 no. space associated with unit 9. A turning circle will be provided at the end of the access road.

It should also be noted that part of the development is to be built on a descending slope and site gradients will have to be agreed in conjunction with the architect.

9.0 CONCLUSIONS

9.1 It is proposed to connect each proposed dwelling into the existing uPVC 150mm Ø foul sewer which runs through the site, 100mm Ø connections will be made at each connection point.

9.2 It is proposed to connect each proposed dwelling into the existing uPVC 225mm Ø storm sewer which runs through the site,100mm Ø connections will be made at each connection point.

9.3 It is proposed to connect the proposed watermain into the existing 100mm Ø public watermain.

9.4 From a review of flood risk mapping, the proposed site is not at risk of flooding.

9.5 It is proposed that there will be 11no. 'end-to-end' car parking spaces and 1no. space specifically associated with unit 9.

Appendix A: Topographical Survey

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LEGEND

Street furniture & Services

- Over Head Wires (LUAS) - Pylon ESB
- Flowerbed
- Pipe
- Lift
- Barrier
- Pump
- Trial Pit
- Bus/Tram Shelter
- Postbox
- Valve - General
- Water Valve
- Gas Valve
- Sluice Valve
- Air Valve
- Stop Cock
- C P Post
- Marker Post
- Traffic light
- Parking Meter
- Plane Aerial Mark
- Smart Card Validator
- Unknown Valve
- Bus Stop
- Bollard
- Beacon
- Coalhole Cover
- Bore Hole
- Electricity Pole
- Telegraph pole
- OCS Pole
- CCTV Camera Pole
- Lamp Post
- Foul Manhole
- Surface Water MH
- Manholes
- Air Conditioning Vents
- Services Inspection Cover
- Traffic Inspection Cover
- Cable TV Inspection Cover
- ESAT Inspection Cover
- NTL Inspection Cover
- Eircom Inspection Cover
- Rodding Eye
- Road Sign
- Bench Seat
- Kiosk
- Gully
- Waste Bin
- Hydrant
- Fire Hydrant
- ESB Box
- ESB Inspection Cover
- Traffic Control Box
- LUAS Technical Cubicle
- Ticket Vending Machine
- Water Meter Cover
- Telecom Inspection Cover
- Monument / Toilets
- Tank Storage
- Basement: MH, Cover & Pipe
- Dished Aerial Mark
- Stay for pole
- Pipe Protection
- Washout
- Phone Box
- Duct
- Gas Cover
- C P Box
- U/G Car Park Vent

Natural Features

- Surface Change
- Land Drain
- Bottom of Slope
- Top of Slope
- Ditch
- Water Edge / Lake / Pond
- Hedge / Trees Drip Line / Vegetation
- Tree Coniferous
- Tree Deciduous
- Water Level
- Crown Level
- Invert level
- Bed Level
- Spotheight

Golf

- Fair Way
- Green
- Tee Box

Other

- Survey Station
- Photo point
- Top of Tree

Built Features

Roads & Road Markings

- Building
- Edge of Road
- Kerb Bottom
- Kerb Top
- Bridge Abutment
- Bridge Deck
- Bridge Parapet
- Building Façade
- Footpath / Platform Train & Tram
- Damp Proof Course / Verge
- Bridge Pier / Wall & Gate Pillar / LUAS Trackbed
- Cycleway / Private Landing Area
- Fence
- Gate
- Road Centreline
- Top of Wall
- Hoarding
- Property Line
- Road Scar
- Top of Fence
- Floor Level
- Apex Height
- Eaves Height
- Parapet Height
- Soffit Elevation
- Step Level
- Concrete Pad
- Track
- Wall / Retaining Wall
- Railway / Tram Rail / Grating / Ramp
- Building Canopy / Roof / Overhang

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The user or recipient of this survey data understands and acknowledges this data may be inaccurate or contain errors or omissions and the user or recipient assumes full responsibility for any risks or damages resulting from, arising from, or in connection with any use of or reliance upon data displayed herein. Although significant care has been exercised to produce surveys that satisfy survey accuracy standards, these surveys are only as accurate as the source data from which they were compiled. Although all reasonable steps have been taken to locate all features visible at the time of the survey, there is no guarantee that all will be shown on the drawing, as some above ground features may have obstructed the survey. Wherever possible, areas unable to be surveyed will be labelled as "UTS".

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North

Site Location

Map Sheet Layout

Surveyed by : SM, CG	Date: 01.10.2019	Datum: Malin Head (OSGM15)	
Drawn by : SM, JM	Date: 17.10.2019	Grid System:	
Checked by : JM	Date: 18.10.2019	Irish National Grid ☐ ITM ☒	

Revisions

No.	Date	Description
0	18.10.2019	First Drawing
1	14.02.2020	Extra MHs

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Email: info@murphysurveys.ie

Client :	Limerick City & County Council
Project :	Topo+Utility_Surveys_19092_Ballylanders_Limerick
Date : 18.10.2019	**Scale :** 1:250@A1
Description :	Project Description
Drawing Number :	**MSL32978-T-1_Rev1**

LEGEND

Street furniture & Services

- Over Head Wires (LUAS) - Pylon
- Flowerbed
- Pipe
- Lift
- Barrier
- Pump
- Trial Pit
- Bus/Tram Shelter
- Postbox
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- Water Valve
- Gas Valve
- Sluice Valve
- Air Valve
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- C P Post
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Golf

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- Green
- Tee Box

Other

- Survey Station
- Photo point
- Top of Tree

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BS Bus Stop; BD Bollard; BEA Beacon; CH Coalhole Cover; BH Bore Hole; EP Electricity Pole; TP Telegraph pole; OCS OCS Pole; CP CCTV Camera Pole; LP Lamp Post; FMH or Foul Manhole; SMH or Surface Water MH; MH or Manholes; AC Air Conditioning Vents; ICU Services Inspection Cover; ICTC Traffic Inspection Cover; ICTV Cable TV Inspection Cover; ICES ESAT Inspection Cover; ICNC NTL Inspection Cover; ICEM Eircom Inspection Cover; Rodding Eye

Sign RS Road Sign; Bench Seat; Kiosk; GY Gully; U/G Vent U/G Car Park Vent; BIN Waste Bin; HY Hydrant; FH Fire Hydrant; EBOX ESB Box; ICE ESB Inspection Cover; TFB Traffic Control Box; LUAS LUAS Technical Cubicle; Ticket Vending Machine; WM Water Meter Cover; ICT Telecom Inspection Cover; Monument / Toilets; Tank Storage; Basement: MH, Cover & Pipe; DAM Dished Aerial Mark; STAY Stay for pole; PP Pipe Protection; Washout

PBOX Phone Box; Duct; GAS Gas Cover; CPBox C P Box

Natural Features

Surface Change; Land Drain; Bottom of Slope; Top of Slope; Ditch; Water Edge / Lake / Pond; Hedge / Trees Drip Line / Vegetation; Tree Coniferous

WLVL Water Level; CRWN Crown Level; IL Invert level; BL Bed Level; S Spotheight; Tree Deciduous

Golf

FWAY Fair Way; GREE Green; TBOX Tee Box

Other

S1 Survey Station; Photo point; TOT Top of Tree

Built Features
Roads & Road Markings

Building; Edge of Road; Kerb Bottom; Kerb Top; Bridge Abutment; Bridge Deck; Bridge Parapet; Building Façade; Footpath / Platform Train & Tram; Damp Proof Course / Verge; Bridge Pier / Wall & Gate Pillar / LUAS Trackbed; Cycleway / Private Landing Area

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FL Floor Level; APX Apex Height; EV Eaves Height; PAR Parapet Height; SOFF Soffit Elevation; STPL Step Level; CONC Concrete Pad; Track

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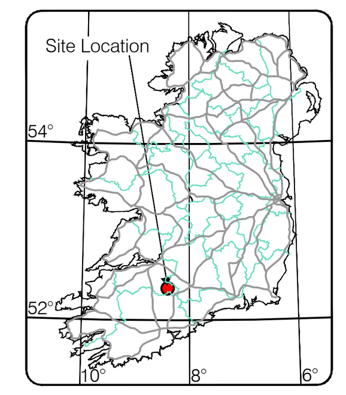

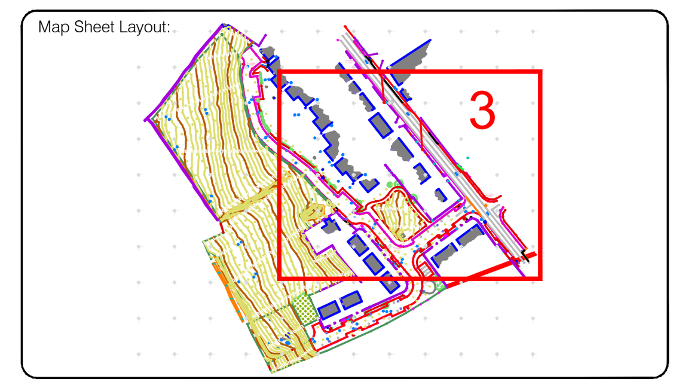

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Client : Limerick City & County Council

Project : Topo+Utility_Surveys_19092_Ballylanders_Limerick

Date : 18.10.2019 — **Scale :** 1:250@A1

Description : Project Description

Drawing Number : **MSL32978-T-3-Rev1**

Appendix B: GPR Survey

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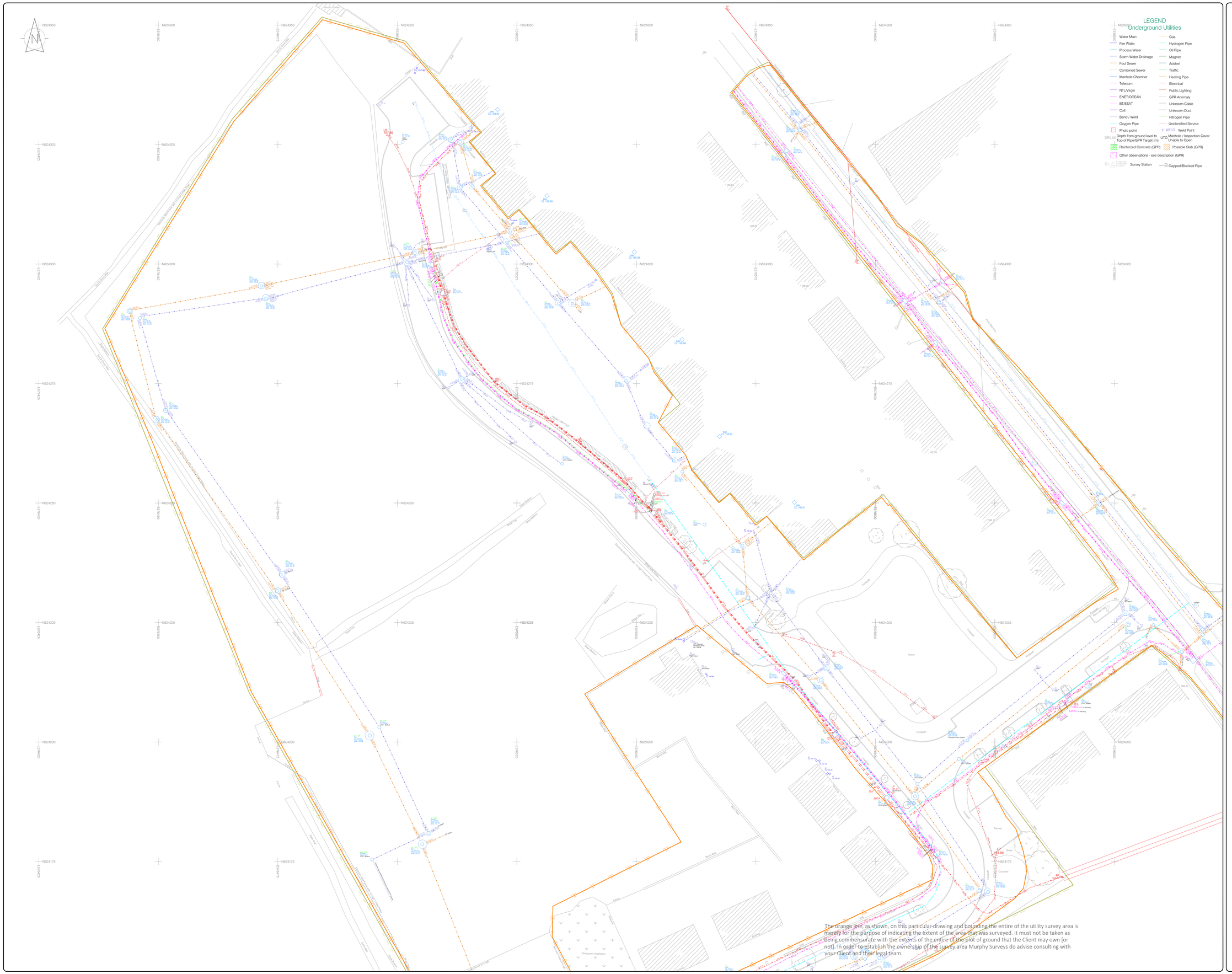

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The survey aims to map all existing utilities and sub surface structures and provide information with respect to pipe size, material type and drainage connectivity. However GPR surveying is limited by the following guidelines and it may not be possible to accurately survey, define and locate all services and sub surface features.

- Locational accuracy is determined by referring to the manufacturers guidelines for the detectors used.
- Existing record information showing underground services is often incomplete and unknown accuracy; therefore it should be regarded only as an indication.
- In ideal conditions these spatial accuracies for the underground utilities are +/- 5% for the RD4000 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.
- Due to the attenuation of the radar signal with depth, resolution is restricted, hence making identification of anomalies difficult with increasing depth.
- 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.
- It is always our intention to use the Utility providers' details, if supplied prior to survey commencement as a guide for location purposes. However, should we not be able to locate those guided services we shall not be held responsible for the accuracy, or otherwise, of the location of that service, as issued by the utility provider and therefore shown "Taken from Records" on the drawing and we are not liable for any loss that may arise due to the lack of accuracy in the guided information.
- Unless otherwise stated, all services and sub surface structures shown on Murphy Surveys Limited plan drawings have been surveyed using approved detectors and the connections between manholes, if not traced, are assumed to run straight.
- Plan accuracies of the order of + or - 150mm 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.

No allowance has been made within our quotation, unless otherwise stated, for the location and mapping of undeclared services. Failure to detect or fully map any declared service will be recorded within the notes accompanying our final drawings.

Where technically possible, depth indications will be given. These should be used for guidance only and wherever critical accuracy is required these should be confirmed by the Client by undertaking trial excavations or similar. Bends, lateral service connections, or the close proximity of other services and local magnetic, atmospheric or ground conditions, could in certain situations influence the accuracy of the plan and depth indication facility. Depths will not be provided unless we are reasonably confident of their validity.

Where Murphy Surveys Limited issues a CAD drawn utility service plan, this should be read in conjunction with all available public utility records etc. As part of our exhaustive Quality Control procedures, Murphy Surveys Limited Endeavour to add relevant Public Utility record information onto the final issue drawing. An allowance should be made for the width of services, particularly where these are laid in bands or are of significant size etc. For clarification or appropriate easement bands, we would recommend that direct contact is made with the Asset Owner or Statutory Undertaker.

We exclude the following, except where otherwise specified and possible to do so;

- All private service connections, (including water or gas fittings where no through flow of applied signal is possible.
- Pot ended or disconnected cables or terminated short lengths of pipe.
- Internal building services
- 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.
- Small diameter cables less than 17mm diameter, or pipes less than 38mm diameter.
- Above 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. masking signal) - intrusive verification options available on request.
- Deep non metallic pipes, ducts or culverts (unless probing or Pipe Track 3d is specified as part of the fully invasive survey option).
- Passing through defective pipework (displaced joints etc) or acute bends between access points.

Please note that our Quotation does not allow for location of individual service feeds to properties unless reasonable to do so, as access would be required into each property to apply direct connections to inlet points and this would significantly increase the scope of work, survey cost and also cause possible disruption to occupants.

All work carried out by Murphy Surveys Limited (MSL) conforms to the guidelines set out by The Survey Association (TSA).

Surveyed by : RH, OL, KA — Date: 16.09.2019
Drawn by : OM, OL — Date: 07.10.2019
Checked by : JM — Date: 21.10.2019

Datum: Malin Head (OSGM15)
Grid System:
Irish National Grid ☐ ITM ☒

Revisions

No.	Date	Description
0	21.10.2019	First Drawing
1	14.02.2020	Additional Survey by MSL. Additional info added from CD Environmental CCTV Survey

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Email: info@murphysurveys.ie

Client : Limerick City & County Council

Project : Utility Survey at Ballylanders Limerick

Date : 14.02.2020 **Scale :** 1:250@A0

Description : Utility Survey

Drawing Number : **MSL32978_U_Rev.1**

LEGEND
Underground Utilities

- Water Main
- Fire Water
- Process Water
- Storm Water Drainage
- Foul Sewer
- Combined Sewer
- Manhole Chamber
- Telecom
- NTL/Virgin
- ENET/OCEAN
- BT/ESAT
- Colt
- Bend / Weld
- Oxygen Pipe
- Gas
- Hydrogen Pipe
- Oil Pipe
- Magnetic Anomaly
- Adshel
- Traffic
- Heating Pipe
- Electrical
- Public Lighting
- GPR Anomaly
- Unknown Cable
- Unknown Duct
- Nitrogen Pipe
- Unidentified Service
- Photo point
- Weld Point
- Depth from ground level to top of Pipe/GPR Target (m)
- Manhole / Inspection Cover Unable to Open
- Reinforced Concrete (GPR)
- Possible Slab (GPR)
- Other observations - see description (GPR)
- Survey Station
- Capped/Blocked Pipe

The orange line, as shown, on this particular drawing and bounding the entire of the utility survey area is merely for the purpose of indicating the extent of the area that was surveyed. It must not be taken as being commensurate with the extents of the entire of the plot of ground that the Client may own [or not]. In order to establish the ownership of the survey area Murphy Surveys do advise consulting with your Client and their legal team.

Murphy Surveys Ltd. Disclaimer

The survey aims to map all existing utilities and sub surface structures and provide information with respect to pipe size, material type and drainage connectivity. However GPR surveying is limited by the following guidelines and it may not be possible to accurately survey, define and locate all services and sub surface features.

- Locational accuracy is determined by referring to the manufacturers guidelines for the detectors used.
- Existing record information showing underground services is often incomplete and unknown accuracy; therefore it should be regarded only as an indication.
- In ideal conditions these spatial accuracies for the underground utilities are +/- 5% for the RD4000 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.
- Due to the attenuation of the radar signal with depth, resolution is restricted, hence making identification of anomalies difficult with increasing depth.
- 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.
- It is always our intention to use the Utility providers' details, if supplied prior to survey commencement as a guide for location purposes. However, should we not be able to locate those guided services we shall not be held responsible for the accuracy, or otherwise, of the location of that service, as issued by the utility provider and therefore shown "Taken from Records" on the drawing and we are not liable for any loss that may arise due to the lack of accuracy in the guided information.
- Unless otherwise stated, all services and sub surface structures shown on Murphy Surveys Limited plan drawings have been surveyed using approved detectors and the connections between manholes, if not traced, are assumed to run straight.
- Plan accuracies of the order of + or - 150mm 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.

No allowance has been made within our quotation, unless otherwise stated, for the location and mapping of undeclared services. Failure to detect or fully map any declared service will be recorded within the notes accompanying our final drawings.
Where technically possible, depth indications will be given. These should be used for guidance only and wherever critical accuracy is required these should be confirmed by the Client by undertaking trial excavations or similar. Bends, lateral service connections, or the close proximity of other services and local magnetic, atmospheric or ground conditions, could in certain situations influence the accuracy of the plan and depth indication facility. Depths will not be provided unless we are reasonably confident of their validity.
Where Murphy Surveys Limited issues a CAD drawn utility service plan, this should be read in conjunction with all available public utility records etc. As part of our exhaustive Quality Control procedures, Murphy Surveys Limited Endeavour to add relevant Public Utility record information onto the final issue drawing. An allowance should be made for the width of services, particularly where these are laid in bands or are of significant size etc. For clarification or appropriate easement bands, we would recommend that direct contact is made with the Asset Owner or Statutory Undertaker.
We exclude the following, except where otherwise specified and possible to do so;

- All private service connections, (including water or gas fittings where no through flow of applied signal is possible.
- Pot ended or disconnected cables or terminated short lengths of pipe.
- Internal building services
- 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.
- Small diameter cables less than 17mm diameter, or pipes less than 38mm diameter.
- Above 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. masking signal) - intrusive verification options available on request.
- Deep non metallic pipes, ducts or culverts (unless probing or Pipe Track 3d is specified as part of the fully invasive survey option).
- Passing through defective pipework (displaced joints etc) or acute bends between access points.

Please note that our Quotation does not allow for location of individual service feeds to properties unless reasonable to do so, as access would be required into each property to apply direct connections to inlet points and this would significantly increase the scope of work, survey cost and also cause possible disruption to occupants.
All work carried out by Murphy Surveys Limited (MSL) conforms to the guidelines set out by The Survey Association (TSA).

Surveyed by : RH, OL, KA	Date: 16.09.2019	Datum: Malin Head (OSGM15)
Drawn by : CM, OL	Date: 07.10.2019	Grid System:
Checked by : JM	Date: 21.10.2019	Irish National Grid ☐ ITM ☒

Revisions

No.	Date	Description
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Phone: (+353) 045 484040
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Client : Limerick City & County Council

Project : Utility Survey at Ballylanders Limerick

Date : 14.02.2020 **Scale :** 1:250@A0

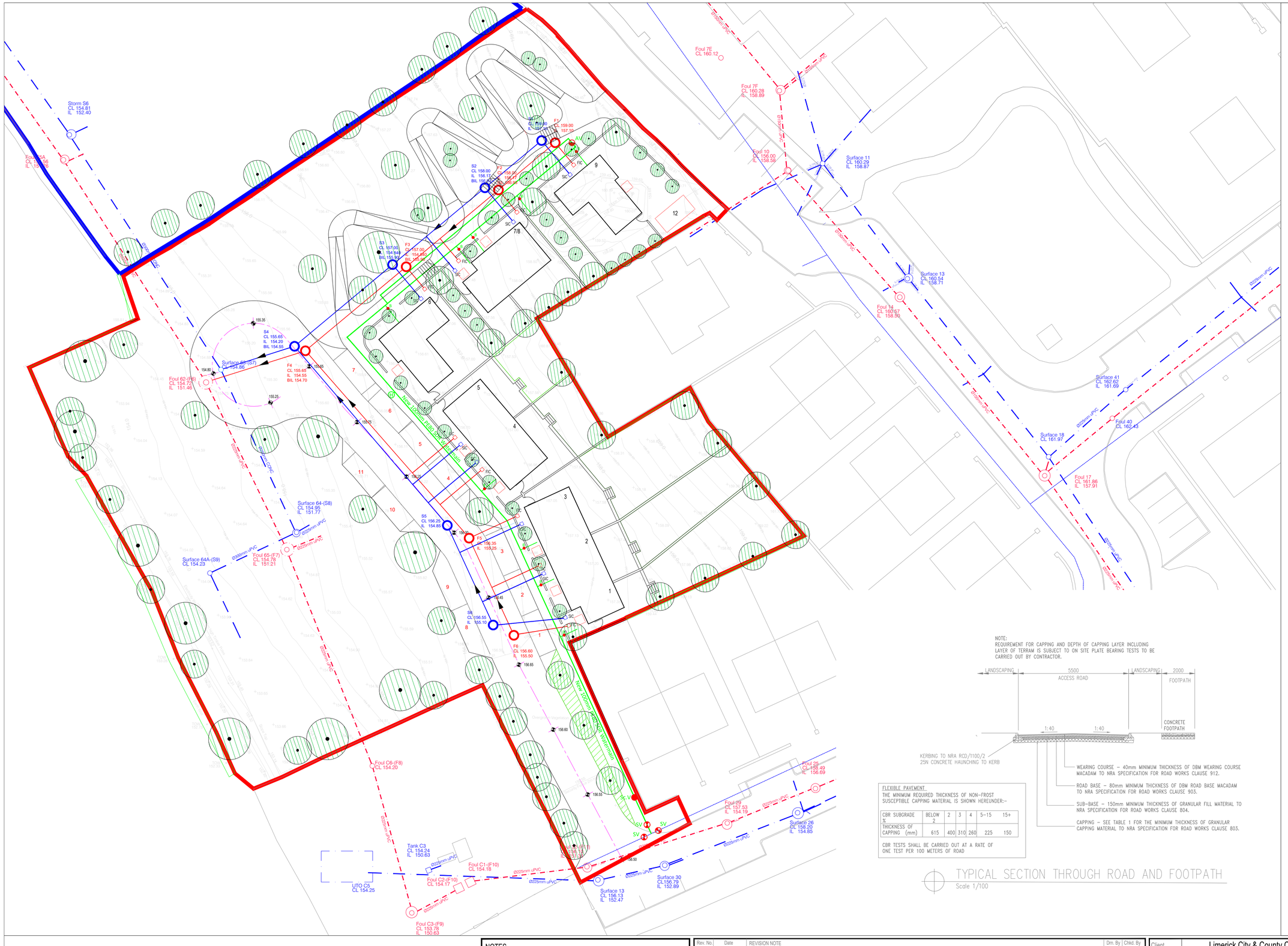
Description : Utility Survey

Drawing Number : **MSL32978_U_Rev.1**

Appendix C: CSC drawing no. L097L-001 P3 Site Layout, Drainage Layout & Road Layout & Cross Section

CS CONSULTING

GROUP



LEGEND

1. EXISTING PUBLIC WATERMAINS
2. EXISTING PRIVATE WATERMAINS
3. PROPOSED WATERMAINS
4. SLUICE VALVE TO IRISH WATER STANDARD DETAIL STD-W-15 — SV
5. AIR VALVE TO IRISH WATER STANDARD DETAIL STD-W-22 — AV
6. HYDRANT TO IRISH WATER STANDARD DETAIL STD-W-19 — H
7. SCOUR VALVE TO IRISH WATER STANDARD DETAIL STD-W-30 — Sc.V
8. BULK METER TO IRISH WATER STANDARD DETAIL STD-W-26 — Me
9. THRUST BLOCK — TB
10. BOUNDARY BOX — B
11. EXISTING PUBLIC FOUL SEWER
12. EXISTING PRIVATE FOUL SEWER
13. PROPOSED FOUL SEWER
14. EXISTING STORM SEWER
15. PROPOSED STORM SEWER
16. PROPOSED ATTENUATION
17. MANHOLE REF, COVER LEVEL AND INVERT LEVEL — F1 CL 100.00 IL 99.40; S1 CL 100.00 IL 99.40
18. SITE BOUNDARY

WATERMAIN NOTES

1. All pipe work, valves, chambers, network arrangements and all associated watermain works to be in accordance with Irish Water Codes of Practice and Standard Details.
2. All new watermain material shall be in accordance with Section 3.9 of the Irish Water Code of Practice.
3. All manholes in grassed areas to have 200mm wide x 100mm deep concrete plinth/kerb cast to their perimeter to ensure they are not overgrown. Concrete to be grade C20/25.
4. Meters for apartments and similar properties shall be installed internally within the premises in accordance with the Building Control Authority's requirements and subject to review by Irish Water as per section 3.15.2 of the Code of Practice.
5. Proposed watermains to be located a minimum of 300mm from the wastewater infrastructure in accordance with section 3.5.18 of the 3.15.18 of the Irish Water Wastewater Code of Practice.
6. The location of the bulk meter, valves and hydrants shall be designed in accordance with section 3.15.4 of the Irish Water Code of practice.
7. Note the Fire Safety Certificate has not been comleted yet, but as part of this development, it is confirmed that hydrants shall not be located any more than 46m from any part of the development.
8. All watermain works to be taken in charge to be air pressure tested in accordance with Irish Water Code of Practice Section 4.10.

NOTE:
REQUIREMENT FOR CAPPING AND DEPTH OF CAPPING LAYER INCLUDING LAYER OF TERRAM IS SUBJECT TO ON SITE PLATE BEARING TESTS TO BE CARRIED OUT BY CONTRACTOR.

FLEXIBLE PAVEMENT
THE MINIMUM REQUIRED THICKNESS OF NON-FROST SUSCEPTIBLE CAPPING MATERIAL IS SHOWN HEREUNDER:-

CBR SUBGRADE %	BELOW 2	2	3	4	5–15	15+
THICKNESS OF CAPPING (mm)	615	400	310	260	225	150

CBR TESTS SHALL BE CARRIED OUT AT A RATE OF ONE TEST PER 100 METERS OF ROAD

TYPICAL SECTION THROUGH ROAD AND FOOTPATH
Scale 1/100

FOUL SEWER NOTES

1. All works will be carried out in accordance with the requirements of Irish Water Codes of Practice for Wastewater.
2. Finished Floor Leves to be finalised with Architect.
3. All manholes in grassed areas to have 200mm wide x 100mm deep concrete plinth / kerb cast to their perimeter to ensure they are not overgrown. Concrete to be grade C20/C25.
4. External face of all proposed manhole chambers to be minimum 0.5 metre from the kerb line and the external face of the sewers to be minimum 1.0 metre from the kerb line.
5. New manholes constructed over existing Irish Water public sewer to be constructed to Irish Water Standards STD-WW-09, STD-WW-10, AND STD-WW-11
6. Concrete surround in accordance with Irish Water standard detail STD-WW-07 and STD-WW-08 to be provided to all sewers where minimum cover (900mm) is not achieved - note the absolute minimum depth of cover above the external crown of the pipe shall be 750mm.
7. All foul sewer pipe materials shall be in compliance with section 3.13 of the Irish Water Code of Practice for Wastewater.

NOTES

1. For setting out refer to Architect's drawings.
2. This drawing to be read in conjunction with all other Architectural and Engineering drawings and all other relevant drawings and Specifications.
3. DO NOT SCALE THIS DRAWING. Use figured dimensions only.
4. No part of this document may be reproduced or transmitted in any form or stored in any retrieval system of any nature without the written permission as copyright holder except as agreed for use on the project for which the document was originally issued.
5. Ordnance Survey Ireland Licence Number EN 0074012

Rev. No	Date	REVISION NOTE	Dm. By	Chkd. By

Client	Limerick City & County Council
Project	Church Glen Housing Ballylanders, Co.Limerick.
Title	Site Layout Stormwater, Foul and Water Layout Road Layout and Cross Section

Dm by	Chkd by	Aprvd by	Dwg. No.	Revision
NQ	DF	GC	L098L-001	P3
Date: July 2021	Scale: 1:250, 1:50			

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NSAI Certified
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Environment I.S. EN ISO 14001:2004
Energy I.S. EN ISO 50001:2011
Health & Safety OHSAS 18001:2007

Appendix D: Irish Water Pre-Connection Feasibility

Billy Lynch

Limerick City and County Council,
Merchants Quay,
Limerick
V94EH90

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Irish Water
PO Box 448,
South City
Delivery Office,
Cork City.

www.water.ie

11 January 2021

Re: CDS20007964 pre-connection enquiry - Subject to contract | Contract denied

Connection for Housing Development of 12 unit(s) at Church Glen, Ballylanders, Co. Limerick

Dear Sir/Madam,

Irish Water has reviewed your pre-connection enquiry in relation to a Water & Wastewater connection at Church Glen, Ballylanders, Co. Limerick (the **Premises**). Based upon the details you have provided with your pre-connection enquiry and on our desk top analysis of the capacity currently available in the Irish Water network(s) as assessed by Irish Water, we wish to advise you that your proposed connection to the Irish Water network(s) can be facilitated at this moment in time.

SERVICE	**OUTCOME OF PRE-CONNECTION ENQUIRY** **THIS IS NOT A CONNECTION OFFER. YOU MUST APPLY FOR A CONNECTION(S) TO THE IRISH WATER NETWORK(S) IF YOU WISH TO PROCEED.**
Water Connection	Feasible without infrastructure upgrade by Irish Water
Wastewater Connection	Feasible without infrastructure upgrade by Irish Water
SITE SPECIFIC COMMENTS	
Water Connection	This Confirmation of Feasibility to connect to the Irish Water infrastructure also does not extend to your fire flow requirements. In order to determine the potential flow that could be delivered during normal operational conditions, an on site assessment of the existing network is required. Please note that Irish Water cannot guarantee a flow rate to meet fire flow requirements and in order to guarantee a flow to meet the Fire Authority requirements, you should provide adequate fire storage capacity within your development.
Wastewater Connection	N/A

The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this development shall comply with the Irish Water Connections and Developer Services Standard Details and Codes of Practice that are available on the Irish Water website. Irish Water reserves the right to supplement these requirements with Codes of Practice and these will be issued with the connection agreement.

The map included below outlines the current Irish Water infrastructure adjacent to your site:

Reproduced from the Ordnance Survey of Ireland by Permission of the Government. License No. 3-3-34

Whilst every care has been taken in its compilation Irish Water gives this information as to the position of its underground network as a general guide only on the strict understanding that it is based on the best available information provided by each Local Authority in Ireland to Irish Water. Irish Water can assume no responsibility for and give no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided and does not accept any liability whatsoever arising from any errors or omissions. This information should not be relied upon in the event of excavations or any other works being carried out in the vicinity of the Irish Water underground network. The onus is on the parties carrying out excavations or any other works to ensure the exact location of the Irish Water underground network is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

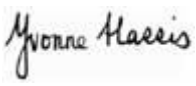
General Notes:

1) The initial assessment referred to above is carried out taking into account water demand and wastewater discharge volumes and infrastructure details on the date of the assessment. **The availability of capacity may change at any date after this assessment.**

2) This feedback does not constitute a contract in whole or in part to provide a connection to any Irish Water infrastructure. All feasibility assessments are subject to the constraints of the Irish Water Capital Investment Plan.
3) The feedback provided is subject to a Connection Agreement/contract being signed at a later date.
4) A Connection Agreement will be required to commencing the connection works associated with the enquiry this can be applied for at https://www.water.ie/connections/get-connected/
5) A Connection Agreement cannot be issued until all statutory approvals are successfully in place.
6) Irish Water Connection Policy/ Charges can be found at https://www.water.ie/connections/information/connection-charges/
7) Please note the Confirmation of Feasibility does not extend to your fire flow requirements.
8) Irish Water is not responsible for the management or disposal of storm water or ground waters. You are advised to contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges
9) To access Irish Water Maps email datarequests@water.ie
10) All works to the Irish Water infrastructure, including works in the Public Space, shall have to be carried out by Irish Water.

If you have any further questions, please contact John Hennessy from the design team on 022 52256 or email jhennessy@water.ie For further information, visit **www.water.ie/connections.**

Yours sincerely,



Yvonne Harris

Head of Customer Operations