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**LANDS AT ELMFIELD
9TH LOCK ROAD, CLONDALKIN
THORNMEADOW DEVELOPMENTS**

**LARGE RESIDENTIAL DEVELOPMENT
ENGINEERING SERVICES REPORT**

Prepared by GK, Consulting Engineers

Date: AUGUST 2026

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Project Preparation and Contact Person

08.2026

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Liam Gleeson – lgleeson@gkce.ie

Date



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1. INTRODUCTION & DESCRIPTION

GK Consulting Engineers have undertaken an assessment of proposed foul, surface water drainage & water supply infrastructure, associated with a proposed large residential development (LRD) at Elmfield. This report is prepared as part of an LRD Stage 3 application.



Image 1.1: Proposed site

Thornmeadow Developments Limited intend to apply for permission for a Large-Scale Residential Development on lands at the Securispeed Logistics site, Elmfield, Ninth Lock Road, Clondalkin, Dublin 22.

The proposed development will consist of the demolition of the existing warehouses and structures on site and the construction of a mixed-use residential-led development comprising a total of 408 no. residential units (403 apartments consisting of 24 no. studio units, 230 no. 1 bed units and 149 no. 2 bed units, and 5 no. 3 bed 2 storey houses) and 1 no. childcare facility. The residential units will comprise a mixture of apartments and own-door houses and range in height from 2-9 storeys. The proposed development will also comprise all associated car parking (205 no. spaces), cycle parking, refuse and storage areas, plant, landscaping, open space, boundary treatment, public lighting, ESB substations, and site and infrastructural works necessary to facilitate the proposed development.

There are existing industrial warehouse's & concrete hard standing on the site, which will be demolished to facilitate the new development.



1.1 SUSTAINABLE DRAINAGE OBJECTIVES

This report has been prepared using the following reference documents

- Greater Dublin Strategic Drainage Study;
- Greater Dublin Regional Code of Practice for Drainage Works – V6.0;
- Technical Guidance Document to Part H of the Building Regulations – Drainage and Waste Water Disposal – 2010;
- Department of the Environment – Recommendations for Site Development Works for Housing Areas;
- BRE 365 – Green Roofs and Façades;
- CIRIA C753 – The SuDS Manual; and

2. SITE CHARACTERISTICS

2.1 EXISTING LAND USE

The site is the location of an industrial estate with warehouse units, used for logistics & distribution. The existing buildings will be completely demolished and site cleared for the construction of the new development. There is also an existing concrete hardstanding which will be removed & softened with a new landscaping design.

The site covers a total area of approximately 2.32Ha.

Access to the site is from 9th Lock Rd on the western boundary. Boundaries to the West and the east are to housing & apartment developments. There are adjoining industrial and retail sites to the south and the north.

2.2 EXISTING SERVICES

Referring to South Dublin County Council utility maps (Appendix A), the existing site is serviced as follows:

Foul Sewer

The site is currently served by a 225mm diameter foul sewer flowing north off the site connecting to a 750mm diameter foul sewer on the New Nangor Rd.

Surface water

The existing building runoff from roof & hardstanding areas is collected by downpipes & gullies. The surface water from the site currently discharges to a 450mm diameter SW sewer. Flowing north off the site.

Watermain

There is an existing 200mm water main that runs along the 9th Lock rd. it is proposed to connect directly to this main via a new 200mm connection servicing the site.



2.3 GROUND CONDITIONS

A variable head permeability test was carried out by Causeway Geotech. Only one test location was identified, mainly due to the existing site use as a live logistics park. The test results failed. The site is not suitable for percolation or infiltrations. However, the soil classification index for the site is Warp 2. Further tests are recommended when the site is cleared. Some percolation is expected.

3. FOUL WATER DRAINAGE

3.1 PROPOSED FOUL LAYOUT

The existing 225mm diameter public foul sewer passes across the top left site corner. We propose to connect to this sewer with the new development outfall. New sewers will be located under main access roads in the new development and the necessary wayleaves provided. All proposed drainage works shall comply with Irish Water Standards.

Foul discharge calculations from the proposed development were issued to IW for the PCE

All proposed works affecting the public drainage system will be subject to detailed agreement with the water and drainage department of SDCC and with Irish Water. The individual pipe materials and gradients are chosen to ensure self-cleaning velocities (i.e. between minimum velocity 0.75m/sec)

A central spine 225 dia pipe network will service the 4 Blocks, ancillary pipes of 150 dia will connect ground floor units into the network. These will all outflow into a new connection to the existing 225 dia mains to the North West of the site. This 225 dia mains is subject to upgrade to a 300 dia following the recommendations in the COF.

3.2 ESTIMATION OF FOUL WATER FLOWS

Irish Water confirmation of feasibility, **CDS25008273** has been provided for 420 units & is attached to this report.

Irish water Dry Weather Flow (DWF):

Domestic wastewater flow calculation in accordance with the DWF method outline in Appendix B -Irish Water Wastewater Guidelines.

DWF(Dry Weather Flow)	446	l/dwelling/day
Number of dwelling units	409	
Occupancy ratio	2.7	People
Per capita consumption	150	l/person/day
Wastewater Volume	1094484	l/day
Average Discharge (24 hrs)	12.67	l/s
Average Discharge (10 hrs)	30.40	l/s

4. WATER SUPPLY**4.1 PROPOSED WATERMAIN LAYOUT**

Information obtained from Irish Water & South Dublin City County Council indicates the presence of a 200mmØ water main pipe running along the 9th Lock Rd. It is intended that a new connection will be made to this main. The proposed development will be served by a new 200mmØ water main pipe. This connection has been approved in the Irish Water confirmation of feasibility, **CDS25008273**.

4.2 WATER DEMAND

Reference is made to Irish Water Code of Practice for Water Infrastructure. Section 3.7.2, Average domestic daily demand in a development can be established based on daily per-capita consumption, house occupancy, number of properties, etc. For design purposes the average daily, domestic demand shall be based on a per-capita consumption of 150 l/person/day and an average occupancy ratio of 2.7 persons per dwelling unit. The average day/peak week demand should be taken as 1.25 times the average daily domestic demand.

Based on the Architects schedule of accommodation.

Number of Apartments	409	units
Daily Domestic Demand	150	l/person/day
Average Daily Domestic Demand	165645	litres/day
Peak Daily Demand	207056	litres/day
Peak hour Demand (10hr Day)	5.75156	l/s
Average Hour Demand (24hr Day)	1.91719	l/s



4.3 WATER STORAGE AND FIRE SUPPLY

Following consultation with IW *"In order to guarantee required fire flow, the Developer should provide adequate fire storage capacity within the Development with agreement of Local Fire Authority."* Typical specified a fire flow requirement is 25l/s for 1hr at 4 bar. Storage results in a requirement of 90 000l which will be provisioned as per IW specifications.

5. SUSTAINABLE DRAINAGE STRATEGY

Overall, the proposed approach for the management of rainfall runoff within the development is to ensure no increase in flood risk to any development within the site or elsewhere, with delivery of wider water quality, amenity and biodiversity benefits.

A full assessment and detailed SuDs system and design layout are detailed in the Surface Water Management Plan (SWMP). Further reference should be made to the SWMP.

6. FLOOD RISK ASSESSMENT

Guidelines for planning titled "The Planning System and Flood Risk Management" were published by the Department of Environment, Heritage and Local Government in 2009. This document identifies different flooding zones, appropriate development in these zones and how to conduct a flood risk assessment (FRA).

The guidelines include definitions of Flood zones A, B and C as described below. It should be noted that these do not account for flood defences as these can be breached or overtopped in extreme events, or in the case of demountable defences, not installed correctly.

Zone A: This is a zone where likelihood of flooding is greatest, with a risk greater than 1% (1 in 100 year) for fluvial and 0.5% (1 in 200 year) for coastal flooding.

Zone B: In this zone the likelihood of fluvial flooding is between 1% and 0.1% (1 in 100 year to 1 in 1000 year) and between 0.5% and 0.1% (1 in 200 year to 1 in 1000 year) for coastal flooding.

Zone C: In this zone the likelihood of flooding is less than 0.1% (1 in 1000 year) for both fluvial and coastal flooding. Such sites are suitable for all development from a flooding perspective.

Once a flood zone has been identified, the guidelines set out the types of development that are appropriate for each zone. Exemptions to the restrictions are provided for through the use of the justification test, where the planning need and the sustainable management of flood risk to an acceptable level must be demonstrated. Many towns and urban centres lie within flood risk zones and the avoidance of all future development in these areas would not be sustainable.

The guidelines set out a three stage approach to carrying out a FRA:

1. Flood Risk Identification:
2. Initial Flood Risk Assessment
3. Detailed Flood Risk Assessment

6.1 ASSESSMENT METHODOLOGY

A site-specific detailed flood risk modelling has been carried out by McCloy Consulting. The site falls into flood zone B, according to SDCC development plan SFRA mapping. The components considered in the identification and assessment of flood risk are:

- Tidal - flooding from high sea levels
- Fluvial - flooding from water courses
- Pluvial - flooding from rainfall / surface water
- Groundwater - flooding from springs/ raised groundwater
- Human/mechanical error - flooding due to human or mechanical error

Reference shall be made to McCloy Consulting assessment report.



APPENDIX

CONFIRMATION OF FEASIBILITY

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www.water.ie

17 December 2025

Our Ref: CDS25008273 Pre-Connection Enquiry
Elmfield Industrial Estate, Ninth Lock Road, Clondalkin, Dublin

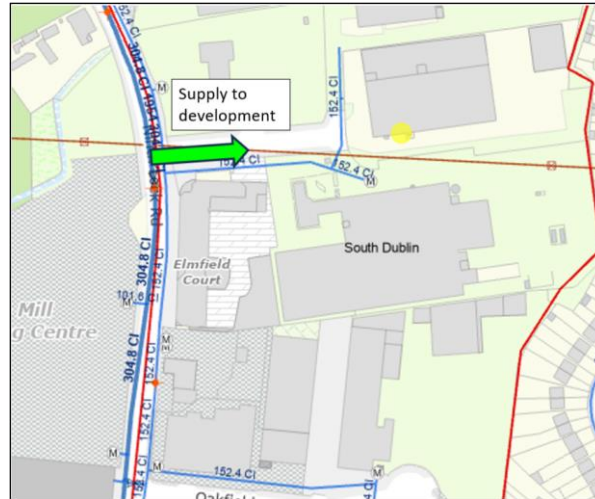
Dear Applicant/Agent,

We have completed the review of the Pre-Connection Enquiry.

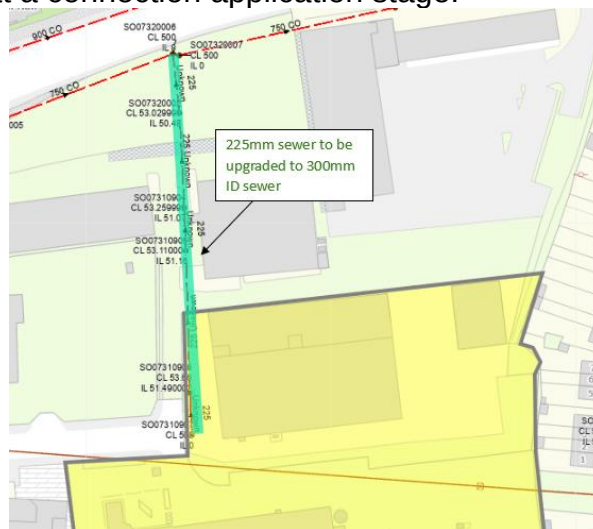
Uisce Éireann has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Multi/Mixed Use Development of 420 unit(s) at Elmfield Industrial Estate, Ninth Lock Road, Clondalkin, Dublin, (the **Development**).

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection** - Feasible without infrastructure upgrade by Uisce Éireann
- The Development can be supplied from the existing 12" AC trunk main on Ninth Lock Road.
Connection main to be a 200mm ID main connected to the trunk main, with a meter and associated telemetry installed on the connection line.



- **Wastewater Connection** - Feasible Subject to upgrades
 - In order to accommodate the proposed connection, upgrade of the existing 225mm sewer to 300mm ID pipe by approximately 150m is required.
 - In order for the works to be carried out on private lands, permission from the landowners will be required.
 - The Developer will be required to fund the upgrade works. The fee will be calculated at a connection application stage.



This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before the Development can be connected to our network(s) you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the

Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

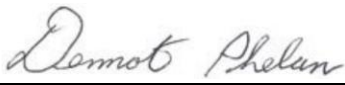
Where can you find more information?

- **Section A** - What is important to know?
- **Section B** - Details of Uisce Éireann's Network(s)

This letter is issued to provide information about the current feasibility of the proposed connection(s) to Uisce Éireann's network(s). This is not a connection offer and capacity in Uisce Éireann's network(s) may only be secured by entering into a connection agreement with Uisce Éireann.

For any further information, visit www.water.ie/connections, email newconnections@water.ie or contact 1800 278 278.

Yours sincerely,



Dermot Phelan
Connections and Developer Services

Section A - What is important to know?

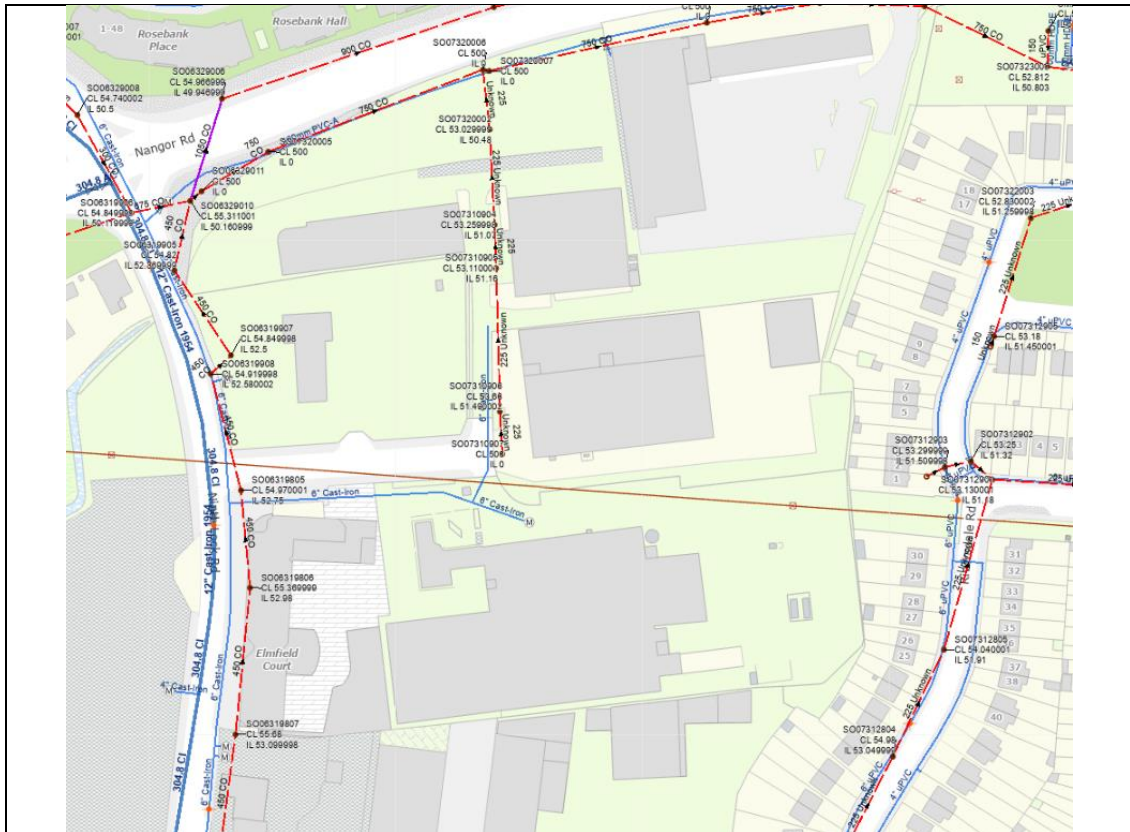
What is important to know?	Why is this important?
Do you need a contract to connect?	• Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Uisce Éireann's network(s). • Before the Development can connect to Uisce Éireann's network(s), you must submit a connection application <u>and be granted and sign</u> a connection agreement with Uisce Éireann.
When should I submit a Connection Application?	• A connection application should only be submitted after planning permission has been granted.
Where can I find information on connection charges?	• Uisce Éireann connection charges can be found at: https://www.water.ie/connections/information/charges/
Who will carry out the connection work?	• All works to Uisce Éireann's network(s), including works in the public space, must be carried out by Uisce Éireann*. *Where a Developer has been granted specific permission and has been issued a connection offer for Self-Lay in the Public Road/Area, they may complete the relevant connection works
Fire flow Requirements	• The Confirmation of Feasibility does not extend to fire flow requirements for the Development. Fire flow requirements are a matter for the Developer to determine. • What to do? - Contact the relevant Local Fire Authority
Plan for disposal of storm water	• The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • What to do? - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Uisce Éireann's network(s)?	• Requests for maps showing Uisce Éireann's network(s) can be submitted to: datarequests@water.ie

What are the design requirements for the connection(s)?	The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with <i>the Uisce Éireann Connections and Developer Services Standard Details and Codes of Practice</i>, available at www.water.ie/connections
Trade Effluent Licensing	- Any person discharging trade effluent** to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). - More information and an application form for a Trade Effluent License can be found at the following link: https://www.water.ie/business/trade-effluent/about/ **trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)

Section B – Details of Uisce Éireann’s Network(s)

The map included below outlines the current Uisce Éireann infrastructure adjacent the Development: To access Uisce Éireann Maps email

datarequests@water.ie



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Note: The information provided on the included maps as to the position of Uisce Éireann’s underground network(s) is provided as a general guide only. The information is based on the best available information provided by each Local Authority in Ireland to Uisce Éireann.

Whilst every care has been taken in respect of the information on Uisce Éireann’s network(s), Uisce Éireann assumes no responsibility for and gives no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided, nor does it accept any liability whatsoever arising from or out of any errors or omissions. This information should not be solely relied upon in the event of excavations or any other works being carried out in the vicinity of Uisce Éireann’s underground network(s). The onus is on the parties carrying out excavations or any other works to ensure the exact location of Uisce Éireann’s underground network(s) 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.

Design Settings

Frequency of use (kDU)	0.50	Minimum Velocity (m/s)	0.75
Flow per dwelling per day (l/day)	446	Connection Type	Level Inverts
Domestic Flow (l/s/ha)	0.0	Minimum Backdrop Height (m)	0.200
Industrial Flow (l/s/ha)	0.0	Preferred Cover Depth (m)	1.200
Additional Flow (%)	0	Include Intermediate Ground	✓

Adoptable Manhole Type

Max Width (mm)	Diameter (mm)	Max Width (mm)	Diameter (mm)
374	1200	749	1500
499	1350	900	1800

>900 Link+900 mm

Max Depth (m)	Diameter (mm)	Max Depth (m)	Diameter (mm)
1.500	1050	99.999	1200

Circular Link Type

Template	Freeform Carrier	Auto Increment (mm)	75
Shape	Circular	Follow Ground	x
Barrels	1		

Available Diameters (mm)

100 | 150

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.000	FW06	J1	40.545	1.500	52.850	52.445	0.405	100.0	100
1.002	J12	FW05	12.652	1.500	52.412	52.328	0.084	150.0	150
4.001	FW04	J7	15.837	1.500	52.575	52.417	0.158	100.0	225
1.008	FW03	J8	28.462	1.500	52.079	51.965	0.114	249.7	300
1.012	FW02	FW01	34.373	1.500	51.652	51.540	0.112	306.9	300
1.013	FW01	FW (Existing)	17.720	1.500	51.540	51.490	0.050	354.4	300
15.002	J02	J01	5.000	1.500	51.996	51.960	0.036	138.9	225
14.001	J01	FW02	27.145	1.500	51.950	51.677	0.273	99.4	225
18.002	FW02.4	FW02	28.398	1.500	52.300	51.677	0.623	45.6	225

Name	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.000	0.665	5.2	0.0	1.350	1.855	0.000	0	0.0	0.0	0	0.000
1.002	0.191	0.714	12.6	0.3	1.838	1.622	0.000	51	0.0	0.0	16	0.280
4.001	0.204	1.148	45.6	0.2	1.000	1.358	0.000	43	0.0	0.0	12	0.288
1.008	0.237	0.876	61.9	1.2	1.721	1.835	0.000	96	2.0	0.0	29	0.339
1.012	0.293	0.789	55.8	2.8	2.123	2.160	0.000	409	2.0	0.0	46	0.412
1.013	0.280	0.734	51.9	2.8	2.160	1.960	0.000	409	2.0	0.0	48	0.392
15.002	0.230	0.973	38.7	0.5	1.879	1.815	0.000	94	0.0	0.0	18	0.327
14.001	0.333	1.151	45.8	1.1	1.825	2.173	0.000	204	0.0	0.0	24	0.473
18.002	0.356	1.702	67.7	0.5	1.225	2.173	0.000	106	0.0	0.0	15	0.494

Links

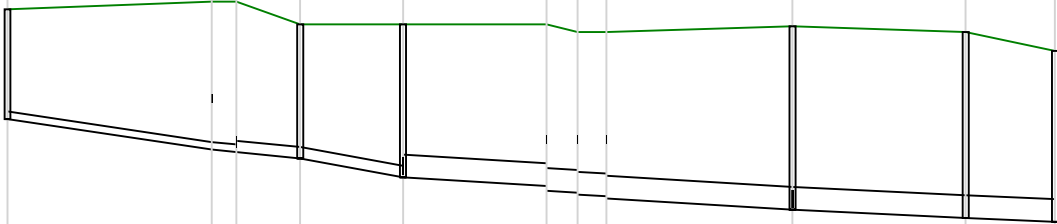
Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
18.001	FW02.5	FW02.4	14.463	1.500	52.575	52.300	0.275	52.6	225
14.000	IC1	J01	60.733	1.500	53.150	51.950	1.200	50.6	150
12.000_1	IC3	J02	16.478	1.500	53.150	52.000	1.150	14.3	150
13.000_2	IC2	J02	16.271	1.500	53.150	52.000	1.150	14.1	150
11.000_1	FW02.2	FW02.1	21.519	1.500	52.325	52.153	0.172	125.0	225
11.001	FW02.1	J02	19.641	1.500	52.153	51.996	0.157	125.0	225
1.001	J1	J12	4.875	1.500	52.445	52.412	0.033	150.0	100
13.000	IC9	J12	10.123	1.500	52.600	52.473	0.127	79.7	150
2.000	IC8	J1	2.325	1.500	53.100	53.071	0.029	80.0	100
1.003	FW05	FW03	20.386	1.500	52.328	52.079	0.249	81.9	150
5.000	IC11	J7	2.276	1.500	52.900	52.862	0.038	60.0	100
6.000	IC10	J6	1.717	1.500	52.700	52.671	0.029	60.0	100
4.002	J7	J6	6.389	1.500	52.417	52.353	0.064	100.0	225
4.003	J6	FW03	23.327	1.500	52.353	52.120	0.233	100.0	225
4.000	IC12	FW04	4.016	1.500	52.625	52.575	0.050	80.3	150
13.000_1	IC15	J10	13.613	1.500	52.700	52.530	0.170	80.1	100
12.000	IC14	J9	13.752	1.500	52.700	52.528	0.172	80.0	100
11.000	IC13	J8	13.648	1.500	52.700	52.529	0.171	79.8	100
1.009	J8	J9	6.145	1.500	51.900	51.875	0.025	245.8	300
1.010	J9	J10	5.753	1.500	51.850	51.827	0.023	250.1	300
1.011	J10	FW02	36.890	1.500	51.800	51.652	0.148	249.3	300
15.000	IC16	FW02.4	9.711	1.500	52.650	52.300	0.350	27.7	150

Name	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)	Pro Velocity (m/s)
18.001	0.257	1.585	63.0	0.3	0.900	1.225	0.000	50	0.0	0.0	11	0.377
14.000	0.362	1.233	21.8	0.6	1.200	1.900	0.000	110	0.0	0.0	17	0.511
12.000_1	0.361	2.322	41.0	0.2	1.200	1.950	0.000	32	0.0	0.0	7	0.535
13.000_2	0.363	2.337	41.3	0.2	1.200	1.950	0.000	32	0.0	0.0	7	0.539
11.000_1	0.147	1.026	40.8	0.1	1.550	1.622	0.000	20	0.0	0.0	8	0.198
11.001	0.165	1.026	40.8	0.2	1.622	1.879	0.000	30	0.0	0.0	10	0.228
1.001	0.053	0.542	4.3	0.0	1.855	1.888	0.000	1	0.0	0.0	3	0.072
13.000	0.237	0.981	17.3	0.3	1.750	1.777	0.000	50	0.0	0.0	13	0.344
2.000	0.074	0.744	5.8	0.0	1.200	1.229	0.000	1	0.0	0.0	3	0.100
1.003	0.234	0.968	17.1	0.3	1.622	1.871	0.000	51	0.0	0.0	13	0.340
5.000	0.051	0.860	6.8	0.0	1.000	1.038	0.000	1	0.0	0.0	3	0.116
6.000	0.051	0.860	6.8	0.0	1.200	1.229	0.000	1	0.0	0.0	3	0.116
4.002	0.204	1.148	45.6	0.2	1.358	1.422	0.000	44	0.0	0.0	12	0.288
4.003	0.204	1.148	45.6	0.2	1.422	1.755	0.000	45	0.0	0.0	12	0.288
4.000	0.223	0.978	17.3	0.2	1.225	1.075	0.000	43	0.0	0.0	12	0.321
13.000_1	0.074	0.743	5.8	0.0	1.200	1.370	0.000	1	0.0	0.0	3	0.100
12.000	0.074	0.744	5.8	0.0	1.200	1.372	0.000	1	0.0	0.0	3	0.100
11.000	0.074	0.745	5.8	0.0	1.200	1.471	0.000	1	0.0	0.0	3	0.100
1.009	0.239	0.883	62.4	1.2	1.900	1.825	0.000	97	2.0	0.0	29	0.342
1.010	0.243	0.875	61.8	1.2	1.850	1.873	0.000	98	2.0	0.0	30	0.343
1.011	0.243	0.876	61.9	1.2	1.900	2.123	0.000	99	2.0	0.0	30	0.344
15.000	0.200	1.667	29.5	0.1	1.200	1.300	0.000	10	0.0	0.0	5	0.285

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
18.000	IC17	FW02.5	9.083	1.500	52.650	52.575	0.075	121.1	150

Name	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)	Pro Velocity (m/s)
18.000	0.202	0.795	14.1	0.3	1.200	0.975	0.000	50	0.0	0.0	14	0.296

Node Name		FW06	J1 J12	FW05	FW03	J8 J9 J10	FW02	FW01	FW (Existing)
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000									
	Link Name	1.000	1.001	1.002	1.003	1.008	1.010	1.011	1.012
	Section Type	100mm	100mm	150mm	150mm	300mm	300mm	300mm	300mm
	Slope (1:X)	100.0	100.0	150.0	81.9	249.7	242.5	249.3	306.9
	Cover Level (m)	54.300	54.400	54.400	54.100	54.100	54.000	54.000	54.000
	Invert Level (m)	52.850	52.445	52.412	52.328	52.079	51.652	51.652	51.540
Length (m)		40.545	4.12	6.5	20.386	28.462	6.157	36.890	34.373

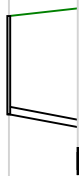
Node Name	108
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 48.000	
Link Name	2
Section Type	1
Slope (1:X)	8
Cover Level (m)	54.400
Invert Level (m)	53.071 53.100
Length (m)	2

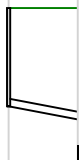
Node Name	IC9	J12
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 48.000		
Link Name	13.0	
Section Type	150r	
Slope (1:X)	79.7	
Cover Level (m)	54.500	54.400
Invert Level (m)	52.600 52.473	
Length (m)	10.1	

Node Name		IC1W04	J7	J6	FW03
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000					
	Link Name	4. 4.001	4.0	4.003	
	Section Type	1:225mm	225mm	225mm	
	Slope (1:X)	8(100.0	10(100.0	100.0	
	Cover Level (m)	54.000 53.800	54.000 54.000		54.100
Invert Level (m)		52.575 52.575	52.417 52.353	52.353	52.120
Length (m)		4.15.837	6.3	23.327	

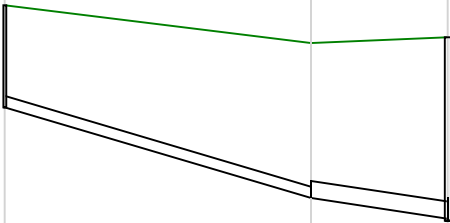
Node Name	1071
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000	
Link Name	5
Section Type	1
Slope (1:X)	6
Cover Level (m)	54.000
Invert Level (m)	52.862 52.900
Length (m)	2

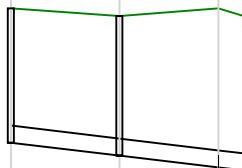
Node Name		1010
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000		
Link Name		6
Section Type		1
Slope (1:X)		6
Cover Level (m)		54.000
Invert Level (m)		52.671 52.700
Length (m)		1

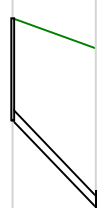
Node Name	IC13 J8	
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000		
	Link Name	11.000
	Section Type	100mm
	Slope (1:X)	79.8
	Cover Level (m)	54.000
Invert Level (m)	52.700	52.529
Length (m)	13.648	

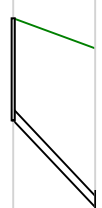
Node Name	IC14 J9	
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000		
Link Name	12.000	
Section Type	100mm	
Slope (1:X)	80.0	
Cover Level (m)	54.000	54.000
Invert Level (m)	52.700	52.528
Length (m)	13.752	

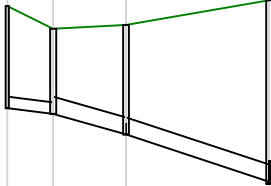
Node Name	IC15 J10	
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000		
	Link Name	13.000
	Section Type	100mm
	Slope (1:X)	80.1
	Cover Level (m)	54.000
Invert Level (m)	52.700	52.530
Length (m)	13.613	

Node Name	IC1	J01	FW02
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000			
	14.000	14.001	
	150mm	225mm	
	50.6	99.4	
	54.500	54.000	54.075
Invert Level (m)	53.150	51.950 51.950	51.677
Length (m)	60.733	27.145	

Node Name	FW02.2	FW02.1	J0201
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000			
Link Name	11.000_1	11.001	15
Section Type	225mm	225mm	22
Slope (1:X)	125.0	125.0	13
Cover Level (m)	54.100	54.000	54.100 54.000
Invert Level (m)	52.325 52.153	52.153	51.996 51.968
Length (m)	21.519	19.641	5.0

Node Name		IC3	J02
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000			
		12.000	
		150mm	
		14.3	
		54.500	54.100
Invert Level (m)		53.150 52.000	
Length (m)		16.478	

Node Name		IC2	J02
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000			
		13.000	
		150mm	
		14.1	
		54.500	54.100
Invert Level (m)		53.150 52.000	
Length (m)		16.271	

Node Name	IC17FW02.FW02.4FW02			
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000				
	Link Name	18.018.001	18.002	
	Section Type	150i225mm	225mm	
	Slope (1:X)	121	52.6	45.6
	Cover Level (m)	54.000	53.700	53.750
Invert Level (m)		52.650	52.575	52.300
		52.650	52.300	51.677
Length (m)		9.0814.463	28.398	

Node Name	IC16FW02.4	
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 47.000		
Link Name	15.0	
Section Type	150r	
Slope (1:X)	27.7	
Cover Level (m)	54.000	53.750
Invert Level (m)	52.650	52.300
Length (m)	9.71	



CAUSEWAY
GEOTECH



25-0862

ELMFIELD, CLONDALKIN GROUND INVESTIGATION REPORT

Client:
BLUEMONT

Clients Representative
GKCE

Date:
AUGUST 2025

Status:
FINAL

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DOCUMENT CONTROL SHEET

REPORT NO:		25-0862			
PROJECT TITLE:		ELMFIELD, CLONDALKIN			
CLIENT:		BLUEMONT			
CLIENTS REPRESENTATIVE:		GKCE			
REVISION:	A00	STATUS	FINAL	ISSUE DATE	08/08/2025
PREPARED BY:		REVIEWED BY:		APPROVED BY:	
					
Gabriella Horan BSc Earth Science		Matthew Graham BEng(Hons) MIEI		Matthew Gilbert MEarthSci PGeo FGS	

This report presents a factual account of the ground investigation in accordance with the Specification and Related Documents for Ground Investigation in Ireland 2nd Edition, published by Engineers Ireland (2016).



METHODS OF DESCRIBING SOILS AND ROCKS

Soil and rock descriptions are based on the guidance in BS5930:2015+A1:2020, The Code of Practice for Ground Investigation.

Abbreviations used on exploratory hole logs	
U	Nominal 100mm diameter undisturbed open tube sample (thick walled sampler).
UT	Nominal 100mm diameter undisturbed open tube sample (thin walled sampler).
P	Nominal 100mm diameter undisturbed piston sample.
B	Bulk disturbed sample.
LB	Large bulk disturbed sample.
SB	Sonic bulk disturbed sample.
D	Small disturbed sample.
C	Core sub-sample (displayed in the Field Records column on the logs).
L	Liner sample from dynamic sampled borehole.
W	Water sample.
ES / EW	Soil sample for environmental testing / Water sample for environmental testing.
SPT (s)	Standard penetration test using a split spoon sampler (small disturbed sample obtained).
SPT (c)	Standard penetration test using 60 degree solid cone.
(x,x/x,x,x,x,x)	Blows per increment during the standard penetration test. The initial two values relate to the seating drive (150mm) and the remaining four to the 75mm increments of the test length.
(Y for Z/ Y for Z)	Incomplete standard penetration test where the full test length was not achieved. The blows 'X' represent the total blows for the given seating or test length 'Z' (mm).
N=X	SPT blow count 'N' given by the summation of the blows 'X' required to drive the full test length (300mm).
HVP / HVR	Uncorrected in situ hand vane peak (HVP) and residual (HVR) result presented in kPa. Vane calibration factor has been applied, but no correction made for soil type.
V VR	Shear vane test (borehole). Shear strength stated in kPa. V: undisturbed vane shear strength VR: remoulded vane shear strength
Soil consistency description	In cohesive soils, where samples are disturbed and there are no suitable laboratory tests, N values may be used to indicate consistency on borehole logs – a median relationship of $N \times 5 = C_u$ is used (as set out in Stroud & Butler 1975).
dd-mm-yyyy	Date at the end and start of shifts, shown at the relevant borehole depth. Corresponding casing and water depths shown in the adjacent columns.
▽	Water strike: initial depth of strike.
▼	Water strike: depth water rose to.
Abbreviations relating to rock core – reference Clause 36.4.4 of BS 5930: 2015+A1:2020	
TCR (%)	Total Core Recovery: Ratio of rock/soil core recovered (both solid and non-intact) to the total length of core run.
SCR (%)	Solid Core Recovery: Ratio of solid core to the total length of core run. Solid core has a full diameter, uninterrupted by natural discontinuities, but not necessarily a full circumference and is measured along the core axis between natural fractures.
RQD (%)	Rock Quality Designation: Ratio of total length of solid core pieces greater than 100mm to the total length of core run.
FI	Fracture Index: Number of natural discontinuities per metre over an indicated length of core of similar intensity of fracturing.
NI	Non Intact: Used where the rock material was recovered fragmented, for example as fine to coarse gravel size particles.
AZCL	Assessed zone of core loss: The estimated depth range where core was not recovered.
DIF	Drilling induced fracture: A fracture of non-geological origin brought about by the rock coring.
(xxx/xxx/xxx)	Spacing between discontinuities (minimum/average/maximum) measured in millimetres.

1 AUTHORITY

On the instructions of GKCE, (the “Client’s Representative”), acting on the behalf of Bluemont (the “Client”), a ground investigation was undertaken at the site to provide geotechnical information for input to the design and construction of a proposed development.

This report details the work carried out both on site; it contains a description of the site, the works undertaken, and the exploratory hole logs.

All information given in this report is based upon the ground conditions encountered during the ground investigation works, and on the results of the field tests performed. However, there may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions between or below exploratory holes. It should be noted that groundwater levels usually vary due to seasonal and/or other effects and may at times differ to those recorded during the investigation. No responsibility can be taken for conditions not encountered through the scope of work commissioned, for example between exploratory hole points, or beneath the termination depths achieved.

This report was prepared by Causeway Geotech Ltd for the use of the Client in response to a particular set of instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

2 PURPOSE, RATIONALE & SCOPE OF THE INVESTIGATION

The purpose of this investigation is to assess the ground conditions and to allow an evaluation of the geotechnical issues with the current site and proposed development.

The rationale has been determined by the Client, with the extent of the investigation including boreholes, rock core, in-situ testing, and the preparation of a factual account of the ground investigation findings.

3 DESCRIPTION OF SITE

The site is located at Irish Transverse Mercator 707057, 731937 on the site of an industrial estate, located in Clondalkin Dublin 22. The site location is presented in Appendix A and a summary of the surrounding land uses is provided in Table 1.

Table 1: Summary of surrounding land uses

Location	Description
North	Commercial premises, R134, Grand Canal, industrial estate.
East	Residential estate, Watery Lane, public green space, Woodford Walk.
South	Industrial premises, residential premises, educational premises.
West	Public green space, R134, educational premises, residential premises.

4 SITE OPERATIONS

4.1 SUMMARY OF SITE WORKS

Site operations, which were conducted between 08/07/2025 and 14/07/2025, comprised:

- One light cable percussion borehole
- One rotary drilled borehole
- in-situ testing, including:
 - Standard Penetration Tests
 - Variable Head Permeability testing in one borehole

The exploratory holes and in-situ tests were located as instructed by the Client, and as shown on the exploratory hole location plan in Appendix A.

4.2 BOREHOLES

A total of two boreholes were put down in a minimum diameter of 150mm through soils and rock strata to their completion depths by a combination of methods, including light cable percussion boring by a Dando 2000 rig and rotary drilling by a Comacchio 405 tracked rotary drilling rig.

The borehole logs state the methodology and plant used for each location, as well as the appropriate depth ranges.

A summary of the boreholes, subdivided by category in accordance with the methods employed for their completion, is presented in the following sub-sections.

4.2.1 LIGHT CABLE PERCUSSION BOREHOLE

One borehole (BH01) was put down to completion in minimum 200mm diameter using a Dando 2000 light cable percussion boring rig. The borehole was terminated on encountering virtual refusal on obstructions, such as large boulders or weathered bedrock.

Hand dug inspection pit were carried out between ground level and 1.20m depth to ensure the borehole was put down at locations clear of services or subsurface obstructions.

Disturbed (bulk and small tub) samples were taken within the encountered strata.

Any water strikes encountered during boring were recorded along with any changes in their levels as the borehole proceeded.

Appendix B presents the borehole log.

4.2.2 ROTARY DRILLED BOREHOLE

One borehole (BHRC01) was put to its completion by rotary drilling techniques only. The borehole was completed using a Comacchio 405 tracked rotary drilling rig.



Hand dug inspection pit were carried out between ground level and 1.20m depth to ensure the borehole was put down at locations clear of services or subsurface obstructions.

Symmetrix-cased full hole rotary percussive drilling techniques were employed to advance the boreholes to bedrock, after which rotary coring was employed to recover core samples of the bedrock. SPTs were carried out at standard intervals throughout the overburden, with small and bulk disturbed samples obtained where possible through the soil strata.

Where coring was carried out within bedrock strata, Geobor S Coring was used. The core was extracted in up to 1.50m lengths using an SK6L core barrel, which produced core of nominal 102mm diameter, and was placed in single channel wooden core boxes.

The core was subsequently photographed and examined by a qualified and experienced Engineering Geologist, thus enabling the production of an engineering log in accordance with BS 5930: 2015+A1:2020: Code of practice for ground investigations.

Appendix B presents the borehole log, with core photographs presented in Appendix C.

4.3 STANDARD PENETRATION TESTS

Standard penetration tests were carried out in accordance with BS EN 22476-3:2005+A1:2011 (BSI, 2011) at standard depth intervals using the split spoon sampler (SPT_(s)) or solid cone attachment (SPT_(c)). The penetrations are stated for those tests for which the full 150mm seating drive or 300mm test drive was not possible.

The N-values provided on the borehole logs are uncorrected and no allowance has been made for energy ratio corrections. The SPT hammer energy measurement report is provided in Appendix E.

4.4 VARIABLE HEAD PERMEABILITY TESTING

One in-situ permeability test was carried out in BH01 by variable head permeability methods, following development of the wells. Testing was carried out in accordance with the guidance as set out in BS EN ISO 22282-2: 2012 (BSI, 2012).

Appendix D presents the results and analysis of the variable head permeability tests.

5 GROUND CONDITIONS

5.1 GENERAL GEOLOGY OF THE AREA

Published geological mapping from the online Geological Survey Ireland spatial resources database indicate the superficial deposits underlying the site comprise of till derived from Limestone. These deposits are shown to be underlain by dark limestone and shale of the Lucan Formation.

5.2 GROUND TYPES ENCOUNTERED DURING INVESTIGATION OF THE SITE

A summary of the ground types encountered in the exploratory holes is listed below, in approximate stratigraphic order:



- **Made Ground (fill):** sandy gravelly clay/silt fill extending to a depth of 0.70-1.10m.
- **Glacial Till:** stiff to very stiff sandy gravelly clay. Medium cobble content was noted in BHRC01.
- **Bedrock (Limestone):** Rockhead was encountered at 2.50m in BHRC01.

Further details of these ground types, including their specific depths and descriptions, can be found on the individual exploratory hole logs accompanying this report.

5.3 GROUNDWATER

Groundwater was not noted during drilling at either of the exploratory hole locations. However, it should be noted that the casing used in supporting the borehole walls during drilling may have sealed out any groundwater strikes and the possibility of encountering groundwater during excavation works should not be ruled out.

Furthermore, any groundwater strikes within bedrock may have been masked by the fluid used as the drilling flush medium.

Seasonal variation in groundwater levels should also be factored into design considerations.



6 REFERENCES

British Standards Institute (BSI). (2007) BS EN 1997-2:2007: Eurocode 7 – Geotechnical Design – Part 2: Ground investigation and testing.

British Standards Institute (BSI). (2011) BS EN ISO 22476-3:2006+A1:2011 Geotechnical investigation and testing. Field testing – Standard penetration test.

British Standards Institute (BSI). (2018a) BS EN ISO 14688-1:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 1 Identification and description.

British Standards Institute (BSI). (2018b) BS EN ISO 14688-2:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 2 Principles for a classification.

British Standards Institute (BSI). (2018c) BS EN ISO 14689-1:2018: Geotechnical investigation and testing. Identification and classification of rock. Identification and description.

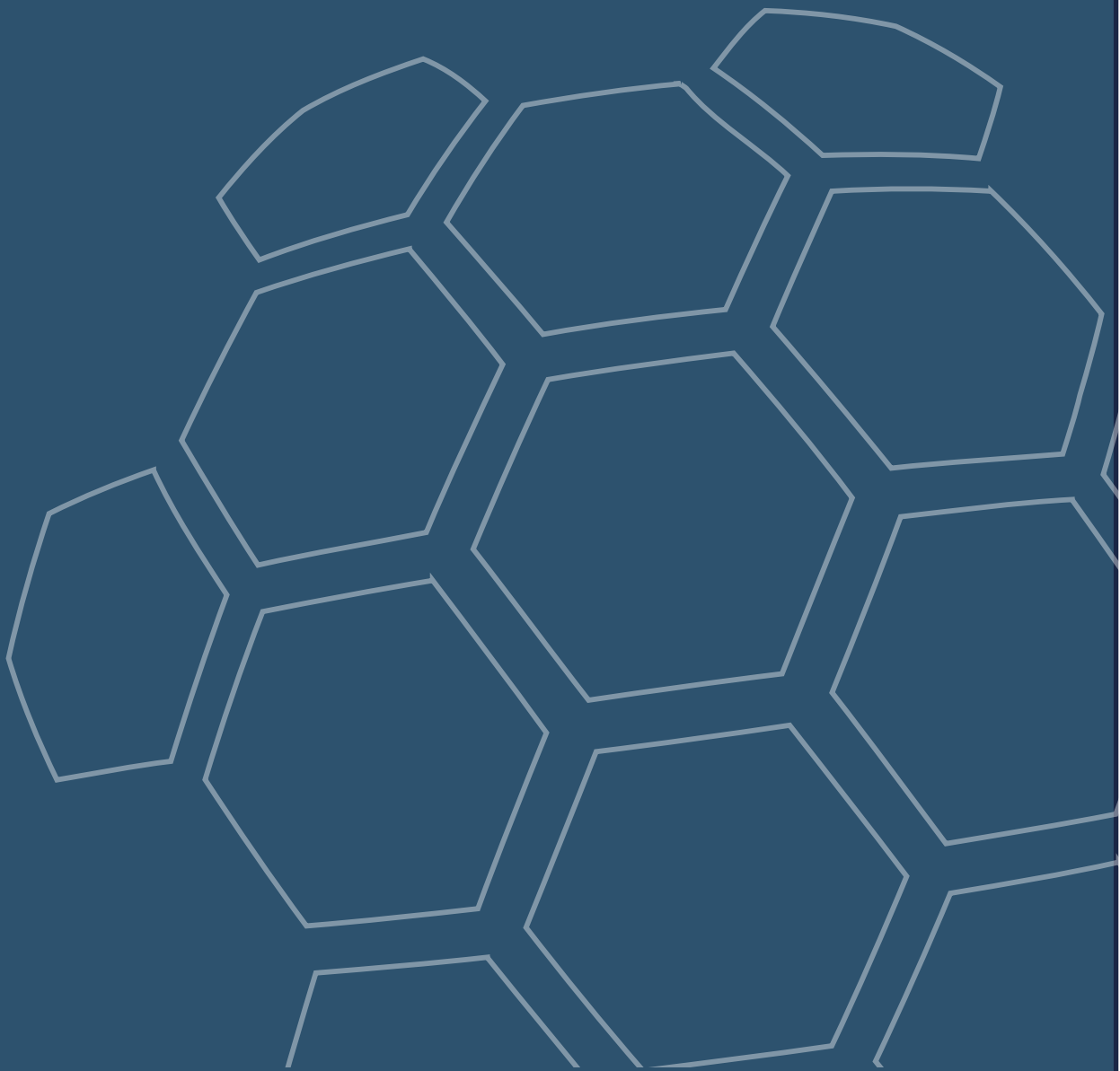
British Standards Institute (BSI). (2020) BS5930:2015+A1:2020: Code of practice for ground investigations.

Geotechnical Society of Ireland. (2016) Specification and Related Documents for Ground Investigation in Ireland. 2nd Edition. Engineers Ireland.

International Society for Rock Mechanics (ISRM). (2007) The complete ISRM suggested methods for rock characterization, testing and monitoring.



APPENDIX A – SITE AND EXPLORATORY HOLE LOCATION PLANS





Legend Key	
Project No.	25-0862
Client	Bluemont
Client's Rep	GKCE
Site Location Plan	
Elmfield, Clondalkin	
	
Last Revision	08/08/2025
Scale	1:10000



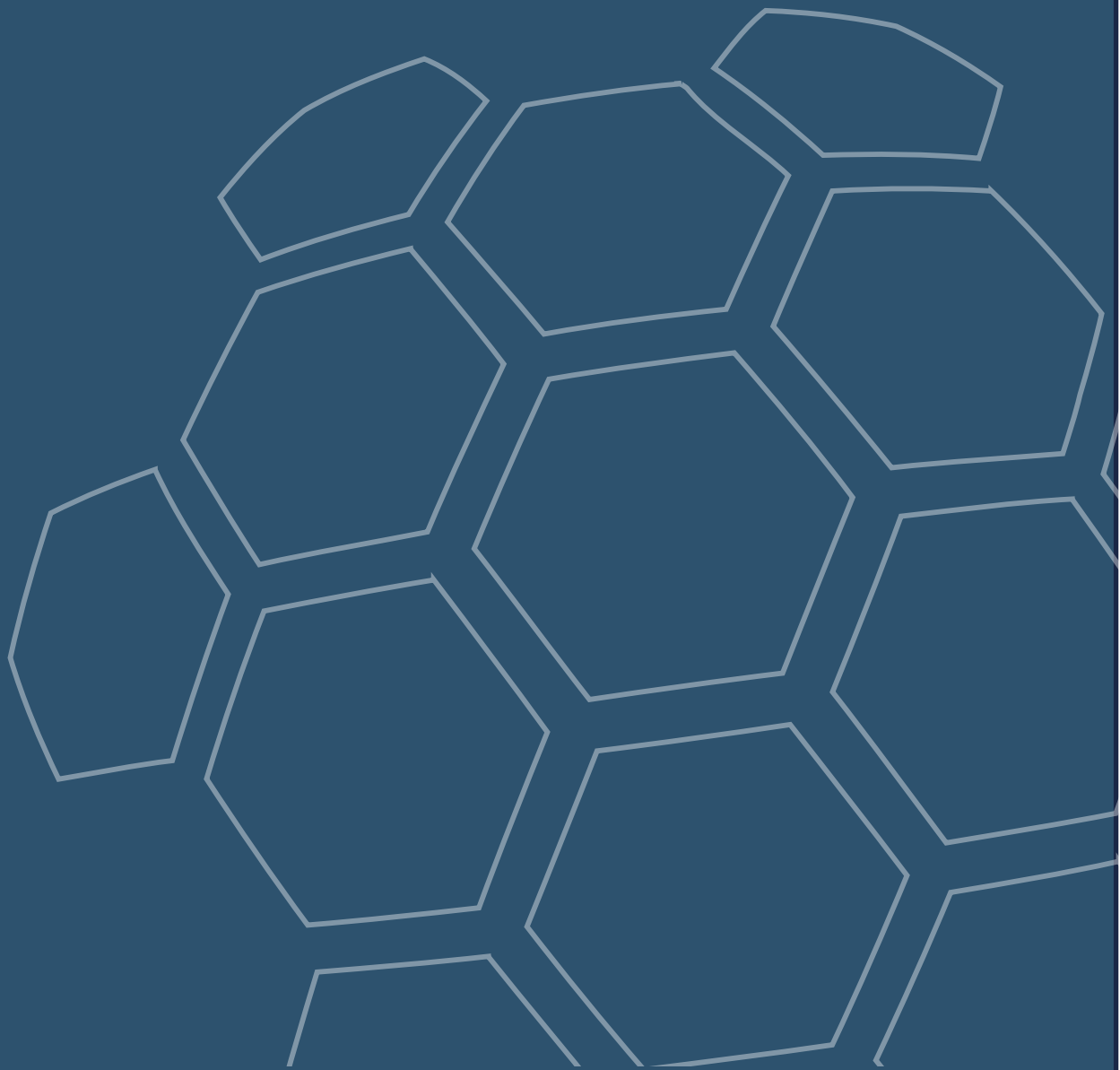
Legend Key

- Locations By Type - CP
- Locations By Type - RC

Boreholes are approximate and generated using logging software.

Project No.	25-0862
Client	Bluemont
Client's Rep	GKCE
Site Location Plan	
Elmfield, Clondalkin	
	
Last Revision	08/08/2025
Scale	1:1000

APPENDIX B – BOREHOLE LOGS





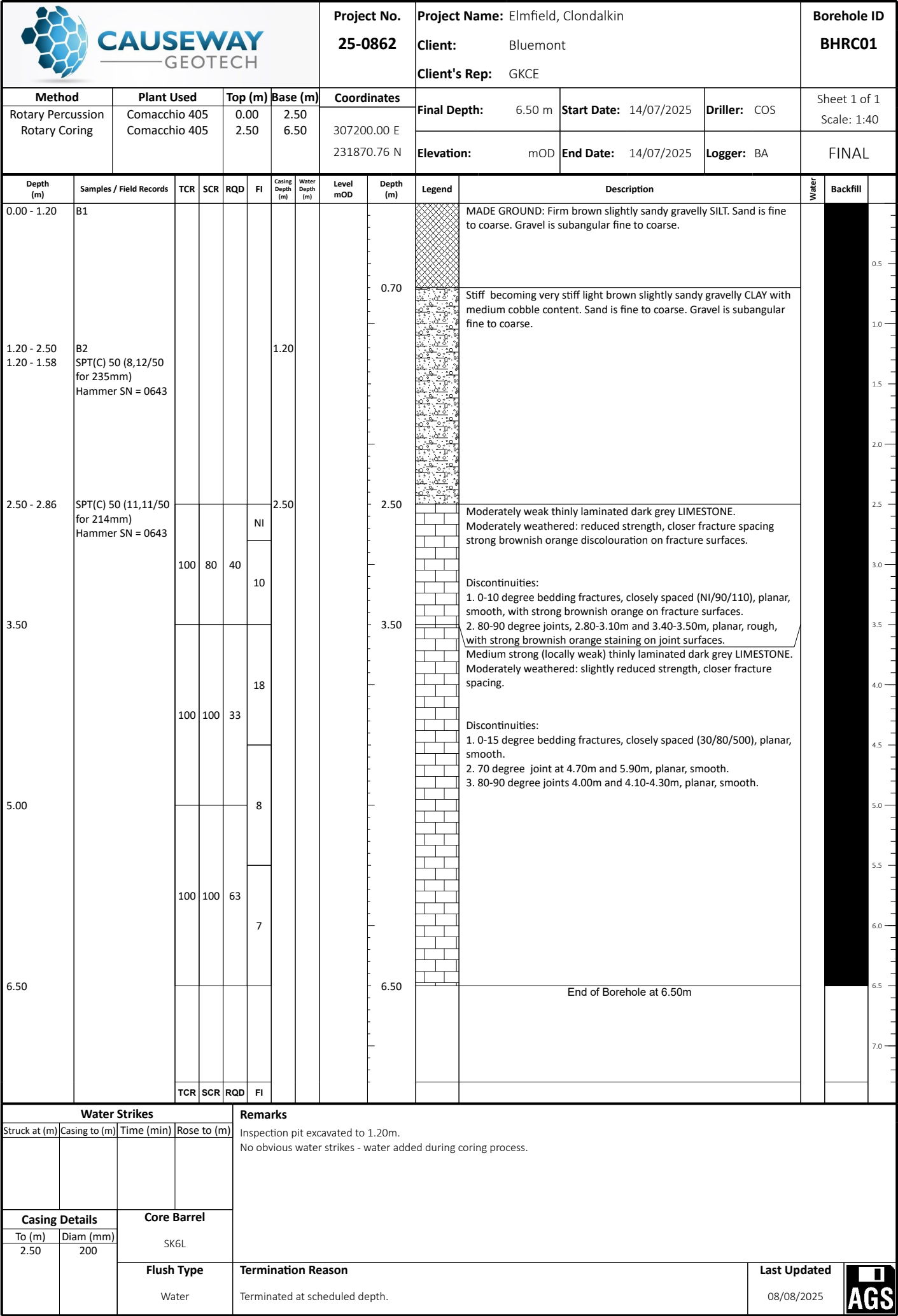
Borehole ID
BH01

Sheet 1 of 1
Scale: 1:40

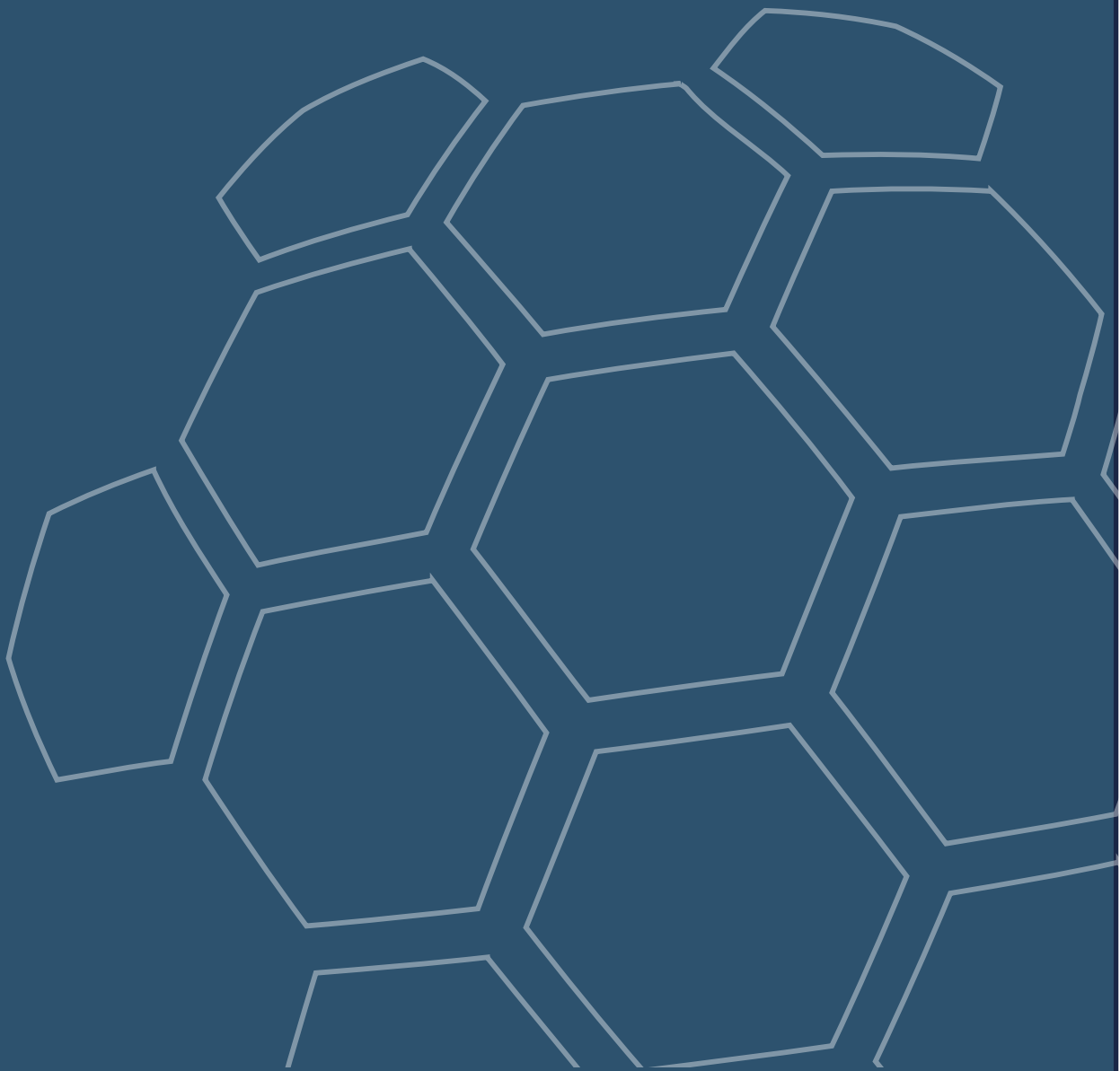
FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill			
0.50 - 1.00	B1	N=15 (3,3/4,3,4,4) Hammer SN = 1529	0.00	Dry		1.10		MADE GROUND: Firm greyish brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse.					
1.20 - 1.45	D4						N=21 (4,4/4,5,5,7) Hammer SN = 1529	2.00			Dry		Firm becoming stiff brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse.
1.20 - 1.65	SPT (S)												
1.65 - 2.00	B2												
2.00	D3	50 (25 for 20mm/50 for 25mm) Hammer SN = 1529	3.00	Dry		2.80		Stiff grey slightly sandy slightly gravelly CLAY with high cobble content. Sand is fine to coarse,. Gravel is subangular fine to coarse. Cobbles are angular.					
2.00 - 2.45	D5												
2.00 - 2.45	SPT (S)												
2.80 - 3.00	B6												
3.00	D7	50 (25 for 20mm/50 for 25mm) Hammer SN = 1529	3.00	Dry		3.00		End of Borehole at 3.00m					
3.00 - 3.04	SPT (C)												

Water Strikes				Chiselling Details			Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	Inspection pit hand dug to 1.20m.			
				2.80	3.00	01:00				
Casing Details		Water Added								
To (m)	Diameter	From (m)	To (m)							
3.00	200						Termination Reason		Last Updated	AGS
Terminated on boulder/possible bedrock.						08/08/2025				



APPENDIX C – CORE PHOTOGRAPHS





BHRC01 Box 1 2.50-3.50m

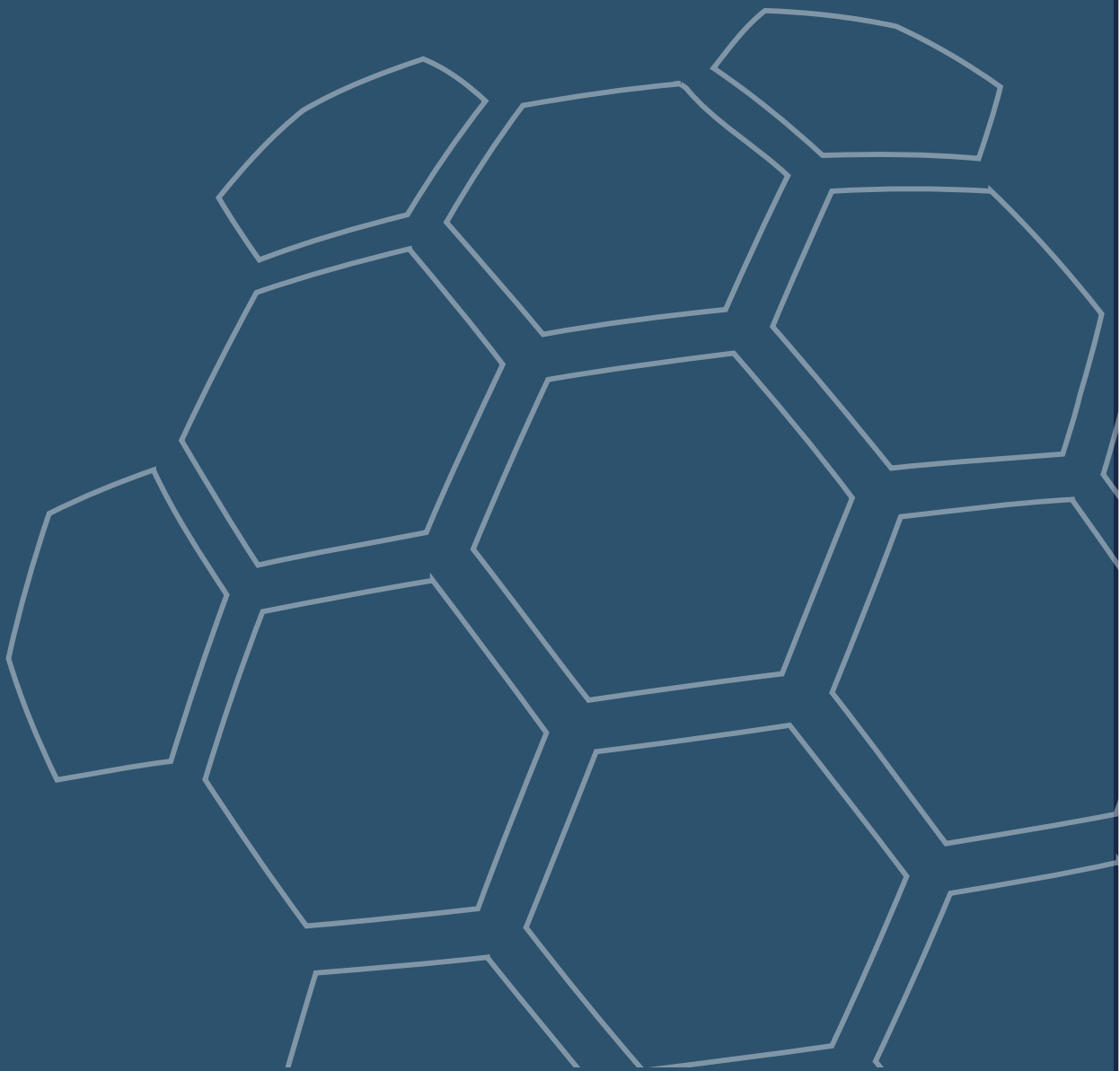


BHRC01 Box 2 3.50-5.00m



BHRC01 Box 3 5.00-6.50m

APPENDIX D – VARIABLE HEAD PERMEABILITY TEST RESULTS



VARIABLE HEAD PERMEABILITY TEST (BOREHOLE)

Project Name: Elmfield Clondalkin

Borehole No.: BH01

Project No.: 25-0862

Test No.: 1

Test Date: 08.07.25

Type of test: Falling Head



Diameter of casing (D):	0.20m
Height of top of casing above ground level:	0.25m
Depth to bottom of casing below ground level:	1.00m
Depth to bottom of borehole below ground level:	2.00m
Length of the test section (L):	1.00m
Standing ground water level (SWL) below ground level:	Dry

CALCULATION OF PERMEABILITY:

Employing Horslev Method (1951)

$$k = \frac{2.3A}{F(t_2 - t_1)} \log \frac{h_1}{h_2}$$

where: k is the permeability of soil

A is the cross-section area of borehole/standpipe

F is the shape factor (see below)

h_1 and h_2 are the hydraulic heads measured respectively at the times t_1 (start of test) and t_2 (0.37 head reached)

Values for the shape factor (F) are given for various conditions (cases A-E) in Annex B of BS EN ISO 22282-1:2012

L/D is 5.0, so Case D is assumed, therefore:

$$F = (2\pi * L) / (LN((L/D) + \sqrt{(L/D)^2 + 1}))$$

i.e. $F = 2.72 \text{ (m)}$

$A = 0.031 \text{ (m}^2\text{)}$

$h_1 = 2.05 \text{ (m)}$

$h_2 = 0.76 \text{ (m)}$

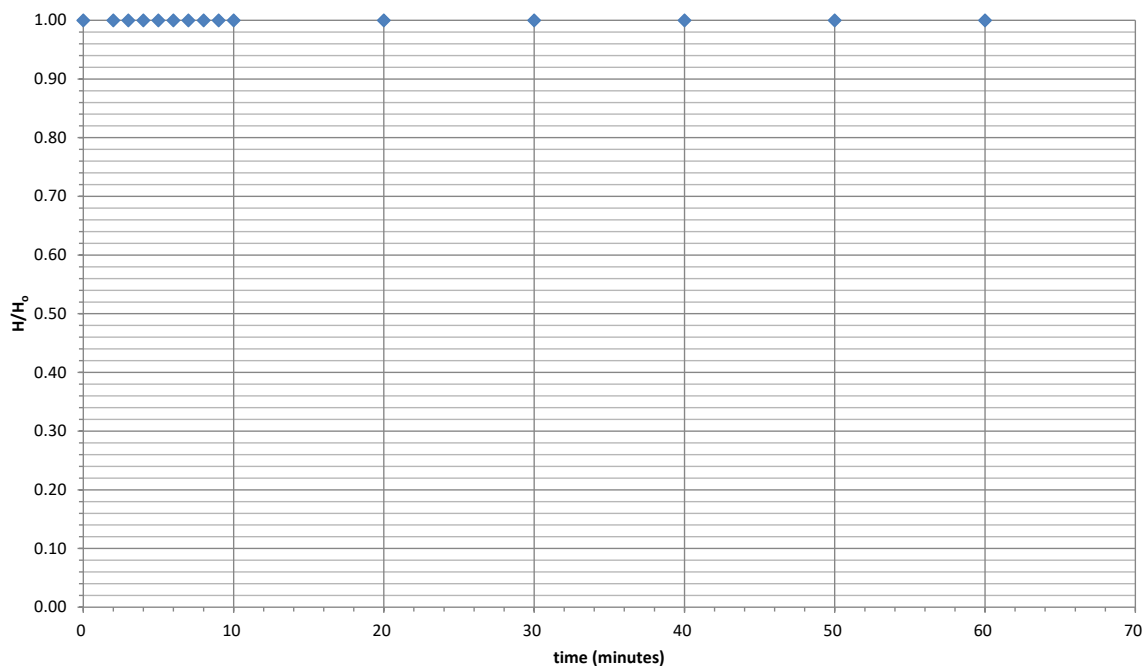
$t_1 = 0 \text{ (s)}$

$t_2 = 420 \text{ (s)}$

Permeability unable to be calculated due to water not dropping to 37% of initial Head

DATUM: Water level measured from top of casing, i.e. SWL is 2.25m below datum

TIME ELAPSED (mins)	WATER LEVEL (m)	HEAD H (m)	HEAD RATIO H/H ₀
0	0.20	2.05	1.00
2	0.20	2.05	1.00
3	0.20	2.05	1.00
4	0.20	2.05	1.00
5	0.20	2.05	1.00
6	0.20	2.05	1.00
7	0.20	2.05	1.00
8	0.20	2.05	1.00
9	0.20	2.05	1.00
10	0.20	2.05	1.00
20	0.20	2.05	1.00
30	0.20	2.05	1.00
40	0.20	2.05	1.00
50	0.20	2.05	1.00
60	0.20	2.05	1.00



APPENDIX E – SPT HAMMER ENERGY MEASUREMENT REPORT



Causeway Geotech LTD
8 Drumahiskey Road
Ballymoney
Co Antrim
BT53 7QL

SPT Hammer Ref: 0643
 Test Date: 03/03/2025
 Report Date:
 File Name: 0643.spt
 Test Operator: CD



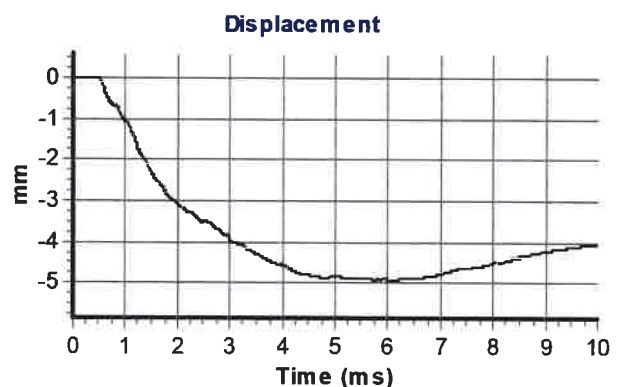
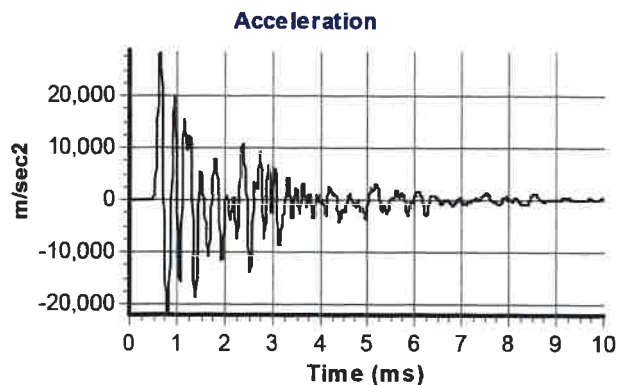
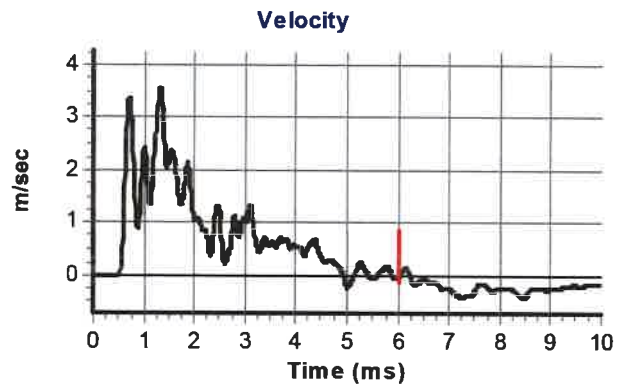
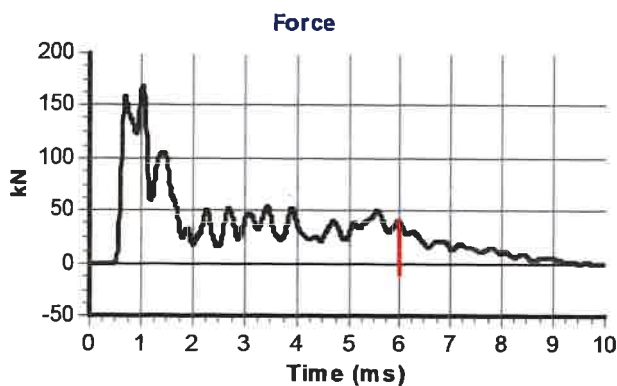
Instrumented Rod Data

Diameter d_r (mm): 54
 Wall Thickness t_r (mm): 6.4
 Rod Length l_r (m): 1.0
 Assumed Modulus E_a (GPa): 208
 Accelerometer No.1: 78855
 Accelerometer No.2: 78856

SPT Hammer Information

Hammer Mass m (kg): 63.5
 Falling Height h (mm): 760
 SPT String Length L (m): 10.0

Comments / Location



Calculations

Area of Rod A (mm^2): 957
 Theoretical Energy E_{theor} (J): 473
 Measured Energy E_{meas} (J): 363

Energy Ratio E_r (%): 77

Signed: Colin Dunlop
 Title: Plant Manager

Causeway Geotech LTD
8 Drumahiskey Road
Ballymoney
Co Antrim
BT53 7QL

SPT Hammer Ref: 1529
 Test Date: 07/03/2025
 Report Date:
 File Name: 1529.spt
 Test Operator: CD



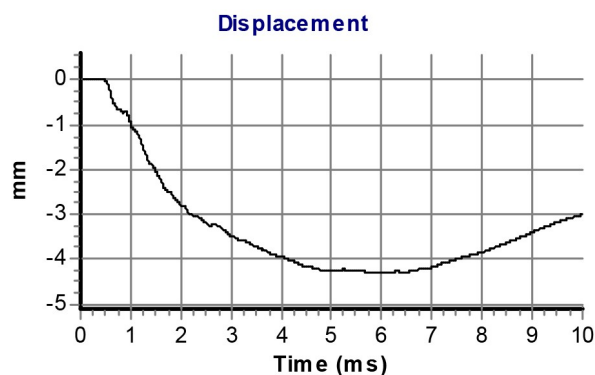
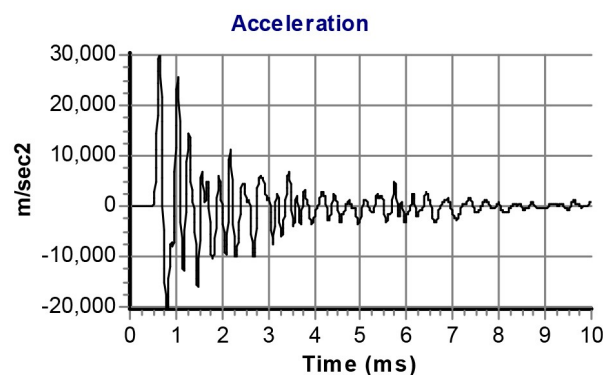
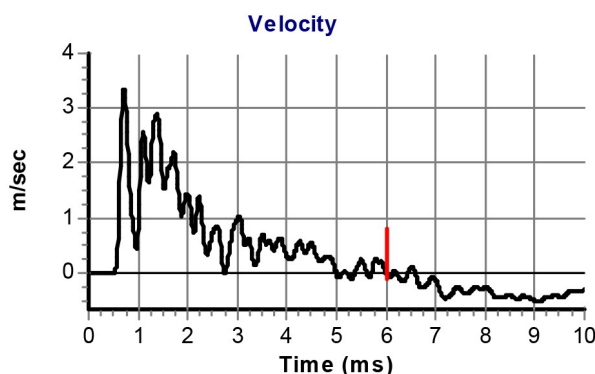
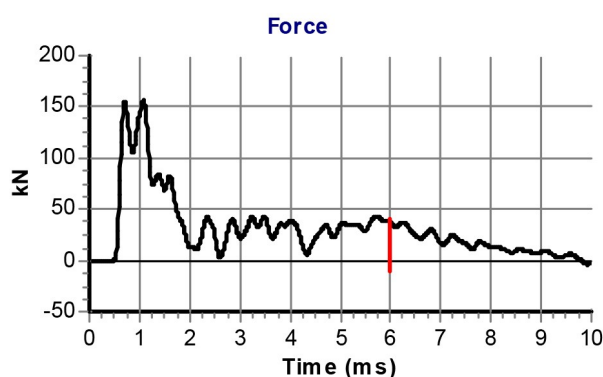
Instrumented Rod Data

Diameter d_r (mm): 54
 Wall Thickness t_r (mm): 6.4
 Rod Length l_r (m): 1.0
 Assumed Modulus E_a (GPa): 208
 Accelerometer No.1: 78855
 Accelerometer No.2: 78856

SPT Hammer Information

Hammer Mass m (kg): 63.5
 Falling Height h (mm): 760
 SPT String Length L (m): 10.0

Comments / Location



Calculations

Area of Rod A (mm²): 957
 Theoretical Energy E_{theor} (J): 473
 Measured Energy E_{meas} (J): 322

Energy Ratio E_r (%): **68**

Signed: Colin Dunlop
 Title: Plant Manager



CAUSEWAY
GEOTECH

Causeway Geotech Limited has made its commitment to health and safety of people, the environment and the quality of its services an integral part of our strategy.

Whether it be ensuring people's safety or meeting the challenges of operating in an ecologically diverse environment, we aim to act in a sustainable and responsible manner at all times.

CERTIFICATIONS / ACCREDITATIONS



MEMBERSHIPS



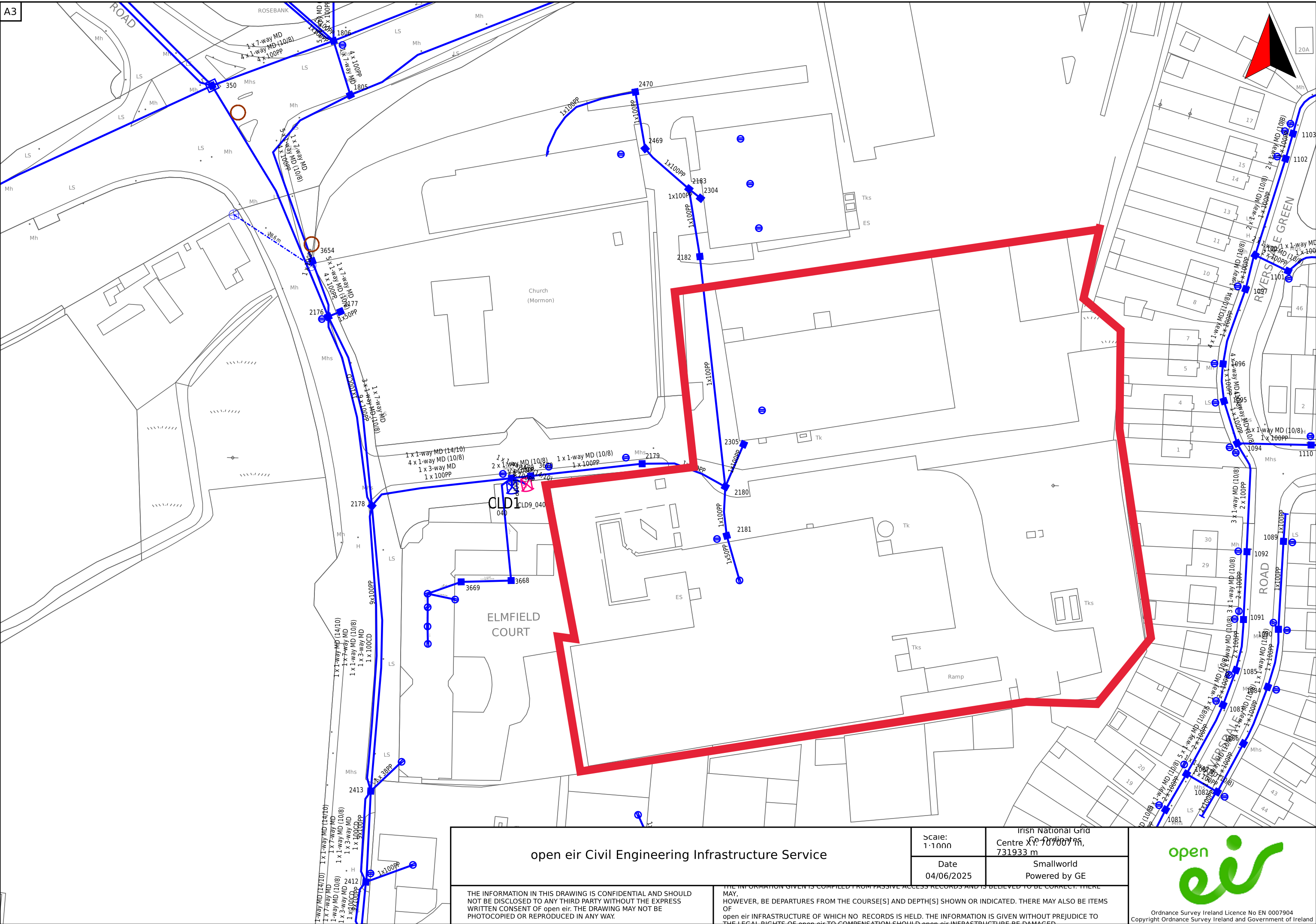
CAUSEWAY GEOTECH LTD

8 Drumahiskey Road, Ballymoney
Co. Antrim, Northern Ireland, BT53 7QL

+44 (0)28 2766 6640

info@causewaygeotech.com

www.causewaygeotech.com



open eir Civil Engineering Infrastructure Service		Scale: 1:1000	Irish National Grid Centre XY: 707007 m, 731933 m
		Date 04/06/2025	Smallworld Powered by GE
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Surface / Storm Water Drainage System

Legend

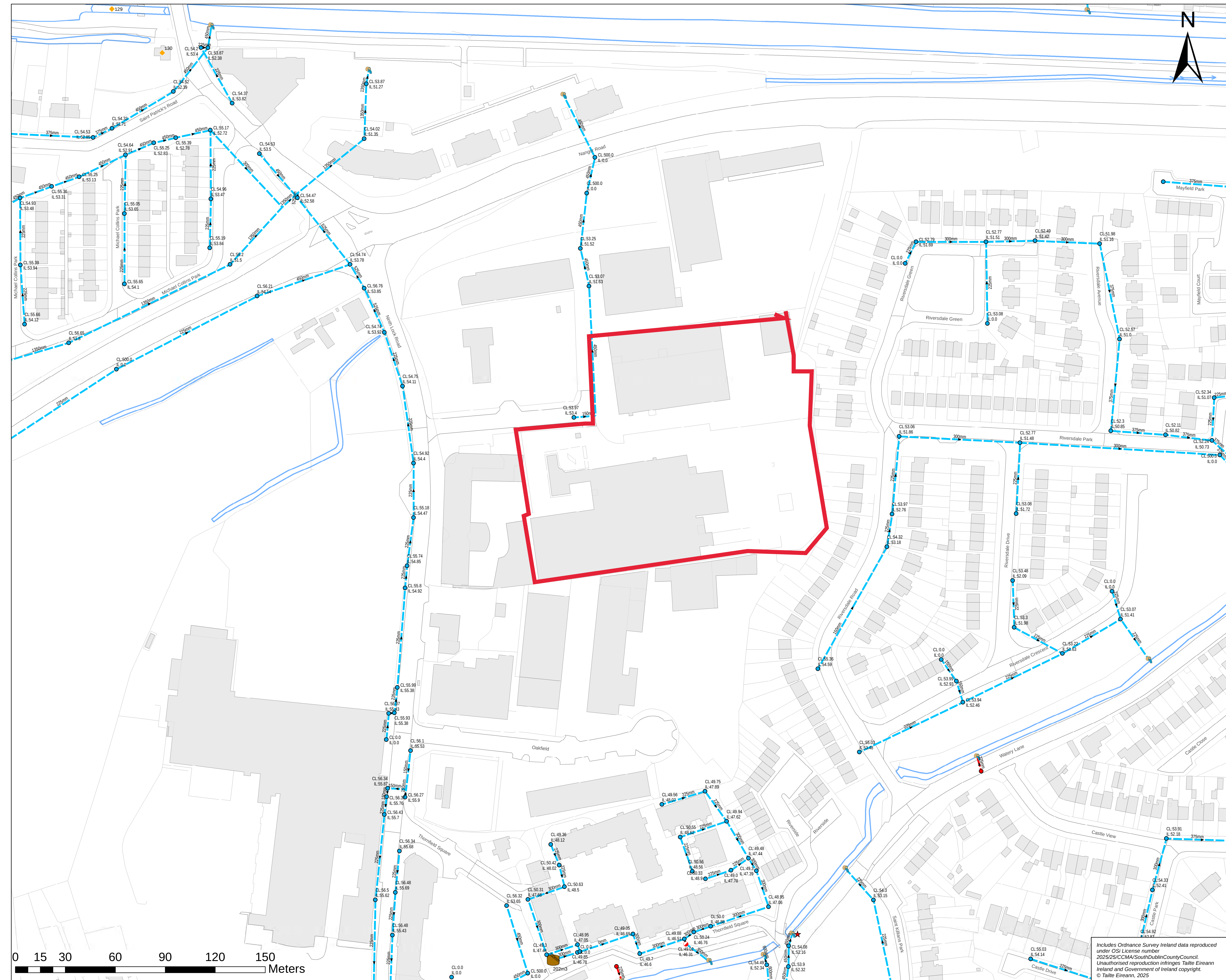
- Standard Manhole
- Hydrobrake Manhole
- Oil / Petrol Interceptor
- CSO Outlet MH
- Downstream Defender
- Other/Specify
- Private
- Backdrop Manhole
- Grit Trap
- Hatchbox
- Large Size SW Chamber
- Surface Water Pumping Station
- Surface Water Outfall (no valve)
- Surface Water Outfall (with valve)
- Attenuation Tank
- Attenuation Arch/Tunnel
- Surface Water Inlet (trash screen)
- Surface Water Outlet (screen)
- Surface Water Inlet
- Soakaway
- Gravity Surface Water Sewer
- Realigned open channel / Stream
- Combined Sewer O/F (CSO)
- Pumping Main
- Private or not TIC
- River / Stream Culvert
- Conveyance Infiltration Trench
- Water Monitoring Locations
- Attenuation Pond
- Swale
- Detention Basin
- Integrated Constructed Wetland
- Tallaght District Heating
- Record of Protected Structures
- County Boundary
- Rivers and Streams

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Date: 06/06/2025

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Legend

Sewer Manholes

- Standard
- Backdrop
- Other; Unknown

Sewer Discharge Points

- Outfall

Sewer Inlets

- Other; Unknown

Sewer Mains (Irish Water)

- Gravity - Foul
- Gravity - Overflow

Sewer Mains (Private)

- Gravity - Foul

Sewer Lateral Lines

- Sewer Lateral Lines

0 15 30 60
m

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator

Scale @ A3: 1:2,000

Drawing No.: IW-AGG-2018-000

Drawn By: RD

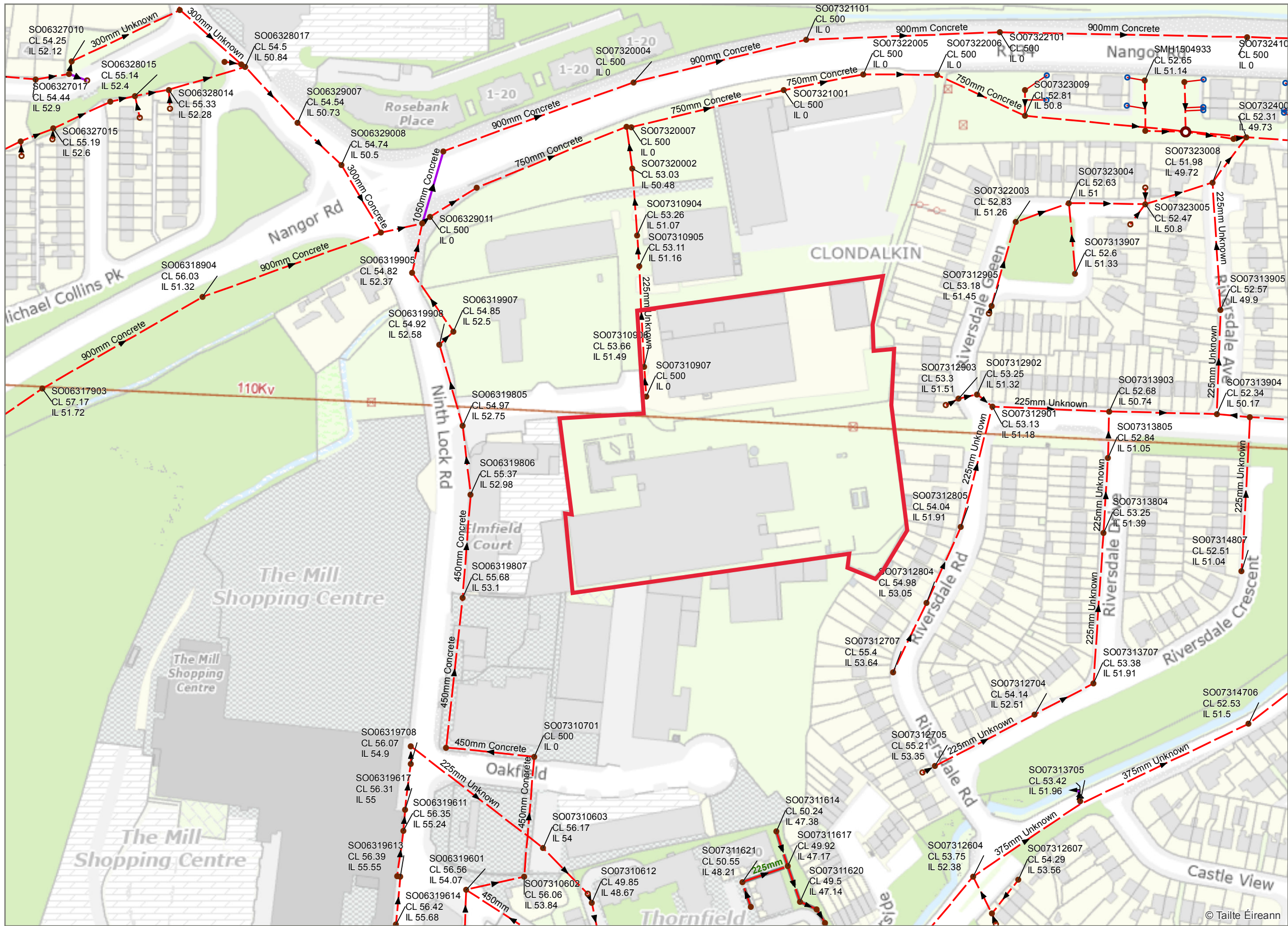
Checked By: <Add Name>

Approved By: <Add Name>

Drawn Date: 03/06/2025

Checked Date: <dd/mm/yyyy>

Approved Date: <dd/mm/yyyy>



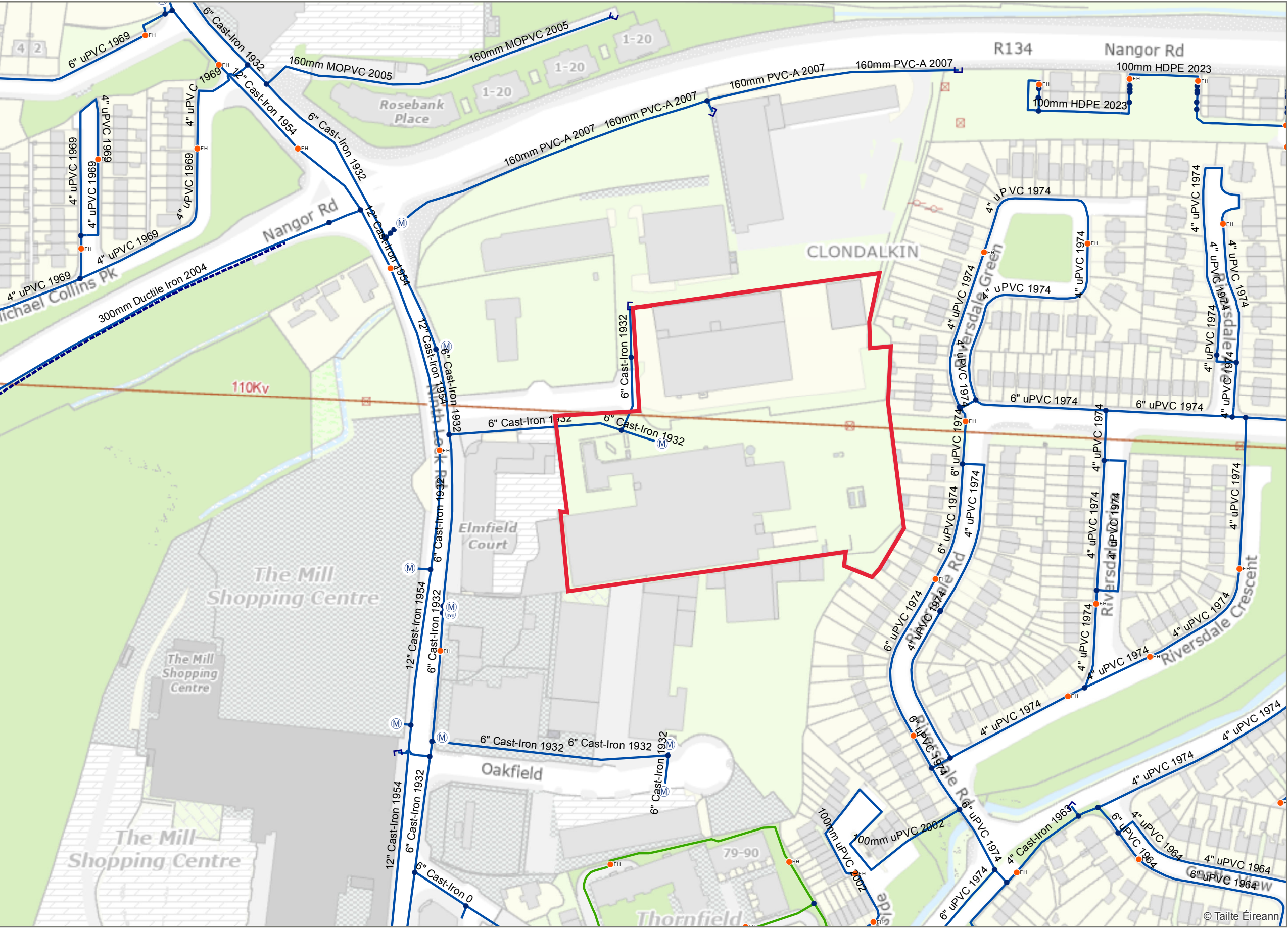
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Sewer Network Elmfield Industrial Estate



Legend

Non Boundary Meter

M Meter

Water Hydrants

FH Fire Hydrant

Water Fittings

Cap

Other Fitting

Water Mains(Irish Water Owned)

Potable Water

Water Mains(Non Irish Water Owned)

Potable Water

Water Abandoned Lines

Water Abandoned Lines



Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator

Scale @ A3: 1:2,000

Drawing No.: IW-AGG-2018-000

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Checked By: <Add Name>

Approved By: <Add Name>

Drawn Date 03/06/2025

Checked Date: <dd/mm/yyyy>

Approved Date: <dd/mm/yyyy>



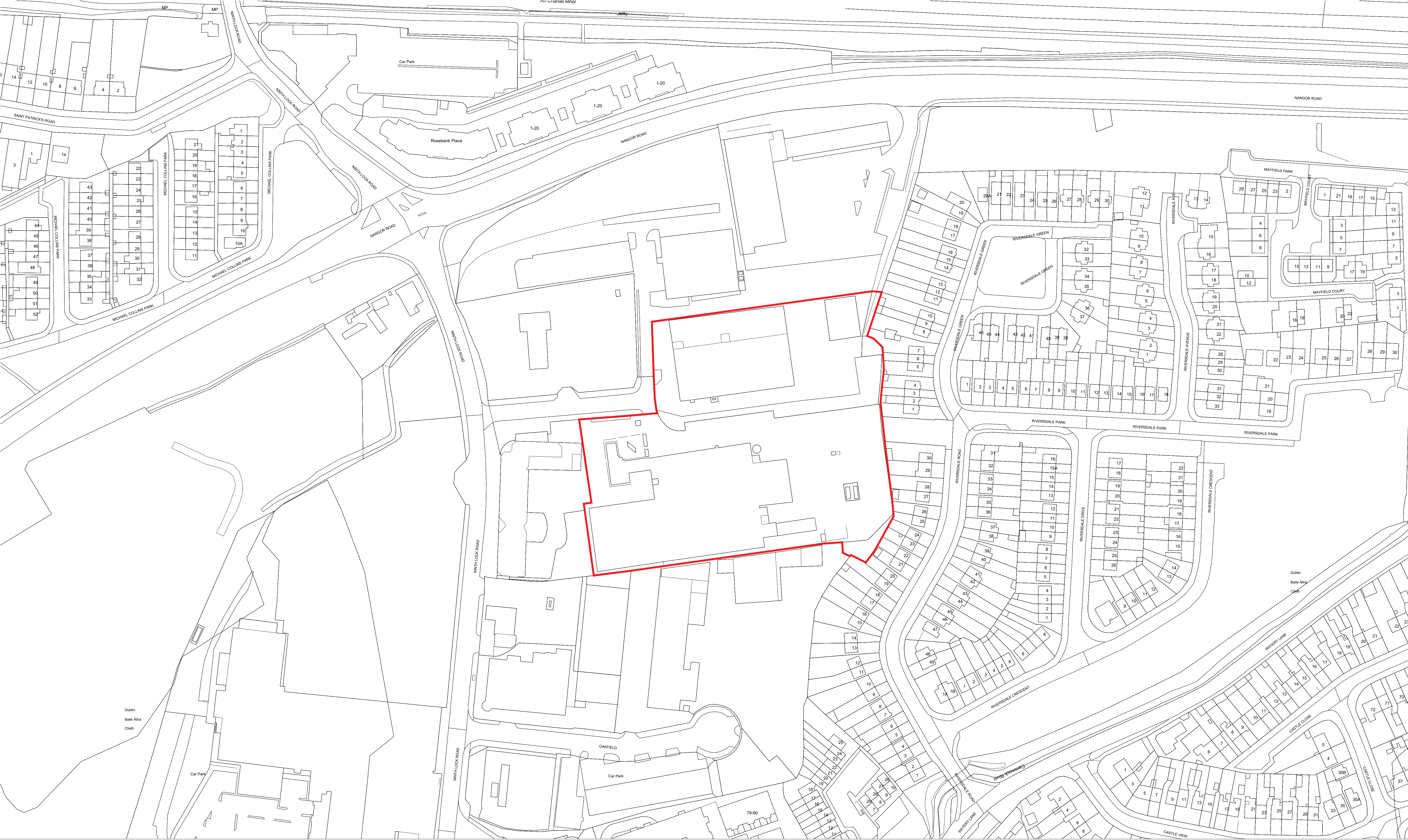
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Water Distribution Elmfield Industrial Estate



Enter Drawing Title

SITE BOUNDARY SHOWN IN RED

ORDNANCE SURVEY
Licence Number: CYAL50442655
Sheet 3326-04, Sheet 3326-05, Sheet 3261-24, Sheet 3261-25

Revision Description	Date	Rev. No.	Issued by

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T12 CN3 Ireland

Project Code: ELM

Project Lead: MH

Drawn By: OOK

Job No.: 25018

Purpose: PLANNING

Scale @ A1: 1:1000

Date Printed: 02-07-2025

Current Rev.: P01

Status: S0

Project: Elmfield
Location: Ninth Lock Road Clondalkin
Client: Bluemont Developments

Drawing Title: Site Location Plan
Drawing No.: 25018-OMP-XX-SX-DR-A-1000

Source File: 25018-OMP SITE LOCATION PLAN.DWG