

ATKINS

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Coastal Quarter SHD 2

Engineering Planning Report

Shankill Property Investments Limited

Sept 2022



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This document has 29 pages including the cover.

Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 1	Issued for Planning	CF / AC	GH	CF / AC	GH	06/09/2022

Client signoff

Client	Shankill Property Investments Ltd.
Project	Coastal Quarter SHD 2
Job number	5214419
Client signature / date	

Contents

Chapter	Page
1. Introduction	5
2. Design Deliverables	6
3. Roads and Street Requirements	7
3.1. Background	7
3.2. Principal Design Considerations	7
3.3. Roads and Streets Design	7
3.4. Compliance with DMURS	8
3.5. Internal Road and Street Design Requirements	8
3.6. Future Transport Link to Bray Dart Station	10
3.7. Junction Design	10
3.8. Parking Space Layout	11
3.9. Accessibility	11
4. Facilities for Pedestrians and Cyclists	12
5. Other Designs Information	14
5.1. Road Construction Details	14
5.2. Signage & Road Marking	15
6. Stormwater Drainage	16
6.1. Stormwater Impact Assessment	16
6.2. Flood Risk Assessment	16
7. Foul Water Drainage	17
7.1. Existing Foul Water Drainage	17
7.2. Proposed Development Foul Water Drainage	18
7.3. Proposed Development Foul Water Network	18
8. Potable Water Supply	21
8.1. Existing Water Supply	21
8.2. Proposed Potable Water Supply	21
8.3. Water Demand Calculations	22
Appendices	23
Appendix A. Irish Water Confirmation of Feasibility Letter	24
Appendix B. Irish Water Statement of Design Acceptance Letter	25
Appendix C. Irish Water Existing Foul Drainage Diversion Application - Confirmation of Feasibility Letter	26
Appendix D. Responses to comments from ABP, WCC and DLRCC	27
Appendix E. Pre-Connection Enquiry Form Submitted to Irish Water	28
Tables	
Table 2-1 - Road Scheme Drawing List	6
Table 3-1 - Street Design Criteria	9
Table 3-2 - Street Typology	10
Table 3-3 - Junction Design Criteria	11
Table 4-1 - Pedestrian and Cyclist Design Criteria & Provision	12
Table 7-1 - Foul Water Flow	18
Table 7-2 - Key Design Parameters	19
Table 8-1 – Total Water Demand Calculations	22

Figures

Figure 1-1 - Site Location	5
Figure 3-1 - Proposed Development Street Layout	9
Figure 4-1 - Pedestrian and Cyclist Provision	13

1. Introduction

Phase 1 of the Harbour Point Masterplan consists of the Coastal Quarter and is located on the former Bray Golf Club Lands off Ravenswell Road and the Dublin Road, Bray, County Wicklow and County Dublin.

The site is generally bounded to the north by the existing public open space at Corke Abbey Valley Park and existing housing estate at Corke Abbey, to the east by the Irish Rail Dublin-Rosslare main rail line, to the south and south west by the River Dargle and the Phase 2 development lands, and to the west by the existing Ravenswell school campus.

The applicant intends to apply to An Bord Pleanála for permission for a Strategic Housing Development (SHD) comprising 586 no. residential units in a mix of apartments, duplexes and houses. In addition, a childcare facility, café, retail unit and 1 no. commercial unit (incorporating a gym and a juice bar) are proposed along with all associated and ancillary development and infrastructural works, hard and soft landscaping, open spaces, boundary treatment works, ancillary car and bicycle parking spaces at surface, undercroft and basement levels. The proposed houses and duplexes range in height from 2 – 3 storeys with the proposed 4 no. apartment blocks ranging in height from 3 – 12 storeys. Block A will accommodate 162 no. Build-to-Rent (BTR) units. It is proposed that 274 no. units will be located within the administrative area of Dun Laoghaire-Rathdown County Council and 312 no. units will be located within the administrative area of Wicklow County Council. The childcare facility, retail, café and commercial unit will all be located in the administrative area of Wicklow County Council.

Planning permission was granted on part of the subject site for 234 no. residential units, a childcare facility, café and retail unit subject to compliance with the terms of conditions attached to reference ABP-311181-21. The current proposed development includes the development as previously permitted under ABP-311181-21 including minor revisions chiefly addressing conditions and new proposals for Blocks A and B which were previously refused.



Figure 1-1 - Site Location

2. Design Deliverables

The planning package of infrastructure drawings is as outlined below.

Drawings have a standardised title block for each series showing the drawings as presented below. Scales are shown within the title block and are in accordance with the Planning Guidelines.

Below is a list of the road infrastructure drawings submitted as part of this planning application.

Table 2-1 - Road Scheme Drawing List

Drawing Number	Title of Drawing
5214419-ATK-01-ZZ-DR-CE-0101	STREET TYPOLOGY - SHEET 1 OF 2
5214419-ATK-01-ZZ-DR-CE-0102	STREET TYPOLOGY - SHEET 2 OF 2
5214419-ATK-01-ZZ-DR-CE-0103	PLAN LAYOUT - SHEET 1 OF 2
5214419-ATK-01-ZZ-DR-CE-0104	PLAN LAYOUT - SHEET 2 OF 2
5214419-ATK-01-ZZ-DR-CE-0105	LONG SECTION
5214419-ATK-01-ZZ-DR-CE-0106	TYPICAL CROSS SECTIONS
5214419-ATK-01-ZZ-DR-CE-0107	VEHICLE TRACKING – FIRE TENDER - SHEET 1 OF 2
5214419-ATK-01-ZZ-DR-CE-0108	VEHICLE TRACKING – FIRE TENDER - SHEET 2 OF 2
5214419-ATK-01-ZZ-DR-CE-0109	VEHICLE TRACKING – REFUSE VEHICLE - SHEET 1 OF 2
5214419-ATK-01-ZZ-DR-CE-0110	VEHICLE TRACKING – REFUSE VEHICLE - SHEET 2 OF 2
5214419-ATK-01-ZZ-DR-CE-0111	JUNCTION LAYOUT - SHEET 1 OF 3
5214419-ATK-01-ZZ-DR-CE-0112	JUNCTION LAYOUT - SHEET 2 OF 3
5214419-ATK-01-ZZ-DR-CE-0113	JUNCTION LAYOUT - SHEET 3 OF 3
5214419-ATK-01-ZZ-DR-CE-0114	JUNCTION VISIBILITY LAYOUT - SHEET 1 OF 3
5214419-ATK-01-ZZ-DR-CE-0115	JUNCTION VISIBILITY LAYOUT - SHEET 2 OF 3
5214419-ATK-01-ZZ-DR-CE-0116	JUNCTION VISIBILITY LAYOUT - SHEET 3 OF 3
5214419-ATK-01-ZZ-DR-CE-0117	RAISED CROSSING AT MAIN ACCESS JUNCTIONS DETAILS
5214419-ATK-01-ZZ-DR-CE-0118	ROAD SECTIONS AND DETAILS
5214419-ATK-01-ZZ-DR-CE-0119	ON STREET PARKING ALLOCATION - SHEET 1 OF 2
5214419-ATK-01-ZZ-DR-CE-0120	ON STREET PARKING ALLOCATION - SHEET 2 OF 2
5214419-ATK-01-ZZ-DR-CE-0121	VEHICLE TRACKING UNDERCROFT – SHEET 1 of 5
5214419-ATK-01-ZZ-DR-CE-0122	VEHICLE TRACKING UNDERCROFT – SHEET 2 of 5
5214419-ATK-01-ZZ-DR-CE-0123	VEHICLE TRACKING UNDERCROFT – SHEET 3 of 5
5214419-ATK-01-ZZ-DR-CE-0124	VEHICLE TRACKING UNDERCROFT – SHEET 4 of 5
5214419-ATK-01-ZZ-DR-CE-0125	VEHICLE TRACKING UNDERCROFT – SHEET 5 of 5
5214419-ATK-01-ZZ-DR-CE-0126	VEHICLE TRACKING – EXISTING IRISH WATER FOUL STORAGE TANK

3. Roads and Street Requirements

3.1. Background

The proposed roads and streets design have been developed in close consultation with the following authorities:

- Dun Laoghaire-Rathdown County Council
- Wicklow County Council
- An Bord Pleanála.

Relevant technical aspects of the roads infrastructure elements are incorporated on the roads infrastructure drawings and within this report.

3.2. Principal Design Considerations

During the design of the proposed scheme included within this planning application, the design team took cognisance of the following key considerations / documents:

- Dun Laoghaire Rathdown County Development Plan: 2022 - 2028
- Wicklow County Development Plan 2016 – 2022
- Wicklow County Draft Development Plan 2021 – 2027
- Design Manual for Urban Roads and Streets (DMURS) 2019
- National Cycle Manual (NCM) 2011

3.3. Roads and Streets Design

The development of the proposed road and street alignment is based on the details as outlined in the road infrastructure drawings, taking cognisance of the development layout, impact on adjacent lands and in line with the requirements of the wider Harbour Point Masterplan.

One of the key proposals in relation to the road layout is enhanced permeability. This is achieved through the development of a layout that limits cul-de-sacs via the use of looped streets thereby encouraging permeability as well as taking cognisance of the requirements of DMURS to ensure that this is achieved.

The roads design package, AutoDesk Civil 3D, has been used to design the horizontal and vertical alignments required for the roads included within this planning application.

The developed alignment design sets parameters for development of other design elements such as drainage, determination of earthworks, etc.

As part of the alignment design process, vertical design has been optimised to follow the existing ground profile where possible, minimise the earthworks as much as possible as well as facilitating the drainage design on the basis of the gravity led system (for foul and surface water) where feasible. However, as outlined above, a number of constraints were considered in this process and this has led to a development and associated street layout that is considered to achieve these aspirations in a balanced way.

A Digital Terrain Model (DTM) has been prepared based on a 3D topographical survey of the existing ground which covers the entire site to accurately reflect the levels required in the proposed layout arrangement and in particular the access junction onto the existing development road adjacent the site.

Horizontal alignments of the roads in this application (Link Street, Local Streets and Homezone Streets) are in accordance with the relevant design standards, DMURS. The horizontal alignment defines the roads horizontal geometry and the chainage.

As outlined above, the vertical alignment of the proposed roads follows the existing ground profile where possible and conforms to the gradient recommendations as set out in the DMURS design standards.

3.4. Compliance with DMURS

A DMURS Statement (document reference 5214419DG0021) has been prepared and accompanies this submission.

The statement of consistency sets out how the proposed Coastal Quarter development has been designed to align with the principles and achieve the recommendations as set out in the Design Manual for Urban Roads and Streets (DMURs).

With regards to the information provided within in the statement it is considered that the proposed Coastal Quarter development is consistent with the requirements for the design of urban roads and streets as set out in DMURS.

3.5. Internal Road and Street Design Requirements

The proposed alignment and associated cross-sections have been developed in accordance with the necessary design standards for roads, streets and homezone areas of this nature. A description of the proposed junction onto the existing Link Road is also included later in this chapter.

Best practice in relation to the design was referenced from the following current design documents and guidelines:

- National Transport Authority, 2011. *National Cycle Manual*;
- Department of Transport, Tourism and Sport, 2019. *Design Manual for Urban Roads and Streets (DMURS)*;
- Department of Environment, 2003, *Traffic Management Guidelines*;
- Transport Infrastructure Ireland, *Design Manual for Roads and Bridges (DMRB)*, (where relevant).

The site layout has been developed in accordance with the principles of DMURS taking note of the site constraints associated with the level changes across the site, the aspiration to retain some of the existing trees, reduced impact on adjacent lands, required open space provision, and access to the wider road network.

The site layout has been developed in accordance with the principles of DMURS taking note of the site constraints and the requirement of the Bray Municipal District Local Area and the Dún Laoghaire-Rathdown Development Plan.

The street layout for the development essentially consists of three types of street typology, as outlined below with locations detailed in Figure 3-1:

- Link Street
- Local Street
- Home Zone Street



Figure 3-1 - Proposed Development Street Layout

Vehicular permeability provides for local access for residents and access to Dublin to the north and Bray Town to the south via existing link roads to the R761 Dublin Road & R761 Castle Street.

The street design criteria for the street typologies in Figure 3-1 are detailed in Table 3-1 below.

Table 3-1 - Street Design Criteria

Design Criteria	Link Street	Local Street	Home Zone Street
DMURS Recommended Design Speed	30-50km/h	10-30km/h	10-30km/h
Adopted Design Speed	40km/h	20km/h	20km/h
Minimum Horizontal Radius	46-56m	11m	11m
Maximum Gradient	5%	5%	5%
Minimum Gradient	0.5%	0.5%	0.5%
Carriageway Width	6.5m	5.5m	4.8m

Further detail associated with the street typologies and the provision of cyclist and pedestrian facilities are as outlined below in Table 3-2.

Table 3-2 - Street Typology

Typology	Description	Pedestrian Provision	Cyclist Provision
Link Street	Link Streets provide the links to Arterial streets, Local Street and Home Zone streets.	Footpath	Off-Line Cycle Path
Local Street	A Residential Street will provide connectivity more locally and reinforce permeability.	Footpath	Shared Street
Home Zone Street	A Home Zone street will provide intimate and safe local access streets prioritising pedestrians and cyclists.	Shared Street with Flush Footway	Shared Street

Details in relation to typical cross sections are as are shown on the road cross sections drawings provided in the road engineering planning drawings.

3.6. Future Transport Link to Bray Dart Station

Wicklow County Council (WCC) is undertaking Part 8 approval procedures to carry out the design and construction of the Bray Sustainable Transport Bridge (Ref. PRR 21/869). Part 8 planning has been granted and is currently under judicial review. The road layout accounts for this realignment of the existing development road (link street) to align with the position of the Future Transport Link, which includes the bridge over the Dargle, to Bray Dart Station. The project has not yet been confirmed by the Planning Authority

The proposed horizontal and vertical alignment of the realigned link street has been generated off the current Part 8 design information provided by Wicklow County Council and ensures that the road design proposals of the Coastal Quarter Development allows for the future delivery of this link to Bray Dart Station.

The road design proposal for this link street terminates prior to the future bridge location to ensure that the delivery of the bridge structures is not impacted. The layout of the Coastal Quarter and the proposed bridge has been coordinated with Wicklow County Council. A number of meetings have been held between Wicklow County Council and representatives of the former Golf Club Lands including pre-planning meetings in relation to the SHD planning application (Ref ABP 308291-20). While the subject scheme has been designed to the existing road network, it can also be adapted to the above referenced scheme should it be granted permission in the future.

3.7. Junction Design

The design of the development junctions is based on the proposed cross sections at these locations and vehicle swept path analysis has been utilised to determine if any of the junctions require amendment to incorporate the largest expected vehicle manoeuvres, a refuse vehicle, through the junction. In general, tight corner radii are proposed in order to reduce traffic speeds which, in turn, create a safer urban environment for pedestrians and cyclists.

Development junction radii and visibility splays are provided in accordance with the design criteria outlined in Table 3-3 below.

Table 3-3 - Junction Design Criteria

Design Criteria	Local Street	Home Zone Street
Junction Radii	* 6.0m between Local Street and Link Street. 3.0m to 4.5m between Local Street and Local Street.	3.0m between Local Street and Local Street.
Junction Approach Gradient	+/-2%	+/-2%
Visibility Splay	2.4m x 36m for junctions from Local Street onto Link Street 2.0m x 14m for junctions from Local Street onto Local Street	2.0m x 14m for junctions from Home Zone Street onto Local Street

Note:

*6.0m radius to accommodate occasional larger vehicles (i.e. Irish Water Tanker servicing Existing Underground Irish Water Foul Storage Tank) per DMURS Figure 4.43.

No changes are proposed at the existing junctions between the existing link streets and the R761 Dublin Road & R761 Castle Street.

3.8. Parking Space Layout

The residential dwelling car parking space layout have been designed in relation to the Wicklow and Dún Laoghaire Rathdown County Development Plans.

The car parking bay sizes provided as part of the Coastal Quarter Development are detailed below.

- Parallel parking bay – 6.0m wide x 2.4m deep
- Perpendicular parking bay (on-street/on-curtilage) – 5.5m deep x 2.4m wide (to ensure that parked cars do not overhang onto the footpath/road)
- Perpendicular parking bay (under croft/basement) – 4.8m deep x 2.4m
- Disabled Parking Bay – 2.4m wide with 1.2m buffer each side and 6m deep.

3.9. Accessibility

The proposed layout of the development seeks improve overall accessibility. DMURS outlines an integrated approach to incorporate elements of urban design that instinctively alter behaviour, thus reducing the necessity for more conventional measures (physical barriers, calming, etc). Examples of this include the use of different materials and finishes in order to define elements of the street environment, particularly where it is used to define the levels of segregation and integration within a street. This approach both enhances the value of place while providing a more attractive and cost-effective street environment. Raised tables are also included in the street layout design which, primarily designed to reinforce lower speed environments, strategically calm traffic and assist pedestrian movement by allowing them to cross at grade

4. Facilities for Pedestrians and Cyclists

The pedestrian and cyclist provision are as follows in Table 4-1.

Table 4-1 - Pedestrian and Cyclist Design Criteria & Provision

Design Criteria	Link Street	Local Street	Home Zone Street
Footpath Provision	Footpaths both sides	Footpaths both sides	Shared surface with 1.2m wide pedestrian refuge
Footway Width	2.0m	2.0m	1.2m
Cyclist Provision	Segregated cycle track on northern side	Shared Street Provision, cyclist shares carriageway with vehicles in low traffic speed and low traffic volume environment	Shared Street Provision, cyclist shares carriageway with vehicles in low traffic speed and low traffic volume environment
Cyclist Width	2.0m	n/a	n/a

The proposed design of the link street in terms of footpath and cycle path provision aligns with the existing provision and the proposed provision for the public transport link.

In addition, pedestrian linkages through and around the proposed development have been considered in the context of desire lines, particularly in the context of facilitating the connections in Figure 4-1 below.

Drop kerb crossings will be provided at the junctions on local streets and home zone streets throughout the site with raised table crossings provided on the link street junctions.

The use of raised table crossing points will have the benefit of providing both a convenient crossing point for pedestrians and cyclists and a traffic calming effect for traffic entering into local and home zone streets.

The raised table crossing design is based on the recommendations in DMURS and the Traffic Management Guidelines.

In overall terms the pedestrian and cyclist provision are as outlined below with locations detailed in Figure 4-1:

- Existing Raised Segregated Cycle Track ■
- Proposed Raised Segregated Cycle Track ■
- Future Raised Segregated Cycle Track ■
- Proposed Shared Street (Local Street) ■
- Proposed Shared Street (Home Zone Street) ■
- Proposed Shared Path ■

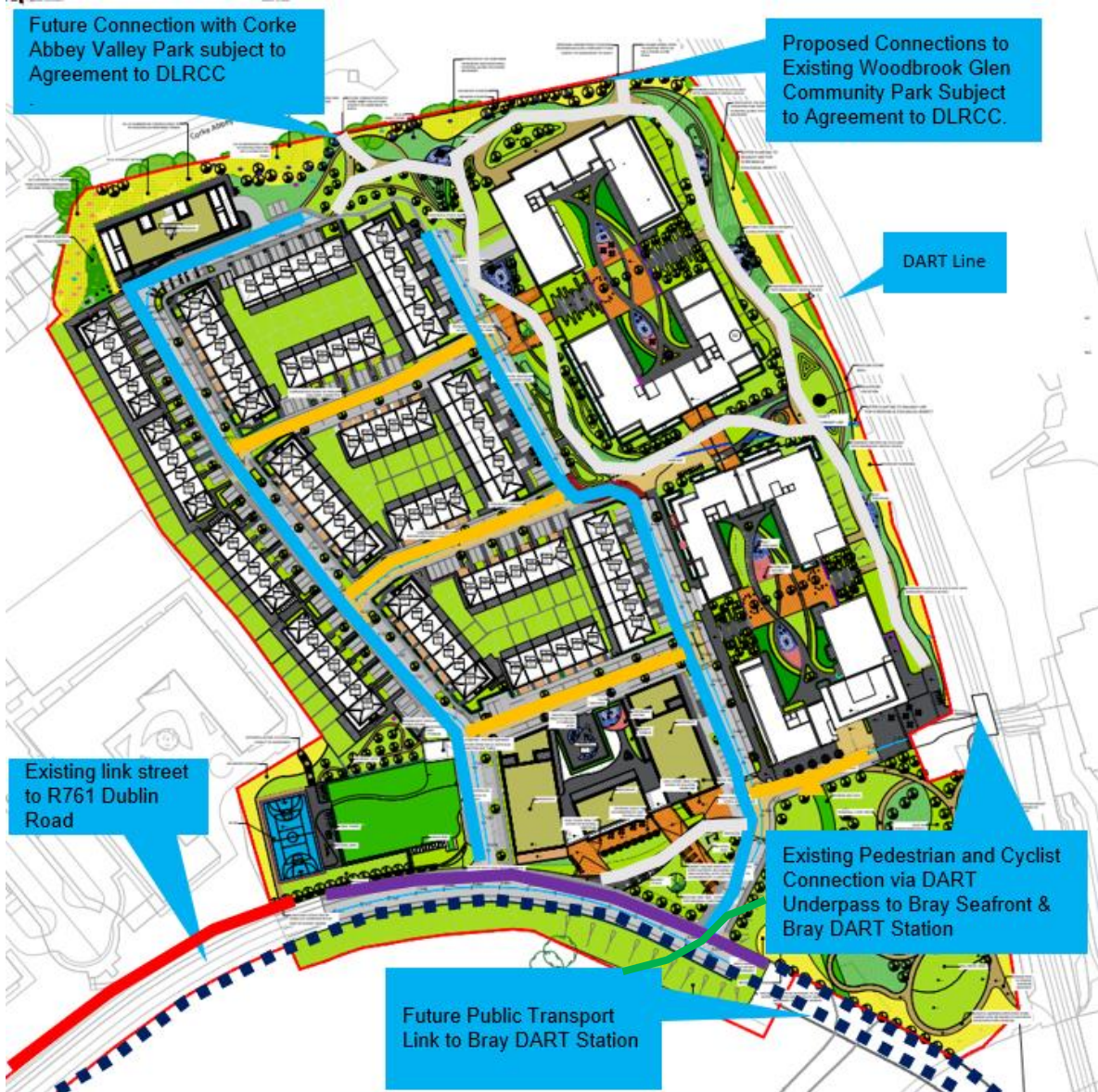


Figure 4-1 - Pedestrian and Cyclist Provision

5. Other Designs Information

5.1. Road Construction Details

The minimum road construction details are detailed below and shown on the drawings provided as part of the roads engineering drawings.

Link Street

- 40mm surface course - SMA 10 surf PMB 65/105-60 des to Clause 5.1.1
- 60mm binder course - AC 20 dense bin 40/60 des to Clause 3.1.4
- 100mm base course - AC 32 dense base 40/60 des to Clause 3.1.1
- 150mm sub-base course- Granular Material Type B to Clause 804
- Capping as Required

Local Street

- 40mm surface course - SMA 10 surf PMB 65/105-60 des to Clause 5.1.1
- 60mm binder course - AC 20 dense bin 40/60 des to Clause 3.1.4
- 100mm base course - AC 32 dense base 40/60 des to Clause 3.1.1
- 150mm sub-base course- Granular Material Type B to Clause 804
- Capping as Required

Homezone Street – Carriageway

- 40mm surface course - HRA 30/14 F surf 40/60 (14mm aggregate) to Series 900 Clause 4 with 20mm buff chippings in a clear binder pre-coat to Series 900 Clause 4.2.
- 60mm binder course - AC 20 dense bin 40/60 des to Clause 3.1.4
- 100mm base course - AC 32 dense base 40/60 des to Clause 3.1.1
- 150mm sub-base course - Granular Material Type B to Clause 804
- Capping as Required

Homezone Street – Parking/Footway Areas (Permeable)

- 60mm paving - PCC Modular Permeable Paving
- 50mm laying course - 6mm open graded (no fines) Gravel Material
- 200mm sub-base course - 10-20mm open angular Gravel Material
- Capping as Required

To reinforce the low speed environment a change in surface colour is proposed on raised junctions/crossings to alert drivers of the change in road layout ahead. A buff surface as per the Homezone Street above is proposed.

Footways will be concreted throughout the development as per the standard detail as shown on the drawings provided as part of the roads engineering drawings.

5.2. Signage & Road Marking

All traffic signs, including information, regulatory and warning signs will be designed in accordance with the Traffic Signs Manual (TSM). The location of traffic signs, mounting heights and orientation will be designed in accordance with the Traffic Signs Manual. Road markings shall be designed in accordance with Chapter 7 of the Traffic Signs Manual.

6. Stormwater Drainage

6.1. Stormwater Impact Assessment

A Stormwater Impact Assessment Report has been carried out along with an independent Stormwater Audit in accordance with Dún Laoghaire Rathdown County Council Development Plan. Refer to Atkins Stormwater Impact Assessment Report 5214419DG0012 for the details of the Storm Water elements associated with the proposed development.

6.2. Flood Risk Assessment

A Flood Risk Assessment report has been undertaken to satisfy the requirements of the Planning System and Flood Risk Management Guidelines. Refer to Atkins Flood Risk Assessment Report 5214419DG0019 for the proposed development.

7. Foul Water Drainage

7.1. Existing Foul Water Drainage

There is significant existing foul drainage infrastructure present within site. A foul rising main and a trunk foul sewer enter the site at the northern boundary and turns east then south along the site boundary where it finally crosses the Dargle River at the south of the site. There are also two gravity foul sewers to the south of the site. These sewers run from west to east across the site where they outfall to the trunk sewers previously discussed.

There is an existing Irish Water underground foul water storage tank close to the western boundary of the proposed development site. The existing tank was constructed by Dun Laoghaire Rathdown County Council in 2007 – 2008 and is a critical piece of infrastructure associated with the Bray Pumping Station to the South of the River Dargle. As confirmed by Shankill Property Investments Ltd., this tank was installed under a 999-year subterranean lease allowing the surface area above to be incorporated into the future build out of the lands including capacity to accommodate substantial fill and an Irish Water service vehicle driving above it.

The purpose of the existing Irish Water underground foul water storage tank is to store foul and/or storm water during exceedance events at Bray Pumping Station. During storm events, the tank and its associated infrastructure are utilised to limit the expected incidence of discharge from the Bray Pumping Station storm overflow to the Irish Sea to 3 times per bathing season and if practical via the foul outfall to 7 times per bathing season.

When the storage tank is required during a storm event the wastewater is pumped from Bray Pumping Station to the tank via an existing rising main. When the storm event subsides, the wastewater is returned via an existing gravity return sewer to the Bray Pumping Station prior to being pumping to Shanganagh Waste Water Treatment Plant. The requirements for the existing tank are outlined in the 'Shanganagh & Bray Main Drainage Scheme Wastewater Treatment Works' Environmental Impact Statement which forms part of the EPA licence requirements (Ref. D0038-01).

As previous addressed in the scheme permitted under ABP-311181-21, item 'Water Services 4' of An Bord Pleanála Opinions, see Appendix D, in the event that the infrastructure mentioned above is not to be relocated a justification should be submitted at application stage to address the negative impacts on the development potential of the site and the public realm. As outlined in Section 7.2 below, both the rising main and gravity return drain storm holding tank will be diverted to facilitate the proposed development, hence no justification will be required at this stage.

The responses to the comments received from ABP noted above and throughout this report are in respect to the pre-application consultation ref ABP-308291-20 on part of the subject site for the permitted development for 234 no. residential units, a childcare facility, café and retail unit ref ABP-311181-21. These responses in respect to this new planning application remain relevant and have been fully addressed as part of this planning submission comprising of 586 no. residential units in a mix of apartments, duplexes and houses within the same site boundary.

A pre-connection application was issued to Irish Water on 21st July 2022. Refer to Appendix E to view the Pre-Connection Enquiry Form submitted. Irish Water issued a Confirmation of Feasibility (COF) letter on the 2nd September 2022 confirming that the connection is feasible. Refer to Appendix A for details of the Confirmation of Feasibility letter from Irish Water.

Refer to Appendix B for final IW statement of design acceptance letter received on the 31st August 2022 confirming that based on the design submitted to them, Irish Water has no objection to the proposals.

7.2. Proposed Development Foul Water Drainage

The new development will be catered by a proposed 225mm diameter foul sewer with a single outfall to a proposed manhole that will be constructed as part of the future foul network reinforcement project to be carried out by Irish Water.

To facilitate the construction of the proposed development, part of the existing Irish Water foul infrastructure will be diverted away from the proposed buildings. An existing Foul Drainage Diversion Application was submitted to Irish Water on the July 22nd, 2022 for the proposed changes.

The required changes involve diverting both the existing rising main and gravity return drain serving the storm holding tank approx. 30m south to avoid the proposed new structures. The sizing and slopes of these will match the existing infrastructure as much as possible to ensure the hydraulic capabilities of the infrastructure is maintained. The storm water holding tank will remain unchanged except for the resurfacing of the area above it as set out in the landscape design.

In accordance with IW requirements, a diversion application was issued to Irish Water Diversion Services in advance of making the planning application. Upon review, Irish Water issued a Confirmation of Feasibility letter on the 11th of August 2022 which stated that “that Irish Water has no objection to the proposed extension” subject to conditions. Refer to Appendix C for the Existing Foul Drainage Diversion Application – Confirmation of Feasibility letter issued by Irish Water.

The existing Irish Water underground foul water storage tank and associated infrastructure have been fully considered as part of the proposed open space to ensure full access by Irish Water and their contractors for ongoing maintenance requirements at both Construction and Permanent Stages of the Development. Refer to both the Traffic Transport Assessment and Construction Management Plan for further information on this. In the Permanent stage access to the area for maintenance requirement will be controlled by the development management company.

7.3. Proposed Development Foul Water Network

Each property will have a separate waste water connection in accordance with IW requirements.

The proposed foul drainage layouts are indicated on drawings 5214419-ATK-01-ZZ-DR-CE-0551 / 0552 with corresponding longitudinal sections indicated on drawing 5214419-ATK-01-ZZ-DR-CE-0560.

The final planning design estimated foul flows that will be generated from the proposed Coastal Quarter SHD 2 are indicated in Table 7-1 below.

Table 7-1 - Foul Water Flow

Description	No. of Units	Volume	Total Discharge l/d
Houses	76	150 l/person/d * 2.7 * 76 * 1.1	33,858 l/d
Duplex	52	150 l/person/d * 2.7 * 52 * 1.1	23,166 l/d
Apartments	458	150 l/person/d * 2.7 * 458 * 1.1	204,039 l/d
Commercial	48 Staff	In accordance with Irish Water Flow Design Rates	3,102 l/d
		Total Discharge	264,165 l/d

Calculation of Proposed Peak Foul Flow

Total Daily Discharge	264,165 l/d
Dry Weather Flow (DWF)	3.06 l/s
Peak Foul Flow (3 x DWF)	9,18 l/s

The foul drainage network for the Coastal Quarter SHD 2 has been designed based upon the criteria set out above.

The drawings display the foul drainage network for the Coastal Quarter SHD 2 (to which this application applies). The entire network has been designed and displayed on the planning drawings to ensure adequate capacity and connectivity within the proposed foul system.

“Micro Drainage” which is an industry standard tool for design and assessment of gravity sewer drainage networks has been used to simulate the proposed network. A full clash detection was also carried out with the proposed storm drainage layout.

The proposed foul drainage network for the development was designed in compliance with IW Code of Practice for Wastewater Infrastructure IW-CDS-5030-03, Standard Details IW-CDS-5030-01 and with the key design parameters in Table 7-2 below.

Table 7-2 - Key Design Parameters

Parameter	Value/Requirement
Minimum depth*	1.2 m cover roads 0.9 m open space
Minimum sewer size	225 mm
Roughness	1.5 mm
Max. velocity at pipe full	3.0 m/s
Min. velocity at pipe half full	1.0 m/s (gradient requirements below have been utilised where minimum velocity is not achievable)
Gradient - 3 or more contributing dwelling	1 in 150 minimum
Gradient - 2 contributing dwelling	1 in 80 minimum
Gradient - 1 contributing dwelling	1 in 40 minimum

** Without recourse to concrete. Absolute minimum cover in roads is 0.9m. Pipes with cover between 0.9m and 1.2m shall be bedded and surrounded in concrete, 150mm thick, Class E, in accordance with IW requirements.*

In accordance with IW requirements the planning design drawings were issued and reviewed to IW Connection and Developer Services (CDS) in advance of making the planning application. The Statement of Design Acceptance was issued by IW on 31st August 2022. The final outfall location has been agreed with IW as per the statement of design acceptance and is fully coordinated with the proposed LNR route and existing IW infrastructure. Refer to Appendix B for the Statement of Design Acceptance.

Planning permission was granted on part of the subject site for 234 no. residential units, a childcare facility, café and retail unit subject to compliance with the terms of conditions attached to reference ABP-311181-21. The proposed development includes development as permitted under ABP-311181-21 together with minor revisions chiefly addressing conditions set out in the grant of planning and new proposals for Blocks A and B which were previously refused.

8. Potable Water Supply

8.1. Existing Water Supply

There is currently no water supply infrastructure present on site. The nearest public infrastructure capable of catering to the proposed development is approx. 675m to the west of the site at the junction on the Dublin Road, where an existing 225mm diameter watermain is present.

A pre-connection application form was issued to Irish Water July 21st, 2022. IW records indicate existing 6" watermains along the Dublin Road R119 as indicated on drawing 5214419-ATK-01-ZZ-DR-CE-2704.

Refer to Appendix A for details of the Confirmation of Feasibility letter from Irish Water.

8.2. Proposed Potable Water Supply

The potable water supply for the site has been designed in accordance with the Irish Water Code of Practice for Water Infrastructure 'IW-CDS-5020-03' and Standard Construction Details 'IW-CDS-5020-01'.

The proposed water supply layouts are indicated on drawings 5214419-ATK-01-ZZ-DR-CE-2701 / 2702 / 2703 / 2704.

The drawings display the water supply layouts for the Coastal Quarter SHD 2 development (to which this application applies). The entire water supply network has been designed as indicated on the planning drawings to ensure adequate supply and connectivity within the proposed potable water system.

A new 225mm diameter watermain is proposed to run 675m west to connect the proposed development to the existing 225mm watermain on the Dublin Road to the proposed site to facilitate water supply. It is also expected to facilitate possible future adjoining developments. The new watermain will start as a 225mm PE watermain when it enters the site and will reduce as it spreads throughout the site in accordance with density demand requirements. A minimum pipe size of 100mm diameter PE pipe has been designed for branches connections.

The new proposed location has been fully agreed with IW as per the final IW statement of design acceptance letter in Appendix B.

Each dwelling will have its own separate supply off the proposed watermain along with a boundary box in accordance with IW standard construction details. For the proposed apartment blocks and crèche building a manifold chamber will be used in accordance with IW- CDS-5020-03 section 3.14.

Fire Hydrants will be located on the watermains in accordance with IW standard construction details and "2006 Building Regulations" (Part B Fire Safety), the system has been designed so that no Fire Hydrant is greater than 46m from any building.

In accordance with IW requirements the planning design drawings were issued and reviewed by Irish Water Connection and Developer Services (CDS) in advance of making the planning application. The Statement of Design Acceptance was issued by IW on 25th August 2022. Refer to Appendix B for the Statement of Design Acceptance. Following the receipt of this letter from IW, Item 'Water Services 6' from the An Bord Pleanála Opinion ABP-308291-20, recommending the assessment of the capacity of the upgrade works, can be deemed addressed. The responses to the comments received from

ABP noted above are in respect to the pre-application consultation ref ABP-308291-20 on part of the subject site for the permitted development for 234 no. residential units, a childcare facility, café and retail unit ref ABP-311181-21. Refer to Appendix D for further details regarding the comments received, Atkins' responses and where they have been incorporated into our design.

8.3. Water Demand Calculations

Initial water demand calculations were issued to IW as part of the pre-connection application. The final planning design estimated water demand that will be generated from the proposed development are indicated in Table 8-1 below.

Table 8-1 – Total Water Demand Calculations

Description	No. of Units	Volume	Total Discharge l/d
Houses	76	$150 \text{ l/person/d} * 2.7 * 76 = 30,780 \text{ l/d}$	0.356 l/s
		Peak week = $0.356 \text{ l/s} * 1.25$	0.445 l/s
		Peak demand = $0.445 \text{ l/s} * 5$	2.225 l/s
Duplex	52	$150 \text{ l/person/d} * 2.7 * 52 = 21,060 \text{ l/d}$	0.244 l/s
		Peak week = $0.244 \text{ l/s} * 1.25$	0.305 l/s
		Peak demand = $0.305 \text{ l/s} * 5$	1.525 l/s
Apartments	458	$150 \text{ l/person/d} * 2.7 * 458 = 185,490 \text{ l/d}$	2.146 l/s
		Peak week = $2.146 \text{ l/s} * 1.25$	2.682 l/s
		Peak demand = $2.682 \text{ l/s} * 5$	13.410 l/s
Commercial	48 Staff	<i>In accordance with Irish Water Flow Design Rates</i>	0.04 l/s
		Peak week	0.05 l/s
		Peak demand	0.225 l/s
		Total Demand	0.356 + 0.244 + 2.146 + 0.04 = 2.786 l/s

Appendices



Appendix A. Irish Water Confirmation of Feasibility Letter

CONFIRMATION OF FEASIBILITY

Ailis Corrigan,
Atkins House,
150 Airside Business Park,
Swords,
Co. Dublin

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

2 September 2022

**Our Ref: CDS22005393 Pre-Connection Enquiry
Lands at the Old Bray Club, Bray, Co. Wicklow**

Dear Applicant/Agent,

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

Irish Water has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Multi/Mixed Use Development of 590 unit(s) at Lands at the Old Bray Club, Bray, Wicklow, (the **Development**).

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

Water Connection

- Feasible Subject to upgrades.
- This connection is feasible subject to confirmation that the proposed water main connection point is as constructed and live. If the proposed connection point is not viable, then a new connection point will need to be agreed at Application stage.

Wastewater Connection

- Feasible Subject to upgrades.
- This connection is feasible subject to the completion of the Old Connaught LNRP.
- The connection is also contingent on completion of the required diversion works within the development (DIV21013).

This letter does not constitute an offer, in whole or in part, to provide a connection to any Irish Water 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 Irish Water.

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/

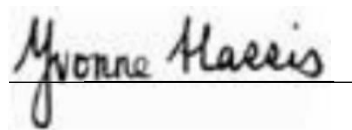
Where can you find more information?

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

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

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

Yours sincerely,

A handwritten signature in black ink that reads "Yvonne Harris". The signature is written in a cursive style and is positioned above a thin horizontal line.

Yvonne Harris
Head of Customer Operations

Section A - What is important to know?

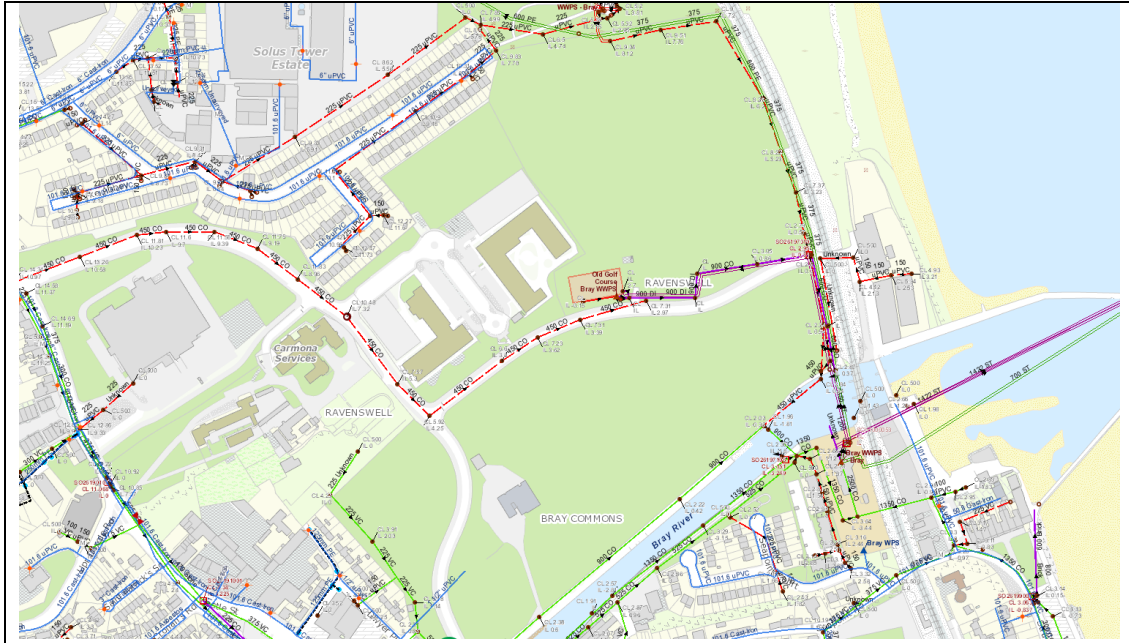
What is important to know?	Why is this important?
<p>Do you need a contract to connect?</p>	<ul style="list-style-type: none"> • Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Irish Water's network(s). • Before the Development can connect to Irish Water's network(s), you must submit a connection application <u>and be granted and sign</u> a connection agreement with Irish Water.
<p>When should I submit a Connection Application?</p>	<ul style="list-style-type: none"> • A connection application should only be submitted after planning permission has been granted.
<p>Where can I find information on connection charges?</p>	<ul style="list-style-type: none"> • Irish Water connection charges can be found at: https://www.water.ie/connections/information/charges/
<p>Who will carry out the connection work?</p>	<ul style="list-style-type: none"> • All works to Irish Water's network(s), including works in the public space, must be carried out by Irish Water*. <p>*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</p>
<p>Fire flow Requirements</p>	<ul style="list-style-type: none"> • 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
<p>Plan for disposal of storm water</p>	<ul style="list-style-type: none"> • 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.
<p>Where do I find details of Irish Water's network(s)?</p>	<ul style="list-style-type: none"> • Requests for maps showing Irish Water's network(s) can be submitted to: datarequests@water.ie

<p>What are the design requirements for the connection(s)?</p>	<ul style="list-style-type: none"> The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with <i>the Irish Water Connections and Developer Services Standard Details and Codes of Practice</i>, available at www.water.ie/connections
<p>Trade Effluent Licensing</p>	<ul style="list-style-type: none"> 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/ <p>**trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)</p>

Section B – Details of Irish Water’s Network(s)

The map included below outlines the current Irish Water infrastructure adjacent the Development: To access Irish Water Maps email

datarequests@water.ie



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

Note: The information provided on the included maps as to the position of Irish Water’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 Irish Water.

Whilst every care has been taken in respect of the information on Irish Water’s network(s), Irish Water 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 Irish Water’s underground network(s). The onus is on the parties carrying out excavations or any other works to ensure the exact location of Irish Water’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.

Appendix B. Irish Water Statement of Design Acceptance Letter

Garry Hanratty
Atkins House
150 Airside Business Park
Swords
Dublin K67 K5W4

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

31 August 2022

**Re: Design Submission for Lands at the Old Bray Golf Club, Bray, Co. Wicklow (the “Development”)
(the “Design Submission”) / Connection Reference No: CDS22005393**

Dear Garry Hanratty,

Many thanks for your recent Design Submission.

We have reviewed your proposal for the connection(s) at the Development. Based on the information provided, which included the documents outlined in Appendix A to this letter, Irish Water has no objection to your proposals.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Irish Water infrastructure. Before you can connect to our network you must sign a connection agreement with Irish Water. This can be applied for by completing the connection application form at www.water.ie/connections. Irish Water’s current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities (CRU)(https://www.cru.ie/document_group/irish-waters-water-charges-plan-2018/).

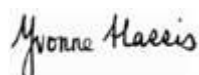
You the Customer (including any designers/contractors or other related parties appointed by you) is entirely responsible for the design and construction of all water and/or wastewater infrastructure within the Development which is necessary to facilitate connection(s) from the boundary of the Development to Irish Water’s network(s) (the “**Self-Lay Works**”), as reflected in your Design Submission. Acceptance of the Design Submission by Irish Water does not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.

If you have any further questions, please contact your Irish Water representative:

Name: Dario Alvarez

Email: dalvarez@water.ie

Yours sincerely,



Yvonne Harris
Head of Customer Operations

Appendix A

Document Title & Revision

- 5214419-ATK-01-ZZ-DR-CE-2701 – Watermain layout 1
- 5214419-ATK-01-ZZ-DR-CE-2702 – Watermain layout 2
- 5214419-ATK-01-ZZ-DR-CE-0551 – Foul sewer layout 1
- 5214419-ATK-01-ZZ-DR-CE-0552 – Foul sewer layout 2
- 5214419-ATK-01-ZZ-DR-CE-0560 – Foul sewer long sections

Standard Details/Code of Practice Exemption: N/A

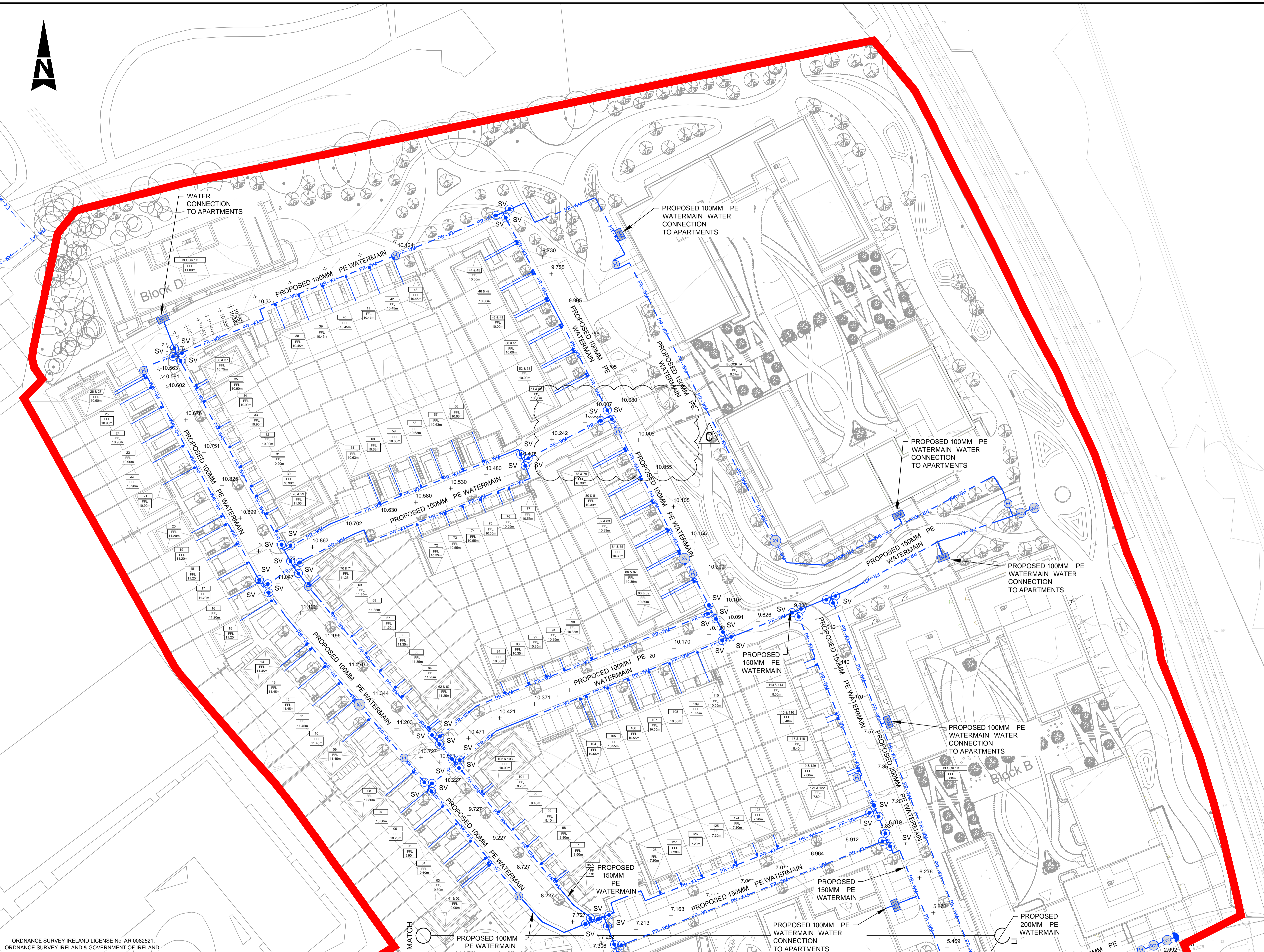
For further information, visit www.water.ie/connections

Notwithstanding any matters listed above, the Customer (including any appointed designers/contractors, etc.) is entirely responsible for the design and construction of the Self-Lay Works. Acceptance of the Design Submission by Irish Water will not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.

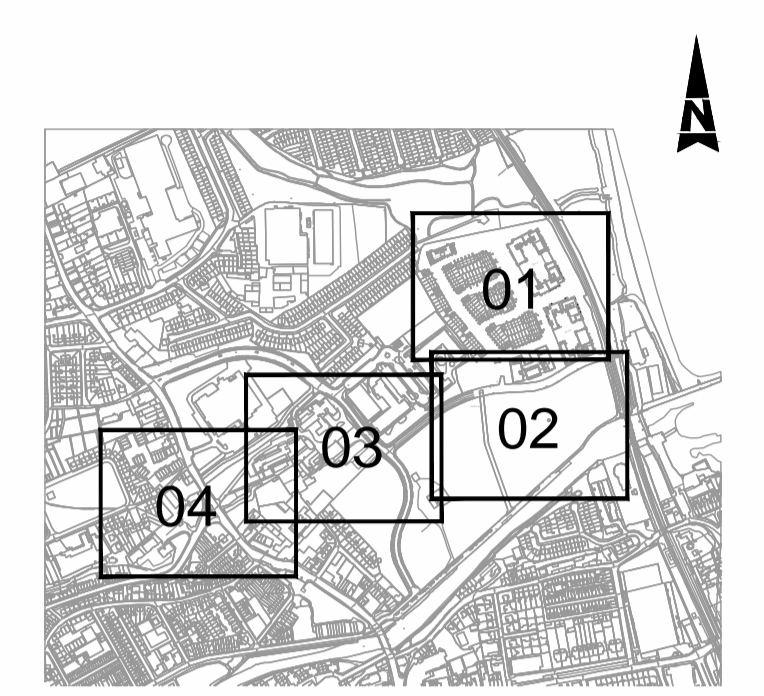
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DO NOT SCALE

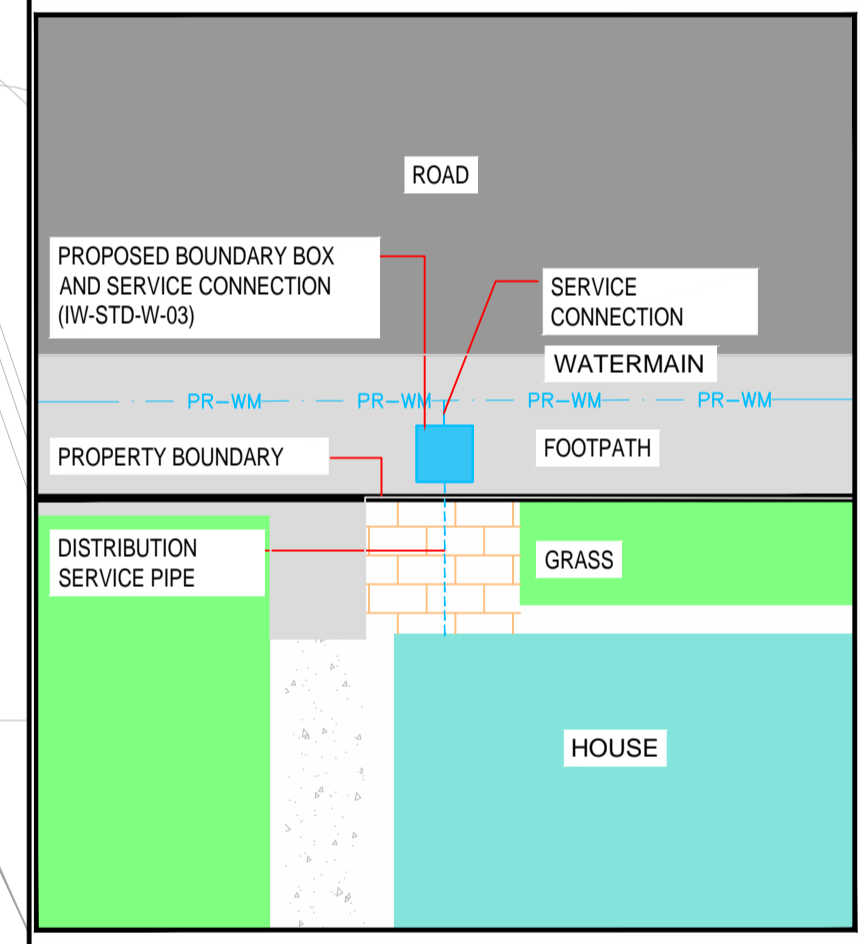
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Date: Aug 25, 2022 - 11:22am
Plotted by: P.Murray



- GENERAL NOTES**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
 2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
 3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
 4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR



KEY PLAN
Scale NTS



TYPICAL BOUNDARY BOX DETAIL
Scale at A1 1:100

NOTE:
INSTALLATION OF WATER MAIN SHALL BE IN ACCORDANCE WITH IRISH WATER, WATER INFRASTRUCTURE STANDARD DETAILS (IW-CDS-5020-01) & CODE OF PRACTICE FOR WATER INFRASTRUCTURE (IW-CDS-5020-03)
INSTALLATION OF WATER MAIN AND ALL OTHER DEVELOPMENT SERVICES SHALL BE IN ACCORDANCE WITH IRISH WATER STD-W-11
AIR VALVE AND HYDRANTS COVERS, WHERE LOCATED IN GRASS AREAS, SHALL BE SURROUNDED BY A CONCRETE PLINTH, 200MM ALL ROUND AND 100MM DEEP FORMED WITH C20/25 CONCRETE, 20MM AGGREGATE SIZE, BEDDED IN CLAUSE 804 MATERIAL. THE PLINTH SHALL INCORPORATE MILD STEEL REINFORCEMENT LINKS AND SHALL HAVE A BULL-NOSE FINISH AROUND ITS EXTERNAL PERIMETER. SEE SECTION 3.18 OF WATER CODE OF PRACTICE A GEOTEXTILE PIPE WRAP ROOT PROTECTION SYSTEM WILL BE APPLIED TO THE PIPES WHERE IT IS LAID WITHIN THE MINIMUM DISTANCE GIVEN IN TABLE A1 OF BS 5837 AS SPECIFIED IN SECTION 3.26 OF THE IRISH WATER CODE OF PRACTICE FOR WATER INFRASTRUCTURE

ORDNANCE SURVEY IRELAND LICENSE No. AR 0082521
ORDNANCE SURVEY IRELAND & GOVERNMENT OF IRELAND

LEGEND	
— EX-WM —	EXISTING WATERMAIN
— PR-WM —	PROPOSED (HPP/HDPE PE-100 SDR-17) WATERMAIN DIAMETER AS INDICATED
SV	PROPOSED SLUICE VALVE (IW-STD-W-15)
H	PROPOSED FIRE HYDRANT (ONLINE IW-STD-W-18) (OFFLINE IW-STD-W-19)
BM	PROPOSED BULK METER (IW-STD-W-26)
— OD —	PROPOSED 25MM (OD) PE SERVICE PIPE AS PER STD-W-01
AV	PROPOSED AIR VALVE (ONLINE IW-STD-W-22) (OFFLINE IW-STD-W-23)
SV	PROPOSED SCOUR VALVE (IW-STD-W-30)
MC	PROPOSED MANIFOLD CHAMBER (IW-CDS-5020-03, SECTION 3.14)
EC	PROPOSED END CAP (IW-STD-W-05)
WH	PROPOSED WASH OUT HYDRANT (IW-STD-W-30A)
—	SITE BOUNDARY

Rev	Description	By	Date	Chk'd	Auth
C	ISSUED FOR IW REVIEW	PS	24.08.22	AC	GH
B	ISSUED FOR IW REVIEW	PS	23.08.22	AC	GH
A	ISSUED FOR IW REVIEW	PS	02.08.22	AC	GH
-	FOR INFORMATION	PS	26.05.22	AC	GH



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1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050 Fax (+353) 091 779 830

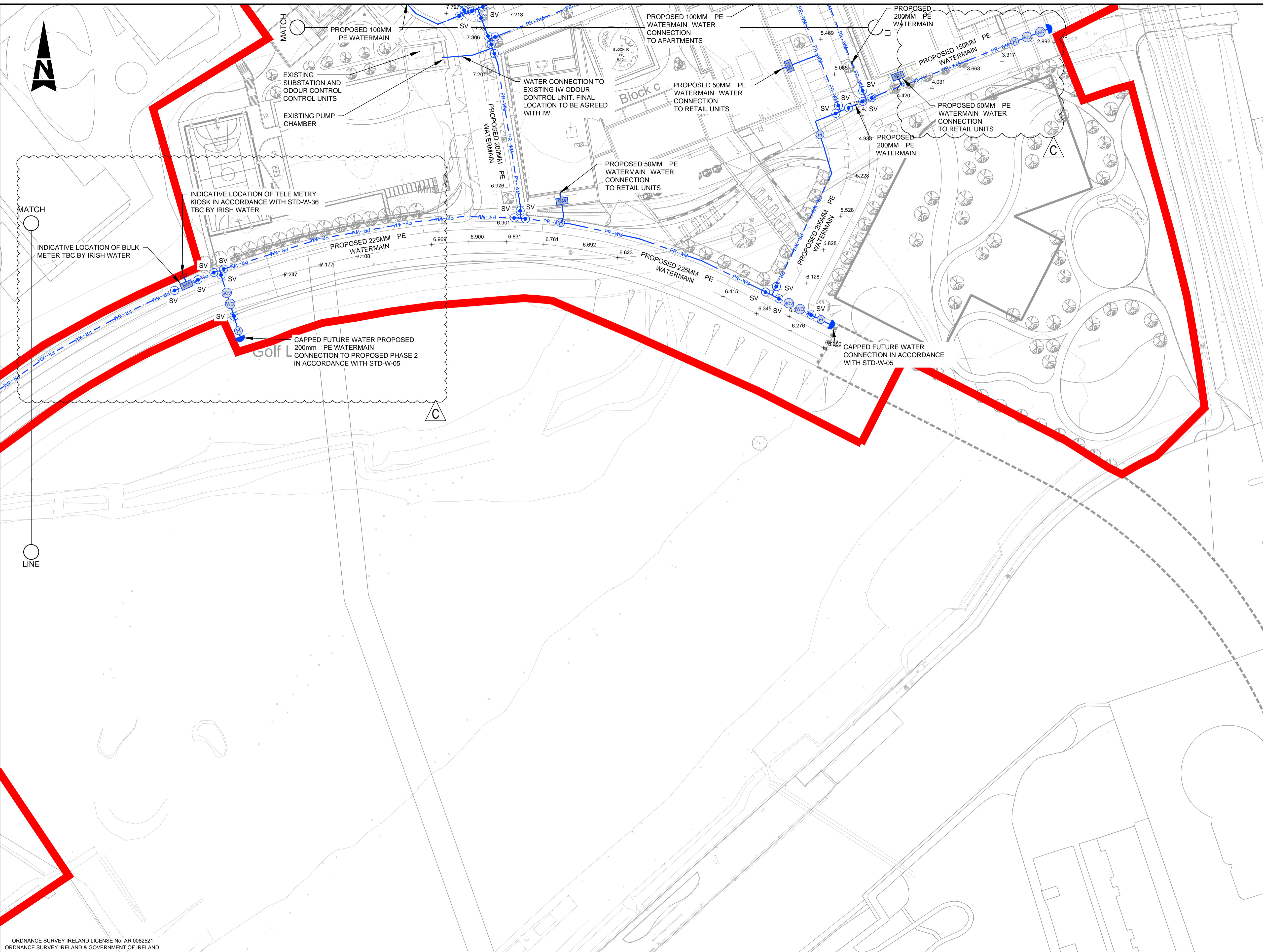
Client	SHANKILL PROPERTY INVESTMENTS LTD		
Project	COASTAL QUARTER BRAY		

Purpose	INFORMATION		
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1:1000 at A3	Date	26.05.22	Checked
			AC
			Authorized
			GH
Status	Drawing Number	Rev	
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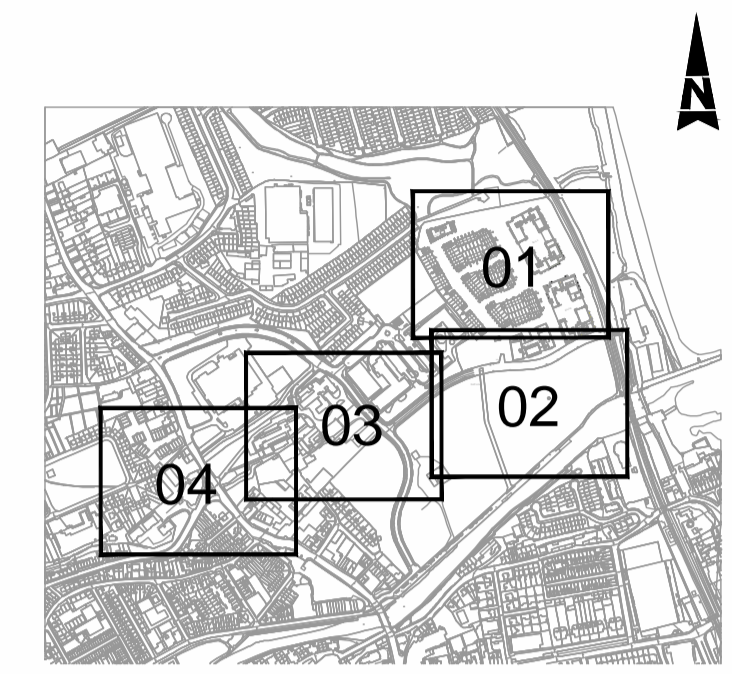
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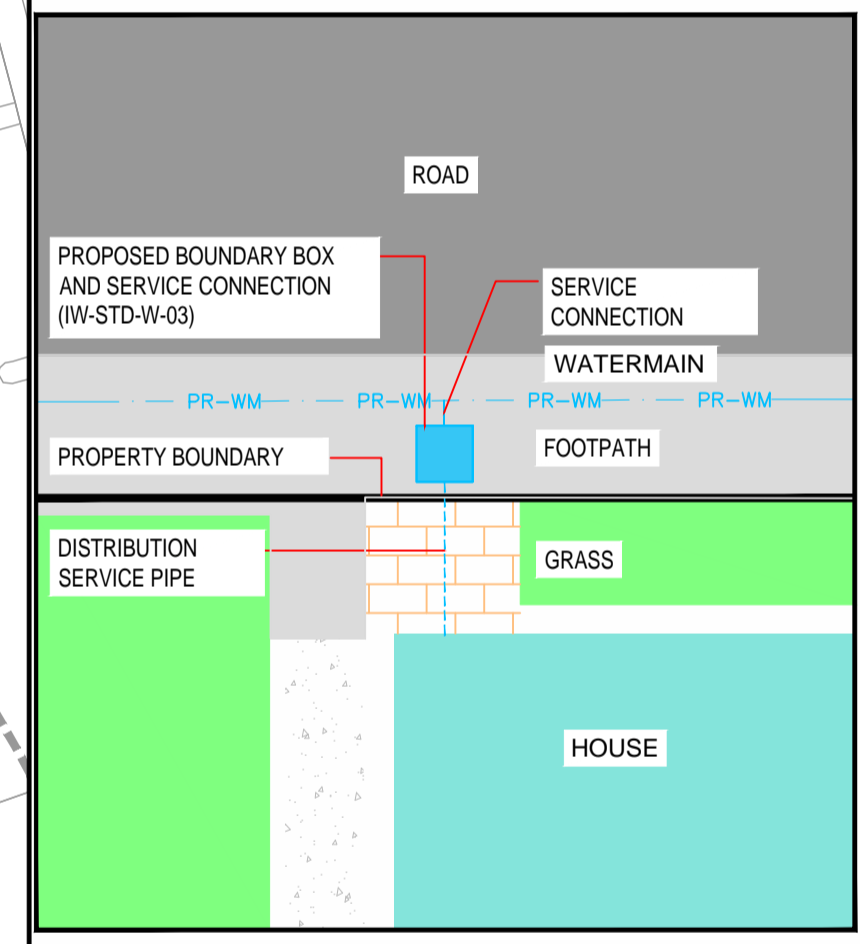
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Date: Aug 25, 2022 - 11:23am
Plotted by: P Murray



- GENERAL NOTES**
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 4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR



KEY PLAN
Scale NTS



TYPICAL BOUNDARY BOX DETAIL
Scale at A1 1:100

NOTE:
INSTALLATION OF WATER MAIN SHALL BE IN ACCORDANCE WITH IRISH WATER, WATER INFRASTRUCTURE STANDARD DETAILS (IW-CDS-5020-01) & CODE OF PRACTICE FOR WATER INFRASTRUCTURE (IW-CDS-5020-03)
INSTALLATION OF WATER MAIN AND ALL OTHER DEVELOPMENT SERVICES SHALL BE IN ACCORDANCE WITH IRISH WATER STD-W-11
AIR VALVE AND HYDRANTS COVERS, WHERE LOCATED IN GRASS AREAS, SHALL BE SURROUNDED BY A CONCRETE PLINTH, 200MM ALL ROUND AND 100MM DEEP FORMED WITH C20/25 CONCRETE, 20MM AGGREGATE SIZE, BEDDED IN CLAUSE 804 MATERIAL. THE PLINTH SHALL INCORPORATE MILD STEEL REINFORCEMENT LINKS AND SHALL HAVE A BULL-NOSE FINISH AROUND ITS EXTERNAL PERIMETER. SEE SECTION 3.18 OF WATER CODE OF PRACTICE A GEOTEXTILE PIPE WRAP ROOT PROTECTION SYSTEM WILL BE APPLIED TO THE PIPES WHERE IT IS LAID WITHIN THE MINIMUM DISTANCE GIVEN IN TABLE A1 OF BS 5837 AS SPECIFIED IN SECTION 3.26 OF THE IRISH WATER CODE OF PRACTICE FOR WATER INFRASTRUCTURE

LEGEND	
	EXISTING WATERMAIN
	PROPOSED (H)PE/HDPE PE-100 SDR-17) WATERMAIN DIAMETER AS INDICATED
	PROPOSED SLUIICE VALVE (IW-STD-W-15)
	PROPOSED FIRE HYDRANT (ONLINE IW-STD-W-18) (OFFLINE IW-STD-W-19)
	PROPOSED BULK METER (IW-STD-W-26)
	PROPOSED 25MM (OD) PE SERVICE PIPE AS PER STD-W-01
	PROPOSED AIR VALVE (ONLINE IW-STD-W-22) (OFFLINE IW-STD-W-23)
	PROPOSED SCOUR VALVE (IW-STD-W-30)
	PROPOSED MANIFOLD CHAMBER (IW-CDS-5020-03, SECTION 3.14)
	PROPOSED END CAP (IW-STD-W-05)
	PROPOSED WASH OUT HYDRANT (IW-STD-W-30A)
	SITE BOUNDARY

Rev	Description	By	Date	Chk'd	Auth
C	ISSUED FOR IW REVIEW	PS	24.08.22	AC	GH
B	ISSUED FOR IW REVIEW	PS	23.08.22	AC	GH
A	ISSUED FOR IW REVIEW	PS	02.08.22	AC	GH
-	FOR INFORMATION	PS	26.05.22	AC	GH

ATKINS
Member of the SNC-Lavalin Group

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Tel (+353) 01 810 8000 Fax (+353) 01 810 8001

Unit 2B, 2200 Cork Airport Business Park, Cork
Tel (+353) 021 429 0300 Fax (+353) 021 429 0360

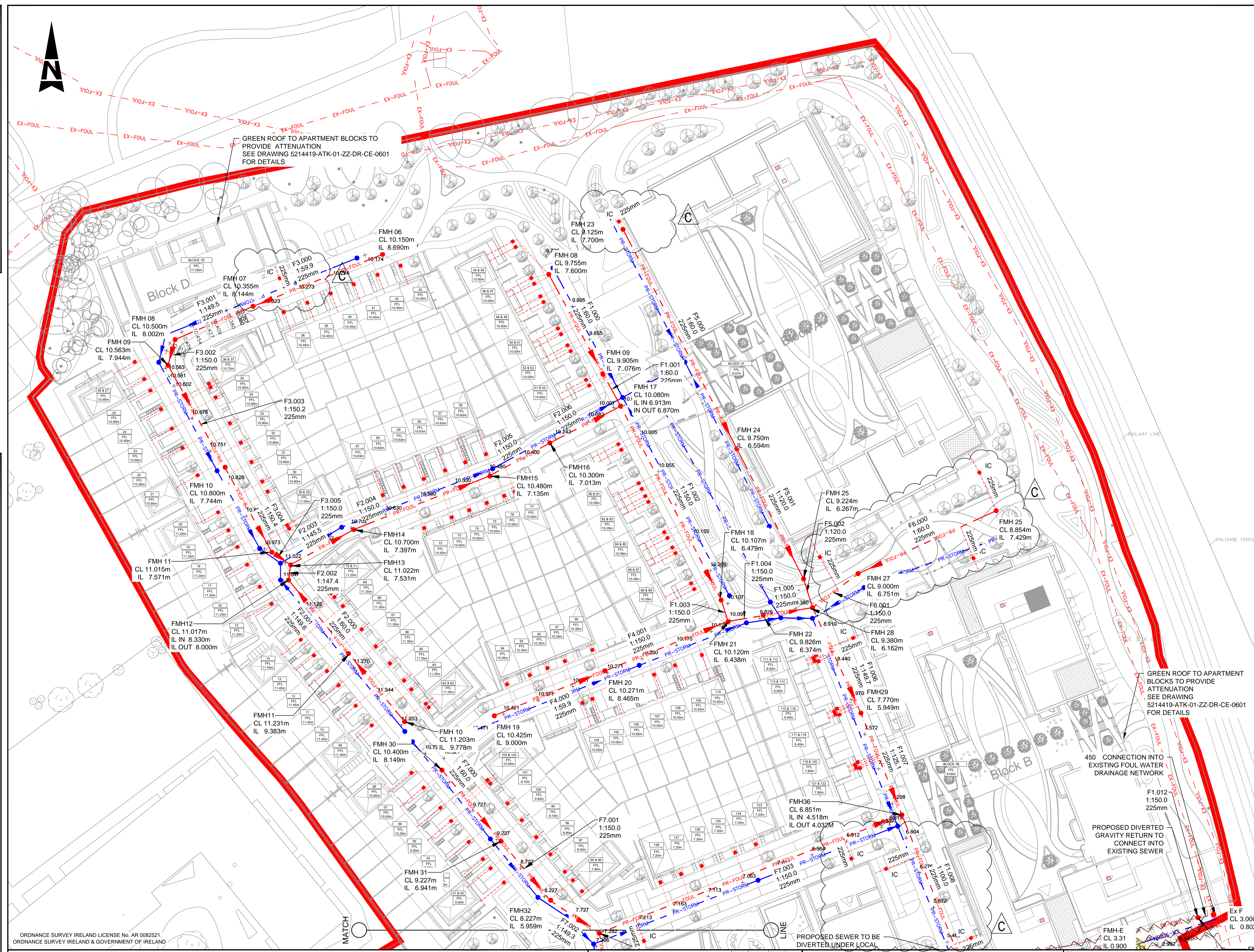
1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050 Fax (+353) 091 779 830

Client	SHANKILL PROPERTY INVESTMENTS LTD
Project	COASTAL QUARTER BRAY

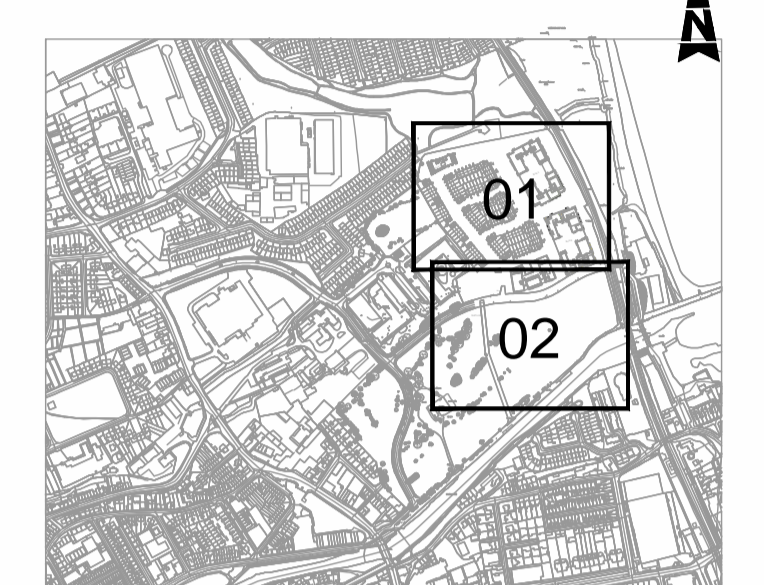
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100
0 10
A1

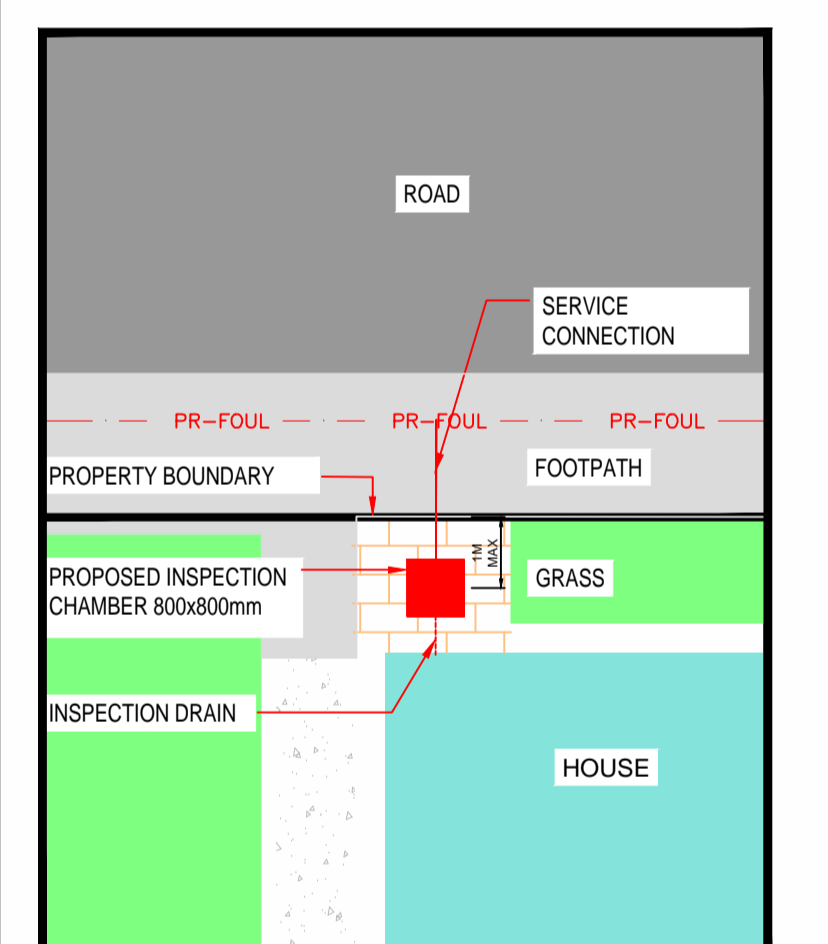
DO NOT SCALE



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KEY PLAN
Scale NTS



INSPECTION CHAMBER LOCATION TYPICAL DETAIL
Scale at A1 1:100

NOTE:

INSTALLATION OF FOUL SEWER SHALL BE IN ACCORDANCE WITH IRISH WATER WASTEWATER INFRASTRUCTURE STANDARD DETAILS (IW-CDS-5030-01) & CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE (IW-CDS-5030-03) INSTALLATION OF FOUL SEWER AND ALL OTHER DEVELOPMENT SERVICES SHALL BE IN ACCORDANCE WITH IRISH WATER STD-WW-05. A GEOTEXTILE PIPE WRAP ROOT PROTECTION SYSTEM WILL BE APPLIED TO THE PIPES WHERE IT IS LAID WITHIN THE MINIMUM DISTANCE GIVEN IN TABLE A1 OF BS 5837 AS SPECIFIED IN SECTION 3.21 OF THE IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE

ORDNANCE SURVEY IRELAND LICENSE No. AR 0082521
ORDNANCE SURVEY IRELAND & GOVERNMENT OF IRELAND

LEGEND

	SITE BOUNDARY		EX-FOUL	EXISTING FOUL MAIN
	PROPOSED (UPVC) GRAVITY FOUL DRAINAGE. DIAMETER AS INDICATED (IW-CDS-5030-03, SECTION 3.13.3)		FW	PROPOSED SEWER UNDER LOCAL NETWORK REINFORCEMENT PROJECT BY IRISH WATER
	PROPOSED FOUL MANHOLE (IW-STD-WW-09.10,11,12)			PIPE WORK TO BE REMOVED
	PROPOSED RISING MAIN, 900mm OD HDPE SDR17			PROPOSED FOUL WATER WAYLEAVE
	PROPOSED INSPECTION CHAMBER & 100MM PVC CONNECTION (IW-STD-WW-03, 13)			
	PROPOSED 900 (UPVC) GRAVITY FOUL DRAINAGE. (IW-CDS-5030-03, SECTION 3.13.3)			

Rev	Description	By	Date	Chk'd	Auth
C	ISSUED FOR IW REVIEW	PS	24.08.22	AC	GH
B	ISSUED FOR IW REVIEW	PS	23.08.22	AC	GH
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1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050 Fax (+353) 091 779 830

Client: SHANKILL PROPERTY INVESTMENTS LTD

Project: COASTAL QUARTER BRAY

INFORMATION

Title: PROPOSED FOUL WATER LAYOUT SHEET 1

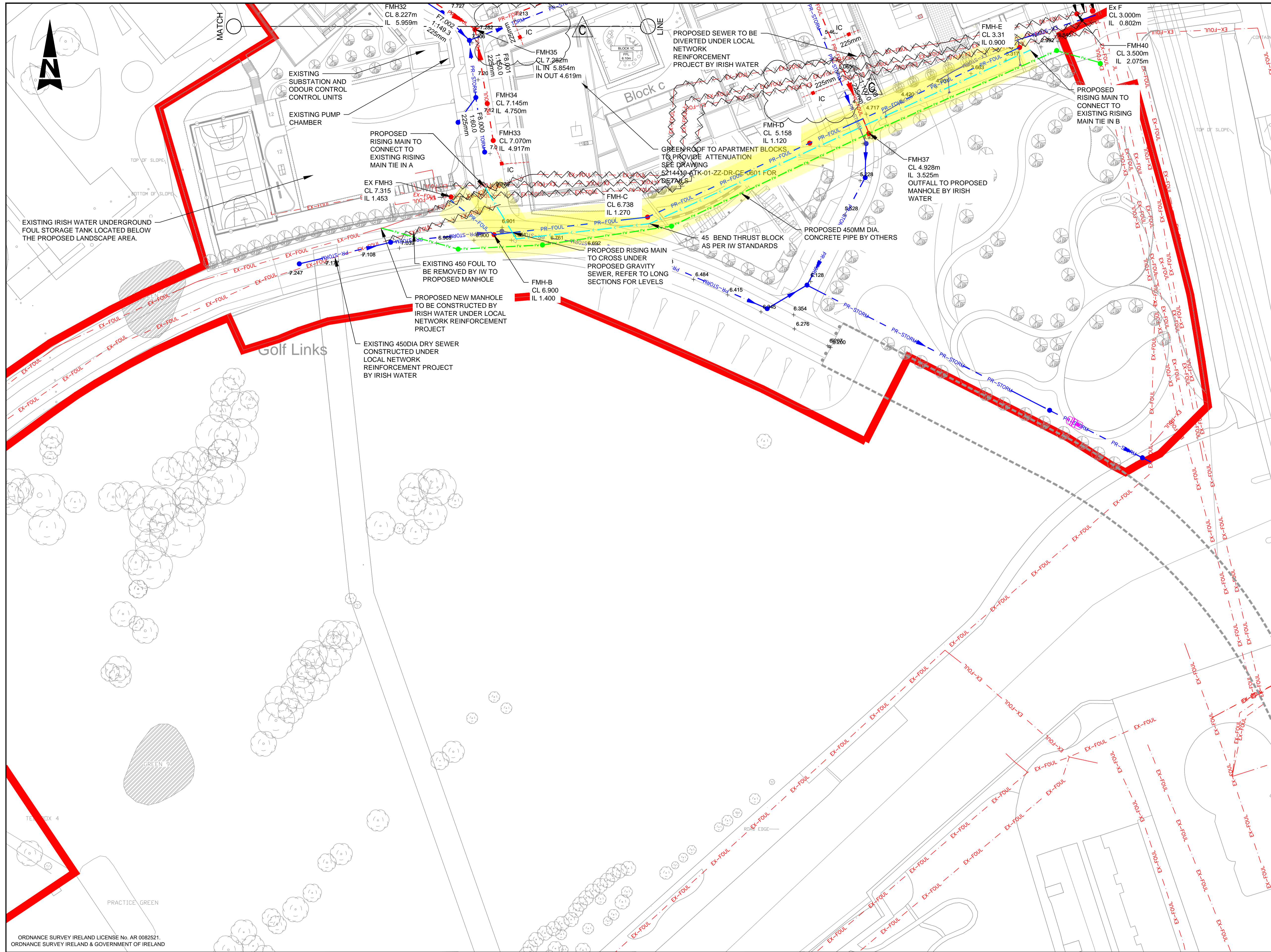
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Date	26.05.22	Date	26.05.22	Date	26.05.22	Date	26.05.22
Status	I	Drawing Number	5214419-ATK-01-ZZ-DR-CE-0551	Rev			C

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Date: Aug 24, 2022 - 6:10pm
Plotted by: PMurphy

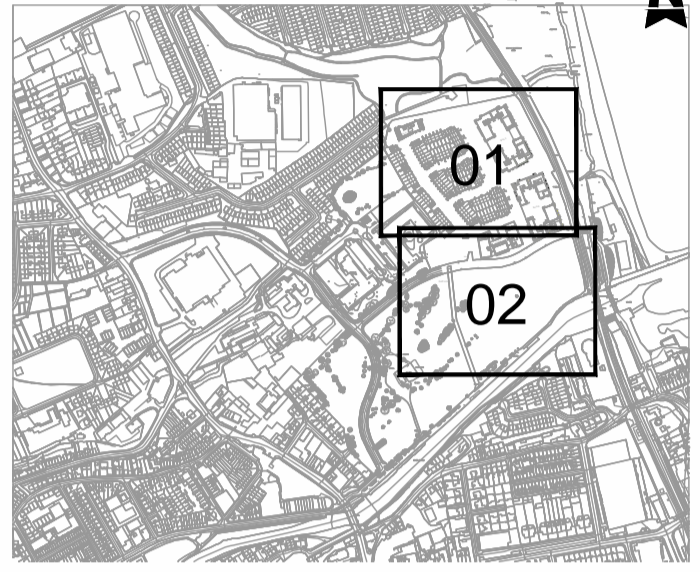
A1

DO NOT SCALE

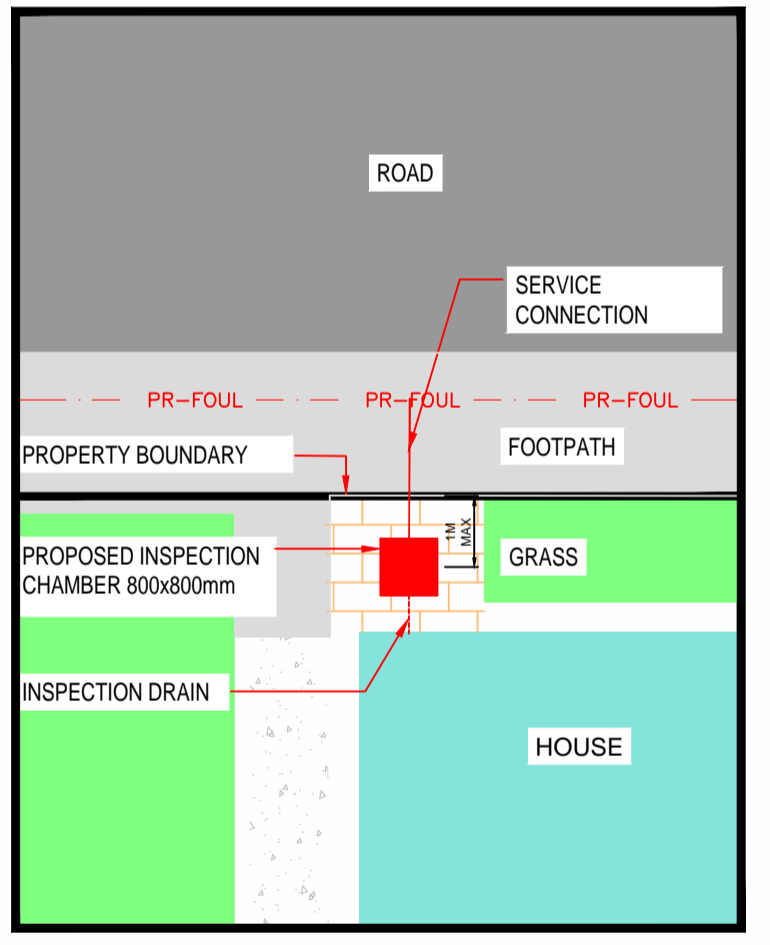
File: 5214419-ATK-01-ZZ-DR-CE-0551_0552.dwg
Date: Aug 24, 2022 - 6:09pm
Printed by: PMurphy



- GENERAL NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
 2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
 3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
 4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR



KEY PLAN
Scale NTS



INSPECTION CHAMBER LOCATION TYPICAL DETAIL
Scale at A1 1:100

NOTE:
INSTALLATION OF FOUL SEWER SHALL BE IN ACCORDANCE WITH IRISH WATER WASTEWATER INFRASTRUCTURE STANDARD DETAILS (IW-CDS-5030-01) & CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE (IW-CDS-5030-03) INSTALLATION OF FOUL SEWER AND ALL OTHER DEVELOPMENT SERVICES SHALL BE IN ACCORDANCE WITH IRISH WATER STD-WW-05. A GEOTEXTILE PIPE WRAP ROOT PROTECTION SYSTEM WILL BE APPLIED TO THE PIPES WHERE IT IS LAID WITHIN THE MINIMUM DISTANCE GIVEN IN TABLE A1 OF BS 5837 AS SPECIFIED IN SECTION 3.21 OF THE IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE

ORDNANCE SURVEY IRELAND LICENSE No. AR 0082521
ORDNANCE SURVEY IRELAND & GOVERNMENT OF IRELAND

LEGEND			
	SITE BOUNDARY		EXISTING FOUL MAIN
	PROPOSED (UPVC) GRAVITY FOUL DRAINAGE. DIAMETER AS INDICATED (IW-CDS-5030-03, SECTION 3.13.3)		PROPOSED SEWER UNDER LOCAL NETWORK REINFORCEMENT PROJECT BY IRISH WATER
	PROPOSED FOUL MANHOLE (IW-STD-WW-09, 10, 11, 12)		PIPE WORK TO BE REMOVED
	PROPOSED RISING MAIN, 900mm OD HDPE SDR17		PROPOSED FOUL WATER WAYLEAVE
	PROPOSED INSPECTION CHAMBER & 100MM PVC CONNECTION (IW-STD-WW-09, 10, 11, 12)		
	PROPOSED 900 (UPVC) GRAVITY FOUL DRAINAGE. (IW-CDS-5030-03, SECTION 3.13.3)		

Rev	Description	By	Date	Chk'd	Auth
C	ISSUED FOR IW REVIEW	PS	24.08.22	AC	GH
B	ISSUED FOR IW REVIEW	PS	23.08.22	AC	GH
A	ISSUED FOR IW REVIEW	PS	02.08.22	AC	GH
-	FOR INFORMATION	PS	26.05.22	AC	GH

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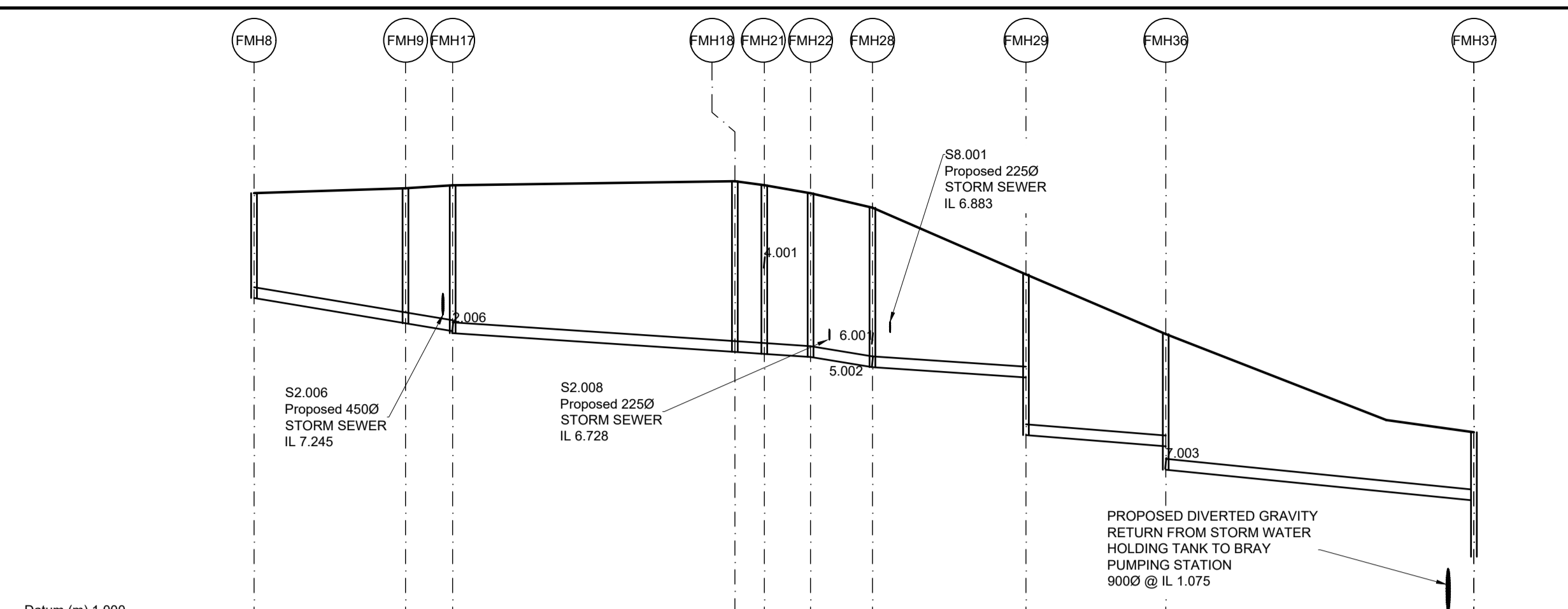
Atkins House, 150-155 Airside, Business Park, Swords, Co. Dublin
Tel (+353) 01 810 8000
Fax (+353) 01 810 8001

Unit 2B, 2200 Cork Airport Business Park, Cork
Tel (+353) 021 429 0300
Fax (+353) 021 429 0360

1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050
Fax (+353) 091 779 830

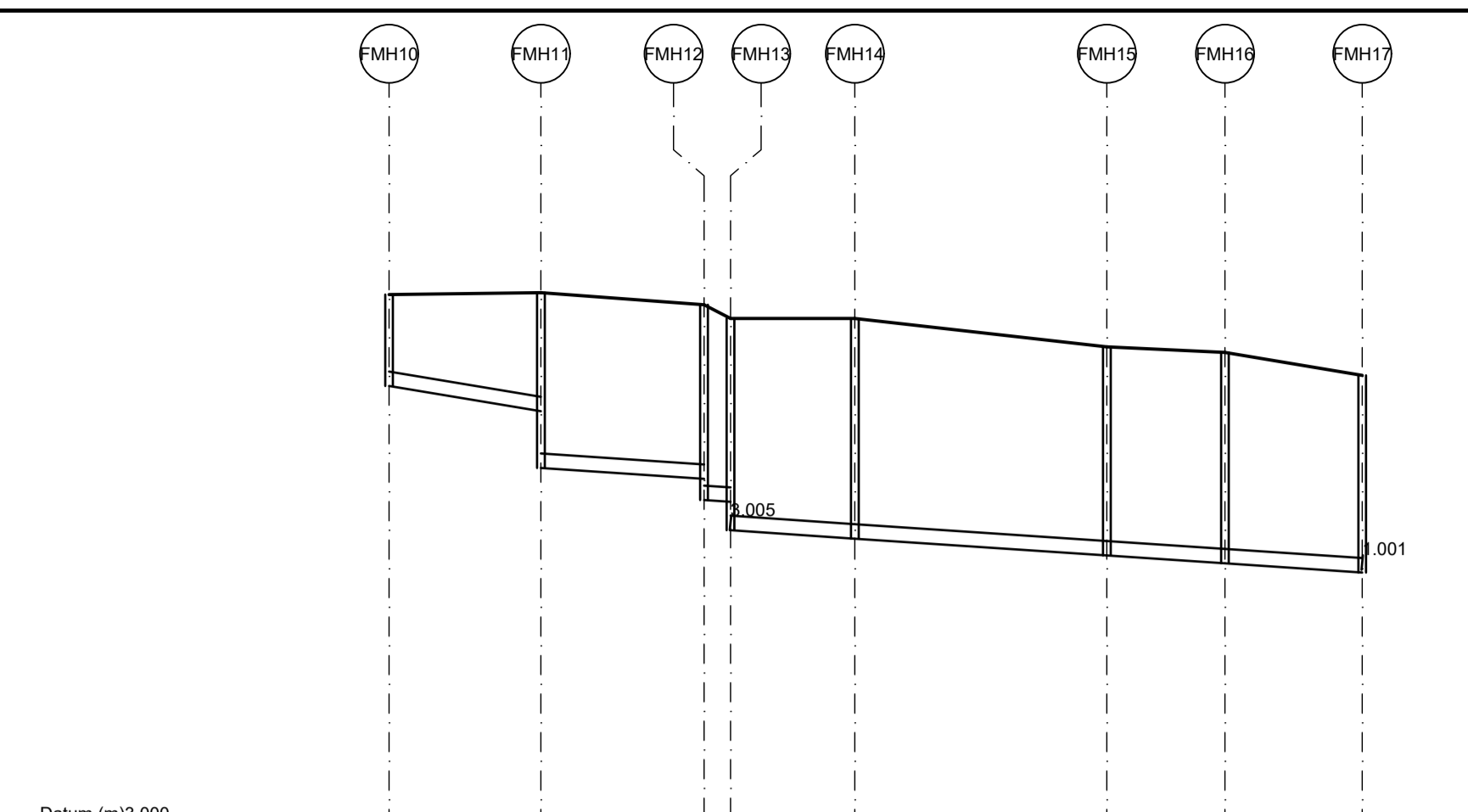
Client	SHANKILL PROPERTY INVESTMENTS LTD
Project	COASTAL QUARTER BRAY

Title		PROPOSED FOUL WATER LAYOUT SHEET 2			
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Date	26.05.22	Date	26.05.22	Date	26.05.22
Status	I	Drawing Number	5214419-ATK-01-ZZ-DR-CE-0552	Rev	C



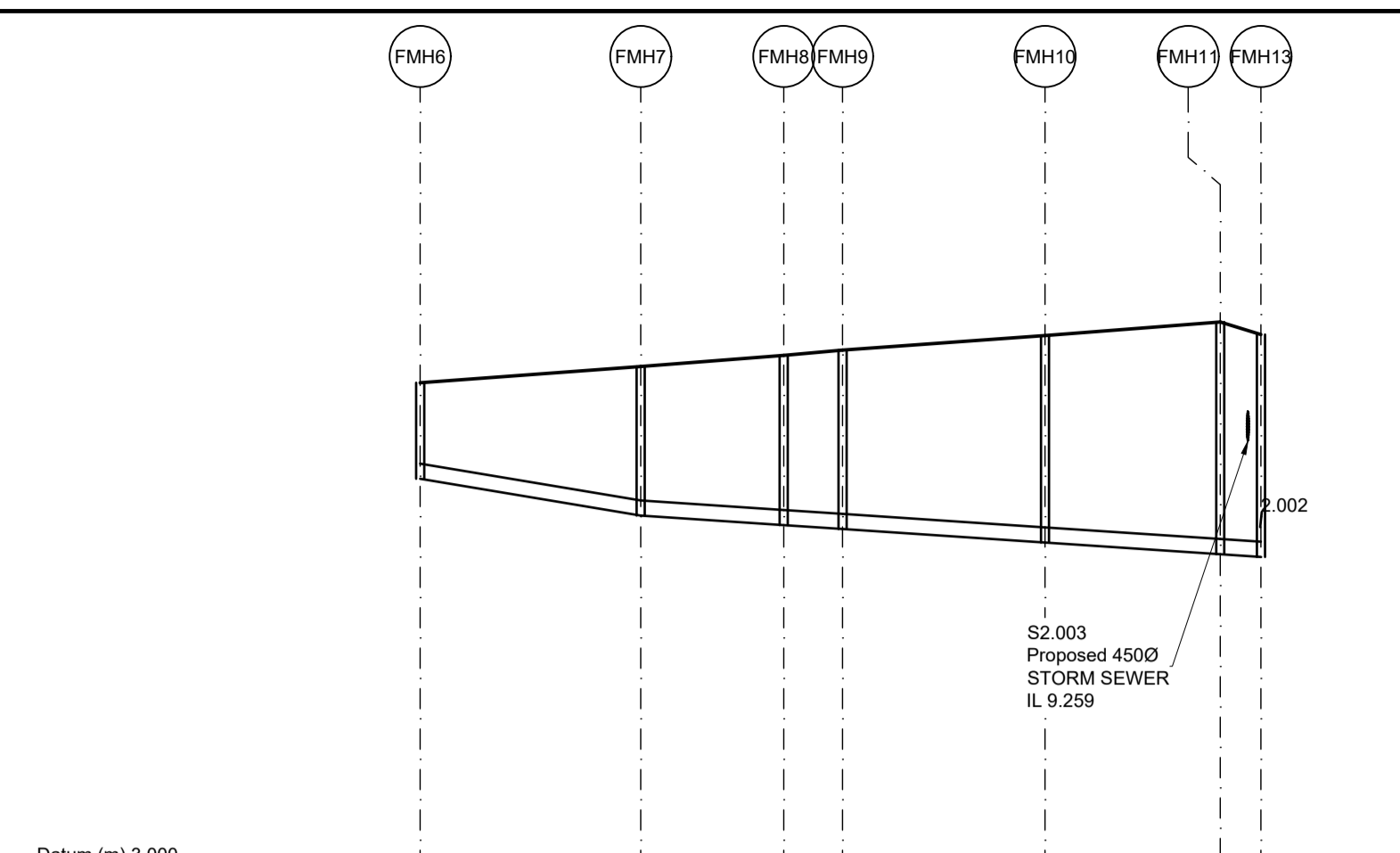
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F1.002	225	150.0	1:100	9.905	7.026	
F1.005	225	150.0	1:100	10.080	6.813	
F1.006	225	150.0	1:100	10.107	6.479	
F1.007	225	150.0	1:100	10.091	6.438	
F1.008	225	100.0	1:100	9.826	6.374	
F1.009	225	100.0	1:100	9.380	6.102	
F1.010	225	100.0	1:100	7.770	5.949	
F1.011	225	100.0	1:100	6.851	4.750	
F1.012	225	100.0	1:100	6.851	4.516	
F1.013	225	100.0	1:100	4.828	4.147	
F1.014	225	100.0	1:100	4.828	3.825	

Longitudinal Section FMH8 - FMH33
 Scale 1:1000 (Horizontally), 1:100 (Vertically)



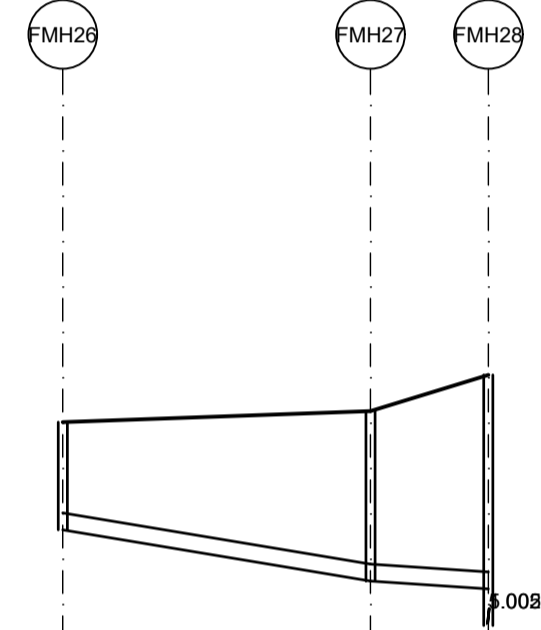
Station	DN	Dia (mm)	Slope (1:X)	Cover Level (m)	Invert Level (m)	Length (m)
F2.000	225	60.0	1:100	11.283	9.778	23.674
F2.001	225	150.0	1:100	11.231	9.883	
F2.003	225	150.0	1:100	11.017	9.100	
F2.004	225	150.0	1:100	10.830	7.837	
F2.005	225	150.0	1:100	10.790	7.195	
F2.006	225	150.0	1:100	10.880	7.013	
F2.007	225	150.0	1:100	10.900	7.013	
F2.008	225	150.0	1:100	10.880	6.820	

Longitudinal Section FMH10 - FMH17
 Scale 1:1000 (Horizontally), 1:100 (Vertically)



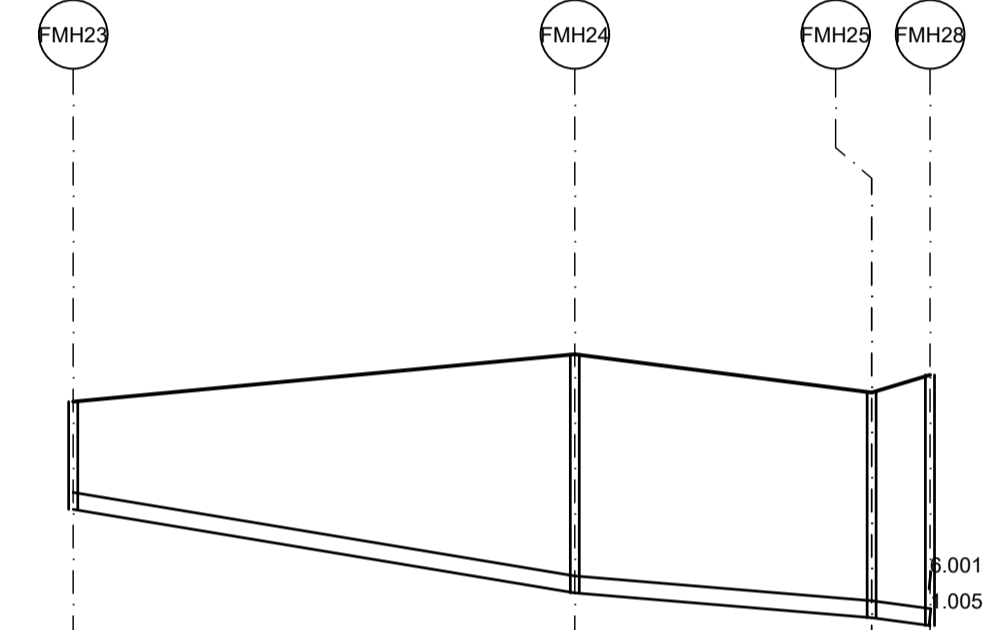
Station	DN	Dia (mm)	Slope (1:X)	Cover Level (m)	Invert Level (m)	Length (m)
F3.000	225	60.0	1:100	10.750	8.689	32.730
F3.001	225	150.0	1:100	10.385	8.144	
F3.003	225	150.0	1:100	10.500	8.002	
F3.004	225	150.0	1:100	10.383	7.944	
F3.005	225	150.0	1:100	10.890	7.744	
F3.006	225	150.0	1:100	11.015	7.571	
F3.007	225	150.0	1:100	11.022	7.531	

Longitudinal Section FMH6 - FMH13
 Scale 1:1000 (Horizontally), 1:100 (Vertically)



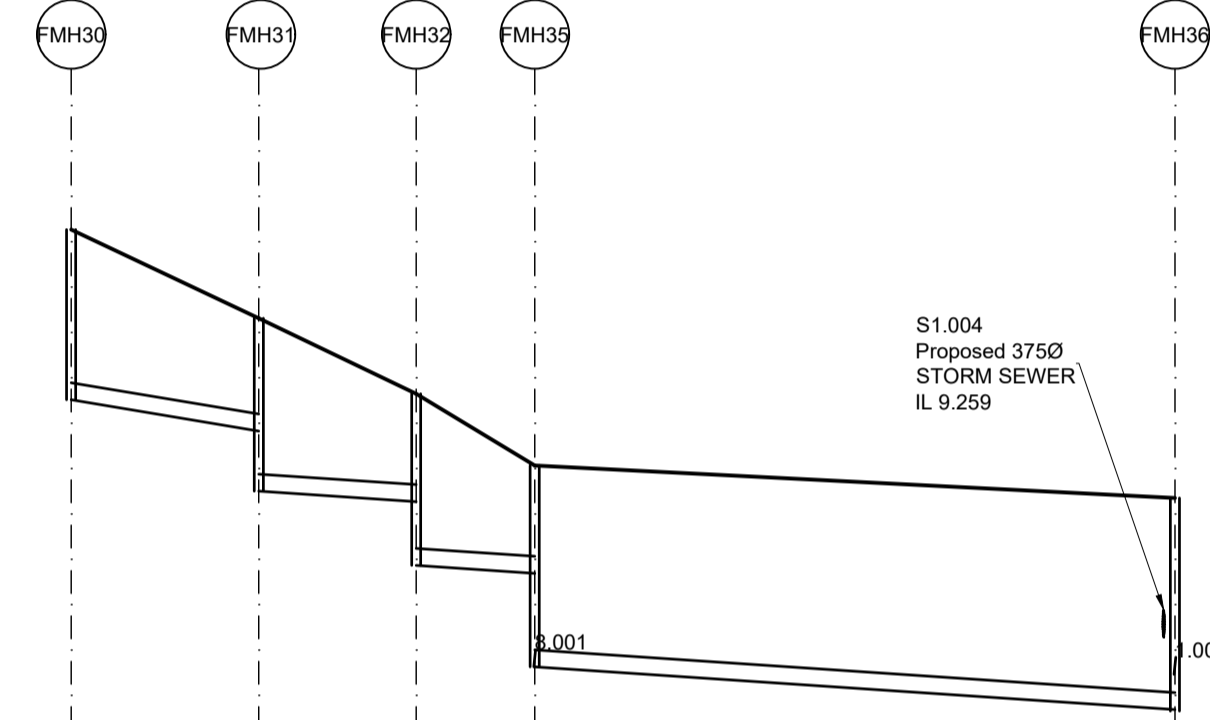
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F6.000	225	60.0	1:100	8.854	7.429	40.899
F6.001	225	150.0	1:100	9.000	6.751	
F6.002	225	150.0	1:100	9.380	6.647	

Longitudinal Section FMH26 - FMH28
 Scale 1:1000 (Horizontally), 1:100 (Vertically)



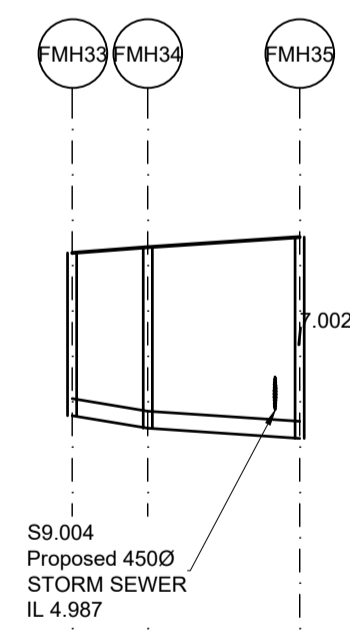
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F5.001	225	120.0	1:100	9.750	6.994	
F5.002	225	120.0	1:100	9.284	6.287	
F5.003	225	120.0	1:100	8.380	6.102	

Longitudinal Section FMH23 - FMH28
 Scale 1:1000 (Horizontally), 1:100 (Vertically)



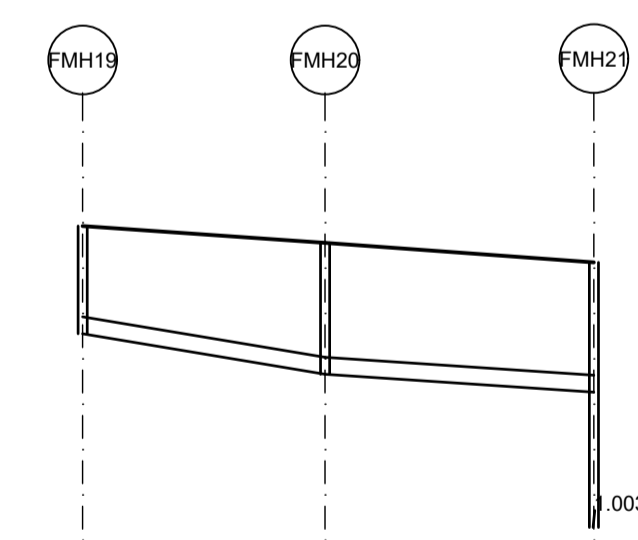
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F7.002	225	150.0	1:100	8.227	6.802	
F7.003	225	150.0	1:100	7.282	5.959	
F7.004	225	150.0	1:100	7.282	5.864	
F7.005	225	150.0	1:100	7.282	4.616	
F7.006	225	150.0	1:100	7.282	4.032	

Longitudinal Section FMH30 - FMH36
 Scale 1:1000 (Horizontally), 1:100 (Vertically)



Station	DN	Dia (mm)	Slope (1:X)	Cover Level (m)	Invert Level (m)	Length (m)
F8.000	225	150.0	1:100	7.070	4.917	20.098
F8.001	225	150.0	1:100	7.495	4.750	
F8.002	225	150.0	1:100	7.279	4.616	

Longitudinal Section FMH33 - FMH35
 Scale 1:1000 (Horizontally), 1:100 (Vertically)



Station	DN	Dia (mm)	Slope (1:X)	Cover Level (m)	Invert Level (m)	Length (m)
F4.000	225	60.0	1:100	10.425	9.000	32.071
F4.001	225	150.0	1:100	10.271	8.465	
F4.002	225	150.0	1:100	10.081	8.228	

Longitudinal Section FMH19 - FMH21
 Scale 1:1000 (Horizontally), 1:100 (Vertically)

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Rev	Description	By	Date	Chk'd	Auth
A	ISSUED FOR IW REVIEW	PS	02.08.22	AC	GH
-	FOR INFORMATION	PS	26.05.22	AC	GH

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1st Floor Technology House Parkmore Technology Park, Galway
 Tel (+353) 091 786 050 Fax (+353) 091 779 830

Client: SHANKILL PROPERTY INVESTMENTS LTD

Project: COASTAL QUARTER PLANNING APPLICATION

Purpose INFORMATION					
Title PROPOSED FOUL WATER LONG SECTIONS SHEET 1					
Original	Scale	Design/Drawn	Checked	Authorized	
AS	SHOWING	PS	AC	GH	
Date	26.05.22	Date	26.05.22	Date	26.05.22
Status	Drawing Number	Rev			
I	5214419-ATK-01-ZZ-DR-CE-0560	A			

Appendix C. Irish Water Existing Foul Drainage Diversion Application - Confirmation of Feasibility Letter

Shankill Property Investments Limited
One Royal Canal House
Royal Canal Park
Dublin 15

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 August 2022

To Whom It May Concern,

Re: Diversion Reference DIV21013 Diversion enquiry. Subject to contract | Contract denied

Irish Water has reviewed your enquiry in relation to a diversion of Irish Water's sewers as part of the proposed Development at Lands at the Old Bray Golf Club, Bray, Wicklow as indicated on drawing no. 5214419-ATK-00-ZZ-SK-CE-0013.

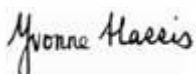
Based upon the details you have provided with your enquiry and as assessed by Irish Water, we wish to advise you that, in this instance, Irish Water has no objection to the proposed extension subject to the following conditions;

- The applicant shall carry out site investigation works to confirm the location of existing IW assets and that the network connectivity of IW assets matches what is shown on IW GIS;
- The applicant shall submit a detailed design outlining the following:
 - coordination between the sewer diversions and the local network reinforcement project;
 - the choice of the contractor who will be carrying out the works; and
 - at the request of Wicklow County Council, a pedestrian and cycle route between the schools and the URB138 to the harbour be kept open and maintained in a safe condition throughout the proposed works.

You are advised that this correspondence does not constitute an agreement in whole or in part to provide a diversion or to build near any Irish Water infrastructure and is provided subject to diversion agreement being executed at a later date. You are advised to make contact with the diversions team at diversions@water.ie once planning permission has been granted and prior to any works commencing on site in order to enter into a diversion agreement with Irish Water.

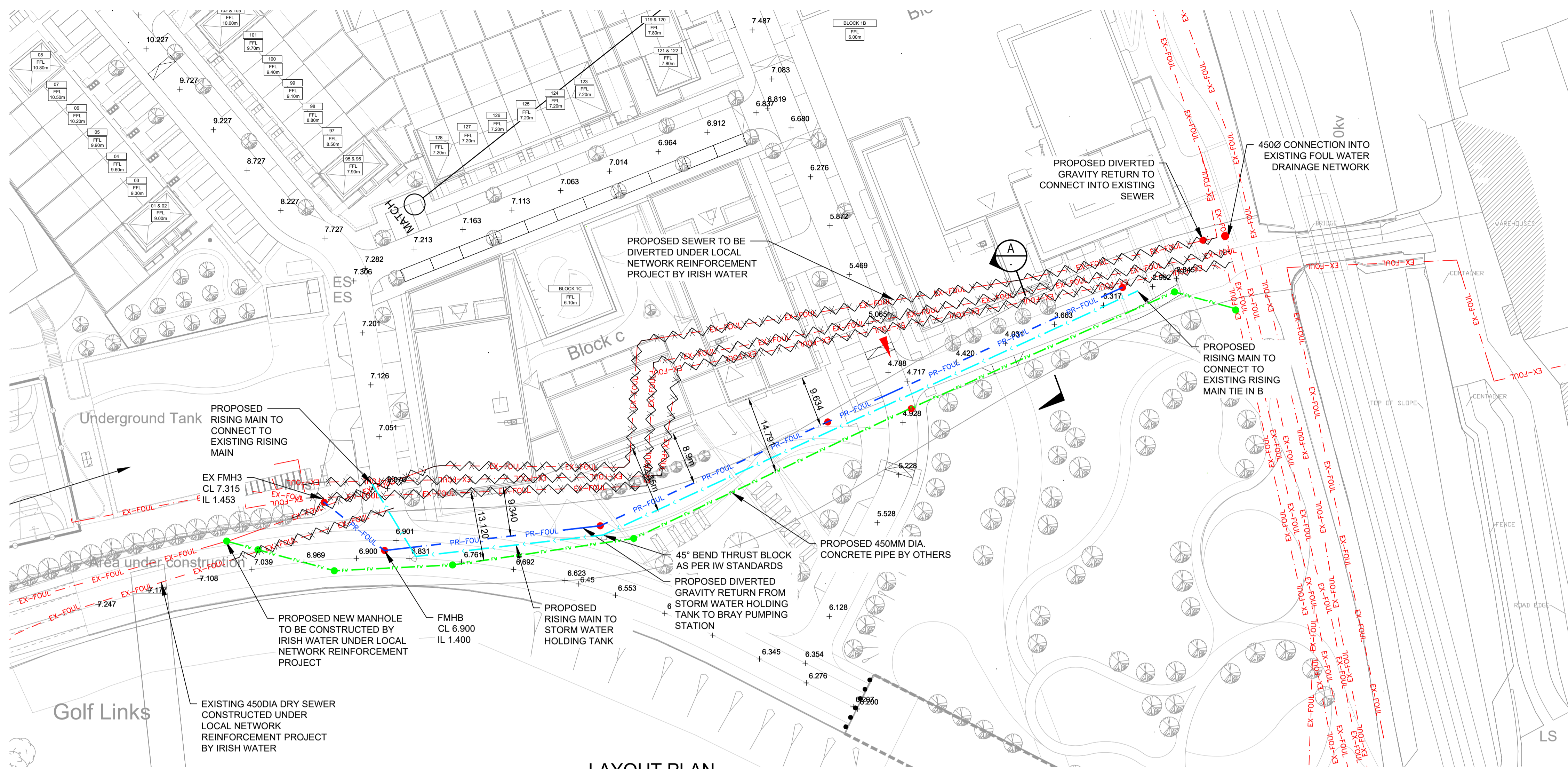
If you have any further questions, please contact Jurica Matosevic from the diversions team on 01 8925846 or email jmatosevic@water.ie. For further information, visit www.water.ie/connections.

Yours sincerely,

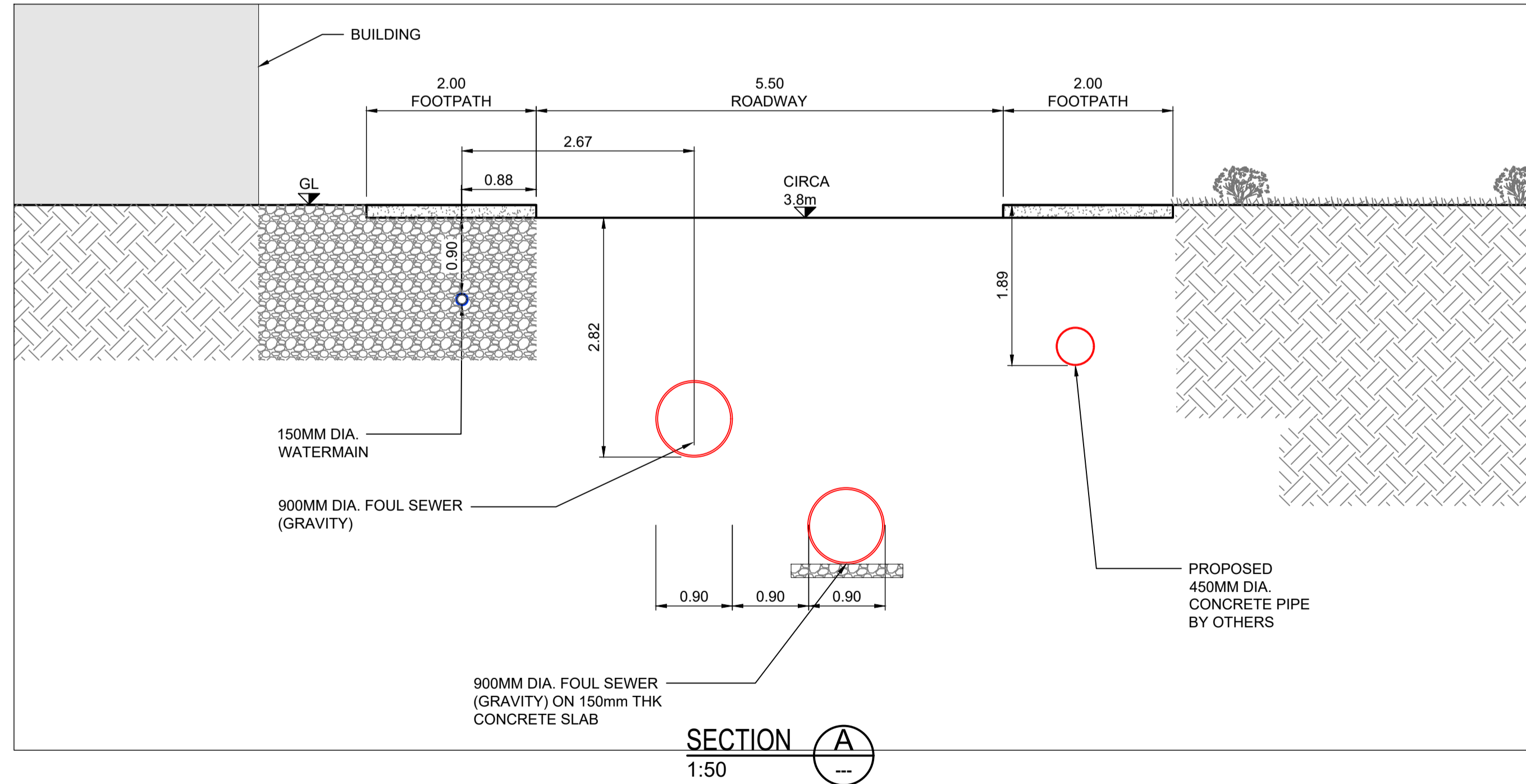


Yvonne Harris

Head of Customer Operations



LAYOUT PLAN
Scale at A1 1:500
Scale at A3 1:1000



SECTION A
1:50

- GENERAL NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
 2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
 3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
 4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR

DRAFT

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ORDNANCE SURVEY IRELAND & GOVERNMENT OF IRELAND

LEGEND	
	SITE BOUNDARY
	PROPOSED (UPVC) GRAVITY FOUL DRAINAGE, DIAMETER AS INDICATED (IW-CDS-5030-03, SECTION 3.13.3)
	PROPOSED FOUL MANHOLE (IW-STD-WW-09.10.11.12)
	PROPOSED RISING MAIN, 900mm OD HDPE SDR17 CONNECTION (IW-STD-WW-03, 13)
	PROPOSED 900Ø (UPVC) GRAVITY FOUL DRAINAGE, (IW-CDS-5030-03, SECTION 3.13.3)
	EX-FOUL EXISTING FOUL MAIN
	FW PROPOSED SEWER UNDER LOCAL NETWORK REINFORCEMENT PROJECT BY IRISH WATER
	PIPE WORK TO BE REMOVED
	PROPOSED FOUL WATER WAYLEAVE

Rev	Description	By	Date	Chk'd	Auth
-	FOR INFORMATION	PS	06.07.22	AC	GH



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Tel (+353) 021 429 0300
Fax (+353) 021 429 0360

1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050
Fax (+353) 091 779 830

Client	SHANKILL PROPERTY INVESTMENTS LTD			
Project	COASTAL QUARTER PLANNING APPLICATION			

INFORMATION					
Title	IRISH WATER DIVERSION CROSS SECTION				
Original Scale	Design/Drawn	Checked	Authorised		
AS SHOWN	PS	AC	GH		
Date	04.07.22	Date	04.07.22	Date	04.07.22
Status	Drawing Number				
----	5214419-ATK-00-ZZ-SK-CE-0013				
Rev	-				

Appendix D. Responses to comments from ABP, WCC and DLRCC

Opinion ABP-308291-20		
Ref	Issue	Atkins Response
Water Services 4	Further consideration of the relocation of Irish Water infrastructure located underneath 'The Orchard' in the south west portion of the site having regard to its potential negative impact on the development potential of the site and the public realm. In the event that the infrastructure is not to be relocated then a justification should be submitted at application stage that seeks to address, inter alia, the potential negative impact on the development potential of the site and the public realm at this location.	Refer to sections 7.2 of Atkins Document 5193890DG0019 for details on the required upgrade works needed for both the foul and water supply infrastructure.
Water Services 6	Further consideration / amendments of the documents as they relate to foul water drainage proposals to service the development. The documents should provide details of necessary upgrade works required to facilitate the development to include, inter alia: plans and particulars, having regard to the wastewater network constraints raised by Irish Water in their report dated 22nd October 2020	Refer to sections 7.2 & 8.2, and Appendices A, B & C of Atkins Document 5193890DG0019 for details on the required upgrade works needed for both the foul and water supply infrastructure.

Inspector's Report on Recommended Opinion ABP-308291-20		
Ref	Issue	Atkins Response
Item 5:	<i>In relation to the Water Services, ABP representatives sought further elaboration / discussion /</i>	
5.1	Clarification of Irish Water infrastructure located underneath 'The Orchard' in the south west portion of the site and its potential negative impact on the development of the site. Consideration of the relocation of this infrastructure	Refer to Sections 7.1 & 7.2 and Appendices A, B & C of the Atkins Documents 5193890DG0019 for further details on the relocation of the infrastructure underneath 'The Orchard'.
5.6	Consideration of the report from Irish Water regarding the capacity of the wastewater network and upgrades that are required to facilitate the development.	Refer to Section 7.3 and Appendices A & B of Atkins Document 5193890DG0019 for details on the wastewater network design, the Confirmation of Feasibility letter and the Design Acceptance letter issued by Irish Water.

Record of Meeting ABP-308291-20		
Ref	Issue	Atkins Response
5	<i>Water Services – flooding and drainage</i>	
ABP 5.4	Consideration of the report from Irish Water and the capacity of the wastewater network.	Refer to section 7.3 and Appendices A & B of Atkins Document 5193890DG0019 for details on the wastewater network design, the Confirmation of Feasibility letter and the Design Acceptance letter issued by Irish Water.

Appendix E. Pre-Connection Enquiry Form Submitted to Irish Water

Pre-connection enquiry form

Business developments, mixed use developments, housing developments



This form is to be filled out by applicants enquiring about the feasibility of a water and/or wastewater connection to Irish Water infrastructure. If completing this form by hand, please use BLOCK CAPITALS and black ink. Please note that this is a digital PDF form and can be filled in electronically

Please refer to the **Guide to completing the pre-connection enquiry form** on page 14 of this document when completing the form.

*** Denotes mandatory/ required field. Please note, if mandatory fields are not completed the application will be returned.**

Section A | Applicant details

1 *Applicant details:

Registered company name (if applicable):

Trading name (if applicable):

Company registration number (if applicable):

Parent company registered company name (if applicable):

Parent company registration number (if applicable):

If you are not a registered company/business, please provide the applicant's name:

*Contact name:

*Postal address:

*Eircode:

Please provide either a landline or a mobile number

Landline:

*Mobile:

*Email:



2 Agent details (if applicable):

The fields marked with * in this section are mandatory if using an agent

*Contact name:

Company name (if applicable):

*Postal address:

*Eircode:

Please provide either a landline or a mobile number

Landline:

*Mobile

*Email:

al.com

3 *Please indicate whether it is the applicant or agent who should receive future correspondence in relation to the enquiry:

Applicant

Agent

Please also include garry.hanratty@atkinsglobal.com as Agent

Section B | Site details

4 *Site address 1 (include Site name/Building name/Building number):

B

*Address 2

*Address 3

*City/Town

*County Eircode

5 *Irish Grid co-ordinates (proposed connection point):

Eastings (X) Northings (Y)

Note: Values for Eastings must be between 015,900 and 340,000. Northings, between 029,000 and 362,000
Eg. co-ordinates of GPO, O'Connell St., Dublin: E(X) 315,878 N(Y) 234,619

6 *Local Authority where proposed development is located:

Development is across two Local Authorities

7 *Has full planning permission been granted? Yes No

If 'Yes', please provide the current or previous planning reference number:

Section D | Water connection and demand details

- 13 *Is there an existing connection to public water mains at the site?** Yes No
- 13.1** If yes, is this enquiry for an additional connection to one already installed? Yes No
- 13.2** If yes, is this enquiry to increase the size of an existing connection? Yes No

14 Approximate date water connection is required: / /

15 *What diameter of water connection is required to service the development? mm

16 *Is more than one connection required to the public infrastructure to service this development? Yes No

If 'Yes', how many?

17 Please indicate the business water demand (shops, offices, schools, hotels, restaurants, etc.):

Post-development peak hour water demand		I/s
Post-development average hour water demand		I/s

Please include calculations on the attached sheet provided. Where there will be a daily/weekly/seasonal variation in the water demand profile, please provide all such details.

18 Please indicate the industrial water demand (industry-specific water requirements):

Post-development peak hour water demand		I/s
Post-development average hour water demand		I/s

Please include calculations on the attached sheet provided. Where there will be a daily/weekly/seasonal variation in the water demand profile, please provide all such details.

19 What is the existing ground level at the property boundary at connection point (if known) above Malin Head Ordnance Datum? m

20 What is the highest finished floor level of the proposed development above Malin Head Ordnance Datum? m

21 Is on-site water storage being provided? Yes No

Please include calculations on the attached sheet provided.

22 Are there fire flow requirements? Yes No

Additional fire flow requirements over and above those identified in Q17-18		I/s
-----------------------------------------------------------------------------	--	-----

Please include calculations on the attached sheet provided, and include confirmation of requirements from the Fire Authority.

23 Do you propose to supplement your potable water supply from other sources? Yes No

If 'Yes', please indicate how you propose to supplement your potable water supply from other sources (see **Guide to completing the application form** on page 15 of this document for further details):

Note foul discharge will be into proposed Network reinforcement project. Dermot Egg (IWA) is project DM

Section E | Wastewater connection and discharge details

24 *Is there an existing connection to a public sewer at the site? Yes No

24.1 If yes, is this enquiry for an additional connection to the one already installed? Yes No

24.2 If yes, is this enquiry to increase the size of an existing connection? Yes No

25 *Approximate date that wastewater connection is required: / /

26 *What diameter of wastewater connection is required to service the development? mm

27 *Is more than one connection required to the public infrastructure to service this development? Yes No

If 'Yes', how many?

28 Please indicate the commercial wastewater hydraulic load (shops, offices, schools, hotels, restaurants, etc.):

Post-development peak discharge		I/s
Post-development average discharge		I/s

Please include calculations on the attached sheet provided.

29 Please indicate the industrial wastewater hydraulic load (industry-specific discharge requirements):

Post-development peak discharge		I/s
Post-development average discharge		I/s

Please include calculations on the attached sheet provided.

Section F | Supporting documentation

Please provide the following additional information (all mandatory):

- > Site location map: A site location map to a scale of 1:1000, which clearly identifies the land or structure to which the enquiry relates. The map shall include the following details:

 - i. The scale shall be clearly indicated on the map.
 - ii. The boundaries shall be delineated in red.
 - iii. The site co-ordinates shall be marked on the site location map.

- > Details of planning and development exemptions (if applicable).
- > Calculations (calculation sheets provided below).
- > Site layout map to a scale of 1:500 showing layout of proposed development, water network and wastewater network layouts, additional water/wastewater infrastructure if proposed, connection points to Irish Water infrastructure.
- > Conceptual design of the connection asset from the proposed development to the existing Irish Water infrastructure, including service conflicts, gradients, pipe sizes and invert levels.
- > Any other information that might help Irish Water assess this pre-connection enquiry.

Section G | Declaration

I/We hereby make this application to Irish Water for a water and/or wastewater connection as detailed on this form.

I/We understand that any alterations made to this application must be declared to Irish Water.

The details that I/we have given with this application are accurate.

I/We have enclosed all the necessary supporting documentation.

Any personal data you provide will be stored and processed by Irish Water and may be transferred to third parties for the purposes of the water and/or wastewater connection process. I hereby give consent to Irish Water to store and process my personal data and to transfer my personal data to third parties, if required, for the purposes of the connection process.

If you wish to revoke consent at any time or wish to see Irish Water’s full Data Protection Notice, please see <https://www.water.ie/privacy-notice/>

Signature: Date: / /

Ailís Corrigan

Your full name (in BLOCK CAPITALS):

Irish Water will carry out a formal assessment based on the information provided on this form. Any future connection offer made by Irish Water will be based on the information that has been provided here.

Please submit the completed form to **newconnections@water.ie** or alternatively, post to:

**Irish Water
PO Box 860
South City Delivery Office
Cork City**

Please note that if you are sending us your application form and any associated documentation by email, the maximum file size that we can receive in any one email is 35MB.

Please note, if mandatory fields are not completed the application will be returned.

Irish Water is subject to the provisions of the Freedom of Information Act 2014 ("FOIA") and the codes of practice issued under FOIA as may be amended, updated or replaced from time to time. The FOIA enables members of the public to obtain access to records held by public bodies subject to certain exemptions such as where the requested records may not be released, for example to protect another individual's privacy rights or to protect commercially sensitive information. Please clearly label any document or part thereof which contains commercially sensitive information. Irish Water accepts no responsibility for any loss or damage arising as a result of its processing of freedom of information requests.

Calculations

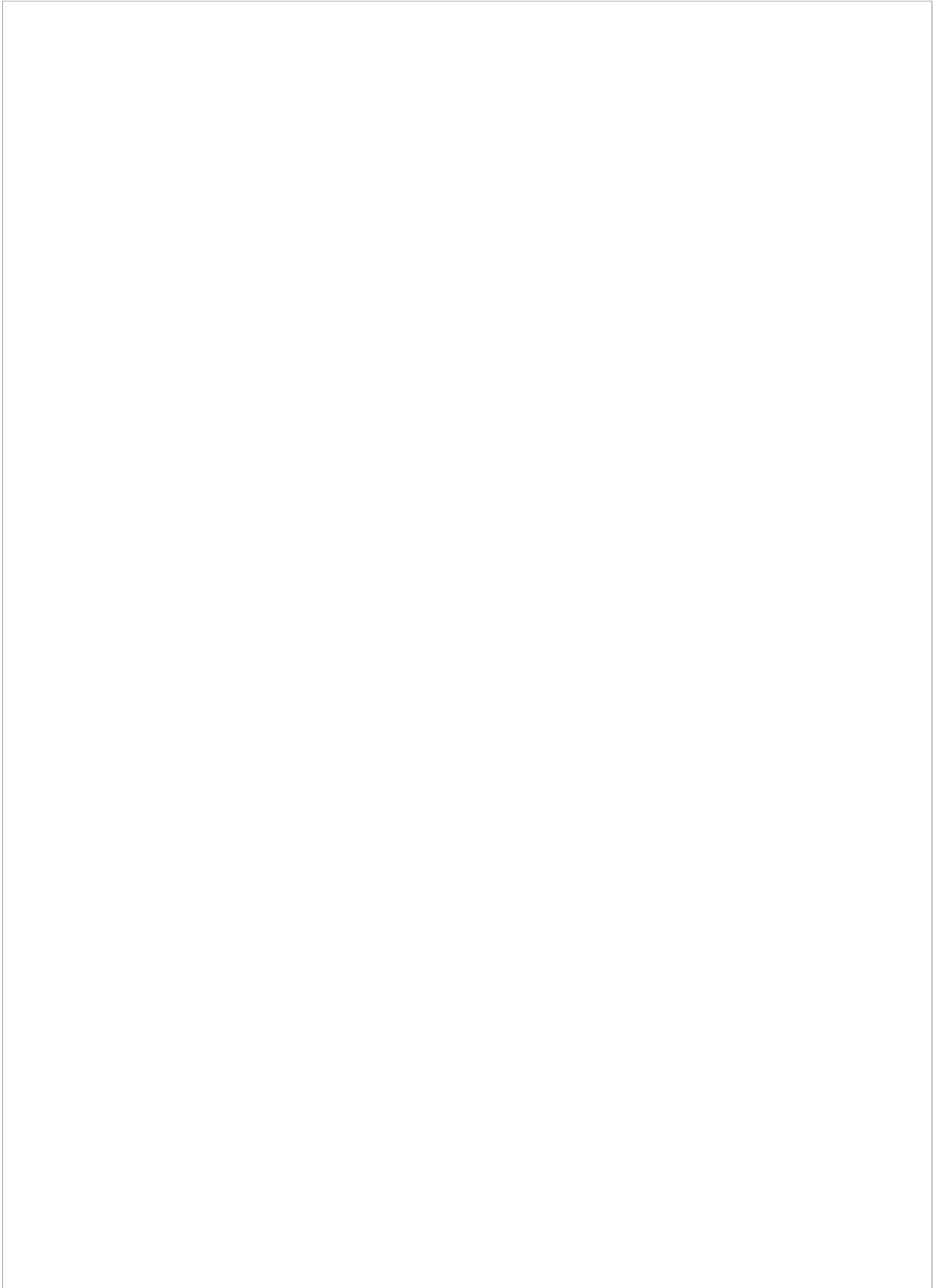
Water demand

On-site storage



Fire flow requirements







Guide to completing the pre-connection enquiry form

This form should be completed by applicants enquiring about the feasibility of a water and/or wastewater connection to Irish Water infrastructure.

The Irish Water Codes of Practice are available at www.water.ie for reference.

Section A | Applicant Details

- Question 1:** This question requires the applicant or company enquiring about the feasibility of a connection to identify themselves, their postal address, and to provide their contact details.
- Question 2:** If the applicant has employed a consulting engineer or an agent to manage the enquiry on their behalf, the agent's address and contact details should be recorded here.
- Question 3:** Please indicate whether it is the applicant or the agent who should receive future correspondence in relation to the enquiry.

Section B | Site details

- Question 4:** This is the address of the site requiring the water/wastewater service connection and for which this enquiry is being made.
- Question 5:** Please provide the Irish Grid co-ordinates of the proposed site. Irish grid positions on maps are expressed in two dimensions as Eastings (E or X) and Northings (N or Y) relative to an origin. You will find these coordinates on your Ordnance Survey map which is required to be submitted with an application.
- Question 6:** Please identify the Local Authority that is or will be dealing with your planning application, for example Cork City Council.
- Question 7:** Please indicate if planning permission has been granted for this application, and if so, please provide the planning permission reference number.
- Question 8:** Please indicate if this development is affiliated with a government body/agency, and if so, specify

Section C | Development details

- Question 9:** Please specify the number of different property/premises types by filling in the tables provided.
- Question 9.1:** Please provide additional details if your proposed business use are in the Food Processing, Industrial unit/ Manufacturing, Sports Facility or Other Categories.
- Question 9.2:** Please indicate the maximum expected occupancy in numbers of people according to the proposed development you selected.
- Question 10:** Please indicate the approximate commencement date of works on the development.
- Question 11:** Please indicate if a phased building approach is to be adopted when developing the site. If so, please provide details of the phase master-plan and the proposed variation in water demand/wastewater discharge as a result of the phasing of the development.
- Question 12:** Please indicate the type of connection required by ticking the appropriate box and proceed to complete the appropriate section or sections.

Section D | Water connection and demand details

- Question 13:** Please indicate if a water connection already exists for this site.
- Question 13.1:** Please indicate if this enquiry concerns an additional connection to one already installed on the site.
- Question 13.2:** Please indicate if you are proposing to upgrade the water connection to facilitate an increase in water demand. Irish Water will determine what impact this will have on our infrastructure.
- Question 14:** Please indicate the approximate date that the proposed connection to the water infrastructure will be required.
- Question 15:** Please indicate what diameter of water connection is required to service this development.

- Question 16:** Please indicate if more than one connection is required to service this development. Please note that the connection size provided may be used to determine the connection charge.
- Question 17:** If this connection enquiry concerns a business premises, please provide calculations for the water demand and include your calculations on the calculation sheet provided. Business premises include shops, offices, hotels, schools, etc. Demand rates (peak and average) are site specific. Average demand is the total daily volume divided by a 24-hour time period and expressed in litres per second (l/s). For design purposes, please refer to the Irish Water Codes of Practice for Water Infrastructure.
- Question 18:** If this connection enquiry is for an industrial premises, please calculate the water demand and include your calculations on the calculation sheet provided. Demand rates (peak and average) are site specific. Average demand is the total daily volume divided by a 24-hour time period and expressed in litres per second (l/s). The peak demand for sizing of the pipe network will be as per the specific business production requirements. For design purposes, please refer to the Irish Water Codes of Practice for Water Infrastructure.
- Question 19:** Please specify the ground level at the location where connection to the public water mains will be made. This is required in order to determine if there is sufficient pressure in the existing water infrastructure to serve your proposed development. Levels should be quoted in metres relative to Malin Head Ordnance Datum.
- Question 20:** Please specify the highest finished floor level on site. This is required in order to determine if there is sufficient pressure in the existing water infrastructure to serve your proposed development. Levels should be quoted in metres relative to Malin Head Ordnance Datum.
- Question 21:** If storage is required, water storage capacity of 24-hour water demand must usually be provided at the proposed site. In some cases, 24-hour storage capacity may not be required, for example 24-hour storage for a domestic house would be provided in an attic storage tank. Please calculate the 24-hour water storage requirements and include your calculations on the attached sheet provided. Please also confirm that on-site storage is being provided by ticking the appropriate box.
- Question 22:** The water supply system shall be designed and constructed to reliably convey the water flows that are required of the development including fire flow requirements by the Fire Authority. The Fire Authority will provide the requirement for fire flow rates that the water supply system will have to carry. Please note that while flows in excess of your required demand may be achieved in the Irish Water network and could be utilised in the event of a fire, Irish Water cannot guarantee a flow rate to meet your fire flow requirement. To guarantee a flow to meet the Fire Authority requirements, you should provide adequate fire storage capacity within your development. Please include your calculations on the attached sheet provided, and further provide confirmation of the Fire Authority requirements.
- Question 23:** Please identify proposed additional water supply sources, that is, do you intend to connect to the public water mains or the public mains and supplement from other sources? If supplementing public water supply with a supply from another source, please provide details as to how the potable water supply is to be protected from cross contamination at the premises.

Section E | Wastewater connection and discharge details

- Question 24:** Please indicate if a wastewater connection to a public sewer already exists for this site.
- Question 24.1:** Please indicate if this enquiry relates to an additional wastewater connection to one already installed.
- Question 24.2:** Please indicate if you are proposing to upgrade the wastewater connection to facilitate an increased discharge. Irish Water will determine what impact this will have on our infrastructure.
- Question 25:** Please specify the approximate date that the proposed connection to the wastewater infrastructure will be required.
- Question 26:** Please indicate what diameter of wastewater connection is required to service this development.
- Question 27:** Please indicate if more than one connection is required to service this development. Please indicate number required.
- Question 28:** If this enquiry relates to a business premises, please provide calculations for the wastewater discharge and include your calculations on the attached sheet provided. Business premises include shops, offices, hotels, schools, etc. Discharge rates (peak and average) are site specific. Average discharge is the total daily volume divided by a 24-hour time period and expressed in litres per second (l/s). For design purposes, please refer to the Irish Water Codes of Practice for Wastewater Infrastructure.

- Question 29:** If this enquiry relates to an industrial premises, please provide calculations for the wastewater discharge and include your calculations on the calculation sheet provided. Discharge rates (peak and average) are site specific. Average discharge is the total daily volume divided by a 24-hour time period and expressed in litres per second (l/s). The peak discharge for sizing of the pipe network will be as per the specific business production requirements. For design purposes, please refer to the Irish Water Codes of Practice for Wastewater Infrastructure.
- Question 30:** Please specify the maximum and average concentrations and the maximum daily load of each of the wastewater characteristics listed in the wastewater organic load table (if not domestic effluent), and also specify if any other significant concentrations are expected in the effluent. Please complete the table and provide additional supporting documentation if relevant. Note that the concentration shall be in mg/l and the load shall be in kg/day. Note that for business premises (shops, offices, schools, hotels, etc.) for which only domestic effluent will be discharged (excluding discharge from canteens/restaurants which would require a Trade Effluent Discharge licence), there is no need to complete this question.
- Question 31:** In exceptional circumstances, such as brownfield sites, where the only practical outlet for storm/surface water is to a combined sewer, Irish Water will consider permitting a restricted attenuated flow to the combined sewer. Storm/surface water will only be accepted from brownfield sites that already have a storm/surface water connection to a combined sewer and the applicant must demonstrate how the storm/surface water flow from the proposed site is minimised using sustainable urban drainage system (SUDS). This type of connection will only be considered on a case by case basis. Please advise if the proposed development intends discharging surface water to the combined wastewater collection system.
- Question 32:** Please specify if the development needs to pump its wastewater discharge to gain access to Irish Water infrastructure.
- Question 33:** Please specify the ground level at the location where connection to the public sewer will be made. This is required to determine if the development can be connected to the public sewer via gravity discharge. Levels should be quoted in metres relative to Malin Head Ordnance Datum.
- Question 34:** Please specify the lowest floor level of the proposed development. This is required in order to determine if the development can be connected to the public sewer via gravity discharge. Levels should be quoted in metres relative to Malin Head Ordnance Datum.
- Question 35:** Please specify the proposed invert level of the pipe exiting the property to the public road.

Section F | Supporting documentation

Please provide additional information as listed.

Section G | Declaration

Please review the declaration, sign, and return the completed application form to Irish Water by email or by post using the contact details provided in Section G.

A large, empty rectangular box with a thin black border, occupying most of the page. It is intended for the user to write their notes.

A large, empty rectangular box with a thin black border, occupying most of the page. It is intended for the user to write their notes.

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