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CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

SERVICES REPORT

Project Reference: Proposed Residential Development at Laurel Heights Phase 2, Cork City.

Client: Summertime Development Ltd.

Project No.: 576000

Design By: P.F & T.A

www.rka.ie

Rev 3, January 2026

Table of Contents

1 Introduction

The proposed development is phase 2 of an existing residential development located at Shanakiel Road, Cork city. The first phase of the development was completed in 2023. This consisted of 20 No. dwelling units.

The second phase now proposed consists of 20 dwellings (see figure 1) contained in two blocks ranging in height from 2 to 3 stories. Phase 2 is located to the East of phase 1 on a site of approximately 0.23 Ha. The existing site is currently vacant.

The proposed development seeks to integrate the 2 phases of the development. This requires some modifications to the existing site works for phase 1. The existing entrance to be used for the proposed development.

The services for the proposed development will largely be independent of phase 1. A new foul sewer connection & watermain connection are proposed. The surface water drainage for the development will be attenuated using SUDS measures. These will include raised planters, swales & an attenuation tank.

Figure 1: Proposed Development outline

2 Surface Water Drainage

2.1 Drainage Impact Assessment

2.1.1 Existing Site Condition

- **Topography**

  The site slopes gently from North to south the elevations range from 89.34 m O.D to 86.90 m O.D. The cross fall on the site has a gradient of approximately 1 in 21. See topographic survey carried out by Geo Data Chartered Land Surveyors as shown in figure 2.

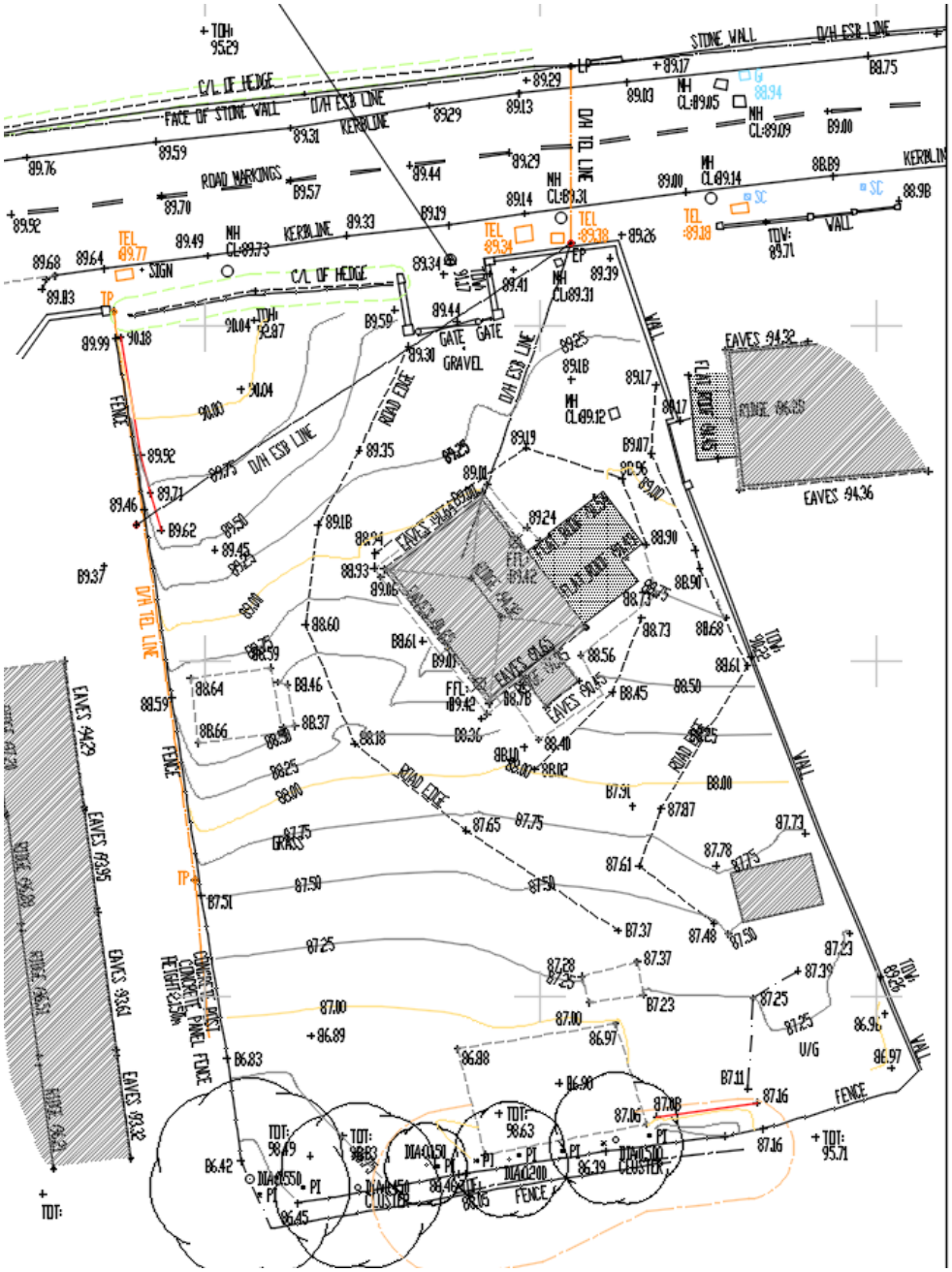


Figure 2: Topographic Survey

- **Ground Conditions**

  The proposed site is currently undeveloped. The surfaces on the existing site are shown on the topographic survey, figure 2. The surfaces range from concrete surfaces, hard standing areas and a limited amount of grassed areas.

- **Land Drain Features**

  There are no land drain features evident on the site. The surface water from the lands percolate into the soft landscaped area. At times of exceedance, it is likely that run off flows to the adjoining property.

- **Overland Flow Path**

  The overland flow path for the existing site is shown in figure 3. This indicates that in the event of exceedance, run off from the site flows in a Southerly direction onto the adjoining HSE property.

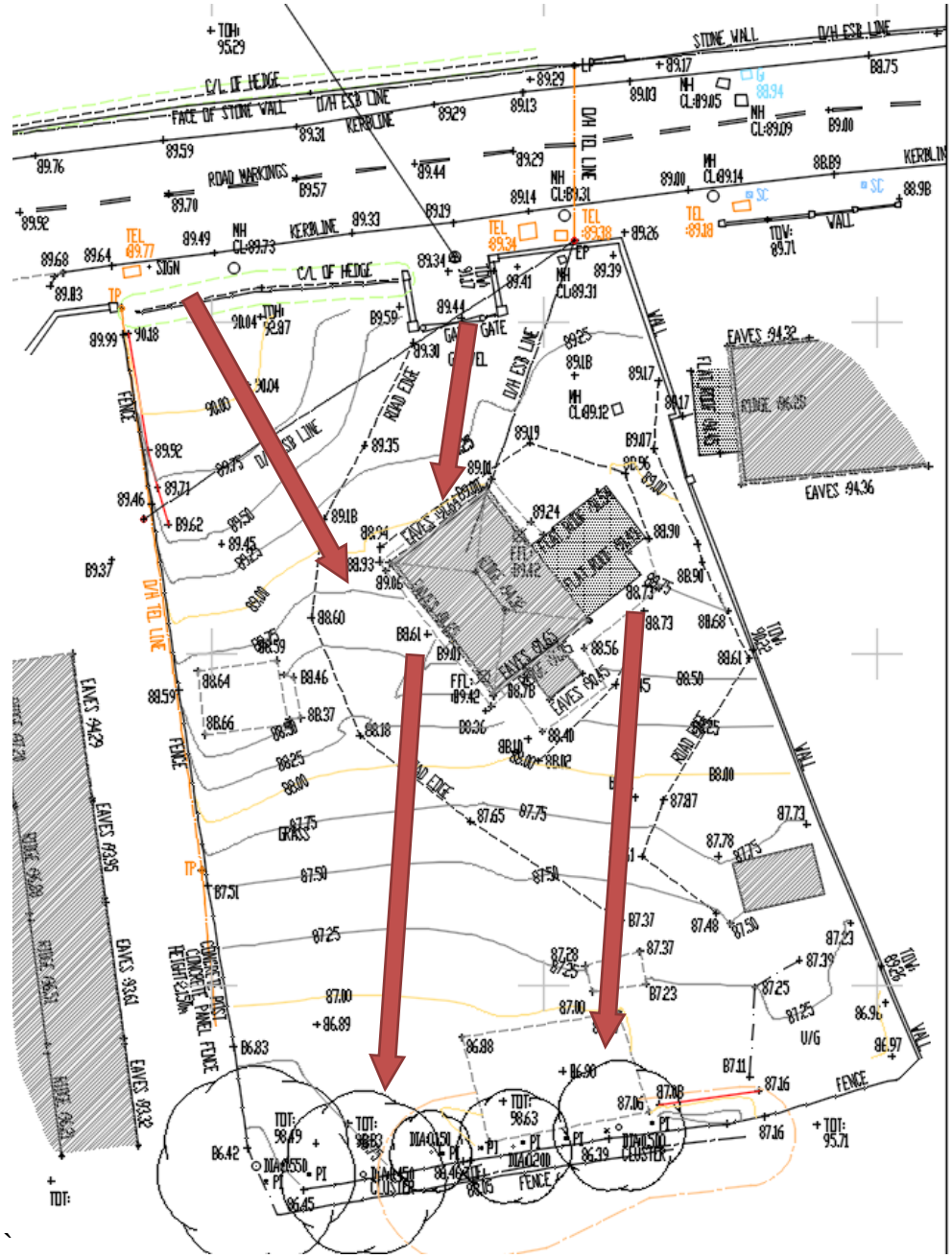


Figure 3: Existing Site Overland Flow Path

- **Utilities**

  There are no records of utilities on the proposed site. It is known however that a water supply, ESB supply & a drainage connection serviced the original dwelling.

The as built drawings for the first phase of the development show that there are separate foul & storm sewers constructed. These flow in a Southerly direction through the HSE property to the City Council storm sewer & UE Foul sewer to the South of the HSE property. The following figure 4 shows the as built of the wastewater layout discharging at the southern end of the site.

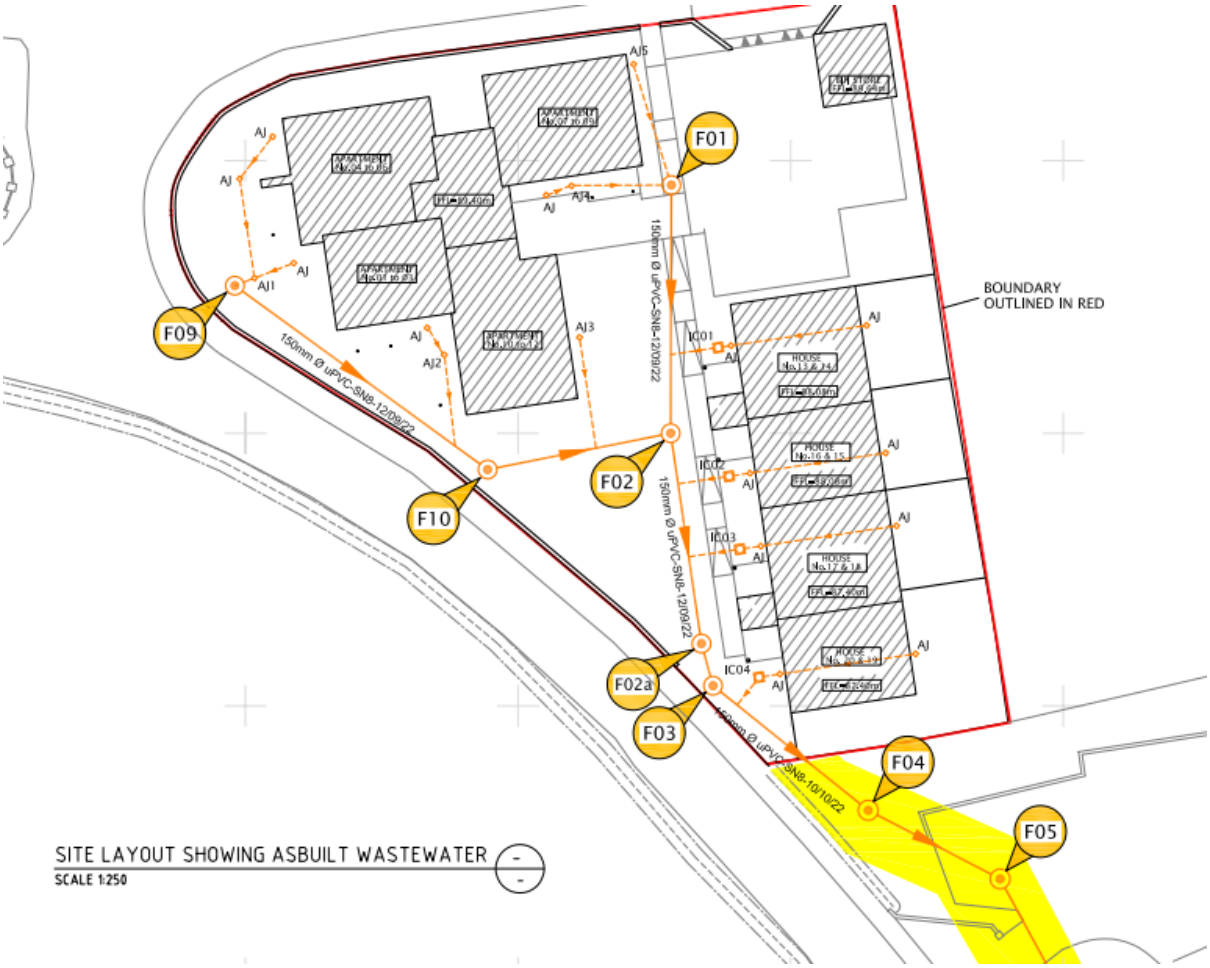


Figure 4: As build Phase 1 drawing

- **Flood Risk**

  The site is located near the top of a large hill. There are no records of fluvial, coastal, pluvial or ground water flooding affecting the site.

2.1.2 Proposed Development

- **Storm Sewer**

The proposed development fits into the existing topography, gently sloping from North to South. The gradient is less steep than the existing contours to ensure compliance with DMURS & Part M Building Regulations.

2.2 Proposed Surface Water (SW) Drainage Layout

The proposed SW drainage plan is shown in figure 5.

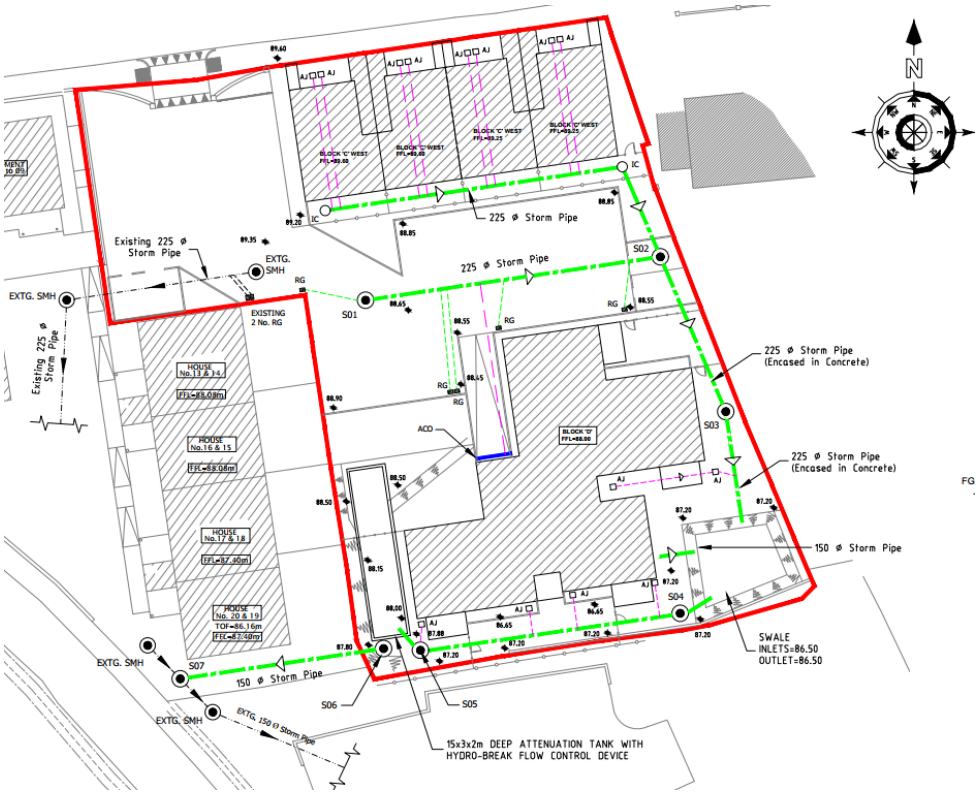


Figure 5: Surface Water Drainage Layout

It is proposed to collect the run off from the development & connect it to the existing surface water drain in phase 1 of the development.

The post development overland flow path is shown on the drawing in the figure 6. This shows that the flow path is not changed materially. The design shows an attenuated flow connecting to the existing surface water drain.

The proposed design provides for overflow arrangements to cater for exceedance events.

Figure 6: Proposed Site Overland Flow Path

- **Discharge Rate**

  The discharge rate applied to the site has a QBAR of 0.75l/sec, rising to 1.46l/sec for $QBAR_{100}$. See calculation below in the section 2.41

2.3 SuDS Measure Considered

The site is a small-scale development with a relatively high level of density. The following matrix identifies the rational for the proposed design.

SuDS Measures	Measures to be used on site	Rational for selecting/not selecting measure
Source Control Measures		
SWALES	Yes	Under-drained swale/ detention basin provided to the South of the site
Tree Pits	No	Site is constrained. Concern that root systems would affect underground services.
Downpipe/ Raised planters	Yes	Level changes across the site allow for high plinth to the South of the apartment block. No tanking required.
Rainwater Harvesting	No	Management/ ownership of feature not clear.
Soakaways	No	Insufficient separation distances form proposed buildings & boundaries available. Potential to undermine foundations.
Infiltration trenches	No	Insufficient separation distances form proposed buildings & boundaries available. Potential to undermine foundations.
Green Roof	No	Maintenance regime excessive for scale of development
Filter Strips	No	Site constraints
Permeable Pavement	No.	Permeable paving not accepted by Local Authority on roads
Blue Roof	No	Maintenance regime excessive for scale of development. Capital costs prohibitive.
Site Control Measures		
Detention Basin	Yes	Underdrained swale/detention basin provided
Ponds	No	Site too small
Wetlands	No	Site too small
Other		
Hydrocarbon Interceptor	No	Bio retention provided in swale/detention basin. Refer to Dublin City Council 2022 publication "Sustainable Drainage Design & Evaluation Guide".
Attenuation Tank	Yes	Not all detention can be facilitated in swale/detention basin. Residual attenuation provided in attenuation tank underground.

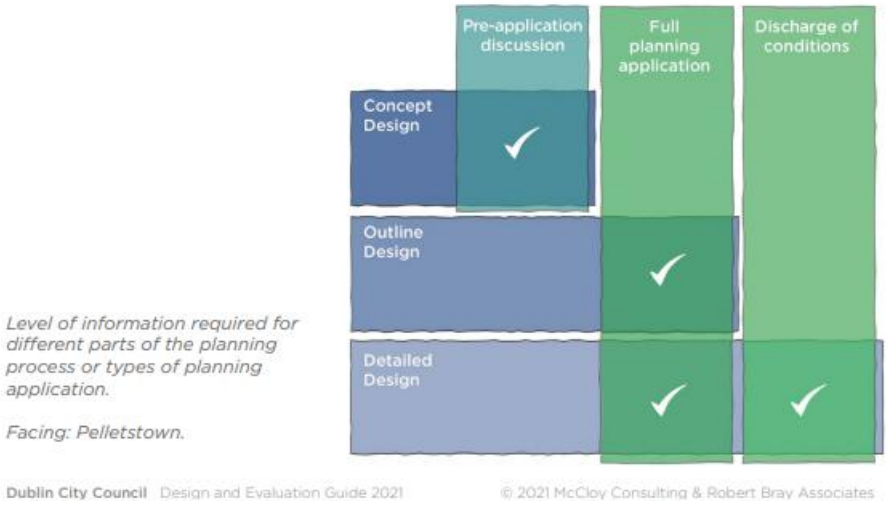
The matrix above demonstrates that the design has considered the 4 pillars of SuDS. The swale & detention basin provide for water quality, amenity, biodiversity & water Quantity. The raised planter also is a source control measure.

The use of the attenuation tank is provided as a last resort measure to provide the required storage for the site.

2.4 Outline Design of SuDS Measured

The purpose of the drainage impact assessment is to provide the local authority with sufficient information to assess the planning application. This level of information is defined in the Dublin City Council 2022 publication "Sustainable Drainage Design & Evaluation Guide".

The image below is extracted from section 7 of the document



The level of detail required for the application is defined as Outline Design. The concept design is discussed above in the previous section. The following details of the outline design are evaluated below;

- Greenfield Run off estimate.
- Attenuation storage
- Interception storage
- Longterm storage.

2.4.1 Green Field Run off rate

Two approaches to designing a proposed greenfield run off rate were evaluated. The first option looked at a flow rate equivalent to 2l/sec/Ha. The total area of the site is 0.23 Ha. This would give a flow rate of 0.46l/sec from the site. Hydrobreak flow control devices will be subject to blockages at this level of flow. This will cause maintenance issues & may result in the overflow of the system, thereby negating the use of the SuDS measures.

An alternative method of assessment utilised the HR Wallingford greenfield runoff estimation for the site (See calculation below)

hr wallingford

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Pat Feehely
Site name:	shanakiel Housing Development
Site location:	Shanakiel Cork

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	51.90066° N
Longitude:	8.50631° W
Reference:	1911254360
Date:	Jan 06 2025 15:48

Runoff estimation approach: IH124

Site characteristics

Total site area (ha): 0.23

Methodology

Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	2	2
HOST class:	N/A	N/A
SPR/SPRHOST:	0.3	0.3

Hydrological characteristics

	Default	Edited
SAAR (mm):	1151	1151
Hydrological region:	13	13
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	1.65	1.65
Growth curve factor 100 years:	1.95	1.95
Growth curve factor 200 years:	2.15	2.15

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q_{BAR} (l/s):	0.75	0.75
1 in 1 year (l/s):	0.64	0.64
1 in 30 years (l/s):	1.24	1.24
1 in 100 year (l/s):	1.46	1.46
1 in 200 years (l/s):	1.61	1.61

This provides a Qbar of 0.75 with a Qbar100 of 1.48 l/Sec.

It should be noted that this value is very conservative as the existing development is NOT a greenfield site. CIRIA C753 V6. section 24.5 states that a "high Runoff Soil that better represents the high levels of runoff that take place from developed surfaces (e.g FSR Soil Type 5)" can be used for urban sites. The use of Soil type 5 for the proposed site would result in a Qbar of 2.58l/sec. & Qbar 100 of 5.03 l/sec.

The Greenfield runoff rates adopted for the proposed development accordingly has a Qbar of 0.75l/sec with a Qbar100 of 1.48 l/Sec.

2.4.2 Rainfall Data

Rainfall Data for the site is provided by Met Eireann. These provide depth of rainfall in mm for events of various duration & return periods. The data for the proposed site is shown in the figure 7.

Met Eireann
Return Period Rainfall Depths for sliding Durations
Irish Grid: Easting: 165200, Northing: 72158,

	Interval		Years											
DURATION	6months,	1year,	2,	3,	4,	5,	10,	20,	30,	50,	75,	100,	150,	200,	250,	500,
5 mins	2.8,	3.7,	4.1,	4.8,	5.3,	5.6,	6.7,	8.0,	8.7,	9.8,	10.8,	11.5,	12.6,	13.4,	14.1,	N/A ,
10 mins	3.8,	5.1,	5.8,	6.7,	7.4,	7.9,	9.4,	11.1,	12.2,	13.7,	15.0,	16.0,	17.5,	18.7,	19.7,	N/A ,
15 mins	4.5,	6.0,	6.8,	7.9,	8.7,	9.2,	11.1,	13.1,	14.3,	16.1,	17.7,	18.8,	20.6,	22.0,	23.1,	N/A ,
30 mins	6.2,	8.1,	9.1,	10.6,	11.5,	12.2,	14.5,	17.0,	18.6,	20.8,	22.7,	24.2,	26.4,	28.0,	29.4,	N/A ,
1 hours	8.4,	10.9,	12.2,	14.1,	15.3,	16.2,	19.1,	22.2,	24.2,	26.9,	29.3,	31.0,	33.7,	35.8,	37.4,	N/A ,
2 hours	11.5,	14.8,	16.4,	18.8,	20.3,	21.4,	25.1,	29.0,	31.4,	34.8,	37.7,	39.9,	43.1,	45.6,	47.6,	N/A ,
3 hours	13.8,	17.6,	19.5,	22.2,	23.9,	25.3,	29.4,	33.8,	36.6,	40.4,	43.7,	46.1,	49.8,	52.6,	54.9,	N/A ,
4 hours	15.7,	19.9,	22.0,	25.0,	26.9,	28.4,	33.0,	37.8,	40.9,	45.0,	48.5,	51.2,	55.2,	58.2,	60.6,	N/A ,
6 hours	18.9,	23.7,	26.1,	29.6,	31.8,	33.5,	38.7,	44.2,	47.6,	52.3,	56.3,	59.3,	63.7,	67.1,	69.8,	N/A ,
9 hours	22.6,	28.3,	31.1,	35.0,	37.5,	39.4,	45.4,	51.6,	55.5,	60.8,	65.2,	68.6,	73.6,	77.4,	80.4,	N/A ,
12 hours	25.8,	32.0,	35.1,	39.4,	42.2,	44.3,	50.8,	57.6,	61.9,	67.6,	72.5,	76.1,	81.5,	85.6,	88.9,	N/A ,
18 hours	30.9,	38.1,	41.7,	46.7,	49.9,	52.2,	59.6,	67.3,	72.1,	78.6,	84.0,	88.1,	94.2,	98.7,	102.4,	N/A ,
24 hours	35.2,	43.2,	47.1,	52.6,	56.1,	58.7,	66.8,	75.2,	80.4,	87.4,	93.4,	97.8,	104.3,	109.2,	113.2,	126.4,
2 days	44.5,	53.9,	58.5,	64.8,	68.8,	71.8,	81.0,	90.5,	96.4,	104.2,	110.8,	115.7,	122.9,	128.3,	132.7,	147.1,
3 days	52.3,	62.9,	67.9,	75.0,	79.4,	82.7,	92.9,	103.3,	109.7,	118.2,	125.4,	130.7,	138.5,	144.3,	149.0,	164.5,
4 days	59.3,	70.8,	76.3,	84.0,	88.8,	92.4,	103.4,	114.6,	121.5,	130.6,	138.3,	143.9,	152.3,	158.5,	163.5,	179.9,
6 days	71.7,	85.0,	91.3,	100.0,	105.5,	109.6,	122.0,	134.6,	142.3,	152.5,	161.1,	167.4,	176.6,	183.5,	189.0,	207.2,
8 days	82.9,	97.7,	104.7,	114.4,	120.5,	125.0,	138.6,	152.5,	160.9,	172.1,	181.4,	188.2,	198.3,	205.8,	211.7,	231.4,
10 days	93.4,	109.5,	117.2,	127.8,	134.3,	139.2,	154.0,	169.0,	178.1,	190.1,	200.0,	207.4,	218.2,	226.2,	232.6,	253.6,
12 days	103.3,	120.7,	129.0,	140.3,	147.4,	152.6,	168.4,	184.4,	194.2,	206.9,	217.6,	225.4,	236.9,	245.3,	252.1,	274.3,
16 days	121.9,	141.8,	151.1,	163.9,	171.8,	177.7,	195.4,	213.3,	224.1,	238.3,	250.1,	258.8,	271.5,	280.9,	288.3,	312.8,
20 days	139.5,	161.5,	171.8,	185.9,	194.7,	201.2,	220.6,	240.2,	252.0,	267.5,	280.4,	289.8,	303.6,	313.8,	321.9,	348.4,
25 days	160.5,	185.0,	196.4,	212.1,	221.8,	228.9,	250.4,	271.9,	284.9,	301.9,	315.9,	326.2,	341.3,	352.4,	361.2,	390.0,

NOTES:
N/A Data not available
These values are derived from a Depth Duration Frequency (DDF) Model
For details refer to:
'Fitzgerald D. L. (2007), Estimates of Point Rainfall Frequencies, Technical Note No. 61, Met Eireann, Dublin',
Available for download at www.met.ie/climate/dataproducts/Estimation-of-Point-Rainfall-Frequencies_TN61.pdf

Figure 7: Rainfall Data

2.4.3 Estimation of Total Storage Requirements for the Development

The storage volume for the proposed development is established by firstly applying a Climate Change Allowance factor (CCA) to the estimated depth duration values. The inflow designs for a 1 in 100-year event is adopted and the Qbar100 outflow is subtracted to give the total storage required.

The table below establishes that the storage volume required for the 1 in 100-year event is 118 m^2.

100 year storage for varying durations (m^3)						
Duration	Depths	Depths CC	Area	Inflow m3	Outflow m3	Storage m3
5 mins	11.5	13.8	1800	27.32	0.44	26.89
10 mins	16	19.2	1800	38.02	0.88	37.14
15 mins	18.8	22.56	1800	44.67	1.31	43.35
30 mins	24.2	29.04	1800	57.50	2.63	54.87
1 hour	31	37.2	1800	73.66	5.26	68.40
2 hours	39.9	47.88	1800	94.80	10.51	84.29
3 hours	46.1	55.32	1800	109.53	15.77	93.77
4 hours	51.2	61.44	1800	121.65	21.02	100.63
6 hours	59.3	71.16	1800	140.90	31.54	109.36
9 hours	68.6	82.32	1800	162.99	47.30	115.69
12 hours	76.1	91.32	1800	180.81	63.07	117.74
18 hours	88.1	105.72	1800	209.33	94.61	114.72
24 hours	97.8	117.36	1800	232.37	126.14	106.23
2 days	115.7	138.84	1800	274.90	252.29	22.62
3 days	130.7	156.84	1800	310.54	378.43	-67.89
4 days	143.9	172.68	1800	341.91	504.58	-162.67
6 days	167.4	200.88	1800	397.74	756.86	-359.12
8 days	188.2	225.84	1800	447.16	1009.15	-561.99
10 days	207.4	248.88	1800	492.78	1261.44	-768.66
12 days	225.4	270.48	1800	535.55	1513.73	-978.18
16 days	258.8	310.56	1800	614.91	2018.30	-1403.40
20 days	289.8	347.76	1800	688.56	2522.88	-1834.32
25 days	326.2	391.44	1800	775.05	3153.60	-2378.55

The attenuation storage is provided by means of the swale/ detention basin & the balance in an underground attenuation tank.

- **Swale/Detention Basin Design.**

  The use of the detention basin/ swale provides a source control measure which will provide primary treatment along with a component of attenuation storage.

  The design of the feature incorporates an underdrain which will convey the flow form the feature to the attenuation tank. Filtration into the receiving soil has not been considered due to the risk to foundations.

  The cross section below indicates in the figure 8 makeup of the feature. The design depth restricts the water level to 200mm in normal operation. This ensures that the risk of drowning in minimised. The side slopes in the feature are 1 in 3. This is in accordance with guidance with section 11 of DCC publication "Sustainable Drainage Design & Evaluation Guide".

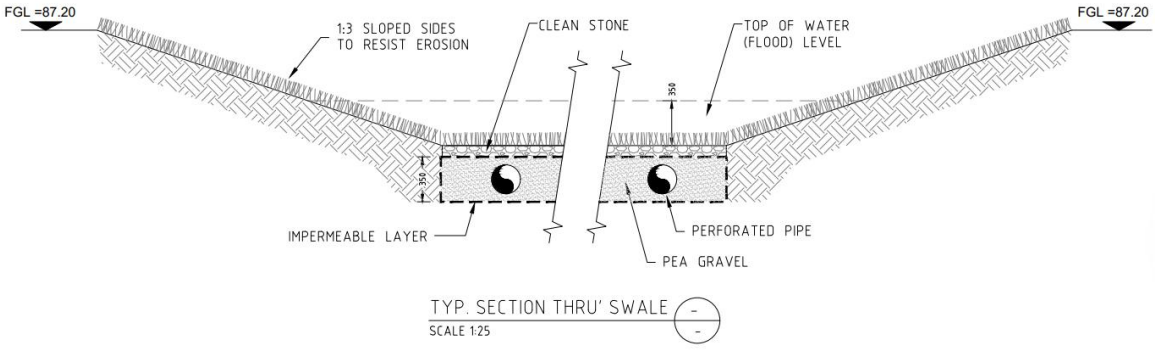


Figure 8: Typical Swale Cross section

The volume of storage at the depth of 200mm is 12.5 m^3. When the inflow is in excess of this capacity, the overflow discharges to the attenuation tank. See Drawing 1002 for details.

In the event of a 1 in 100-year event, the feature will fill to a level of 350mm. An overflow from the attenuation tank ensures that the water level will not rise above this datum.

The proposed design also incorporates a wall to the South of the feature to ensure that a freeboard of 600mm is provided to protect the adjoining property. The total volume of storage in the feature will be 24.5m^3 in the event of a 1 in 100-year event.

The balance of the storage will be provided in an underground attenuation tank.

- **Attenuation Tank Design**

The attenuation tank design will need to cater for the balance of the storage required once the above ground source control is exhausted. The volume of this storage is given by the total storage requirement minus the swale/detention storage contribution. This give a tank storage requirement of 118-24.5 = 93.5m3. The effective dimensions of the tank are 16 x 3 x 2 m. This provides a storage of 96 m^3. The proposed attenuation tank is greater than the required requirement.

- **Interception Storage**

In addition to the Attenuation storage, it is a requirement to provide at least 5mm interception storage for the development. The site has an area of 0.23 Ha. Giving an interception storage of 12m^3.

The proposed swale/ detention feature has an interception storage of 12.5 m^3 at a depth of 200mm. This exceeds the minimum required.

- **Long Term Storage.**

Criteria 4 of the GDSDS requires long term storage to be considered in SuDS design. Long term storage is required for river protection.

The formula for long-term storage is:

$$Vol_{xs} = RD.A.10\left[\frac{PIMP}{100}(\alpha 0.8) + \left(1 - \frac{PIMP}{100}\right)(\beta.SOIL) - SOIL\right]$$

where:

Vol_{xs}	is the extra runoff volume (m^3) of development runoff over Greenfield runoff
RD	is the rainfall depth for the 100 year, 6-hour event (mm)
PIMP	is the impermeable area as a percentage of the total area (values from 0 to100)
A	is the area of the site (ha)
SOIL	is the "SPR" index from FSR
$\alpha 0.8$	is the proportion of paved area draining to the network or directly to the river (values from 0 to1) with 80 percent runoff
β	is the proportion of pervious area draining to the network or directly to the river (values from 0 to1)

For the proposed site, the following values are applicable.

RD = 40.7mm

A = 0.23 Ha.

PIMP = 78%

Soil = Soil type 2 = 0.3

$\alpha 0.8 = 1$

$\beta = 1$

$Vol_{xs} = 51\ m^3$

The total volume of long-term storage required is 51 m^3

Long term storage is not cumulative to Attenuation storage. As the provided attenuation storage of 118 m^3 is greater than 51 m^3, the criteria for long term storage has been achieved.

2.5 Maintenance of SuDS Measures

To ensure that the source control measures are maintained properly, the following regular maintenance is recommended;

Type	Activity	Normal site care (Site) or SuDS-specific maintenance (SuDS)	Suggested frequency
Regular Maintenance			
Litter	Pick up all litter in SUDS Landscape areas along with remainder of the site – remove from site	Site	1 visit monthly
Grass	Mow all grass verges, paths and amenity grass at 35-50mm with 75mm max. Leaving cuttings in situ	Site	As required or 1 visit monthly
Grass	Mow all dry swales, dry SUDS basins and margins to low flow channels and other SUDS features at 100mm with 150mm max. Cut wet swales or basins annually as wildflower areas – 1st and last cuts to be collected	Site	4-8 visits per year or as required
Grass	Wildflower areas strimmed to 100mm in Sept or at end of school holidays – all cuttings removed Or Wildflower areas strimmed to 100mm on 3 year rotation – 30% each year – all cuttings removed	Site	1 visit annually 1 visit annually
Inlets & outlets	Inspect monthly, remove silt from slab aprons and debris. Strim 1m round for access	SuDS	1 visit monthly

3 Proposed Foul Water Dicharge

The foul sewer in phase 1 of the development is a 150mm Sn8 PVC service which discharges to the south through the HSE property.

UE Code of practice will not normally allow more than 20 dwelling to connect to 150mm dia sewers. The proposed development consists of 20 units. When combined with the existing development (20 units) the possibility of connecting to the 150mm sewer will not be feasible. Desktop research has shown that upgrading the existing 150mm service would not be feasible given the proximity of the nearest 225mm foul sewer on Shanakiel road.

It is proposed to connect the foul sewer to the UE 225mm diameter service on Blarney Road.

A Pre-Connection Enquiry (PCE) has been submitted to UE. The reference number is CDS24010297. This has been confirmed (see Appendix).
The proposed development consists of 20 no. units. It is proposed to connect to the existing UE Foul Sewer located in Blarney Road. It is proposed to run a new 225mm diameter sewer pipe along Blarney Road to connect to a new manhole to the northeast of the site. Please refer to Proposed Foul Drainage Layout 1001-PL.

Sewers carrying domestic wastewater from this proposed housing development should be designed to carry a minimum wastewater volume of six times dry weather flows (6DWF).

Dry Weather Flow (DWF) is taken as 600 litres per dwelling (three persons per house and per capita wastewater flow of 200 litres per head per day).
Total Dry Weather Flow (DWF) = 20 x 200 /24/60/60 = 0.0463 l/sec

Peak Flow is taken as 2 DWF = 2 x 0.0463= 0.093 l/sec

Foul Pipe Network is designed to carry a minimum wastewater volume of six times
Dry Weather Flow (6 DWF).
6 DWF = 6 x 0.0463= 0.278 l/sec

4 Proposed Water Supply

A Pre-Connection Enquiry (PCE) has been submitted to UE. The reference number is CDS24010297. This has been confirmed (see Appendix).

20 no. units in this development are proposed to connect to the existing 110mm Diameter Irish Water Watermain in phase 1 of the development. This water

demand includes: Average domestic daily demand in the development is established based on daily per-capita consumption, house occupancy, number of properties. For design purposes, the average daily domestic demand is based on a per-capita consumption of 150 l/person/day and an average occupancy ratio of 2.7 persons per dwelling.

20 No. Dwellings: 20 x 150 x 2.7 = 8,100 l/day

Total Average Daily Demand = 8,100 l/day

Average Daily Demand per Hour = 8,100 / 24 = 338 l/hour (0.094 l/sec)

The average day/peak week demand should be taken as 1.25 times the average daily domestic demand.

Total average day/peak demand = 8,100 x 1.25 = 10,125 l/day (peak demand)

Post development peak hour water demand = 10,125 / 24 = 422 l/hour (0.117 l/sec)

The peak demand for sizing of the pipe network will normally be 2.1 times the average day, peak week demand. Sizes pipes total average day/peak demand = 8,100 x 2.1 = 17,010 l/day.

5 Roads

The development has been designed to DMURS standard. The existing entrance to be used for the proposed development. A 2 m footpath is provided on the eastern side of the entrance. Just after the entrance, it reaches to the courtyard area the design for this space becomes a homezone area.

The homezone is a pedestrian focused environment which creates a sense of place and a sense of enclosure for the proposed residents. The design of the proposed scheme has been developed in coordination with Hudson and Associates Architects to ensure a multi-disciplinary approach is adopted by the design team. The design of the residential units has ensured that there is an

active edge to all areas of the development providing supervision to all common spaces.

The proposed design provides for cycling facilities in accordance with the City Development Plan.

Figure 9: Proposed Roads Layout

Appendix 1 Proposed Drawings

- Proposed Watermain Layout
- Proposed Foul Sewer Layout
- Proposed Storm Sewer Layout
- Proposed Attenuation Tank General Arrangement
- Proposed Manholes Details
- Proposed Roads Layout

Original Drawing Size A1

Notes

SURVEY NOTES

1. ALL LEVELS ARE RELATED TO MALIN HEAD DATUM (OSGM15).
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
3. DRAWING IS REFERENCED TO ING CO-ORDINATE SYSTEM.
4. DO NOT SCALE, THIS SHALL ONLY BE PERMITTED IN DIGITAL FORM.
5. GRID IS 20m X 20m.

EXISTING 110mm DIA.
DUCTILE IRON WATERMAIN

BLARNEY ROAD

PROPOSED CONNECTION TO
EXISTING PUBLIC WATERMAIN

EXTG. SV
EXTG. AV
EXTG. SV
EXTG. BULK METER

EXISTING 450mm DIA.
DUCTILE IRON WATERMAIN

APARTMENT No.07 to 09
APARTMENT No.04 to 06
FFL=89.40m
APARTMENT No.01 to 03
APARTMENT No.10 to 12

HOUSE No.13 & 14
FFL=88.08m
HOUSE No.16 & 15
FFL=88.08m
HOUSE No.17 & 18
FFL=87.40m
HOUSE No. 20 & 19
TOF=86.16m
FFL=87.40m

EXISTING 110mm DIA.
HDPE WATERMAIN

BLOCK 'C' WEST FFL=89.60
BLOCK 'C' WEST FFL=89.60
BLOCK 'C' WEST FFL=89.25
BLOCK 'C' WEST FFL=89.25
BLOCK 'D' FFL=88.00

PROPOSED 100mm
HDPE WATERMAIN

MMBB

46m RADIUS TO PROPOSED
FIRE HYDRANT

SV
EXTG. SV
WM
FH
BB

89.60 89.20 89.35 88.85 88.65 88.55 88.45 88.90 88.50 88.15 87.85 87.88 87.80 87.20 86.65

LEGEND:

- Site Boundary
- Existing Uisce Eireann Main
- Proposed 100mmØ HDPE Watermain
- SV — Proposed Sluice Valve
- FH — Proposed Fire Hydrant
- WM — Proposed Water Meter
- BB — 25mm Connection Feed & Boundary Watermeter Box

PROPOSED WATERMAIN LAYOUT

SCALE 1:200

Rev	Date	Drawn	Description	Ch'k'd
PL1	July '25	ME	Issued for Plannnng	PF

2 Clogheen Business Park,
Blarney Road, Cork,
Ireland.
T: +353 (0)21 4399799
F: +353 (0)21 4399797
E: admin@rka.ie
W: www.rka.ie
CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

Client:
Summertime Developments Ltd.

Project:
Residential Development
at Laurel Heights,
Shanakiel, Cork City.

Drawing Title:
Proposed Watermain Layout
No.'s 21 to 51 Laurel Heights

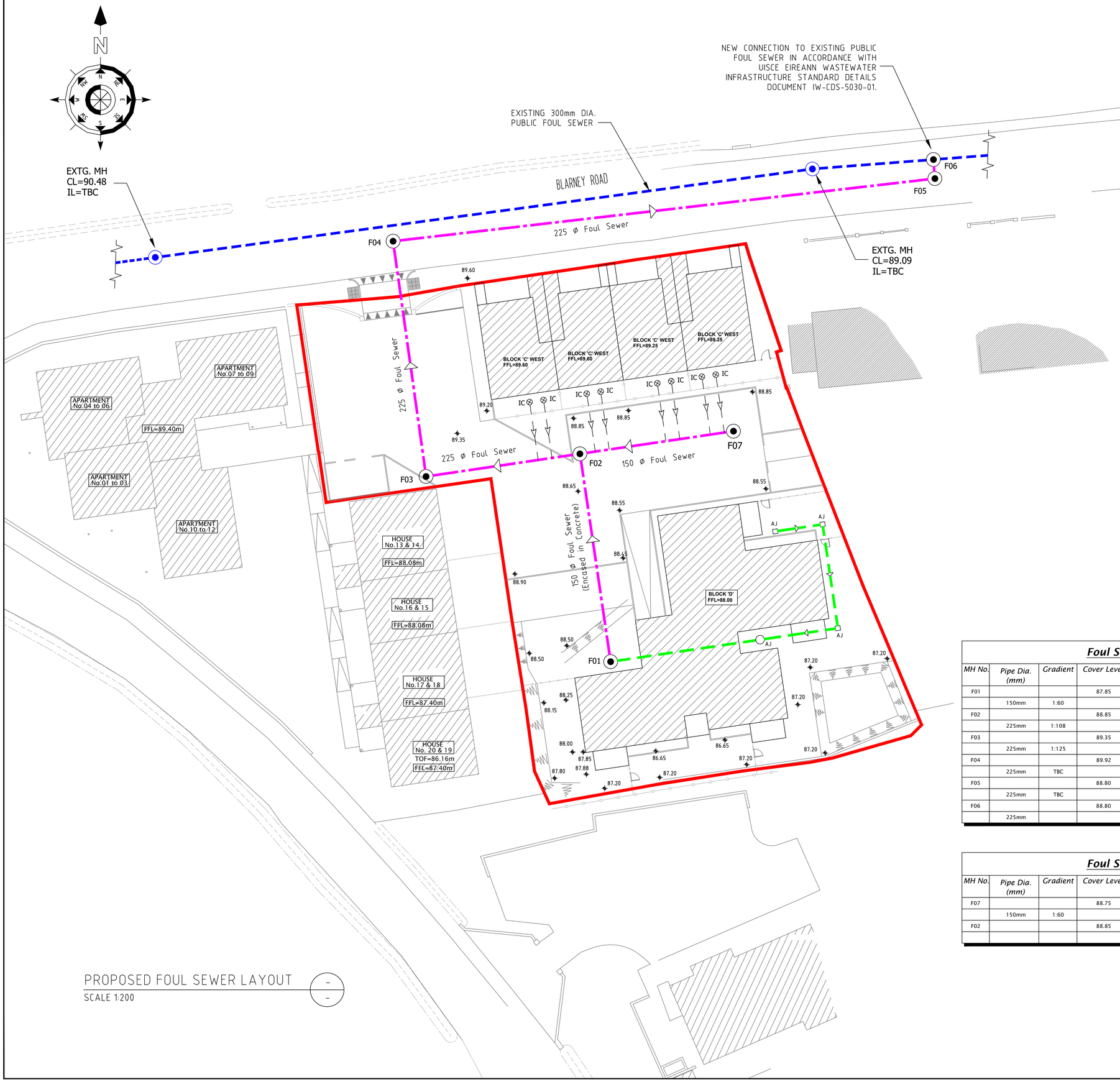
Designed:	PF	Drawn:	GR	Date:	June '25
Eng Chk:	PF	Dwg. Chk:	PF	Scale:	1:200 @ A1
Project. No:	576				
Drawing No:	1000			Status:	Planning
				Rev:	PL1

Original Drawing Size A1

Notes

SURVEY NOTES

1. ALL LEVELS ARE RELATED TO MALIN HEAD DATUM (OSGM15).
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
3. DRAWING IS REFERENCED TO ING CO-ORDINATE SYSTEM.
4. DO NOT SCALE, THIS SHALL ONLY BE PERMITTED IN DIGITAL FORM.
5. GRID IS 20m X 20m.



PROPOSED FOUL SEWER LAYOUT

SCALE 1:200

LEGEND:

- Site Boundary
- Existing Uisce Eireann Foul Sewer
- Proposed Foul Sewer
- Proposed 150 mm Ø Localised Sewer
- Proposed 100 mm Ø uPVC SN8 House Feeds
- IC — Proposed Private Side Inspection Chambers
- F01 — Proposed Foul Manhole

Foul Sewer

MH No.	Pipe Dia. (mm)	Gradient	Cover Level	Inlet B	Inlet C	Inlet D	Outlet A	Location
F01			87.85				86.96	A
	150mm	1:60						
F02			88.85	86.95	86.60		86.60	A, B, C
	225mm	1:108						
F03			89.35	86.45			86.45	A, B
	225mm	1:125						
F04			89.92	86.25			86.25	B, A
	225mm	TBC						
F05			88.80	TBC			TBC	B, A
	225mm	TBC						
F06			88.80	TBC			TBC	A, B
	225mm							

Foul Sewer

MH No.	Pipe Dia. (mm)	Gradient	Cover Level	Inlet B	Inlet C	Inlet D	Outlet A	Location
F07			88.75				87.25	A
	150mm	1:60						
F02			88.85	86.95	86.60		86.60	A, B, C

Rev	Date	Drawn	Description	Ch'k'd
PL1	July '25	ME	Issued for Planning	PF

2 Clogheen Business Park, Blarney Road, Cork, Ireland.
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E: admin@rka.ie
W: www.rka.ie
CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

Client:

Summertime Developments Ltd.

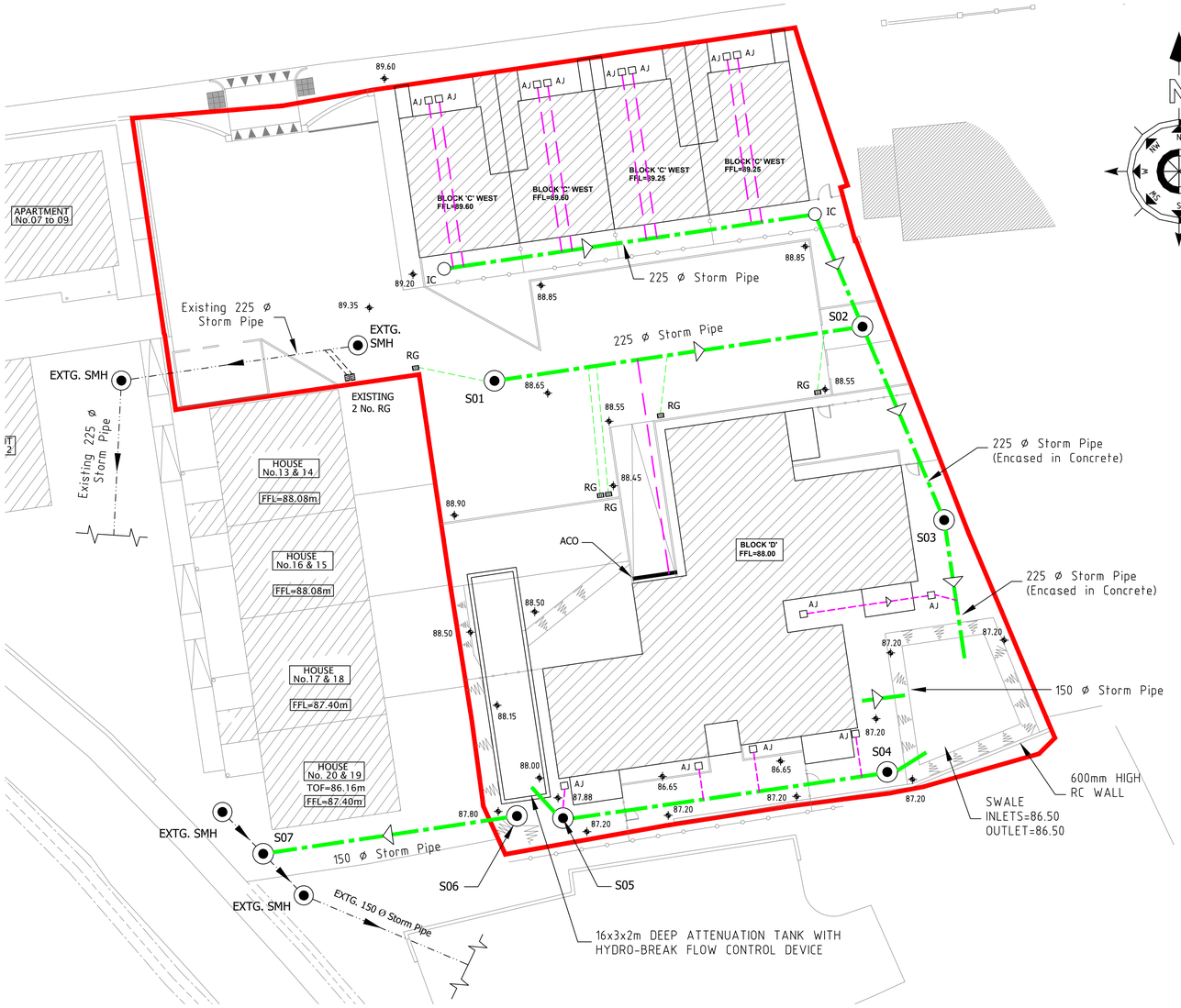
Project:

Residential Development
at Laurel Heights,
Shanakiel, Cork City.

Drawing Title:

Proposed Foul Sewer Layout
No.'s 21 to 51 Laurel Heights

Designed:	PF	Drawn:	GR	Date:	June '25
Eng Chk:	PF	Dwg. Chk:	PF	Scale:	1:200 @ A1
Project. No:	576				
Drawing No:	1001			Status:	Planning
				Rev:	PL1



Storm Drain

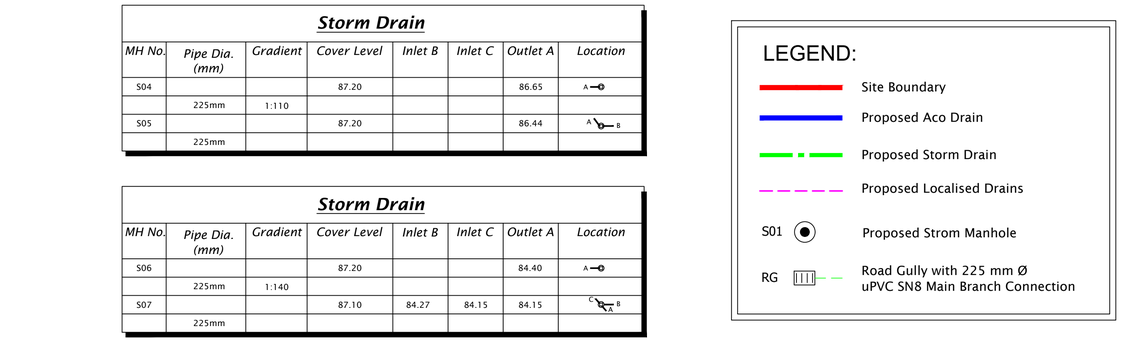
MH No.	Pipe Dia. (mm)	Gradient	Cover Level	Inlet B	Inlet C	Outlet A	Location
S01			88.75			87.15	A
	225mm	1:106					
S02			88.70	86.90		86.90	B A
	225mm	1:74					
S03			87.85	86.90		86.70	B A

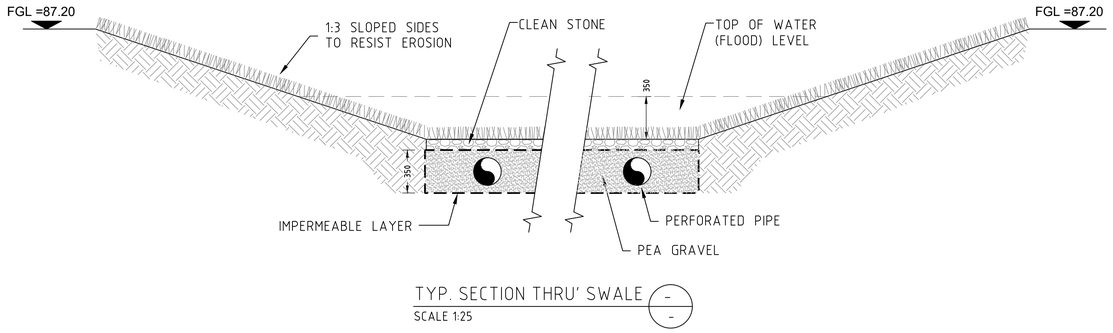
Storm Drain

MH No.	Pipe Dia. (mm)	Gradient	Cover Level	Inlet B	Inlet C	Outlet A	Location
S04			87.20			86.65	A
	225mm	1:110					
S05			87.20			86.44	A B
	225mm						

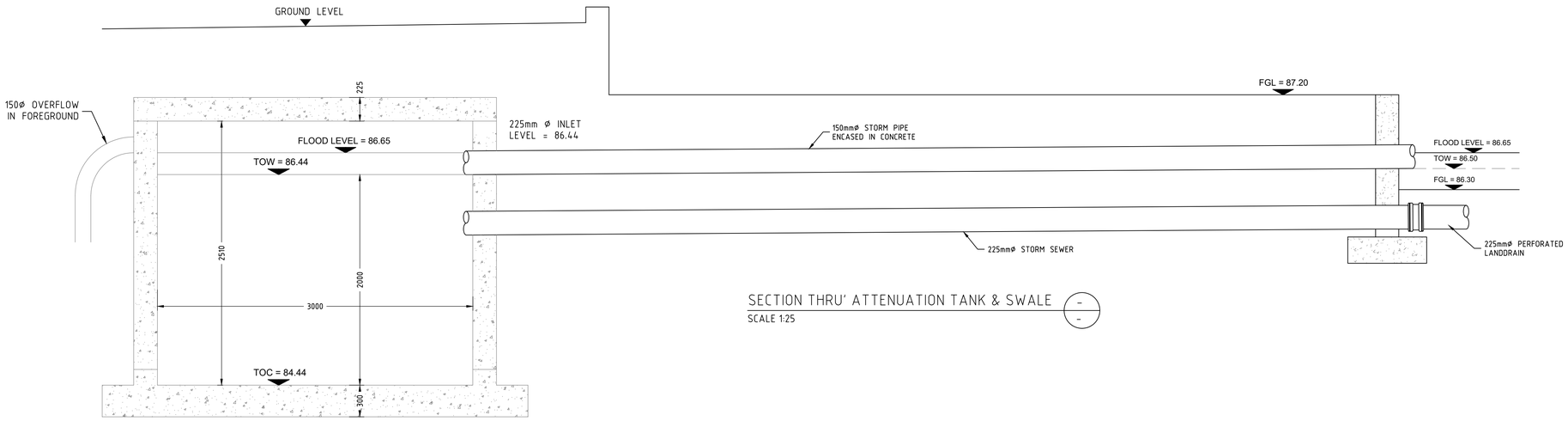
Storm Drain

MH No.	Pipe Dia. (mm)	Gradient	Cover Level	Inlet B	Inlet C	Outlet A	Location
S06			87.20			84.40	A
	225mm	1:140					
S07			87.10	84.27	84.15	84.15	C A B
	225mm						





TYP. SECTION THRU' SWALE
SCALE 1:25



SECTION THRU' ATTENUATION TANK & SWALE
SCALE 1:25

Original Drawing Size A1

Notes

SURVEY NOTES
1. ALL LEVELS ARE RELATED TO MALIN HEAD DATUM (OSGM15).
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
3. DRAWING IS REFERENCED TO ING CO-ORDINATE SYSTEM.
4. DO NOT SCALE, THIS SHALL ONLY BE PERMITTED IN DIGITAL FORM.
5. GRID IS 20m X 20m.

Rev	Date	Drawn	Description	Ch'k'd
PL1	July '25	ME	Issued for Planning	PF

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CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

Client:
Summertime Developments Ltd.

Project:
Residential Development
at Laurel Heights,
Shanakiel, Cork City.

Drawing Title:
Proposed Storm Drain Layout
No.'s 21 to 51 Laurel Heights

Designed:	PF	Drawn:	GR	Date:	June '25
Eng Chk:	PF	Dwg. Chk:	PF	Scale:	1:200 @ A1
Project. No:	576				
Drawing No:	1002			Status:	Planning
				Rev:	PL1

Original Drawing Size A1

Notes

GENERAL NOTES:

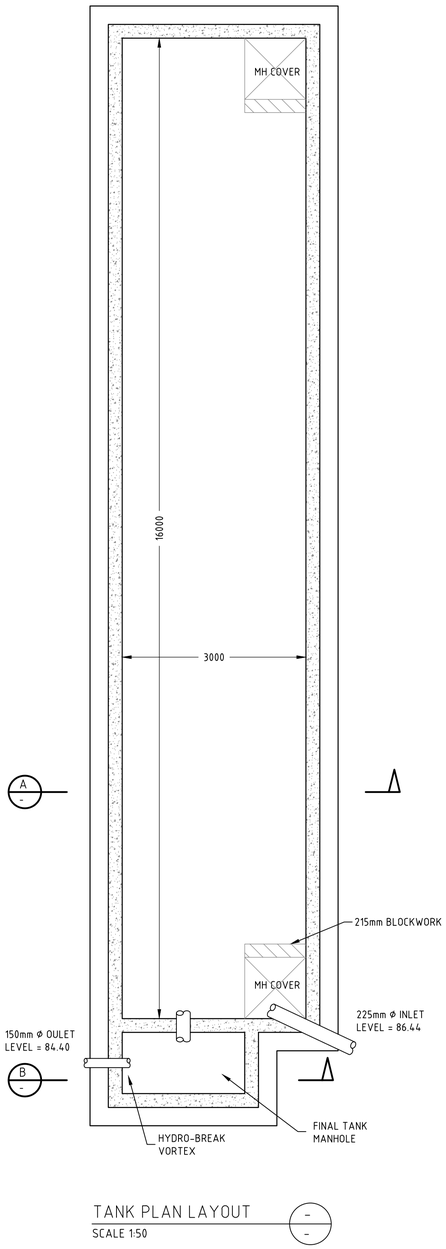
1. DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTS DRAWINGS.
2. ALL DIMENSIONS IN MILLIMETRES.
3. SETTING OUT DETAILS TO BE OBTAINED FROM ARCHITECTS DRAWINGS.
4. ARCHITECT TO BE INFORMED OF ANY DISCREPANCIES IMMEDIATLEY.
5. ENGINEER TO BE NOTIFIED OF ANY CONCRETE POURS SO THEY MAY BE INSPECTED AND PASSED.
6. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT IRISH AND BRITISH STANDARDS.
7. TO BE READ IN CONJUNCTION WITH THE CIVIL/STRUCTURAL SPECIFICATION

REFERENCE DRAWINGS:

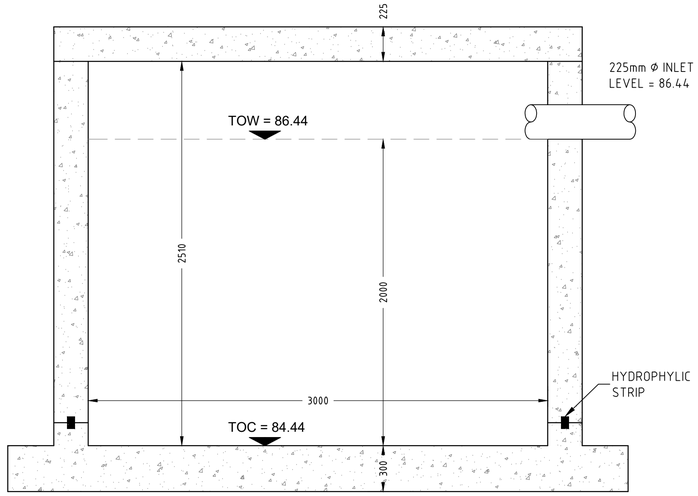
TO BE READ IN CONJUNCTION WITH RKA DWG. No. 576-1002.

LEGEND:

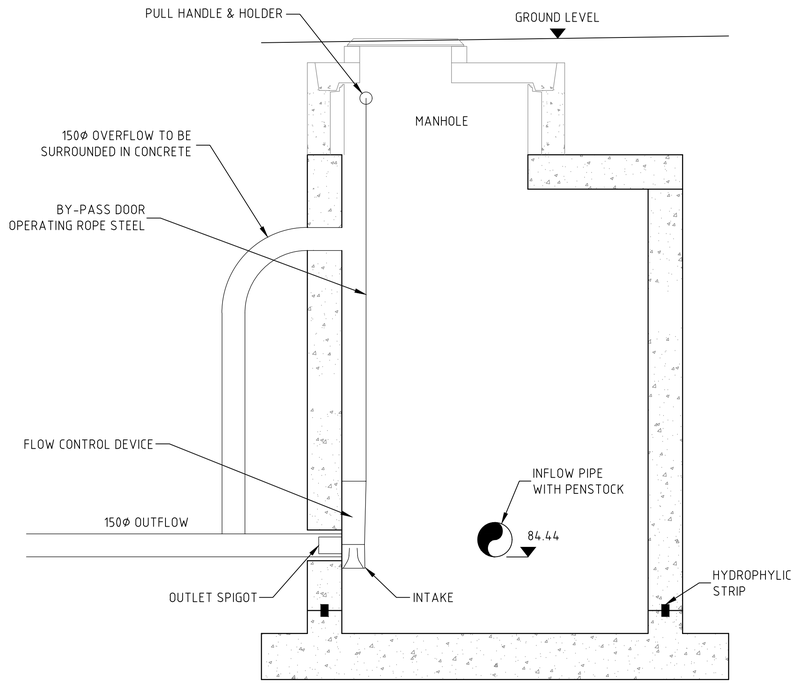
01 / - = SECTION MARK 01 - ON CURRENT DWG.



TANK PLAN LAYOUT
SCALE 1:50 (-/-)



SECTION A / -
SCALE 1:20



SECTION B / -
SCALE 1:20

Rev	Date	Drawn	Description	Ch'k'd
PL1	July '25	ME	Issued for Planning	PF

Client:
Summertime Developments Ltd.

Project:
Residential Development
at Laurel Heights,
Shanakiel, Cork City.

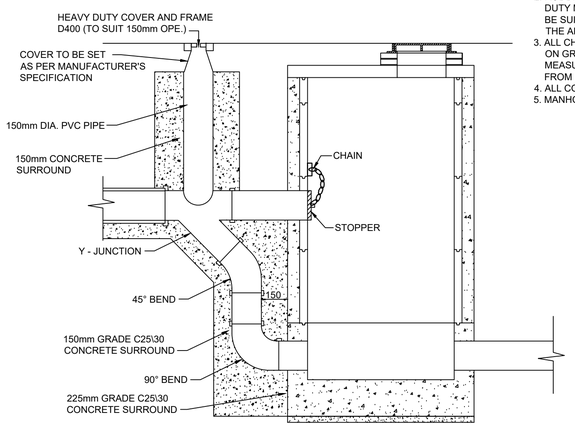
Drawing Title:
Proposed Attenuation Tank
General Arrangement

Designed:	PF	Drawn:	GR	Date:	Jan. '25
Eng Chk:	PF	Dwg. Chk:	PF	Scale:	As Shown @ A1
Project. No:	576				
Drawing No:	1003			Status:	Planning
				Rev:	PL1

Original Drawing Size A1

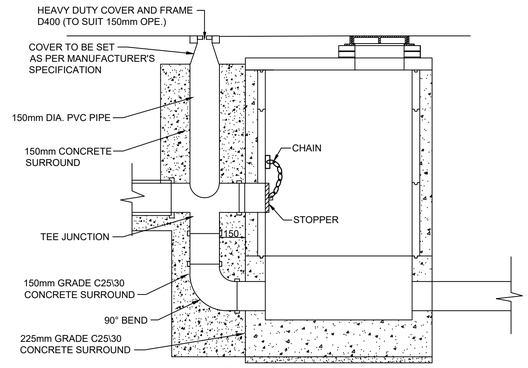
Notes

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. RODDING EYE CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 AND BS 5834. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO THE APPROVAL OF IRISH WATER.
3. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM IRISH WATER.
4. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
5. MANHOLE DETAILS TO BE IN ACCORDANCE WITH STD-WW-09, 10 AND 11



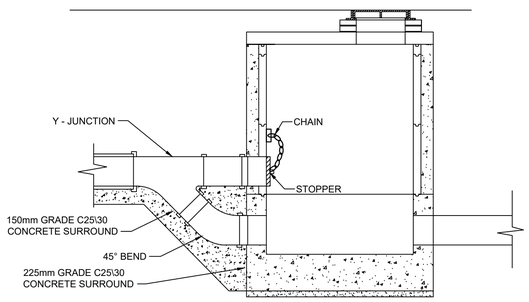
TYPE No. 1

150mm - 450mm DIA. (INCL.) DROP GREATER THAN 1700mm
500mm - 900mm DIA. (INCL.) DROP GREATER THAN 2300mm



TYPE No. 2

150mm - 450mm DIA. (INCL.) DROP GREATER THAN 900 AND LESS THAN 1700mm
500mm - 900mm DIA. (INCL.) DROP GREATER THAN 1300mm AND LESS THAN 2300mm

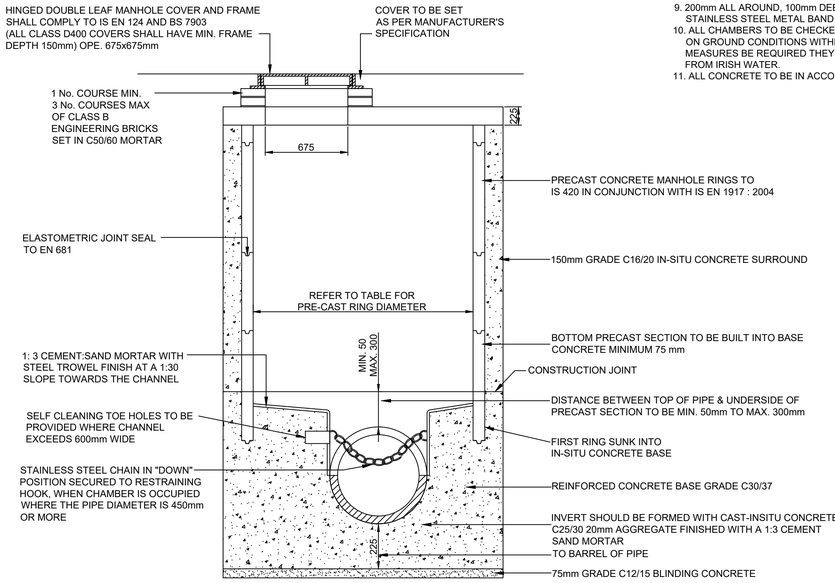


TYPE No. 3

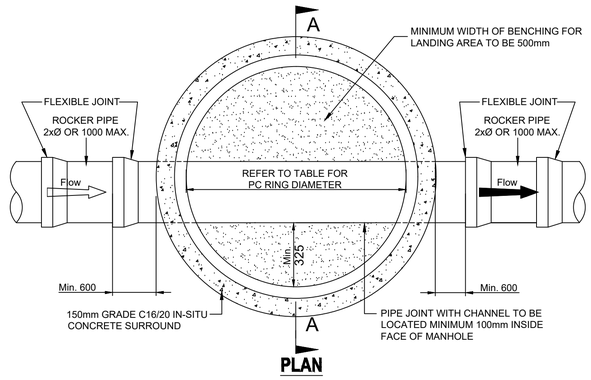
150mm - 450mm DIA. (INCL.) DROP GREATER THAN 600mm AND LESS THAN 900m
500mm - 900mm DIA. (INCL.) DROP GREATER THAN 600mm AND LESS THAN 1300mm

BACKDROP MANHOLES

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND BS 5911-PART 3.
3. THICKER MANHOLE BASES REQUIRED FOR SEWERS IN EXCESS OF 3m DEEP WHERE THE SIZE IS GREATER THAN THE STANDARD MINIMUM SIZE.
4. APPROVED PRE-CAST CONCRETE BASES MAY BE USED INCORPORATING CHANNELS, BENCHING ETC. SUBJECT TO IRISH WATER APPROVAL AND COMPLYING WITH BS 5911-PART 4 2002.
5. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
6. MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER APPROVAL.
7. MANHOLE ROOFS SHOULD CONSIST OF RE-INFORCED CONCRETE SLAB OF IN-SITU CONCRETE, C30/37, WITH A MINIMUM THICKNESS OF 225mm DESIGNED TO CARRY ALL LIVE AND DEAD LOADS, ALTERNATIVELY, APPROVED PRE-CAST CONCRETE ROOF SLABS MAY BE USED SUBJECT TO IRISH WATER APPROVAL AND COMPLIANCE WITH BS 5911 PART 4: 2002.
8. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO APPROVAL FROM IRISH WATER.
9. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND AROUND COVERS IN GREEN AREAS.
10. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM IRISH WATER.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.



SECTION A-A



PLAN

MINIMUM MANHOLE DIAMETERS	
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 375	1200
375 TO 450	1350
500 TO 750	1500

PRE-CAST CONCRETE MANHOLE

NORMAL INTERNAL DIAMETER	MINIMUM TRENCH WIDTH (mm)	MAXIMUM TRENCH WIDTH (mm)
100	450	650
150	500	700
225	600	800
300	700	900
375	950	1150
450	1050	1250
525	1150	1350
600	1250	1450
675	1350	1550
750	1400	1600
825	1500	1700
900	1950	2150
1050	2100	2300
1200	2300	2500
ABOVE 1200	PIPE DIAMETER PLUS 800mm	OUTSIDE DIAMETER PLUS 1000mm

MAX. & MIN. TRENCH WIDTHS

MANHOLES
1. Pre-cast concrete manholes to be accordance with IS 420: 1989.
2. Manhole covers to roads to be Cavanagh Panther heavy duty Ref: A0011 to EN 124 or similar approved.
3. Manhole covers to gardens and medium trafficked areas to be Cavanagh Tiger Duty Ref: A0053 to EN 124 or similar approved.

Rev	Date	Drawn	Description	Ch'k'd
PL	July '25	ME	Issued for Planning	PF

rka CONSULTING ENGINEERS
2 Clogheen Business Park,
Blarney Road, Cork,
Ireland.
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F: +353 (0)21 4399797
E: admin@rka.ie
W: www.rka.ie
CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

Client:
Summertime Developments Ltd.

Project:
Residential Development
at Laurel Heights,
Shanakiel, Cork City.

Drawing Title:
Proposed Manhole Details
No.'s 21 to 51 Laurel Heights

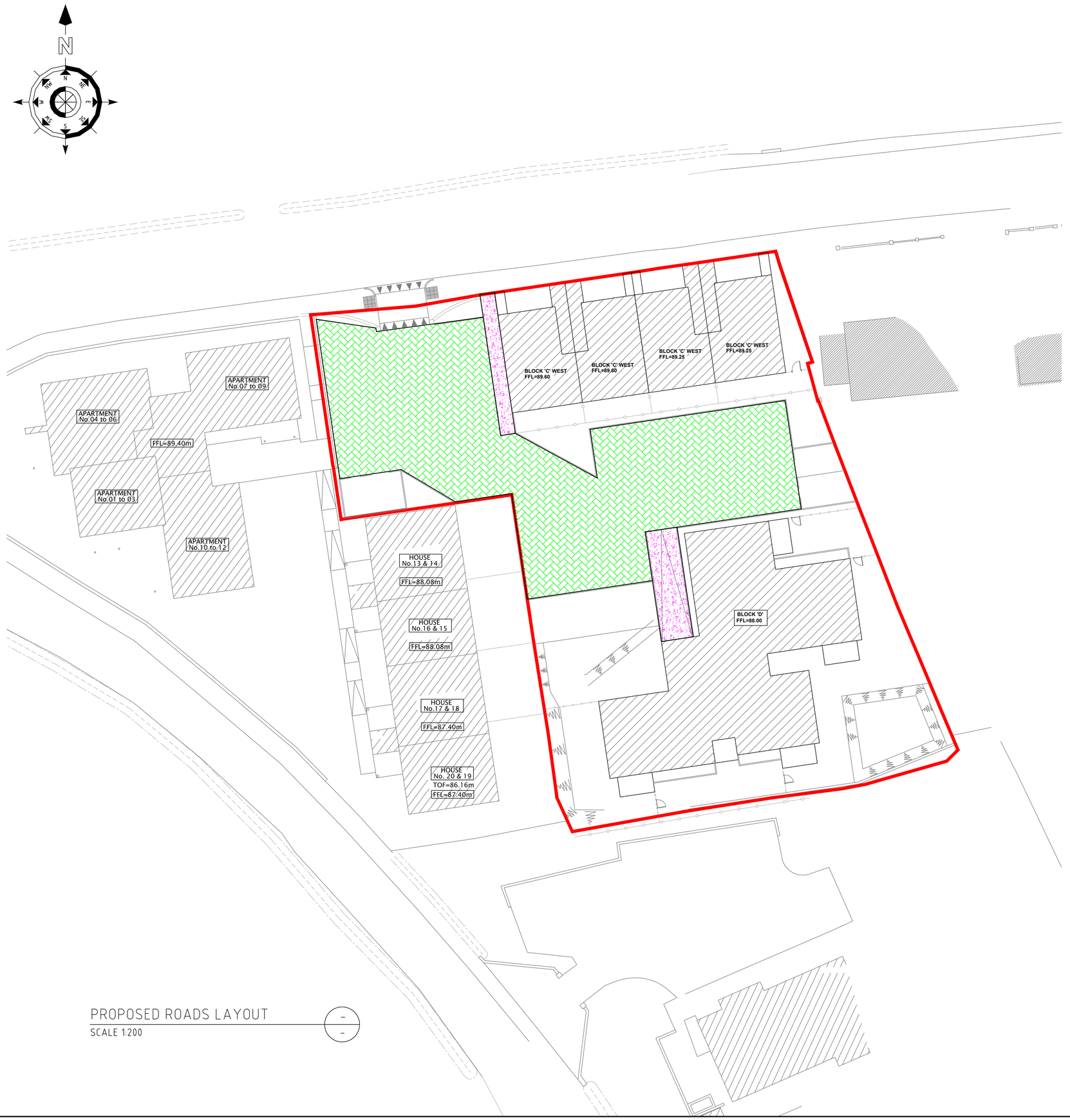
Designed: -	Drawn: GR	Date: November '24	
Eng Chk: -	Dwg. Chk: -	Scale: As Shown	
Project. No: 576			
Drawing No: 1004		Status: Planning	Rev: PL

Original Drawing Size A1

Notes

SURVEY NOTES

1. ALL LEVELS ARE RELATED TO MALIN HEAD DATUM (OSGM15).
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
3. DRAWING IS REFERENCED TO ING CO-ORDINATE SYSTEM.
4. DO NOT SCALE, THIS SHALL ONLY BE PERMITTED IN DIGITAL FORM.
5. GRID IS 20m X 20m.



PROPOSED ROADS LAYOUT

SCALE 1:200

LEGEND:

- Site Boundary
- Home Zone Shared Surface
- Concrete Footpath

Rev	Date	Drawn	Description	Ch'k'd
PL1	July '25	ME	Issued for Planning	PF

2 Clogheen Business Park,
Blarney Road, Cork,
Ireland.
T: +353 (0)21 4399799
F: +353 (0)21 4399797
E: admin@rka.ie
W: www.rka.ie
CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

Client:

Summertime Developments Ltd.

Project:

Residential Development
at Laurel Heights,
Shanakiel, Cork City.

Drawing Title:

Proposed Roads Layout
No.'s 21 to 51 Laurel Heights

Designed:	PF	Drawn:	GR	Date:	June '25
Eng Chk:	PF	Dwg. Chk:	PF	Scale:	1:200 @ A1
Project. No:	576				
Drawing No:	1005			Status:	Planning
				Rev:	PL1

Appendix 2 Uisce Éireann Pre Connection Enquiry

CONFIRMATION OF FEASIBILITY

Gerard Ryan

2 Clogheen Business Park
Blarney Road
Co. Cork
T23X70V

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

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

28 March 2025

Our Ref: CDS24010297 Pre-Connection Enquiry
21-51 Laurel, Shanakiel, Cork, Cork

Dear Applicant/Agent,

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

Uisce Éireann has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Housing Development of 30 unit(s) at 21-51 Laurel, Shanakiel, Cork, Cork, (the **Development)**.

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

- **Water Connection** - Feasible without infrastructure upgrade by Uisce Éireann
- **Wastewater Connection** - Feasible without infrastructure upgrade by Uisce Éireann

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

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

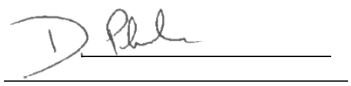
Where can you find more information?

- **Section A -** What is important to know?

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

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

Yours sincerely,



Dermot Phelan
Connections Delivery Manager

Section A - What is important to know?

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

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

Appendix 3 Records

- Irish Water Watermain Records (3 No.)
- Cork City Council Storm Records (1 No.)
- Cork City Council Foul Records (2 No.)
- ESB Networks Records (1 No.)
- Gas Network Records (1 No.)

Cork City Council
Environment Directorate
Water Distribution Section

Shanakiel Rd Watermain Records

Scale (A3):

1:500

N

Drawn: LG

Date: 04/05/2018

Legend

- Sluice Valve - Open
- Sluice Valve - Closed
- Hydrant
- Cast-Iron
- Ductile Iron
- MDPE

600

4

14

100

1

2

6

95

91

90

85

84

100

100

Hostel

SHANAKIEL ROA

UISCE ÉIREANN : IRISH WATER

Cork City Council

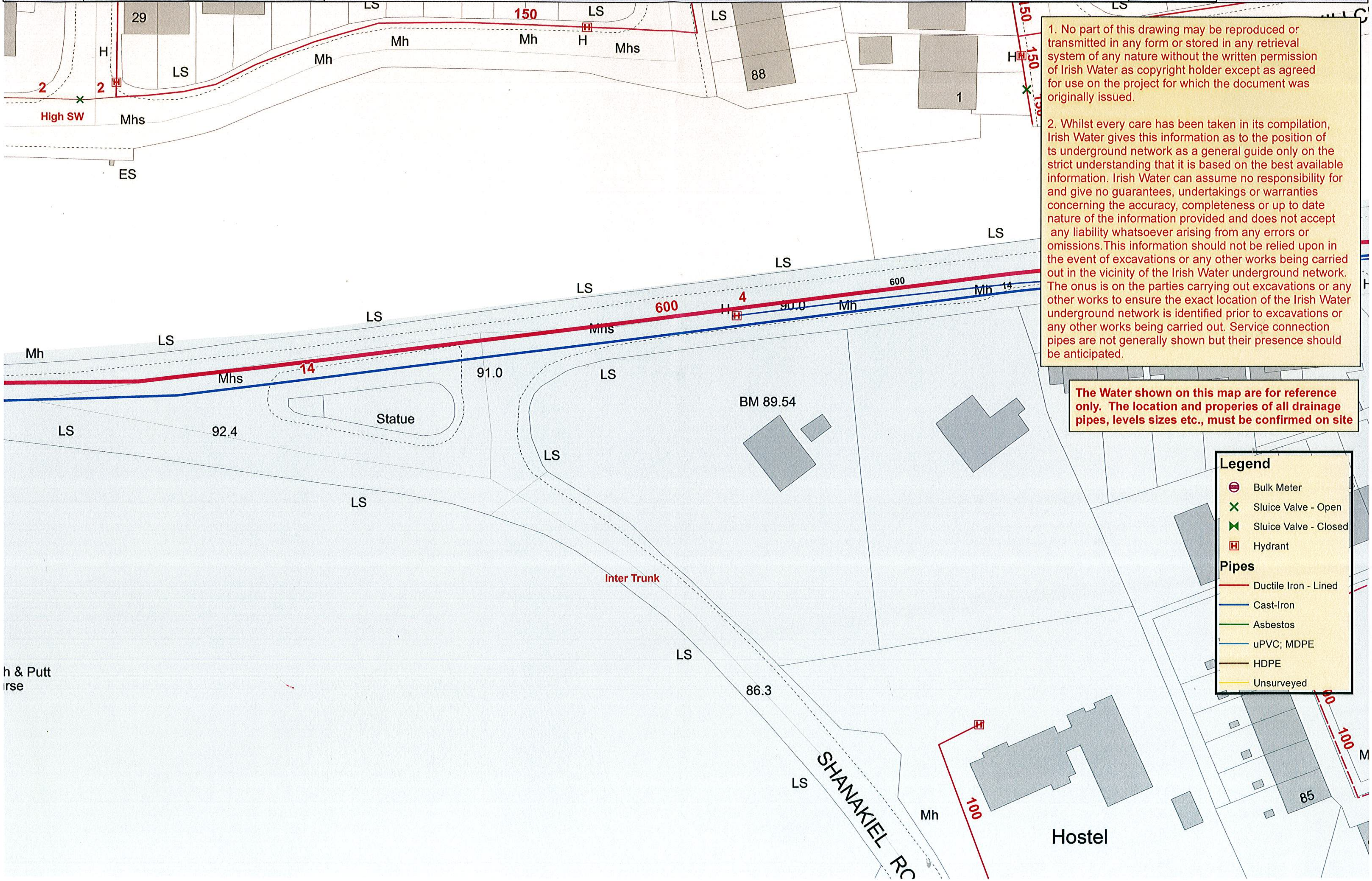
Environment Directorate
Water Services (Distribution) Section

Scale (A3): 1:560

N

Drawn: RL

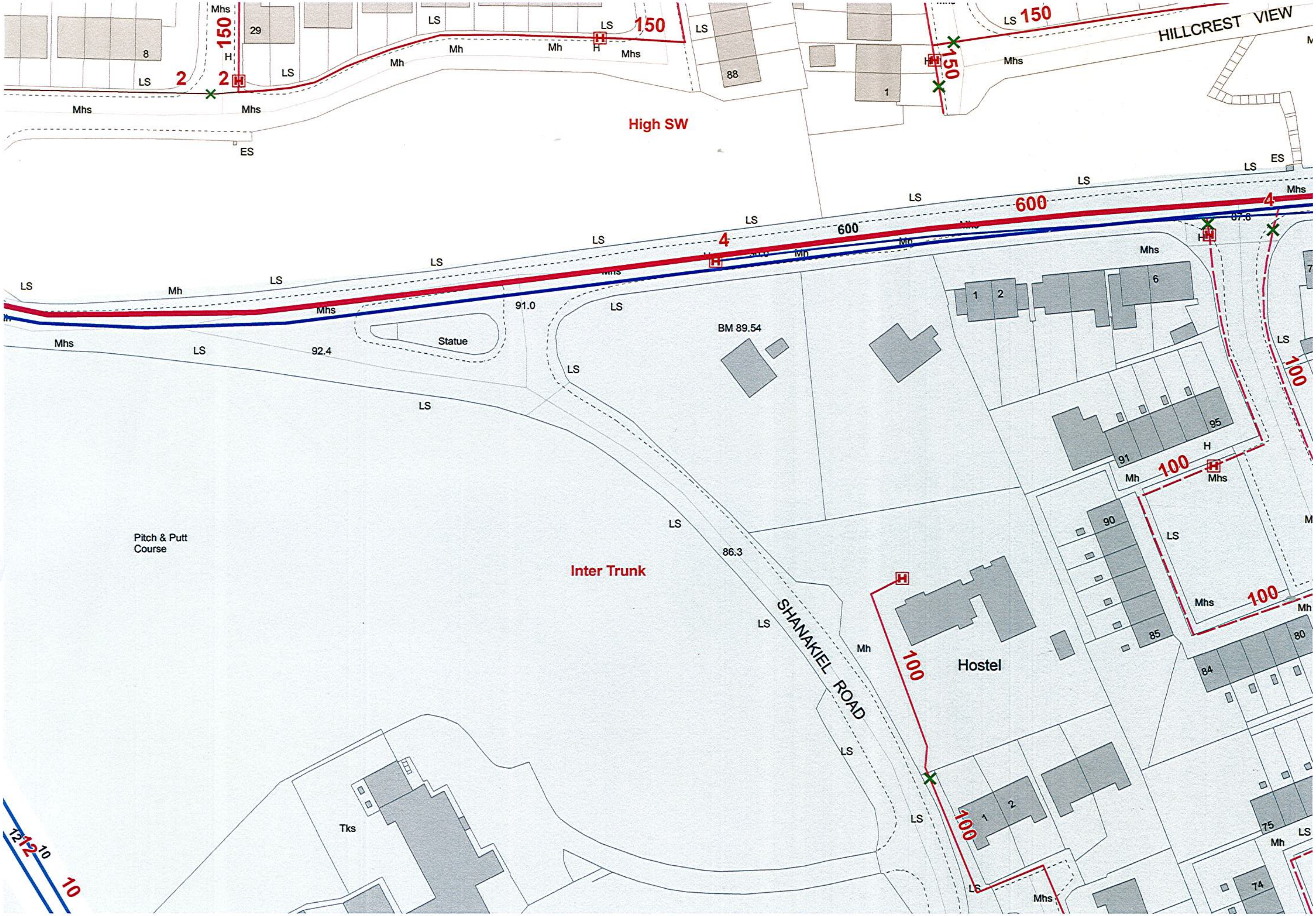
Date: 21/02/2019



1. No part of this drawing may be reproduced or transmitted in any form or stored in any retrieval system of any nature without the written permission of Irish Water as copyright holder except as agreed for use on the project for which the document was originally issued.

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

The Water shown on this map are for reference only. The location and properies of all drainage pipes, levels sizes etc., must be confirmed on site


HILLCREST VIEW
High SW
Inter Trunk
SHANAKIEL ROAD
Pitch & Putt
Course
Statue
Hostel
Tks
BM 89.54
92.4
91.0
86.3
600
4
150
100
2
10
12

Drainage Records

Legend

CCC_StormNetwork
PIPE_FUNCT
– LOCAL STORM

CCC_StormManholes
MANHOLE_
● Manhole

THE SEWERS SHOWN ON THIS MAP ARE FOR REFERENCE ONLY. THE LOCATION AND PROPERTIES OF ALL SEWERS, LEVELS, PIPESIZES, etc, MUST BE CONFIRMED ON SITE.

1:1,000

N

CORK CITY COUNCIL ENVIRONMENT DIRECTORATE
Storm Network

Drawn By: G. Roche

Checked by: L.L

Date: 24/01/2018

LS
LS
Mhs
ES
88
1
N
LS
LS
LS
Mhs
Mh
H
90.0
Mh
LS
LS
300
Mhs
Mh
91.0
LS
1
2
BM 89.54
LS
92.4
Statue
LS
LS
LS
86.3
SH
Pitch & Putt
Course

Drainage Records

Legend

IW_FoulNetwork
PIPE_FUNCT
LOCAL FOUL

IW_FoulManholes
MANHOLE_
Manhole

THE SEWERS SHOWN ON THIS MAP ARE FOR REFERENCE ONLY. THE LOCATION AND PROPERTIES OF ALL SEWERS, LEVELS, PIPESIZES, etc, MUST BE CONFIRMED ON SITE.

1:500

N

CORK CITY COUNCIL ENVIRONMENT DIRECTORATE
(As agents of Irish Water)

Drawn By: A. Homan

Checked by: G.R.

Date: 03/05/2018

Drainage Records

Legend

IW_FoulNetwork
PIPE_FUNCT
LOCAL FOUL

IW_FoulManholes
MANHOLE_
Manhole

THE SEWERS SHOWN ON THIS MAP ARE FOR REFERENCE ONLY. THE LOCATION AND PROPERTIES OF ALL SEWERS, LEVELS, PIPESIZES, etc, MUST BE CONFIRMED ON SITE.

1:1,000

N

CORK CITY COUNCIL ENVIRONMENT DIRECTORATE
(As agents of Irish Water)

Drawn By: A. Homan

Checked by: G.R.

Date: 04/05/2018

ESB Networks

TITLE: 20180515-005_A3

COLOUR CODE:

- BLACK - 38KV & HIGHER VOLTAGE OVERHEAD LINES
- GREEN - MV(10KV/20KV) OVERHEAD LINES
- BLUE - LV (400V/230V) OVERHEAD LINES
- CYAN - 38KV & HIGHER VOLTAGE UNDERGROUND CABLE ROUTES
- RED - MV/LV (10KV/20KV/400V/230V) UNDERGROUND CABLE ROUTES

DATE: 15-May-2018

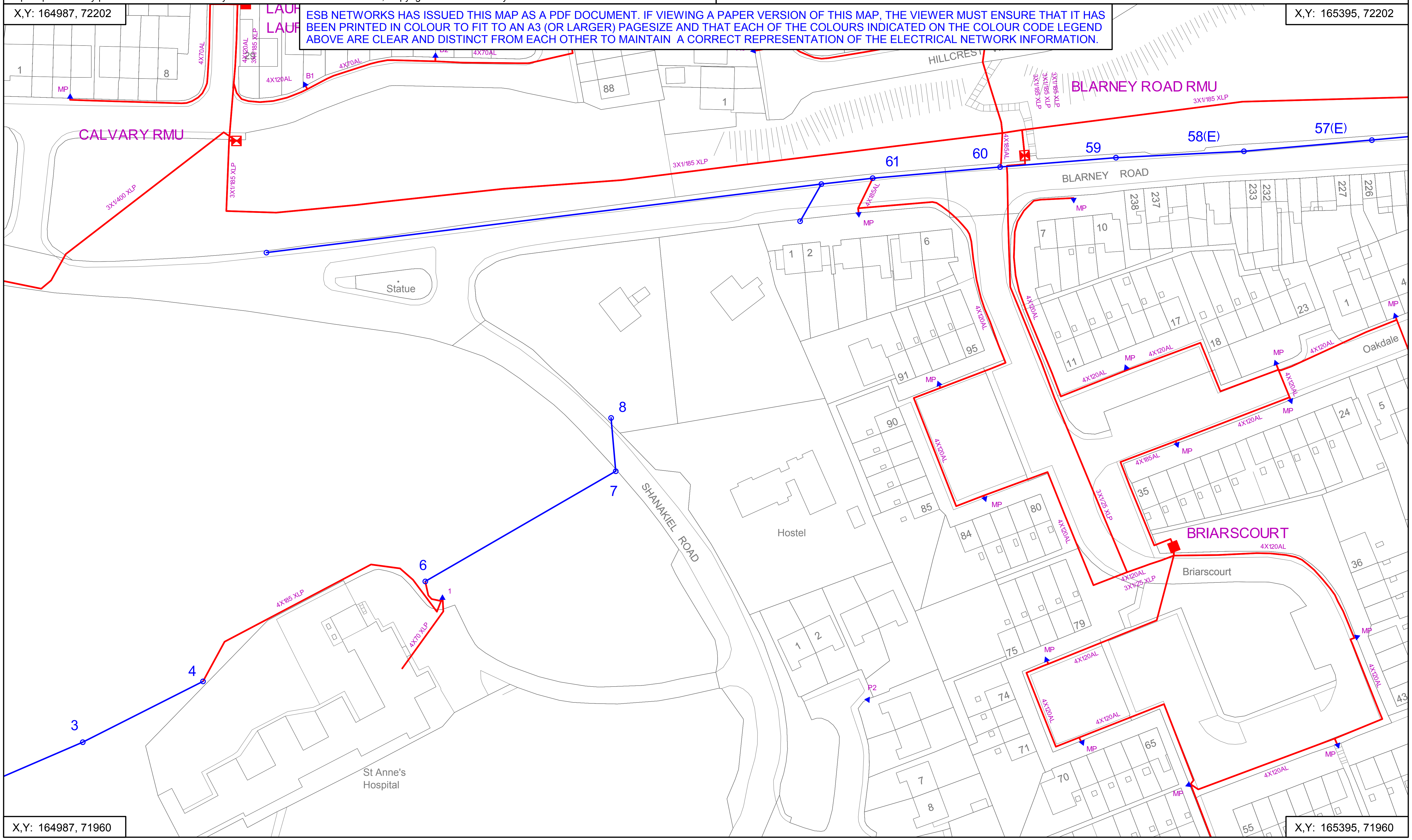
** SCALE: 1:1000

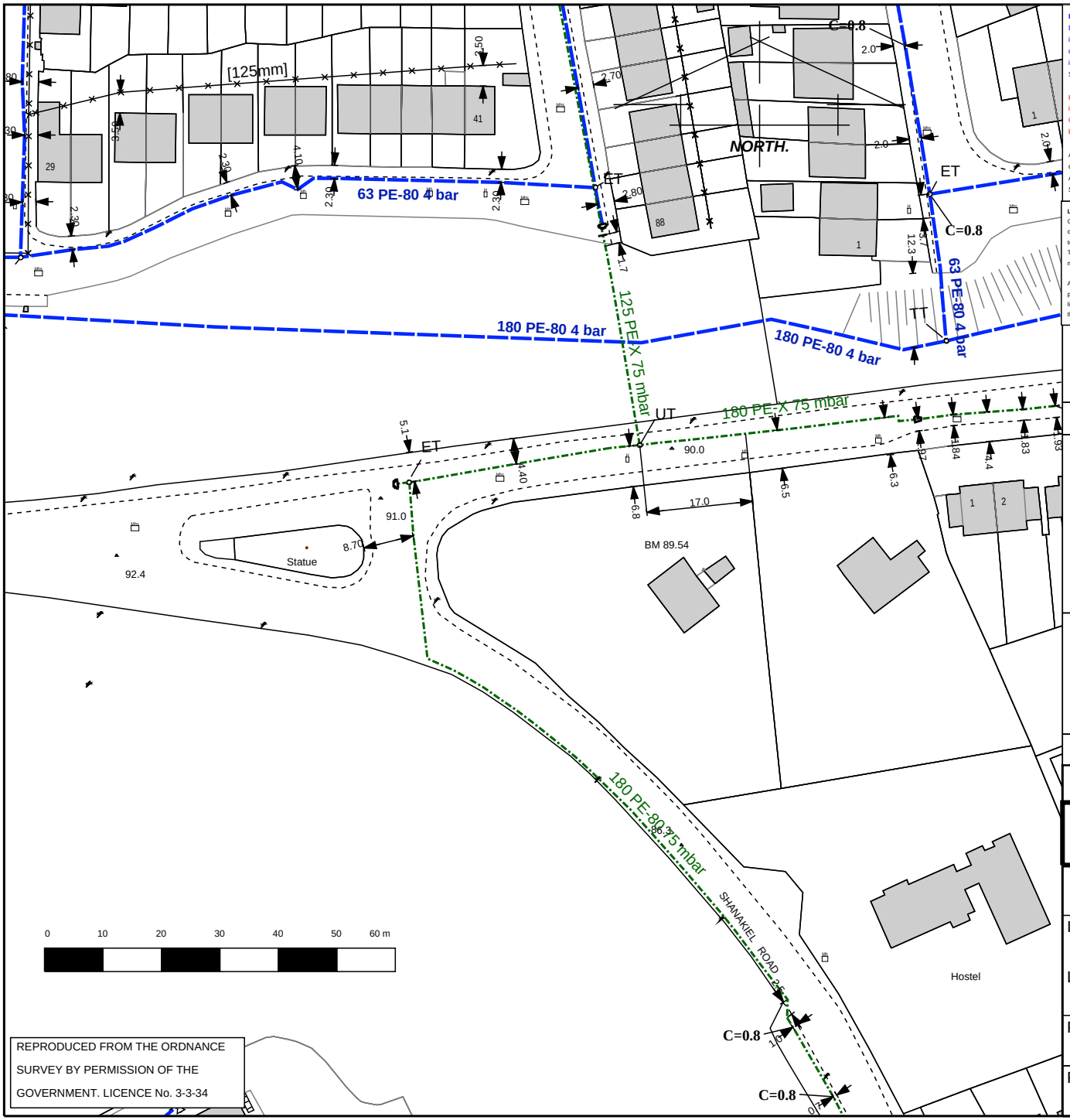
** SCALE WHEN PRINTED ON AN A3 PAGE
XY COORDINATES DISPLAYED IN IRISH GRID COORDINATE SYSTEM

WARNING

THIS MAP INDICATES THE APPROXIMATE LOCATION OF ESB TRANSMISSION (400KV, 220KV, 110KV, 38KV) AND DISTRIBUTION (20KV, 10KV, 230V/400V) UNDERGROUND CABLES AND OVERHEAD LINES IN THE GENERAL AREA OF THE PROPOSED WORKS. ESB NETWORKS TAKES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE MAP. IT IS THE USER'S RESPONSIBILITY TO INDEPENDENTLY VERIFY THE INFORMATION AND THE LOCATION OF UNDERGROUND CABLES AND OVERHEAD LINES. LOW VOLTAGE (230V/400V) SERVICE CABLES (E.G. HOUSE SERVICES, FACTORY/SHOP SERVICES, PUBLIC LIGHTING LAMP SERVICES, ETC) ARE NOT INCLUDED BUT THEIR PRESENCE SHOULD BE ANTICIPATED. THE DEPTHS OF UNDERGROUND CABLES MUST NEVER BE ASSUMED. ADDITIONAL MORE DETAILED INFORMATION IS AVAILABLE FOR HIGH VOLTAGE TRANSMISSION UNDERGROUND CABLES (38KV, 110KV, 220KV, 400KV) FROM THE LOCAL ESB NETWORKS TRANSMISSION REPRESENTATIVE - SEE ATTACHED LIST FOR CONTACT DETAILS OR CALL 1850 372 757. NO WORK SHOULD BE CARRIED OUT IN THE VICINITY OF 38KV OR HIGHER VOLTAGE UNDERGROUND CABLES WITHOUT PRIOR CONSULTATION WITH ESB NETWORKS. BEFORE ANY MECHANICAL EXCAVATION IS UNDERTAKEN, THE ACTUAL LOCATION OF ALL UNDERGROUND ELECTRICITY CABLES MUST BE ESTABLISHED AND VERIFIED ON THE SITE USING: (A) UP-TO-DATE MAP RECORDS; (B) CABLE LOCATER EQUIPMENT OPERATED IN BOTH POWER AND RADIO MODES; (C) CAREFUL HAND DIGGING OF TRIAL HOLES USING 'SAFE DIGGING PRACTICE'. REFER ALSO TO 'HSA CODE OF PRACTICE FOR AVOIDING DANGER FROM UNDERGROUND SERVICES'. ESB TAKES NO RESPONSIBILITY FOR AND SHALL BEAR NO LIABILITY, HOWSOEVER ARISING, IN RELATION TO ANY DAMAGE, INJURY/DEATH OR LOSS OF SUPPLY AS A RESULT OF DAMAGE OR INTERFERENCE WITH ITS NETWORKS.

ESB NETWORKS HAS ISSUED THIS MAP AS A PDF DOCUMENT. IF VIEWING A PAPER VERSION OF THIS MAP, THE VIEWER MUST ENSURE THAT IT HAS BEEN PRINTED IN COLOUR TO FIT TO AN A3 (OR LARGER) PAGESIZE AND THAT EACH OF THE COLOURS INDICATED ON THE COLOUR CODE LEGEND ABOVE ARE CLEAR AND DISTINCT FROM EACH OTHER TO MAINTAIN A CORRECT REPRESENTATION OF THE ELECTRICAL NETWORK INFORMATION.





REPRODUCED FROM THE ORDNANCE SURVEY BY PERMISSION OF THE GOVERNMENT. LICENCE No. 3-3-34

Important Safety Notice:

Damage to gas pipelines can result in serious injury or death. Gas network information is provided as a general guide. The exact location and depth of medium or low pressure distribution gas pipes must be verified on site by carrying out necessary investigations, including, for example, hand digging trial holes along the route of the pipe. Service pipes are not generally shown but their presence should always be anticipated.

High pressure transmission pipelines are shown in red. If a transmission pipeline is identified within 10m of any intended excavations then work must not proceed before GNI has been consulted. The true location and depth of a transmission pipeline must be verified on site by a representative of GNI. Contact can be made through 1850 427 747.

All work in the vicinity of the gas network must be completed in accordance with the current edition of the Health & Safety Authority publication, Code of Practice For Avoiding Danger From Underground Services which is available from the Health and Safety Authority (1890 289 389) or can be downloaded at www.hsa.ie.

- Aurora Telecom Fibre Optic Cable
- Aurora Telecom Duct
- Aurora Telecom Sub-duct
- Aurora Telecom Inserted Gas Pipe

Contact Aurora Telecom on 1850-427-399 or (01)203-0120.

- Transmission Pipe (High Pressure)
- Transmission Pipe (Construction Issue)
- Distribution Pipe (Medium Pressure)
- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted Pipe (Medium Pressure)
- Inserted Pipe (Low Pressure)
- Distribution Pipe (Abandoned)

- .C=? Cover (depth in meters)
- CP Test Point
- End Cap
- Hot Tap
- Installation
- Valve
- Mains Verification **
- Pressure Monitor
- Protection (Sleeve)
- Protection (Slabbing)
- Reducer
- Service Terminator
- Tee
- Transition

** Please contact GNI on 1850-427747 for specific information.

Design Department - DUBLIN

Gas Networks Ireland

GAS NETWORK INFORMATION

Issue: RKA Consulting Engineers

Location: Shanakiel Road, Cork

Plot Date:	Contact:
08/05/2018	M English
Plotted by:	**Scale:**
KOC	1:1000