DOCUMENT ISSUE &
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PROJECT	**Farranamartin Housing Development**	**Day**	25								
JOB No.	**24561**	**Month**	07								
SHEET No.	**1**	**Year**	25								
Drg. No.	**Drawing Title**	**Scale**	**R**	**E**	**V**	**I**	**S**	**I**	**O**	**N**	**S**
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24561-GNI-XX-ZZ-DR-C-0002	Storm And Foul Longitudinal Sections	As Shown	P.02								
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24561-GNI-XX-ZZ-DR-C-0011	Watermain Construction Standard Details Sheet 1 of 2	As Shown	P.02								
24561-GNI-XX-ZZ-DR-C-0012	Watermain Construction Standard Details Sheet 2 of 2	As Shown	P.02								
-	Drainage and Watermain Design Report		2								

Distribution	Distribution - No of Copies or Email (E)	
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Architects		E
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Main Contractor		

Farranamartin, Tuam, Galway

Proposed New Housing Development

Drainage and Watermain Design Report

Gilligan

CONSULTING CIVIL AND STRUCTURAL ENGINEERS

GILLIGAN AND PARTNERS,

23 BEDFORD STREET,

BELFAST.

BT2 7EJ.

PROJECT No. 24561

July 2025

Document Control

Client: Galway County Council

Architect: Collins-Rolston

Project: Farranamartin, Tuam, Galway

Project Number: 24561

Document Title: Drainage and Watermain Design Report

Revision	Date Issued	Prepared	Reviewed	Approved
1st issue	11/04/2025	CB	CT	CT
2nd Issue	25/07/2025	CB	CT	CT

1. Introduction

Gilligan NI have been commissioned by Galway County Council, to complete a report on the methodology and design of watermains and sewers for the proposed development off the Galway Road in Tuam.
This report seeks to provide a working drainage design that follows regulations. Methods used will be in accordance with standard practice, with drawings and calculations provided.

2. Site Information

2.1. Predevelopment

Site is located around 675m from St. Jarlath's Park in Tuam. Site is inland, and the local area is predominately residential, with the southern and south western boundaries bounded by fields. The site is greenfield and approximately 1.87ha in area, rising from NW to the SE of the site.

Site Aerial Picture

2.2. Proposed Development

The proposed development can be seen in appendix A, and indicates the construction of 62 units in total, comprised of: 24 houses; 26 apartments; and 12 bungalows along with the normal residential roads and a central open space. Units to range from 2 person to 7 person dwellings.

3. Foul Water Drainage Design

3.1. Existing Drainage Patterns

There are no foul or combined sewers running through the site. There is an existing Uisce Eireann Foul network running along the R939(Galway Road). This has been detailed within the drawing referenced 24561-GNI-XX-ZZ-DR-C-0001. The Foul Sewer runs towards the centre of Tuam (NE of the site) and is a 350mm concrete pipe.

3.2. Foul Sewer Design Method

Foul Sewers are to be designed in accordance with Irish Waters Code of Practice for Wastewater Infrastructure (July 2020, Revision 2).
Usage per person will be taken as 150l/day/person, as per Irish Waters Code of Practice for Wastewater Infrastructure(July 2020, Revision 2.
Pipe roughness (k_s) is to be taken as 1.5mm. Pipe fluid velocity should be no less than 0.75m/s at 1/3 of the design flow(2DWF). Pipe velocity is to be calculated using Colebrook-White equation.

3.3. Development Foul Loading

Foul Loading is to be calculated using the equations specified in the Irish Waters Code of Practice for Wastewater Infrastructure(July 2020, Revision 2), in Appendix B section 2. Site specific foul loading is as follows:

***DWF** = 150l/day(G) x 249(P) + 10% CC = 41085l/day = 0.476l /s*

***6DWF** = 6[150l/day(G) x 249(P) + 10% CC = 41085l/day] = 246510l/day = 2.853l/s (Design flow)*

3.4. Foul Sewer Design

The Foul Sewer design can been found in **Appendix A**, with the proposed foul sewers shown in red with the relevant manholes referenced as F1, F2, F3 etc.

The Foul sewer is a gravity sewer, falling towards the bottom entrance of the site. Gradients and pipe sizes will be as per the table on P45 of the *Irish Waters Code of Practice for Wastewater Infrastructure*:

Table: Sewer Size/Gradient for Multiple Properties

Number of Dwellings	Pipe Diameter	Minimum Gradient
2 to 9	150mm (or 225mm)	1:60
10 to 20		1:150
21 to 210	225mm	1:200
211 to 250		1:150
251 to 330		1:100
331 – 450	300mm	1:300
451 to 565		1:200
566 to 655		1:150
656 to 830		1:100

Pipe sizes range from 150mm to 300mm, with falls ranging from 1:21 to 1:127. According to the Wastewater Code of Practice, pipes ran at these gradients for the unit numbers served, will reach the ideal self-cleansing velocities, between 0.75m/s and 3.00m/s.

Pipes have been upsized to 300mm along the proposed developments main road(Road 1), to allow for potential future connections.

3.5. Uisce Eireann Feasibility Confirmation

Based on the application submitted by Galway County Council in January 2024, Uisce Eireann have confirmed that the nearby wastewater network can serve the 63 new dwellings. This development is to have 62 units total, therefore the local UE sewage network has adequate capacity to serve the scheme.

UE(Uisce Eireann) Confirmation of Feasibility letter can be found in **Appendix B**.

4. Storm Water Drainage Design

4.1. Existing Drainage Patterns

There are no storm water sewers running through the site. There is a dedicated storm sewer running along the R939(Galway Road), heading SW,. The Storm sewer is a 225mm diameter PVC pipe.

4.2. Storm Sewer Design Method

Surface water systems must be designed in accordance with the requirements of the local authority who oversee the surface water drainage systems. Alongside the drainage design, Sustainable Drainage Systems(SuDs), should be implemented within the design.
Sewer systems are to be designed in accordance with Irish Waters Code of Practice for Wastewater Infrastructure(July 2020, Revision 2). Another document that will be taken into account as part of this drainage design would be the Greater Dublin Strategic Drainage Study(GDSDS).
The GDSDS states that for a drainage system must account for four main criteria, seen in section 6.3.4 of the GDSDS document. All will be considered, but criterion 3 would be considered the most pertinent to this scenario.

- 3.1 - No flooding on site except where planned (30-year rainfall event),
- 3.2 - No internal property flooding (100-year rainfall event),
- 3.3 - No internal property flooding (100-year river event and FFL to be 500mm above level of river flooding) and;,
- 3.4 - No flood routing off site except where specifically planned. (100-year rainfall event).

4.3. Design Parameters

Site specific parameters such as M5-60 and ratio “R” for the designated site, have been set at 17.00mm/hr and 0.300 respectively, which would be standard for the area.

Surface water system is to be designed to store up to a 1-100 year rainfall event + 20% for climate change, whilst discharging at greenfield run-off rate.
Total hardstanding area from the propose development has been predicted to be 0.943ha
A roughness(k_s) value of 0.6mm will be assumed.

4.4. Storm Sewer Design

Storm sewer design can be viewed in **Appendix A**. Storm pipes are coloured in green, with manholes referenced S1, S2, S3 etc.
Storm water run-off will be collected through gullies and downpipes from the roads and houses, which are then connected to PVC pipes and concrete manholes. Pipe sizes range from 150mm to 450mm, with the manholes sizes ranging from 1200mm diameter to 2100mm diameter pre-cast concrete rings. Larger Manholes will have 3 or more connections.
There are two different storm systems designed here: one system will discharge via. ground infiltration; and the other system will discharge directly to the dedicated storm sewer located on the Galway Road.
Calculations were completed using the hydraulic modelling software, Causeway Flow. Calculations can be seen in **Appendix C**.

4.4.1. Soakaway System

Two soakaway tests were conducted in accordance with BRE 365 on February of 2025 in the centre of the site. Logs and Locations of the soakaway tests can be found within **Appendix D**.
The soakaway tests found that the site has rapid infiltration through the subgrade, with a soakage rate of $1.74x10^{-4}$m/s.
As part of this design, a value of 0.6m/hr has been taken and is the infiltration value used within the hydraulic model.
The soakaway system will be in the form of a geocellular crate system, with a permeable membrane installed along the base to allow water to soakaway. The hydraulic model has shown that for a tank of volume 168m^3, there will be no out of sewer flooding exhibited within the site during a 1:100 year + 20% intensity increase.

Site would have been seen as ideal for a soakaway system, as the subgrade seems to be mainly gravel, which sits on a layer of Burren Formation Limestone. This limestone is categorised as a regionally important kastified aquifer, with a high conduit flow and rapid groundwater recharge rates. Surface water run-off would be able to rapidly pass through fissures and cracks within the limestone relatively easily. On a further note, no Karst features are exhibited within 100m of the site.

4.4.2. Attenuation System

The attenuation tank system located at the site entrance will be similar to the previously mentioned soakaway and in the form of a geocellular crate system. The attenuation tank will be wrapped in an impermeable membrane with the joints welded together to prevent water from escaping.
According to CIRIA C753, there should not be an infiltration system installed within 5m of a building. Given that there are no soakage rates for the area around the entrance road, and the confined space, it is deemed that a soakaway would provide more risk than a sealed storage system.
To prevent overburdening of the dedicated storm water system, and local watercourses downstream, a vortex flow control has been designed in the final manhole, prior to it discharging into the public system. This will restrict the flow to a greenfield run-off equivalent for the area that it is serving (6.1l/s/ha). The greenfield run-off equivalent is calculated using the formula: 10l/s/ha of greenfield site.
Calculations indicated that there is no out of sewer flooding from this proposed system during a 1:100 year storm event + 20% intensity increase.

4.4.3. Petrol Interceptors

Two Class 1 bypass petrol interceptors are to be installed to guard both geocellular tanks. This is to manage the quality of water that is exiting the site and entering either the ground or the watercourses. Both storm systems are taking road surface water run-off. The Site would be designated as low risk for oil spills, therefore Class 1 interceptors should be adequate to remove the small amounts of oil generated by this development.
Petrol interceptors will have the capacity to take an excess of 100l/s of flow.

5. Watermain Design

5.1. Local Watermain Network

There are no watermains traversing the site. There is a watermain system located on the R939, directly in front of the site entrance. The Watermain is a 355mm diameter HDPE main at the entrance of the site.

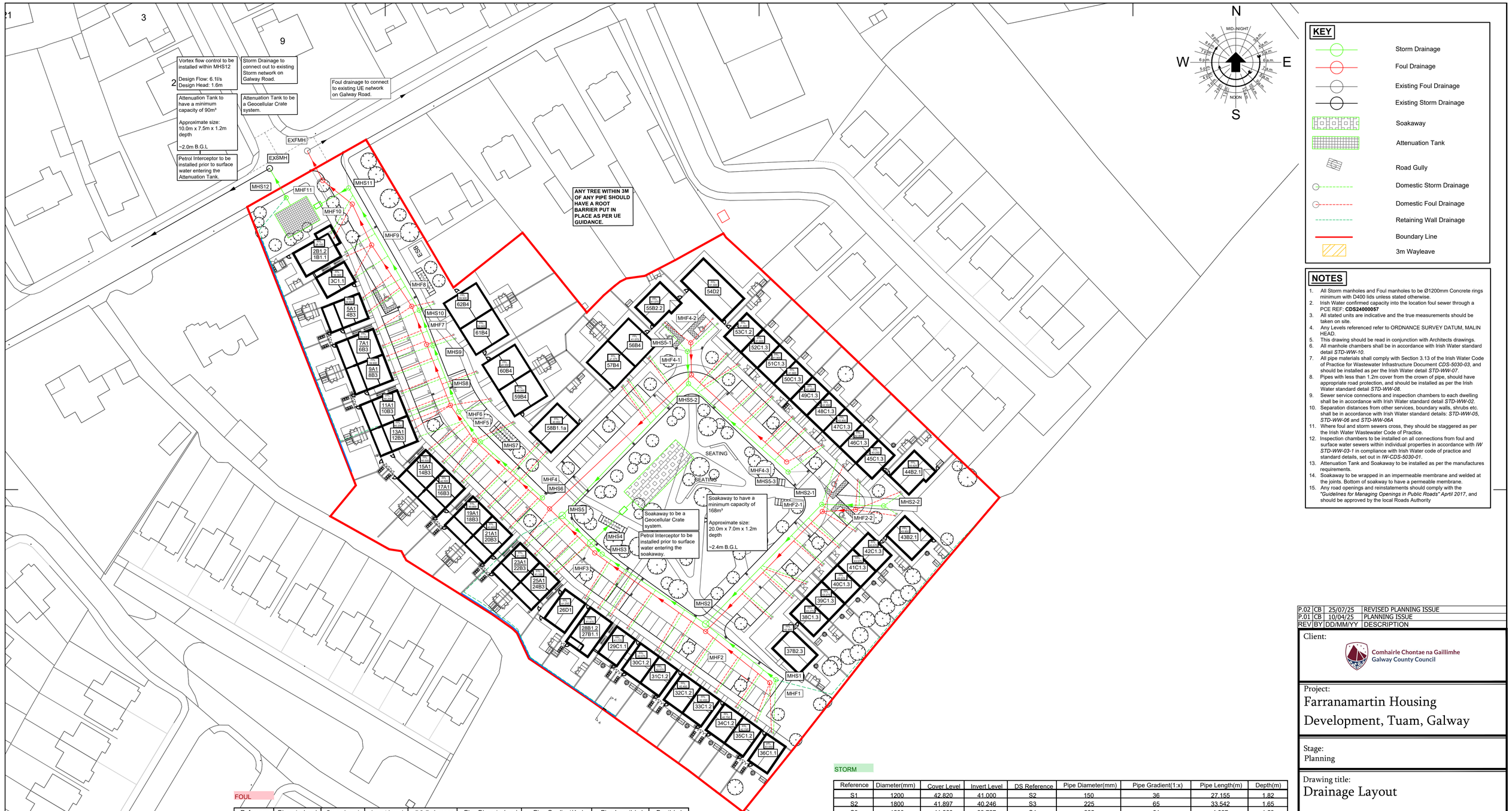
5.2. Watermain Design

In line with Local Authority and Uisce Éireann standards, a water meter and logging device will be installed at the point of connection to the site.
Within the site, boundary boxes, hydrants, and sluice valves will be installed in accordance with the layout drawings, with air valves and scour valves installed at high points and low points respectively. All watermains will be commissioned and pressure tested in compliance with Uisce Éireann standards. Typical construction and meter details are provided as part of the engineering drawings accompanying this planning application.
Fire hydrants will be installed within the site at intervals that comply with Part B of the Building Regulations, ensuring that all buildings are located within 46 metres of a hydrant.
Any additional requirements specified by the local fire authority will be incorporated.
The Watermain design can be found in **Appendix E**.

5.3. Uisce Eireann Feasibility Confirmation

Based off the application submitted by Galway County Council in January 2024, Uisce Eireann have confirmed that the nearby potable water network can serve 63 new dwellings. This development is to have 62 units total, therefore the existing UE water network can provide the appropriate flows necessary to serve this development.
UE(Uisce Eireann) Confirmation of Feasibility letter can be found in **Appendix B**.

Appendix A



KEY

- Storm Drainage
- Foul Drainage
- Existing Foul Drainage
- Existing Storm Drainage
- Soakaway
- Attenuation Tank
- Road Gully
- Domestic Storm Drainage
- Domestic Foul Drainage
- Retaining Wall Drainage
- Boundary Line
- 3m Wayleave

NOTES

1. All Storm manholes and Foul manholes to be Ø1200mm Concrete rings minimum with D400 lids unless stated otherwise.
2. Irish Water confirmed capacity into the location foul sewer through a PCE REF: **CDS24000057**
3. All stated units are indicative and the true measurements should be taken on site.
4. Any Levels referenced refer to ORDNANCE SURVEY DATUM, MALIN HEAD.
5. This drawing should be read in conjunction with Architects drawings.
6. All manhole chambers shall be in accordance with Irish Water standard detail *STD-WW-10*.
7. All pipe materials shall comply with Section 3.13 of the Irish Water Code of Practice for Wastewater Infrastructure Document *CDS-5030-03*, and should be installed as per the Irish Water detail *STD-WW-07*.
8. Pipes with less than 1.2m cover from the crown of pipe, should have appropriate road protection, and should be installed as per the Irish Water standard detail *STD-WW-08*.
9. Sewer service connections and inspection chambers to each dwelling shall be in accordance with Irish Water standard detail *STD-WW-02*.
10. Separation distances from other services, boundary walls, shrubs etc. shall be in accordance with Irish Water standard details: *STD-WW-05*, *STD-WW-06* and *STD-WW-06A*
11. Where foul and storm sewers cross, they should be staggered as per the Irish Water Wastewater Code of Practice.
12. Inspection chambers to be installed on all connections from foul and surface water sewers within individual properties in accordance with *IW STD-WW-03-1* in compliance with Irish Water code of practice and standard details, set out in *IW-CDS-5030-01*.
13. Attenuation Tank and Soakaway to be installed as per the manufactures requirements.
14. Soakaway to be wrapped in an impermeable membrane and welded at the joints. Bottom of soakway to have a permeable membrane.
15. Any road openings and reinstatements should comply with the *"Guidelines for Managing Openings in Public Roads" Aprtil 2017*, and should be approved by the local Roads Authority

FOUL

Reference	Diameter(mm)	Cover Level	Invert Level	DS Reference	Pipe Diameter(mm)	Pipe Gradient(1:x)	Pipe Length(m)	Depth(m)
F1	1200	42.710	41.146	F2	300	31	24.052	1.564
F2	1200	41.870	40.370	F3	300	55	37.053	1.50
F3	1200	41.200	39.700	F4	300	57	17.184	1.50
F4	1200	40.900	39.400	F5	300	50	27.781	1.50
F5	1200	40.340	38.840	F6	300	43	11.543	1.50
F6	1200	40.070	38.570	F7	300	52	17.799	1.50
F7	1200	39.730	38.230	F8	300	51	11.182	1.50
F8	1200	39.510	38.010	F9	300	50	20.104	1.50
F9	1200	39.110	37.610	F10	300	40	11.579	1.50
F10	1200	38.820	37.320	F11	300	54	11.892	1.50
F11	1200	38.760	37.100	EXFMH	300	39	7.800	1.66
EXFMH	TBD	38.560	36.900	-	225	-	-	1.66
F2-2	1200	43.200	41.850	F2-1	150	21	9.080	1.35
F2-1	1200	42.870	41.420	F2	225	44	45.685	1.45
F4-3	1200	42.270	40.920	F4-1	225	37	35.166	1.35
F4-2	1200	41.000	39.970	F4-1	150	59	8.784	1.03
F4-1	1200	41.270	39.820	F4	225	127	53.184	1.45

STORM

Reference	Diameter(mm)	Cover Level	Invert Level	DS Reference	Pipe Diameter(mm)	Pipe Gradient(1:x)	Pipe Length(m)	Depth(m)
S1	1200	42.820	41.000	S2	150	36	27.155	1.82
S2	1800	41.897	40.246	S3	225	65	33.542	1.65
S3	1200	41.260	39.727	S4	225	61	4.667	1.53
S4	2100	41.140	39.390	SW	450	397	15.868	1.75
SW	-	41.400	39.000	-	-	-	-	2.40
S6	1200	40.760	39.200	S7	150	75	22.740	1.56
S7	1200	40.313	38.898	S8	150	51	10.141	1.42
S8	1200	40.110	37.700	S9	225	74	11.147	2.41
S9	1200	39.820	37.550	S10	225	93	18.574	2.27
S10	1200	39.520	37.350	S11	225	65	32.308	2.17
S11	1200	38.820	36.850	Tank	225	64	6.408	1.97
Tank	1200	38.700	36.750	S12	225	102	6.130	1.95
S12	1200	38.600	36.690	EXSMH	225	92	9.177	1.91
S2-2	1200	43.700	42.100	S2-1	150	40	16.884	1.60
S2-1	1200	43.060	41.678	S2	150	32	45.462	1.38
								0.00
S5-3	1200	42.280	40.600	S5-2	150	50	36.484	1.68
S5-1	1200	41.120	40.000	S5-2	150	65	8.507	1.12
S5-2	1500	41.310	39.870	S5	225	130	50.096	1.44
S5	1800	40.839	39.485	S4	300	134	12.739	1.35

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

Stage:
Planning

Drawing title:
Drainage Layout

Scale: 1:500
Size: A1
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

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Drawing No: 24561-GNI-XX-ZZ-DR-C-0001
Revision: P.02

NOTES

1. All Storm manholes and Foul manholes to be Ø1200mm Concrete rings minimum with D400 lids unless stated otherwise.
2. Irish Water confirmed capacity into the location foul sewer through a PCE REF: **CDS24000057**
3. All stated units are indicative and the true measurements should be taken on site.
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5. This drawing should be read in conjunction with Architects drawings
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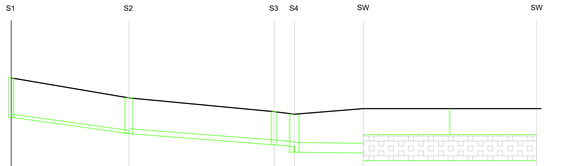
14. Soakaway to be wrapped in an impermeable membrane and welded at the joints. Bottom of soakway to have a permeable membrane.
15. Any road openings and reinstatements should comply with the *"Guidelines for Managing Openings in Public Roads" April 2017*, and should be approved by the local Roads Authority

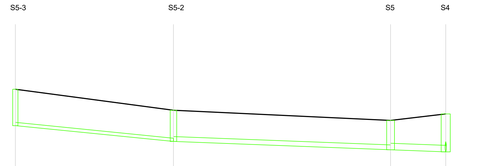


Hor Scale 500
Ver Scale 100

Datum (m) 35.000											
Link Name	1.01		1.02		1.03	1.04					
Section Type	150mm		225mm		225mm	450mm					
Slope (1:X)	36.0		64.6		60.6	396.7					
Cover Level (m)	42.800	41.897			41.260	41.140	41.400				41.400
Invert Level (m)	41.000	40.246	40.246		39.727	39.727	39.650	39.350	39.000		39.000
Length (m)	27.155		33.542		4.667	15.868					

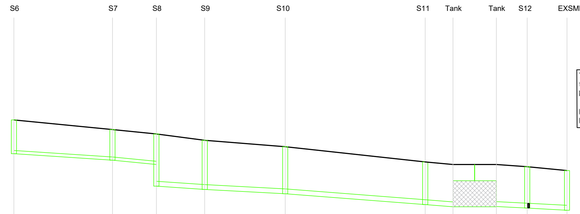
Hor Scale 500
Ver Scale 100

Datum (m) 35.000			
Link Name	3.01	3.02	
Section Type	150mm	150mm	
Slope (1:X)	40.0	31.7	
Cover Level (m)	43.700	43.060	41.897
Invert Level (m)	42.100	41.678 41.678	40.246
Length (m)	16.884	45.462	



Hor Scale 500
Ver Scale 100

Datum (m) 35.000				
Link Name	4.01	4.03	4.04	
Section Type	150mm	225mm	300mm	
Slope (1:X)	50.0	130.1	134.1	
Cover Level (m)	42.280	41.310	40.939	41.140
Invert Level (m)	40.600	39.870 39.870	39.485 39.485	39.390
Length (m)	36.484	50.096	12.739	

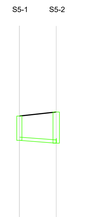


Vortex flow control to be installed within MHS12

Design Flow: 6.1l/s
Design Head: 1.6m

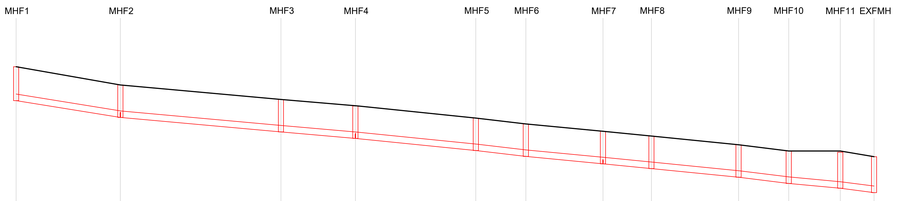
Hor Scale 500
Ver Scale 100

Datum (m) 35.000										
Link Name	2.01	2.02	2.03	2.04	2.05	2.06	2.07	2.08		
Section Type	150mm	150mm	225mm	225mm	225mm	225mm	225mm	225mm		
Slope (1:X)	75.3	51.2	74.3	92.9	64.6	64.1	102.2	91.8		
Cover Level (m)	40.760	40.313	40.110	39.820	39.220	38.620	38.700	38.600	38.420	
Invert Level (m)	39.200	38.898 38.898	38.700 37.700	37.550 37.550	37.350 37.350	36.850	36.750	36.690 36.690	36.590	
Length (m)	22.740	10.141	11.147	18.574	32.308	6.408	6.130	9.177		



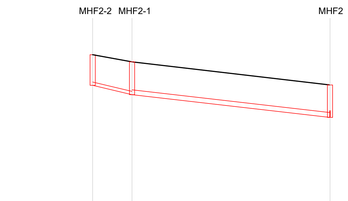
Hor Scale 500
Ver Scale 100

Datum (m) 35.000			
Link Name	4.02		
Section Type	150mm		
Slope (1:X)	65.4		
Cover Level (m)	41.120	41.310	
Invert Level (m)	40.000	39.870	
Length (m)	8.507		



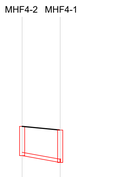
Hor Scale 500
Ver Scale 100

Datum (m) 35.000												
Link Name	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.09	1.10	1.11	
Section Type	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	
Slope (1:X)	31.0	55.0	57.0	50.0	43.0	53.0	51.0	50.0	40.0	54.0	39.0	
Cover Level (m)	42.710	41.870	41.200	40.900	40.340	40.070	39.730	39.510	39.110	38.820	38.780	38.560
Invert Level (m)	41.146	40.370 40.370	39.700 39.700	39.405 39.405	38.840 38.840	38.570 38.570	38.200 38.200	38.010 38.010	37.610 37.610	37.320 37.320	37.103 37.103	36.900
Length (m)	24.052	37.053	17.184	27.781	11.543	17.799	11.182	20.104	11.579	11.892	7.800	



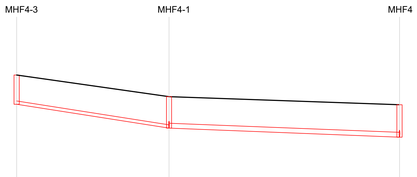
Hor Scale 500
Ver Scale 100

Datum (m) 35.000			
Link Name	2.01	2.02	
Section Type	150mm	225mm	
Slope (1:X)	21.0	44.0	
Cover Level (m)	43.200	42.870	42.870
Invert Level (m)	41.850	41.420 41.420	40.370
Length (m)	9.080	45.685	



Hor Scale 500
Ver Scale 100

Datum (m) 35.000		
Link Name	4.01	
Section Type	150mm	
Slope (1:X)	59.0	
Cover Level (m)	41.000	41.270
Invert Level (m)	39.970	39.820
Length (m)	8.784	



Hor Scale 500
Ver Scale 100

Datum (m) 35.000			
Link Name	3.01	3.02	
Section Type	225mm	225mm	
Slope (1:X)	37.0	127.0	
Cover Level (m)	42.270	41.270	40.900
Invert Level (m)	40.920	39.820 39.820	39.400
Length (m)	35.166	53.184	

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

Stage:
Planning

Drawing title:
Storm And Foul Longitudinal Sections

Scale: As Shown
Size: A0
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 05/02/25

Gilligan
CONSULTING CIVIL & STRUCTURAL ENGINEERS
23 BEDFORD STREET, BELFAST, BT27FJ
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No: 24561-GNI-XX-ZZ-C-0002
Revision: P.02

Appendix B

CONFIRMATION OF FEASIBILITY

Ciara McDonagh

Housing Department
Galway County Council
Prospect Hill
Galway
H91H6KX

13 February 2025

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

Our Ref: CDS24000057 Pre-Connection Enquiry
Farranamartin, Galway Road, Tuam, Galway

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 63 unit(s) at Farranamartin, Galway Road, Tuam, Galway, (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/

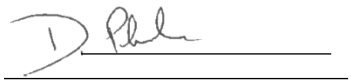
Where can you find more information?

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

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

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

Yours sincerely,



Dermot Phelan
Connections Delivery Manager

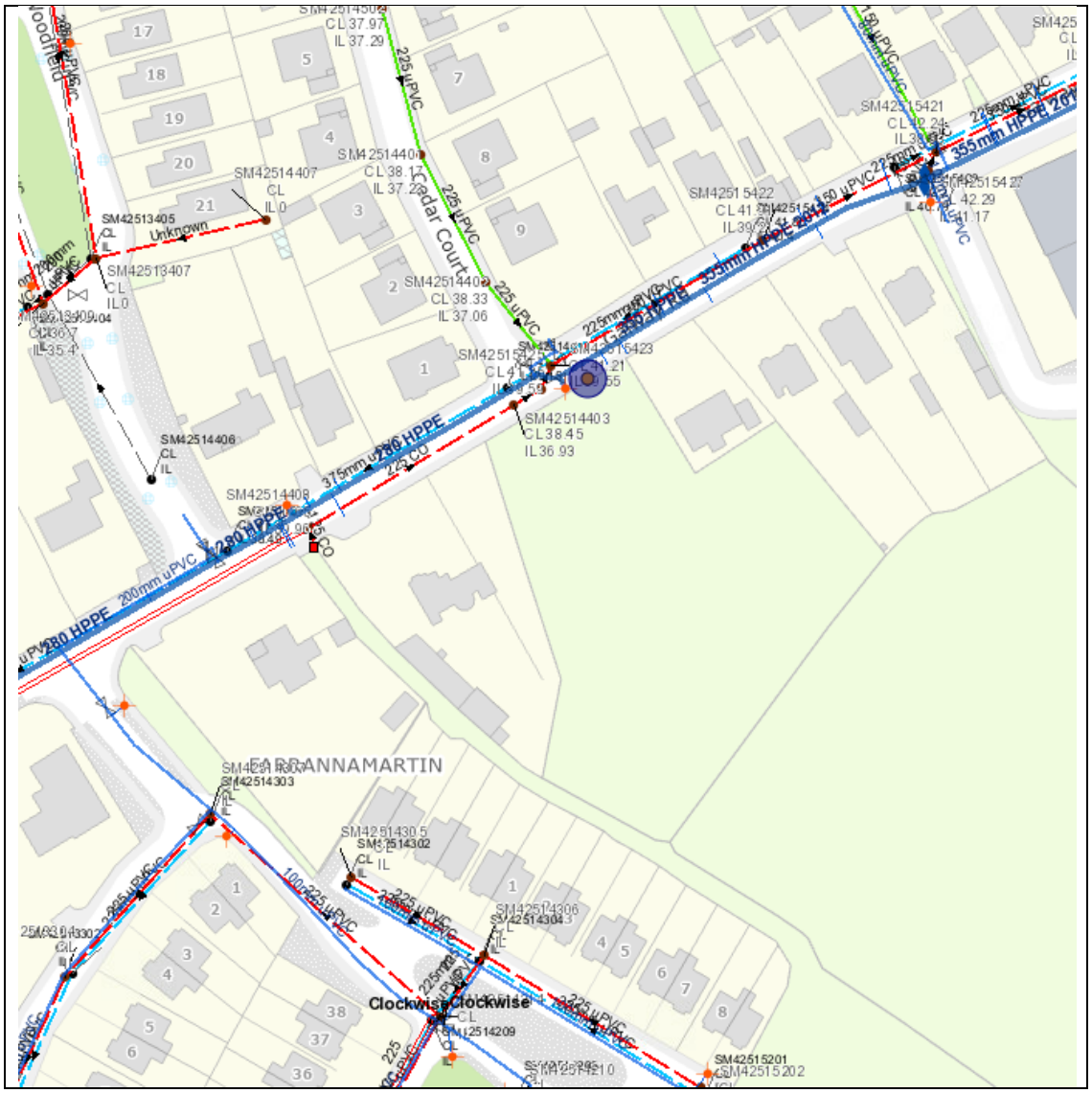
Section A - What is important to know?

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)

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

The map included below outlines the current Uisce Éireann infrastructure adjacent the Development: To access Uisce Éireann Maps email datarequests@water.ie



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 Uisce Éireann's underground network(s) is provided as a general guide only. The information is based on the best available information provided by each Local Authority in Ireland to Uisce Éireann.

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

being carried out in the vicinity of Uisce Éireann’s underground network(s). The onus is on the parties carrying out excavations or any other works to ensure the exact location of Uisce Éireann’s underground network(s) is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

Appendix C

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	Scotland and Ireland	Connection Type	Level Soffits
M5-60 (mm)	17.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.300	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S1	0.016	5.00	42.820	1200	264.858	97.133	1.820
S2	0.172	5.00	41.897	1800	243.573	113.995	1.651
S3	0.092	5.00	41.260	1200	215.925	132.986	1.533
S4	0.012	5.00	41.140	2100	212.667	136.328	1.750
S5	0.105	5.00	40.839	1800	204.488	143.621	1.354
S6	0.036	5.00	40.760	1200	199.070	148.415	1.560
S7	0.040	5.00	40.313	1200	182.193	163.655	1.415
S8	0.017	5.00	40.110	1200	176.259	171.878	2.410
S9	0.080	5.00	39.820	1200	172.228	182.271	2.270
S10	0.108	5.00	39.520	1200	165.511	199.588	2.170
S11	0.026	5.00	38.820	1200	146.269	232.913	1.970
S12	0.000	5.00	38.600	1200	129.245	230.280	1.910
EXSMH	0.000		38.420	1200	124.714	238.261	1.830
S2-1	0.031	5.00	43.060	1200	275.222	146.631	1.382
S2-2	0.036	5.00	43.700	1200	292.101	146.228	1.600
S5-3	0.011	5.00	42.280	1200	266.033	155.478	1.680
S5-2	0.109	5.00	41.310	1500	238.895	179.533	1.440
S5-1	0.047	5.00	41.120	1200	238.576	188.350	1.120
SW	0.000		41.400	1350	223.801	147.634	2.050
Tank	0.000		38.700		132.272	224.949	1.950

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.01	S1	S2	27.155	0.600	41.000	40.246	0.754	36.0	150	5.27	50.0
1.02	S2	S3	33.542	0.600	40.246	39.727	0.519	64.6	225	5.99	49.8
1.03	S3	S4	4.667	0.600	39.727	39.650	0.077	60.6	225	6.04	49.6
1.04	S4	SW	15.868	0.600	39.390	39.350	0.040	396.7	450	6.37	48.5
2.01	S6	S7	22.740	0.600	39.200	38.898	0.302	75.3	150	5.33	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.01	1.682	29.7	2.2	1.670	1.501	0.016	0.0	27	0.980
1.02	1.629	64.8	34.4	1.426	1.308	0.255	0.0	116	1.652
1.03	1.683	66.9	46.6	1.308	1.265	0.347	0.0	138	1.814
1.04	1.014	161.3	83.0	1.300	1.600	0.631	0.0	229	1.021
2.01	1.160	20.5	4.9	1.410	1.265	0.036	0.0	50	0.950

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
2.02	S7	S8	10.141	0.600	38.898	38.700	0.198	51.2	150	5.47	50.0
2.03	S8	S9	11.147	0.600	37.700	37.550	0.150	74.3	225	5.63	50.0
2.04	S9	S10	18.574	0.600	37.550	37.350	0.200	92.9	225	5.91	50.0
2.05	S10	S11	32.308	0.600	37.350	36.850	0.500	64.6	225	6.38	48.5
2.06	S11	Tank	6.408	0.600	36.850	36.750	0.100	64.1	225	5.09	50.0
2.07	Tank	S12	6.130	0.600	36.750	36.690	0.060	102.2	225	5.18	50.0
2.08	S12	EXSMH	9.177	0.600	36.690	36.590	0.100	91.8	225	5.31	50.0
3.01	S2-2	S2-1	16.884	0.600	42.100	41.678	0.422	40.0	150	5.18	50.0
3.02	S2-1	S2	45.462	0.600	41.678	40.246	1.432	31.7	150	5.65	50.0
4.01	S5-3	S5-2	36.484	0.600	40.600	39.870	0.730	50.0	150	5.35	50.0
4.02	S5-1	S5-2	8.507	0.600	40.000	39.870	0.130	65.4	150	5.12	50.0
4.03	S5-2	S5	50.096	0.600	39.870	39.485	0.385	130.1	225	5.90	50.0
4.04	S5	S4	12.739	1.500	39.485	39.390	0.095	134.1	300	6.11	49.3

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
2.02	1.409	24.9	10.3	1.265	1.260	0.076	0.0	67	1.342
2.03	1.518	60.4	12.6	2.185	2.045	0.093	0.0	70	1.209
2.04	1.357	54.0	23.4	2.045	1.945	0.173	0.0	103	1.308
2.05	1.629	64.8	36.9	1.945	1.745	0.281	0.0	122	1.681
2.06	1.636	65.1	41.6	1.745	1.725	0.307	0.0	131	1.734
2.07	1.293	51.4	41.6	1.725	1.685	0.307	0.0	154	1.436
2.08	1.365	54.3	41.6	1.685	1.605	0.307	0.0	148	1.500
3.01	1.596	28.2	4.9	1.450	1.232	0.036	0.0	42	1.195
3.02	1.793	31.7	9.1	1.232	1.501	0.067	0.0	55	1.549
4.01	1.426	25.2	1.5	1.530	1.290	0.011	0.0	25	0.785
4.02	1.245	22.0	6.4	0.970	1.290	0.047	0.0	55	1.081
4.03	1.144	45.5	22.6	1.215	1.129	0.167	0.0	112	1.143
4.04	1.197	84.6	36.3	1.054	1.450	0.272	0.0	137	1.152

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.01	27.155	36.0	150	Circular	42.820	41.000	1.670	41.897	40.246	1.501
1.02	33.542	64.6	225	Circular	41.897	40.246	1.426	41.260	39.727	1.308
1.03	4.667	60.6	225	Circular	41.260	39.727	1.308	41.140	39.650	1.265
1.04	15.868	396.7	450	Circular	41.140	39.390	1.300	41.400	39.350	1.600

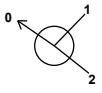
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.01	S1	1200	Manhole	Adoptable	S2	1800	Manhole	Adoptable
1.02	S2	1800	Manhole	Adoptable	S3	1200	Manhole	Adoptable
1.03	S3	1200	Manhole	Adoptable	S4	2100	Manhole	Adoptable
1.04	S4	2100	Manhole	Adoptable	SW	1350	Manhole	Adoptable

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
2.01	22.740	75.3	150	Circular	40.760	39.200	1.410	40.313	38.898	1.265
2.02	10.141	51.2	150	Circular	40.313	38.898	1.265	40.110	38.700	1.260
2.03	11.147	74.3	225	Circular	40.110	37.700	2.185	39.820	37.550	2.045
2.04	18.574	92.9	225	Circular	39.820	37.550	2.045	39.520	37.350	1.945
2.05	32.308	64.6	225	Circular	39.520	37.350	1.945	38.820	36.850	1.745
2.06	6.408	64.1	225	Circular	38.820	36.850	1.745	38.700	36.750	1.725
2.07	6.130	102.2	225	Circular	38.700	36.750	1.725	38.600	36.690	1.685
2.08	9.177	91.8	225	Circular	38.600	36.690	1.685	38.420	36.590	1.605
3.01	16.884	40.0	150	Circular	43.700	42.100	1.450	43.060	41.678	1.232
3.02	45.462	31.7	150	Circular	43.060	41.678	1.232	41.897	40.246	1.501
4.01	36.484	50.0	150	Circular	42.280	40.600	1.530	41.310	39.870	1.290
4.02	8.507	65.4	150	Circular	41.120	40.000	0.970	41.310	39.870	1.290
4.03	50.096	130.1	225	Circular	41.310	39.870	1.215	40.839	39.485	1.129
4.04	12.739	134.1	300	Circular	40.839	39.485	1.054	41.140	39.390	1.450

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.01	S6	1200	Manhole	Adoptable	S7	1200	Manhole	Adoptable
2.02	S7	1200	Manhole	Adoptable	S8	1200	Manhole	Adoptable
2.03	S8	1200	Manhole	Adoptable	S9	1200	Manhole	Adoptable
2.04	S9	1200	Manhole	Adoptable	S10	1200	Manhole	Adoptable
2.05	S10	1200	Manhole	Adoptable	S11	1200	Manhole	Adoptable
2.06	S11	1200	Manhole	Adoptable	Tank		Junction	
2.07	Tank		Junction		S12	1200	Manhole	Adoptable
2.08	S12	1200	Manhole	Adoptable	EXSMH	1200	Manhole	Adoptable
3.01	S2-2	1200	Manhole	Adoptable	S2-1	1200	Manhole	Adoptable
3.02	S2-1	1200	Manhole	Adoptable	S2	1800	Manhole	Adoptable
4.01	S5-3	1200	Manhole	Adoptable	S5-2	1500	Manhole	Adoptable
4.02	S5-1	1200	Manhole	Adoptable	S5-2	1500	Manhole	Adoptable
4.03	S5-2	1500	Manhole	Adoptable	S5	1800	Manhole	Adoptable
4.04	S5	1800	Manhole	Adoptable	S4	2100	Manhole	Adoptable

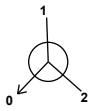
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S1	264.858	97.133	42.820	1.820	1200				
						0	1.01	41.000	150
S2	243.573	113.995	41.897	1.651	1800		1	3.02	40.246	150
							2	1.01	40.246	150
							0	1.02	40.246	225
S3	215.925	132.986	41.260	1.533	1200		1	1.02	39.727	225
							0	1.03	39.727	225

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S4	212.667	136.328	41.140	1.750	2100	1	4.04	39.390	300
						2	1.03	39.650	225
						0	1.04	39.390	450
S5	204.488	143.621	40.839	1.354	1800	1	4.03	39.485	225
						0	4.04	39.485	300
S6	199.070	148.415	40.760	1.560	1200	0	2.01	39.200	150
S7	182.193	163.655	40.313	1.415	1200	1	2.01	38.898	150
						0	2.02	38.898	150
S8	176.259	171.878	40.110	2.410	1200	1	2.02	38.700	150
						0	2.03	37.700	225
S9	172.228	182.271	39.820	2.270	1200	1	2.03	37.550	225
						0	2.04	37.550	225
S10	165.511	199.588	39.520	2.170	1200	1	2.04	37.350	225
						0	2.05	37.350	225
S11	146.269	232.913	38.820	1.970	1200	1	2.05	36.850	225
						0	2.06	36.850	225
S12	129.245	230.280	38.600	1.910	1200	1	2.07	36.690	225
						0	2.08	36.690	225
EXSMH	124.714	238.261	38.420	1.830	1200	1	2.08	36.590	225
S2-1	275.222	146.631	43.060	1.382	1200	1	3.01	41.678	150
						0	3.02	41.678	150
S2-2	292.101	146.228	43.700	1.600	1200	0	3.01	42.100	150
S5-3	266.033	155.478	42.280	1.680	1200	0	4.01	40.600	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S5-2	238.895	179.533	41.310	1.440	1500		1	4.02	39.870	150
							2	4.01	39.870	150
							0	4.03	39.870	225
S5-1	238.576	188.350	41.120	1.120	1200		0	4.02	40.000	150
SW	223.801	147.634	41.400	2.050	1350		1	1.04	39.350	450
Tank	132.272	224.949	38.700	1.950			1	2.06	36.750	225
							0	2.07	36.750	225

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	Scotland and Ireland	Skip Steady State	x
M5-60 (mm)	17.000	Drain Down Time (mins)	240
Ratio-R	0.300	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	10	10	0
30	10	10	0
100	10	10	0

Node S12 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	36.690	Product Number	CTL-SHE-0107-6100-1600-6100
Design Depth (m)	1.600	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	6.1	Min Node Diameter (mm)	1200

Node SW Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.60000	Invert Level (m)	39.000	Depth (m)	1.200
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	120	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	7.000	Number Required	1
Porosity	1.00	Pit Length (m)	20.000		

Node Tank Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	36.750
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	156

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	75.0	0.0	1.200	75.0	0.0	1.201	0.0	0.0

Results for 2 year +10% CC +10% A Critical Storm Duration. Lowest mass balance: 99.54%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	10	41.031	0.031	2.8	0.0410	0.0000	OK
15 minute winter	S2	10	40.382	0.136	44.6	0.6561	0.0000	OK
15 minute winter	S3	11	39.937	0.210	59.3	0.5136	0.0000	OK
15 minute winter	S4	11	39.661	0.271	106.6	0.9804	0.0000	OK
15 minute winter	S5	11	39.691	0.206	46.4	0.8742	0.0000	OK
15 minute winter	S6	10	39.257	0.057	6.3	0.0927	0.0000	OK
15 minute winter	S7	10	38.982	0.084	13.3	0.1465	0.0000	OK
15 minute winter	S8	10	37.784	0.084	16.0	0.1079	0.0000	OK
15 minute winter	S9	10	37.678	0.128	30.0	0.2435	0.0000	OK
15 minute winter	S10	10	37.500	0.150	48.4	0.3338	0.0000	OK
120 minute winter	S11	90	37.112	0.262	19.7	0.3723	0.0000	SURCHARGED
120 minute winter	S12	90	37.110	0.420	18.2	0.4746	0.0000	SURCHARGED
15 minute summer	EXSMH	1	36.590	0.000	5.8	0.0000	0.0000	OK
15 minute winter	S2-1	10	41.741	0.063	11.7	0.1016	0.0000	OK
15 minute winter	S2-2	10	42.148	0.048	6.3	0.0780	0.0000	OK
15 minute winter	S5-3	10	40.628	0.028	1.9	0.0351	0.0000	OK
15 minute winter	S5-2	11	39.997	0.127	29.2	0.4367	0.0000	OK
15 minute winter	S5-1	10	40.063	0.063	8.3	0.1302	0.0000	OK
60 minute winter	SW	55	39.406	0.056	61.6	56.9551	0.0000	OK
120 minute winter	Tank	90	37.111	0.361	22.2	27.0598	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S1	1.01	S2	2.8	0.278	0.093	0.2630	
15 minute winter	S2	1.02	S3	43.6	1.343	0.674	1.0650	
15 minute winter	S3	1.03	S4	59.4	1.688	0.887	0.1619	
15 minute winter	S4	1.04	SW	106.2	1.180	0.658	1.4278	
15 minute winter	S5	4.04	S4	45.3	0.754	0.535	0.7547	
15 minute winter	S6	2.01	S7	6.2	0.771	0.303	0.1837	
15 minute winter	S7	2.02	S8	13.0	1.359	0.522	0.0972	
15 minute winter	S8	2.03	S9	15.9	0.869	0.263	0.2048	
15 minute winter	S9	2.04	S10	29.5	1.154	0.547	0.4770	
15 minute winter	S10	2.05	S11	48.2	1.653	0.744	0.9550	
120 minute winter	S11	2.06	Tank	19.3	1.432	0.296	0.2549	
120 minute winter	S12	Hydro-Brake®	EXSMH	6.0				56.1
15 minute winter	S2-1	3.02	S2	11.5	0.932	0.363	0.5388	
15 minute winter	S2-2	3.01	S2-1	6.2	1.061	0.221	0.0996	
15 minute winter	S5-3	4.01	S5-2	1.8	0.203	0.073	0.3307	
15 minute winter	S5-2	4.03	S5	28.3	0.944	0.623	1.5333	
15 minute winter	S5-1	4.02	S5-2	8.2	0.700	0.373	0.0974	
60 minute winter	SW	Infiltration		11.7				
120 minute winter	Tank	2.07	S12	18.2	0.623	0.355	0.2438	

Results for 30 year +10% CC +10% A Critical Storm Duration. Lowest mass balance: 99.54%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	10	41.042	0.042	5.2	0.0559	0.0000	OK
15 minute winter	S2	12	40.878	0.632	82.2	3.0547	0.0000	SURCHARGED
15 minute winter	S3	11	40.175	0.447	95.5	1.0968	0.0000	SURCHARGED
120 minute winter	S4	114	39.884	0.494	71.4	1.7868	0.0000	SURCHARGED
120 minute winter	S5	114	39.885	0.400	30.8	1.6999	0.0000	SURCHARGED
15 minute winter	S6	10	39.280	0.080	11.7	0.1317	0.0000	OK
15 minute winter	S7	11	39.038	0.140	24.5	0.2455	0.0000	OK
15 minute winter	S8	12	38.288	0.588	29.1	0.7562	0.0000	SURCHARGED
15 minute winter	S9	12	38.248	0.698	51.4	1.3305	0.0000	SURCHARGED
15 minute winter	S10	12	38.055	0.705	78.7	1.5689	0.0000	SURCHARGED
120 minute winter	S11	116	37.579	0.729	34.7	1.0355	0.0000	SURCHARGED
120 minute winter	S12	116	37.577	0.887	17.6	1.0032	0.0000	SURCHARGED
15 minute summer	EXSMH	1	36.590	0.000	6.1	0.0000	0.0000	OK
15 minute winter	S2-1	11	41.771	0.093	21.7	0.1509	0.0000	OK
15 minute winter	S2-2	10	42.167	0.067	11.7	0.1089	0.0000	OK
15 minute winter	S5-3	10	40.638	0.038	3.6	0.0483	0.0000	OK
15 minute winter	S5-2	12	40.292	0.422	49.3	1.4484	0.0000	SURCHARGED
15 minute winter	S5-1	12	40.352	0.352	15.3	0.7224	0.0000	SURCHARGED
120 minute winter	SW	114	39.884	0.534	71.4	124.5392	0.0000	OK
120 minute winter	Tank	116	37.578	0.828	33.7	62.0904	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S1	1.01	S2	5.1	0.396	0.173	0.2941	
15 minute winter	S2	1.02	S3	69.7	1.752	1.075	1.3340	
15 minute winter	S3	1.03	S4	94.8	2.383	1.416	0.1837	
120 minute winter	S4	1.04	SW	71.4	1.049	0.443	2.5142	
120 minute winter	S5	4.04	S4	30.8	0.698	0.364	0.8971	
15 minute winter	S6	2.01	S7	11.5	0.857	0.563	0.3012	
15 minute winter	S7	2.02	S8	23.9	1.498	0.960	0.1619	
15 minute winter	S8	2.03	S9	26.9	0.893	0.446	0.4433	
15 minute winter	S9	2.04	S10	46.9	1.180	0.870	0.7387	
15 minute winter	S10	2.05	S11	74.4	1.871	1.149	1.2849	
120 minute winter	S11	2.06	Tank	33.7	1.648	0.517	0.2549	
120 minute winter	S12	Hydro-Brake®	EXSMH	6.1				100.4
15 minute winter	S2-1	3.02	S2	21.2	1.329	0.670	0.6606	
15 minute winter	S2-2	3.01	S2-1	11.6	1.241	0.411	0.1588	
15 minute winter	S5-3	4.01	S5-2	3.5	0.278	0.140	0.3848	
15 minute winter	S5-2	4.03	S5	45.2	1.137	0.994	1.9924	
15 minute winter	S5-1	4.02	S5-2	12.7	0.790	0.577	0.1498	
120 minute winter	SW	Infiltration		11.7				
120 minute winter	Tank	2.07	S12	17.6	0.557	0.342	0.2438	

Results for 100 year +10% CC +10% A Critical Storm Duration. Lowest mass balance: 99.54%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	12	41.361	0.361	6.8	0.4777	0.0000	SURCHARGED
15 minute winter	S2	12	41.336	1.090	98.8	5.2723	0.0000	SURCHARGED
120 minute winter	S3	118	40.382	0.655	50.6	1.6049	0.0000	SURCHARGED
120 minute winter	S4	118	40.380	0.990	89.0	3.5792	0.0000	SURCHARGED
120 minute winter	S5	118	40.381	0.896	39.7	3.8081	0.0000	SURCHARGED
15 minute winter	S6	12	39.343	0.143	15.2	0.2345	0.0000	OK
15 minute winter	S7	12	39.227	0.329	30.6	0.5772	0.0000	SURCHARGED
15 minute winter	S8	12	38.959	1.259	36.3	1.6190	0.0000	SURCHARGED
15 minute winter	S9	12	38.904	1.354	62.6	2.5811	0.0000	SURCHARGED
15 minute winter	S10	12	38.627	1.277	97.4	2.8430	0.0000	SURCHARGED
120 minute winter	S11	118	37.915	1.065	42.6	1.5127	0.0000	SURCHARGED
120 minute winter	S12	118	37.913	1.223	16.0	1.3830	0.0000	SURCHARGED
15 minute summer	EXSMH	1	36.590	0.000	6.1	0.0000	0.0000	OK
15 minute winter	S2-1	12	42.083	0.405	28.1	0.6580	0.0000	SURCHARGED
15 minute winter	S2-2	12	42.179	0.079	15.2	0.1279	0.0000	OK
15 minute winter	S5-3	12	40.650	0.050	4.6	0.0637	0.0000	OK
15 minute winter	S5-2	12	40.646	0.776	63.0	2.6621	0.0000	SURCHARGED
15 minute winter	S5-1	12	40.740	0.740	19.8	1.5203	0.0000	SURCHARGED
120 minute winter	SW	118	40.380	1.030	87.6	169.5447	0.0000	OK
120 minute winter	Tank	118	37.914	1.164	41.5	87.2772	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S1	1.01	S2	8.1	0.465	0.274	0.4781	
15 minute winter	S2	1.02	S3	83.4	2.097	1.287	1.3340	
120 minute winter	S3	1.03	S4	50.6	1.645	0.756	0.1856	
120 minute winter	S4	1.04	SW	87.6	1.113	0.543	2.5142	
120 minute winter	S5	4.04	S4	37.9	0.729	0.448	0.8971	
15 minute winter	S6	2.01	S7	13.8	0.873	0.673	0.3970	
15 minute winter	S7	2.02	S8	29.5	1.674	1.184	0.1785	
15 minute winter	S8	2.03	S9	32.5	0.889	0.539	0.4433	
15 minute winter	S9	2.04	S10	56.3	1.415	1.043	0.7387	
15 minute winter	S10	2.05	S11	91.1	2.291	1.406	1.2849	
120 minute winter	S11	2.06	Tank	41.5	1.738	0.638	0.2549	
120 minute winter	S12	Hydro-Brake®	EXSMH	6.1				112.8
15 minute winter	S2-1	3.02	S2	23.6	1.416	0.746	0.8004	
15 minute winter	S2-2	3.01	S2-1	15.1	1.267	0.535	0.2275	
15 minute winter	S5-3	4.01	S5-2	4.8	0.365	0.189	0.4147	
15 minute winter	S5-2	4.03	S5	55.8	1.404	1.227	1.9924	
15 minute winter	S5-1	4.02	S5-2	15.8	0.900	0.720	0.1498	
120 minute winter	SW	Infiltration		11.7				
120 minute winter	Tank	2.07	S12	16.0	0.571	0.311	0.2438	

Appendix D

Legend Key

- Locations By Type - DP
- Locations By Type - IP
- Locations By Type - TP

Contract No:	6433
Contract Name:	Farranamartin
Location:	Tuam, Co. Galway
Client:	Galway County Council
Engineer:	Gilligan NI Ltd
Title:	Site Plan
Scale:	1:1000
Drawn By:	SL

Site Investigations Ltd
The Grange
12th Lock Road
Lucan
Co. Dublin
T: 01 6108768
e: info@siteinvestigations.ie

SOAKAWAY TEST

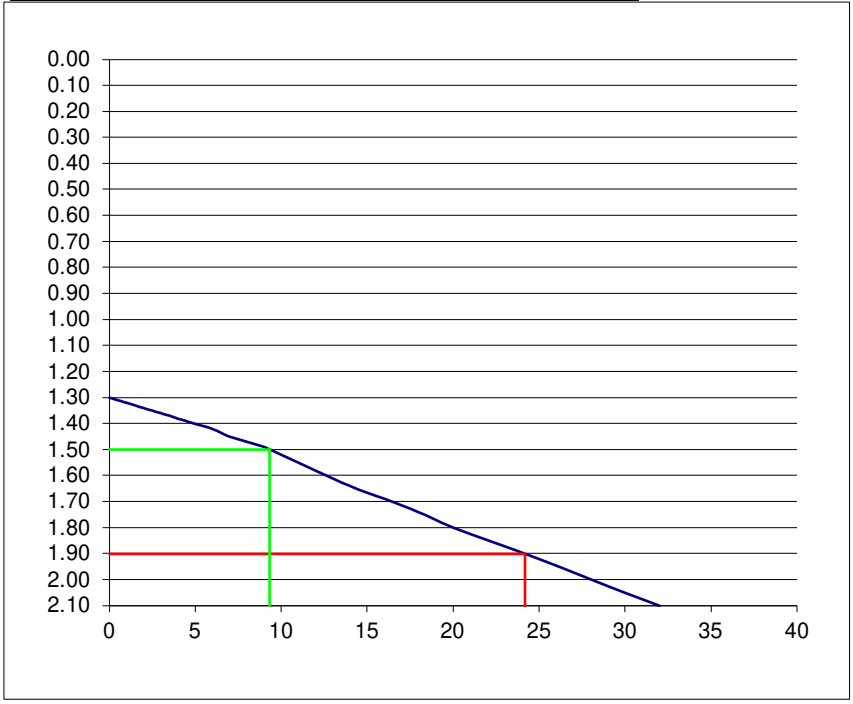
Project Reference:	6433
Contract name:	Farranamartin
Location:	Tuam, Co. Galway
Test No:	SA01
Date:	12/02/2025

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	1.00	Firm brown sandy slightly gravelly silty CLAY.
1.00	2.10	Grey silty sandy GRAVEL with high cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.30
0.5	1.31
1	1.32
1.5	1.33
2	1.34
2.5	1.35
3	1.36
3.5	1.37
4	1.38
4.5	1.39
5	1.40
6	1.42
7	1.45
8	1.47
9	1.49
10	1.52
12	1.58
14	1.64
16	1.69
18	1.74
20	1.80
25	1.92
30	2.05
32	2.10

Pit Dimensions (m)		
Length (m)	3.20	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.30	m
Depth of Water	0.80	m
75% Full	1.50	m
25% Full	1.90	m
75%-25%	0.40	m
Volume of water (75%-25%)	**0.77**	m3
Area of Drainage	**15.96**	m2
Area of Drainage (75%-25%)	**4.96**	m2
Time		
75% Full	9.33	min
25% Full	24.17	min
Time 75% to 25%	**14.84**	min
Time 75% to 25% (sec)	**890.4**	sec



f = 0.01043 m/min or **1.74E-04 m/s**

SOAKAWAY TEST

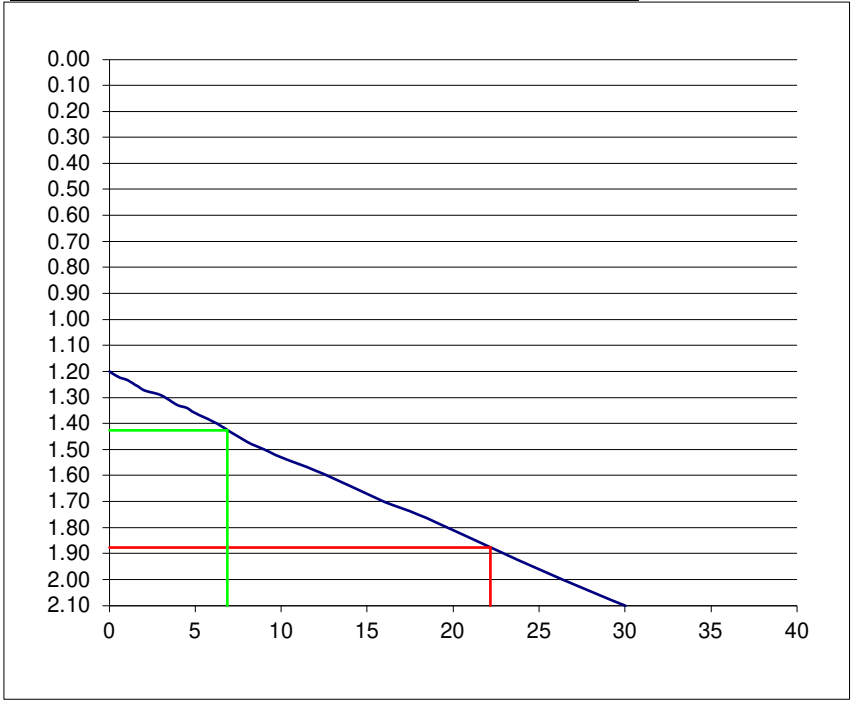
Project Reference:	6433
Contract name:	Farranamartin
Location:	Tuam, Co. Galway
Test No:	SA01
Date:	12/02/2025

Ground Conditions

From	To	
0.00	0.20	TOPSOIL.
0.20	0.70	Firm brown sandy slightly gravelly silty CLAY.
0.70	2.10	Grey silty sandy GRAVEL with high cobble content.

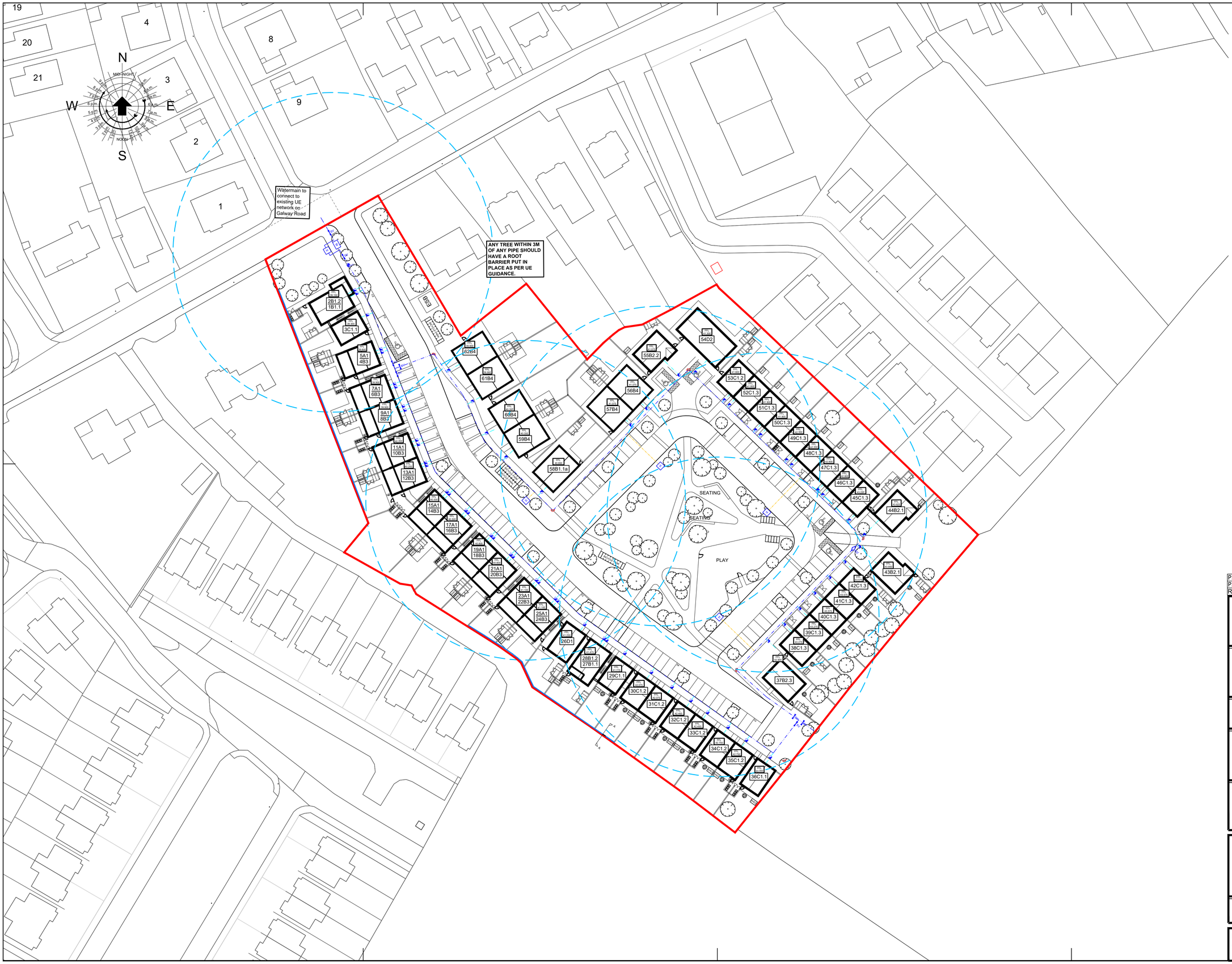
Elapsed Time (mins)	Fall of Water (m)
0	1.20
0.5	1.22
1	1.23
1.5	1.25
2	1.27
2.5	1.28
3	1.29
3.5	1.31
4	1.33
4.5	1.34
5	1.36
6	1.39
7	1.43
8	1.47
9	1.50
10	1.53
12	1.58
14	1.64
16	1.70
18	1.75
20	1.81
25	1.96
30	2.10

Pit Dimensions (m)		
Length (m)	3.10	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.20	m
Depth of Water	0.90	m
75% Full	1.43	m
25% Full	1.88	m
75%-25%	0.45	m
Volume of water (75%-25%)	**0.84**	m3
Area of Drainage	**15.54**	m2
Area of Drainage (75%-25%)	**5.19**	m2
Time		
75% Full	6.88	min
25% Full	22.17	min
Time 75% to 25%	**15.30**	min
Time 75% to 25% (sec)	**917.7**	sec



f = 0.01054 m/min or **1.76E-04 m/s**

Appendix E



KEY

- Fire Hydrant
- Scour Valve
- Air Valve
- Sluice Valve
- 150mm HDPE Watermain
- Boundary Box
- Bulk Flowmeter(with telemetry system)
- Thrust Block
- 80mm Hydrant Connection
- 25mm Customer Connection
- Boundary Line
- 3m Wayleave

NOTES

1. All stated units are indicative and the true measurements should be taken on site.
2. Any Levels referenced refer to ORDNANCE SURVEY DATUM, MALIN HEAD.
3. This drawing should be read in conjunction with Architects drawings.
4. All watermain works shall be carried out in accordance with Irish Water Standard Details and Code of Practice for Water Infrastructure Document *CDS-5020-03*.
5. All pipe materials shall be in compliance with Section 3.9 of Irish Water Code of Practice Document *CDS-5020-03*.
6. Individual water service connections and boundary boxes to each dwelling shall be in compliance with Irish Water standard detail *STD-W-02* and *STD-W-03*.
7. Separation distances from other services, boundary walls etc. shall be in accordance with Irish Water standard detail *STD-W-11*.
8. Separation distances from trees, shrubs etc. shall be in accordance with Irish Water standard detail *STD-W-12* & *12A*.
9. In places where pipes may have reduced cover, trenching backfill/bedding and reduced cover protection slabs shall be in accordance with Irish Water standard detail *STD-W-13*.
10. Sluice valve details shall be in accordance with Irish Water standard detail *STD-W-15*.
11. On line and off-line hydrant details shall be in accordance with Irish Water standard detail *STD-W-18* & *STD-W-19* respectively.
12. On line and off-line air valve details shall be in accordance with Irish Water standard detail *STD-W-22* & *STD-W-23* respectively.
13. Scour valve and chamber details shall be in accordance with Irish Water standard detail *STD-W-30*.
14. Any road openings and reinstatements should comply with the *"Guidelines for Managing Openings in Public Roads" April 2017*, and should be approved by the local Roads Authority

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

Stage:
Planning

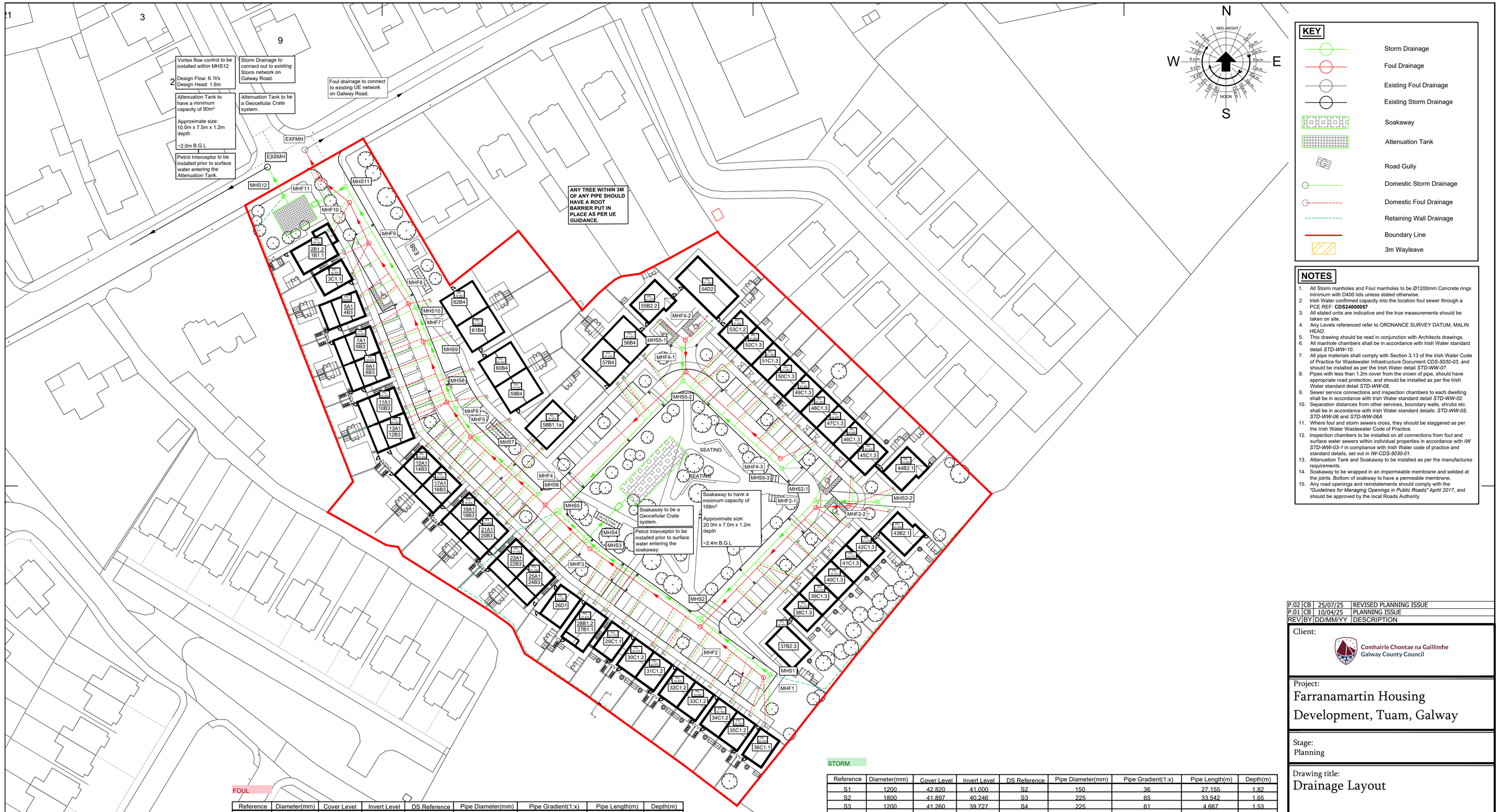
Drawing title:
Watermain Layout

Scale: 1:500
Size: A1

Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

Gilligan
CONSULTING CIVIL & STRUCTURAL ENGINEERS
23 BEDFORD STREET, BELFAST, BT27EJ
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No: 24561-GNI-XX-ZZ-DR-C-0003
Revision: P.02



KEY

- Storm Drainage
- Foul Drainage
- Existing Foul Drainage
- Existing Storm Drainage
- Soakaway
- Attenuation Tank
- Road Gully
- Domestic Storm Drainage
- Domestic Foul Drainage
- Retaining Wall Drainage
- Boundary Line
- 3m Wayleave

NOTES

1. All Storm manholes and Foul manholes to be Ø1200mm Concrete rings minimum with D400 lids unless stated otherwise.
2. Irish Water confirmed capacity into the location foul sewer through a PCE REF: **CDS24000057**
3. All stated units are indicative and the true measurements should be taken on site.
4. Any Levels referenced refer to ORDNANCE SURVEY DATUM, MALIN HEAD.
5. This drawing should be read in conjunction with Architects drawings.
6. All manhole chambers shall be in accordance with Irish Water standard detail *STD-WW-10*.
7. All pipe materials shall comply with Section 3.13 of the Irish Water Code of Practice for Wastewater Infrastructure Document *CDS-5030-03*, and should be installed as per the Irish Water detail *STD-WW-07*.
8. Pipes with less than 1.2m cover from the crown of pipe, should have appropriate road protection, and should be installed as per the Irish Water standard detail *STD-WW-08*.
9. Sewer service connections and inspection chambers to each dwelling shall be in accordance with Irish Water standard detail *STD-WW-02*.
10. Separation distances from other services, boundary walls, shrubs etc. shall be in accordance with Irish Water standard details: *STD-WW-05, STD-WW-06* and *STD-WW-06A*
11. Where foul and storm sewers cross, they should be staggered as per the Irish Water Wastewater Code of Practice.
12. Inspection chambers to be installed on all connections from foul and surface water sewers within individual properties in accordance with *IW STD-WW-03-1* in compliance with Irish Water code of practice and standard details, set out in *IW-CDS-5030-01*.
13. Attenuation Tank and Soakaway to be installed as per the manufactures requirements.
14. Soakaway to be wrapped in an impermeable membrane and welded at the joints. Bottom of soakway to have a permeable membrane.
15. Any road openings and reinstatements should comply with the *"Guidelines for Managing Openings in Public Roads" Aprtil 2017*, and should be approved by the local Roads Authority

FOUL

Reference	Diameter(mm)	Cover Level	Invert Level	DS Reference	Pipe Diameter(mm)	Pipe Gradient(1:x)	Pipe Length(m)	Depth(m)
F1	1200	42.710	41.146	F2	300	31	24.052	1.564
F2	1200	41.870	40.370	F3	300	55	37.053	1.50
F3	1200	41.200	39.700	F4	300	57	17.184	1.50
F4	1200	40.900	39.400	F5	300	50	27.781	1.50
F5	1200	40.340	38.840	F6	300	43	11.543	1.50
F6	1200	40.070	38.570	F7	300	52	17.799	1.50
F7	1200	39.730	38.230	F8	300	51	11.182	1.50
F8	1200	39.510	38.010	F9	300	50	20.104	1.50
F9	1200	39.110	37.610	F10	300	40	11.579	1.50
F10	1200	38.820	37.320	F11	300	54	11.892	1.50
F11	1200	38.760	37.100	EXFMH	300	39	7.800	1.66
EXFMH	TBD	38.560	36.900	-	225	-	-	1.66
F2-2	1200	43.200	41.850	F2-1	150	21	9.080	1.35
F2-1	1200	42.870	41.420	F2	225	44	45.685	1.45
F4-3	1200	42.270	40.920	F4-1	225	37	35.166	1.35
F4-2	1200	41.000	39.970	F4-1	150	59	8.784	1.03
F4-1	1200	41.270	39.820	F4	225	127	53.184	1.45

STORM

Reference	Diameter(mm)	Cover Level	Invert Level	DS Reference	Pipe Diameter(mm)	Pipe Gradient(1:x)	Pipe Length(m)	Depth(m)
S1	1200	42.820	41.000	S2	150	36	27.155	1.82
S2	1800	41.897	40.246	S3	225	65	33.542	1.65
S3	1200	41.260	39.727	S4	225	61	4.667	1.53
S4	2100	41.140	39.390	SW	450	397	15.868	1.75
SW	-	41.400	39.000	-	-	-	-	2.40
S6	1200	40.760	39.200	S7	150	75	22.740	1.56
S7	1200	40.313	38.898	S8	150	51	10.141	1.42
S8	1200	40.110	37.700	S9	225	74	11.147	2.41
S9	1200	39.820	37.550	S10	225	93	18.574	2.27
S10	1200	39.520	37.350	S11	225	65	32.308	2.17
S11	1200	38.820	36.850	Tank	225	64	6.408	1.97
Tank	1200	38.700	36.750	S12	225	102	6.130	1.95
S12	1200	38.600	36.690	EXSMH	225	92	9.177	1.91
S2-2	1200	43.700	42.100	S2-1	150	40	16.884	1.60
S2-1	1200	43.060	41.678	S2	150	32	45.462	1.38
								0.00
S5-3	1200	42.280	40.600	S5-2	150	50	36.484	1.68
S5-1	1200	41.120	40.000	S5-2	150	65	8.507	1.12
S5-2	1500	41.310	39.870	S5	225	130	50.096	1.44
S5	1800	40.839	39.485	S4	300	134	12.739	1.35

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

Stage:
Planning

Drawing title:
Drainage Layout

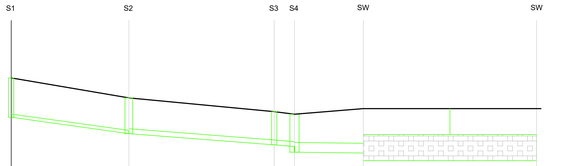
Scale: 1:500
Size: A1
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

Gilligan
CONSULTING CIVIL & STRUCTURAL ENGINEERS
23 BEDFORD STREET, BELFAST, BT27EJ
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No: 24561-GNI-XX-ZZ-DR-C-0001
Revision: P.02

NOTES

1. All Storm manholes and Foul manholes to be Ø1200mm Concrete rings minimum with D400 lids unless stated otherwise.
2. Irish Water confirmed capacity into the location foul sewer through a PCE REF: **CDS24000057**
3. All stated units are indicative and the true measurements should be taken on site.
4. Any Levels referenced refer to ORDNANCE SURVEY DATUM, MALIN HEAD.
5. This drawing should be read in conjunction with Architects drawings
6. All manhole chambers shall be in accordance with Irish Water standard detail *STD-WW-10*
7. All pipe materials shall comply with Section 3.13 of the Irish Water Code of Practice for Wastewater Infrastructure Document *CDS-5030-03*, and should be installed as per the Irish Water detail *STD-WW-07*.
8. Pipes with less than 1.2m cover from the crown of pipe, should have appropriate road protection, and should be installed as per the Irish Water standard detail *STD-WW-08*.
9. Sewer service connections and inspection chambers to each dwelling shall be in accordance with Irish Water standard detail *STD-WW-02*.
10. Separation distances from other services, boundary walls, shrubs etc. shall be in accordance with Irish Water standard details. *STD-WW-05*, *STD-WW-06* and *STD-WW-06A*
11. Where foul and storm sewers cross, they should be staggered as per the Irish Water Wastewater Code of Practice.
12. Inspection chambers to be installed on all connections from foul and surface water sewers within individual properties in accordance with *IW STD-WW-03-1* in compliance with Irish Water code of practice and standard details, set out in *IW-CDS-5030-01*.
13. Attenuation Tank and Soakaway to be installed as per the manufactures requirements.
14. Soakaway to be wrapped in an impermeable membrane and welded at the joints. Bottom of soakway to have a permeable membrane.
15. Any road openings and reinstatements should comply with the *"Guidelines for Managing Openings in Public Roads" April 2017*, and should be approved by the local Roads Authority

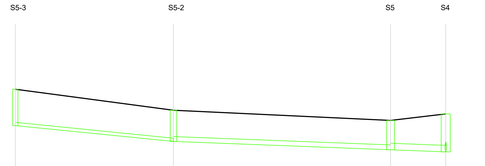


Hor Scale 500
Ver Scale 100

Datum (m) 35.000											
Link Name	1.01		1.02		1.03	1.04					
Section Type	150mm		225mm		225mm	450mm					
Slope (1:X)	36.0		64.6		60.6	396.7					
Cover Level (m)	42.800	41.897			41.260	41.140	41.400				41.400
Invert Level (m)	41.000	40.246	40.246		39.727	39.727	39.650	39.350	39.000		39.000
Length (m)	27.155		33.542		4.667	15.868					

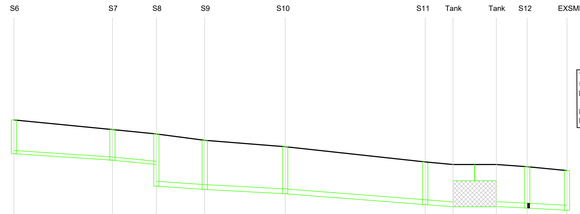
Hor Scale 500
Ver Scale 100

Datum (m) 35.000			
Link Name	3.01	3.02	
Section Type	150mm	150mm	
Slope (1:X)	40.0	31.7	
Cover Level (m)	43.700	43.060	41.897
Invert Level (m)	42.100	41.678 41.678	40.246
Length (m)	16.884	45.462	



Hor Scale 500
Ver Scale 100

Datum (m) 35.000				
Link Name	4.01	4.03	4.04	
Section Type	150mm	225mm	300mm	
Slope (1:X)	50.0	130.1	134.1	
Cover Level (m)	42.280	41.310	40.939	41.140
Invert Level (m)	40.600	39.870 39.870	39.485 39.485	39.390
Length (m)	36.484	50.096	12.739	

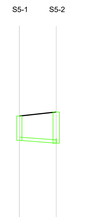


Vortex flow control to be installed within MHS12

Design Flow: 6.1l/s
Design Head: 1.6m

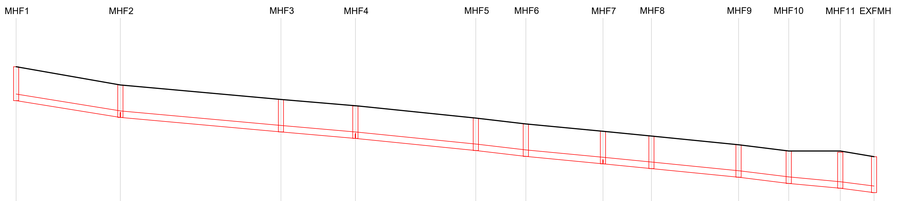
Hor Scale 500
Ver Scale 100

Datum (m) 35.000										
Link Name	2.01	2.02	2.03	2.04	2.05	2.06	2.07	2.08		
Section Type	150mm	150mm	225mm	225mm	225mm	225mm	225mm	225mm		
Slope (1:X)	75.3	51.2	74.3	92.9	64.6	64.1	102.2	91.8		
Cover Level (m)	40.760	40.313	40.110	39.820	39.220	38.620	38.700	38.600	38.420	
Invert Level (m)	39.200	38.898 38.898	38.700 37.700	37.550 37.550	37.350 37.350	36.850	36.750	36.690 36.690	36.590	
Length (m)	22.740	10.141	11.147	18.574	32.308	6.408	6.130	9.177		



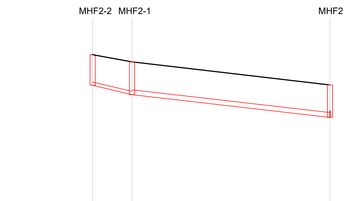
Hor Scale 500
Ver Scale 100

Datum (m) 35.000			
Link Name	4.02		
Section Type	150mm		
Slope (1:X)	65.4		
Cover Level (m)	41.120	41.310	
Invert Level (m)	40.000	39.870	
Length (m)	8.507		



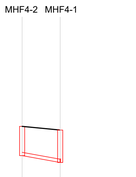
Hor Scale 500
Ver Scale 100

Datum (m) 35.000												
Link Name	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.09	1.10	1.11	
Section Type	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	
Slope (1:X)	31.0	55.0	57.0	50.0	43.0	53.0	51.0	50.0	40.0	54.0	39.0	
Cover Level (m)	42.710	41.870	41.200	40.900	40.340	40.070	39.730	39.510	39.110	38.820	38.780	38.560
Invert Level (m)	41.146	40.370 40.370	39.700 39.700	39.405 39.405	38.840 38.840	38.570 38.570	38.200 38.200	38.010 38.010	37.610 37.610	37.320 37.320	37.103 37.103	36.900
Length (m)	24.052	37.053	17.184	27.781	11.543	17.799	11.182	20.104	11.579	11.892	7.800	



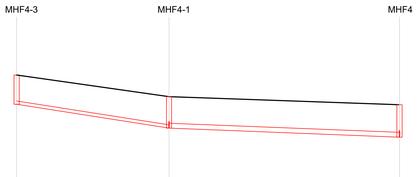
Hor Scale 500
Ver Scale 100

Datum (m) 35.000			
Link Name	2.01	2.02	
Section Type	150mm	225mm	
Slope (1:X)	21.0	44.0	
Cover Level (m)	43.200	42.870	42.870
Invert Level (m)	41.850	41.420 41.420	40.370
Length (m)	9.080	45.685	



Hor Scale 500
Ver Scale 100

Datum (m) 35.000		
Link Name	4.01	
Section Type	150mm	
Slope (1:X)	59.0	
Cover Level (m)	41.000	41.270
Invert Level (m)	39.970	39.820
Length (m)	8.784	



Hor Scale 500
Ver Scale 100

Datum (m) 35.000			
Link Name	3.01	3.02	
Section Type	225mm	225mm	
Slope (1:X)	37.0	127.0	
Cover Level (m)	42.270	41.270	40.900
Invert Level (m)	40.920	39.820 39.820	39.400
Length (m)	35.166	53.184	

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

Stage:
Planning

Drawing title:
Storm And Foul Longitudinal Sections

Scale: As Shown
Size: A0
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 05/02/25

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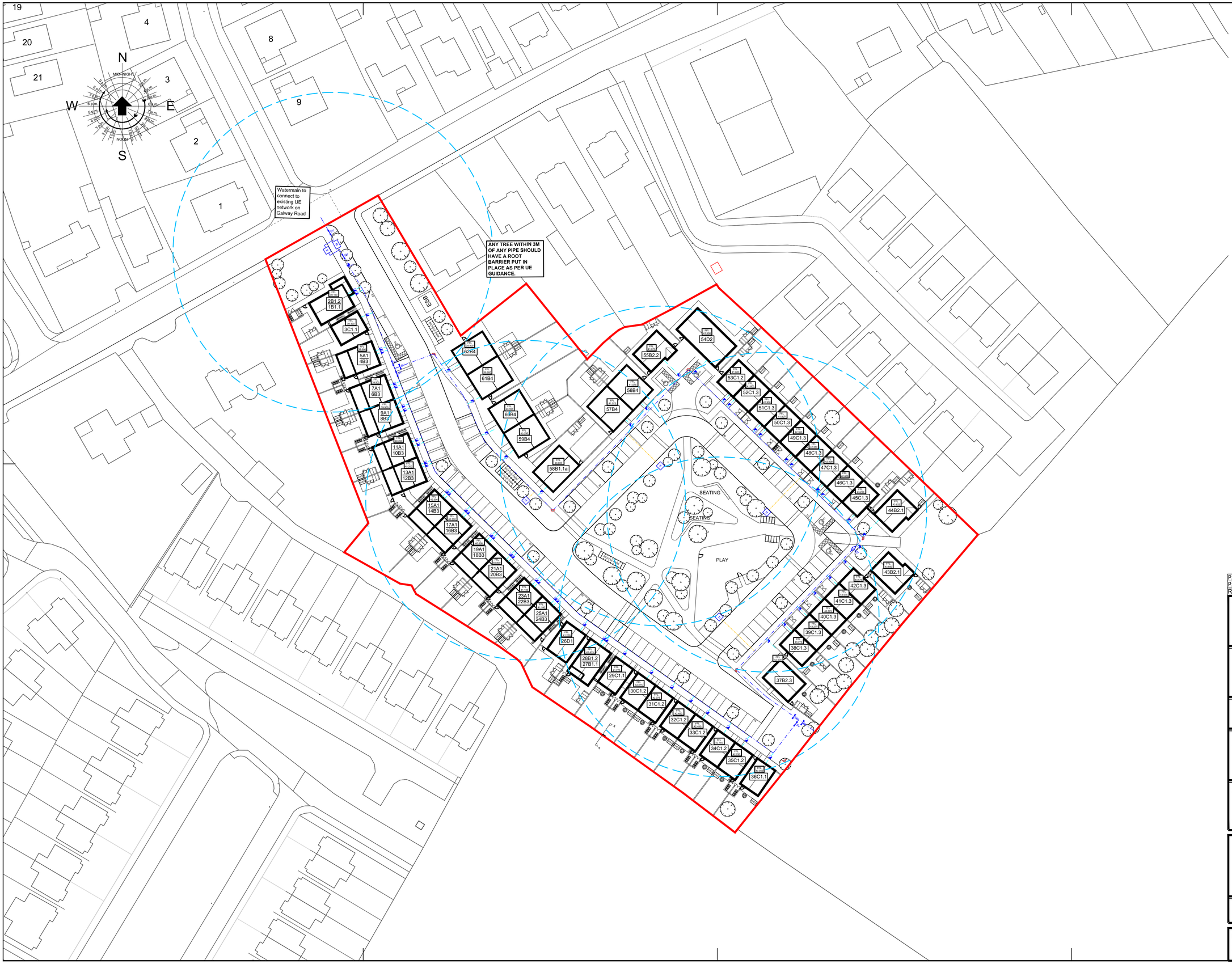
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No: 24561-GNI-XX-ZZ-C-0002
Revision: P.02



KEY

- Fire Hydrant
- Scour Valve
- Air Valve
- Sluice Valve
- 150mm HDPE Watermain
- Boundary Box
- Bulk Flowmeter(with telemetry system)
- Thrust Block
- 80mm Hydrant Connection
- 25mm Customer Connection
- Boundary Line
- 3m Wayleave

NOTES

1. All stated units are indicative and the true measurements should be taken on site.
2. Any Levels referenced refer to ORDNANCE SURVEY DATUM, MALIN HEAD.
3. This drawing should be read in conjunction with Architects drawings.
4. All watermain works shall be carried out in accordance with Irish Water Standard Details and Code of Practice for Water Infrastructure Document *CDS-5020-03*.
5. All pipe materials shall be in compliance with Section 3.9 of Irish Water Code of Practice Document *CDS-5020-03*.
6. Individual water service connections and boundary boxes to each dwelling shall be in compliance with Irish Water standard detail *STD-W-02* and *STD-W-03*.
7. Separation distances from other services, boundary walls etc. shall be in accordance with Irish Water standard detail *STD-W-11*.
8. Separation distances from trees, shrubs etc. shall be in accordance with Irish Water standard detail *STD-W-12* & *12A*.
9. In places where pipes may have reduced cover, trenching backfill/bedding and reduced cover protection slabs shall be in accordance with Irish Water standard detail *STD-W-13*.
10. Sluice valve details shall be in accordance with Irish Water standard detail *STD-W-15*.
11. On line and off-line hydrant details shall be in accordance with Irish Water standard detail *STD-W-18* & *STD-W-19* respectively.
12. On line and off-line air valve details shall be in accordance with Irish Water standard detail *STD-W-22* & *STD-W-23* respectively.
13. Scour valve and chamber details shall be in accordance with Irish Water standard detail *STD-W-30*.
14. Any road openings and reinstatements should comply with the *"Guidelines for Managing Openings in Public Roads" Aprril 2017*, and should be approved by the local Roads Authority

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

Stage:
Planning

Drawing title:
Watermain Layout

Scale: 1:500
Size: A1

Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

Gilligan
CONSULTING CIVIL & STRUCTURAL ENGINEERS
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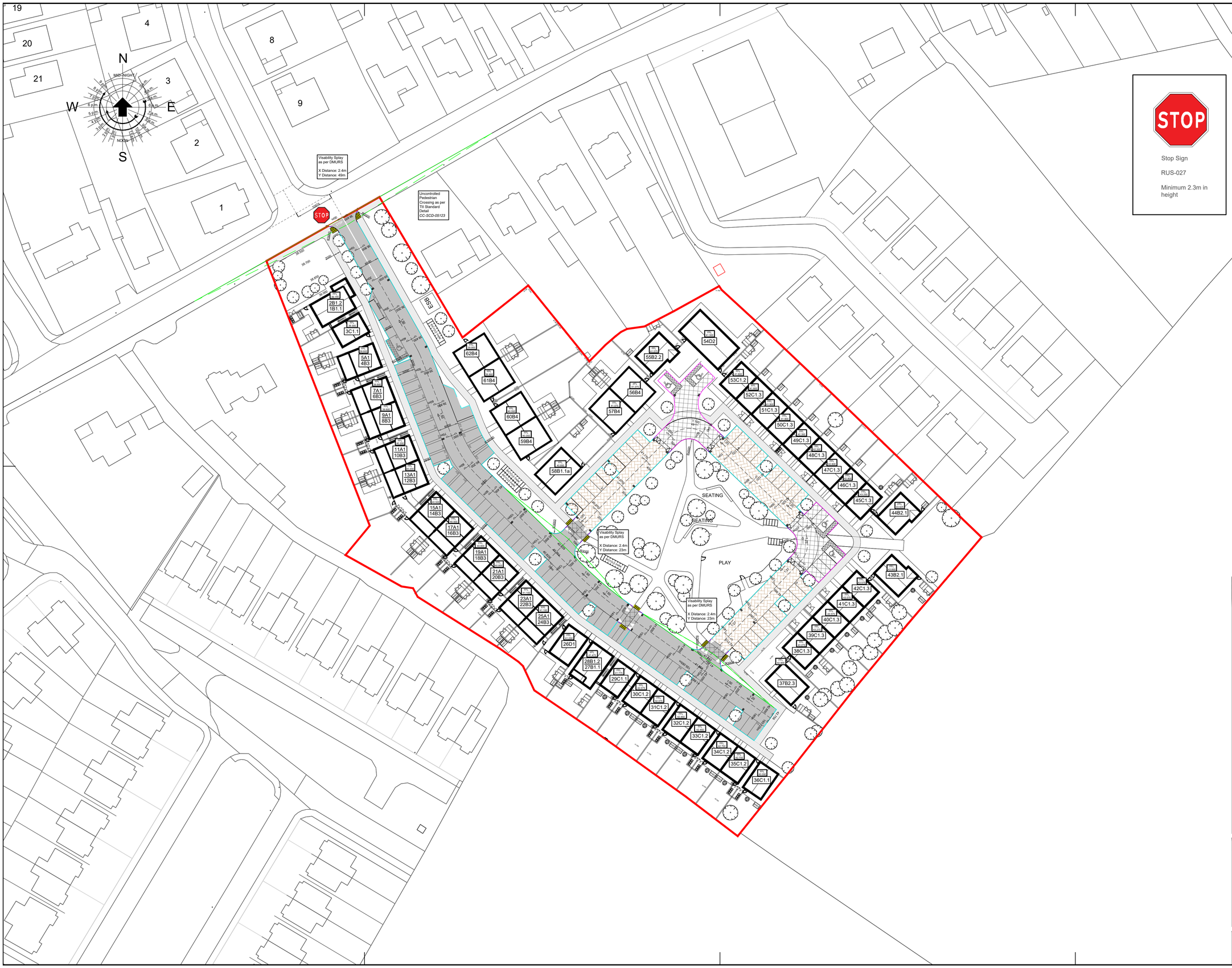
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No: 24561-GNI-XX-ZZ-DR-C-0003
Revision: P.02



KEY

- Road Surface
- Shared Surface
- Brushed Concrete Pavement
- Homezone Surfacing (Imprinted Asphalt Surface)
- Buff Blister Tactile Paving
- Kerb(max. 125mm)
- Bullnose Kerb(max. 20mm)
- Transitional Kerb
- +6.0m Level
- Gully
- Visibility Splay
- Road Falls

STOP

Stop Sign

RUS-027

Minimum 2.3m in height

NOTES

1. All stated units are indicative and the true measurements should be taken on site.
2. Any Levels referenced refer to ORDNANCE SURVEY DATUM, MALIN HEAD.
3. This drawing should be read in conjunction with the drawing referenced as: **"24561-GNI-XX-ZZ-DR-C-0005 and 24561-GNI-XX-ZZ-DR-C-0006"**.
4. Please refer to Architects drawings for boundary treatment details.
5. All accessibility ancillaries must comply with Government 'Guidance on the use of Tactile Paving Surfaces'.
6. All bituminous materials to comply with BS EN 13108-01 :2006.
7. All asphalt work to comply with BS EN 13108-04 :2006.
8. Cycle Lanes design and layout out to follow the "Cycle Design Manual(September 2023)".
9. Thermo plastic paint to be used for all Road Markings, and they must be in accordance with the Department of Transport, Tourism and Sport Traffic sign manual.
10. Ramps up to shared surfaces should be no steeper than a 1:12 gradient.
11. Pavements/Roads to not exceed a 1:20 gradient, unless otherwise stated.
12. Tactile Paving to comply with"Guidance on the use of tactile paving surfaces(December 2021)".
13. Signs must be placed as shown on the drawing and must be in accordance with the Department of Transport, Tourism and Sport Traffic sign manual.
14. Drop kerbs to be provided to the rear of the disabled parking bays to allow for level access to the pavement.

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

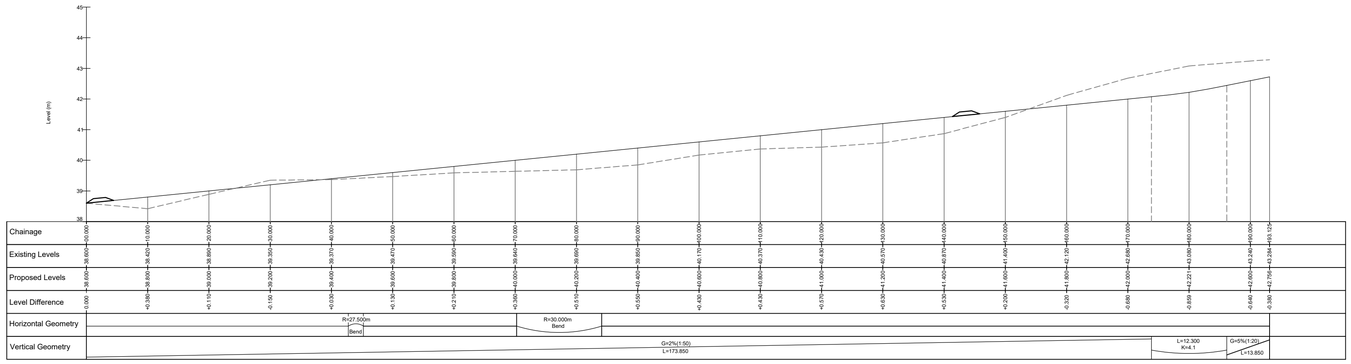
Stage:
Planning

Drawing title:
Road Layout

Scale: 1:500
Size: A1
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

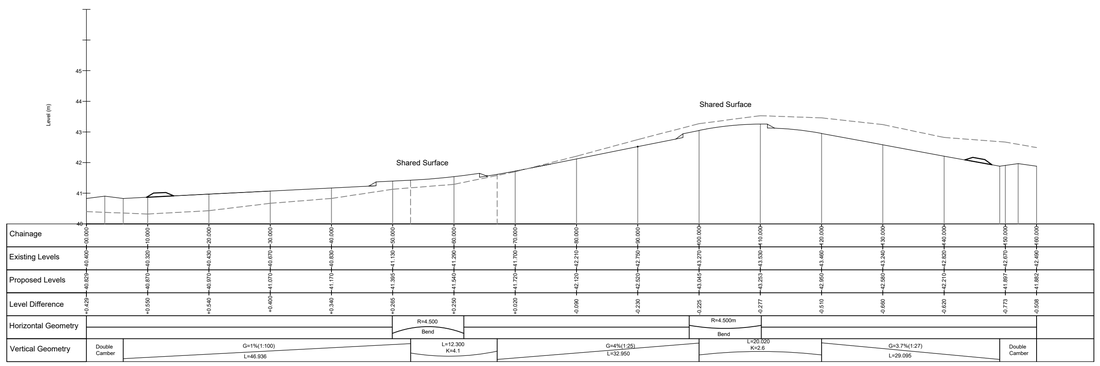
Gilligan
CONSULTING CIVIL & STRUCTURAL ENGINEERS
23 BEDFORD STREET, BELFAST, BT27EJ
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No: 24561-GNI-XX-ZZ-DR-C-0004
Revision: P.02



ROAD ALIGNMENT 1 - LONGSECTION

SCALE: H 1:500,V 1:100. DATUM: 38.000



ROAD ALIGNMENT 2 - LONGSECTION

SCALE: H 1:500,V 1:100. DATUM: 40.000

NOTES

Raised Table

Existing Ground Profile

NOTES

1. All stated units are indicative and the true measurements should be taken on site.
2. Any Levels referenced refer to ORDNANCE SURVEY DATUM, MALIN HEAD.
3. This drawing should be read in conjunction with the drawing referenced as: **"24561-GNI-XX-ZZ-DR-C-0004"**.
4. Please refer to Architects drawings for boundary treatment details.
5. All accessibility ancillaries must comply with Government 'Guidance on the use of Tactile Paving Surfaces'.
6. All bituminous materials to comply with BS EN 13108-01 :2006.
7. All asphalt work to comply with BS EN 13108-04 :2006.
8. Thermo plastic paint to be used for all Road Markings, and they must be in accordance with the Department of Transport, Tourism and Sport Traffic sign manual.
9. Ramps up to shared surfaces should be no steeper than a 1:12 gradient.
10. Pavements/Roads to not exceed a 1:20 gradient, unless otherwise stated.
11. Tactile Paving to comply with"Guidance on the use of tactile paving surfaces(December 2021)".
12. Signs must be placed as shown on the drawing and must be in accordance with the Department of Transport, Tourism and Sport Traffic sign manual.
13. Drop kerbs to be provided to the rear of the disabled parking bays to allow for level access to the pavement.

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:

Comhairle Chontae na Gaillimhe
Galway County Council

Project:

Farranamartin Housing Development, Tuam, Galway

Stage:
Planning

Drawing title:

Road Long Section

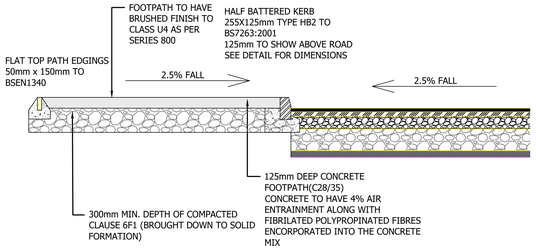
Scale: As Shown
Size: A1
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

Gilligan

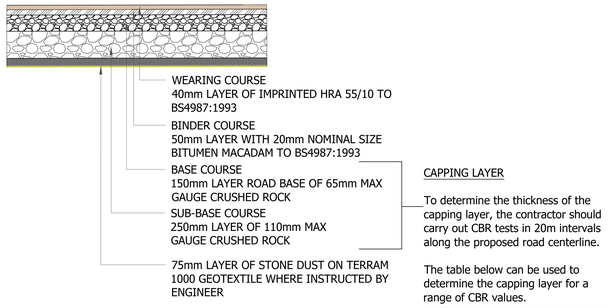
CONSULTING CIVIL & STRUCTURAL ENGINEERS

23 BEDFORD STREET, BELFAST, BT27EJ
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No: 24561-GNI-XX-ZZ-DR-C-0005
Revision: P.02

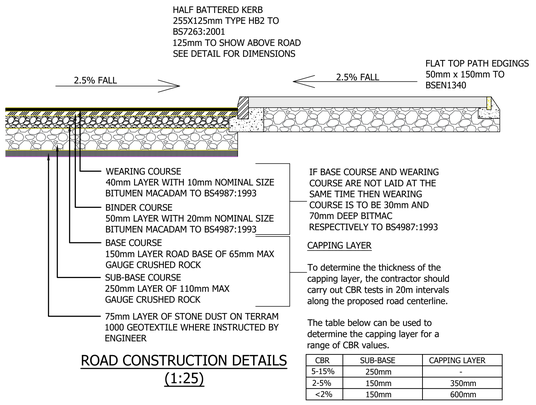


FOOTPATH CONSTRUCTION DETAILS
(1:25)



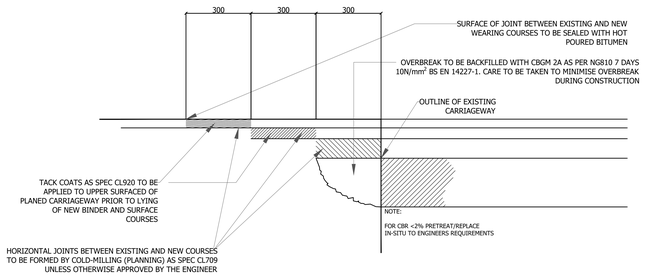
CBR	SUB-BASE	CAPPING LAYER
5-15%	250mm	-
2-5%	150mm	350mm
<2%	150mm	600mm

TYPICAL HOMEZONE ROADWAY SECTION (1:20)

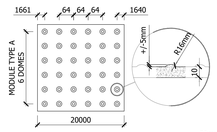


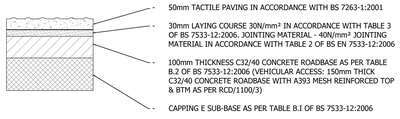
CBR	SUB-BASE	CAPPING LAYER
5-15%	250mm	-
2-5%	150mm	350mm
<2%	150mm	600mm

ROAD CONSTRUCTION DETAILS
(1:25)



ROAD CONSTRUCTION JOINT (1:10)





TACTILE PAVING UNCONTROLLED PEDESTRIAN CROSSINGS (1:10)

1. GEOGRID TO BE INSTALLED AS PER THE MANUFACTUERS REQUIREMENTS.
2. MIN. CBR VALUES TO BE ACHIEVED:
   15% TOP OF CAPPING LAYERS
   30% TOP OF SUB BASE LAYERS
3. GEOTEXTILE SEPERATION MEMBRANE TO BE INSTALLED AT THE SUB-FORMATION LEVEL. THE PROPOSED MATERIAL SHALL BE MANUFACTURED FROM SUNTHETIC MEMBRANE TERMALLY BONDED OR SIMILAR TYPE APPROVED BY ENGINEER.

KEY

GEOGRID 1

GEOGRID 2

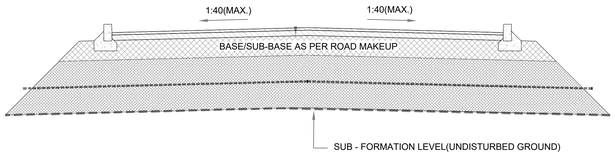
GEOTEXTILE SEPERATION MEMBRANE

6F2 CAPPING MATERIAL

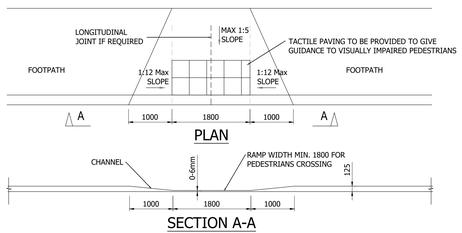
SUB - BASE

BINDER COURSE

WEARING COURSE



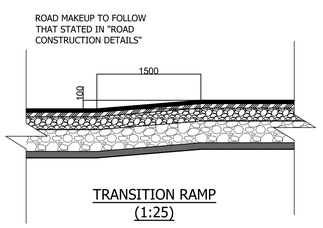
ROADS WITH SIGNIFICANT ROAD BUILD UP STANDARD DETAIL
(NTS)



PLAN

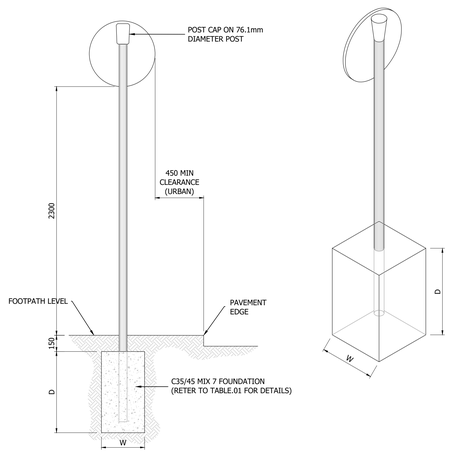
SECTION A-A

PEDESTRAIN CROSSING DROPPED KERB RAMP
(1:50)



TRANSITION RAMP
(1:25)

NOTES:
1. ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE.
2. ALL STEELWORK TO BE GRADE S235 J2 IN ACCORDANCE WITH IS.EN 12899-1.
3. ALL STEELWORK TO BE HOT-DIP GALVANIZED IN ACCORDANCE WITH IS.EN ISO 1461.
4. CHECK THE UNDERGROUND SERVICES AT AN EARLY STAGE (AND ACCOMMODATE AS MAY BE NECESSARY).
5. REFER TO TRAFFIC SIGN MANUAL FOR ALL STANDARD DIMENSION.
6. POST EMBEDMENT TO BE 0.75 X D
7. ORIENTATION OF SIGN:
- ON A STRAIGHT ROAD - HORIZONTAL AXIS 96° AWAY FROM THE GENERAL ALIGNMENT OF THE LEFT-HAND SIDE OF THE CARRIAGEWAY
- ON A RIGHT-HAND BENDS - 90° ANGLE TO A LINE TANGENTIAL TO THE LEFT-HAND EDGE OF CARRIAGEWAY
- ON A LEFT-HAND BENDS - 95° FROM A LINE JOINING THE EDGE OF CARRIAGEWAY 200m IN ADVANCE OF THEE SIGN.



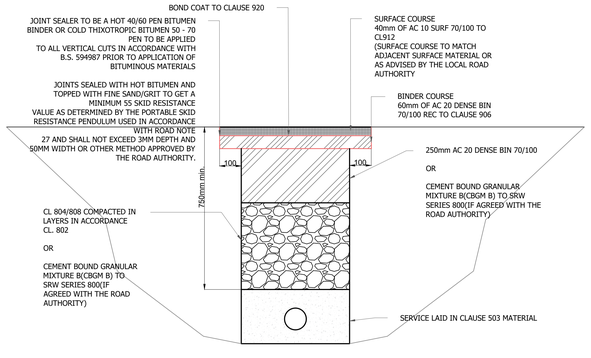
TRAFFIC SIGN (SINGLE POST)
(1:20)

TABLE.01

SUMMARY	TRADITIONAL FOUNDATION OPTION 1			TRADITIONAL FOUNDATION OPTION 2			PLANTED FOUNDATION		POST DETAILS		
SIGN FACE AREA	L	W	D	L	W	D	Ø	D	Ø	WALL THICKNESS	TYPE
≤0.283 m² (Ø600mm)	0.75	0.40	0.55	0.55	0.55	0.55	0.40	0.50	76.1	3.2	CHS
0.283≤AREA≤0.5625m² (BETWEEN 600Ø & 750x750)	0.75	0.65	0.65	0.70	0.70	0.70	0.40	0.65	76.1	3.2	CHS
0.5625≤AREA≤1.189m² (750X750 TO 940x1265m²)	1.00	0.75	0.50	0.80	0.80	0.80	0.40	0.75	76.1	3.2	CHS

STANDARD DETAIL SD4 WITHIN THE DOCUMENT TITLED "GUIDELINES FOR MANAGING OPENINGS IN ROADS" APR. 2017

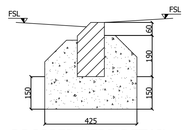
ANY NOTES REFERENCED SHOULD BE TAKEN FROM THIS DOCUMENT



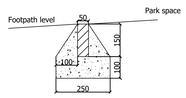
TYPICAL SERVICE REINSTATEMENT DETAIL WITHIN AN ASPHALT ROAD
(1:10)

NOTES

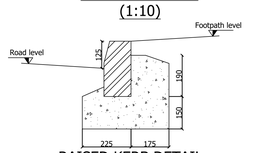
1. All stated units are indicative and the true measurements should be taken on site.
2. Any Levels referenced refer to ORDNANCE SURVEY DATUM. MALIN HEAD.
3. This drawing should be read in conjunction with the drawing referenced as: **"24561-GNI-XX-ZZ-DR-C-0004"**.
4. Please refer to Architects drawings for boundary treatment details.
5. All accessibility ancillaries must comply with Government 'Guidance on the use of Tactile Paving Surfaces'.
6. All bituminous materials to comply with BS EN 13108-01 :2006.
7. All asphalt work to comply with BS EN 13108-04 :2006.
8. Thermo plastic paint to be used for all Road Markings, and they must be in accordance with the Department of Transport, Tourism and Sport Traffic sign manual.
9. Ramps up to shared surfaces should be no steeper than a 1:15 gradient.
10. Pavements/Roads to not exceed a 1:20 gradient, unless otherwise stated.
11. Tactile Paving to comply with"Guidance on the use of tactile paving surfaces(December 2021)".
12. Signs must be placed as shown on the drawing and must be in accordance with the Department of Transport, Tourism and Sport Traffic sign manual.
13. Drop kerbs to be provided to the rear of the disabled parking bays to allow for level access to the pavement.



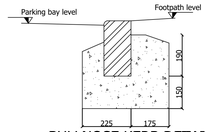
DROPPED KERB DETAIL
(1:10)



PIN KERB DETAIL
(1:10)



RAISED KERB DETAIL
(1:10)



BULLNOSE KERB DETAIL
(1:10)

P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE
REV	BY	DD/MM/YY	DESCRIPTION

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

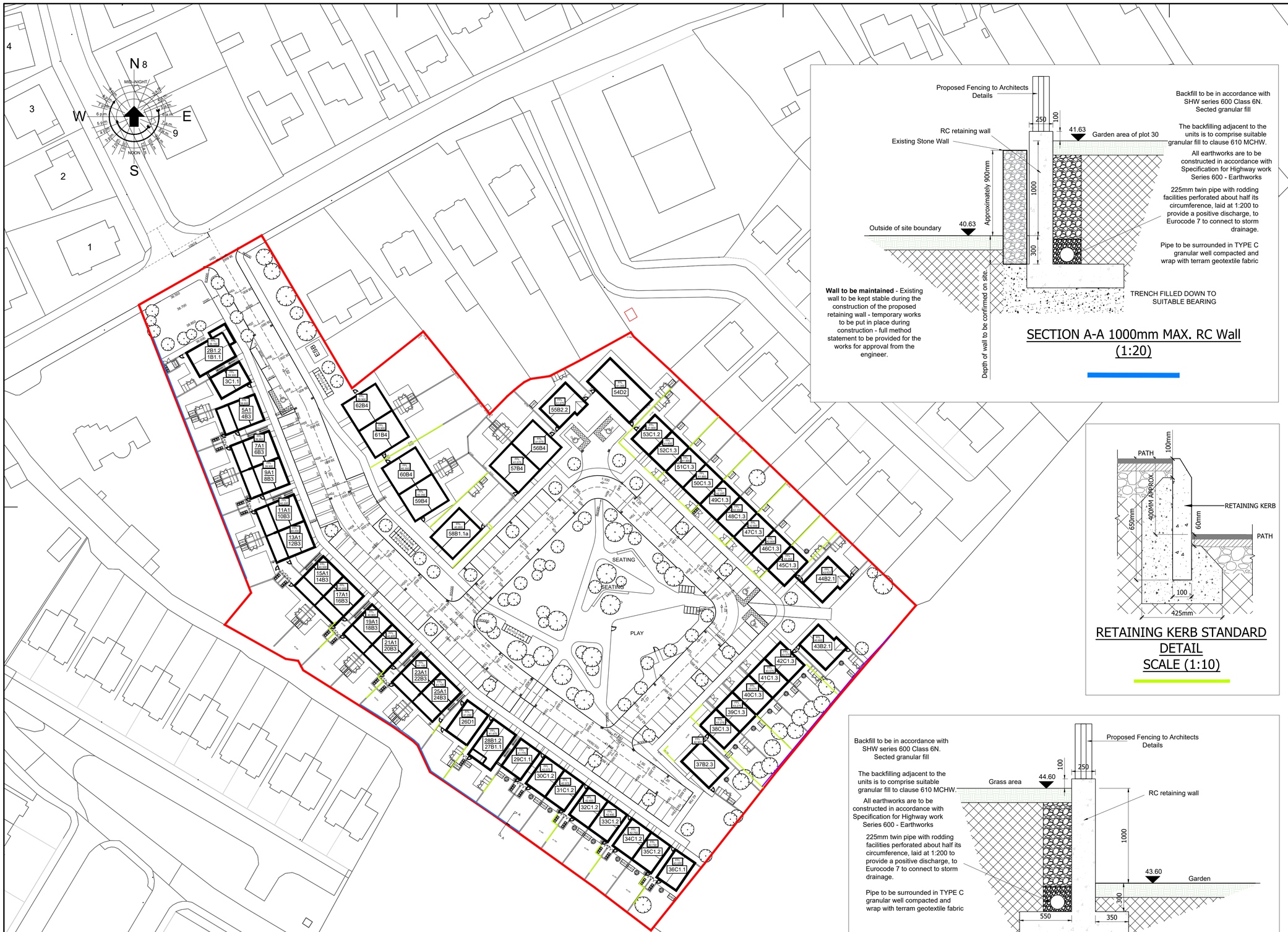
Stage:
Planning

Drawing title:
Road Construction Standard Details

Scale: As Shown
Size: A0
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 05/02/2025

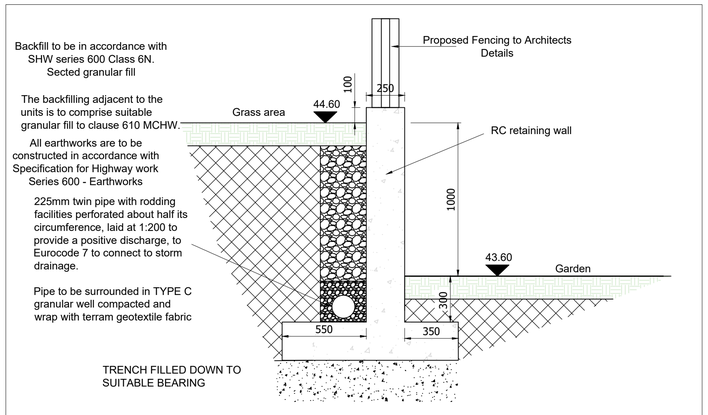
Gilligan
CONSULTING CIVIL & STRUCTURAL ENGINEERS
23 BEDFORD STREET, BELFAST, BT27EJ
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No: 24561-GNI-XX-ZZ-C-0006
Revision: P.02



SECTION A-A 1000mm MAX. RC Wall (1:20)

RETAINING KERB STANDARD DETAIL SCALE (1:10)



1000mm MAX. RC Wall (1:20)

KEY

- Retaining Kerb(max. 400mm)
- RC Wall(max. 1000mm)
- "L - Shaped" RC Wall(max. 1000mm)
- Section Marker

NOTES

Do not scale this drawing - work to figured dimensions only.

This drawing is to be read in conjunction with all relevant Architect's, Service Engineer's and Gilligans (NI) Ltd Engineers drawings.

The Main Contractor is responsible for the stability of the construction work at all stages.

The Main Contractor is responsible for the stability of the construction work at all stages.

The contractor shall verify all existing conditions and dimensions prior to beginning construction and/or ordering materials. Any discrepancies shall be brought to the attention of the engineer immediately
All Materials and workmanship to be in accordance with BS. 5628-3

Holes Recesses or Chases must not be cut or formed without the Engineers permission.

Designed concrete specification for RC Retaining Wall (60mm cover with 10mm deviation)

The concrete shall be produced in accordance with **BS EN 206**

Compressive strength class;	C32/40
Maximum water/cement ratio;	0.45
Minimum cement/combination conent;	360kg/m^3
Allowable cement/combination types;	IIIB, IUB-P, IUB-Q, IUB-V
Air-entrainment required;	4.5%
Maximum aggregate size;	20mm
Chloride content class	CL 0,30
Consistence class	S3

All concrete shall be designed for exposure classes XC4, XD1, XF3 and XA1 in accordance with **BS EN 206 Part 1**

Construction and Expansion joints to be agreed with Engineer. Minimum cover to reinforcement to be 50mm.

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

Stage:
Planning

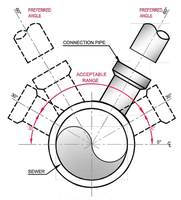
Drawing title:
Retaining Wall Layout

Scale: 1:500
Size: A1
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

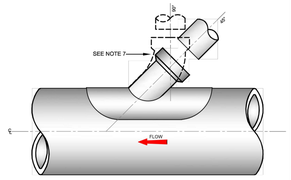
Gilligan
CONSULTING CIVIL & STRUCTURAL ENGINEERS
23 BEDFORD STREET, BELFAST, BT27EJ
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No: 24561-GNI-XX-ZZ-DR-C-0007
Revision: P.02

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AS FAR AS PRACTICABLE, JUNCTIONS AND SERVICE CONNECTIONS SHALL BE BUILT IN FOR ALL PLANNED USERS WHEN THE SEWER IS BEING CONSTRUCTED. WHERE IT IS NECESSARY TO MAKE A POST-CONSTRUCTION CONNECTION THE DEVELOPER SHALL BRING THE SERVICE CONNECTION TO THE INSPECTION CHAMBER, INSTALL THE INSPECTION CHAMBER AND SEAL THE UPSTREAM END UNTIL THE CONNECTION IS REQUIRED.
3. THE VERTICAL ANGLE BETWEEN THE SERVICE CONNECTING PIPE AND THE HORIZONTAL SHALL BE WITHIN THE ACCEPTABLE RANGE OF 30° to 90°.
4. WHERE THE SERVICE PIPE CONNECTION WITHIN THE FOOTPRINT OF THE SELF LAY AGREEMENT IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER OF 300mm DIAMETER OR LESS, CONNECTIONS SHALL BE MADE USING 45° ANGLE JUNCTIONS.
5. WHERE THE CONNECTION IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER GREATER THAN 300mm, THE FOLLOWING SHALL APPLY :
   A. WHERE THE DIAMETER OF THE CONNECTING PIPE IS GREATER THAN HALF THE DIAMETER OF THE SEWER, AN ACCESS MANHOLE SHALL BE CONSTRUCTED TO FORM THE CONNECTION POINT, OR,
   B. WHERE THE DIAMETER OF THE CONNECTION PIPE IS LESS THAN OR EQUAL TO HALF THE DIAMETER OF THE SEWER, THEN THE CONNECTION SHALL BE MADE USING A PREFORMED Y-BRANCH FITTING WITH A 45 DEG. SLOW BEND TO FORM THE CONNECTION TO THE WORKS.
6. CONNECTION USING SADDLES MAY ONLY BE USED IN EXCEPTIONAL CIRCUMSTANCES AND ONLY TO WHERE THE CONNECTION IS TO AN EXISTING SEWER. CONNECTIONS MADE WITH SADDLE FITTINGS SHALL BE MADE BY CUTTING AND SAFELY REMOVING A CORE FROM THE PIPE AND JOINTING THE SADDLE FITTING TO THE PIPE IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS TO ENSURE A WATERTIGHT JOINT. THE CONNECTING PIPE SHALL NOT PROTRUDE INTO THE SEWER.
7. THE USE OF 90° "Y"-BRANCH OR SADDLE CONNECTIONS TO THE SEWER MAY BE ALLOWED, PROVIDED THE SADDLE OR BRANCH INCORPORATES A SWEPT TEE CONNECTION TOWARDS THE DIRECTION OF FLOW OF THE SEWER.

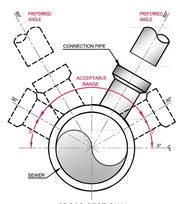


CROSS-SECTIONAL VIEW OF SEWER

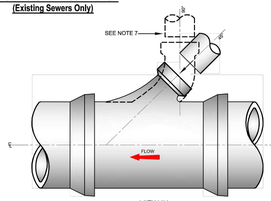


VIEW IN DIRECTION OF ARROW A

TYPICAL 45° SADDLE CONNECTION (Existing Sewers Only)



CROSS-SECTIONAL VIEW OF SEWER



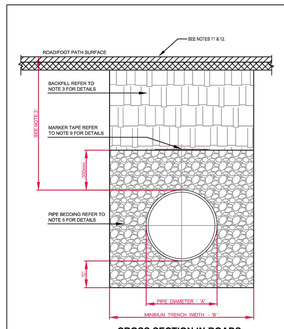
VIEW IN DIRECTION OF ARROW A

45° "Y" BRANCH

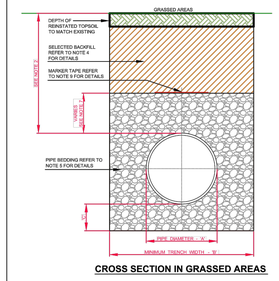
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

										STANDARD DETAILS - WASTEWATER	SCALE: NOT TO SCALE; DATE: SEPT. 2015
										TITLE: TYPICAL SEWER / SERVICE PIPE CONNECTION	DRAWING No.: STD-WW-04; REV: 2
	2	07/20	RH	TOC	Updated connector detail & notes	MCD					
	1	11/17	JMC	TOC	Updated connector detail & notes	MCD					
	0	09/15	JMC	TOC	Initial Issue	SL					
	No.	Date	Ch'k	Ch'd	Description	App'd					

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. THE MINIMUM DEPTH OF COVER FROM THE FINISHED SURFACE TO THE CROWN OF THE PIPE OR TOP OF CONCRETE SURROUND SHOULD BE AS FOLLOWS:
   A) GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS - DEPTH NOT LESS THAN 0.9 M. (THIS WOULD NORMALLY RELATE TO DRAINS IN PRIVATE PROPERTY, SHALLOW PIPES OF THIS NATURE SHOULD NOT BE LAID UNDER PUBLIC ROADS)
   ACCORDANCE WITH THE CURRENT BUILDING REGULATIONS).
   B) DRIVEWAYS, FOOTWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.9 M.
   C) DRIVEWAYS, FOOTWAYS, PARKING AREAS AND NARROW STREETS WITHOUT FOOTWAYS (E.G. MEWS DEVELOPMENTS) WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.9 M.
   D) ROADS WITHIN HOUSING ESTATES OR THE GATED ESTATES SHALL BE SIMILAR TO THAT OUTLINED ABOVE.
   E) AGRICULTURAL LAND AND PUBLIC OPEN SPACE - DEPTH NOT LESS THAN 0.9 M.
   F) OTHER ROADWAYS, HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS FOR VEHICLES OF ANY WEIGHT - DEPTH NOT LESS THAN IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 1.2m
3. CLAUSE 804 / 806 MATERIAL IN ACCORDANCE WITH THE TRANSPORT INFRASTRUCTURE IRELAND SPECIFICATION FOR ROAD WORKS IS TO BE USED AS BACKFILL MATERIAL WHERE THE SEWER/ MAIN IS LOCATED IN ROADS,FOOTPATHS OR PUBLIC AREAS. THE MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 150mm AND IN THE ROADWAY, CLAUSE 804 / 806 IS TO BE COMPACTED AS PER CLAUSE 802 OF THE TRANSPORT INFRASTRUCTURE IRELAND SPECIFICATION FOR ROAD WORKS. CLAUSE 804 IS TO BE USED WITHIN 600mm OF CEMENT BOUND MATERIALS, CONCRETE PAVEMENTS, CONCRETE STRUCTURES OR CONCRETE PRODUCTS. OTHERWISE CLAUSE 804 / 806 MAY BE USED. WHERE CLAUSE 804 IS USED AS BACKFILL MATERIAL ABOVE CLAUSE 804 OR CLAUSE 806/ OF THE PIPE TRENCH WILL ONLY BE ALLOWED BY IRISH WATER WHERE THE ROADS AUTHORITY IN WHOSE FUNCTIONAL AREA THE DEVELOPMENT IS LOCATED, PROVIDES **WRITTEN APPROVAL** TO THE DEVELOPER TO THE USE SUCH ALTERNATIVE MATERIAL EVIDENCE OF THIS WRITTEN APPROVAL TO BE SUBMITTED TO IRISH WATER PRIOR TO THE COMMENCEMENT OF WORKS.
4. SELECTED EXCAVATED MATERIAL - COMPLYING WITH THE REQUIREMENTS OF "ACCEPTABLE MATERIAL" AS OUTLINED ON CLAUSE 801 OF THE TII SPECIFICATION FOR ROADWORKS, TABLE 8/1,CLASS 6,CLASS 7. MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO REVIEW BY IRISH WATER.
5. PIPE BEDDING SHALL COMPLY WITH WIS 4-04-02 AND 4-04-03.
6. THE PIPE BEDDING GRANULAR MATERIAL SHALL BE 14mm TO 6mm ($\frac{3}{4}$" TO $\frac{1}{4}$") GRADED CRUSHED ROCK OR GRAVEL. THE PIPE SURROUND, WHICH IS PART OF THE 1m SAND/CONCRETE BED, HAUNCH, & SURROUND, WHERE REQUIRED, SHALL BE TO STD-WW-08.
7. IN SOFT GROUND CONDITIONS (CBR < 5) THE MATERIAL SHOULD BE MANAGED IN ACCORDANCE WITH THE TRANSPORT INFRASTRUCTURE IRELAND SPECIFICATION FOR ROAD WORKS SHALL REPLACE THE EXCAVATED MATERIAL, WRAPPED IN GEO-TEXTILE WRAPPING. ALTERNATIVELY, SPECIAL PIPE SUPPORT ARRANGEMENTS (CONCRETE CRADLING ETC). MAY BE REQUIRED WHERE THE DEPTH OF SOFT MATERIAL IS EXCESSIVE. SUCH ARRANGEMENTS SHALL BE SUBJECT TO AN ASSESSMENT BY IRISH WATER BEFORE ADVANCING WITH THE WORK.
8. PIPES SHALL NOT BE SUPPORTED ON STONES, ROCKS OR ANY HARD OBJECTS AT ANY POINT ALONG THE TRENCH. ROCK SHALL BE EXCAVATED TO A DEPTH OF 150mm BELOW THE BOTTOM OF THE PIPE. THE TRENCH BOTTOM SHALL THEN BE FILLED WITH CLAUSE 804 MATERIAL IN ACCORDANCE WITH THE TRANSPORT INFRASTRUCTURE IRELAND SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
9. NON DEGRADABLE MARKER TAPE SHOULD BE INSTALLED AT THE TOP OF PIPE BEDDING LAYER FOR SEWERS AND WATER MAINS. IT SHOULD RUN CONTINUOUSLY ALONG THE SEWER. IN THE CASE OF NON METAL PIPE MATERIAL, THE MARKER TAPE SHOULD INCORPORATE A TRACE WIRE WHICH IS LINKED TO FITTINGS AND TERMINATED AT THE WASTE WATER PUMPING STATION (IF PROVIDED) AND THE GRID-HARGS MANHOLE.
10. TRENCH WIDTH SHALL BE AS SHOWN. 600mm MAY BE 450mm, SUBJECT TO CONSTRUCTION WORKING SPACE GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.
11. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
12. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF "GUIDANCE FOR REINSTATEMENT OF OPENINGS IN ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.



CROSS SECTION IN ROADS



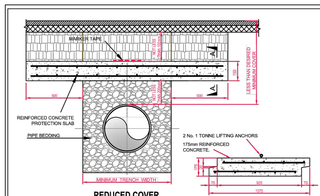
CROSS SECTION IN GRASSED AREAS

PIPE DIAMETER 'A' (mm)	TRENCH WIDTH 'B' (mm)
≤ 80 RISING MAIN	SEE NOTE 10
100	500
150 - 200	600
>200 - 350	750
>350 - 450	900

PIPE DIAMETER 'A' (mm)	DEPTH OF BEDDING 'C' (mm)
≤160	100
150 - 450	200

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

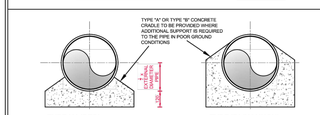
										STANDARD DETAILS - WASTEWATER	SCALE: NOT TO SCALE; DATE: SEPT. 2015
										TITLE: TRENCH BACKFILL AND BEDDING	DRAWING No.: STD-WW-07; REV: 2
	2	07/20	RH	TOC	Wording/Layout updated. Marker tape added to note 9.	MCD					
	1	11/17	JMC	TOC	Updated Notes & Added Table	MCD					
	0	09/15	JMC	TOC	Initial Issue	SL					
	No.	Date	Ch'k	Ch'd	Description	App'd					



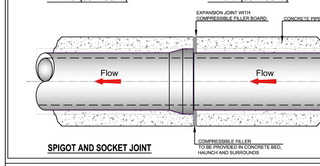
REDUCED COVER PROTECTION SLAB DETAIL

SECTION A-A

1. FOR ANY SLABBING WORKS TO BE CARRIED OUT WITHIN THE VICINITY OF THE PIPELINE, A METHOD STATEMENT IS TO BE SUBMITTED FOR REVIEW BY IRISH WATER.
2. MARKER TAPE TO BE PLACED ABOVE THE SLAB AND ALONG THE DIRECTION OF THE PIPELINE
3. CONCRETE TO BE GRADE C30/35
4. MINIMUM COVER TO STEEL REINFORCEMENT =40mm
5. SLABS TO BE DESIGNED FOR USE UNDER A HB25 LOAD IN ACCORDANCE WITH BS5400-2. DESIGN TO BE SUBMITTED TO IRISH WATER FOR ASSESSMENT PRIOR TO INSTALLATION.
6. THE SOIL ON WHICH THE SLAB RESTS MUST HAVE A CBR OF 4% OR GREATER.WHERE THE CBR IS LESS THAN 4% THE MATERIAL SHALL BE REMOVED AND REPLACED WITH IMPORTED GRANULAR MATERIAL AS APPROVED BY IRISH WATER.
7. IF DIRECTION OF PIPELINE AND DIRECTION OF TRAFFIC FLOW ARE PARALLEL, THE DIRECTION OF LAY OF THE SLAB IS TO BE AGAINST THE DIRECTION OF TRAFFIC FLOW.
8. IF PIPELINE PROTECTION SLAB IS TO BE USED SOLELY FOR IMPACT PROTECTION & OVERALL DEPTH OF COVER IS GREATER THAN 1.2m, THE DISTANCE BETWEEN UNDERSIDE OF SLAB & TOP OF PIPE MAY BE INCREASED AFTER CONSULTATION WITH IRISH WATER.



TYPE 'C' OR TYPE 'D' CONCRETE SURROUND TO BE PROVIDED WHERE DEPTH OF COVER IS LESS THAN 900mm IN FIELDS OR 1200mm IN ROADS AS AN ALTERNATIVE TO THE PROVISION OF A CONCRETE SLAB, SUBJECT TO THE AGREEING TO THE OMISSION OF THE SLAB IN LIEU OF THE SURROUND.

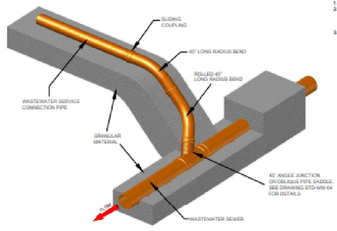


SPIGOT AND SOCKET JOINT

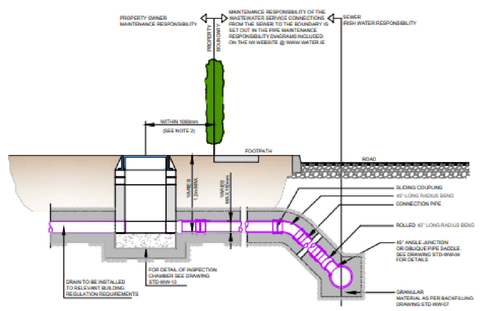
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

										STANDARD DETAILS - WASTEWATER	SCALE: NOT TO SCALE; DATE: SEPT. 2015
										TITLE: CONCRETE PROTECTION SLAB, BED, HAUNCH, AND SURROUND, TO WASTEWATER PIPES	DRAWING No.: STD-WW-08; REV: 1
	1	07/20	RH	TOC	Protection slab detail added and notes updated, title updated.	MCD					
	0	09/15	JMC	TOC	Initial Issue	SL					
	No.	Date	Ch'k	Ch'd	Description	App'd					

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AN INSPECTION CHAMBER SHOULD BE LOCATED AT OR WITHIN 1m OF THE PROPERTY BOUNDARY TO FACILITATE ACCESS FOR MAINTENANCE OF THE CONNECTION ON THE PRIVATE SIDE OF THE CURTILAGE, IF PRACTICABLE. CONSULT WITH IRISH WATER ON ALTERNATIVE LOCATIONS.
3. ANY PIPE AND ASSOCIATED ACCESS UPSTREAM OF THE POINT OF CONNECTION TO A PUBLIC SEWER WITHIN THE CONFINES OF A PRIVATE BOUNDARY IS A PRIVATE DRAIN AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS.



3D VIEW SHOWING SERVICE CONNECTION PIPEWORK

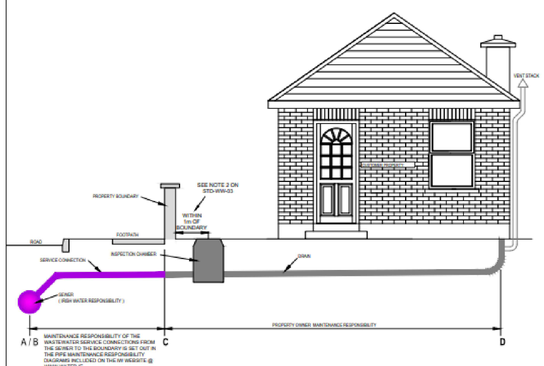


SECTION SHOWING DRAIN AND SERVICE CONNECTION PIPEWORK

PIPE SIZE (mm)	GRADIENT
100	1:40 - 1:80

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

										STANDARD DETAILS - WASTEWATER	SCALE: NOT TO SCALE; DATE: SEPT. 2015
										TITLE: DRAIN AND SERVICE CONNECTION PIPEWORK	DRAWING No.: STD-WW-03; REV: 2
	2	07/20	RH	TOC	Connection reposition, invert connection details	MCD					
	1	11/17	JMC	TOC	Updated Notes	MCD					
	0	09/15	JMC	TOC	Initial Issue	SL					
	No.	Date	Ch'k	Ch'd	Description	App'd					



	MAINTENANCE RESPONSIBILITY
(A) SEWER	IRISH WATER
(B/C) SERVICE CONNECTION (INCLUDING VALVE)	SEE NOTE ABOVE
INSPECTION CHAMBER	PROPERTY OWNER
(C/D) DRAIN	PROPERTY OWNER
INTERNAL PLUMBING	PROPERTY OWNER

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

										STANDARD DETAILS - WASTEWATER	SCALE: NOT TO SCALE; DATE: SEPT. 2015
										TITLE: WASTEWATER SERVICE CONNECTION MAINTENANCE RESPONSIBILITY	DRAWING No.: STD-WW-01; REV: 2
	2	07/20	RH	TOC	S-C ownership revised	MCD					
	1	11/17	JMC	TOC	Note reference added	MCD					
	0	09/15	JMC	TOC	Initial Issue	SL					
	No.	Date	Ch'k	Ch'd	Description	App'd					

P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE
REV	BY	DD/MM/YY	DESCRIPTION

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

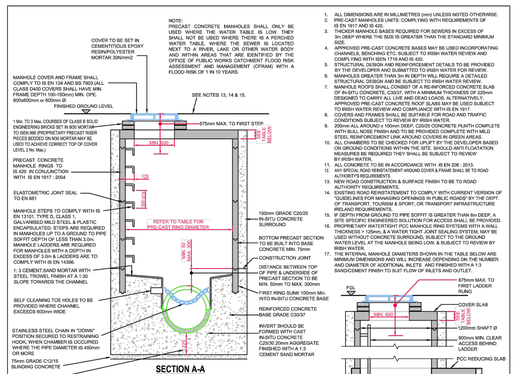
Stage:
Planning

Drawing title:
Drainage Construction Standard Details Sheet 1 of 3

Scale: As Shown
Size: A1
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

Gilligan
CONSULTING CIVIL & STRUCTURAL ENGINEERS
23 BEDFORD STREET, BELFAST, BT27EJ
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No.: 24561-GNI-XX-ZZ-DR-C-0008
Revision: P.02



MINIMUM MANHOLE DIAMETERS			
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)	MIN. PRECAST ROOF SLAB EFFECTIVE THICKNESS (mm)	MIN. IN-SITU ROOF SLAB THICKNESS (mm)
LESS THAN 375	1200	160	225
375 TO 450	1350	160	225
500 TO 750 *	1500	170	225

ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750 *	1000
GREATER THAN 750 *	1250

* SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS. MANHOLE SIZE OF THESE CHAMBERS MAY BE REQUIRED DUE TO MULTIPLE PIPES WITHIN MANHOLE.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN : IRISH WATER

No	Date	Drn	Chk	Description	Apd
3	07/10/RH	TOC	Notes Updated		MD
2	11/11/	MCTOC	Added rocker pipe table, deep manhole detail, added & updated notes		MD
1	09/16/	MCTOC	Added steps & revised access cips & cover notes		MD
0	09/15/	MCTOC	Initial Issue		SL

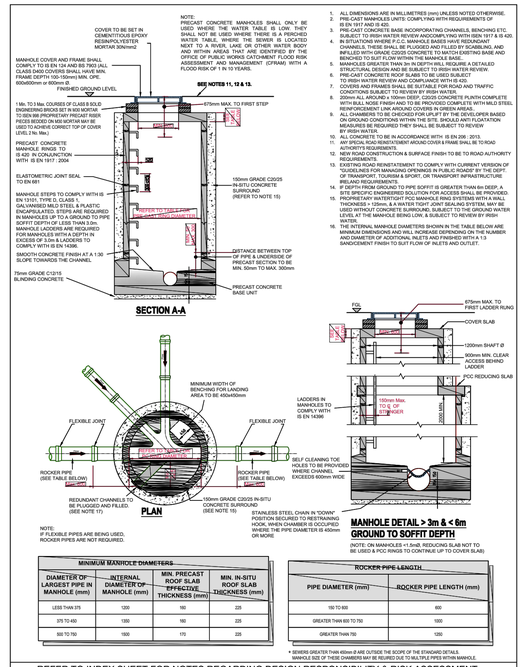
STANDARD DETAILS - WASTEWATER

SCALE: NOT TO SCALE | DATE: SEPT. 2015

TITLE: PRE-CAST CONCRETE MANHOLE WITH CAST IN-SITU BASE

DRAWING No.: STD-WW-10 | REV: 3

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND IS 420.
3. THICKER MANHOLE BASES REQUIRED FOR SEWERS IN EXCESS OF 3m DEEP WHERE THE SIZE IS GREATER THAN THE STANDARD MINIMUM DIAMETER.
4. APPROVED PRE-CAST CONCRETE BASES MAY BE USED INCORPORATING CHANNELS, BENCHING ETC. SUBJECT TO IRISH WATER REVIEW AND COMPLYING WITH ISEN 1719 AND IS 420.
5. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE.
6. MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW.
7. MANHOLE ROOFS SHALL CONSIST OF A RE-INFORCED CONCRETE SLAB OF IN-SITU CONCRETE, C20/37, WITH A MINIMUM THICKNESS OF 225mm (MANHOLES GREATER THAN 1200mm DIA.) OR PRE-CAST UNITS. APPROVED PRE-CAST CONCRETE ROOF SLABS MAY BE USED SUBJECT TO IRISH WATER REVIEW AND COMPLIANCE WITH IS EN 1917.
8. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
9. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK 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 REVIEW BY IRISH WATER.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
12. ANY SPOIL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITYS REQUIREMENTS.
13. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
14. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS* BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR, TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.
15. IF DEPTH FROM GROUND TO PIPE SOFFIT IS GREATER THAN 6m DEEP, A SITE SPECIFIC ENGINEERED SOLUTION FOR ACCESS SHALL BE PROVIDED.
16. PROPRIETARY WATERTIGHT PCC MANHOLE RING SYSTEMS WITH A WALL THICKNESS = 125mm, & A WATER TIGHT JOINT SEALING SYSTEM, MAY BE USED WITHOUT CONCRETE SURROUND, SUBJECT TO THE GROUND WATER LEVEL AT THE MANHOLE BEING LOW, & SUBJECT TO REVIEW BY IRISH WATER.
17. THE INTERNAL MANHOLE DIAMETERS SHOWN IN THE TABLE BELOW ARE MINIMUM DIMENSIONS AND WILL INCREASE DEPENDING ON THE NUMBER AND DIAMETER OF ADDITIONAL INLETS AND FINISHED WITH A 1:3 SAND/CEMENT FINISH TO SUIT FLOW OF INLETS AND OUTLET.



1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND IS 420.
3. PRE-CAST CONCRETE BASE INCORPORATING CHANNELS, BENCHING ETC. SUBJECT TO IRISH WATER REVIEW ANDCOMPLYING WITH ISEN 1917 & IS 420.
4. IN SITUATIONS WHERE P.C.C. MANHOLE BASES HAVE REDUNDANT CHANNELS, THESE SHALL BE PLUGGED AND FILLED BY SCABBLING, AND REMOVING THE TOP REINFORCEMENT, AND CONCRETING BASE AND BENCHED TO SUIT FLOW WITHIN THE MANHOLE BASE.
5. MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW.
6. PRE-CAST CONCRETE ROOF SLABS TO BE USED SUBJECT TO IRISH WATER REVIEW AND COMPLIANCE WITH IS EN 1917.
7. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
8. 200mm ALL AROUND, 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.
9. 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 REVIEW BY IRISH WATER.
10. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
11. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
12. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
13. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS* BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR, TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.
14. IF DEPTH FROM GROUND TO PIPE SOFFIT IS GREATER THAN 6m DEEP, A SITE SPECIFIC ENGINEERED SOLUTION FOR ACCESS SHALL BE PROVIDED.
15. PROPRIETARY WATERTIGHT PCC MANHOLE RING SYSTEMS WITH A WALL THICKNESS = 125mm, & A WATER TIGHT JOINT SEALING SYSTEM, MAY BE USED WITHOUT CONCRETE SURROUND, SUBJECT TO THE GROUND WATER LEVEL AT THE MANHOLE BEING LOW, & SUBJECT TO REVIEW BY IRISH WATER.
16. THE INTERNAL MANHOLE DIAMETERS SHOWN IN THE TABLE BELOW ARE MINIMUM DIMENSIONS AND WILL INCREASE DEPENDING ON THE NUMBER AND DIAMETER OF ADDITIONAL INLETS AND FINISHED WITH A 1:3 SAND/CEMENT FINISH TO SUIT FLOW OF INLETS AND OUTLET.

MINIMUM MANHOLE DIAMETERS			
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)	MIN. PRECAST ROOF SLAB EFFECTIVE THICKNESS (mm)	MIN. IN-SITU ROOF SLAB THICKNESS (mm)
LESS THAN 375	1200	160	225
375 TO 450	1350	160	225
500 TO 750 *	1500	170	225

ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750	1000
GREATER THAN 750	1250

* SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS. MANHOLE SIZE OF THESE CHAMBERS MAY BE REQUIRED DUE TO MULTIPLE PIPES WITHIN MANHOLE.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN : IRISH WATER

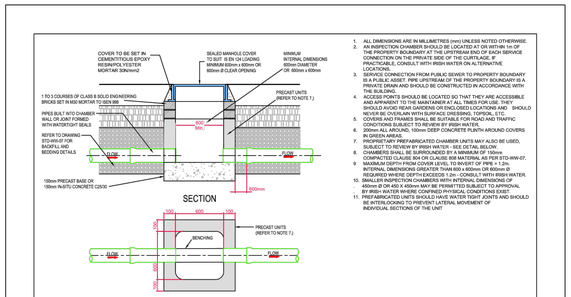
No	Date	Drn	Chk	Description	Apd
0	07/25/RH	TOC	Initial Issue		MD

STANDARD DETAILS - WASTEWATER

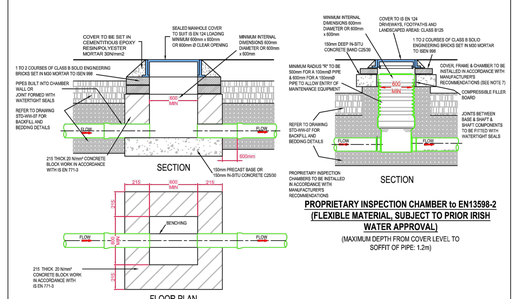
SCALE: NOT TO SCALE | DATE: SEPT. 2015

TITLE: PRE-CAST CONCRETE MANHOLE WITH PRECAST BASE.

DRAWING No.: STD-WW-10A | REV: 0



1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AN INSPECTION CHAMBER SHOULD BE LOCATED AT OR WITHIN 1m OF THE PROPERTY BOUNDARY AT THE UPSTREAM END OF EACH SERVICE PIPE WHERE POSSIBLE ON THE PRIVATE SIDE OF THE CURTILAGE, PRACTICABLE, CONSULT WITH IRISH WATER ON ALTERNATIVE LOCATIONS.
3. SERVICE CONNECTION FROM PUBLIC SEWER TO PROPERTY BOUNDARY IS A PUBLIC ASSET. PIPE UPSTREAM OF THE PROPERTY BOUNDARY IS A PRIVATE DRAIN AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE BUILDING.
4. ACCESS POINTS SHOULD BE LOCATED SO THAT THEY ARE ACCESSIBLE AND APPARENT TO THE MAINTAINER AT ALL TIMES FOR USE. THEY SHOULD AVOID REAR GARDENS OR ENCLOSED LOCATIONS AND SHOULD NOT BE LOCATED IN DRIVEWAYS, FOOTPATHS OR CAR PARKS.
5. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
6. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
7. PRECAST FIBERGLASS/CONCRETE CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER - SEE DETAIL WS1.04K.
8. CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 804 OR CLAUSE 808 MATERIAL AS PER STD-WW-07.
9. MAXIMUM DEPTH FROM COVER LEVEL TO INVERT OF PIPE = 1.2m. CONSULT WITH IRISH WATER IF DEPTH EXCEEDS 1.2m. ADDITIONAL REQUIRED WHERE DEPTH EXCEEDS 1.2m - CONSULT WITH IRISH WATER.
10. SMALLER INSPECTION CHAMBERS WITH INTERNAL DIMENSIONS OF 450mm Ø OR 450 X 450mm MAY BE PERMITTED SUBJECT TO APPROVAL BY IRISH WATER WHERE CONFINED PHYSICAL CONDITIONS EXIST.
11. THE USE OF DROP PIPES SHALL BE AVOIDED WITH TIGHT FITTE AND SHOULD BE INTERLOCKING TO PREVENT LATERAL MOVEMENT OF INDIVIDUAL SECTIONS OF THE UNIT



REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN : IRISH WATER

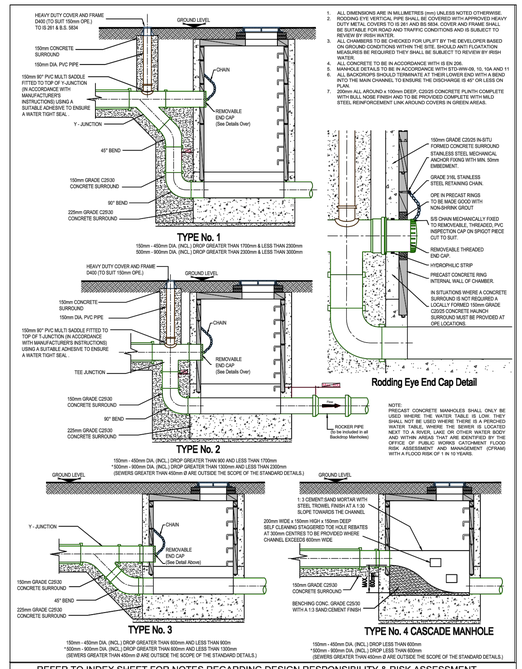
No	Date	Drn	Chk	Description	Apd
3	07/10/RH	TOC	Added Flexible Material LC Detail, Updated Notes		MD
2	11/11/	MCTOC	Updated notes		MD
1	09/16/	MCTOC	Added CI. 809 to note 8		MD
0	09/15/	MCTOC	Initial Issue		SL

STANDARD DETAILS - WASTEWATER

SCALE: NOT TO SCALE | DATE: SEPT. 2015

TITLE: PRIVATE SIDE INSPECTION CHAMBER

DRAWING No.: STD-WW-13 | REV: 3



REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN : IRISH WATER

No	Date	Drn	Chk	Description	Apd
2	07/25/RH	TOC	Cascade manhole Type 4 added, as was duplicate, other updated, file updated		MD
2	10/25/	MCTOC	Updated notes		MD
1	09/16/	MCTOC	Added steps		MD
0	09/15/	MCTOC	Initial Issue		SL

STANDARD DETAILS - WASTEWATER

SCALE: NOT TO SCALE | DATE: SEPT. 2015

TITLE: BACKDROP AND CASCADE MANHOLES

DRAWING No.: STD-WW-12 | REV: 3

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

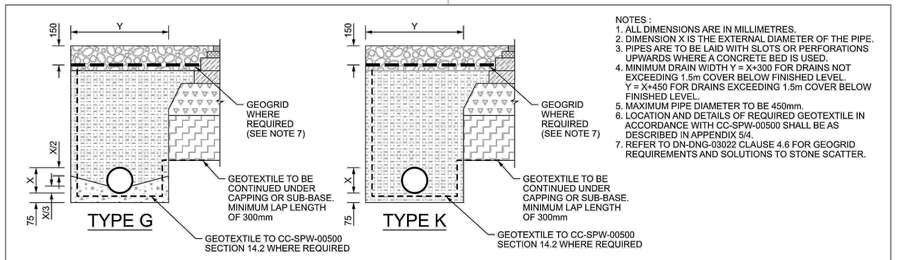
Stage:
Planning

Drawing title:
Drainage Construction Standard Details Sheet 2 of 3

Scale: As Shown
Size: A1
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

Gilligan
CONSULTING CIVIL & STRUCTURAL ENGINEERS
23 BEDFORD STREET, BELFAST, BT27EJ
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

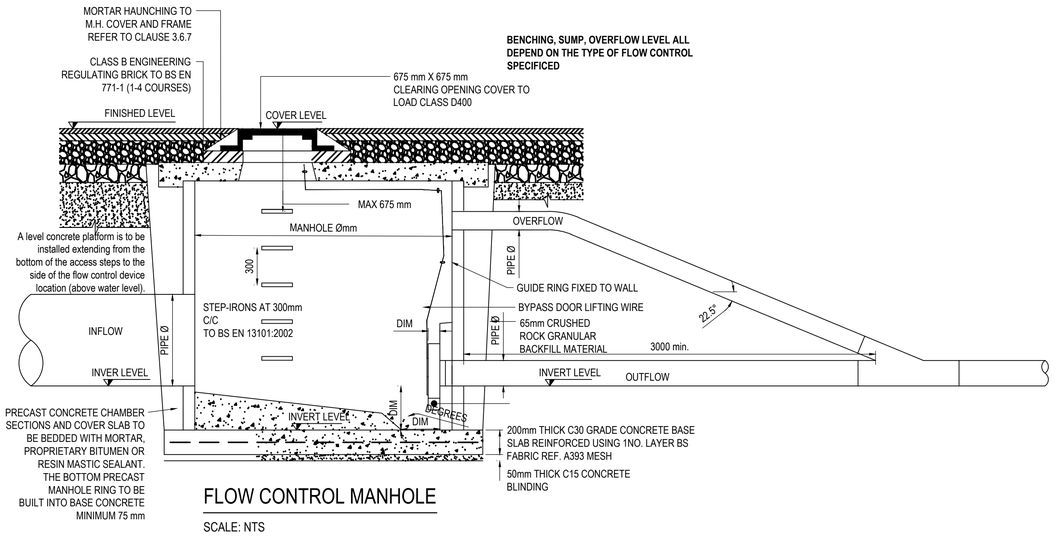
Drawing No: 24561-GNI-XX-ZZ-DR-C-0009
Revision: P.02



NOTES :
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. DIMENSION X IS THE EXTERNAL DIAMETER OF THE PIPE.
3. PIPES ARE TO BE LAID WITH SLOTS OR PERFORATIONS UPWARDS WHERE A CONCRETE BED IS USED.
4. MINIMUM DRAIN WIDTH Y = X+300 FOR DRAINS NOT EXCEEDING 1.5m COVER BELOW FINISHED LEVEL. Y = X+450 FOR DRAINS EXCEEDING 1.5m COVER BELOW FINISHED LEVEL.
5. MAXIMUM PIPE DIAMETER TO BE 450mm.
6. LOCATION AND DETAILS OF REQUIRED GEOTEXTILE IN ACCORDANCE WITH CC-SPW-00500 SHALL BE AS DESCRIBED IN APPENDIX 5/4.
7. REFER TO DN-DNG-03022 CLAUSE 4.6 FOR GEOGRID REQUIREMENTS AND SOLUTIONS TO STONE SCATTER.

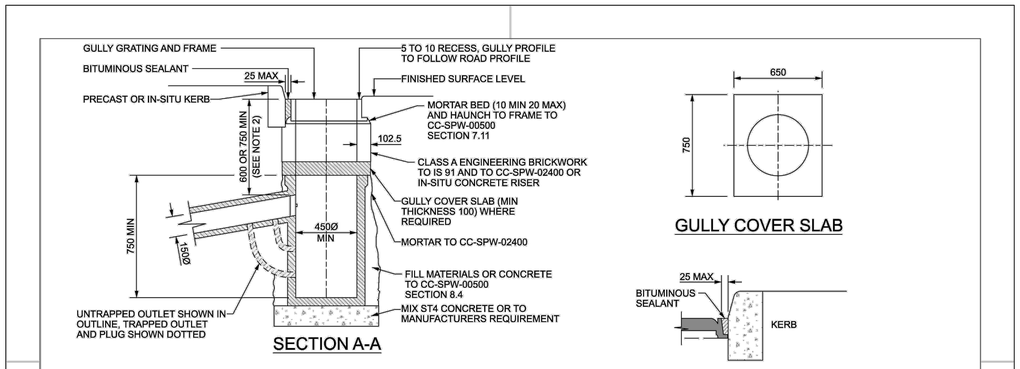
NOT TO SCALE

ACTIVITY	PUBLICATION TITLE			
CC Construction & Commissioning	DRAINAGE FILTER DRAINS TRENCH AND BEDDING DETAILS			
STREAM	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER (ACTIVITY / STREAM / DRAWING NUMBER)
STANDARD CONSTRUCTION DETAILS (SCD)	RCD/500/20	STANDARDS	SEPTEMBER 2024	CC / SCD / 00520



FLOW CONTROL MANHOLE

SCALE: NTS

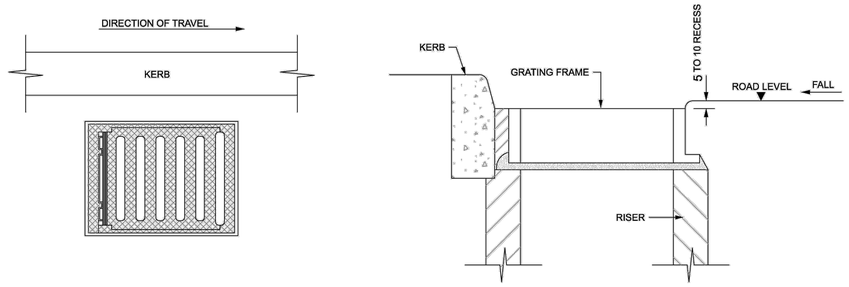


NOTES :
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. THE MINIMUM DEPTH FROM THE TOP OF THE GRATING TO THE TOP OF THE GULLY OUTLET IS TO BE 750mm WHEN THE CONNECTING PIPE IS UNDER A CARRIAGEWAY, HARD SHOULDER OR HARD STRIP AND 600mm ELSEWHERE.
3. PRECAST CONCRETE GULLIES AND COVER SLABS SHALL BE TO IS EN 1917 OR BS 5911-6.
4. FOR DETAILS OF TYPICAL GULLY GRATING SEE CC-SCD-00512.
5. WHERE A GULLY HAS A TRAP THE STOPPERS SHALL COMPLY WITH THE REQUIREMENTS OF BS 5911-4 AND IS EN 1917.
6. FOR DETAILS OF GULLY GRATINGS REFER TO APPENDIX 5/1.
7. SEE CC-SCD-00511 FOR IN-SITU CONCRETE AND BLOCKWORK GULLIES.

NOT TO SCALE

ACTIVITY	PUBLICATION TITLE			
CC Construction & Commissioning	DRAINAGE PRECAST CONCRETE GULLY			
STREAM	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER (ACTIVITY / STREAM / DRAWING NUMBER)
STANDARD CONSTRUCTION DETAILS (SCD)	RCD/500/10	STANDARDS	SEPTEMBER 2024	CC / SCD / 00510

NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. GULLY GRATING TO COMPLY WITH IS EN 124.
3. GULLY GRATING TO BE PROVIDED WITH A LOCKING DEVICE TO CC-SPW-00500 SECTION 8.3.



INDICATIVE GULLY GRATING DETAIL

GULLY PROFILE

NOT TO SCALE

ACTIVITY	PUBLICATION TITLE			
CC Construction & Commissioning	DRAINAGE GULLY GRATING			
STREAM	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER (ACTIVITY / STREAM / DRAWING NUMBER)
STANDARD CONSTRUCTION DETAILS (SCD)	RCD/500/12	STANDARDS	SEPTEMBER 2024	CC / SCD / 00512

REV	BY	DD/MM/YY	DESCRIPTION
P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

Stage:
Planning

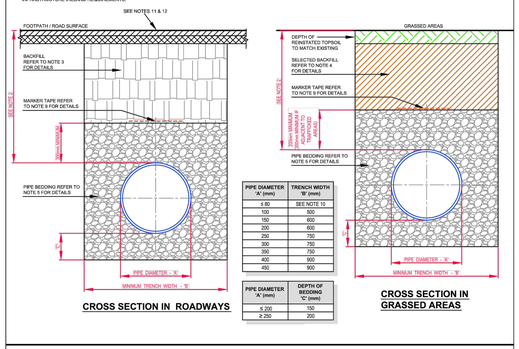
Drawing title:
Drainage Construction Standard Details Sheet 3 of 3

Scale: As Shown
Size: A1
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

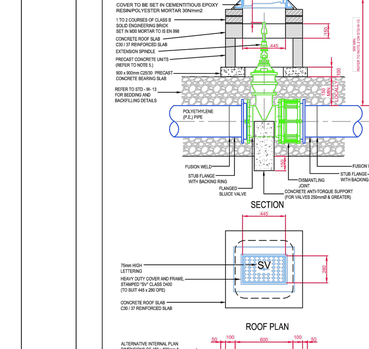
Gilligan
CONSULTING CIVIL & STRUCTURAL ENGINEERS
23 BEDFORD STREET, BELFAST, BT27EJ
TELEPHONE: 028 9023 2841 FACSIMILE: 028 9024 7104

Drawing No: 24561-GNI-XX-ZZ-DR-C-0010
Revision: P.02

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. THE MINIMUM DEPTH OF COVER FROM THE FINISHED GROUND LEVEL TO THE EXTERNAL CROWN OF THE PIPE SHALL BE 900mm WHERE THE PIPE IS TO BE LOCATED IN HOUSING ESTATE ROADS, GREATER DEPTHS OF COVER AND/OR PIPE STRENGTH AND/OR A HIGHER CLASS OF BEDDING MATERIAL MAY BE REQUIRED WHERE HIGH TRAFFIC LOADING IS ANTICIPATED. THE DESIRABLE COVER FOR A WATERMAIN SHOULD BE 1200mm, WHERE PRACTICABLE & SHOULD NOT EXCEED 3.0m.
3. WHERE THE PIPE IS TO BE LOCATED UNDER A ROAD FOR WHICH THE LOCAL AUTHORITY SPECIFICATION FOR ROAD WORKS IS TO BE USED AS BACKFILL MATERIAL WHERE THE WATER MAIN IS LOCATED IN ROADS, FOOTPATHS OR WHEN THE NEAREST PART OF THE TRENCH IS WITHIN 1m OF THE PAVED EDGE OF THE ROADWAY, CLAUSE 804 / 808 IS TO BE COMPACTED AS PER CLAUSE 802 OF THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. CLAUSE 808 IS TO BE USED WITHIN 500mm OF CEMENT BOUND MATERIALS, CONCRETE PAVEMENTS, CONCRETE STRUCTURES OR CONCRETE PRODUCTS. OTHERWISE CLAUSE 804 MAY BE USED. ALTERNATIVE BACKFILL MATERIAL TO THAT DESCRIBED ABOVE CLAUSE 804 OR CLAUSE 808 OF THE PIPE TRENCH WILL ONLY BE ALLOWED BY IRISH WATER WHERE THE ROADS AUTHORITY IN WHOSE FUNCTIONAL AREA THE DEVELOPMENT IS LOCATED, PROVIDES **WRITTEN APPROVAL** TO THE DEVELOPER TO THE USE SUCH ALTERNATIVE MATERIAL.
4. PIPE BEDDING SHALL COMPLY WITH IW-S 08-02 AND IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm (6.3[A]) GRADED AGGREGATE OR 10mm (6.3[A]) SINGLE SIZED AGGREGATE TO IS EN 13242.
5. PIPE BEDDING SHALL COMPLY WITH IW-S 08-02 AND IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm (6.3[A]) GRADED AGGREGATE OR 10mm (6.3[A]) SINGLE SIZED AGGREGATE TO IS EN 13242.
6. IN SOFT GROUND CONDITIONS (CBR = 5) THE MATERIAL SHOULD BE EXCAVATED OUT AND DISPOSED OF IN ACCORDANCE WITH THE WASTE MANAGEMENT ACT AND CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS SHALL REPLACE THE EXCAVATED MATERIAL, WRAPPED IN GEO-TEXTILE WRAPPING. ALTERNATIVELY, SPECIAL PIPE SUPPORT MEASURES, PILING ETC. MAY BE REQUIRED WHERE THE DEPTH OF SOFT MATERIAL IS EXCESSIVE, SUCH ARRANGEMENTS SHALL BE SUBJECT TO ASSESSMENT BY IRISH WATER BEFORE ADVANCING WITH THE WORKS.
7. PIPES SHALL NOT BE SUPPORTED ON STONES OR ROCKS, OR ANY HARD OBJECT AT ANY POINT ALONG THE TRENCH. ROCK SHALL BE EXCAVATED TO A DEPTH OF 150mm BELOW THE ACTUAL DEPTH OF THE TRENCH WITH THE VOID FILLED WITH CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
8. TRENCH WIDTHS SHALL BE ACHIEVABLE, CONCRETE GRADE C21/3 SHALL BE USED AS BACKFILL MATERIAL.
9. MARKER TAPE TO BE 400mm WIDE BLUE POLYETHYLENE MATERIAL IN ACCORDANCE WITH EN 12100, PLASTIC PIPES SHALL HAVE WARNING TAPE INCORPORATED A REINFORCED BAND BRACING WIRE. SERVICE PIPES SHALL HAVE 200mm WIDE MESH TAPE. MARKER TAPE TO BE LAID AT TOP OF PIPE BEDDING LAYER.
10. TRENCH WIDTHS FOR PIPE SIZES ≤300mm MAY BE ~600mm, SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.
11. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
12. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.



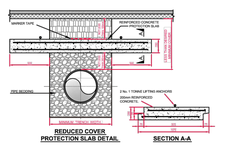
CROSS SECTION IN ROADWAYS



CROSS SECTION IN GRASSED AREAS

PIPE DIAMETER 'A' (mm)	TRENCH WIDTH 'B' (mm)
≤ 80	SEE NOTE 10
100	500
150	600
200	600
250	750
300	750
350	750
400	900
450	900

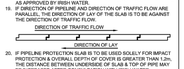
PIPE DIAMETER 'A' (mm)	DEPTH OF BEDDING 'C' (mm)
≤ 200	150
≥ 250	200



REDUCED COVER PROTECTION SLAB DETAIL

SECTION A-A

13. FOR ANY SLABBING WORKS TO BE CARRIED OUT WITHIN THE CARRIAGEWAY OF A ROAD, A METHOD STATEMENT IS TO BE SUBMITTED FOR APPROVAL BY IRISH WATER.
14. MARKER TAPE TO BE PLACED ABOVE THE PROTECTION SLAB ALONG THE DIRECTION OF THE PIPELINE
15. CONCRETE TO BE GRADE C30/37.
16. SLABS TO BE REINFORCED WITH A25 REINFORCEMENT =40mm
17. SLABS TO BE DESIGNED FOR LOW LOADS + HGV LOAD IN ACCORDANCE WITH BS5400-2. DESIGN TO BE SUBMITTED TO IRISH WATER FOR ASSESSMENT PRIOR TO INSTALLATION
18. THE SOIL ON WHICH THE SLAB RESTS MUST HAVE A CBR OF 4% OR GREATER. WHERE THE CBR IS LESS THAN 4% THE MATERIAL SHALL BE REMOVED TO THE DEPTH WITH IMPORTED GRANULAR MATERIAL AS APPROVED BY IRISH WATER
19. IF DIRECTION OF PIPELINE AND DIRECTION OF TRAFFIC FLOW ARE PARALLEL, THE DIRECTION OF LAY OF THE SLAB IS TO BE AGAINST THE DIRECTION OF TRAFFIC FLOW.



20. IF PIPELINE PROTECTION SLAB IS TO BE USED SOLELY FOR IMPACT PROTECTION & OVERALL DEPTH OF COVER IS GREATER THAN 1.2m, THE DISTANCE BETWEEN UNDERSIDE OF SLAB & TOP OF PIPE MAY BE INCREASED AFTER CONSULTATION WITH IRISH WATER.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN - IRISH WATER

				Minor edit to note 9 at Threadbo also detail added. Fire arrested.	MCD
2	07/20/JRH	TOC			
1	11/17/JMC	TOC		Added & updated notes	MCD
0	09/15/JMC	TOC		Initial Issue	SL
No.	Date	Drn	Chk	Description	App.

STANDARD DETAILS - WATER

TITLE: TRENCH BACKFILL / BEDDING & REDUCED COVER PROTECTION SLAB DETAIL

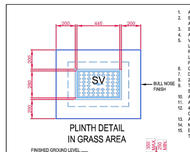
SCALE: NOT TO SCALE

DRAWING No.: STD-W- 13

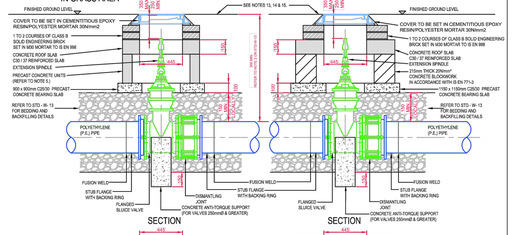
DATE: SEPT. 2015

REV: 2

1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. BLUCE VALVE CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 201 OR BS 934. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. BLUCE VALVES SHALL BE RESILIENT SEATED AND SHALL COMPLY WITH BS 5163, BS 5163, BS EN 1074-1, BS 1074-1, OR EQUIVALENT & U SPECIFICATIONS.
4. ALL BLUCE VALVES SHALL BE ANTICLOCKWISE CLOSING.
5. VALVE CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK, ALTERNATIVELY PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C25/30. WITH A MINIMUM THICKNESS OF 150mm. PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH IS EN 1917 & IS 420. PCC CHAMBER RISER UNITS SHOULD BE INTERLOCKING WHEN STACKED TO PREVENT LATERAL MOVEMENT OF INDIVIDUAL UNITS.
6. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER STD-W-13.
7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
8. 200mm ALL AROUND. 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER STANDARD DRAWING STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
10. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
12. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
13. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
14. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.
15. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.



PLINTH DETAIL IN GRASS AREA



REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN - IRISH WATER

				Updated M48 Torque Support Note & added plan dimensions note	MCD
3	07/20/JRH	TOC			
2	11/17/JMC	TOC		Revised & Added Notes	MCD
1	09/16/JMC	TOC		Revised notes 2,3 & 6	MCD
0	09/15/JMC	TOC		Initial Issue	SL
No.	Date	Drn	Chk	Description	App.

STANDARD DETAILS - WATER

TITLE: SLUICE VALVE FOR POLYETHYLENE (P.E.) PIPE (< 350mm DIA.) (Sheet 2 of 2)

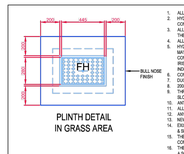
SCALE: NOT TO SCALE

DRAWING No.: STD-W- 15

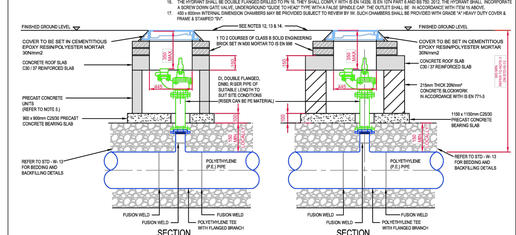
DATE: SEPT. 2015

REV: 3

1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. HYDRANT CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO BI 201 OR BS 934. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. ALL HYDRANTS, SURFACE BOX FRAMES & COVERS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF IS EN 14339, IS EN 14384 & BS 750. FIRE HYDRANTS SHALL BE TYPE 2. THE HYDRANT INLET SHALL BE 80mm DIAMETER WITH PN16.
4. ALL BLUCE VALVES SHALL BE ANTICLOCKWISE CLOSING.
5. HYDRANT CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK, ALTERNATIVELY PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C25/30. WITH A MINIMUM THICKNESS OF 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH IS EN 1917 & IS 420. PCC CHAMBER RISER UNITS SHOULD BE INTERLOCKING WHEN STACKED TO PREVENT LATERAL MOVEMENT OF INDIVIDUAL UNITS.
6. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER STD-W-13.
7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
8. 200mm ALL AROUND. 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER STANDARD DRAWING STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
10. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
12. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
13. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
14. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.



PLINTH DETAIL IN GRASS AREA



REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN - IRISH WATER

				Added notes re hydrant outlet & plan dimensions	MCD
3	07/20/JRH	TOC			
2	11/17/JMC	TOC		Revised & added notes	MCD
1	09/16/JMC	TOC		Revised notes 2,3 & 6	MCD
0	09/15/JMC	TOC		Initial Issue	SL
No.	Date	Drn	Chk	Description	App.

STANDARD DETAILS - WATER

TITLE: ON - LINE HYDRANT FOR POLYETHYLENE (P.E.) PIPE (Sheet 3 of 4)

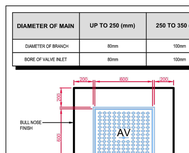
SCALE: NOT TO SCALE

DRAWING No.: STD-W- 18

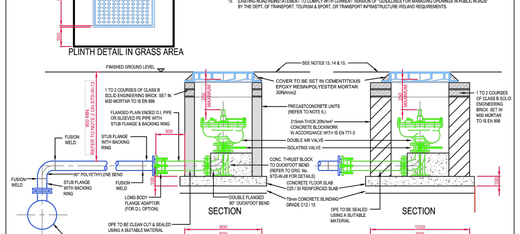
DATE: SEPT. 2015

REV: 3

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. ALL DRAWINGS SHALL BE CERTIFIED BY A CHARTERED ENGINEER AND SUBMITTED TO THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C25/30. WITH A MINIMUM THICKNESS OF 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH IS EN 1917 & IS 420.
3. CONCRETE FOR FLOW METER CHAMBER TO COMPLY WITH THE REQUIREMENTS OF BS EN 1917 AND IS 420, COMPLETE WITH 160mm CONCRETE SURROUND MAY BE USED AS AN ACCEPTABLE ALTERNATIVE.
4. PRECAST UNITS COMPLETED WITH RUBBER SEALING GASKET BETWEEN UNITS, COMPLYING WITH THE REQUIREMENTS OF IS EN 1917 AND IS 420, COMPLETE WITH 160mm CONCRETE SURROUND MAY BE USED AS AN ACCEPTABLE ALTERNATIVE.
5. CONCRETE SURROUND TO BE GRADE C25/25 IN ACCORDANCE WITH IS EN 206.
6. ALL CHAMBER COVERS TO BE CLASS D400 HEAVY DUTY METAL COVERS TO IS EN 124 RATING D400. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
7. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
8. 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 REVIEW BY IRISH WATER.
9. THE FLOW METER CHAMBER IS TO BE DOWNSIZED TO ACCOMMODATE THE REDUCED DIAMETER OF THE FLOW METER. STRAIGHT PIPE LENGTHS UPSTREAM AND DOWNSTREAM OF THE METER TO BE PROVIDED TO THE METER SHALL BE CAPABLE OF ACCURATE NIGHT FLOW MEASUREMENT.
10. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
11. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
12. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
13. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.
14. THE HYDRANT SHALL BE DOUBLE FLANGED DRILLED TO PN 16, TAPER WALL CONN.T WITH IS EN 14339, IS EN 1074-6 AND BS 750. THE HYDRANT SHALL INCORPORATE A 100mm DIA. SCOUR VALVE, SURFACE BOX AND "CLOSED TO THE PUBLIC" SIGN. THE SCOUR VALVE SHALL BE IN ACCORDANCE WITH ITEM 10 ABOVE.
15. 450 x 450mm INTERNAL DIMENSION CHAMBERS MAY BE PROVIDED SUBJECT TO REVIEW BY IW. SUCH CHAMBERS SHALL BE PROVIDED WITH GRADE "A" HEAVY DUTY COVER & FRAME & STAMPED "SV".



PLINTH DETAIL IN GRASS AREA



REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN - IRISH WATER

				Updated brickwork bedding mortar spec.notes & added	MCD
4	07/20/JRH	TOC			
3	11/17/JMC	TOC		Added & updated notes	MCD
2	09/16/JMC	TOC		Revised notes 2,3 & 6	MCD
1	04/16/JMC	TOC		Added thrust blocks	MCD
0	09/15/JMC	TOC		Initial Issue	SL
No.	Date	Drn	Chk	Description	App.

STANDARD DETAILS - WATER

TITLE: ON - LINE AIR VALVE FOR POLYETHYLENE (P.E.) PIPE (Sheet 3 of 4)

SCALE: NOT TO SCALE

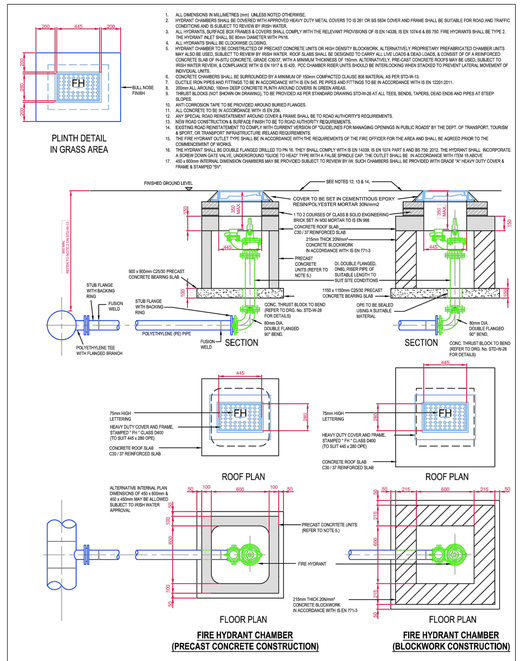
DRAWING No.: STD-W- 22

DATE: SEPT. 2015

REV: 3

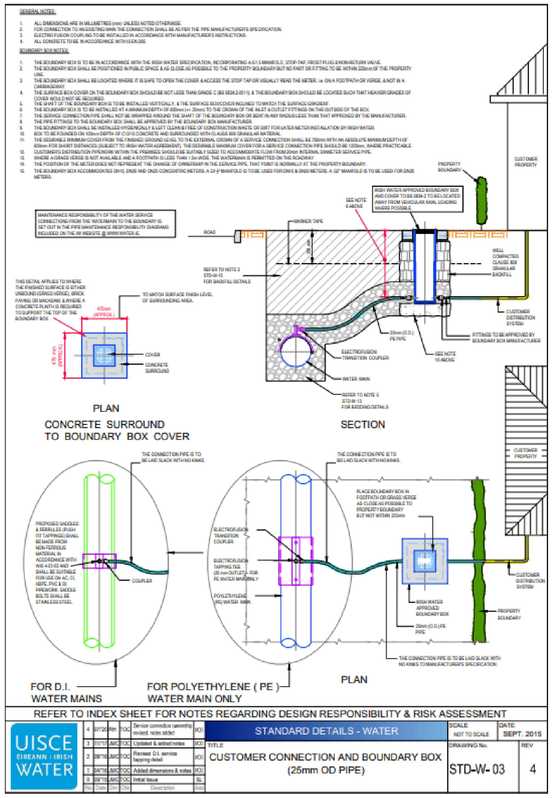
DIAMETER OF MAIN	UP TO 250 (mm)	250 TO 350 (mm)
DIAMETER OF BRANCH	80mm	100mm
BORE OF VALVE INLET	80mm	100mm

1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AIR VALVE CHAMBERS TO BE OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK, ALTERNATIVE PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER.
3. PRECAST CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER STD-W-13.
4. DUCTILE IRON PIPES / FITTINGS AND PE PIPES / FITTINGS TO BE IN ACCORDANCE WITH IS EN 545 AND IS EN 12201:2011.
5. 200mm ALL AROUND. 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
6. THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER STANDARD DRAWING STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
7. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
8. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
9. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD



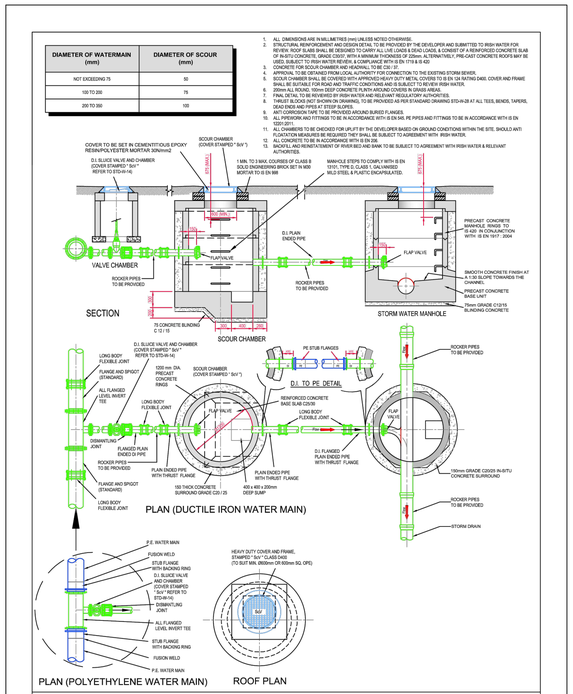
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN : IRISH WATER	4	07/29/RH	TOC	Added notes re. hyd. outlet & pipe dims. & revised branch pipe to PE	WCD	STANDARD DETAILS - WATER	SCALE: NOT TO SCALE; DATE: SEPT. 2015
	3	11/17/	MCTOC	Revised & added notes, & revised pipework	WCD	TITLE: OFF - LINE HYDRANT FOR POLYETHYLENE (P.E.) PIPE (Sheet 4 of 4)	DRAWING No.: STD-W- 19; REV: 4
	2	09/16/	MCTOC	Revised notes 2, 3 & 6	WCD		
	1	04/16/	MCTOC	Added thrust blocks	WCD		
	0	09/15/	MCTOC	Initial Issue	BL		
	No	Date	Drn	Chk	Description	App	



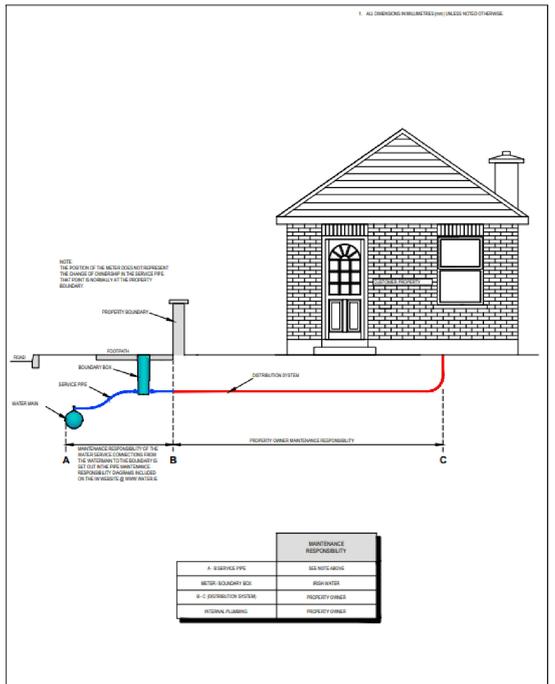
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN : IRISH WATER	4	07/29/RH	TOC	Service connection ownership revised, notes added	WCD	STANDARD DETAILS - WATER	SCALE: NOT TO SCALE; DATE: SEPT. 2015
	3	11/17/	MCTOC	Updated & added notes	WCD	TITLE: CUSTOMER CONNECTION AND BOUNDARY BOX (25mm OD PIPE)	DRAWING No.: STD-W- 03; REV: 4
	2	09/16/	MCTOC	Revised D.I. service tapping detail	WCD		
	1	04/16/	MCTOC	Added dimensions & notes	WCD		
	0	09/15/	MCTOC	Initial Issue	BL		
	No	Date	Drn	Chk	Description	App	



REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN : IRISH WATER	0	07/29/RH	TOC	Initial Issue	WCD	STANDARD DETAILS - WATER	SCALE: NOT TO SCALE; DATE: SEPT. 2019
	No	Date	Drn	Chk	Description	App	TITLE: SCOUR CHAMBER TO STORM SEWER ARRANGEMENTS; DRAWING No.: STD-W-30B; REV: 0



	MAINTENANCE RESPONSIBILITY
A - B SERVICE PIPE	SEE NOTE ABOVE
METER / BOUNDARY BOX	IRISH WATER
B - C DISTRIBUTION SYSTEM	PROPERTY OWNER
INTERNAL PLUMBING	PROPERTY OWNER

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE ÉIREANN : IRISH WATER	1	07/29/RH	TOC	Responsibility Changed	WCD	STANDARD DETAILS - WATER	SCALE: NOT TO SCALE; DATE: SEPT. 2015
	0	09/15/	MCTOC	Initial Issue	BL	TITLE: WATER SERVICE CONNECTION RESPONSIBILITY; DRAWING No.: STD-W- 01; REV: 1
	No	Date	Drn	Chk	Description	App	

P.02	CB	25/07/25	REVISED PLANNING ISSUE
P.01	CB	10/04/25	PLANNING ISSUE
REV	BY	DD/MM/YY	DESCRIPTION

Client:
Comhairle Chontae na Gaillimhe
Galway County Council

Project:
Farranamartin Housing Development, Tuam, Galway

Stage:
Planning

Drawing title:
Watermain Construction Standard Details Sheet 2 of 2

Scale: As Shown
Size: A1
Drawn by: CB
Checked: CT
Architect: Collins-Rolston
Date: 04/12/24

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Drawing No: 24561-GNI-XX-ZZ-DR-C-0012
Revision: P.02