

Preliminary Engineering Assessment Report

Proposed Part 8 Residential Development Site at Dunmurry
Road, Kildare, Co. Kildare

24/02/2017

Waterman Moylan Consulting Engineers Limited

Marine House, Clanwilliam Place, Dublin D02 FY24
www.waterman-moylan.ie

Preliminary Engineering Assessment Report

Project Number: 16-057r.001

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Client Name: Kildare County Council.

Document Reference: 16-057r.001

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Quality Assurance . Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

Issue	Date	Prepared by	Checked by	Approved by
No. 1	18/07/2016	A Nevin	I Worrell	I Worrell
No. 2	14/02/2017	I Worrell	I Worrell	I Worrell
No. 3	24/02/2017	I Worrell	I Worrell	I Worrell

Comments

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- 16-057-SK104 Vehicular Turning Path Plan

1. Introduction

1.1 Site Location

The proposed Part 8 residential development is located adjacent to the R401 Dunmurry Road in Kildare Town, Co. Kildare. It is bounded to the west by Dunmurry Rise residential development and to the east by Rathbride Demense residential development. The north of the site is bounded by greenfield and to the south by a distributor road. The exact site location is shown on Waterman Moylan Drawing No. 16-057-SK101 attached in Appendix A.

1.2 Site Description

The site area is approximately 0.97 hectares. The lands are presently not in use and slope from north to south. The site is accessed from Dunmurry Rise residential development. The subject site is zoned as ~~R~~ Existing Residential+in the Kildare Town Local Area Plan 2012-2018.

1.3 Background of Report and Summary

This report investigates the availability of existing engineering infrastructure that would be required to facilitate a medium density residential development on the subject site. It details the options available for the disposal of storm water, disposal of foul water, water supply and road access from the developed site.

2. Surface Water Drainage

2.1 General

There are existing 225mm diameter surface water pipes on to the subject site to cater for the proposed 34 No. residential units, these drains to the existing storm attenuation system.

The existing surface water network was constructed as part of the Dunmurry Rise residential development.

Surface Water from the subject site currently drains an existing attenuation system which consists of 2 No. 23m³ and 2 No. 36m³ tanks draining into the western inlet of an existing soakpit and 2 No. 36m³ tanks draining into the eastern inlet of an existing soakpit providing a total storm attenuation capacity of 190m³ for Dunmurry Rise located along the southern boundary of the site.

The existing soakpit comprises of a trench excavated to approximately 4.5m below ground level (mbgl) measuring 14m long and 4.8m wide. This is lined with a geotextile membrane and filled with 150mm diameter clean broken stone. The storm water enters the soakpit at the base through pipes at either end and then travels up through 8 No. connected perforated vertical 1200mm diameter pipes. The pipes have an overflow connection at approximately 1.2m below ground which allows them to drain back into the attenuation tanks when the water level in the pit rises to that level.

This existing attenuation system appears to be undersized and it is proposed that this be upgraded, to cater for the proposed and existing developments. This will consist of the provision of an additional soakaway area within the landscape within Dunmurry Rise. A full maintenance regime for the proposed attenuation system will be established to ensure the effective operation of this system. This could include measures such as:

- Inspection of all open grated manholes, soakaway inlet and outlet manholes, petrol interceptors, attenuation tanks and soakaways on a twice yearly basis

- Removal of all debris from all open grated manholes, soakaway inlet and outlet manholes, petrol interceptors, attenuation tanks on an annual basis (or more frequent if considered appropriate)
- The mowing and forking of all detention basin areas on a quarterly basis or as required to promote percolation
- The installation of water monitoring standpipes to aid water level monitoring if considered appropriate
- The maintenance of a record log of all maintenance and monitoring undertaken

Waterman Moylan Drawing No. 16-057-SK102 in Appendix A shows the existing surface water network for the subject site. The proposed additional soakaway and attenuation area is also indicated on this plan.

The proposed detention basin will provide c. 90 m³ of above ground at a depth of 500 mm during the critical 1 in 100 year design storm and will empty in a period of hours. All attenuation up to the 1 in 50 year storm will be wholly contained below ground within the attenuation tanks and soakaway system. This is fully compliant with the requirements set out in the Greater Dublin Strategic Drainage Study. Alternatively this 90 m³ of storage can be provided below ground through the expansion of the attenuation tank capacity

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3. Foul Water Drainage

3.1 General

There are existing 150mm diameter foul sewer pipes on to the subject site to cater for the proposed 34 No. residential units, these drains to the local foul sewer network. The existing foul sewer was constructed as part of the Dunmurry Rise residential development. This sewer is in the ownership of Kildare County Council.

The existing network caters for the 26 No. existing residential units and it is proposed to discharge an additional 34 No. residential units into this network.

Waterman Moylan Drawing No. 16-057-SK102 in Appendix A show the existing foul sewer network within the subject site. This network will be amended as required to cater for the proposed development.

4. Water Supply

4.1 Water Supply – General

There is an existing 100mm diameter watermain on to the subject site to cater for the proposed 34 No. residential units.

The existing watermain network was constructed as part of the Dunmurry Rise residential development.

5. Transport

5.1 Site Access

It is proposed to have access via the existing part of Dunmurry Rise residential development, which is accessed of the R401 Dunmurry Road. The internal road network will facilitate the required vehicular turning movements. Waterman Moylan Drawing No. 16-057-SK104 in Appendix A indicates the available turning movements.

Appendices

A. Drawings

16-057-SK101 Site Location

16-057-SK102 Existing Drainage and Watermain Layout

16-057-SK103 Proposed Drainage and Watermain Layout

16-057-SK104 Vehicular Turning Path Plan

REV.	DATE	AMENDMENT	DRN	APPD

STATUS **PART 8 APPLICATION
NOT FOR CONSTRUCTION**

Waterman Moylan
Engineering Consultants
MARINE HOUSE, CLANWILLIAM PLACE, DUBLIN D02 FY24.
Tel: (01) 664 8900 Fax: (01) 661 3618
Email: info@waterman-moylan.ie www.waterman-moylan.ie

CLIENT **KILDARE COUNTY COUNCIL**
ARCHITECT **DEATON LYSAGHT ARCHITECTS**

PROJECT **DUNMURRY RISE, BISHOPSLAND,
KILDARE TOWN,
CO. KILDARE.**

TITLE **SITE LOCATION PLAN**

DRAWN AN	DESIGNED AN	APPROVED IW	DATE JAN 2016
SCALE AS SHOWN	JOB NO. 16-057	DRG. NO. SK-101	REVISION

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SITE LOCATION PLAN
SCALE 1:10000

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PROJECT
**DUNMURRY RISE, BISHOPSLAND,
KILDARE TOWN,
CO. KILDARE.**

TITLE
EXISTING DRAINAGE & WATERMAIN LAYOUT

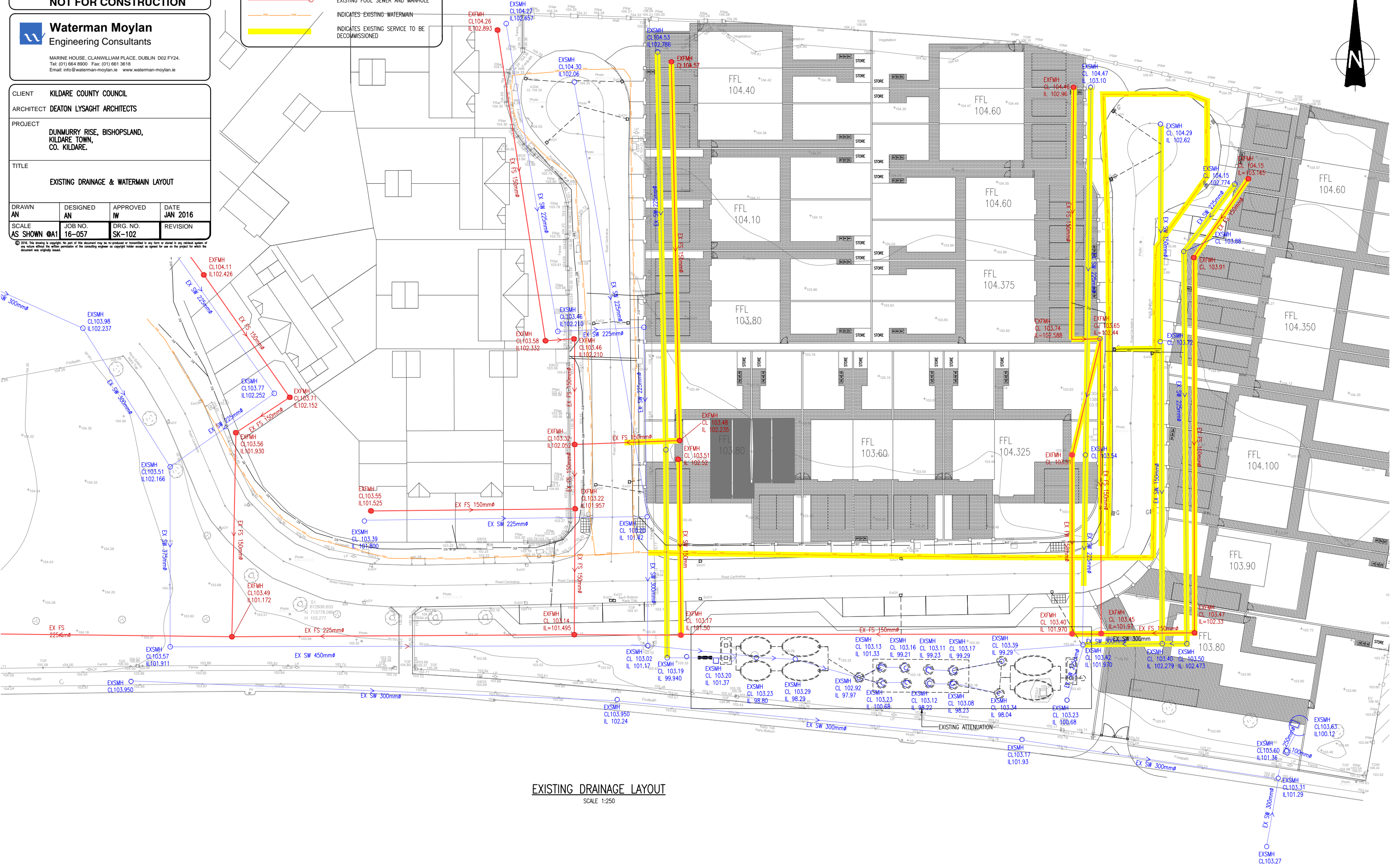
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SCALE AS SHOWN @A1	JOB NO. 16-057	DRG. NO. SK-102	REVISION

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LEGEND

- EXSMH (Blue circle with cross) EXISTING SURFACE WATER PIPE AND MANHOLE
- EXFMH (Red circle with cross) EXISTING FOUL SEWER AND MANHOLE
- Orange line INDICATES EXISTING WATERMAIN
- Yellow line INDICATES EXISTING SERVICE TO BE DECOMMISSIONED

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EXISTING DRAINAGE LAYOUT
SCALE 1:250

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Tel: (01) 664 8900 Fax: (01) 661 3618
Email: info@waterman-moylan.ie www.waterman-moylan.ie

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ARCHITECT **DEATON LYSAGHT ARCHITECTS**

PROJECT **DUNMURRY RISE, BISHOPSLAND, KILDARE TOWN, CO. KILDARE.**

TITLE **PROPOSED DRAINAGE & WATERMAIN LAYOUT**

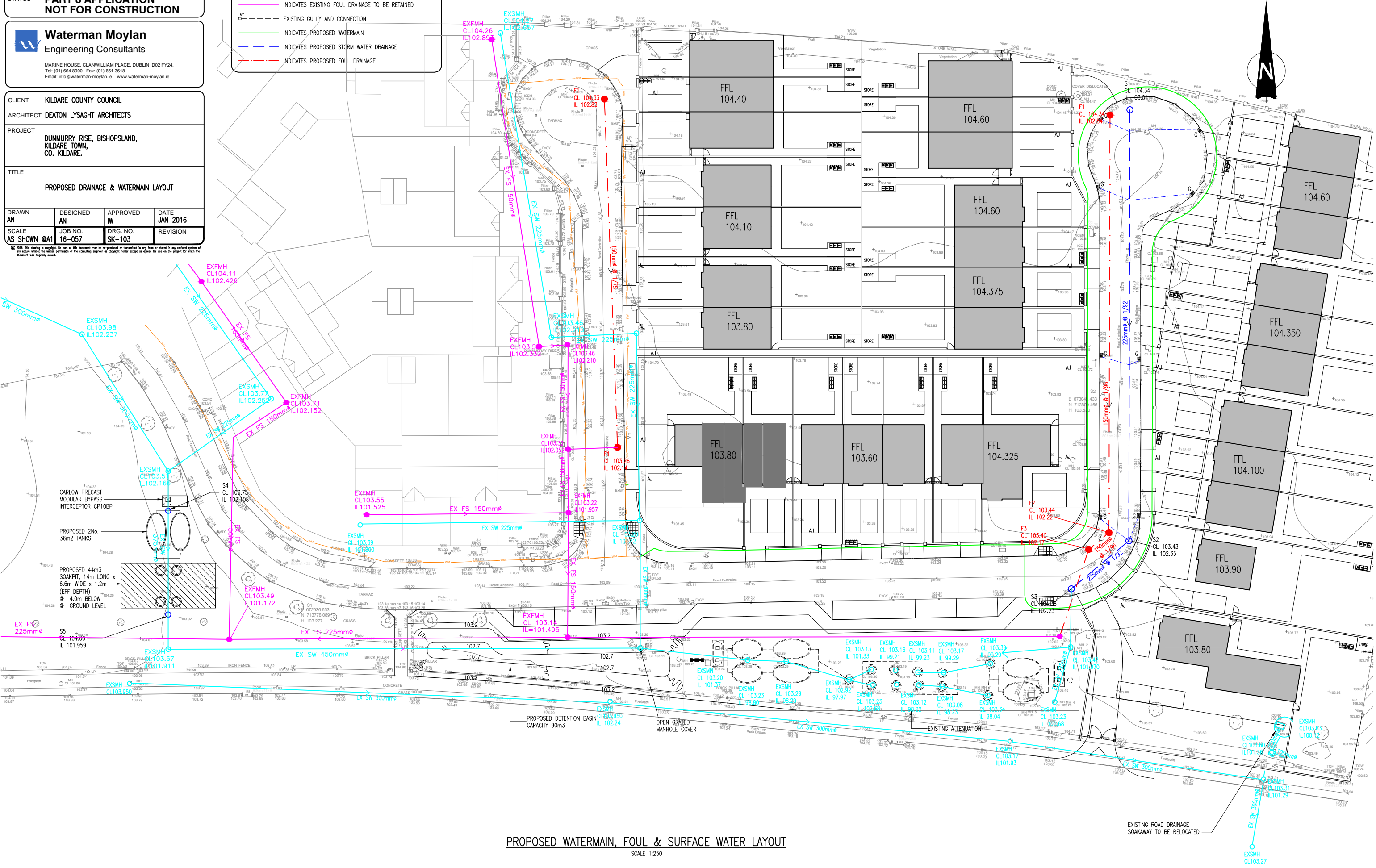
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SCALE AS SHOWN @A1	JOB NO. 16-057	DRG. NO. SK-103	REVISION

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LEGEND

- INDICATES EXISTING WATERMAIN TO BE RETAINED
- INDICATES EXISTING STORM WATER DRAINAGE TO BE RETAINED
- INDICATES EXISTING FOUL DRAINAGE TO BE RETAINED
- EXISTING GULLY AND CONNECTION
- INDICATES PROPOSED WATERMAIN
- INDICATES PROPOSED STORM WATER DRAINAGE
- INDICATES PROPOSED FOUL DRAINAGE.

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PROPOSED WATERMAIN, FOUL & SURFACE WATER LAYOUT
SCALE 1:250

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Email: info@waterman-moylan.ie www.waterman-moylan.ie

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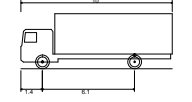
TITLE **VEHICULAR TURNING PATH PLAN**

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SCALE AS SHOWN @ A1	JOB NO. 16-057	DRG. NO. SK-104	REVISION

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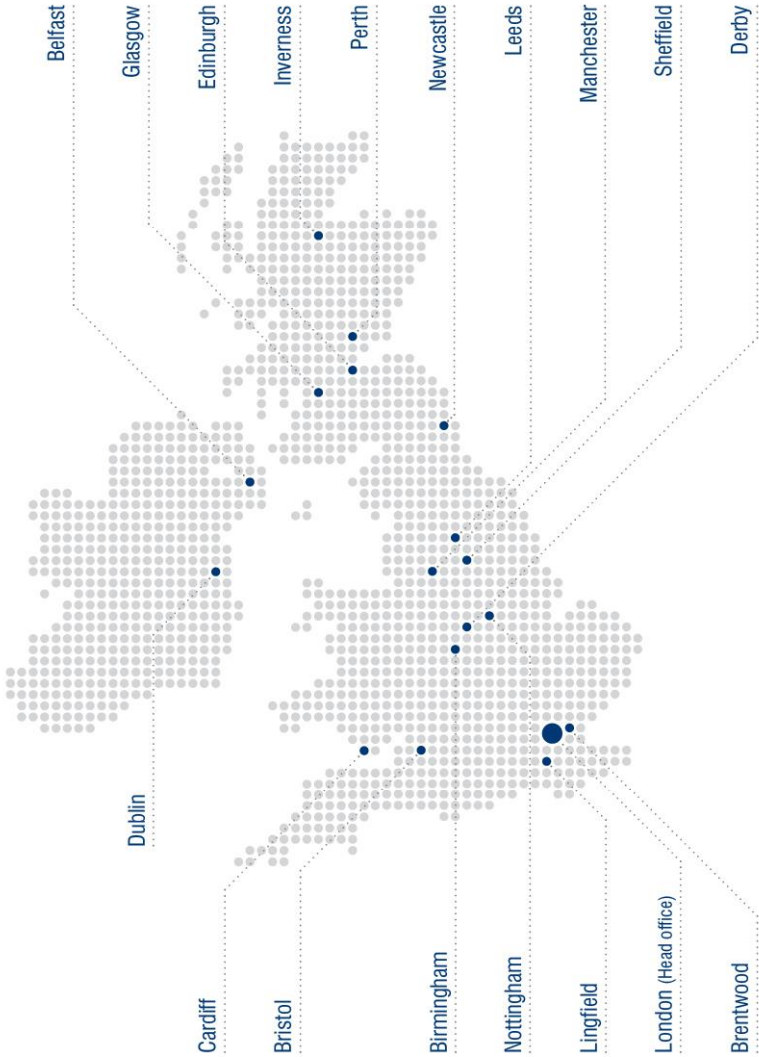


FTA Design HG Rigid Vehicle (1998)

Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock-to-lock time	3.00s
Curb to curb Turning Radius	11.000m

VEHICULAR TURNING PATH PLAN
SCALE 1:250

UK and Ireland Office Locations



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