



REPORT

Response to Kildare County Council
Pre-Application Consultation Meeting Comments
& Discussions Relating to Hospital Street

Magee Barracks, Hospital Street, Kildare Town

GARLAND
Concepts Realised

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Description of change	Originator	Rev	Approval	Date
Initial Release	BM	1st	CR	08/05/19

INTRODUCTION

This report has been prepared to address the items noted by and received from Kildare County Council in relation to Drainage for the Residential and Neighborhood Centre Development (Phase 1) on the Former Magee Barracks Site in Kildare Town, County Kildare. Garland met with KCC WSD Senior Executive Engineer, Mr David Hall, on 10 January 2019 in order to discuss his queries in detail.

This report also addresses efforts made by this Design Team to agree with Kildare County Council's Roads Department the extent of works required to Hospital Street as per the request of An Board Pleanála.

1. RESPONSE TO KCC DRAINAGE DEPARTMENT QUERIES

1.1. Irish Water (IW) Issues (Foul and Water Supply)

Item no.	Query Raised/ Note from Relevant Authority	Response
1.1	Confirmation of no known foul sewer network constraints downstream of proposed development.	We confirm based on review of public record drawings and the results of GPR surveys, that to the best of our knowledge there are no known foul sewer network constraints downstream of the proposed development.
1.2	In advance of submitting a full application to ABP, this development must be reviewed with IW by means of new PCE feedback and a Statement of Design Acceptance.	Garland has received confirmation of feasibility (reference no. 026936066) on 28 May 2019 as response to new PCE submitted. Garland has also received a Statement of Design Acceptance (reference no. Cust17398/CUSTO182467) for the proposed water and wastewater designs on 29 May 2019. Included within Appendix A.
1.3	LA WSD considers a hydraulic assessment of the available network capacity may be required	As noted in item no 1.3, Irish Water has issued Garland with confirmation of feasibility and a statement of design acceptance.
1.4	LA WSD not in favour of foul sewer discharge to the existing 600mm dia sewer traversing through Ruanbeg and proceeds under the former Chapmans Garage building to connect to the sewer main on Curragh Road.	The proposed development will be divided into 2 distinct drainage catchments, North and South. The northern catchment drainage strategy has been revised to discharge to the existing foul sewer network within Ruanbeg Crescent (previously Ruanbeg Drive). This network connects to the sewer main on Curragh Road, and completely negates the issue of discharging to the sewer main running underneath the former Chapman's Garage.

	IW GIS mapping indicates a 100mm dia uPVC and 4" CI mains traversing the north western corner of the site and connecting to the existing water storage tower for the Magee Barracks.	Site investigations and surveys has shown this service to be redundant and the water storage tower to be disconnected from this service.
1.5	The existence of a wayleave agreement for the existing sewer through Ruanbeg to which the proposed development may discharge should be addressed in the final WSDR with any planning application.	The existing sewer within Ruanbeg is an Irish Water asset. As mentioned in item 1.2, Irish Water has issued their approval of the network design in the form of the PCE feasibility confirmation and Statement of Design Acceptance.
1.6	LA WSD recommends all sewer diversions should be designed and provided with adequate capacity and wayleave.	The housing layout (in the vicinity of Coolmoney Square) has been revised to address the concern in relation to sufficient wayleave widths. The new layout also assists in ensuring the diversion angles are sufficient to promote flow and decrease risk of friction losses and restrictions. Garland confirms that the design proposal of replacing the existing 2 no foul mains (300mm dia and 375mm dia) with 1 no 600mm dia has sufficient capacity to convey the existing flows within these existing foul mains.
1.7	Diversion of schools rising main, necessary wayleaves, future maintenance of the rising main and gravity mains should be agreed with the school authorities.	Garland hereby confirms that this has been agreed with the relevant school authorities.
1.8	KCC WSD advises that the applicant consult with IW and LA WSD prior to finalising foul drainage and water supply strategy, Statement of Design Acceptance Submission to IW and full planning application submission to the planning board.	Garland has consulted with KCC WSD Senior executive Engineer, Mr David Hall, on 10 January 2019. The drainage strategies, details and concerns raised was discussed and agreed. The minutes of the meeting has been included in Appendix B.
1.9	The proposed foul drainage and water supply systems shall be designed in accordance with the relevant IW publications. LA WSD recommends that the proposed foul drainage make reasonable accommodation for any existing or future developments in the area.	IW Statement of Design Acceptance, issued on 29 May confirms water and wastewater designs are in accordance with the relevant IW publications. Garland Water Services Design Report, included in this planning application, confirms the accommodation for any existing and future developments within the design.

	<p>Regards should be had to the relevant fire-fighting requirements for the proposed development.</p>	<p>We are of the opinion that there is sufficient pressure within the system for fire-fighting requirements. The Irish Water Statement of Design Acceptance would appear to confirm this. However, Garland have commissioned a contractor, LowFlo, to log 7 days of pressure and flows at 2 no locations on close proximity to the Magee Barracks site. This is currently being undertaken and will be submitted to Kildare County Council drainage department prior to the commencement of the development.</p>
1.10	<p>The foul sewers shall to the fullest extent possible be laid in the roadways and the watermains in footpaths-verges including in the new link road as required by IW standard construction details and code of practice for wastewater and water infrastructure. Sewers and watermains in open spaces and non-road common areas should be avoided and under no circumstances should distribution sewers or watermains be located in private properties.</p> <p>Collection sewers and water supply pipes from and to individual houses obviously must traverse through private properties but must discharge to main distribution sewers and watermains in roadways and footpaths-verges, respectively.</p> <p>Watermains should be interconnected to a reasonable extent to ensure continuity of supply to customers during supply interruptions and should be looped with no dead-ends.</p>	<p>IW Statement of Design Acceptance, issued on 29 May confirms water and wastewater designs are in accordance with the relevant IW publications.</p>
1.11	<p>The full planning application should explicitly demonstrate this compliance with relevant drawings and design calculations. The information contained in the final WSDR and drawings submitted in the planning application shall be fully consistent. Foul sewer pipe network reference numbers from the design</p>	<p>Garland confirms that all engineering reports and layouts issued with this application explicitly demonstrates compliance with IW publications. Foul sewer pipe network reference numbers from the design calculations has been clearly indicated on all layouts and longitudinal sections for ease of reference.</p>

	calculations should be clearly indicated on the drainage layout drawings.	
1.12	Detailed foul drainage longitudinal sections submitted with the planning application should show the intersection points with other services particularly the surface water sewers.	Garland confirms that foul drainage longitudinal sections shows the intersection points with other services.
1.13	The applicant should have regard to LA pre-planning meeting details regarding water services, previous planning decisions and the IW and LA WSD reports on the subject site and adjacent sites including 18149 medical facility, 18273 discount retail store, 13635 and 1613 for the 2 schools.	Garland hereby confirms that previous planning decisions and reports on the subject site and adjacent sites has been acknowledged and considered in this planning application.
1.14	Water conservation measures should be considered	Garland has considered water conservation measures. Some of these that will be considered for implementation includes; dual flush toilets, low flow shower heads, tap aerators, water butts.

1.2. KCC Water Services Queries (Surface Water and Flood Risk)

Item no.	Query Raised/ Note from Relevant Authority	Response
2.1	LA WSD requires further clarification related to the intended Surface Water Design.	Garland Water Services Design Report, included in this planning application, elaborates on the surface water drainage and infiltration strategy. The site has effectively been subdivided into 9 SW zones of which SW zones S1 – S8 are infiltration zones and S9 an attenuation zone. Garland has reviewed all infiltration test locations, their profiles and results. The soil layer consistent with positive infiltration was found within all the soil profiles within the proposed infiltration zones. The depth of each of the proposed soakaway/infiltration units has been specifically designed so as to be located at the depth which would aid in maximum infiltration. SW Zone S9 was included and approved as part of the Cancer treatment Centre planning application (reference no. 18149). This zone makes use of an underground attenuation tank with discharge limited to 2l/s to the existing network within Hospital Street.

<p>2.2</p>	<p>Permeable paving in car parking bays should infiltrate to ground, subject to confirmation of ground conditions.</p> <p>The issue of the impact of the 100 year storm event plus 20% climate change factor on the storage capacity of the permeable paving granular sub-layer and the effect on the proposed development of the storage being exceeded should be addressed.</p> <p>KCC Roads & Transportation division do not permit permeable paving in residential development public areas including roads and car parking.</p>	<p>All permeable paving in car parking spaces will be in accordance with the CIRIA SUDS Manual 2016. The proposed system will be of Type B as per Figure 20.13. This system allows for infiltration into the subgrade as well as a fin drain network should the subgrade be saturated.</p> <p>This system will not provide attenuation for the 100 year event, but instead this will be provided in the geocellular tank downstream of the storm sewer network (including 20% allowance for climate change). The reason for this is the complexity, cost and difficulty involved in attempting to throttle the individual flow rates from private properties.</p> <p>Garland confirms that only private car parking bays will be of permeable paver type.</p>
<p>2.3</p>	<p>IW GIS mapping does not show an existing surface water sewer on Hospital Street.</p> <p>In the previous WSDR it refers to a capacity restriction on the M7 drainage system.</p>	<p>Garland commissioned a survey of all services within Hospital Street. The aforementioned survey along with on site investigations and desktop studies concluded that foul and surface water from properties adjacent to Hospital Street discharges to a combined sewer network located within Hospital Street. The Garland Water Services Design Report elaborates on the aforementioned services and includes a layout to illustrate the current foul and surface water network within Kildare Town.</p> <p>A study has recently been carried out by Kildare Road Design Office to determine the available capacity in this M7 drainage system which can be reserved for storm flows from development in the catchment. The publication of this study is yet to be released however, correspondence with Mr. John Grealish from Kildare County Council National Roads Office (KCC NRO) confirmed that the KCC NRO had no objections to the proposed peak flow discharge. The previous design and submission of this application concluded a peak flow discharge to the network in question to be 27 l/s. This has since been significantly reduced by means of alternative SUDS measures (described in the Garland Water Services Design Report) across the Magee Barracks development. Correspondence with Mr John Grealish has been included within Appendix D.</p>

2.4	It is recommended that the Local Roads Area Engineer be consulted regarding issues raised in 2.1 - 2.3 above as the Roads department are responsible for maintaining public surface water drainage network.	Garland has consulted with Kildare County Council National Roads Office on 5 th February 2019 and 14 th February 2019 at which the road design strategy was reviewed.
2.5	Special attention should be given to protecting and preventing pollution of the regionally important Curragh aquifer waterbody which underlies the subject site.	Garland has included petrol bypass separators, in the surface water network design, to all surface water networks discharging to infiltration units and local surface water networks. Refer to AWN environmental report for further information related to environmental matters and concerns raised by KCC.
2.6	Compliance with GDSDS.	Garland confirms that all engineering reports and layouts issued with this application explicitly demonstrates compliance with the Greater Dublin Strategic Drainage Study (GDSDS).
2.7	The infiltration and attenuation storage volumes for the required 100 year storm event shall be calculated with a 20% climate change factor. The base infiltration mode on the infiltration tank design calculations has not been mobilised and needs to be addressed.	The Garland Water Services Design Report confirms than 20% climate change being included in all calculations and designs. Base infiltration was not considered due to the risk of the infiltration unit base being silted up. This allows for a more conservative design in assuring adequate infiltration throughout the infiltration unit's design life.
2.8	Under no circumstances should surface water discharge to foul drainage systems or combined systems or vice versa.	Recent surveys and site investigations concluded that properties along Hospital Street, in close proximity to the proposed Magee Barracks development, are all serviced by a combined sewer within Hospital Street. A small area/section of Hospital Street, to the front of the proposed Magee Barracks development entrance, is serviced by a designated surface water network and drains to an existing land drain to the back of the Fitzpatrick Garage Site. It is Garland's intention to discharge surface water run-off from the site to the existing combined sewer network within Hospital Street. The existing discharge from the site connects to this combined sewer. Upon completion of this development, the discharge to this combined sewer will be significantly reduced. Should Kildare County Council condition that the surface water discharge to a designated surface water network, the current design has sufficient grade and levels available to be able to sufficiently connect to the designated surface water network as mentioned above

2.9	LA WSD queries related to further clarification on design and design intent.	Refer to the revised Garland Water Services Design Report. The overall surface water drainage strategy has been revised and now entails 8 infiltration zones and 1 attenuation zone. The peak discharge rate from the Magee Barracks Development to Hospital Street is 2 l/s and was included and approved as part of the Cancer treatment Centre planning application (reference no. 18149).
2.10	Pipe network design including collector outfall sewer shall comply with GSDSDS Vol 2 section 6.5. The pipe network calculations submitted in any planning application should clearly demonstrate the application of a 20% climate change factor and have a minimum 2 year design return period. See 2.23 below.	The Windes calculations included and referred to in the Garland Water Services Design Report confirms the surface water network pipe design complies with the GSDSDS and has been designed for a 5 year return period and has made allowance for 20% climate change. The aforementioned has been summarised on the Global Variables page to each surface water network design report.
2.11	<p>Rainwater harvesting and 'green' flat roofs should be provided at the commercial zone and childcare facility and rainwater butts should be provided in the houses.</p> <p>Water conservation measures such as water saving flush toilets should be provided in all housing units and buildings with water saving taps also provided in the commercial zone buildings and childcare facility.</p>	<p>Green roofs have been included as part of the apartment block designs. Garland has ignored the storage capacity of the green roofs within the surface water network calculations in order to mitigate the risk of the green roof being saturated during a large storm event.</p> <p>Refer to the architectural layouts and reports for conservation measures implemented as noted in item 1.14 above.</p>
2.12	Consideration should also be given to any existing drainage pipes, ditches, channels traversing the subject site and they should be appropriately accommodated in the final drainage design submitted with any planning application.	All existing services, apart from those shown on Garland drawings earmarked for diversion, will be made redundant and removed. These services has been clearly identified on the Garland services layouts issued with this planning application.
2.13	The surface water sewers shall to the fullest extent possible be laid in the roadways as required by IW standard construction details and code of practice.	Garland confirms that all engineering reports and layouts issued with this application explicitly demonstrates compliance with the Greater Dublin Strategic Drainage Study (GSDSDS) and IW standard details and policies.
2.14	Surface water drainage longitudinal sections submitted with the full planning application should show intersections with other services	Garland confirms that surface water drainage longitudinal sections shows the intersection points with other services.

	<p>particularly the foul sewers to ensure they can be accommodated without conflict and with the necessary separation distance provided. See 1.12 above.</p> <p>The 9 drainage catchments, infiltration tank, collector outfall sewer, flow control devices and pollution prevention interceptors and surface water sewer pipe network reference numbers from the design calculations should be clearly shown on the drainage layout drawings.</p> <p>The various infiltration test locations should be superimposed on a drainage layout drawing(s).</p>	<p>Garland confirms that all surface water design elements along with pipe network reference numbers from the design calculations has been clearly indicated on all layouts and longitudinal sections for ease of reference.</p> <p>Garland has included a layout drawing with infiltration locations and surface water drainage strategy clearly demonstrated.</p>
2.15	<p>Information across the submitted technical drainage documents especially the WSDR report text, calculations and drainage drawings should be consistent.</p>	<p>Garland has revised the drainage strategy for the Magee Barracks Development. This is described and demonstrated within the Garland Water Services Design Report and Garland services layouts.</p>
2.18	<p>The subject site is not located in a fluvial flood zone identified in the OPW CFRAMS exercise nor is a site specific Flood Risk Assessment (SSFRA) required under the terms of the current Kildare Town Local Area Plan although this is up for review.</p> <p>Nonetheless, a FRA commensurate with the scale of the development and flood risk hazards identified from the recommended sources is required.</p> <p>The applicant has submitted a flood risk assessment (FRA).</p>	<p>Garland hereby confirms that a detailed FRA for the subject site has been included with this application.</p>
2.19	<p>At FRA section 2.1 the current Kildare Town LAP flood risk policies & objectives should be cited as a source and these should be addressed in the final FRA to be submitted with any planning application. OPW PFRA flood mapping is not cited either but is addressed at section 2.2 Fluvial Flood Risk. Figure 2.2 FRA does not</p>	<p>Section 5 of the Kildare Town Local Area Plan has been reviewed in the preparation of the Flood Risk Assessment and is cited within the report. The pluvial flooding indicated in the LAP has now been addressed within the FRA.</p> <p>The OPW Preliminary Flood Risk Assessment is addressed in 2.2 of the report.</p>

	<p>indicate any fluvial flooding at the subject site but there is a pluvial flood zone at the subject site and this flood risk should be assessed at section 2.3 on pluvial storm water flood risk in the final FRA.</p> <p>The OPW historic Flood Hazard mapping for the site extents and environs should be included in the final FRA and any flood risk therein should be addressed in the final FRA.</p> <p>The entire applicant landholding including the former Magee Barracks site on which the proposed Phase 1 development is situated and the proposed phase 2 site to the north is the designated extents of the FRA.</p> <p>This is an acceptable approach however a separate FRA or SSRA will be required for phase 2.</p>	<p>The OPW Preliminary Flood Risk Map indicates a reoccurring flood event in the vicinity of the site. However, the flood event appears to occur outside of the subject site and this is further evident by the accompany report on the OPW site. The report relates to the minutes of a meeting with the Area Engineer for Kildare on 30/03/05. The Area Engineer notes that flood events occur at this 'low lying area as a significant portion of surface water in Kildare town is piped to this location'. This would indicate that the flooding is in a public area. We would also note that the drainage in this area has been upgraded in recent years by KCC / Irish Water.</p> <p>A separate FRS shall be prepared for the Phase 2 application.</p>
2.20	<p>Overland flood routes into and from the proposed development should be assessed. This is relevant as the remainder of the undeveloped landholding post phase 1 and prior to phase 2 is included in the FRA site extents as 2.19 above and may pose a pluvial flood risk.</p> <p>Neither should there be any adverse or increased flood risk posed to third party lands, properties and public roads as a result of the proposed development.</p>	<p>The topography of the area for Phase 2 of the development shall not be changed due to the Phase 1 application. The topography of the Phase 2 site falls from the northwest towards the southeast of the site, away from the Phase 1 site. Therefore, the development of Phase 1 does not adversely affect the current pluvial condition of the Phase 2 site.</p> <p>The proposed development has significant pluvial / storm water measures incorporated within the design of the proposed storm water system and does not pose a risk to third party lands, properties and public roads as a result of the proposed development.</p>
2.21	<p>Where existing on site flood storage is lost as a result of the development adequate compensatory flood storage shall be provided on-site as part of the proposed development in accordance with 'The Planning System and Flood Risk Management Guidelines for Planning Authorities'.</p>	<p>There is no existing flood storage on the subject site.</p>

2.22	<p>Section 2.4 Groundwater Flood risk should be reappraised following the detailed site investigation to be carried out as described at 2.1 above and included in the final FRA.</p>	<p>Garland hereby confirms that the FRA has been appraised in conjunction with the site investigation report.</p>
2.23	<p>As regards residual risk appropriate allowance for climate change should be included in the final FRA applied to all relevant flood levels, flows and volumes.</p> <p>It is pertinent to bring the OPW Flood Maps website which contains not only the current scenario river (fluvial) flood extents mapping but also both the mid-range (20% climate change factor) and high-end future scenario (30% climate change factor) river flood maps which obviously have greater flood extents than the current scenario as they factor in greater climate change effects and may impact the subject site. These issues should be addressed in the final FRA submitted with any planning application to the Planning Board.</p> <p>Checks should be made for adequate protection and no pluvial flooding from the drainage pipe network for return periods of 30 and 100 years. This normally requires simulation modelling to enable and assessment of the flood risk for extreme events. Thus in practice nearly all systems are modelled to demonstrate that their performance is adequate for protection against flooding.</p>	<p>As confirmed within the Garland Water Services Design Report and FRA, all designs as well as the FRA has been base on a 1:100 year report including a 20% allowance for climate change.</p>
2.24	<p>The revised SSFRA submitted with any final planning application particularly section 5 thereof should obviously have regard to any changes in the surface water drainage strategy and design that may arise as outlined above.</p>	<p>Garland hereby confirms that the revised FRA takes into account the redesign of the development.</p>

2.25	A copy of the relevant flood section and maps including the Land Use Zoning objectives map from the Kildare Town Local Area Plan shall be included in the final FRA with any planning application submission with the subject site highlighted.	Flood maps has been included within the FRA report issued with this application.
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2. DISCUSSIONS REGARDING WORKS TO HOSPITAL STREET

The applicant intends to deliver the works described in the development description as stated in the formal planning notices along the Magee Barracks site frontage. In the Planning Application reference 18/149, under appeal to An Board Pleanála (reference ABP-303141-18), for a Cancer Treatment Clinic (Proton Treatment) to be located on the verge of this site, Kildare County Council have conditioned some road improvement works on Hospital Street outside of the applicants land ownership. A letter of consent has been provided by Kildare County Council to include these lands in the road improvement works. These improvement works, beyond the site frontage of Magee Barracks, and the responsibility for same, are the subject of a first party appeal. The An Board Pleanála opinion in relation to the proposed development requested that consultations should take place between both parties to determine if agreement could be reached on these matters and that clarification should be provided on any outstanding issues which agreement has not been reached.

Whilst favourable discussions were undertaken between the applicant and Kildare County Council Roads Department in relation to the conditions associated with the Cancer Treatment Clinic, no formal agreement was reached with KCC in respect to revisions to the relevant conditions. No formal correspondence on this matter has been received from KCC to date since meetings were undertaken on two separate occasions in February, on 7th and 14th February. Garland Consulting Engineers, along with the applicant, Mr. David Kennedy, met with Senior Engineer Mr. John Coppinger and Senior Executive Engineer Mr. George Willoughby on both of these occasions. A verbal proposal was put forward by Kildare County Council at the second meeting and written confirmation of same was requested. Written confirmation has not, to date been received, despite Garland following up on this on several occasions. Garland Consulting Engineers have been following up with KCC and seeking a decision on this matter, however, it has not been forthcoming. The matter is now before the Board in relation to this separate application (reference ABP-303141-18) and as such cannot be dealt with within this application.

Signed: 
CATHAL RIGNEY
CHARTERED ENGINEER

Date: 23 July 2019

APPENDIX A
Irish Water PCE and SDA



Columbia Estates Management (IE)
Garland
Garland House
28-30 Rathmines Park
Dublin 6



Uisce Éireann
Bosca OP 6000
Baile Átha Cliath 1
Éire

Irish Water
PO Box 6000
Dublin 1
Ireland

T: +353 1 89 25000
F: +353 1 89 25001
www.water.ie

28 May 2019

Dear Sir/Madam,

**Re: Customer Reference No 026936066 pre-connection enquiry - Subject to contract | Contract denied
Connection for 656 unit domestic, Creche, 3 retails units & Cancer Treatment Centre at Magee Barracks site**

Irish Water has reviewed your pre-connection enquiry in relation to water and wastewater connections at Magee Barracks Dublin Road Kildare . Based upon the details that you have provided with your pre-connection enquiry and on the capacity currently available in the network(s), as assessed by Irish Water, we wish to advise you that, subject to a valid connection agreement being put in place, your proposed connection to the Irish Water network(s) can be facilitated.

Strategic Housing Development

Irish Water notes that the scale of this development dictates that it is subject to the Strategic Housing Development planning process. Therefore:

- A. In advance of submitting your full application to An Bord Pleanála for assessment, you must have reviewed this development with Irish Water and received a Statement of Design Acceptance in relation to the layout of water and wastewater services.
- B. You are advised that this correspondence does not constitute an offer in whole or in part to provide a connection to any Irish Water infrastructure and is provided subject to a connection agreement being signed and appropriate connection fee paid at a later date.
- C. In advance of submitting this development to An Bord Pleanála for full assessment, the developer is required to have entered into a Project Works Services Agreement to deliver investigations to confirm the available capacity and to determine the full extent of any upgrades which may be required to be completed to Irish Water infrastructure.

Wastewater

A Project Works Services Agreement is required to confirm the available capacity and to determine the full extent of any upgrades which may be required to be completed to the wastewater network.

Our records indicate the presence of foul pipework traversing the subject site - note that it will be necessary to comply with Irish Water's wayleave and/or diversion requirements in relation to this infrastructure. Please refer to <https://www.water.ie/connections/developer-services/diversions/>.

This assessment relates to foul discharge only and does not incorporate accepting any storm discharge from the subject site. Surface water should not be discharged via a foul or combined system.

In the case of wastewater connections this assessment does not confirm that a gravity connection achievable. Therefore a suitably sized pump station may be required to be installed on your site. All infrastructure should be designed and installed in accordance with the Irish Water Code of Practice.

Water

A water connection for the development is feasible without network upgrades.

All infrastructure should be designed and installed in accordance with the Irish Water Codes of Practice and Standard Details. A design proposal for the water and/or wastewater infrastructure should be submitted to Irish Water for assessment. Prior to submitting your planning application, you are required to submit these detailed design proposals to Irish Water for review.

A connection agreement can be applied for by completing the connection application form available at **www.water.ie/connections**. Irish Water's current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities.

If you have any further questions, please contact Fionán Ginty from the design team on 018925734 or email fginty@water.ie. For further information, visit **www.water.ie/connections**

Yours sincerely,

Maria O'Dwyer
Connections and Developer Services

Stiúrthóirí / Directors: Mike Quinn (Chairman), Jerry Grant, Cathal Marley, Brendan Murphy, Michael G. O'Sullivan
Oifig Chláraithe / Registered Office: Teach Colvill, 24-26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86 / Colvill House, 24-26 Talbot Street, Dublin 1, D01 NP86
Is cuideachta ghníomhaíochta ainmnithe atá faoi theorainn scaireanna é Uisce Éireann / Irish Water is a designated activity company, limited by shares.
Uimhir Chláraithe in Éirinn / Registered in Ireland No.: 530363

Columbia Estates Management Limited c/o Ben Mong,
Garland Consulting Engineers,
Garland House,
28-30 Rathmines Park,
Dublin 6

29 May 2019

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

Irish Water
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

Re: Design Submission for Housing Development at Magee Barracks, Dublin Road, Kildare (the “Development”) (the “Design Submission”) / Cust17398/CUSTO182467.

Dear Ben,

Many thanks for your recent Design Submission.

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

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

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

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

Name: Fionán Ginty
Phone: 01 8925734
Email: fginty@water.ie

Yours sincerely,



Maria O’Dwyer

Connections and Developer Services

Appendix A

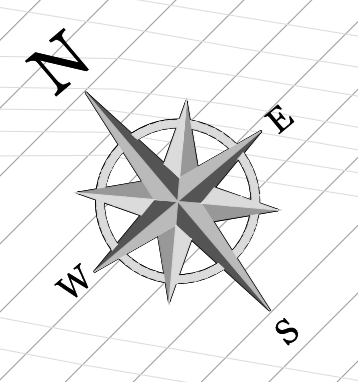
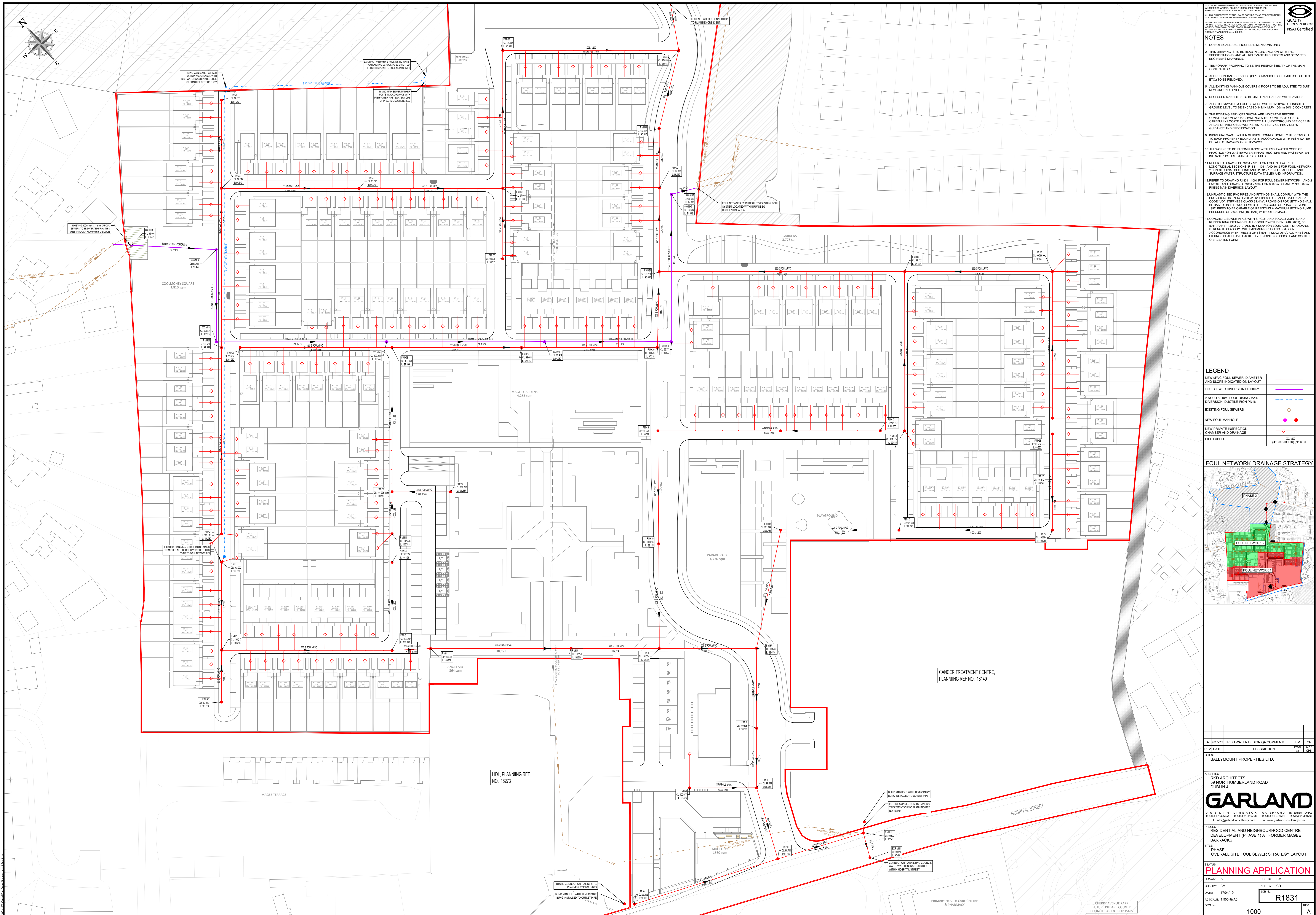
Document Title & Revision

- R1831-1000-A Phase 1 Overall Site Foul Sewer Strategy Layout
- R1831-1001-A Foul Sewer Network 1 and 2 Layout
- R1831-1003-A Phase 1 Water main Layout
- R1831-1010-A Phase 1 Foul Network 1 Longitudinal Sections
- R1831-1012-A Phase 1 Foul Network 2 Longitudinal Sections
- R1831-1015-1st Phase 1 Overall Site Foul Sewer Strategy Layout
- R1831-A0-1st Site Location Layout
- GAR-ISD-101-A Infrastructure Standard Details (WW-03/ WW-04)
- GAR-ISD-104-A Infrastructure Standard Details (WW-12/ WW-13)

Standard Details/Code of Practice Exemption: N/A

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

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

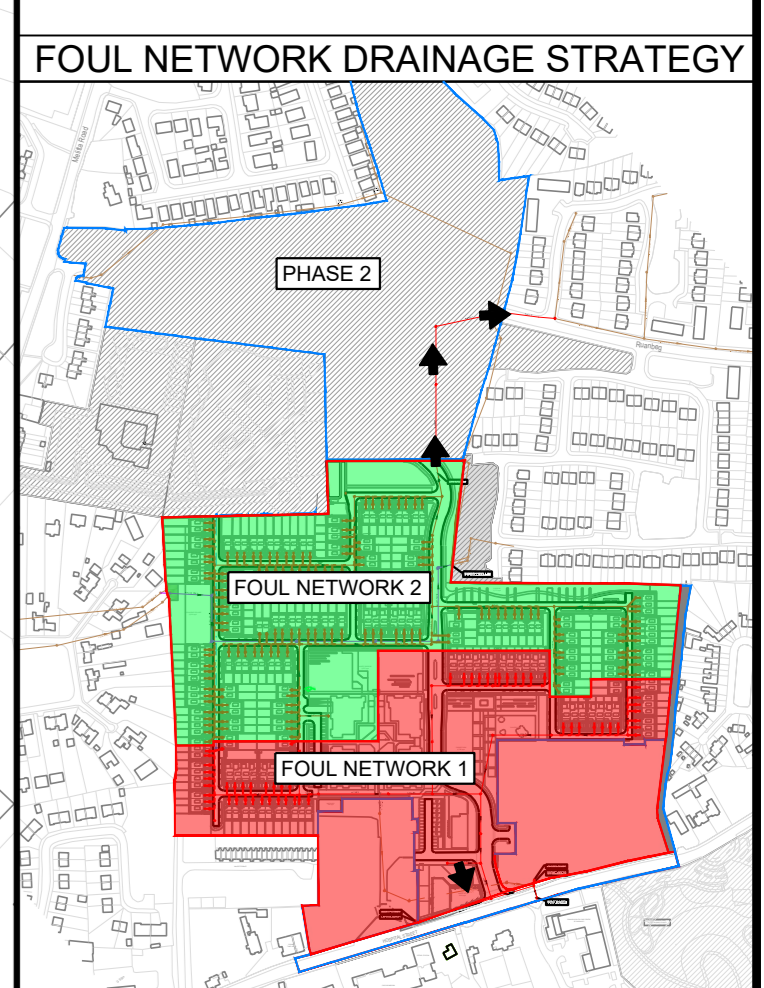


QUALITY
NSAI Certified

- NOTES**
- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL RELEVANT ARCHITECTS AND SERVICES ENGINEERS DRAWINGS.
 - TEMPORARY PROPPING TO BE THE RESPONSIBILITY OF THE MAIN CONTRACTOR.
 - ALL EXISTING SERVICES (PIPES, MANHOLES, CHAMBERS, GULLIES ETC.) TO BE REMOVED.
 - ALL EXISTING MANHOLE COVERS & ROOFS TO BE ADJUSTED TO SUIT NEW GROUND LEVELS.
 - RECESSED MANHOLES TO BE USED IN ALL AREAS WITH PAVINGS.
 - ALL STORMWATER & FOUL SEWERS WITHIN 100mm OF FINISHED GROUND LEVEL TO BE ENCASED IN MINIMUM 100mm 20M20 CONCRETE.
 - THE EXISTING SERVICES SHOWN ARE INDICATIVE BEFORE CONSTRUCTION WORK COMMENCES. THE CONTRACTOR TO CAREFULLY LOCATE AND PROTECT ALL UNDERGROUND SERVICES IN AREAS OF PROPOSED WORKS, AS PER SERVICE PROVIDERS GUIDANCE AND SPECIFICATION.
 - INDIVIDUAL WASTEWATER SERVICE CONNECTIONS TO BE PROVIDED TO EACH PROPERTY BOUNDARY IN ACCORDANCE WITH IRISH WATER DETAILS STD-WW-03 AND STD-WW-13.
 - ALL REFER TO DRAWINGS R1831-1001 FOR FOUL NETWORK 1 & 2. REFER TO DRAWINGS R1831-1002 FOR FOUL NETWORK 1 AND 2 LAYOUT AND DRAWINGS R1831-1003 FOR 600mm DIA AND 2 NO. 200mm RISING MAIN DIVERSION LAYOUT.
 - UNPLASTICISED PVC PIPES AND FITTINGS SHALL COMPLY WITH THE PROVISIONS IN EN 1401:2002. PIPES TO BE APPLICATION AREA CODE 'MDF' STIFFNESS CLASS 3 ANH'. PROVISION FOR SETTING SHALL BE BASED ON THE WIND UPLIFT SETTING CODE OF PRACTICE, JUNE 1997. PIPES TO BE CAPABLE OF RESISTING A MAXIMUM SETTING PUMP PRESSURE OF 2.00 BAR (10.00M WWT) WITH NO DAMAGE.
 - CONCRETE SEWER PIPES WITH SPOUT AND SOCKET JOINTS AND RUBBER RING FITTINGS SHALL COMPLY WITH EN 1916:2002, BS 991 PART 1 (2002-2016) AND BS 1200:2010. ALL PIPES AND FITTINGS SHALL HAVE GASKET TYPE JOINTS OF SPOUT AND SOCKET OR REATED FORM.

LEGEND

NEW UPVC FOUL SEWER, DIAMETER AND SLOPE INDICATED ON LAYOUT	—
FOUL SEWER DIVERSION Ø 600mm	—
2 NO. Ø 50 mm FOUL RISING MAIN DIVERSION, DUCTILE IRON PN16	—
EXISTING FOUL SEWERS	—
NEW FOUL MANHOLE	●
NEW PRIVATE INSPECTION CHAMBER AND DRAINAGE	○
PIPE LABELS	—



REV	DATE	DESCRIPTION	BY	CHK	CR
A	05/05/16	IRISH WATER DESIGN QA COMMENTS	BM	BM	CR

CLIENT: BALLYMOUNT PROPERTIES LTD.

ARCHITECT: PRCD ARCHITECTS, 59 NORTHUMBERLAND ROAD, DUBLIN 4

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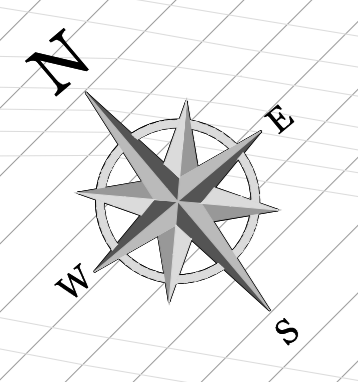
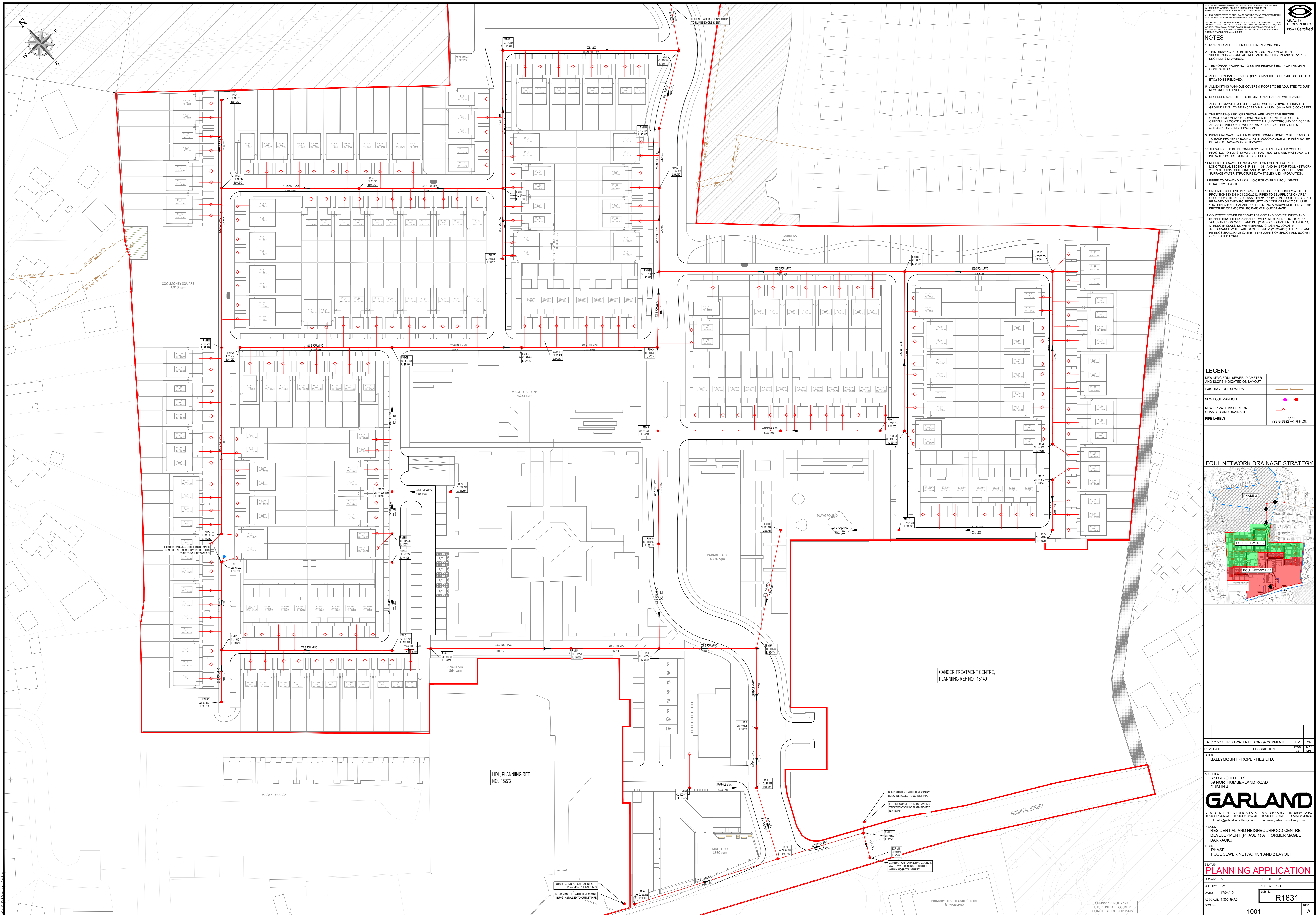
PROJECT: RESIDENTIAL AND NEIGHBOURHOOD CENTRE DEVELOPMENT (PHASE 1) AT FORMER MAGEE BARRACKS

TITLE: PHASE 1 OVERALL SITE FOUL SEWER STRATEGY LAYOUT

STATUS: **PLANNING APPLICATION**

DRAWN: SL	DES. BY: BM
CHK. BY: BM	APP. BY: CR
DATE: 17/04/19	JOB NO.
AD SCALE: 1:500 @ A0	R1831
DRG. No.	REV.

1000 A

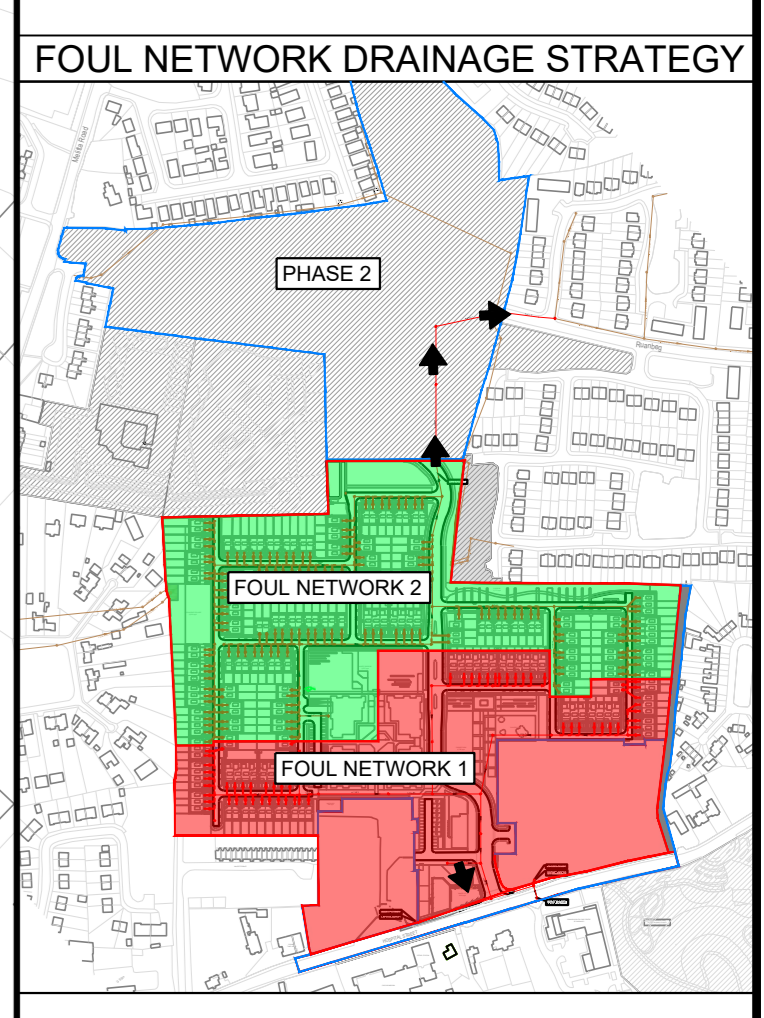


QUALITY
NSAI Certified

- NOTES**
- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL RELEVANT ARCHITECTS AND SERVICES ENGINEERS DRAWINGS.
 - TEMPORARY PROPPING TO BE THE RESPONSIBILITY OF THE MAIN CONTRACTOR.
 - ALL REDUNDANT SERVICES (PIPES, MANHOLES, CHAMBERS, GULLIES ETC.) TO BE REMOVED.
 - ALL EXISTING MANHOLE COVERS & ROOFS TO BE ADJUSTED TO SUIT NEW GROUND LEVELS.
 - RECESSED MANHOLES TO BE USED IN ALL AREAS WITH FINISHES.
 - ALL STORMWATER & FOUL SEWERS WITHIN 100mm OF FINISHED GROUND LEVEL TO BE ENCASED IN MINIMUM 100mm CONCRETE.
 - THE EXISTING SERVICES SHOWN ARE INDICATIVE BEFORE CONSTRUCTION WORK COMMENCES. THE CONTRACTOR TO CAREFULLY LOCATE AND PROTECT ALL UNDERGROUND SERVICES IN AREAS OF PROPOSED WORKS, AS PER SERVICE PROVIDERS GUIDANCE AND SPECIFICATION.
 - INDIVIDUAL WASTEWATER SERVICE CONNECTIONS TO BE PROVIDED TO EACH PROPERTY BOUNDARY IN ACCORDANCE WITH IRISH WATER DETAILS STD-WW-03 AND STD-WW-13.
 - ALL WORKS TO BE IN COMPLIANCE WITH IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE AND WASTEWATER INFRASTRUCTURE STANDARD DETAILS.
 - REFER TO DRAWINGS R181 - 1010 FOR FOUL NETWORK 1 LONGITUDINAL SECTIONS, R181 - 1011 AND 1012 FOR FOUL NETWORK 2 LONGITUDINAL SECTIONS AND R181 - 1013 FOR ALL FOUL AND SURFACE WATER STRUCTURE DATA TABLES AND INFORMATION.
 - REFER TO DRAWING R181 - 1000 FOR OVERALL FOUL SEWER STRATEGY OF LAYOUT.
 - UNLESS SPECIFIED PVC PIPES AND FITTINGS SHALL COMPLY WITH THE PROVISIONS IN EN 1401:2000/2012. PIPES TO BE APPLICATION AREA CODE 'S2' STRENGTH CLASS BAWN. PROTECTORS, SETTING SHALL BE BASED ON THE WRC SEWER SETTING CODE OF PRACTICE, JUNE 1997. PIPES TO BE CAPABLE OF RESISTING A MAXIMUM JETTING PUMP PRESSURE OF 2,000 PSI (138 BAR) WITHOUT DAMAGE.
 - CONCRETE SEWER PIPES WITH SPIGOT AND SOCKET JOINTS AND RUBBER RING FITTINGS SHALL COMPLY WITH EN 1916:2002, BS 5911 PART 1 (2002:2010) AND IS 12004 (OR EQUIVALENT STANDARD, STRENGTH CLASS 'S2' WITH MAXIMUM CRACKING LOADS) IN ACCORDANCE WITH TABLE 8 OF BS 5911:1 (2002:2010). ALL PIPES AND FITTINGS SHALL HAVE GASKET TYPE JOINTS OF SPIGOT AND SOCKET OR REBATED FORM.

LEGEND

NEW UPVC FOUL SEWER, DIAMETER AND SLOPE INDICATED ON LAYOUT	
EXISTING FOUL SEWERS	
NEW FOUL MANHOLE	
NEW PRIVATE INSPECTION CHAMBER AND DRAINAGE	
PIPE LABELS	REFERENCING PIPES/LOC



REV	DATE	DESCRIPTION	DWG	APP'D	CR
A	17/04/19	IRISH WATER DESIGN QA COMMENTS	BM		CR

CLIENT: BALLYMOUNT PROPERTIES LTD.

ARCHITECT: PRCD ARCHITECTS
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DUBLIN 4

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DUBLIN LIMERICK WATERFORD INTERNATIONAL
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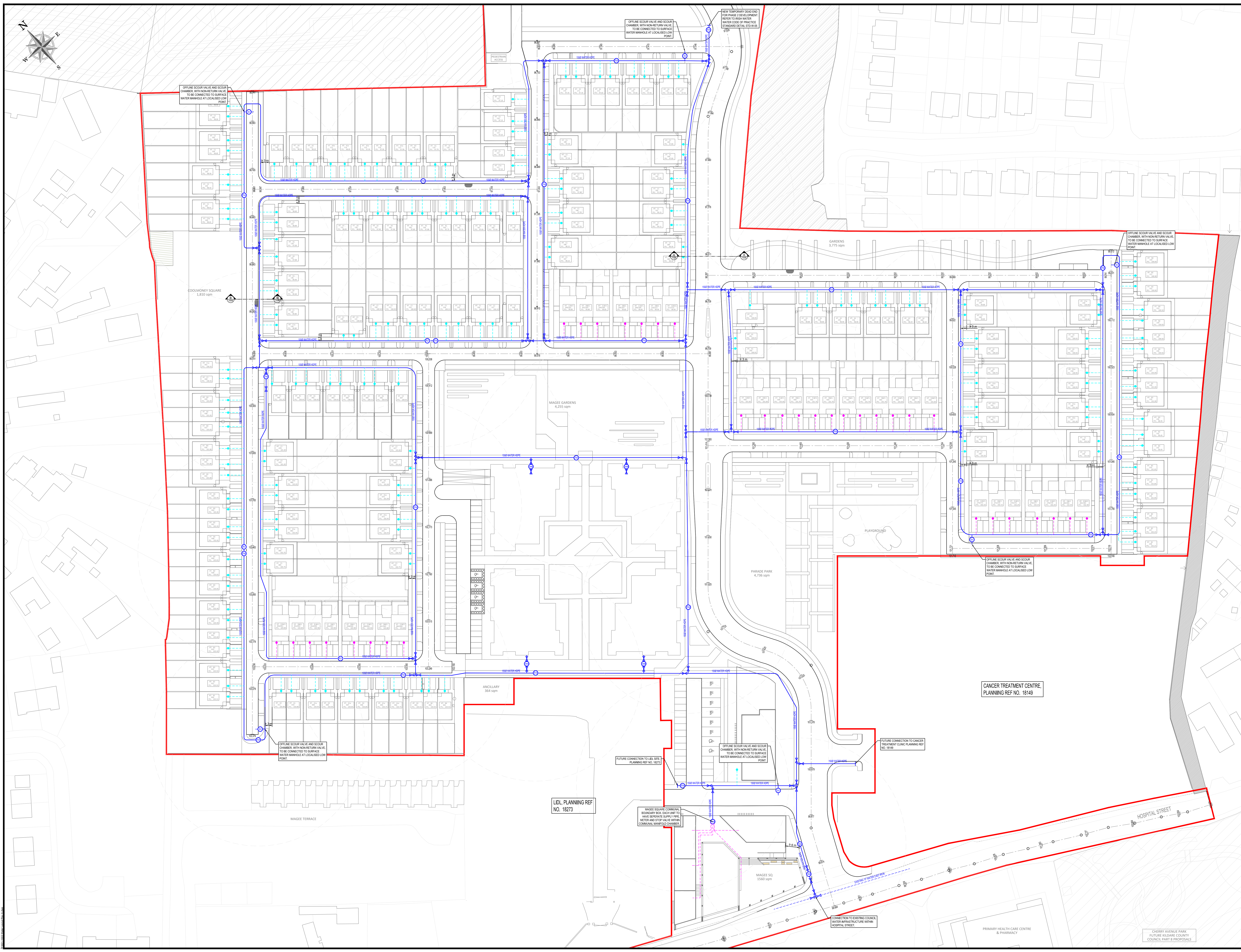
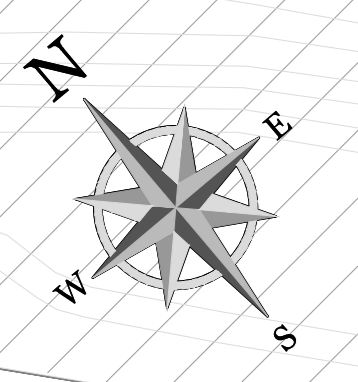
PROJECT: RESIDENTIAL AND NEIGHBOURHOOD CENTRE DEVELOPMENT (PHASE 1) AT FORMER MAGEE BARRACKS

TITLE: PHASE 1 FOUL SEWER NETWORK 1 AND 2 LAYOUT

STATUS: **PLANNING APPLICATION**

DRAWN: SL	DES. BY: BM
CHK. BY: BM	APP. BY: CR
DATE: 17/04/19	JOB NO: R1831
AD SCALE: 1:500 @ A0	REV: A

1001

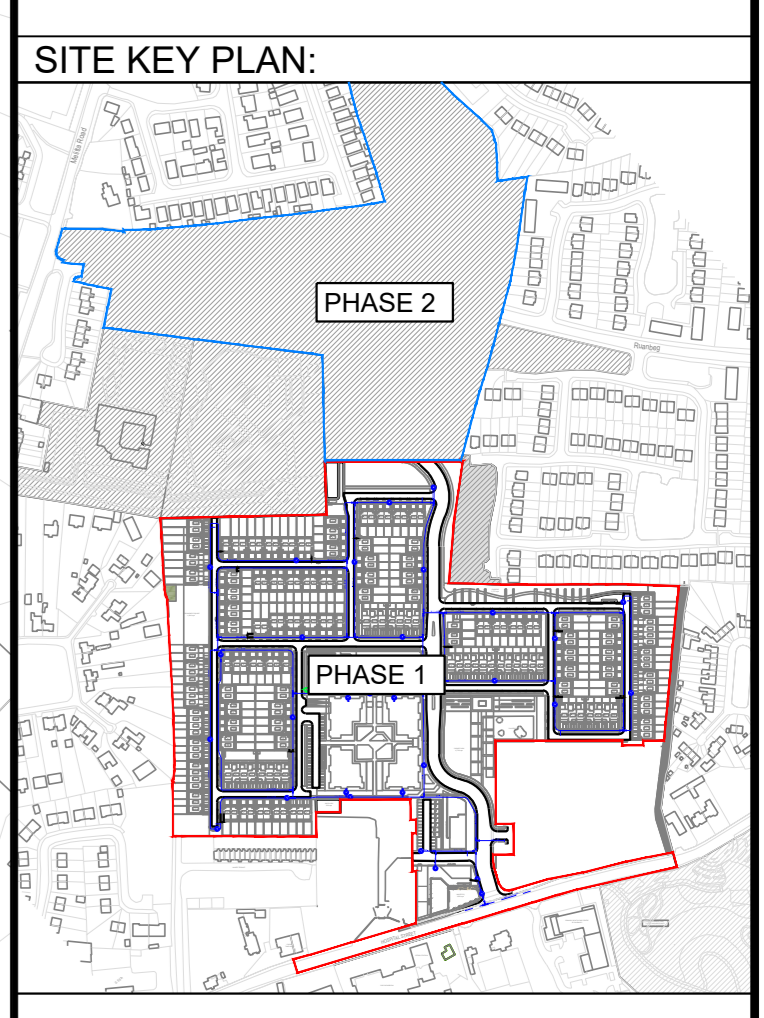


QUALITY
NSAI Certified

- NOTES**
- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL RELEVANT ARCHITECTS AND SERVICES ENGINEERS DRAWINGS.
 - DRAWINGS SHALL BE CHECKED BY CONTRACTOR AND ANY DISCREPANCIES (DIMENSIONS) SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE WORK IS COMMENCED. PIPE FALLS TO BE AS SPECIFIED. ILS AND CLS SUBJECT TO SITE REVIEW.
 - TEMPORARY PROPPING TO BE THE RESPONSIBILITY OF THE MAIN CONTRACTOR.
 - THIS DRAWING TO BE READ IN CONJUNCTION WITH THE ARCHITECTS DRAWINGS AND SPECIFICATIONS.
 - THE EXISTING SERVICES SHOWN ARE INDICATIVE BEFORE CONSTRUCTION WORK COMMENCES. THE CONTRACTOR IS TO CAREFULLY LOCATE AND PROTECT ALL UNDERGROUND SERVICES IN AREAS OF PROPOSED WORKING, AS PER SERVICE PROVIDERS GUIDANCE AND SPECIFICATION.
 - ALL WORKS TO BE IN COMPLIANCE WITH IRISH WATER CODE OF PRACTICE FOR WATER AND WASTEWATER INFRASTRUCTURE AND WATER AND WASTEWATER INFRASTRUCTURE STANDARDS DETAILS.
 - REFER TO DRAWING R1831-1008 FOR RELEVANT SERVICES CROSS SECTIONS.

LEGEND

EXISTING COUNCIL WATERMAIN	---
NEW WATERMAIN, HDPE SDR17 PIPE	---
NEW SLUICE VALVE	⊕
NEW FIRE HYDRANT	⊕
NEW AIR VALVE 50mm	⊕
NEW BULK DEVELOPMENT METER	⊕
NEW OFFLINE SCOUR VALVE AND SCOUR CHAMBER	⊕
NEW TEMPORARY WATERMAIN BLANK END	---
NEW HOUSE CONNECTION PN12.5 PER 25mm Ø WITH BOUNDARY BOX	---
NEW DUPLEX UNITS' CONNECTION PN12.5 PER 50mm Ø WITH COMMUNAL BOUNDARY BOX	---
ROAD CENTRE LINE WITH ROAD LEVEL	---
40m RADIUS COVERAGE OF FIRE HYDRANT	---



REV	DATE	DESCRIPTION	DWG	APP	CHK
A	17/05/18	IRISH WATER DESIGN QA COMMENTS	JC	JN	

ARCHITECT:
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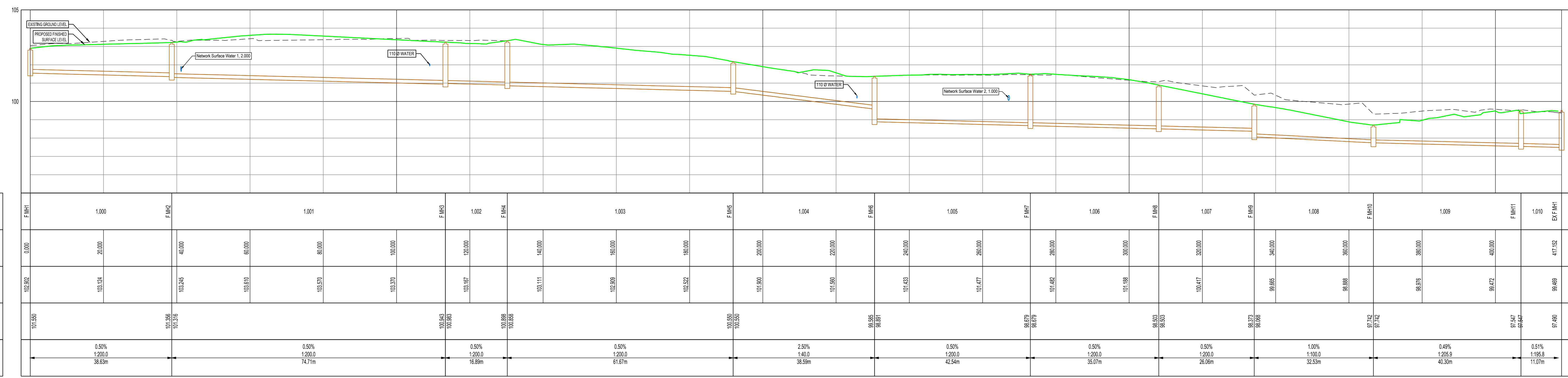
PROJECT:
RESIDENTIAL AND NEIGHBOURHOOD CENTRE
DEVELOPMENT (PHASE 1) AT FORMER MAGEE
BARRACKS

TITLE:
PHASE 1
WATERMAIN LAYOUT

STATUS:
PLANNING APPLICATION

DRAWN: SL	DES. BY: BM
CHK. BY: BM	APP. BY: CR
DATE: 17/04/19	JOB No:
AS SCALE: 1:500 @ A0	R1831
DRG. No:	REV. A

- NOTES**
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 - REFER TO DRAWING R1831-1001 FOR PHASE 1 FOUL NETWORK 1 AND LAYOUT.
 - ALL EXISTING MANHOLE COVERS & ROOFS TO BE ADJUSTED TO SUIT NEW GROUND LEVELS.
 - RECESSED MANHOLES TO BE USED IN ALL AREAS WITH PAVERS.
 - ALL SURFACE WATER & FOUL SEWERS WITHIN 100mm OF FINISHED GROUND LEVEL TO BE ENCASED IN MINIMUM 100mm 20MPa CONCRETE.
 - ALL WORKS TO BE IN COMPLIANCE WITH IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE AND WASTEWATER INFRASTRUCTURE STANDARD DETAILS.

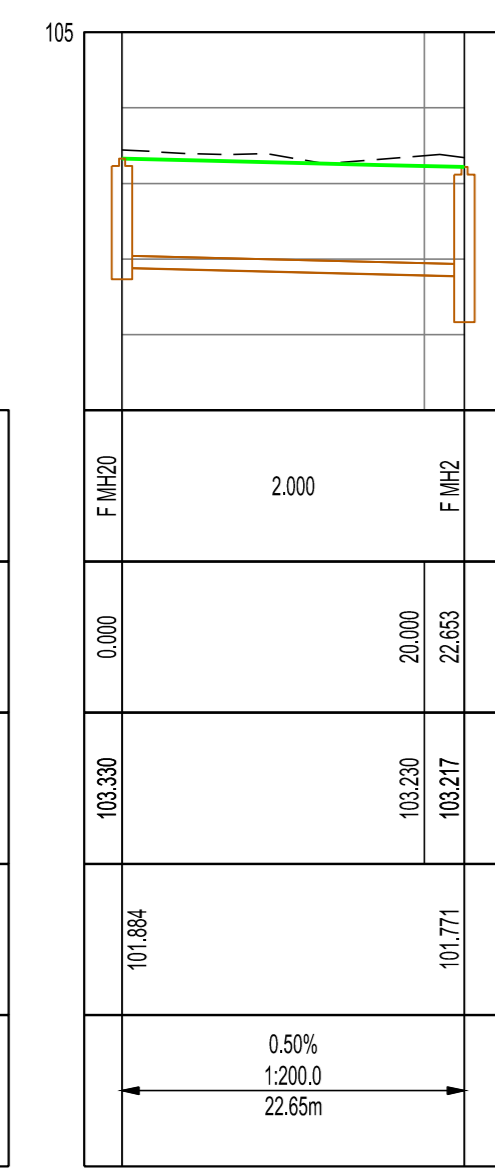


LONGSECTION F MH1 TO EX F MH1
FROM 0.000 TO 418.064

SCALES:
Horizontal 1:500
Vertical 1:100

DATUM 95.000

REFERENCE	F.MH1	1.000	F.MH2	1.001
DISTANCE (m)	0.000	20.000	40.000	60.000
GROUND LEVEL	102.802	103.124	103.245	103.305
PIPE INVERT LEVEL	97.126	97.146	97.116	97.143
SLOPE / LENGTH		0.50% 1,200.0 34.57m		0.50% 1,200.0 74.71m

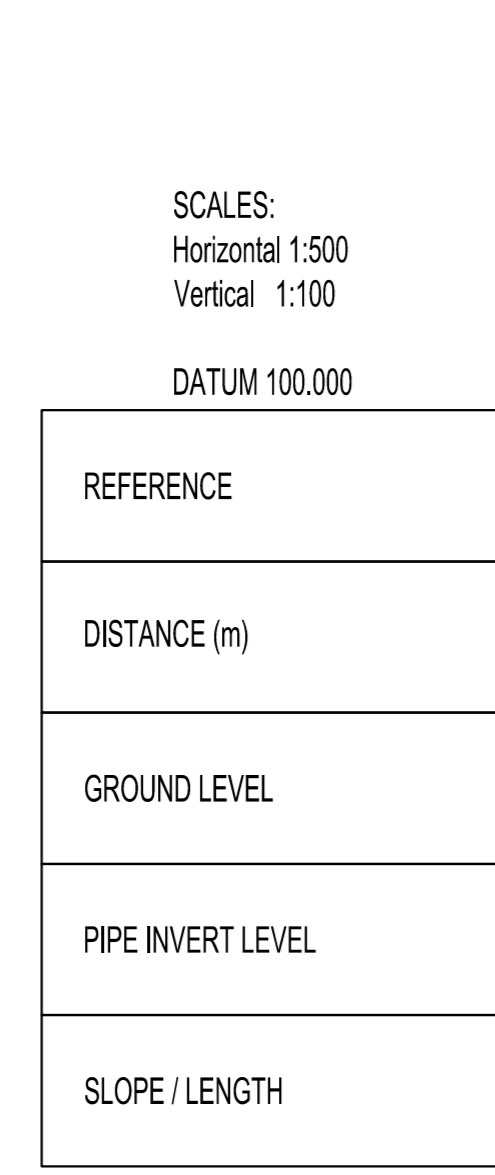


LONGSECTION F MH20 TO F MH2
FROM 0.000 TO 22.653

SCALES:
Horizontal 1:500
Vertical 1:100

DATUM 100.000

REFERENCE	F.MH20	2.000	F.MH2
DISTANCE (m)	0.000	20.000	22.653
GROUND LEVEL	103.330	103.330	103.217
PIPE INVERT LEVEL	101.684	101.771	101.771
SLOPE / LENGTH		0.50% 1,200.0 32.26m	

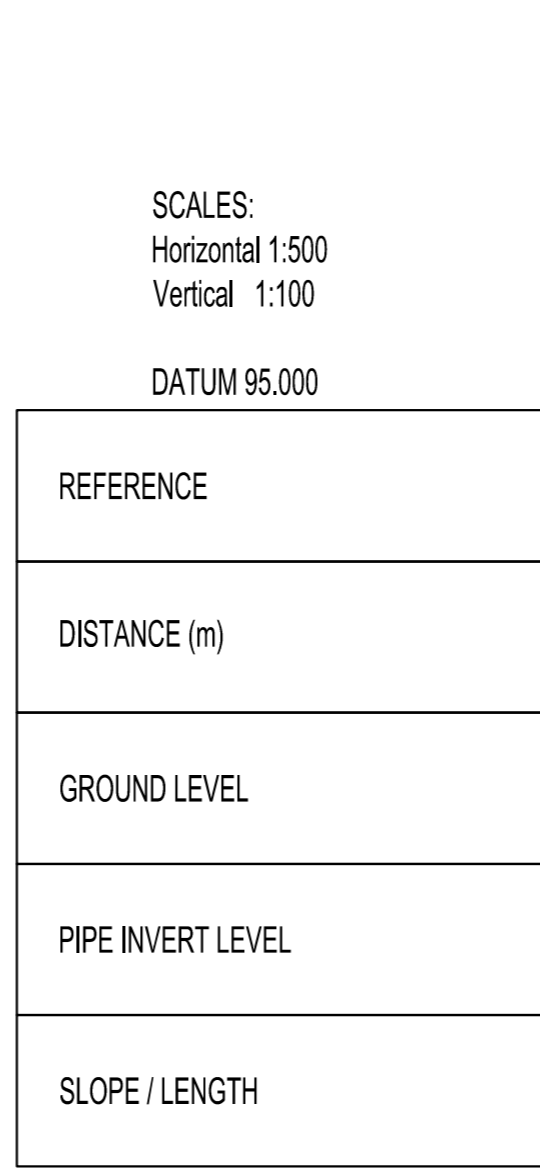


LONGSECTION F MH2 TO F MH3
FROM 0.000 TO 38.651

SCALES:
Horizontal 1:500
Vertical 1:100

DATUM 100.000

REFERENCE	F.MH2	3.000	F.MH3
DISTANCE (m)	0.000	20.000	38.651
GROUND LEVEL	103.310	103.310	103.227
PIPE INVERT LEVEL	101.126	101.843	101.843
SLOPE / LENGTH		0.50% 1,200.0 38.65m	

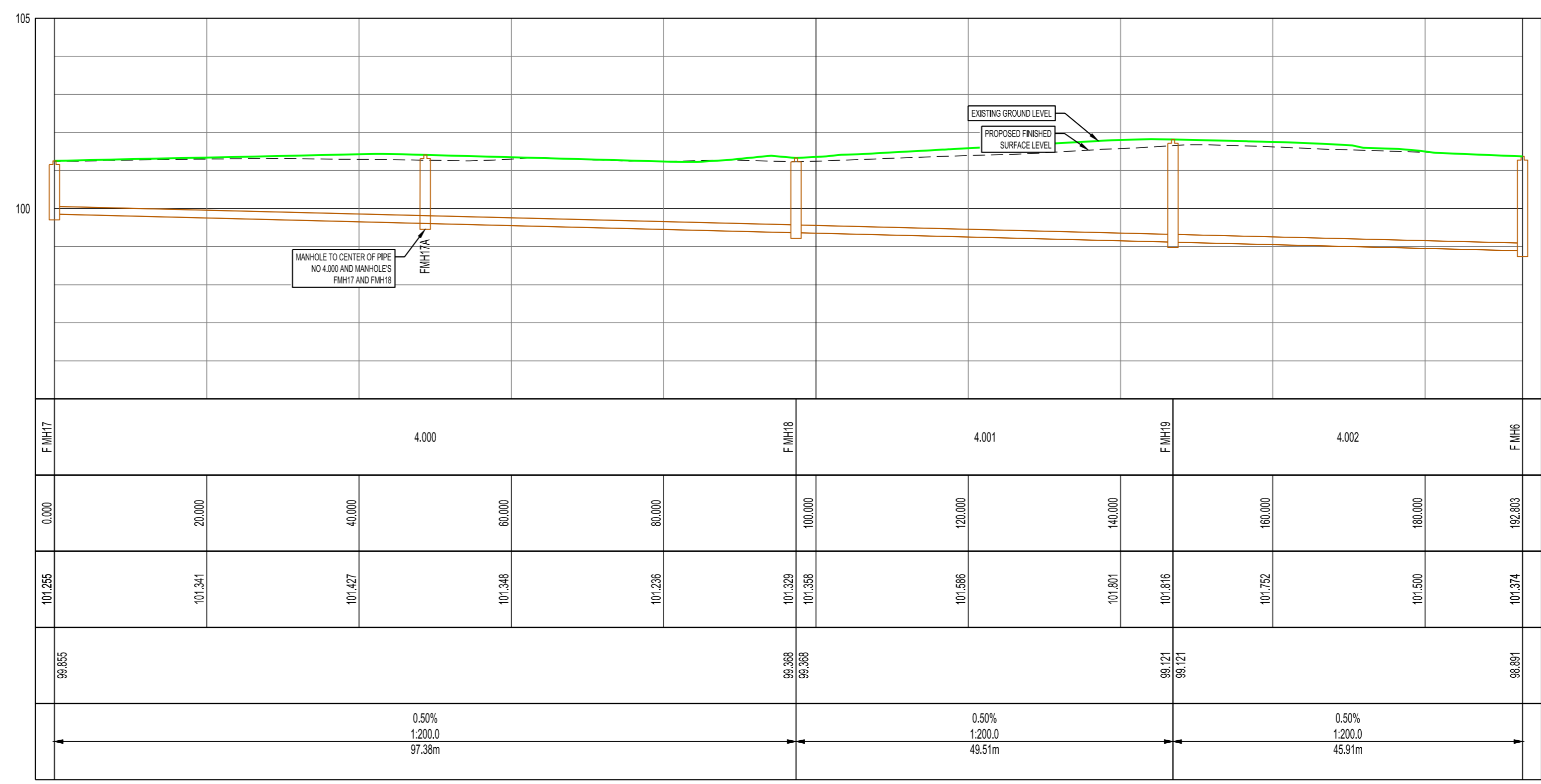


LONGSECTION F MH7 TO F MH6
FROM 0.000 TO 192.833

SCALES:
Horizontal 1:500
Vertical 1:100

DATUM 95.000

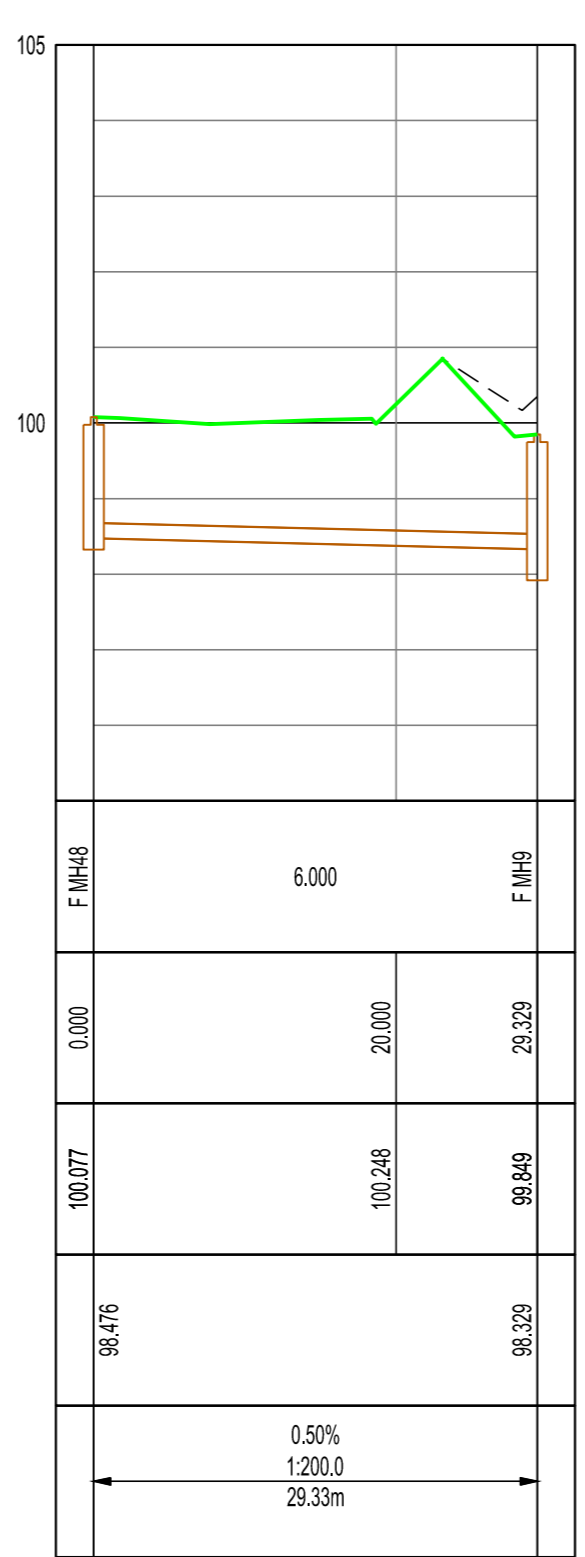
REFERENCE	F.MH7	4.000	F.MH6
DISTANCE (m)	0.000	20.000	192.833
GROUND LEVEL	101.295	101.241	101.274
PIPE INVERT LEVEL	98.856	98.856	98.851
SLOPE / LENGTH		0.50% 1,200.0 37.39m	



SCALES:
Horizontal 1:500
Vertical 1:100

DATUM 95.000

REFERENCE	F.MH7	4.000	F.MH6
DISTANCE (m)	0.000	20.000	192.833
GROUND LEVEL	101.295	101.241	101.274
PIPE INVERT LEVEL	98.856	98.856	98.851
SLOPE / LENGTH		0.50% 1,200.0 37.39m	

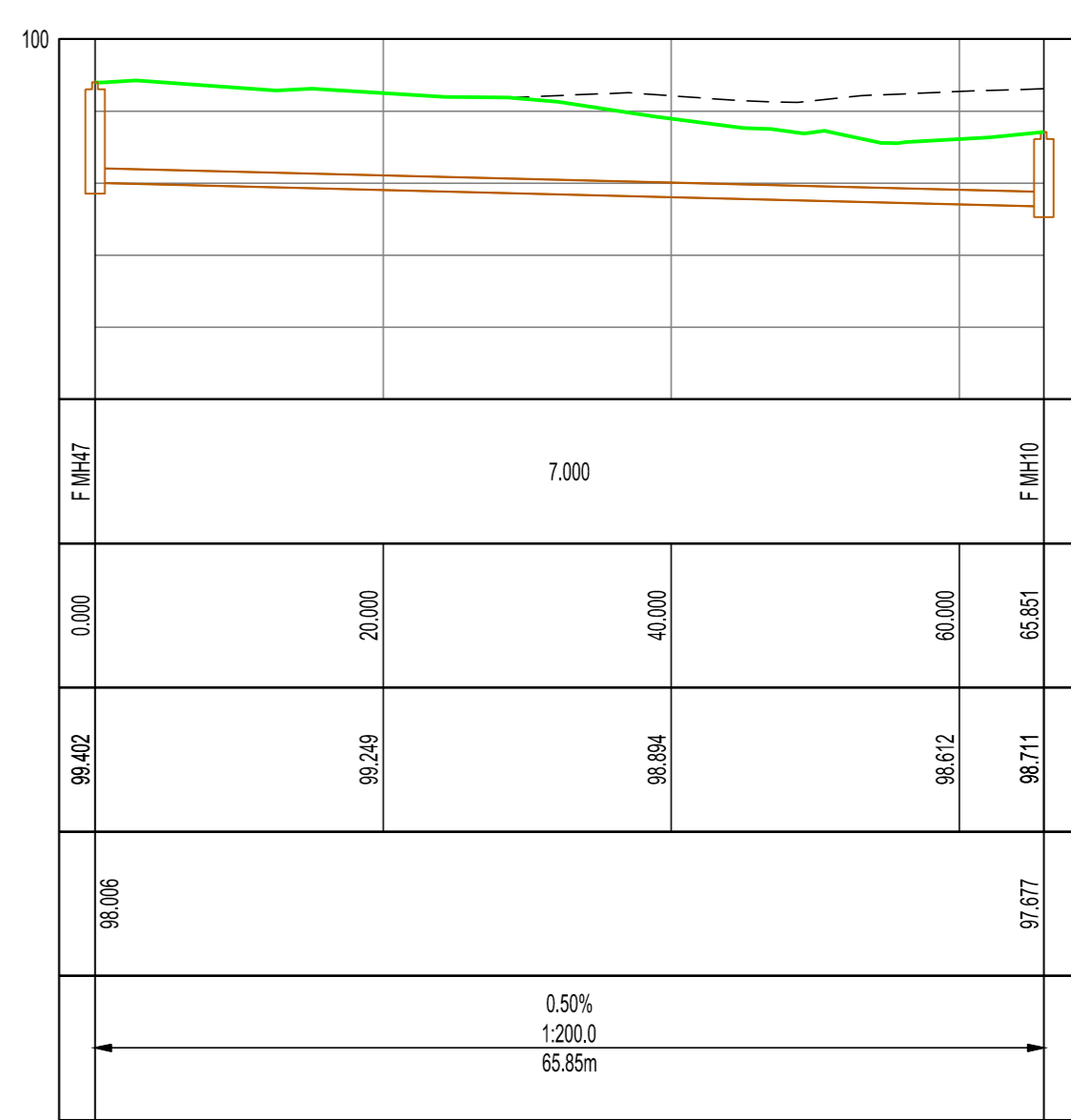


LONGSECTION F MH8 TO F MH9
FROM 0.000 TO 29.329

SCALES:
Horizontal 1:500
Vertical 1:100

DATUM 95.000

REFERENCE	F.MH8	6.000	F.MH9
DISTANCE (m)	0.000	20.000	29.329
GROUND LEVEL	98.615	98.248	98.085
PIPE INVERT LEVEL	96.125	96.125	96.125
SLOPE / LENGTH		0.50% 1,200.0 29.33m	

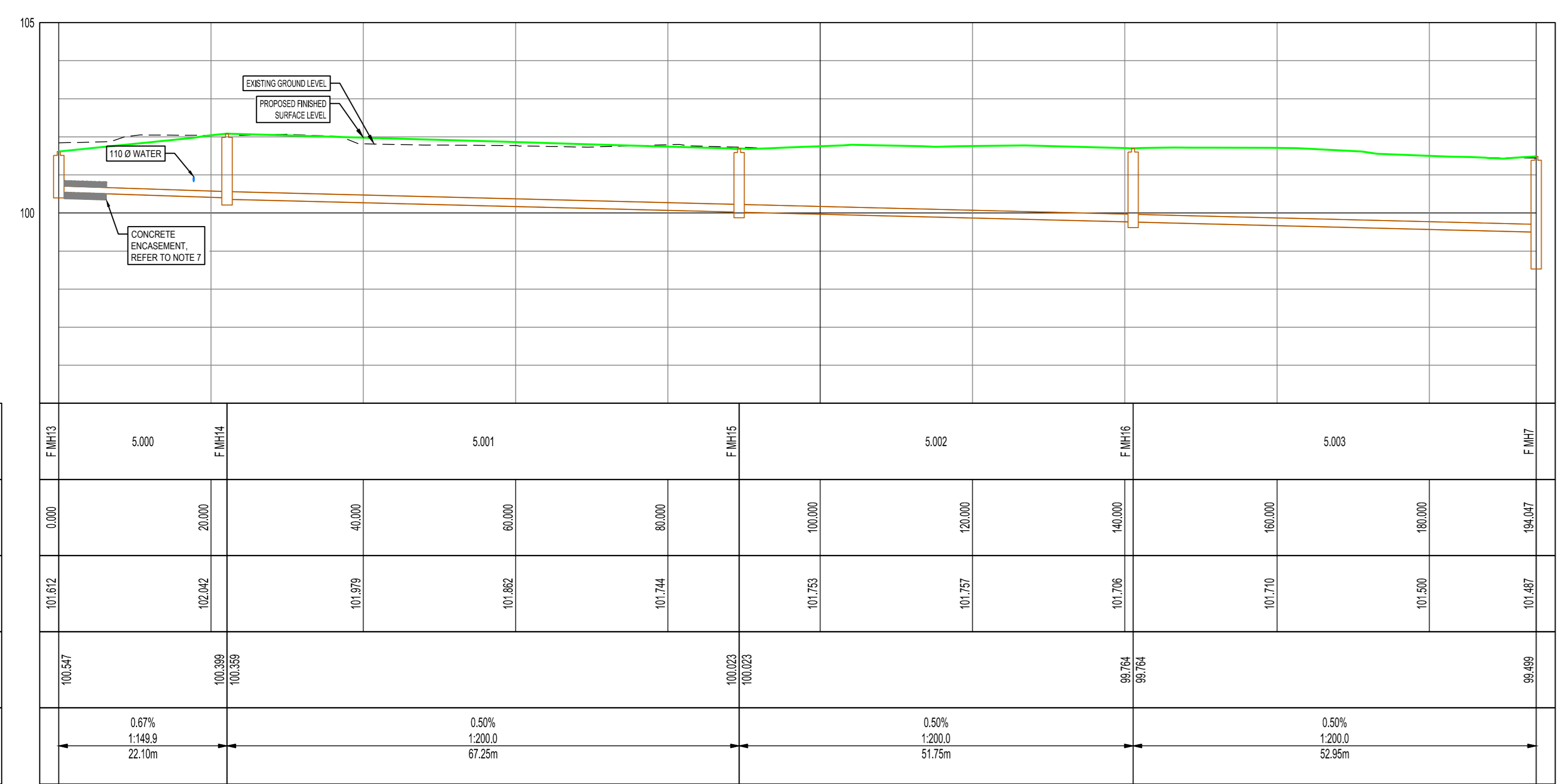


LONGSECTION F MH47 TO F MH10
FROM 0.000 TO 65.851

SCALES:
Horizontal 1:500
Vertical 1:100

DATUM 95.000

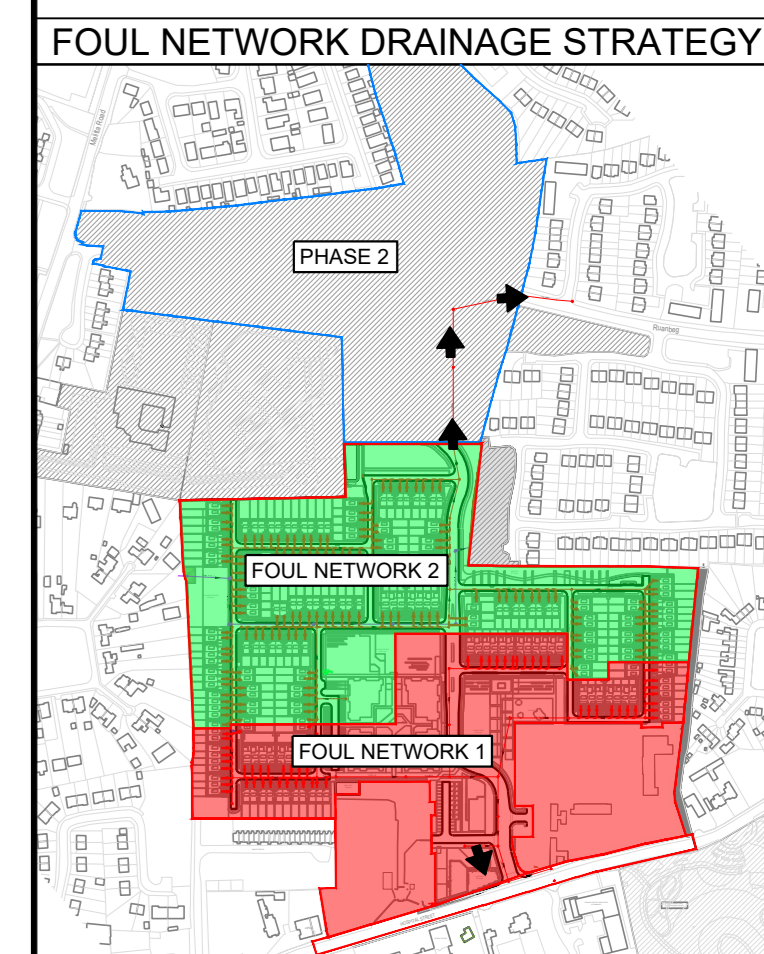
REFERENCE	F.MH13	5.000	F.MH14
DISTANCE (m)	0.000	20.000	59.427
GROUND LEVEL	100.247	100.242	100.102
PIPE INVERT LEVEL	97.392	97.392	97.392
SLOPE / LENGTH		0.67% 1,149.0 22.10m	



LONGSECTION F MH13 TO F MH7
FROM 0.000 TO 194.047

LEGEND

EXISTING GROUND LEVEL	---
PROPOSED FINISHED SURFACE LEVEL	---



REV	DATE	DESCRIPTION	BY	CHECK
A	17/04/19	IRISH WATER DESIGN QA COMMENTS	JC	BM

CLIENT: BALLYMOUNT PROPERTIES LTD.
ARCHITECT: RKD ARCHITECTS
59 NORTHUMBERLAND ROAD
DUBLIN 4

GARLAND
DUBLIN LIMERICK WATERFORD INTERNATIONAL
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E: info@garlandconsultancy.com W: www.garlandconsultancy.com

PROJECT: RESIDENTIAL AND NEIGHBOURHOOD CENTRE DEVELOPMENT (PHASE 1) AT FORMER MAGEE BARRACKS

TITLE: PHASE 1 FOUL NETWORK 1 LONGITUDINAL SECTIONS

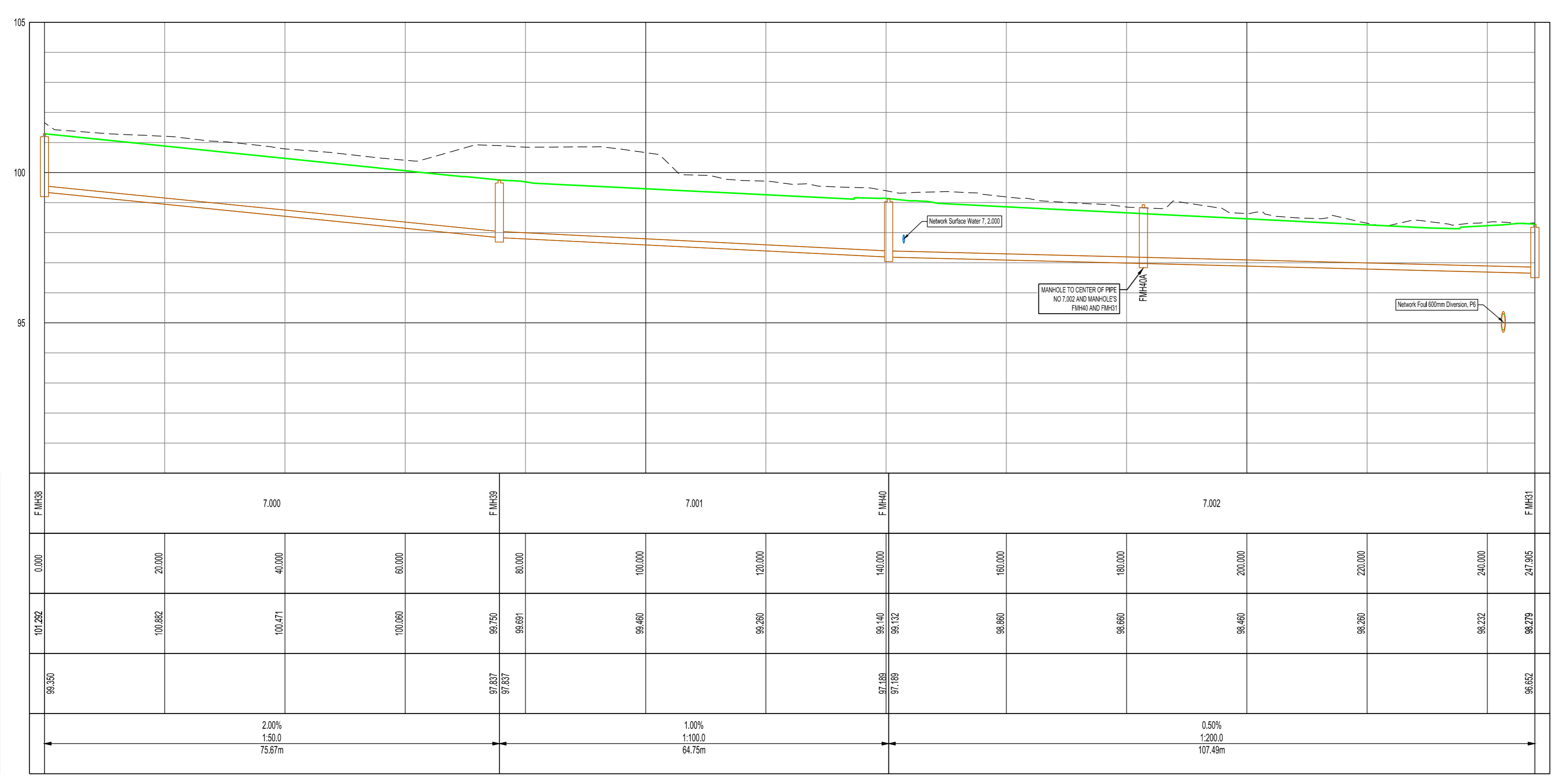
DATE: 17/04/19

AS SCALE: 1:500

JOB No: R1831

REV: 1010

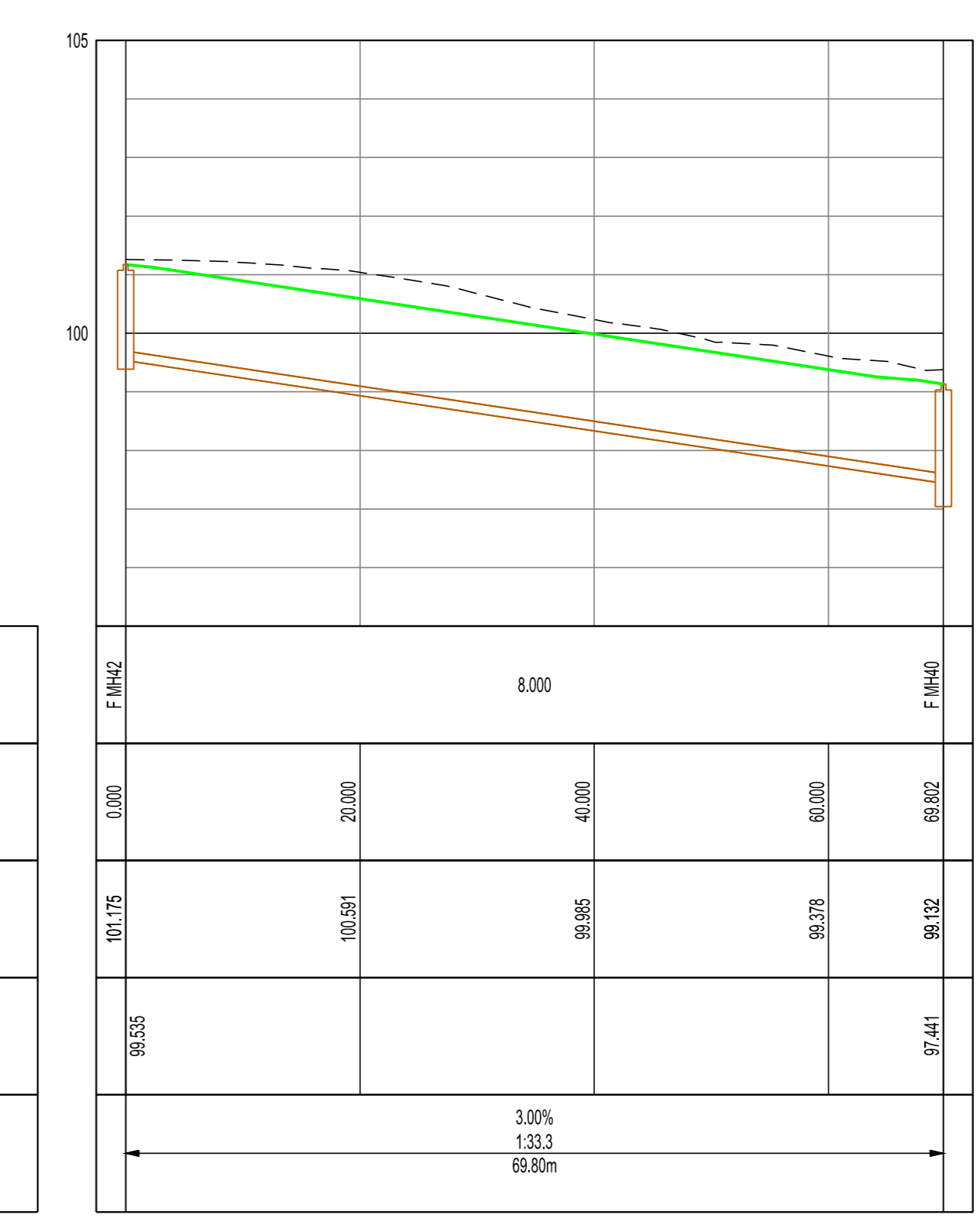
- NOTES**
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 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL RELEVANT ARCHITECTS AND SERVICES ENGINEERS DRAWINGS.
 - TEMPORARY PROPPING TO BE THE RESPONSIBILITY OF THE MAIN CONTRACTOR.
 - REFER TO DRAWING R1811 - 1001 FOR PHASE 1 FOUL NETWORK 1 AND 2 LAYOUT.
 - ALL EXISTING MANHOLE COVERS & ROOFS TO BE ADJUSTED TO SUIT NEW GROUND LEVELS.
 - RECESSED MANHOLES TO BE USED IN ALL AREAS WITH PAVERS.
 - ALL SURFACE WATER & FOUL SEWERS WITHIN 1200mm OF FINISHED GROUND LEVEL TO BE ENCASED IN MINIMUM 200mm 20/10 CONCRETE.
 - ALL WORKS TO BE IN COMPLIANCE WITH IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE AND WASTEWATER INFRASTRUCTURE STANDARD DETAILS.



LONGSECTION F MH38 TO F MH31
FROM 0.000 TO 247.955

SCALES:
Horizontal 1:500
Vertical 1:100
DATUM 90.000

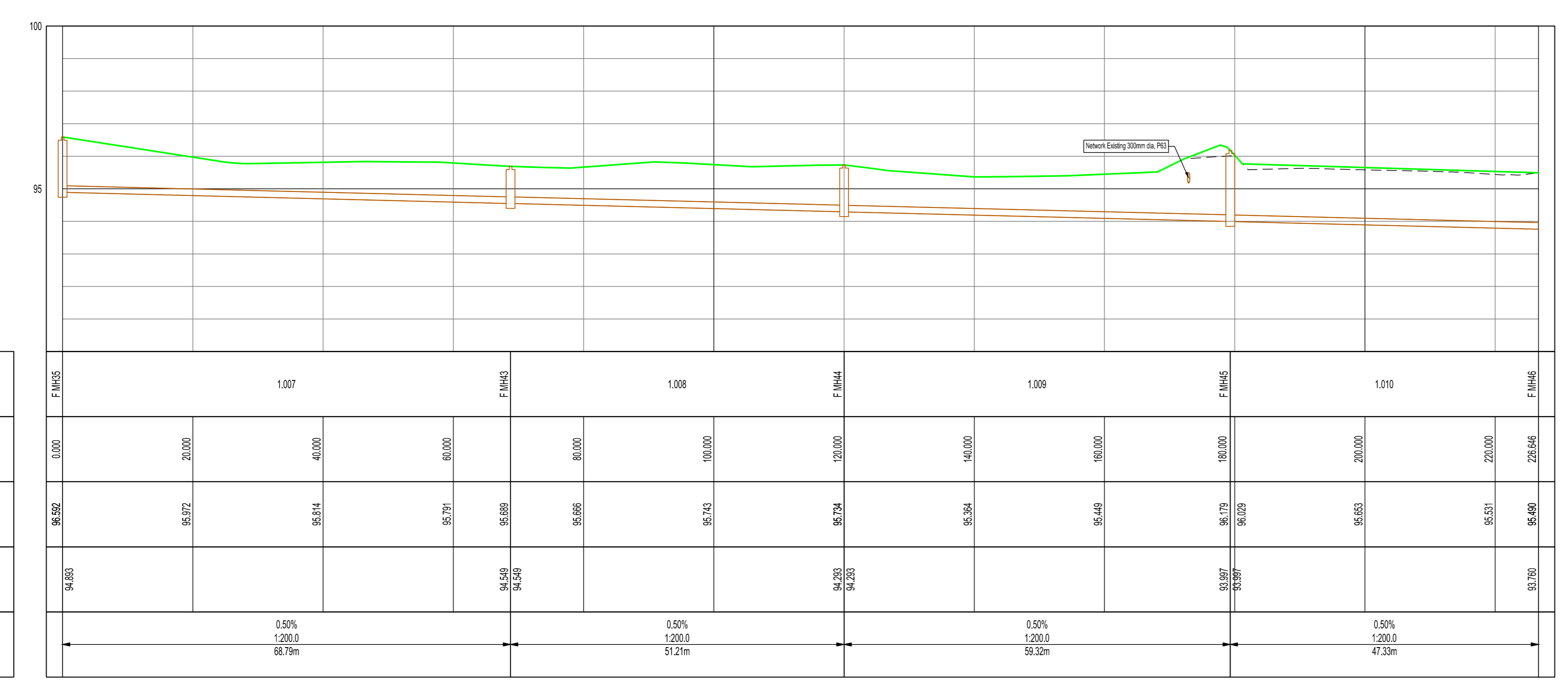
REFERENCE	F MH38	7.000	F MH35	7.001	F MH34	7.002	F MH31
DISTANCE (m)	0.000	20.000	40.000	60.000	80.000	100.000	120.000
GROUND LEVEL	107.926	107.982	107.471	107.296	99.730	99.691	98.460
PIPE INVERT LEVEL	98.724		97.927	97.929		97.146	97.148
SLOPE / LENGTH		2.20% 75.67m		1.80% 64.75m		1.00% 107.49m	



LONGSECTION F MH42 TO F MH40
FROM 0.000 TO 68.802

SCALES:
Horizontal 1:500
Vertical 1:100
DATUM 95.000

REFERENCE	F MH42	8.000	F MH40
DISTANCE (m)	0.000	20.000	40.000
GROUND LEVEL	107.175	107.591	99.845
PIPE INVERT LEVEL	98.535		97.141
SLOPE / LENGTH		3.00% 68.80m	



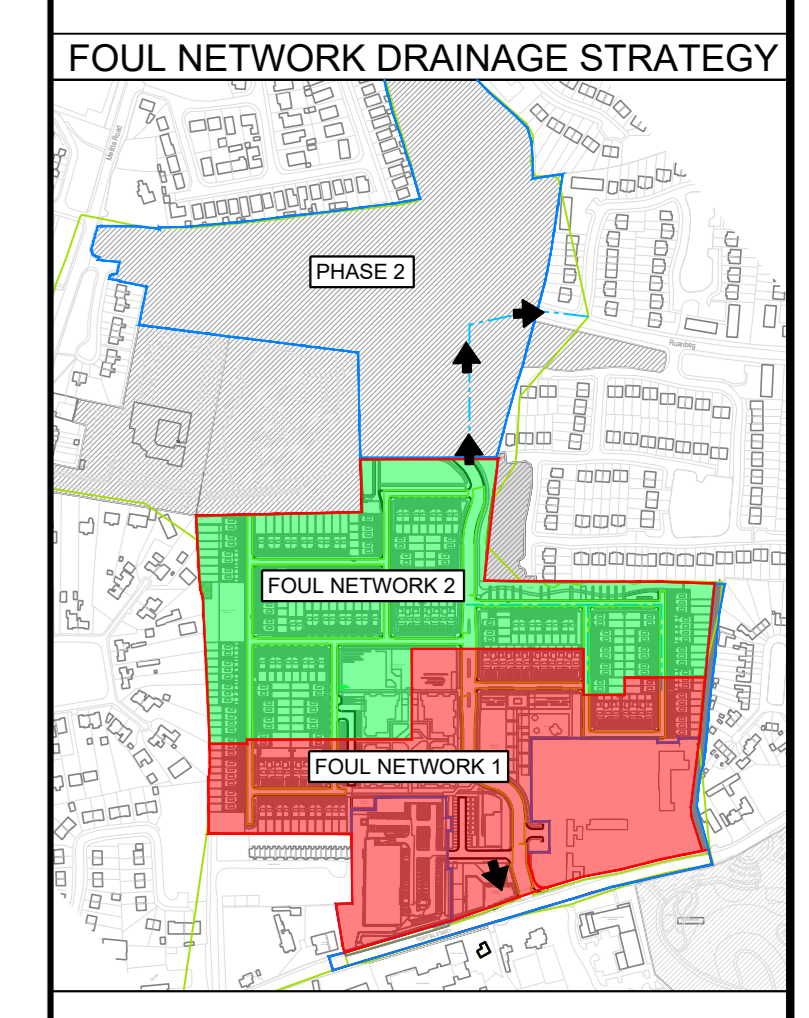
LONGSECTION F MH45 TO F MH46
FROM 0.000 TO 226.646

SCALES:
Horizontal 1:500
Vertical 1:100
DATUM 90.000

REFERENCE	F MH45	1.007	F MH44	1.008	F MH43	1.009	F MH42	1.010	F MH46
DISTANCE (m)	0.000	20.000	40.000	60.000	80.000	100.000	120.000	140.000	160.000
GROUND LEVEL	96.492	96.973	96.814	95.791	95.889	95.698	95.142	95.734	95.394
PIPE INVERT LEVEL	94.889		94.545	94.524		94.593	94.525		93.987
SLOPE / LENGTH		0.50% 1.20% 88.78m		0.50% 1.20% 51.21m		1.00% 1.20% 55.52m		0.50% 1.20% 47.33m	

LEGEND

EXISTING GROUND LEVEL	---
PROPOSED FINISHED SURFACE LEVEL	----



REV	DATE	DESCRIPTION	DWG	APP
A	17/04/19	IRISH WATER DESIGN QA COMMENTS	JC	BM

CLIENT: BALLYMOUNT PROPERTIES LTD.

ARCHITECT:
RKD ARCHITECTS
58 NORTHUMBERLAND ROAD
DUBLIN 4

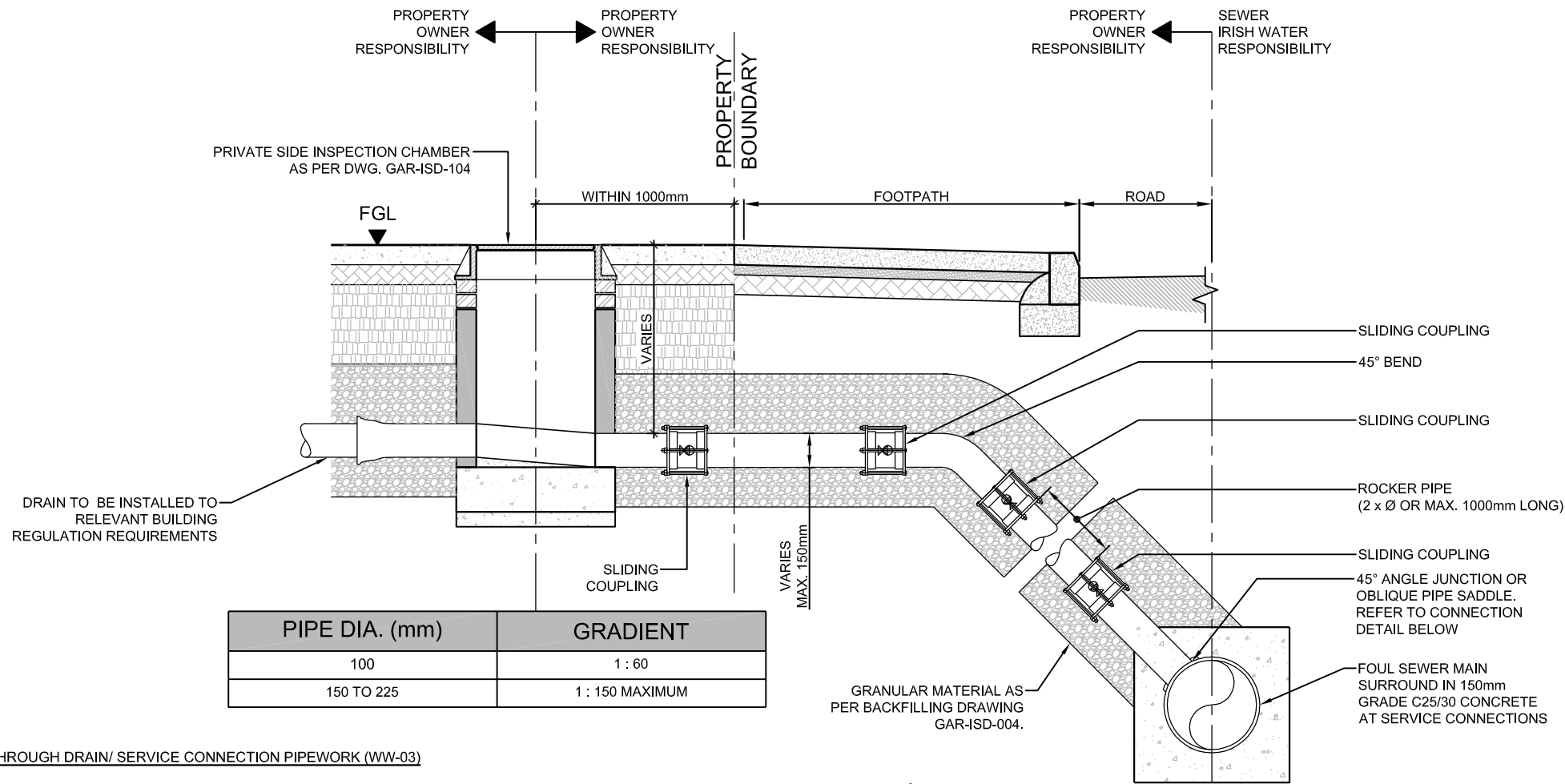
GARLAND
DUBLIN LIMERICK WATERFORD INTERNATIONAL
T: +353 (0) 1 494622 T: +353 (0) 1 317708 T: +353 (0) 878811 T: +353 (0) 310108
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PROJECT:
RESIDENTIAL AND NEIGHBOURHOOD CENTRE
DEVELOPMENT (PHASE 1) AT FORMER MAGEE
BARRACKS

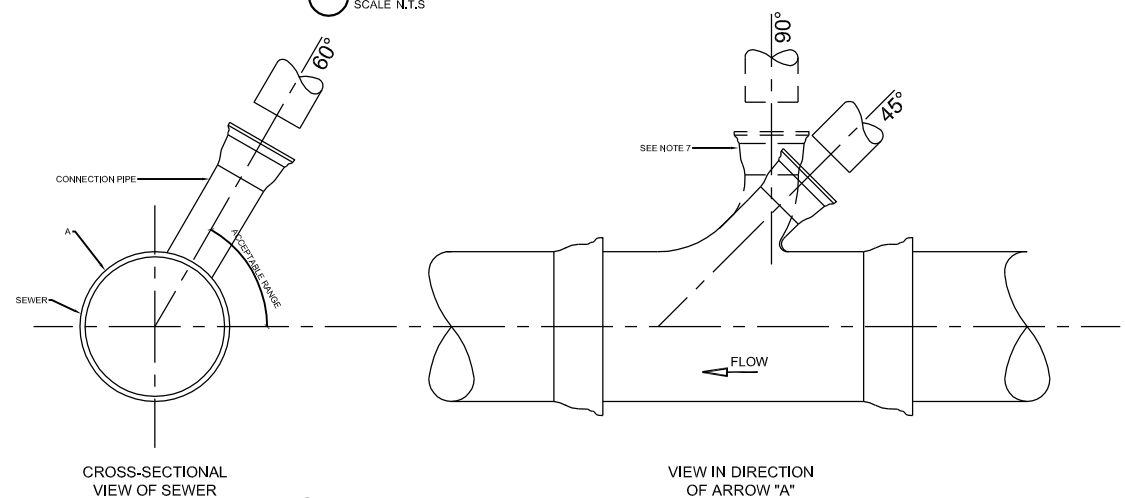
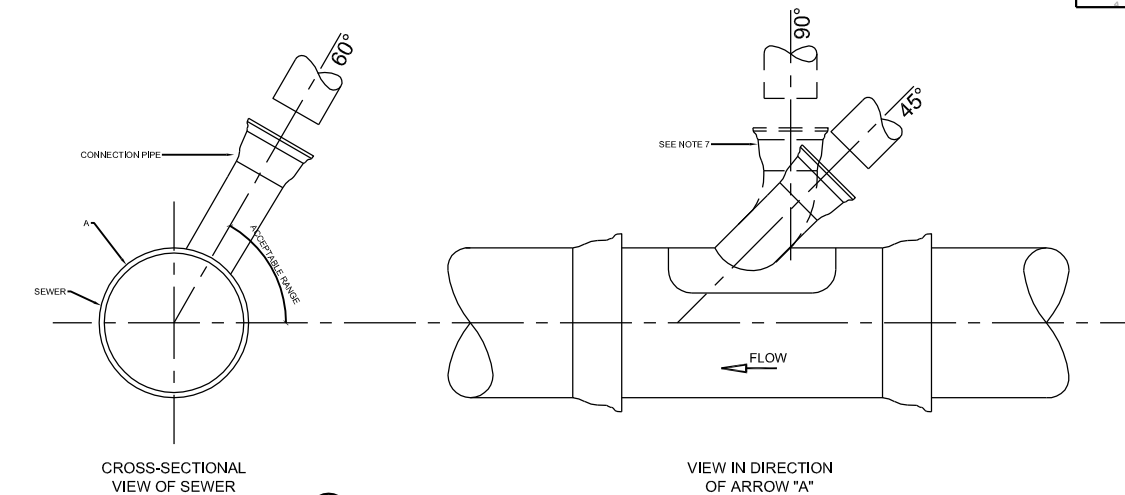
TITLE:
PHASE 1
FOUL NETWORK 2
LONGITUDINAL SECTIONS (SHEET 2 OF 2)

STATUS:
PLANNING APPLICATION

DRAWN: SL DES: BM
CHK: BY: BM APP: BY: CR
DATE: 17/04/19 JOB No:
AS SCALE: 1:500 @ A0 **R1831**
REV: A



TYPICAL SECTION THROUGH DRAIN/ SERVICE CONNECTION PIPEWORK (WW-03)
SCALE N.T.S



TYPICAL SEWER/ SERVICE PIPE CONNECTION (WW-04)
SCALE N.T.S

45° JUNCTION CONNECTION
SCALE N.T.S

DETAIL NOTES

- DRAIN AND SERVICE CONNECTIONS (WW-003)**
1. AN INSPECTION CHAMBER SHOULD BE LOCATED AT OR WITHIN 1m OF THE PROPERTY BOUNDARY AT THE UPSTREAM END OF EACH SERVICE CONNECTION ON THE PRIVATE SIDE OF THE CURTILAGE. IF PRACTICABLE, CONSULT WITH IW ON ALTERNATIVE LOCATIONS.
 2. 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.
- TYPICAL SEWER/SERVICE PIPE CONNECTION (WW-004)**
3. 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 SEWER TO THE INSPECTION CHAMBER, INSTALL THE INSPECTION CHAMBER AND SEAL THE UPSTREAM END UNTIL THE CONNECTION IS REQUIRED.
 4. THE VERTICAL ANGLE BETWEEN THE SERVICE CONNECTING PIPE AND THE HORIZONTAL SHALL BE GREATER THAN 0° AND NOT MORE THAN 60°.
 5. WHERE THE CONNECTION IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER OF 300mm DIAMETER OR LESS, CONNECTIONS SHALL BE MADE USING 45° ANGLE JUNCTIONS.
 6. WHERE THE CONNECTION IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER GREATER THAN 300mm :
 - A) IF 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) IF THE DIAMETER OF THE CONNECTING PIPE IS LESS THAN OR EQUAL TO HALF THE DIAMETER OF THE SEWER, THEN THE CONNECTION SHALL BE MADE USING A PREFORMED SADDLE FITTING WITH A SLOW BEND BETWEEN THE SADDLE AND THE CONNECTING SEWER/DRAIN .
 7. 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 MANUFACTURER'S INSTRUCTIONS TO ENSURE A WATERTIGHT JOINT, THE CONNECTING PIPE SHALL NOT PROTRUDE INTO THE SEWERS.
 8. THE USE OF 90° CONNECTIONS TO THE SEWER MAY BE ALLOWED SUBJECT TO IRISH REVIEW, PROVIDED THE SADDLE OR BRANCH INCORPORATES A SWEEP TEE CONNECTION TOWARDS THE DIRECTION OF FLOW.

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Sheet Title:
INFRASTRUCTURE STANDARD DETAILS
(WW-03/ WW-04)

Sheet No. GAR-ISD-101 Rev. A

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APPENDIX B
Minutes of Meeting with Kildare
County Council WSD



Ben Mong

From: Cathal Rigney
Sent: Wednesday 23 January 2019 15:09
To: sean@formationgroupplc.com; pturley@johnspainassociates.com; nbyrne@johnspainassociates.com; Paul Davey; sguidera@rkd.ie
Cc: Ben Mong
Subject: Magee Barracks - Record of Meeting with KCC Drainage Department

Dear All,

Below, please find note of our meeting with David Hall of KCC Drainage Department.

If you have any queries, please don't hesitate to contact me.

Meeting with David Hall, KCC – 10 January 2019

The meeting was very positive and a number of issues raised in the Planning Report were discussed and agreed. The following is an outline of the main points:

- Potable Water (Irish Water Responsibility):
 - The water requirements for the project will be reassessed in light of the increase density of the development.
 - Liaise with Irish Water in relation to getting Design Acceptance (this is a process Irish Water have developed for such projects)
- Foul Water (Irish Water Responsibility):
 - The proposal to discharge part of the development to the Ruanbeg System will necessitate a survey of a portion of the system (the section passing under Chapmans Garage) as the KCC / Irish Water Records of same are unclear.
 - It was suggested that discharging all of the development to the public system in Hospital Street might be a more acceptable alternative. This would require pumping.
- Surface Water (Kildare County Council Responsibility):
 - KCC to revert on the location of the Public Surface Water system within Hospital Street. KCC don't believe that there is any issue in relation to this system having adequate capacity for the proposed development.
 - Written confirmation from TII in relation to the capacity of the carrier pipe under the M7 motorway. It was noted that confirmation of capacity was received via email from TII previously but a formal letter is required.
 - Rainwater Butts to be provided in the development.
- Flooding (Kildare County Council Responsibility):
 - The effects of the undeveloped Phase 2 site will have on the Phase 1 site to be addressed.

Regards,

Cathal Rigney



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APPENDIX C
Kildare NRO correspondence



Ben Mong

From: John Grealish <jgrealish@kildarenrdo.com>
Sent: Thursday 24 January 2019 17:46
To: Ben Mong
Cc: Cathal Rigney
Subject: RE: Kildare - TII carrier pipe

Ben,
I refer to previous emails and correspondence dated 9th January
Kildare NRO has no objection to the proposed peak flow discharge of 27l/s from the former Magee Barracks site, to the carrier pipe installed as part of the M7 Kildare Town Bypass Scheme, as set out in your correspondence dated 9th January 2019.

This is conditional on

1. A satisfactory maintenance regime being put in place to ensure that all attenuation proposals are regularly maintained and operating effectively.
2. A flow measurement device being installed to record discharge flows from the site. The flow measurement device is to be maintained for a period of 5 years after completion of construction with measurement data being forwarded to the council on a monthly basis. Details of the type of measurement device and its location to be agreed with the council prior to commencement of construction.

I cannot confirm TII,s position, however it is my understanding that they are a statutory consultee under the process.

I trust this is satisfactory.

Regards,

John Grealish, BE CEng MIEI
Chartered Engineer
A/Senior Engineer

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email: jgrealish@kildarenrdo.com



Tá an ríomhphost seo príobháideach agus ní ceadmhach úsáid an ríomhphost seo d'éinne ach don té ar seoladh chuige é. D'Fhéadfadh go mbeadh eolas inti atá faoi phribhléid agus rúnda de réir an dlí. Munar duit an ríomhphost seo, déan teagmhail leis an seoltóir comh luath agus is féidir. D'fhéadfadh nach iad tuairimí Chomhairle Chontae Chill Dara na tuairimí curtha in iúl ins an ríomhphost seo.

Déanann Comhairle Chontae Chill Dara iarracht na ríomhphoist a chosaint ó víris. Mar sin féin, moltar duit gach ríomhphost a scanadh mar ní ghlacann an Comhairle aon dliteanas i leith damáiste dod' chórais.

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