

**Habitats Directive Appropriate Assessment
Screening Determination**

Social Housing, 19 & 20 Dr Croke Place, Kilbrin.



Cork County Council
Comhairle Contae Chorcaí

**Completed by: Ian McDermott,
Cork County Council.**

Date: July 2022

This document contains the Habitats Directive Screening Determination of Cork County Council in respect of proposed social housing at 19 & 20 Dr Croke Place, Kilbrin. The determination is based on the information provided in the Appropriate Assessment Screening Report which has been prepared by O'Connor Sutton Cronin & Associates Ltd. (OCSC) for Cork County Council and which is appended to this document. This screening determination should be read in conjunction with that report.

<p>Name of the project</p> <p>Social Housing, 19 & 20 Dr Croke Place, Kilbrin.</p>
<p>Description of the project</p> <p>Proposal relates to the construction of 2 no. social houses in Kilbrin, County Cork.</p> <p>While the surface water drainage system has not been designed, Cork County Council have identified the following site-specific elements for surface water disposal;</p> <ul style="list-style-type: none"> • The public car parking bays constructed as part of the project are proposed to drain into existing gullies which are connected to the combined sewer which is ultimately treated at the Kilbrin wastewater treatment plant. • It is proposed to drain each dwelling plot to a soakaway in the rear garden. This will need to be designed in accordance with BRE Digest Standard 365. <p>Wastewater is to be directed to the Kilbrin Public WWTP.</p>
<p>Name and location of EU sites subject to screening</p> <p>The Blackwater (Munster) 090 watercourse, is located approximately 300m northeast of the development site, and the River Allow 060 watercourse, is located 630m to the northwest. Both these watercourses eventually discharge into the Blackwater River (Cork/Waterford) Special Area of Conservation at different locations approximately 3.8km west and 5.6km south of the site respectively.</p> <p>Two other European designated sites have been noted as occurring within 15km of the proposed development site namely;</p> <ol style="list-style-type: none"> 1. Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area – located 14.9km west; 2. Kilcolman Bog Special Protection Area – located 14.9km east. <p>No other EU sites have been identified.</p>
<p>Is the project directly connected with or necessary to the management of the sites listed above?</p> <p>No.</p>
<p>Describe how the project (alone or in combination) is likely to affect the Natura 2000 Site.</p> <p>The submitted screening report considers potential impacts on European Sites as follows:</p>

1. Land take / habitat loss;
2. Resource requirements;
3. Duration of works;
4. Emissions (Disposal to land, water or air);
5. Excavation requirements / erosion / sedimentation;
6. Transportation requirements;
7. Duration of construction, operation, decommissioning;
8. Habitat reduction;
9. Species disturbance;
10. Habitat or species fragmentation;
11. Changes in key indicators of conservation value;
12. Climate change.

An assessment of significance of potential effects in relation to points 1 – 12, as detailed above, has been provided within the submitted screening report in regard to the proposals potential impact on European sites. This assessment primarily focuses on the Blackwater River SAC due to the relative proximity of the site to the SAC and watercourses hydrologically connected to the designated site. Furthermore, the report concentrates on the Blackwater River SAC due to operational wastewater generated as a result of the proposal which will be treated by the Kilbrin WWTP before discharging to an adjoining watercourse connected to the SAC.

Risk of the proposed project giving rise to significant negative effects on the European sites is ruled out for the following reasons:

1. There will be no direct interventions within any European Site and accordingly the potential for the project to give rise to direct impacts on habitats which are qualifying interests of nearby European Site are screened out.
2. There are no requirements of the proposed development which will be additional to existing requirements, therefore there would be no interactions with resources necessary for the maintenance of the integrity of any European Site.
3. Given the relatively small scale and short-term nature of the construction works, the duration of the works will not have a significant impact nearby European sites.
4. Given the lack of hydrological connection to any European Site and intervening distance potential for impact during the construction phase are determined to be negligible. During the operational phase a new surface water drainage arrangement system will be designed for the site, with the proposed housing units discharging to onsite soakaways and car parking bays connecting into the existing infrastructure. Foal drainage will be connected to the existing Kilbrin wastewater treatment plant. This plant is stated to be operating in compliance with license conditions and has sufficient capacity to accept the additional loading which will be generated by this development. It can therefore be concluded that no significant impacts to the Blackwater River SAC resulting from the proposed development are envisaged.
5. The proposed development does not require major excavation works. Given the relatively small scale and short term nature of the works, coupled with the distance of the development works from the European site and the fact that the Blackwater River SAC is

located upstream of the study area, there is no direct significant effects to the European site anticipated as a result of erosion and/or sedimentation.

6. There will be a minor temporary increase in traffic during the construction phase, however these effects are considered to be negligible with regard to European sites due to the small scale of the works and distances is involved.
7. The construction result in residential development which will be permanent features with no decommissioning phase. The duration of the construction works will have no effects on European sites given the small-scale nature of the works, the distances and indirect pathways identified.
8. There will be no reduction of habitat of European sites resulting from the proposed development.
9. There are no pathways for disturbance effects identified on qualifying species due to the distance between the proposed development and the nearest European site.
10. No potential effects on designated European sites as a result of habitat or species fragmentation has been identified.
11. No changes in key indicators of conservation value have been identified due to the scale and timeline of the development combined with the distance and indirect pathways identified, effects arising from these works will be negligible.
12. Due to the nature and scale of the proposed work, the effects of the proposed development on climate and Irelands obligations under the Kyoto Protocol are not anticipated to be significant.

Are there other projects or plans that together with the project being assessed that could affect these sites (provide details)?

No other plans or projects have been identified within the submitted AA Screening Report. The report states that given the nature of the development, it's scale, the existing localized and temporary nature of the construction effects identified, the proposed development will not lead to a significant in combination effect with any other plans and projects.

Screening Report Conclusion

The report as submitted states that the project is not foreseen to give rise to any significant adverse effects on any designated European sites, alone or in combination with other plans or projects. This evaluation is made in view of the conservation objectives of the habitats or species for which these sites have been designated. Consequently, a stage two is not required for the project.

Cork County Council evaluation and overall conclusion that there are no significant effects on European Sites foreseen as a result of the proposal.

I consider the primary issues of ecological concern is to the Blackwater River (Cork/Waterford) Special Area of Conservation as a result of the proposal due to activities which could have the potential to alter natural hydrological flows, or which could pose a threat of introducing toxic

pollutants such as hydrocarbons, or increasing turbidity, silt or nutrients into the system, which could have the potential to give rise to significant negative impacts on some of the qualifying interests associated with this site.

I am happy that the proposal as it stands does not pose a significant threat to the qualifying interests of the SAC or any Natura 2000 site for the following reasons:

- There is no spatial overlap between the proposed development site and any Natura 2000 site;
- No direct loss, alteration or fragmentation of habitats will occur within any Natura 2000 site;
- The proposed development does not present a significant risk to the levels of occurrence, population density and habitats for which qualifying species of nearby European sites are associated with either during construction or post construction due to disturbance and/or displacement effects. There are no features or habitats of value within the proposed development site which would differentiate it as a critical resource for ex-situ qualifying species from similar habitats in the surrounding area. Furthermore, due to the nature of the works and existing environment, which is subject to noise disturbance from the village of Kilbrin and adjacent site works, no works which could generate significant noise above already occurring background levels are expected to be required during the construction phase. Therefore, no noise related disturbance that could result in significant effects to qualifying species is predicted.
- The site is located sufficiently distant from the River Blackwater (circa 8km) and River Allow (circa 3.5km) to be satisfied that there is no risk of activities associated with the project causing disturbance to species which are qualifying interests of the SAC;
- The site does not represent critical wintering, breeding and/or foraging habitat for ex-situ species of conservation concern of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA and the Kilcolman Bog SPA.
- The risk of surface water emissions associated with the proposed development is considered low during the construction phase and imperceptible during the post construction phase. It is noted that due to the scale of the works, intervening distance, the presence of buffers between the work area and any designated European site, and the lack of a direct hydrological connection, the risk of significant water quality impacts as a result of the proposed development are not likely;
- It is proposed that surface water run-off in the post construction phase will be managed through on-site soakaways and surface water emanating from the proposed car parking bays will be treated by way of the public WWTP prior to discharge;
- The Kilbrin WWTP has capacity to accept the loading which will be generated by this development and is operating in accordance with its license conditions. There is no evidence to indicate that the current discharge from the Kilbrin WWTP or the additional loading of the proposed development is currently or will impact on water quality within the Blackwater River SAC.

Overall, I am satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of any European site, in view of the sites Conservation Objectives.

2 no Housing Units

Dr. Croke Place, Kilbrin, Co. Cork

Planning Report



**Cork
County Council**
Comhairle Contae Chorcaí

Proposed Development

This report relates to a Cork County Council application to seek approval for Part 8 Planning Exemption under 'Planning and Development (Section 179A) Regulations 2023' for the construction of 2 no. housing units at Dr. Croke Place, Garranmacgarrett, Kilbrin, County Cork.

The original housing estate at Dr Croke Place, was built by Cork County Council, comprising of 16 semi-detached and terraced 2 storey units, and 2 serviced sites. Units 17 and 18 were recently constructed by CCC on the adjacent serviced site. This application is to develop the remaining serviced site for social housing. The estate is situated at the centre of Kilbrin village, 7km northeast of Kanturk and 19km northwest of Mallow, the two largest towns in the Municipal District in north Cork.

Policy Context

The proposed development is located within the development boundary of Kilbrin as defined by the County Development Plan 2022. The Development Boundary Objective for Kilbrin states:

County Development Plan Objective Development Boundary Objective for Kilbrin	
Objective No.	
DB-01	<ul style="list-style-type: none">a) Within the development boundary of Kilbrin encourage the development of up to 10 houses during the period.b) Appropriate and sustainable water and waste water infrastructure, that secures the objectives of the Water Framework Directive and the protection of the Blackwater Special Area of Conservation must be available to cater for the development of the settlement.



Public and Private Open Space

Larger gardens (315sqm and 340sqm) have been provided to compensate for the lack of public open space within the existing estate. This is an acceptable approach.

Services

Submitted documents state that Cork County Council Architect's Dept. has made initial pre-connection enquiries with Irish Water in regard to water and foul drainage infrastructure. Irish Water have confirmed that connection to the network is feasible without infrastructural upgrade for both Water and Wastewater connections.

To comply with Objective WM11-10 and paragraph 11.10.4 in the Cork County Development Plan 2022, a softer engineered or 'nature-based approach' shall be used to manage rainfall runoff on the site by managing and treating surface water above-ground rather than sending rainfall below-ground into drains, pipes, attenuation tanks and other 'hard engineering' solutions. The approach aims to maximise the retention and/or infiltration of storm water runoff on-site and eliminate discharges to the public drainage system, thereby mitigating the drainage impact of the proposed development. A Drainage Impact Assessment has been submitted which sets out the SuDS measures proposed for this development.

AA Screening

A 'Habitats Directive Appropriate Assessment Screening Determination' report has been provided as part of submitted documents. Based on the Appropriate Assessment Screening process, it has been determined that no likely significant effects will arise on any European sites.

EIAR Screening

An EIA assessment has been carried out – see Appendix A – and this concluded that based on a preliminary examination of the nature, size or location of the development, there is no real likelihood of significant effects on the environment and EIA is not required.

Exemption Status

In considering whether or not the proposed development constitutes exempt development under Section 179(A) of the Planning and Development Act 2000 (as amended), the proposed development is considered against the requirements and criteria set out in this section of the Act.

The proposed development is classified as 'Housing Development' on Council owned lands which are within the Development Boundary for Kilbrin as per the CDP 2022 wherein is the stated objective to encourage the development of up to 10 houses within the plan period. The lands are serviceable. An EIAR is not required. As AA has been screened out by the relevant competent expert within Cork County Council, it is considered that the proposed development meets the provisions of Section 179(A) of the Planning and development Act and would therefore be classed as exempt from the Part 8 process.

Conclusion

The proposed redevelopment of the subject site is considered to be in accordance with the core strategy and objectives of the County Development Plan 2022 having regard to its location within the development boundary and as such represents the proper planning and sustainable development of the area.

Appendix A: EIS Assessment

Establishing if the proposal is a ' <i>sub-threshold development</i> ':	
Planning Register Reference:	None provided.
Development Summary:	To construct two 2 bedroom dwellings
Was a Screening Determination carried out under Section 176A-C?	No, Proceed to Part A
A. Schedule 5 Part 1 - Does the development comprise a project listed in Schedule 5, Part 1 , of the Planning and Development Regulations 2001 (as amended)? (Tick as appropriate)	
No	Proceed to Part B
B. Schedule 5 Part 2 - Does the development comprise a project listed in Schedule 5, Part 2 , of the Planning and Development Regulations 2001 (as amended) and does it meet/exceed the thresholds? (Tick as appropriate)	
Yes, the project is of a type listed but is <i>sub-threshold</i> : Class 10 'Infrastructure projects'. The threshold is the construction of more than 500 dwelling units. The proposed development is for 2 housing units which is substantially below this threshold. The proposed project is considered to be an urban development within other parts of a built-up area. The proposed development is 0.1 hectares (ha) which is below the 10 hectares threshold in other parts of a built up area, therefore an EIAR is not required to be produced in accordance with Schedule 5 Part 2 (10) (b) (iv).	Proceed to Part C
C. If Yes , has Schedule 7A information/screening report been submitted?	
No, Schedule 7A information/screening report has not been submitted by the applicant	Preliminary Examination required

Preliminary Examination:		
The planning authority shall carry out a preliminary examination of, at the least, the nature, size or location of the development.		
	Comment:	Yes/No/ Uncertain:
<p>Nature of the development: <i>Is the nature of the proposed development exceptional in the context of the existing environment?</i></p> <p><i>Will the development result in the production of any significant waste, or result in significant emissions or pollutants?</i></p>	<p>No, this is predominately a residential area.</p> <p>If constructed, the proposed residential development is considered to be modest in scale and will not generate excessive waste beyond the typical municipal type and quantities expected in a domestic setting.</p>	No
<p>Size of the development: <i>Is the size of the proposed development exceptional in the context of the existing environment?</i></p> <p><i>Are there cumulative considerations having regard to other existing and/or permitted projects?</i></p>	<p>The size of the proposal is modest and there are no existing or permitted projects that could give rise to cumulative impacts.</p>	No
<p>Location: <i>Is the proposed development located on, in, adjoining or does it have the potential to impact on an ecologically sensitive site or location?¹</i></p> <p><i>Does the proposed development have the potential to affect other significant environmental sensitivities in the area?</i></p>	<p>The Blackwater (Munster) 090 watercourse, is located approximately 300m northeast of the development site, and the River Allow 060 watercourse, is located 630m to the northwest. Both these watercourses eventually discharge into the Blackwater River (Cork/Waterford) Special Area of Conservation at different locations approximately 3.8km west and 5.6km south of the site respectively.</p> <p>Two other European designated sites have been noted as occurring within 15km of the proposed development site namely;</p> <ol style="list-style-type: none"> 1. Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area – located 14.9km west; 2. Kilcolman Bog Special Protection Area – located 14.9km east. <p>The Habitats Directive Appropriate Assessment Screening Determination states that that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of any European site, in view of the sites Conservation Objectives.</p>	No

¹ Sensitive locations or features includes European sites, NHA/pNHA, Designated Nature Reserves, land designated as a refuge for flora and fauna, and any other ecological site which is the objective of a CDP/LAP (including draft plans).

Preliminary Examination Conclusion:

Based on a preliminary examination of the **nature, size or location** of the development, there is no real likelihood of significant effects on the environment.

EIA is not required.

CLIENT:**PROJECT:**

19 & 20, Dr. Croke Place, Kilbrin

DOCUMENT TITLE:

Drainage Impact Assessment

DJF Engineering Services Ltd.

Tramore House, Reeveswood, Douglas Road, Cork, Ireland

Tel: 021-2392424 • Email: info@djfes.com • Web: www.djfes.com

Current Issue	Date	Issue Description	Approvals	
			By	Approved
A	18/07/23	Planning Issue	SH	FM

CONTENTS

1.0	Introduction	3
1.1	Background.....	3
1.2	Scope	3
2.0	Site	5
2.1	Location	5
2.2	Site Topography.....	5
2.3	Adjacent Land Use	5
2.4	Existing Services.....	5
3.0	Surface Water Drainage	6
3.1	Surface Water Discharge Philosophy.....	6
3.2	SuDS Pillars	8
4.0	Flood Risk Assessment	10
5.0	Waste Water	11
6.0	Water	11

Appendix 1 Surface Water Infiltration Calculations

Appendix 2 Irish Water Pre-Connection Enquiry & Confirmation of Feasibility

1.0 INTRODUCTION

1.1 Background

Cork County Council wish to obtain planning permission for two new houses at Dr. Croke Place, Kilbrin, Co. Cork.

Cork County Council have engaged DJF Engineering Services Ltd. to provide Engineering services in relation to the preparation of the planning submission for this development.

1.2 Scope

This Drainage Impact Assessment (DIA) has been prepared to demonstrate how the development successfully uses Sustainable Urban Drainage Systems (SuDS) and nature based solutions to manage surface water within and adjacent to the site.

This DIA has been prepared as per the requirements of the Cork County Development Plan 2022 and the guidance given in Cork County Council Advice Note 1 Surface Water Management published in December 2022.

As the proposed development is for less than 10 residential units and/or less than 500 square meters of new or additional non-residential floorspace, the development is considered to be a "Small-Scale Development".

Table 1 *Nature Based Solutions and Small-Scale Development* of Advice Note 1 states that a DIA for development of less than 10 residential units and/or less than 500 square meters of new or additional non-residential floorspace should include, but is not limited to, the following:

- Full drainage details, drawings, and calculations.
- A SuDS statement incorporating Cork County Council SuDS Selection Hierarchy Sheet for Small Scale Development, showing how design of SuDS have been integrated successfully into the surface water management plan for the site.
- All new developments must allow for Climate Change as set out in Table 11.4 of Chapter 11. (For additional technical advice refer to the Cork County Council Strategic Flood Risk Assessment (SFRA) and the Greater Dublin Strategic Drainage Strategy Technical Documents, Volume 5, Climate Change).
- Show how the 4 pillars of SuDS (Water Quantity, Water Quality, Amenity and Biodiversity) are achieved.

The DIA also outlines the Engineering approach taken for the proposed development in relation to including Waste Water, Water, and Flooding.

2.0 SITE

2.1 Location

The proposed site is located on Cork County Council lands at Dr. Croke Place, Kilbrin, Co. Cork within an existing residential development.

2.2 Site Topography

This is an elevated site approximately 170m above sea level. There is a height difference of approximately 2m across the site falling towards the South East.

Groundwater flow is expected to follow the site topography and flow in a South South Easterly direction.

2.3 Adjacent Land Use

The proposed site is in the South East corner of the Cork County Council lands Dr. Croke Place. There are existing houses in the rest of the Cork County Council plot.

To the South and East there is good quality arable farmland.

2.4 Existing Services

Dr. Croke Place is served by existing water supply pipes, wastewater drainage, electrical services and telecom/data services.

A redundant septic tank is located in the future rear gardens to no.'s 19 & 20. This has been emptied and filled with stone as part of the scope of works for the construction of no.'s 17 & 18 in March 2023.

3.0 SURFACE WATER DRAINAGE

3.1 Surface Water Discharge Philosophy







In order to comply with Objective WM11-10 and paragraph 11.10.4 in the Cork County Development Plan 2022, a softer engineered or 'nature-based approach' shall be used to manage rainfall runoff on the site i.e., by managing and treating surface water above-ground rather than sending rainfall below-ground into drains, pipes, attenuation tanks and other 'hard engineering' solutions.

The approach aims to maximise the retention and/or infiltration of storm water runoff on-site and eliminate discharges to the public drainage system, thereby mitigating the drainage impact of the proposed development.

Detailed supporting calculations for the design of the soakaways are included in the appendices. The calculations include a 10% allowance for Climate Change increases.

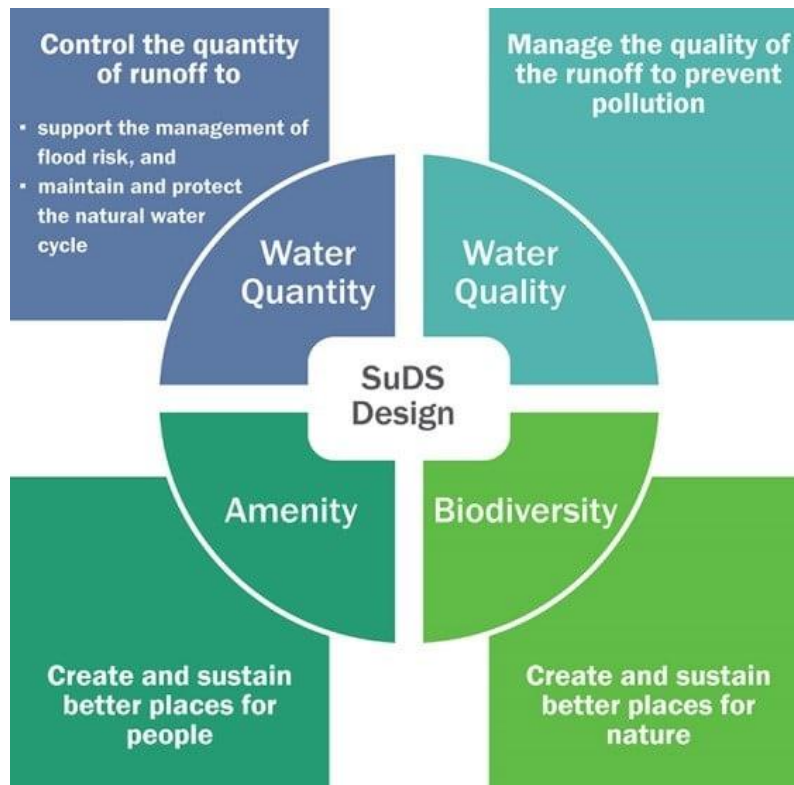
The table overleaf sets out the SuDS measured proposed for this development.

SuDS Selection Hierarchy for Small-Scale Development

SuDS Measure	Image	Measures to be used on site	Rationale for selecting/not selecting measure including discharge rate applied with supporting calculations
Water butt – 150L capacity or more (based water use demand) with means of overflow		Yes for rainwater pipes to rear	Cost effective measure, which can be securely positioned on the rear elevations
Permeable paving – consider for all hard paved areas without heavy traffic		No	Proposed parking area will be in the public realm and maybe subject to heavy traffic e.g. by refuse lorries when turning
Bio-retention planter – disconnect downpipe connection into drains and allow roof runoff into planter with means of overflow		No	Limited space available on rear footpaths Planters will require tenant maintenance
Green / Blue Roof – requires a minimum substrate depth (growth medium) of at least 80 mm excluding the vegetative mat		No	No suitable roofs on the development
Rain garden - disconnect downpipe/RWP into the planted flower bed		No	Planted areas will require tenant maintenance
Soakaways discharging surface water collected from roofs and impermeable paving into the ground		Yes	Sites are suitable for discharging surface water to ground via soakaways positioned in the rear gardens – see the appendices for supporting calculations and refer to the proposed drawings
Swales for surface water run-off from impermeable surfacing		Yes	To alleviate risk of possible pluvial flooding from the estate road north of no. 20 a swale is proposed along the Eastern site boundary

3.2 SuDS Pillars

The four pillars of SuDS are Water Quantity, Water Quality, Amenity and Biodiversity.



Water Quantity

This pillar is achieved by controlling the quantity of runoff from the site of the development through SuDS measures in particular the use of water butts and on site soakaways.

Water Quality

This pillar is achieved by having no runoff into a public surface water system or watercourse from the development. This mimics the natural catchment and groundwater recharge and manages the quality of runoff to prevent pollution.

Amenity

This pillar is achieved by creating and sustaining better places for people. The proposed development has well-proportioned green spaces to the rear and public open green spaces to the front of the houses.

Biodiversity

This pillar is achieved by creating and sustaining better places for nature. The proposed development has well-proportioned green spaces to the rear and public open green spaces to the front of the houses.

4.0 FLOOD RISK ASSESSMENT

The site is in Flood Risk Zone C and is not at risk of coastal or fluvial flooding. Neither is the elevated site at risk of flooding from nearby streams or drainage ditches or from pluvial flooding.

Therefore, it is considered that flood risk is not an issue for this development.

The proposed design considers the impact of surface water flood risks on drainage design. Flood risk from sources other than fluvial and tidal have been reviewed and the proposed floor level has been set to be above adjacent ground levels.

Surface water discharge from the development is proposed to be drained to ground via suitably designed infiltration soakaways (as noted above and as demonstrated in the appendices) with no discharge to the existing public drainage system.

There is no consequential increase in flood risk due to the proposed development.

Given that the site is not at risk of flooding and the proposed development does not increase flood risks, no further flood risk assessment is proposed.

5.0 WASTE WATER

Uisce Eireann have confirmed that wastewater connections for the proposed development are feasible.

All proposed works are to be in accordance with Irish Water Code of Practice for Waste Water Infrastructure.

For further details, please refer to the drawings and the Irish Water Pre-Connection Enquiry & Confirmation of Feasibility in the appendices.

6.0 WATER

Uisce Eireann have confirmed that water supply connections for the proposed development are feasible.


All proposed works are to be in accordance with Irish Water Code of Practice for Water Infrastructure.

For further details, please refer to the drawings and the Irish Water Pre-Connection Enquiry & Confirmation of Feasibility in the appendices.

As there are existing fire hydrants positioned within 46m of the proposed houses, no additional fire hydrants are proposed.

Appendix 1

Surface Water Infiltration Calculations

	Project Cork Co. Co. Housing at 19 & 20 Dr Croke Place, Kilbrin	Job No. 5005-01	Sheet no. 1 of 7
	Part of Structure Infiltration Soakaway Sizing	By SH	Chkd. FM
	Ref. Dwg. No. 5005-101	Date 12/07/2023	Date 13/07/2023
SOURCE	CALCULATIONS	OUTPUT	

INTRODUCTION


DJF Engineering Services were appointed as Civil Structural Engineers by Cork County Council for a small residential development at the above site.

The following is proposed:

- 2 new houses with no private driveways
- No additional estate roads
- 4 no. additional parking spaces off estate road

It is proposed to drain surface water from roofs and paths to a soakaway in the rear garden of each house

The proposed soakaways are sized to cater for run-off due for a storm event with a 30 year return period and with a 10% increase in intensity due to climate change using the methodology and criteria given in BRE Digest 365.

	Project Cork Co. Co. Housing at 19 & 20 Dr Croke Place, Kilbrin	Job No. 5005-01	Sheet no. 2 of 7
	Part of Structure Infiltration Soakaway Sizing	By SH	Chkd. FM
	Ref. Dwg. No. 5005-101	Date 12/07/2023	Date 13/07/2023
SOURCE	CALCULATIONS		OUTPUT

GROUND CONDITIONS

2019 OCB Investigations

OCB Geotechnical carried out a previous site investigation at the adjacent site in 2019. This is included in the appendices.

OCB's exploratory holes encountered:

TOPSOIL / MADE GROUND: Soft dark brown slightly sandy gravelly silty Clay with low cobble content and frequent roots and rootlets was encountered from ground surface to 0.15m.

MADE GROUND: Soft/firm greyish brown slightly sandy gravelly silty Clay with low cobble content, occasional construction debris / rubbish and occasional rootlets was encountered from 0.15m to 0.75m.

Stiff yellowish brown, becoming by 1.0m light brown, slightly sandy gravelly CLAY/SILT with medium to high cobble content and a trace of rootlets from 0.75m to 1.3m. This soil has a high plasticity.

Medium strong dark grey SILTSTONE, distinctly to highly weathered with penetrative light brown discolouration and very closely spaced discontinuities with dark brown to black iron oxide staining was encountered from 1.3m to the termination depth of 1.75m. This material is interpreted as the Cloone Flagstone Formation.

Dynamic probes DP1 and DP2 encountered effective refusal at 1.6m and 1.3m BGL.

2023 DJF Investigations


In February 2023, in preparation for the development of the site at no. 19 & 20,, DJF inspected a trial hole excavated to the rear of the site of no. 19.

This trial hole indicated the following ground conditions in no. 19:

- 0.3m TOPSOIL / MADE GROUND with rootlets
- 0.4m firm gravelly CLAY/SILT with cobbles
- Dense angular GRAVEL / weathered SILTSTONE (shale)

Notes:

- Trial hole was excavated approx. 10m from rear building line of no. 17 & 18 in future rear garden of no. 19.
- Trial hole excavated with mini digger to 1.6m depth approximately
- Ground level measured at approx. +175.2m (original ground level is difficult to estimate due to spoil heaped in the area)
- No groundwater encountered
- The shale material was too permeable to carry out a soakaway test given the available water supply

	Project Cork Co. Co. Housing at 19 & 20 Dr Croke Place, Kilbrin	Job No. 5005-01	Sheet no. 3 of 7
	Part of Structure Infiltration Soakaway Sizing	By SH	Chkd. FM
	Ref. Dwg. No. 5005-101	Date 12/07/2023	Date 13/07/2023
SOURCE	CALCULATIONS	OUTPUT	




Trial hole to rear of site for no. 19 showing angular GRAVEL / weathered SILTSTONE (shale)



Project	Cork Co. Co. Housing at 19 & 20 Dr Croke Place, Kilbrin	Job No.	5005-01	Sheet no.	4 of 7
Part of Structure	Infiltration Soakaway Sizing	By	SH	Chkd.	FM
Ref. Dwg. No.	5005-101	Date	12/07/2023	Date	13/07/2023
SOURCE	CALCULATIONS	OUTPUT			



Material excavated from trial hole to rear of site of no. 19

	Project Cork Co. Co. Housing at 19 & 20 Dr Croke Place, Kilbrin	Job No. 5005-01	Sheet no. 5 of 7
	Part of Structure Infiltration Soakaway Sizing	By SH	Chkd. FM
	Ref. Dwg. No. 5005-101	Date 12/07/2023	Date 13/07/2023
SOURCE	CALCULATIONS	OUTPUT	

SOAKAWAY DESIGN INPUT DATA

Soil Infiltration Rate

The proposed soakaways will be excavated within the Dense angular GRAVEL / weathered SILTSTONE (shale) stratum encountered in the trial pit excavated.

Conservatively, the coefficient of permeability for this soil is taken to be 1×10^{-4} m/s
(lower value of range for a *clean sand-gravel mixture* from BS 8004)

Rainfall

From Met Eireann online database:

Met Eireann
Return Period Rainfall Depths for sliding Durations
Irish Grid: Easting: 184000, Northing: 102000,

DURATION	Interval	Years															
		2,	3,	4,	5,	10,	20,	30,	50,	75,	100,	150,	200,	250,	500,		
5 mins	2.9, 4.0,	4.6,	5.6,	6.2,	6.7,	8.2,	10.0,	11.2,	12.9,	14.3,	15.5,	17.2,	18.6,	19.7,	N/A		
10 mins	4.0, 5.6,	6.5,	7.7,	8.6,	9.3,	11.5,	14.0,	15.6,	17.9,	20.0,	21.5,	24.0,	25.9,	27.4,	N/A		
15 mins	4.7, 6.6,	7.6,	9.1,	10.1,	10.9,	13.5,	16.4,	18.4,	21.1,	23.5,	25.3,	28.2,	30.4,	32.3,	N/A		
30 mins	6.2, 8.6,	9.9,	11.7,	13.0,	14.0,	17.1,	20.7,	23.0,	26.3,	29.1,	31.3,	34.7,	37.4,	39.5,	N/A		
1 hours	8.2, 11.2,	12.8,	15.1,	16.7,	17.9,	21.7,	26.0,	28.8,	32.7,	36.1,	38.7,	42.8,	45.9,	48.4,	N/A		
2 hours	10.8, 14.6,	16.6,	19.4,	21.4,	22.8,	27.5,	32.7,	36.1,	40.7,	44.8,	47.9,	52.7,	56.3,	59.3,	N/A		
3 hours	12.8, 17.1,	19.3,	22.5,	24.7,	26.3,	31.6,	37.4,	41.1,	46.3,	50.8,	54.2,	59.5,	63.5,	66.7,	N/A		
4 hours	14.3, 19.1,	21.5,	25.0,	27.4,	29.2,	34.9,	41.1,	45.2,	50.7,	55.5,	59.2,	64.8,	69.1,	72.6,	N/A		
6 hours	16.9, 22.3,	25.0,	29.0,	31.7,	33.7,	40.1,	47.1,	51.5,	57.7,	63.0,	67.1,	73.2,	77.9,	81.7,	N/A		
9 hours	19.9, 26.0,	29.1,	33.6,	36.6,	38.9,	46.0,	53.8,	58.8,	65.6,	71.4,	75.9,	82.7,	87.8,	92.0,	N/A		
12 hours	22.3, 29.0,	32.4,	37.4,	40.6,	43.1,	50.8,	59.2,	64.5,	71.8,	78.1,	82.9,	90.1,	95.6,	100.1,	N/A		
18 hours	26.3, 33.9,	37.8,	43.3,	46.9,	49.7,	58.4,	67.7,	73.6,	81.6,	88.6,	93.9,	101.8,	107.8,	112.7,	N/A		
24 hours	29.0, 37.2,	41.3,	47.3,	51.1,	54.1,	63.3,	73.1,	79.4,	87.9,	95.2,	100.7,	109.1,	115.4,	120.5,	137.9		
2 days	37.4, 46.9,	51.6,	58.2,	62.5,	65.8,	75.8,	86.4,	93.1,	102.0,	109.7,	115.4,	124.0,	130.4,	135.7,	153.3		
3 days	44.6, 55.1,	60.3,	67.5,	72.2,	75.7,	86.5,	97.8,	104.8,	114.2,	122.3,	128.2,	137.2,	143.8,	149.2,	167.3		
4 days	51.1, 62.5,	68.1,	75.9,	80.9,	84.6,	96.0,	108.0,	115.4,	125.2,	133.6,	139.8,	149.0,	156.0,	161.5,	180.1		
6 days	62.9, 75.9,	82.2,	90.9,	96.5,	100.6,	113.2,	126.2,	134.2,	144.9,	153.8,	160.5,	170.3,	177.7,	183.6,	203.1		
8 days	73.8, 88.2,	95.0,	104.6,	110.6,	115.0,	128.7,	142.6,	151.2,	162.5,	172.0,	179.1,	189.4,	197.1,	203.3,	223.8		
10 days	84.1, 99.6,	107.1,	117.3,	123.7,	128.5,	143.0,	157.8,	166.9,	178.8,	188.8,	196.2,	207.1,	215.1,	221.6,	242.8		
12 days	93.9, 110.6,	118.5,	129.4,	136.3,	141.3,	156.6,	172.2,	181.7,	194.2,	204.7,	212.4,	223.7,	232.0,	238.7,	260.7		
16 days	112.7, 131.4,	140.2,	152.3,	159.9,	165.4,	182.2,	199.2,	209.5,	223.0,	234.2,	242.5,	254.6,	263.5,	270.6,	294.0		
20 days	130.7, 151.2,	160.9,	174.0,	182.1,	188.2,	206.2,	224.4,	235.4,	249.8,	261.7,	270.5,	283.3,	292.7,	300.2,	324.8		
25 days	152.5, 175.1,	185.6,	199.9,	208.7,	215.3,	234.8,	254.4,	266.1,	281.5,	294.2,	303.5,	317.1,	327.1,	335.0,	360.9		

NOTES:

N/A Data not available

These values are derived from a Depth Duration Frequency (DDF) Model

For details refer to:

'Fitzgerald D. L. (2007), Estimates of Point Rainfall Frequencies, Technical Note No. 61, Met Eireann, Dublin',
Available for download at www.met.ie/climate/dataproducts/Estimation-of-Point-Rainfall-Frequencies_TN61.pdf


Design rainfall intensity

Location of catchment area Kilbrin, North Cork

Ratio r $r = 0.300$

5-yr rtn period rainfall 60 min M5_60min = 17.9 mm Increase for global warming $p_{climate} = 10\%$

Area drained by single house soakaway (roof and footpaths to perimeter) = 80m²

	Project Cork Co. Co. Housing at 19 & 20 Dr Croke Place, Kilbrin	Job No. 5005-01	Sheet no. 6 of 7
	Part of Structure Infiltration Soakaway Sizing	By SH	Chkd. FM
	Ref. Dwg. No. 5005-101	Date 12/07/2023	Date 13/07/2023
SOURCE	CALCULATIONS		OUTPUT

SOAKAWAY DESIGN (RECTANGULAR TRENCH) (BRE DIGEST 365/SUDS)

Assuming 40% porosity, soakaway to be suitably sized to contain 100% of the 1 in 300 year storm event and to half empty in less than 24 hours for the 1 in 30 year event

Try 2mx2mx0.9m deep soakaway:

SOAKAWAY DESIGN

In accordance with BRE Digest 365 - Soakaway design

Tedds calculation version 2.0.05

Design rainfall intensity

Location of catchment area	Other
Impermeable area drained to the system	A = 80.0 m ²
Return period	Period = 30 yr
Ratio 60 min to 2 day rainfall of 5 yr return period	r = 0.300
5-year return period rainfall of 60 minutes duration	M5_60min = 17.9 mm
Increase of rainfall intensity due to global warming	p _{climate} = 10 %


Soakaway / infiltration trench details

Soakaway type	Rectangular
Minimum depth of pit (below incoming invert)	d = 900 mm
Width of pit	w = 2000 mm
Length of pit	l = 2000 mm
Percentage free volume	V _{free} = 40 %
Soil infiltration rate	f = 100.×10⁻⁶ m/s
Wetted area of pit 50% full	a _{s50} = l × d + w × d = 3600000 mm ²

Table equations

Inflow (cl.3.3.1)	I = M30 × A
Outflow (cl.3.3.2)	O = a _{s50} × f × D
Storage (cl.3.3.3)	S = I - O

Duration, D (min)	Growth factor Z1	M5 rainfalls (mm)	Growth factor Z2	30 year rainfall, M30 (mm)	Inflow (m ³)	Outflow (m ³)	Storage required (m ³)
5	0.34	6.7	1.46	9.8	0.78	0.11	0.67
10	0.49	9.6	1.49	14.3	1.15	0.22	0.93
15	0.59	11.6	1.49	17.3	1.39	0.32	1.06
30	0.77	15.2	1.49	22.6	1.81	0.65	1.16
60	1.00	19.7	1.47	29.0	2.32	1.30	1.03
120	1.25	24.6	1.46	36.0	2.88	2.59	0.28
240	1.57	30.9	1.44	44.5	3.56	5.18	0.00
360	1.78	35.0	1.43	50.1	4.00	7.78	0.00

	Project Cork Co. Co. Housing at 19 & 20 Dr Croke Place, Kilbrin	Job No. 5005-01	Sheet no. 7 of 7
	Part of Structure Infiltration Soakaway Sizing	By SH	Chkd. FM
	Ref. Dwg. No. 5005-101	Date 12/07/2023	Date 13/07/2023
SOURCE	CALCULATIONS		OUTPUT

Duration, D (min)	Growth factor Z1	M5 rainfalls (mm)	Growth factor Z2	30 year rainfall, M30 (mm)	Inflow (m ³)	Outflow (m ³)	Storage required (m ³)
600	2.12	41.7	1.41	58.7	4.70	12.96	0.00
1440	2.84	55.9	1.36	76.2	6.10	31.10	0.00

Required storage volume $S_{req} = 1.16 \text{ m}^3$

Soakaway storage volume $S_{act} = l \times d \times w \times V_{free} = 1.44 \text{ m}^3$

PASS - Soakaway storage volume

Time for emptying soakaway to half volume $t_{s50} = S_{req} \times 0.5 / (a_{s50} \times f) = 26\text{min } 52\text{s}$

PASS - Soakaway discharge time less than or equal to 24 hours

Appendix 2

Irish Water Pre-Connection Enquiry & Confirmation of Feasibility

Pre-connection enquiry form

Business developments, mixed use developments, housing developments



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

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

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

Section A | Applicant details

1 *Applicant details:

Registered company name (if applicable): C O R K C O U N T Y C O U N C I

L H O U S I N G D I R E C T O R A T E

Trading name (if applicable):

Company registration number (if applicable):

Parent company registered company name (if applicable):

Parent company registration number (if applicable):

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

*Contact name: M A U R I C E M A N N I N G

*Postal address: C O R K C O U N T Y C O U N C I L

A R C H I T E C T S D E P A R T M E N T C O H A L L

C A R R I G R O H A N E R D C O R K

*Eircode: T 1 2 R 2 N C

Please provide either a landline or a mobile number

Landline:

*Mobile: 0 8 6 8 1 0 1 4 1 9

*Email: R E F E R N O T E S A T E N D

2 Agent details (if applicable):

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

*Contact name: T B C

Company name (if applicable):

*Postal address:

*Eircode:

Please provide either a landline or a mobile number

Landline:

*Mobile

*Email:

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

Applicant

Agent

Section B | Site details

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

1 9 & 2 0

*Address 2 D O C T O R C R O K E P L A C E

*Address 3

*City/Town K I L B R I N

*County C O R K Eircode T B C

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

Eastings (X) 5 4 8 1 9 7 Northings (Y) 6 0 6 8 4 3

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

6 *Local Authority where proposed development is located:

C O R K C O U N T Y C O U N I C I L

7 *Has full planning permission been granted? Yes No

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

P A R T 8 I N D U E C O U R S E

9.2 Please provide the maximum expected occupancy in number of people, according to the proposed development you selected, e.g. Number of office workers, number of nursing home residents, maximum pub occupancy, number of hotel beds, number of retail workers:

8					
---	--	--	--	--	--

10 ***Approximate start date of proposed development:**

0	1	/	0	6	/	2	0	2	3
---	---	---	---	---	---	---	---	---	---

11 ***Is the development multi-phased?** Yes No

If 'Yes', application must include a master-plan identifying the development phases and the current phase number.
 If 'Yes', please provide details of variations in water demand volumes and wastewater discharge loads due to phasing requirements.

12 ***Please indicate the type of connection required by ticking the appropriate box below:**

Both Water and Wastewater Please complete both Sections D and E

Water only Please go to Section D

Wastewater only Please go to Section E

Reason for only applying for one service (if applicable):

Section D | Water connection and demand details

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

14 **Approximate date water connection is required:** / /

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

- 16 ***Is more than one connection required to the public infrastructure to service this development?** Yes No
- If 'Yes', how many?

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

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

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

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

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

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

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

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

- 21 **Is on-site water storage being provided?** Yes No
- Please include calculations on the attached sheet provided.

Section F | Supporting documentation

Please provide the following additional information (all mandatory):

- > Site location map: A site location map to a scale of 1:1000, which clearly identifies the land or structure to which the enquiry relates. The map shall include the following details:
 - i. The scale shall be clearly indicated on the map.
 - ii. The boundaries shall be delineated in red.
 - iii. The site co-ordinates shall be marked on the site location map.
- > Details of planning and development exemptions (if applicable).
- > Calculations (calculation sheets provided below).
- > Site layout map to a scale of 1:500 showing layout of proposed development, water network and wastewater network layouts, additional water/wastewater infrastructure if proposed, connection points to Irish Water infrastructure.
- > Conceptual design of the connection asset from the proposed development to the existing Irish Water infrastructure, including service conflicts, gradients, pipe sizes and invert levels.
- > Any other information that might help Irish Water assess this pre-connection enquiry.

Section G | Declaration

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

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

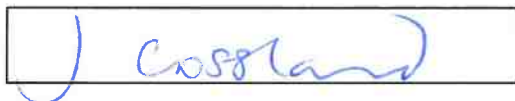
The details that I/we have given with this application are accurate.

I/We have enclosed all the necessary supporting documentation.

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

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

Signature:



Date:

03 / 08 / 2022

Your full name (in BLOCK CAPITALS):

J C R O S S L A N D E X E C U T I V E A R C H I T E C T

Irish Water will carry out a formal assessment based on the information provided on this form.

Any future connection offer made by Irish Water will be based on the information that has been provided here.

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

Irish Water
PO Box 860
South City Delivery Office
Cork City

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

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

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

Calculations

Water demand

TBC

On-site storage

N/A

Fire flow requirements

N/A

TBC

N/A

Guide to completing the pre-connection enquiry form

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

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

Section A | Applicant Details

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

Section B | Site details

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

Section C | Development details

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

Section D | Water connection and demand details

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

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

Section E | Wastewater connection and discharge details

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

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

Section F | Supporting documentation

Please provide additional information as listed.

Section G | Declaration

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

Q1

MAURICE MANNING IS THE DIRECTOR OF SERVICES AUTHORISED TO SIGN THE OFFER. CORRESPONDENCE SHOULD BE SENT TO THE PROJECT ARCHITECT - JOANNE CROSSLAND
JOANNE.CROSSLAND@CORKCOCO.IE
THE AGENT/SE HAS YET TO BE APPOINTED.

Q11

THIS IS THE LAST PHASE OF THE ESTATE.
THE IW WAYLEAVE FOR THE FOUL IN THE LAND BANK AND ESTATE ROAD AND WATER IN IN THE ESTATE IS BEING ARRANGED UNDER THE PREVIOUS PHASE APPLICATION FOR 17 & 18 REF CDS19006373

Q13/24

THIS IS THE DEVELOPMENT OF AN EXISTING SERVICED SITE, THE EXISTING WATER AND FOUL ARE IN THE ESTATE

Q19/20/33/34

THE PROPOSED TWO STORY DWELLINGS FFL WILL BE SET TO ALLOW GRAVITY FLOW INTO THE EXISTING FOUL DRAINS.

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

CONFIRMATION OF FEASIBILITY

Maurice Manning
Cork County Council
Architects Department Co Hall
Carrigrohane Rd
Cork
T12R2NC

Uisce Éireann
Bosca OP448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Irish Water
PO Box 448,
South City
Delivery Office
Cork City.

www.water.ie

23 September 2022

**Our Ref: CDS22005646 Pre-Connection Enquiry
19 & 20, Doctor Croke Place, Kilbrin, Cork**

Dear Applicant,

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

Irish Water has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Housing Development of 2 unit(s) at 19 & 20, Doctor Croke Place, Kilbrin, Cork, (the **Development**).

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

- **Water Connection** - Feasible without infrastructure upgrade by Irish Water
- **Wastewater Connection** - Feasible without infrastructure upgrade by Irish Water

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

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

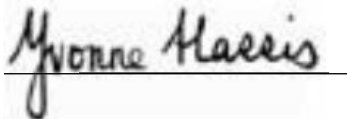
Where can you find more information?

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

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

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

Yours sincerely,

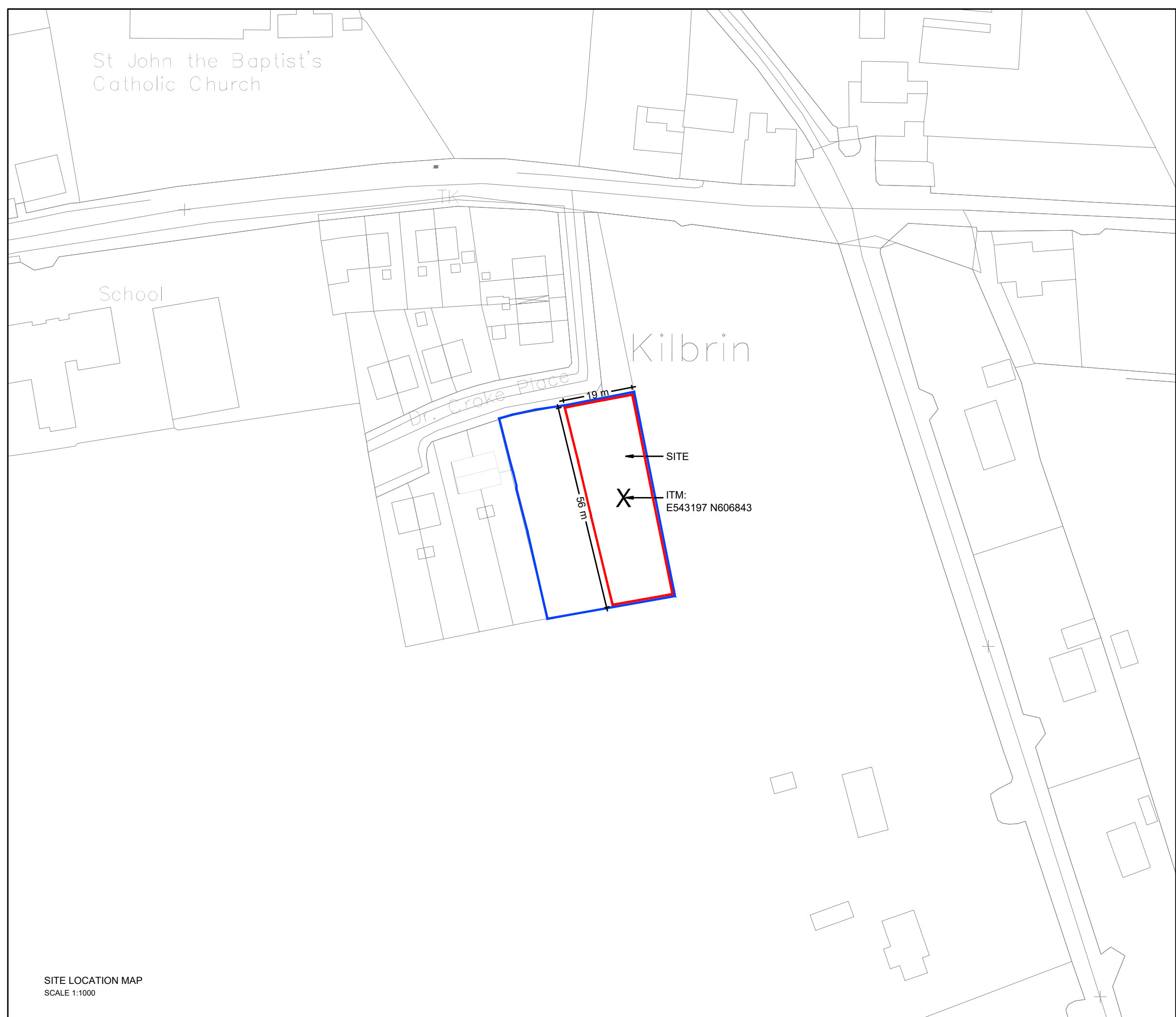
A handwritten signature in black ink that reads "Yvonne Harris". The signature is written in a cursive style and is positioned above a horizontal line.

Yvonne Harris
Head of Customer Operations

Section A - What is important to know?

What is important to know?	Why is this important?
Do you need a contract to connect?	<ul style="list-style-type: none"> • Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Irish Water's network(s). • Before the Development can connect to Irish Water's network(s), you must submit a connection application <u>and be granted and sign</u> a connection agreement with Irish Water.
When should I submit a Connection Application?	<ul style="list-style-type: none"> • A connection application should only be submitted after planning permission has been granted.
Where can I find information on connection charges?	<ul style="list-style-type: none"> • Irish Water connection charges can be found at: https://www.water.ie/connections/information/charges/
Who will carry out the connection work?	<ul style="list-style-type: none"> • All works to Irish Water's network(s), including works in the public space, must be carried out by Irish Water*. <p>*Where a Developer has been granted specific permission and has been issued a connection offer for Self-Lay in the Public Road/Area, they may complete the relevant connection works</p>
Fire flow Requirements	<ul style="list-style-type: none"> • The Confirmation of Feasibility does not extend to fire flow requirements for the Development. Fire flow requirements are a matter for the Developer to determine. • What to do? - Contact the relevant Local Fire Authority
Plan for disposal of storm water	<ul style="list-style-type: none"> • The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • What to do? - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Irish Water's network(s)?	<ul style="list-style-type: none"> • Requests for maps showing Irish Water's network(s) can be submitted to: datarequests@water.ie

<p>What are the design requirements for the connection(s)?</p>	<ul style="list-style-type: none"> The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with <i>the Irish Water Connections and Developer Services Standard Details and Codes of Practice</i>, available at www.water.ie/connections
<p>Trade Effluent Licensing</p>	<ul style="list-style-type: none"> Any person discharging trade effluent** to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). More information and an application form for a Trade Effluent License can be found at the following link: https://www.water.ie/business/trade-effluent/about/ <p>**trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)</p>



NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



KEY

CORK COUNTY COUNCIL LAND HOLDINGS.

SITE DELINEATED IN RED.

AREA OF SITE: 1019m² / 0.251 acres

ORDNANCE SURVEY IRELAND
 SHEET NUMBERS:
 5743-D - Vector 2500

ITM (Taken at centre of site)
 E543197 N606843

© Ordnance Survey Ireland. All rights reserved.
 Licence number 2022/OSI_NMA_045

Rev. No.	Revision Description	Date
----------	----------------------	------

Project Stage: Single Stage Submission

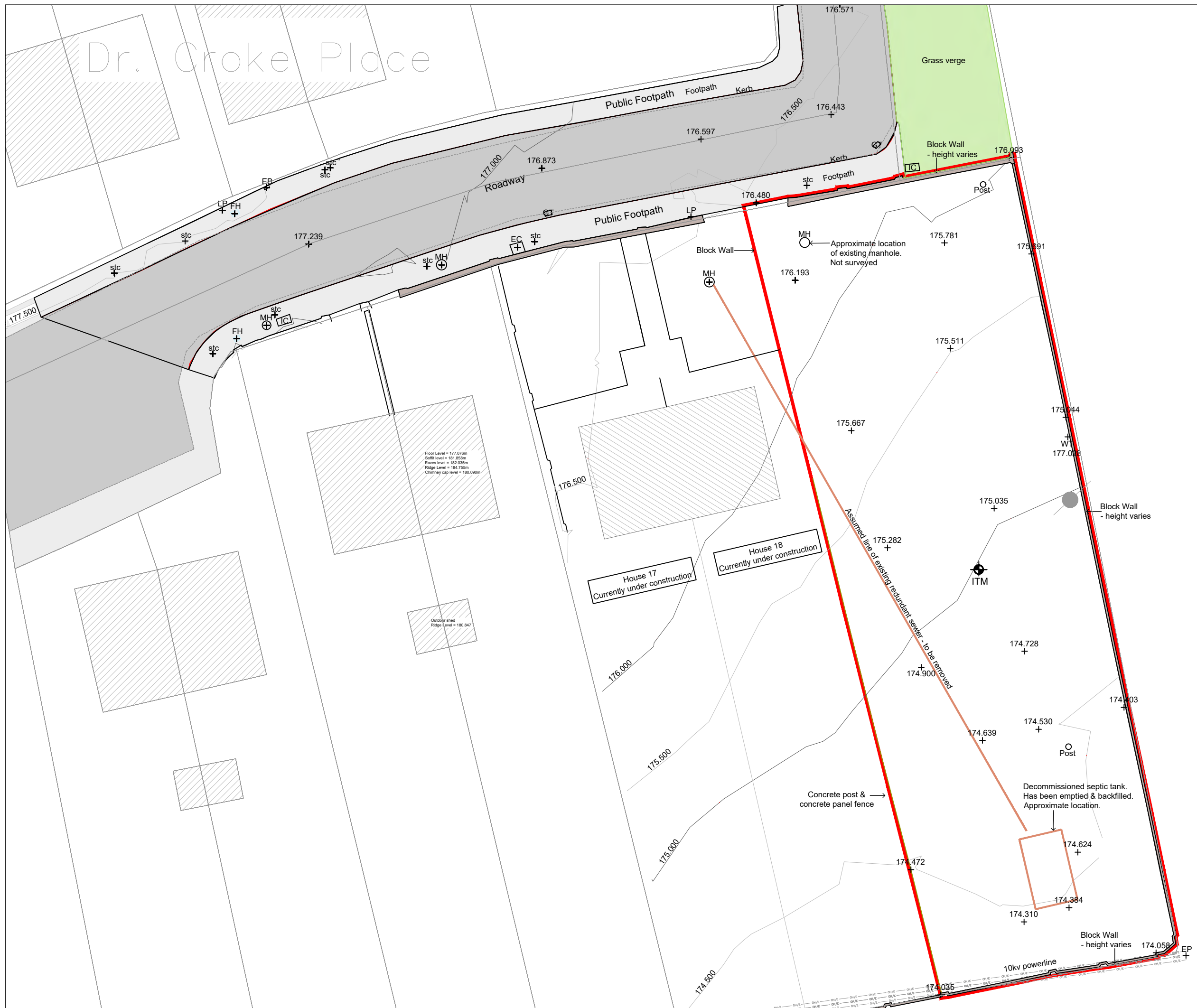
Project Title: Proposed Housing Development
 No.19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Site Location Map

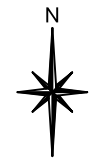
Comhairle Contae Chorcaí
 Ailrí | Súdúthóireacht Títhochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Sheet: A3	Design Team: Architect: SK Technician: TOF Surveyor: RB Snr. Architect: R. Henry
Dwg. No.: DR-CCC-A-PL-100	Date: Oct. 23	Scale: 1:1000
Date: Oct. 23	Scale: 1:1000	Issue for: Planning

SITE LOCATION MAP
 SCALE 1:1000



NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



LEGEND

— SITE DELINEATED IN RED.
 AREA OF SITE: 1019m² / 0.251a

OSI SHEET No.'S:
 5743-D - Vector 2500

ITM (Taken at centre of site)
 E543197 N606843

© Ordnance Survey Ireland. All rights reserved.
 Licence number 2022/OSi_NMA_045

- EP electricity pole
- EB electricity box
- EC electricity cover
- FH fire hydrant
- GT gully
- IC inspection cover
- KT kirb top
- LP lamp post
- MHC manhole cover
- stc stop cock
- SV sluice valve
- TC telecom cover
- WMR water meter
- WT wall top

Rev. No.	Revision Description	Date

Project Stage: Single Stage Submission

Project Title: Proposed Housing Development
No.19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Existing Site Layout

Conhairle Contae Chorcaí
 Alltíri | Stúirthóireacht Tithíochta

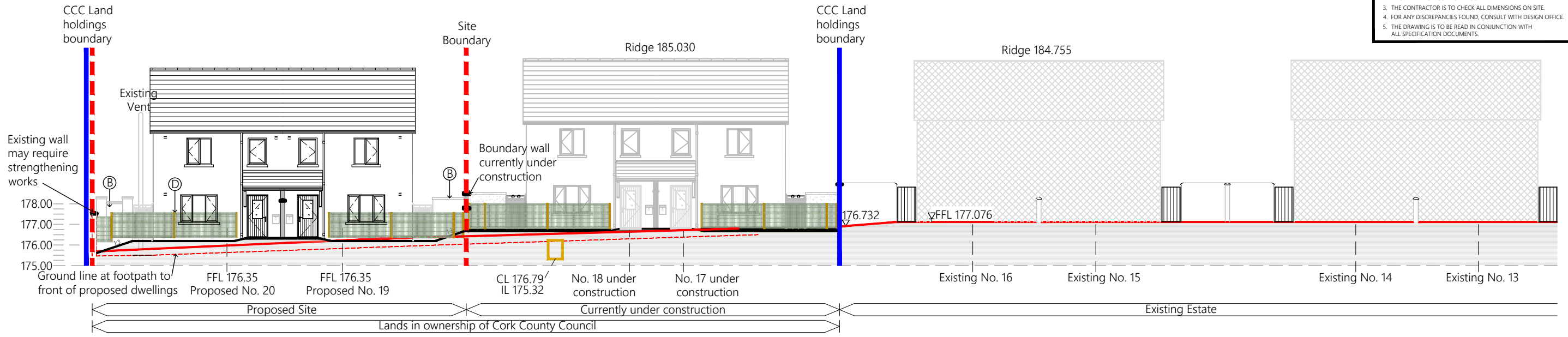
Cork County Council
 Architects | Housing Directorate

County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

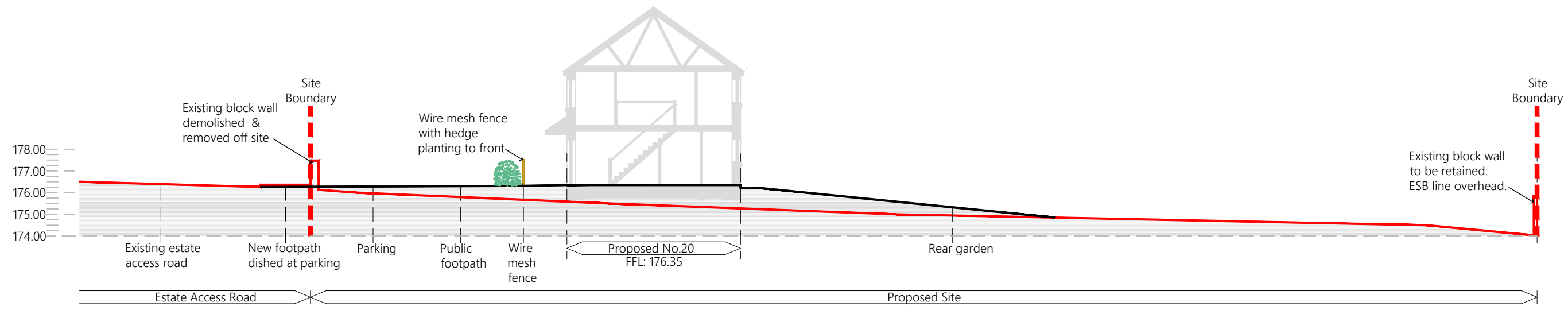
Job Reference: N2022014	Sheet: A3	Design Team: Architect: SK Technician: ToF Surveyor: RB Snr. Architect: R. Henry
Dwg. No.: DR-CCC-A-PL-106	Date: Oct. 23	Scale: 1:250
Date: Oct. 23	Scale: 1:250	Issue for: Planning



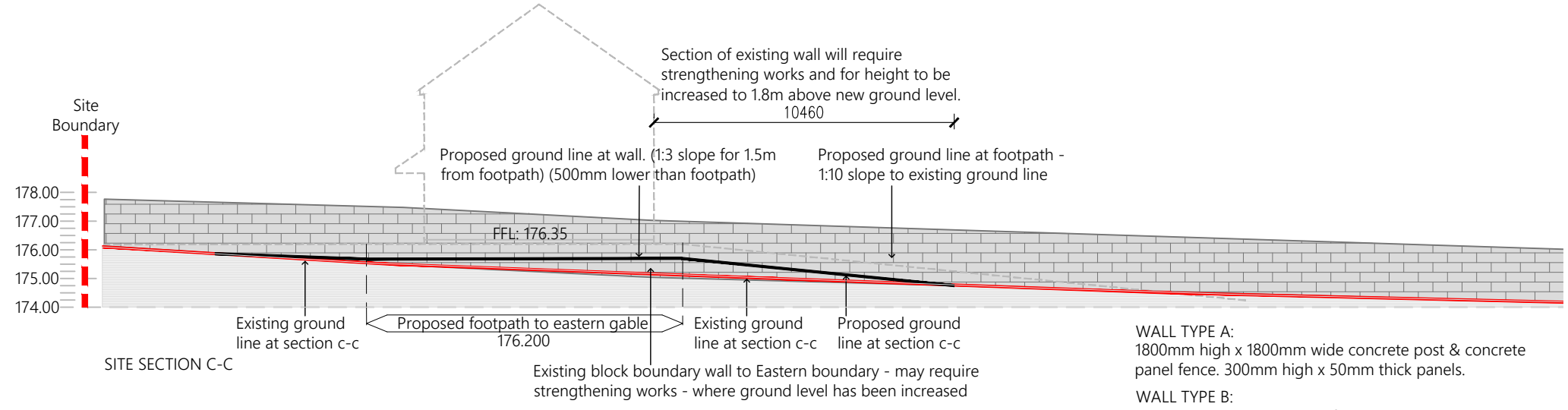
NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



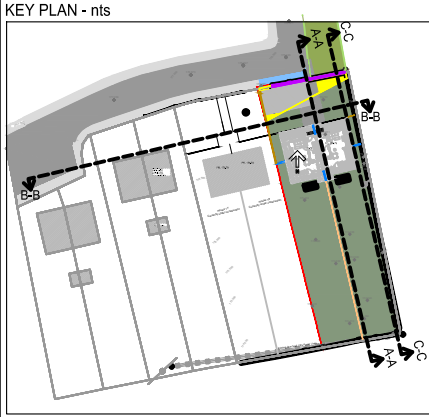
SITE CONTEXT ELEVATION B-B



SITE SECTION A-A



SITE SECTION C-C



LEGEND



- █ Extents of Cork County Council Land Holdings
- █ Extents of proposed development
- Proposed groundline footpath
- Existing ground line as per survey

WALL TYPE A:
 1800mm high x 1800mm wide concrete post & concrete panel fence. 300mm high x 50mm thick panels.

WALL TYPE B:
 1.9m high wall comprising of 1.8 min high, 215mm solid block wall with 100mm cast in-situ capping. Wet dash render both sides.

WALL TYPE C:
 1.2m high wall comprising of 1.1 min high, 215mm solid block wall with 100mm cast in-situ capping. Wet dash render both sides.

D: MESH FENCE
 1.2m high

Rev. No.	Revision Description	Date
Project Stage: Single Stage Submission		
Project Title: Proposed Housing Development Dr. Croke Place, Kilbrin.		
Drawing Title: Extended Site Section A-A & C-C Site Context Elevation B-B		
 Comhairle Contae Chorcaí Alltairí Stúráthóireacht Títhíochta Cork County Council Architects Housing Directorate County Hall, Cork Tel: (021) 4285433 e-mail: architects.housing@corkcoco.ie		
Job Reference: N2022014	Sheet: A3	Design Team: Architect: SK Technician: TOF Surveyor: RB Snr. Architect: R. Henry
Dwg. No.: DR-CCC-A-PL-140	Date: Oct. 23	Scale: 1:200
Issue for: Planning		 2040

NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



FRONT ELEVATION

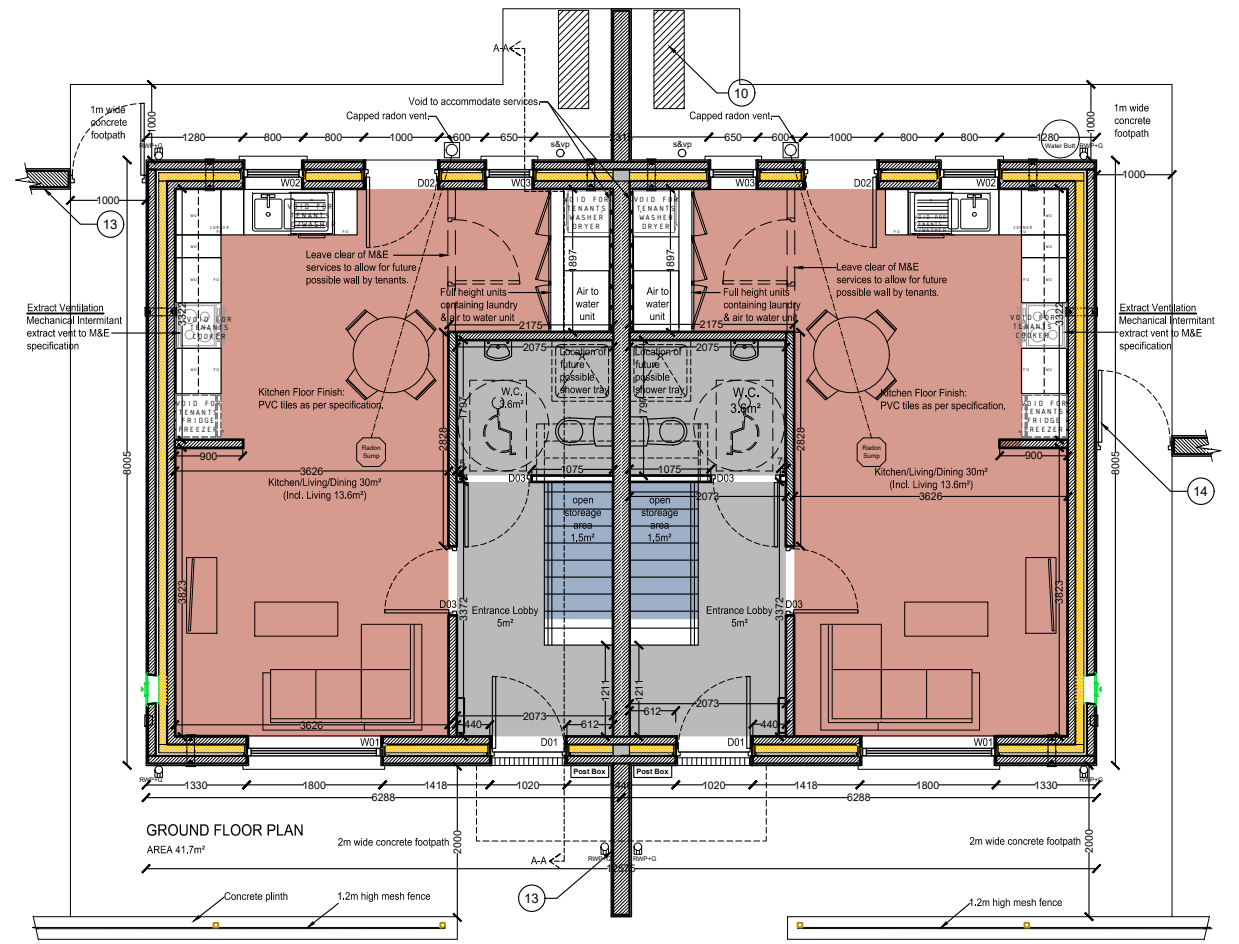


REAR ELEVATION

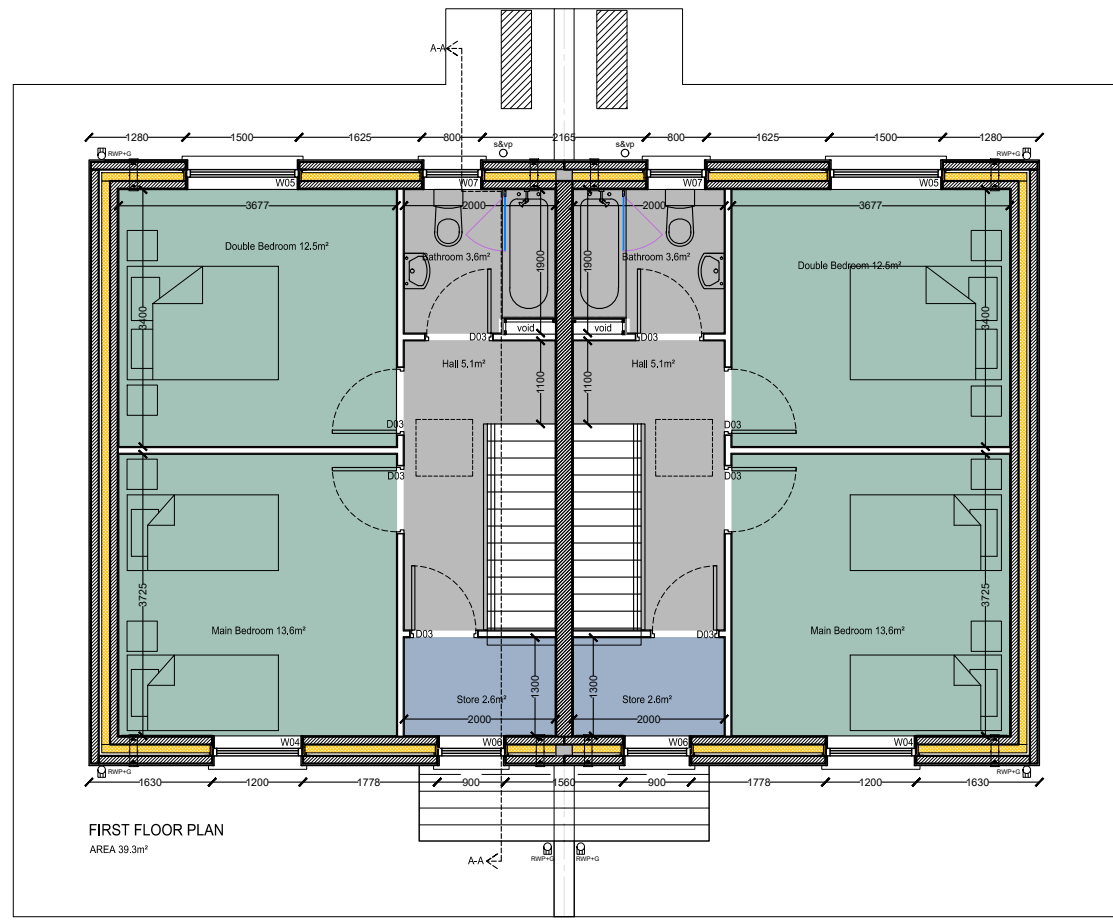
- Material Legend:**
1. Roof: Slate Blue-Black to match adjacent houses.
 2. Ridge Tiles: Slate ridge tile to match adjacent houses.
 3. Walls: Smooth plaster finish to front elevation, gables & plinths. Wet dash finish to rear elevation.
 4. Cill: Precast concrete cill.
 5. Rain Water Goods: 155mm wide, 98mm depth uPVC half round gutter & 82mm uPVC round downpipe.
 6. Eaves: Projecting uPVC fascia, soffit & verge.
 7. Windows: Double glazed uPVC windows.
 8. Doors: Composite Engineered door with hardwood finish.
 9. Code5 lead flashing.
 10. Outdoor fan unit for heat pump to M&E specification.
 11. Obscure glazing to bathroom.
 12. Canopy.
 13. 1.9m high wall comprising of 1.8m high, 215mm solid block wall with 100mm cast-in-situ capping. Wet dash render on both sides. Extended at canopy.
 14. Galvanised steel gate.

Mechanical & Electrical
 Please see Mechanical & Electrical drawings for specification and layouts for Water main, Foul & Surface water drainage, Electrical, Space & Hot water, Data, Lighting, Fire, Ventilation, etc.

Civil & Structural
 Please see Civil & Structural drawings for specification and layouts for foundations, rising walls, concrete slab, Steel Beams, Lintels, Prefabricated truss design, etc.






GROUND FLOOR PLAN
 AREA 41.7m²



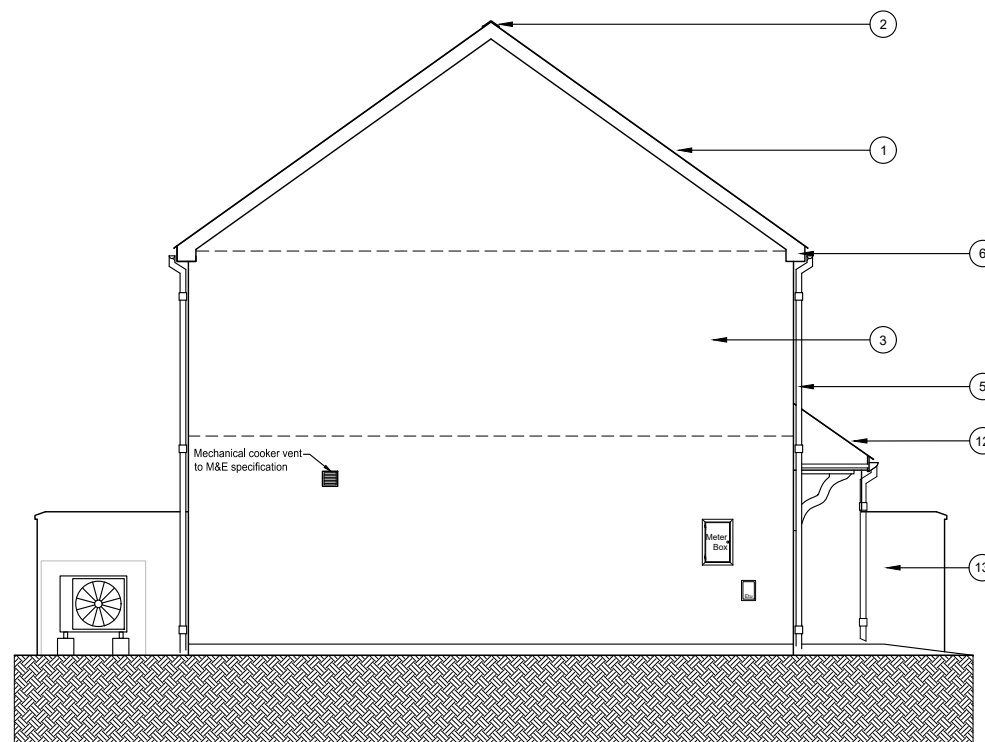
FIRST FLOOR PLAN
 AREA 39.3m²

DWELLING TYPE	GROSS FLOOR AREA	AGGREGATE LIVING AREA	MAIN LIVING ROOM	AGGREGATE BEDROOM AREA	STORAGE
2BED/4PERSON HOUSE	M²	M²	M²	M²	M²
2 STOREY					
MINIMUM	80	30	13	25	4
PROPOSED	81	30	13.6	26	4.1

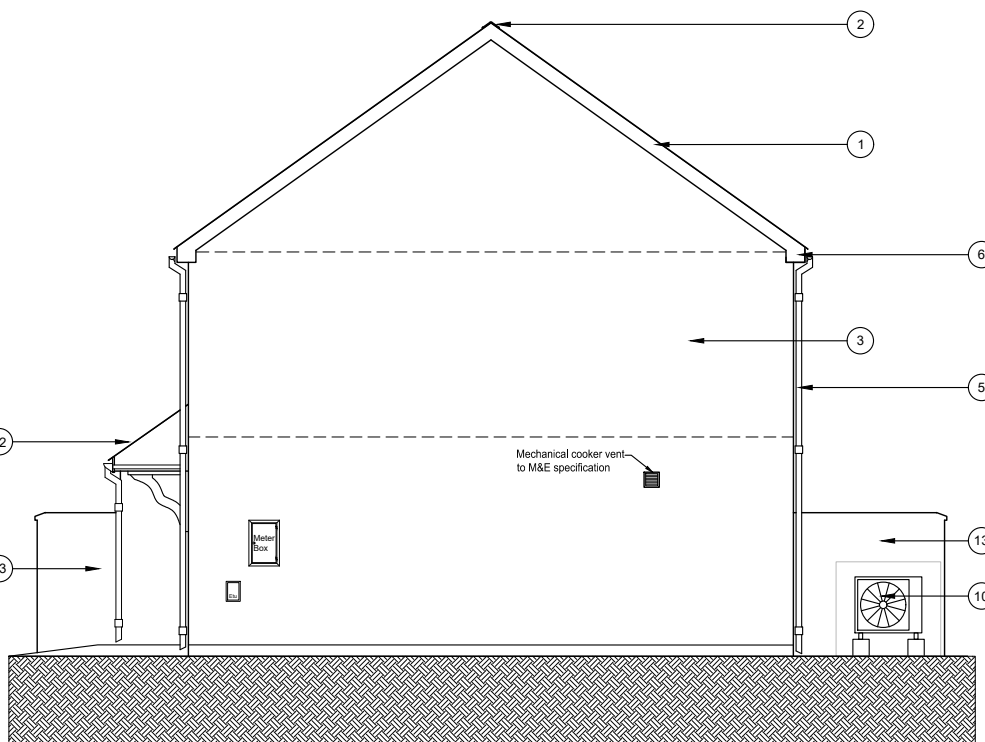
Rev. No.	Revision Description	Date
Project Stage: Single Stage Submission		
Project Title: Proposed Housing Development 19 & 20 Dr. Croke Place, Kilbrin.		
Drawing Title: Floor Plans, Front & Rear Elevations		
 Comhairle Contae Chorcaí Ailtirí Stúdíó Treacht Tírlíochta Cork County Council Architects Housing Directorate County Hall, Cork Tel: (021) 4285433 e-mail: architects.housing@corkcoco.ie		

Job Reference: N2020014	Sheet: A3	Design Team: Architect: SK, Technician: TOF, Surveyor: RB, Snr. Architect: R. Henry
Dwg. No.: DR-CCC-A-PL-200	Date: Oct. 23	Scale: 1:100
Issue for: Planning		 

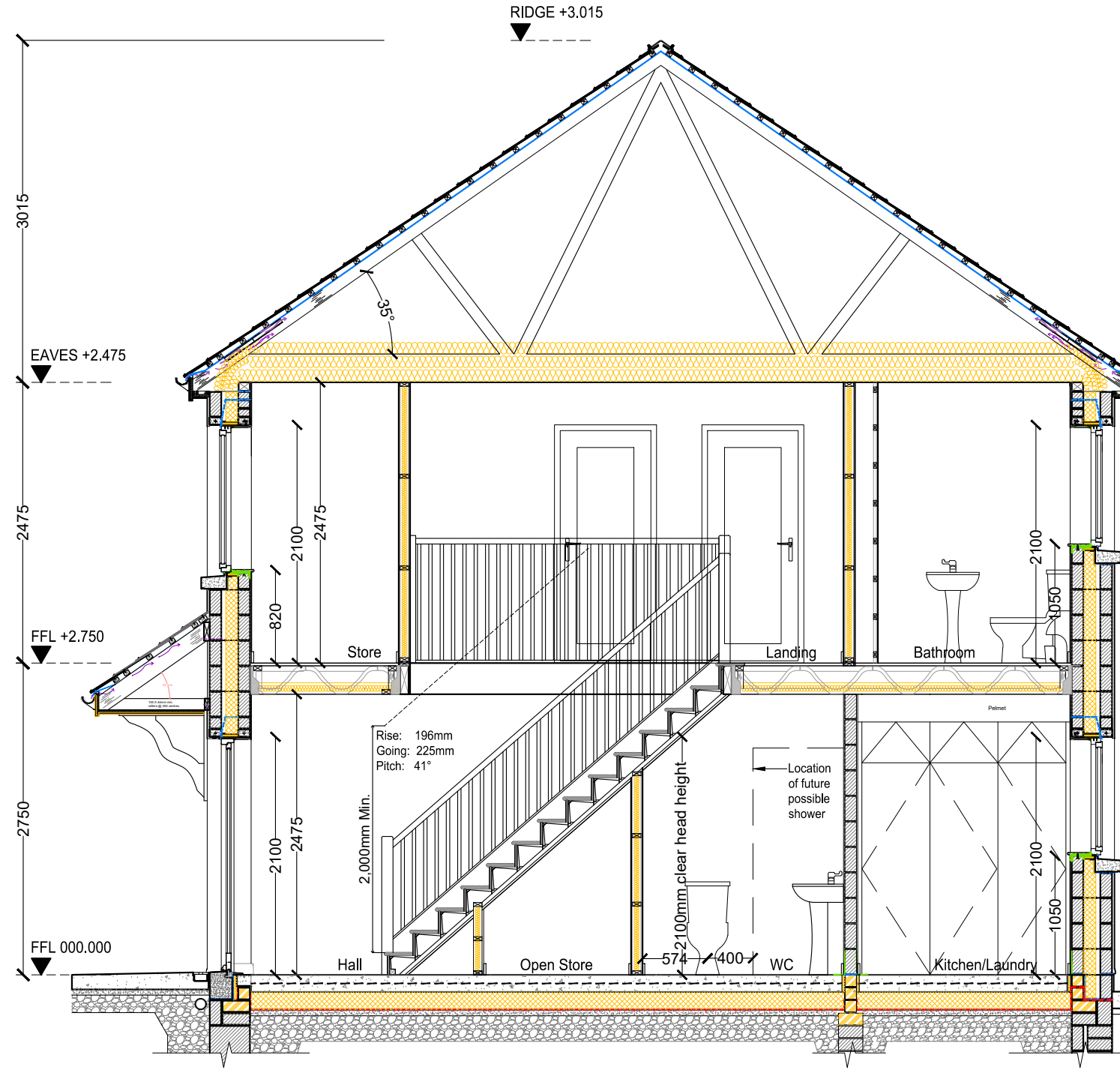
NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



SIDE ELEVATION
Scale 1:100



SIDE ELEVATION
Scale 1:100



SECTION A-A
Scale 1:50

- Material Legend:**
1. Roof: Slate Blue-Black to match adjacent houses.
 2. Ridge Tiles: Slate ridge tile to match adjacent houses.
 3. Walls: Smooth plaster finish to front elevation, gables & plinths. Wet dash finish to rear elevation.
 4. Cill: Precast concrete cill.
 5. Rain Water Goods: 155mm wide, 98mm depth uPVC half round gutter & 82mm uPVC round downpipe.
 6. Eaves: Projecting uPVC fascia, soffit & verge.
 7. Windows: Double glazed uPVC windows.
 8. Doors: Composite Engineered door with hardwood finish.
 9. Code5 lead flashing.
 10. Outdoor fan unit for heat pump to M&E specification.
 11. Obscure glazing to bathroom.
 12. Canopy.
 13. 1.9m high wall comprising of 1.8m high, 215mm solid block wall with 100mm cast-in-situ capping. Wet dash render on both sides. Extended at canopy.
 14. Galvanised steel gate.

Rev. No.	Revision Description	Date

Project Stage: Single Stage Submission

Project Title: Proposed Housing Development
19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Side Elevations & Section

Comhairle Contae Chorcaí
 Alltairí | Stúdíó Treacht Títhochta
Cork County Council
 Architects | Housing Directorate

County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

DWELLING TYPE	GROSS FLOOR AREA	AGGREGATE LIVING AREA	MAIN LIVING ROOM	AGGREGATE BEDROOM AREA	STORAGE
2BED/4PERSON HOUSE	M ²	M ²	M ²	M ²	M ²
2 STOREY					
MINIMUM	80	30	13	25	4
PROPOSED	81	30	13.6	26	4.1

Job Reference: N2020014
 Sheet: A3
 Design Team:
 Architect: SK
 Technician: TOF
 Surveyor: RB
 Snr. Architect: R. Henry

Dwg. No.: DR-CCC-A-PL-201

Date: Oct. 23
 Scale: 1:50/1:100
 Issue for: Planning

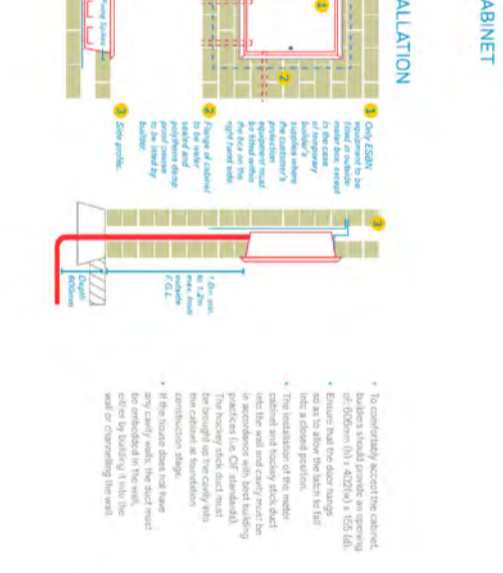
2040

ESB

- The service pole and the conductors of the duct are both within the sale boundary.
- ESB's Engineering Offices will confirm the service pole position and the ducting route on-site.
- An outdoor meter cabinet to ESI Standard 12-3 (1996), is installed in a suitable location.
- An ESB approved 'hockey stick' is retained at the meter cabinet position.
- It is essential that the ESB cable does not come into contact with the early realisation.
- Allow a projection of 25mm of the hockey stick into the base of the cabinet.
- There must be a minimum clearance of 100mm between the duct and the ground level.



- the service duct and other services on the householder's property.
- ESB will provide black UV light resistant ducting from below the finished ground level to the top of the service pole.
- For poles more than 50m away from the cabinet, 125mm red ESB approved ducting shall be used. An ESB approved hockey stick shall be retained at the junction of the duct and the cabinet's face.
- 10mm Down-rope
- 2x ESB cables to the meter cabinet with 25mm steel and HDPE ducting
- ESB Approved of Practice for Customer Interface at 50 degree bend
- ESB Approved of Practice for Customer Interface at 90 degree bend
- Connection will only be made after all above requirements are met.
- For all details visit the National Code of Practice for Customer Interface at www.esb.ie/customerinterface



- An outdoor meter cabinet must be provided to the ESB Network (ESB) located inside (i) the meter cabinet must be directly accessible from the street or driveway, or within 2m of either side of the meter cabinet; (ii) If any further gas services are required, please discuss these with ESB's representatives; (iii) Unacceptable positions will not be considered these include behind security walls/gates or in porches; (iv) Damaged cabinets will not be considered; (v) Meter cabinets must comply with ESB specifications. If you need a meter cabinet key to access your outdoor meter cabinet please call at 1850 372 727

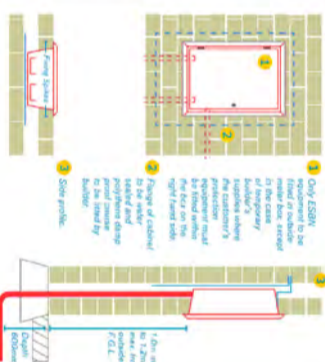
ESB

LOCATION AND INSTALLATION OF METERING CABINET for Standard Non-scheme Domestic Connection

LOCATION



INSTALLATION



- To comfortably access the cabinet, Builders should provide an opening of 600mm (D1, 402N) x 1051 (H).
- Ensure that the door swings into a clear position.
- The installation of the meter cabinet and hockey stick duct into the wall and carry must be in accordance with the ESI Standard 12-3 (1996).
- The hockey stick and must be brought up the cavity into the cabinet at foundation.
- The meter cabinet must be installed with the duct must be enclosed in the wall, the wall or covering the wall.

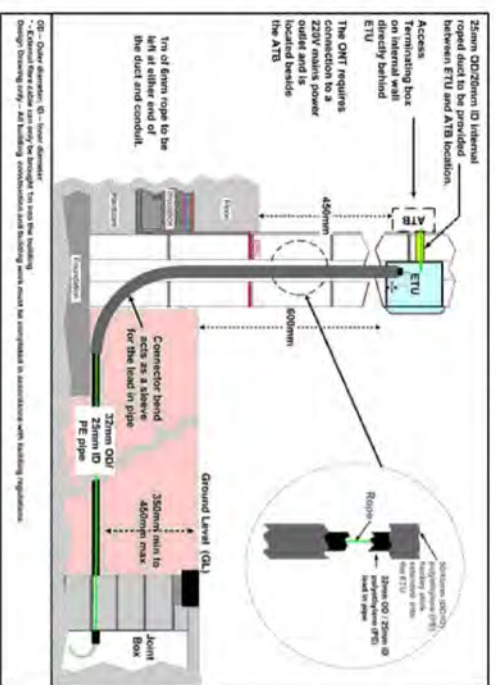
CUSTOMER TAILS



- NOTE
- THIS DRAWING IS COPYRIGHT.
 - THIS DRAWING MUST NOT BE SCALED.
 - THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 - FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 - THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.

EIR

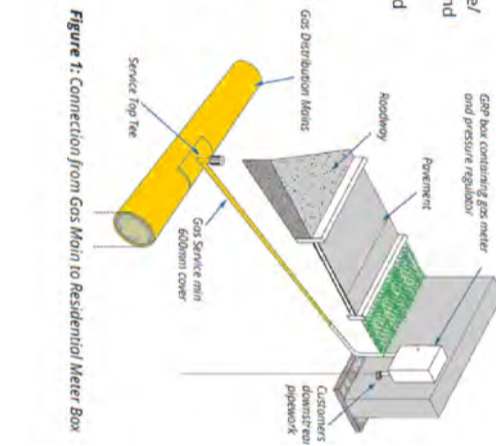
Where a New house is being built on ETU must be inserted in the external wall of a convenient location in accordance with the building regulations shown in Fig 2 below.



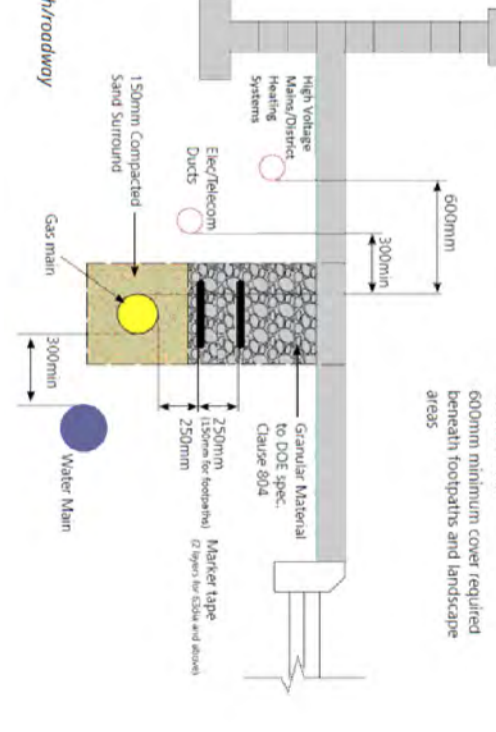
A GNI approved contractor will lay and test the gas connection pipe/service pipe in the pre-excavated trench provided by the builder and a top tee connection is made to the main in the path or road as appropriate. The gas connection pipe shall have sand surround and be reinstated as soon as practicable in order to reduce the possibility of external damage on site. Normally 32mm (low pressure) size polyethylene connection pipe and 25mm (medium pressure) size polyethylene connection pipe is used.

A gas connection pipeline is laid by Gas Networks Ireland connecting a building to the natural gas network. The natural gas connection pipeline must be laid in a straight line to the meter location, using the shortest most direct route and where possible at right angles to the gas main. An illustration of this is shown in figure 1.

Marker tape should be placed over all gas mains, gas connections and ducting intended for gas distribution pipes.



N.B. Contractors/builders must provide their own sand surround and reinstatement material. The main or connection/service pipe must be covered in surround before the Gas Networks Ireland contractor leaves the site. The trench must be reinstated as soon as possible after the pipe is laid to reduce the possibility of damage to the gas pipes.



GAS

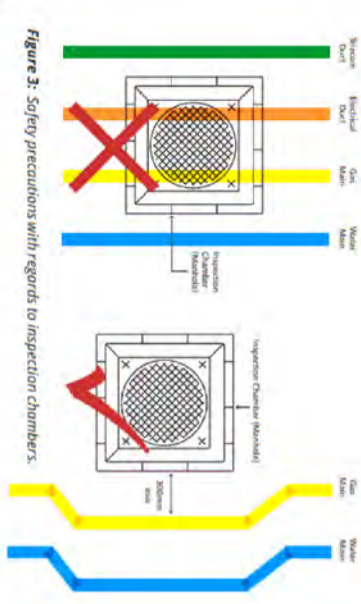


Figure 3: Safety precautions with regards to inspection chambers.

GAS

Where to locate your meter

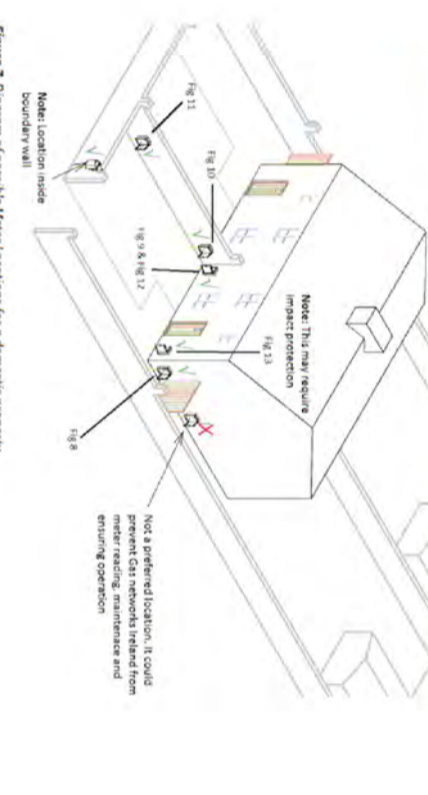


Figure 7: Diagram of possible Meter Locations for a domestic property.

GAS

Where to locate your meter

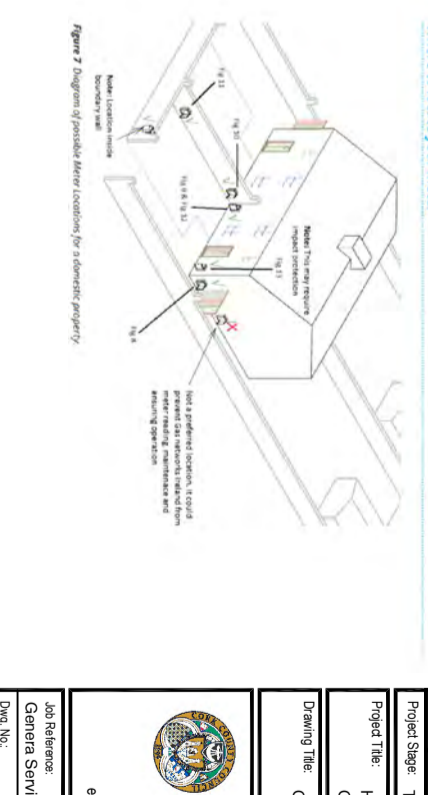


Figure 7: Diagram of possible Meter Locations for a domestic property.

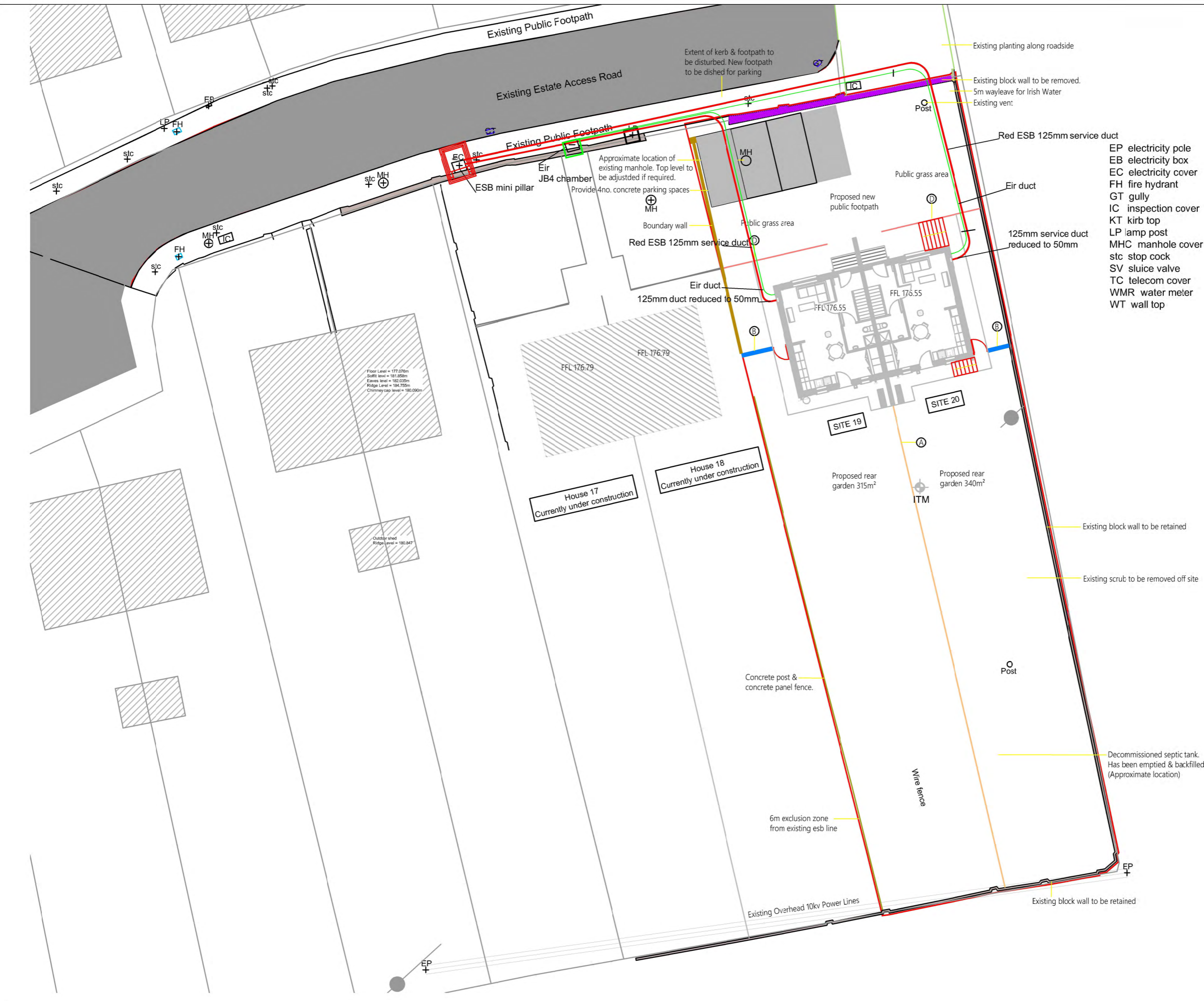
Job Reference: JC		Design Team: JC	
Architect: TOF		Surgeon: RP	
DR-CC-ME-WD-205_1001		Snr. Architect: B.Hern	
Date: Feb. 23 11:50	Scale: Tender	Issue for: A3	Sheet: Redubing Ireland

Project Title: Housing Development
General Services/Utilities












Drawing Title: General Services

Comhairle Contae Chorcaí
Ailbín | Sturthourescath | Ithnootha
Cork County Council
County Hall Cork
Tel. (021) 4288483
e-mail: architectshousing@comcoco.ie

NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



EP electricity pole
 EB electricity box
 EC electricity cover
 FH fire hydrant
 GT gully
 IC inspection cover
 KT kerb top
 LP lamp post
 MHC manhole cover
 stc stop cock
 SV sluice valve
 TC telecom cover
 WMR water meter
 WT wall top

-  MP Minipillar
-  MMP Micropillar
-  125mm ESB supply duct
-  50mm ESB service duct
-  110mm EIR service duct
-  EIR JB4 inspection chamber
-  Public lighting service duct
-  Public light
-  ESB pole
-  ESB POLE
-  JB 26 Chamber

Rev. No.	Revision Description	Date

Project Stage: Planning

Project Title: Proposed Housing Development
 No.19 & 20 Dr. Croke Place, Kilbrin.

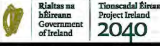
Drawing Title: ESB - Eir Site Services

Conhairle Contae Chorcaí
 Ailtirí | Stúirthóiríocht Tithíochta

Cork County Council
 Architects | Housing Directorate

County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@co.kccoco.ie

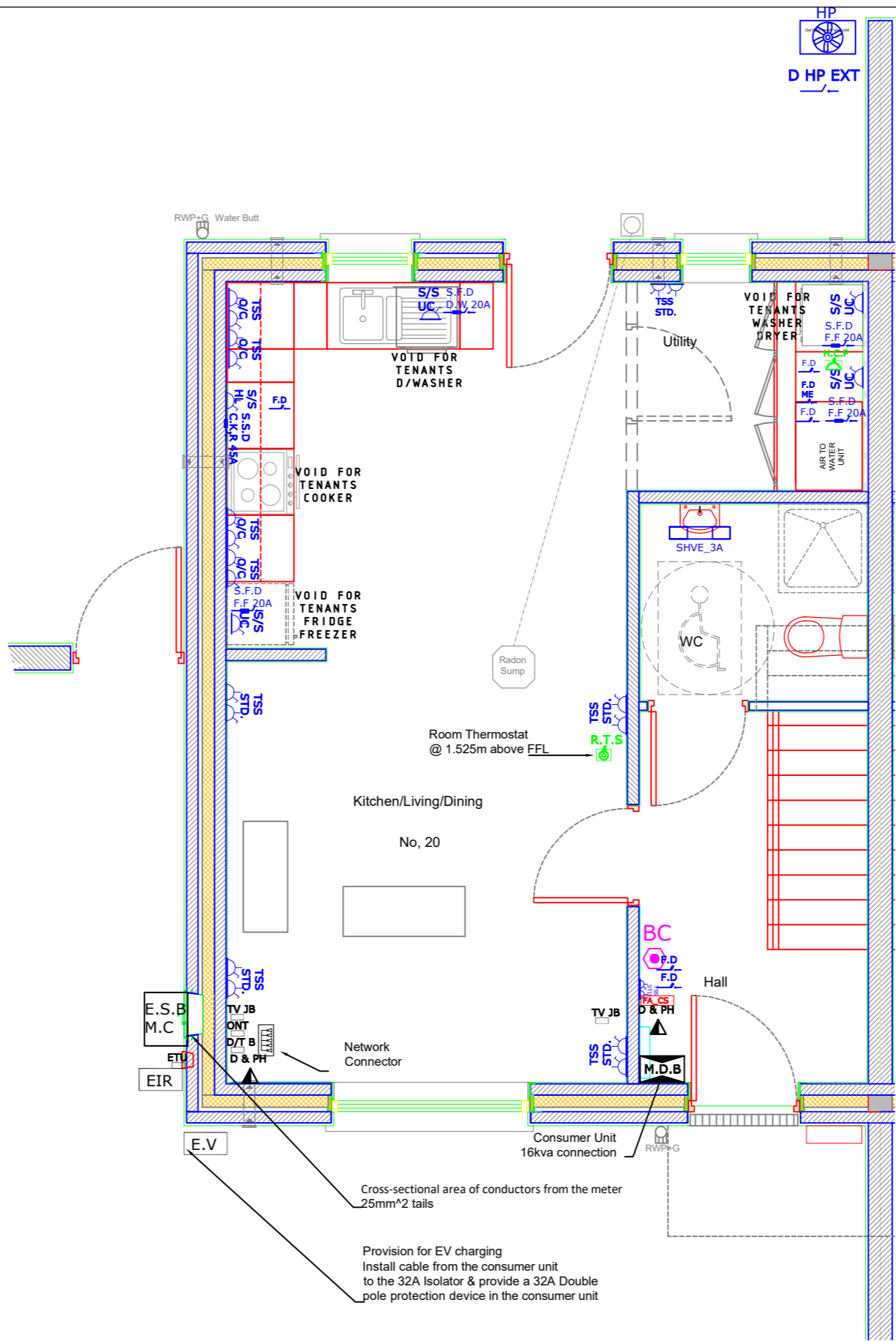
Job Reference: N2022014	Sheet: A3	Design Team: Architect: JC Technician: ToF Surveyor: RB Snr. Architect: R. Henry Engineer: J. Fleming
Dwg. No.: DR-CCC-A-PL-120	Date: Oct.2023	Scale: 1:250
Date: Oct.2023	Scale: 1:250	Issue for: Planning



Legend, Electrical Services

- Single Switched Socket 400mm FFL
- Single Switched Socket High Level, Extractor Fan
- Single Switched Socket 400mm FFL, Under Counter
- Double Switched Socket 400mm FFL
- Double Switched Socket 1200mm FFL
- Double Switched Socket Under Counter 400mm FFL
- Switched Fused Disconnection (Spur)
- Switched Fused Disconnection (Spur) 16A
- Switched Fused Disconnection (Spur) Dish Washer 20A
- Fused Disconnection (Spur) Booster Pump Isolator Heat Pump EXT
- Fused Disconnection (Spur) 45A Shower
- Switched Disconnection (Spur) 45A, Cooker
- Data & Telephone
- TV Junction Box
- Access Terminating Box
- Data & Telephone Box
- Fibre Terminal Box
- Data Patch Panel
- Data Point
- External Terminating Unit
- Heating control unit
- Room temperature stat
- Telephone
- TV socket
- Motorised Valve
- Switch 1 Gang 1 Way
- Switch 1 Gang 2 Way
- Switch 2 Gang 1 Way
- Switch 3 Gang 1 Way
- Door Bell Push Button
- Door Bell Chime
- Shaver Light
- Smoke Head
- Heat Detector
- Carbon monoxide detector
- Fire Alarm Control Switch
- Mechanical Extraction Control Switch
- External Temperature Sensor
- Ceiling Rose
- LED Bulk Fitting Head External
- LED Bulk Fitting Head Internal
- Main Distribution/Consumer Unit
- ESB Meter Cabinet
- EIR Incoming
- Electric Vehicle Charging Point, Isolator & Charger complete with DCL Protection

NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



Proposed layout consumer/distribution board for 19 & 20 Kilbrin 16kva connection

Main Isolating Switch 2 Pole		Surge Protection		32A RCD		20A MCB Kitchen Sockets		20A MCB Kitchen Sockets		20A MCB Utility Room Sockets		20A MCB Living Room Sockets		20A MCB Hall, Landing Store Sockets		20A MCB Bedroom Sockets		20A MCB Bedroom Sockets		32A RCD/RCBO Provision EV Charging	
32A MCB Cooker	32A RCBO HP Out Door	20A RCBO Indoor HP	20A RCBO Booster Pump	20A RCBO Fridge	10A RCBO Heat CTRL	10A RCBO Kitchen Dining Room Utility External Lights	10A RCBO Bed Room Store Lights	10A RCBO Bed Room Bath Lights	10A RCBO Landing Hall Exterior Lights	6A RCBO Fire Alarm Intruder D Bell	6A RCBO MEV										

Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services

Rev. No.	Revision Description	Date

Project Stage: Planning

Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Electrical Layout Ground Floor

Comhairle Contae Chorcaí
 Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corccoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: JF Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-200	Sheet: A3
Date: Oct.2023 1:50	Scale: Planning

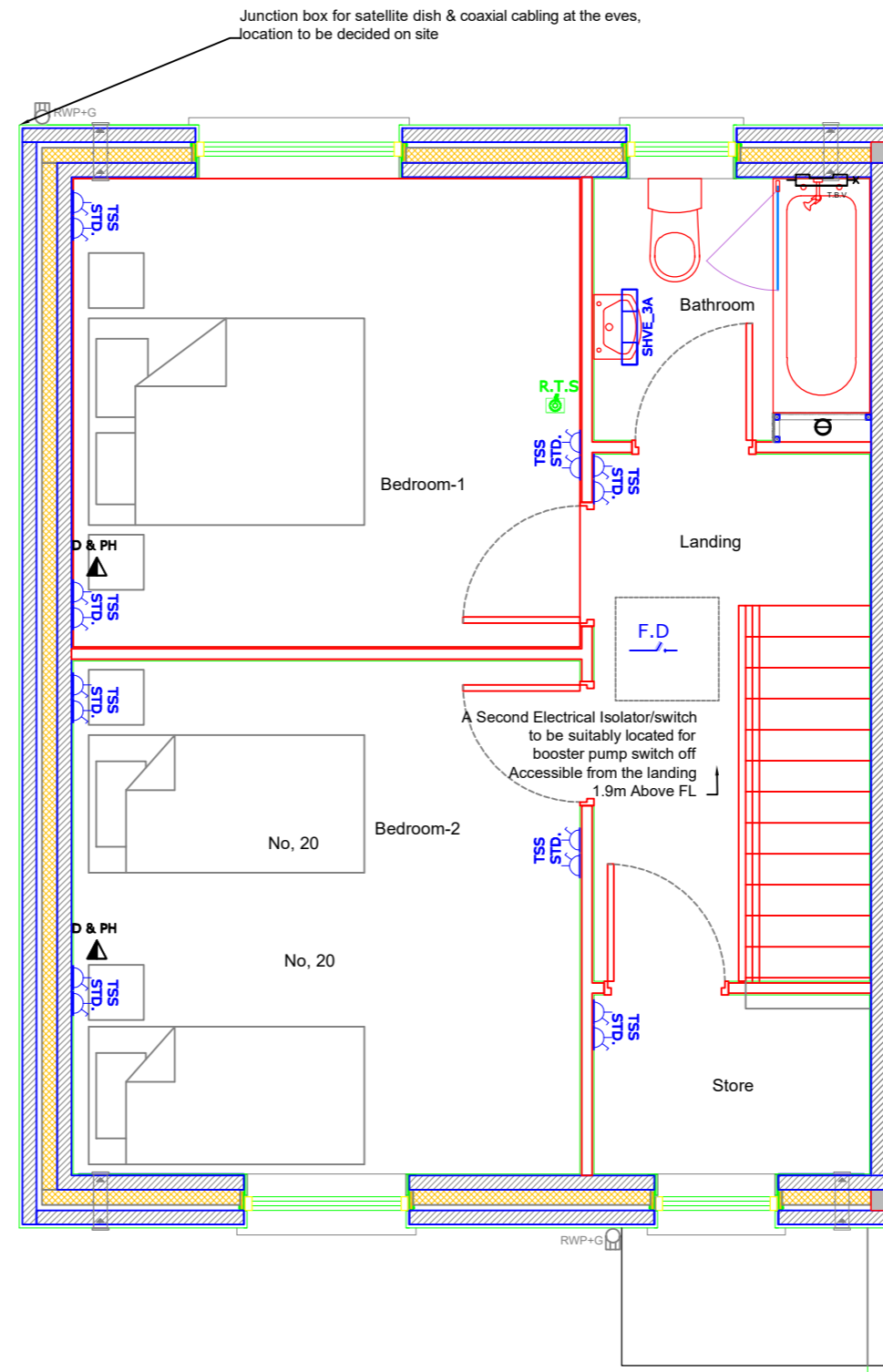
The electrical equipment used in this install shall comply with the European product standard(s) which includes I.S. EN, HD or an I.S. implementing HD, in absence of these standards the following appropriate standard(s) shall apply: Irish Standards (I.S.), or IEC standards not approved in CENELEC; or national standard(s) of another country.
 Where there are no applicable standards, the item concerned shall be selected by special agreement between the persons specifying the installation and the installer. The resulting degree of safety of the installation shall not be less than obtained by compliance with I.S. 10101 (2020).

Distribution boards/consumer unit manufactured from materials complying EN 61439, erected at a height not greater than 2.15m to the top of the highest protective device, to include 2 pole isolation switch, over current protection, surge protection, arc fault detection.

Legend, Electrical Services

- Single Switched Socket 400mm FFL
- Single Switched Socket High Level, Extractor Fan
- Single Switched Socket 400mm FFL, Under Counter
- Double Switched Socket 400mm FFL
- Double Switched Socket 1200mm FFL
- Double Switched Socket Under Counter 400mm FFL
- Switched Fused Disconnection (Spur)
- Switched Fused Disconnection (Spur) 16A
- Switched Fused Disconnection (Spur) Dish Washer 20A
- Fused Disconnection (Spur) Booster Pump Isolator Heat Pump EXT
- Fused Disconnection (Spur) 45A Shower
- Switched Disconnection (Spur) 45A, Cooker
- Data & Telephone
- TV Junction Box
- Access Terminating Box
- Data & Telephone Box
- Fibre Terminal Box
- Data Patch Panel
- Data Point
- External Terminating Unit
- Heating control unit
- Room temperature stat
- Telephone
- TV socket
- Motorised Valve
- Switch 1 Gang 1 Way
- Switch 1 Gang 2 Way
- Switch 2 Gang 1 Way
- Switch 3 Gang 1 Way
- Door Bell Push Button
- Door Bell Chime
- Shaver Light
- Smoke Head
- Heat Detector
- Carbon monoxide detector
- Fire Alarm Control Switch
- Mechanical Extraction Control Switch
- External Temperature Sensor
- Ceiling Rose
- LED Bulk Fitting Head External
- LED Bulk Fitting Head Internal
- Main Distribution/Consumer Unit
- ESB Meter Cabinet
- EIR Incoming
- Electric Vehicle Charging Point, Isolator & Charger complete with DCL Protection

NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



Proposed layout consumer/distribution board for 19 & 20 Kilbrin 16kva connection												
Arc Fault detection devices to be used												
Main Isolating Switch 2 Pole	Surge Protection	63A RCBO	20A MCB Kitchen Sockets	20A MCB Kitchen Sockets	20A MCB Utility Sockets	20A MCB Living Room Sockets	20A MCB Hall, Landin Sockets	20A MCB Bedroom Sockets	20A MCB Bedroom Sockets	20A MCB Bedroom Sockets	32A RCD/RCBO Provision EV Charging	
32A MCB Cooker	32A RCBO HP Out Door	20A RCBO Indoor HP	20A RCBO Booster Pump	20A RCBO Fridge	10A RCBO Heat CTRL	10A RCBO Kitchen Dining Room Utility External Lights	10A RCBO Bed Room Store Lights	10A RCBO Bed Room Bath Room Lights	10A RCBO Landing Hall Exterior Lights	6A RCBO Fire Alarm Intruder D Bell	6A RCBO MEV	

Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services

The electrical equipment used in this install shall comply with the European product standard(s) which includes I.S. EN, HD or an I.S. implementing HD, in absence of these standards the following appropriate standard(s) shall apply: Irish Standards (I.S.), or IEC standards not approved in CENELEC; or national standard(s) of another country.
 Where there are no applicable standards, the item concerned shall be selected by special agreement between the persons specifying the installation and the installer. The resulting degree of safety of the installation shall not be less than obtained by compliance with I.S. 10101 (2020).

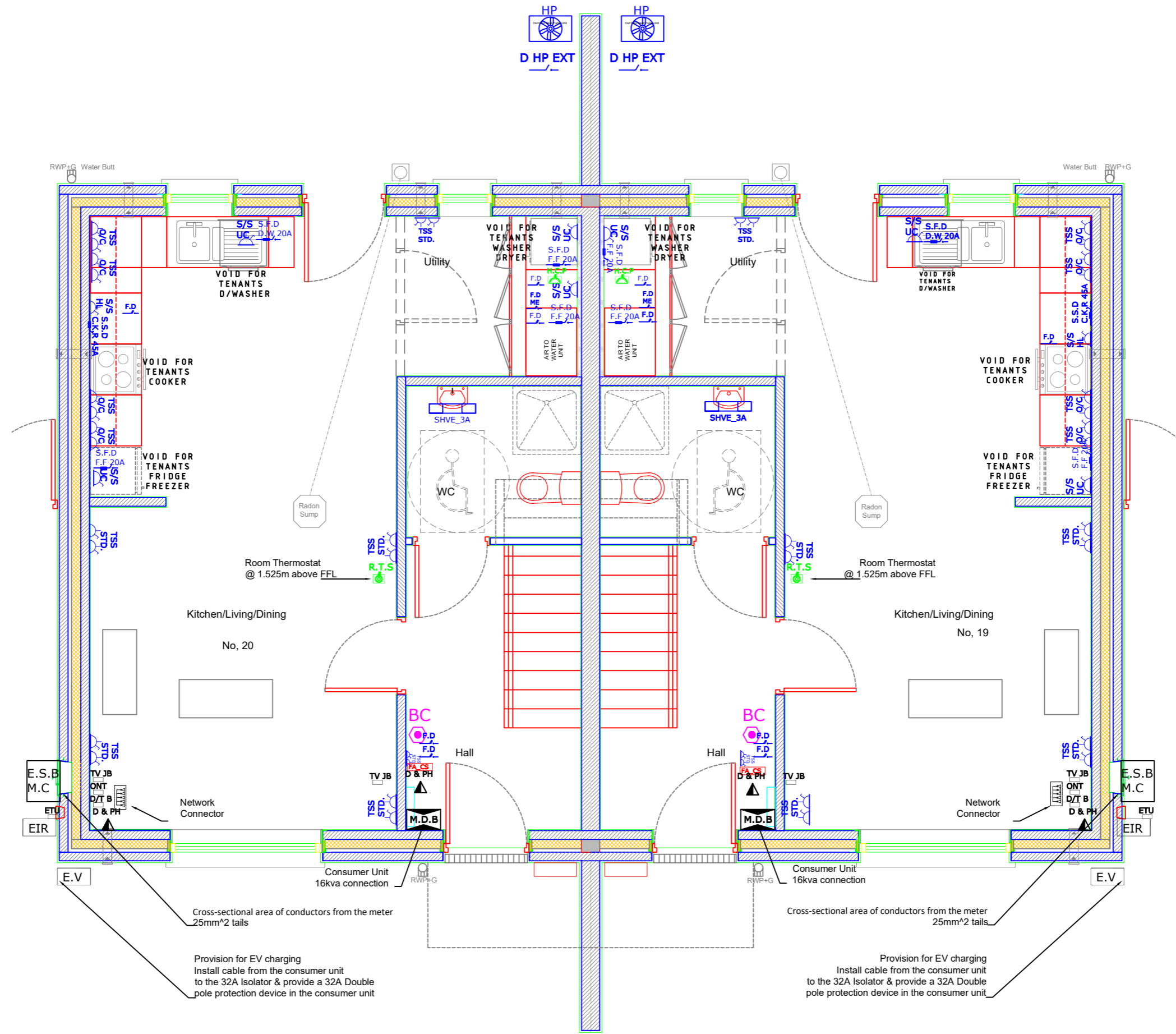
Distribution boards/consumer unit manufactured from materials complying EN 61439, erected at a height not greater than 2.15m to the top of the highest protective device, to include 2 pole isolation switch, over current protection, surge protection, arc fault detection.

Rev. No.	Revision Description	Date
Project Stage: Planning		
Project Title: Housing Development 19 & 20 Dr. Croke Place, Kilbrin.		
Drawing Title: Electrical Layout First Floor		
 Comhairle Contae Chorcaí Ailtirí Stiúrthóireacht Tithíochta Cork County Council Architects Housing Directorate County Hall, Cork Tel: (021) 4285433 e-mail: architects.housing@corkcoco.ie		
Job Reference: N2022014	Architect: JC	Design Team: TOF
Dwg. No.: DR-CCC-ME-PL-201	Technician: JF	Engineer: RB
Date: Oct.2023	Scale: 1:50	Issue for: Planning
	Sheet: A3	

Legend, Electrical Services

- Single Switched Socket 400mm FFL
- Single Switched Socket High Level, Extractor Fan
- Single Switched Socket 400mm FFL, Under Counter
- Double Switched Socket 400mm FFL
- Double Switched Socket 1200mm FFL
- Double Switched Socket Under Counter 400mm FFL
- Switched Fused Disconnection (Spur)
- Switched Fused Disconnection (Spur) 16A
- Switched Fused Disconnection (Spur) Dish Washer 20A
- Fused Disconnection (Spur) Booster Pump
- Isolator Heat Pump EXT
- Fused Disconnection (Spur) 45A Shower
- Switched Disconnection (Spur) 45A, Cooker
- Data & Telephone
- TV Junction Box
- Access Terminating Box
- Data & Telephone Box
- Fibre Terminal Box
- Data Patch Panel
- Data Point
- External Terminating Unit
- Heating control unit
- Room temperature stat
- Telephone
- TV socket
- Motorised Valve
- Switch 1 Gang 1 Way
- Switch 1 Gang 2 Way
- Switch 2 Gang 1 Way
- Switch 3 Gang 1 Way
- Door Bell Push Button
- Door Bell Chime
- Shaver Light
- Smoke Head
- Heat Detector
- Carbon monoxide detector
- Fire Alarm Control Switch
- Mechanical Extraction Control Switch
- External Temperature Sensor
- Ceiling Rose
- LED Bulk Fitting Head External
- LED Bulk Fitting Head Internal
- Main Distribution/Consumer Unit
- ESB Meter Cabinet
- EIR Incoming
- Electric Vehicle Charging Point, Isolator & Charger complete with DCL Protection

NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services

Cross-sectional area of conductors from the meter
 25mm² tails

Provision for EV charging
 Install cable from the consumer unit to the 32A Isolator & provide a 32A Double pole protection device in the consumer unit

Cross-sectional area of conductors from the meter
 25mm² tails

Provision for EV charging
 Install cable from the consumer unit to the 32A Isolator & provide a 32A Double pole protection device in the consumer unit

Rev. No.	Revision Description	Date

Project Stage: Planning

Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.

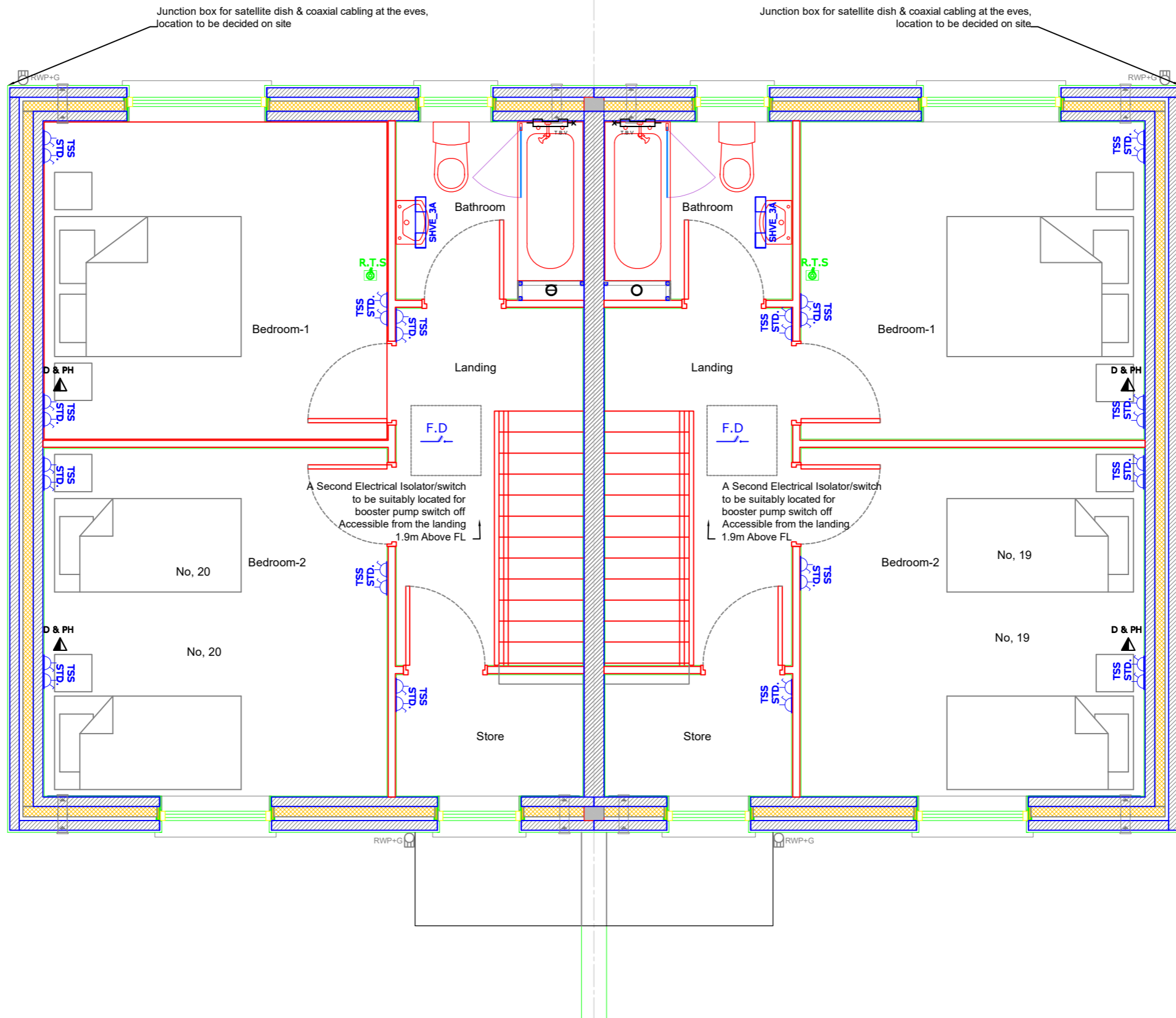
Drawing Title: Electrical Layout Ground Floor 19 & 20

Comhairle Contae Chorcaí
 Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@cornccoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-202	Sheet: A3
Date: Oct.2023	Scale: 1:50
Issue for: Planning	Rebuilding Ireland

Legend, Electrical Services

- Single Switched Socket 400mm FFL
- Single Switched Socket High Level, Extractor Fan
- Single Switched Socket 400mm FFL, Under Counter
- Double Switched Socket 400mm FFL
- Double Switched Socket 1200mm FFL
- Double Switched Socket Under Counter 400mm FFL
- Switched Fused Disconnection (Spur)
- Switched Fused Disconnection (Spur) 16A
- Switched Fused Disconnection (Spur) Dish Washer 20A
- Fused Disconnection (Spur) Booster Pump Isolator Heat Pump EXT
- Fused Disconnection (Spur) 45A Shower
- Switched Disconnection (Spur) 45A, Cooker
- Data & Telephone
- TV Junction Box
- Access Terminating Box
- Data & Telephone Box
- Fibre Terminal Box
- Data Patch Panel
- Data Point
- External Terminating Unit
- Heating control unit
- Room temperature stat
- Telephone
- TV socket
- Motorised Valve
- Switch 1 Gang 1 Way
- Switch 1 Gang 2 Way
- Switch 2 Gang 1 Way
- Switch 3 Gang 1 Way
- Door Bell Push Button
- Door Bell Chime
- Shaver Light
- Smoke Head
- Heat Detector
- Carbon monoxide detector
- Fire Alarm Control Switch
- Mechanical Extraction Control Switch
- External Temperature Sensor
- Ceiling Rose
- LED Bulk Fitting Head External
- LED Bulk Fitting Head Internal
- Main Distribution/Consumer Unit
- ESB Meter Cabinet
- EIR Incoming
- Electric Vehicle Charging Point, Isolator & Charger complete with DCL Protection



NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.

Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services

Rev. No.	Revision Description	Date

Project Stage: Planning

Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.















































Drawing Title: Electrical Layout First Floor 19 & 20

Comhairle Contae Chorcaí
 Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie





Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-203	Sheet: A3
Date: Oct.2023	Scale: 1:50
Issue for: Planning	

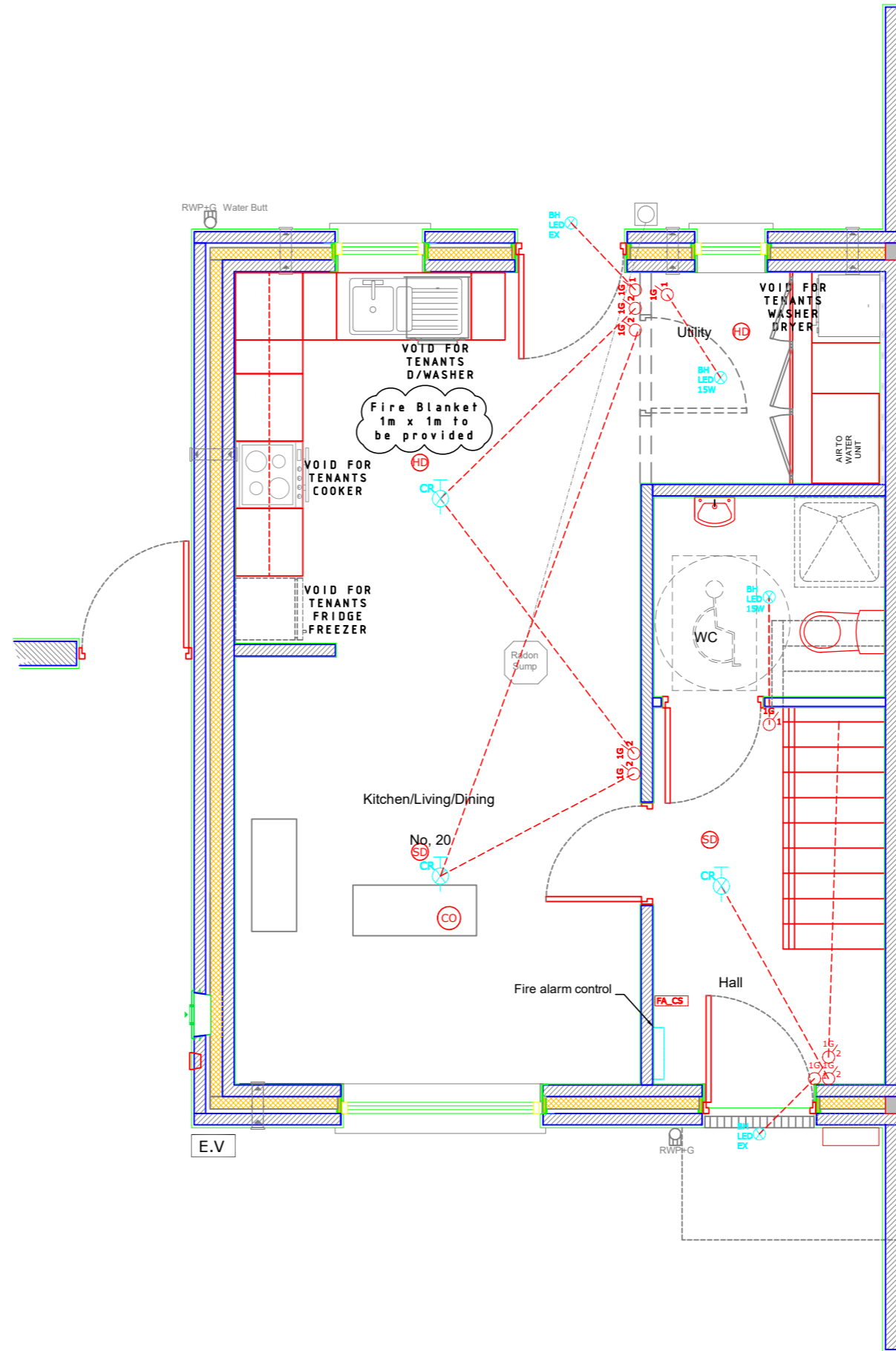
NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.

Legend, Electrical Services

-  Single Switched Socket 400mm FFL
-  Single Switched Socket High Level, Extractor Fan
-  Single Switched Socket 400mm FFL, Under Counter
-  Double Switched Socket 400mm FFL
-  Double Switched Socket 1200mm FFL
-  Double Switched Socket Under Counter 400mm FFL
-  Switched Fused Disconnection (Spur)
-  Switched Fused Disconnection (Spur) 16A
-  Switched Fused Disconnection (Spur) Dish Washer 20A
-  Fused Disconnection (Spur) Booster Pump
-  Isolator Heat Pump EXT
-  Fused Disconnection (Spur) 45A Shower
-  Switched Disconnection (Spur) 45A, Cooker
-  Data & Telephone
-  TV Junction Box
-  Access Terminating Box
-  Data & Telephone Box
-  Fibre Terminal Box
-  Data Patch Panel
-  Data Point
-  External Terminating Unit
-  Heating control unit
-  Room temperature stat
-  Telephone
-  TV socket
-  Motorised Valve
-  Switch 1 Gang 1 Way
-  Switch 1 Gang 2 Way
-  Switch 2 Gang 1 Way
-  Switch 3 Gang 1 Way
-  Door Bell Push Button
-  Door Bell Chime
-  Shaver Light
-  Smoke Head
-  Heat Detector
-  Carbon monoxide detector
-  Fire Alarm Control Switch
-  Mechanical Extraction Control Switch
-  External Temperature Sensor
-  Ceiling Rose
-  LED Bulk Fitting Head External
-  LED Bulk Fitting Head Internal
-  Main Distribution/Consumer Unit
-  ESB Meter Cabinet
-  EIR Incoming
-  Electric Vehicle Charging Point, Isolator & Charger complete with DCL Protection

Legend, Intruder Alarm

-  Sounder
-  Strobe Sounder
-  Door/Window Contact
-  Intruder Alarm Panel



Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services

Rev. No.	Revision Description	Date

Project Stage: Planning

Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.















































Drawing Title: Light Circuits, Fire Alarm Ground Floor

Comhairle Contae Chorcaí
 Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie





Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-216	Sheet: A3
Date: Oct.2023	Scale: 1:50
Issue for: Planning	Rebuilding Ireland

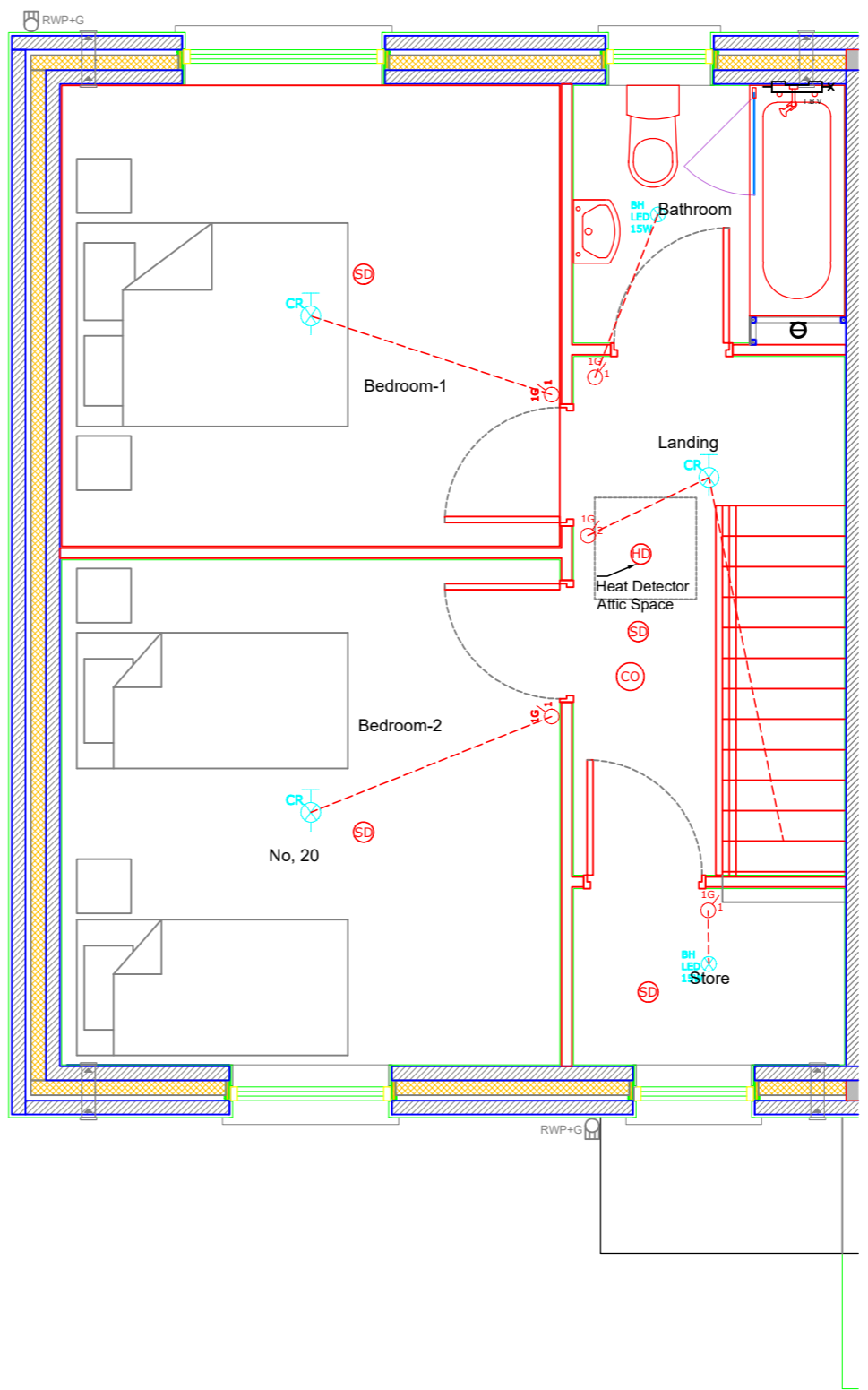
NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.

Legend, Electrical Services

-  Single Switched Socket 400mm FFL
-  Single Switched Socket High Level, Extractor Fan
-  Single Switched Socket 400mm FFL, Under Counter
-  Double Switched Socket 400mm FFL
-  Double Switched Socket 1200mm FFL
-  Double Switched Socket Under Counter 400mm FFL
-  Switched Fused Disconnection (Spur)
-  Switched Fused Disconnection (Spur) 16A
-  Switched Fused Disconnection (Spur) Dish Washer 20A
-  Fused Disconnection (Spur) Booster Pump
-  Isolator Heat Pump EXT
-  Fused Disconnection (Spur) 45A Shower
-  Switched Disconnection (Spur) 45A, Cooker
-  Data & Telephone
-  TV Junction Box
-  Access Terminating Box
-  Data & Telephone Box
-  Fibre Terminal Box
-  Data Patch Panel
-  Data Point
-  External Terminating Unit
-  Heating control unit
-  Room temperature stat
-  Telephone
-  TV socket
-  Motorised Valve
-  Switch 1 Gang 1 Way
-  Switch 1 Gang 2 Way
-  Switch 2 Gang 1 Way
-  Switch 3 Gang 1 Way
-  Door Bell Push Button
-  Door Bell Chime
-  Shaver Light
-  Smoke Head
-  Heat Detector
-  Carbon monoxide detector
-  Fire Alarm Control Switch
-  Mechanical Extraction Control Switch
-  External Temperature Sensor
-  Ceiling Rose
-  LED Bulk Fitting Head External
-  LED Bulk Fitting Head Internal
-  Main Distribution/Consumer Unit
-  ESB Meter Cabinet
-  EIR Incoming
-  Electric Vehicle Charging Point, Isolator & Charger complete with DCL Protection

Legend, Intruder Alarm

-  Sounder
-  Strobe Sounder
-  Door/Window Contact
-  Intruder Alarm Panel



Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services

Rev. No.	Revision Description	Date

Project Stage: Planning

Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Light Circuits, Fire Alarm, First Floor

Comhairle Contae Chorcaí
 Ailtirí | Stúirthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

Job Reference: N2020014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-217	Sheet: A3
Date: Oct.2023	Scale: 1:50
Issue for: Planning	Rebuilding Ireland

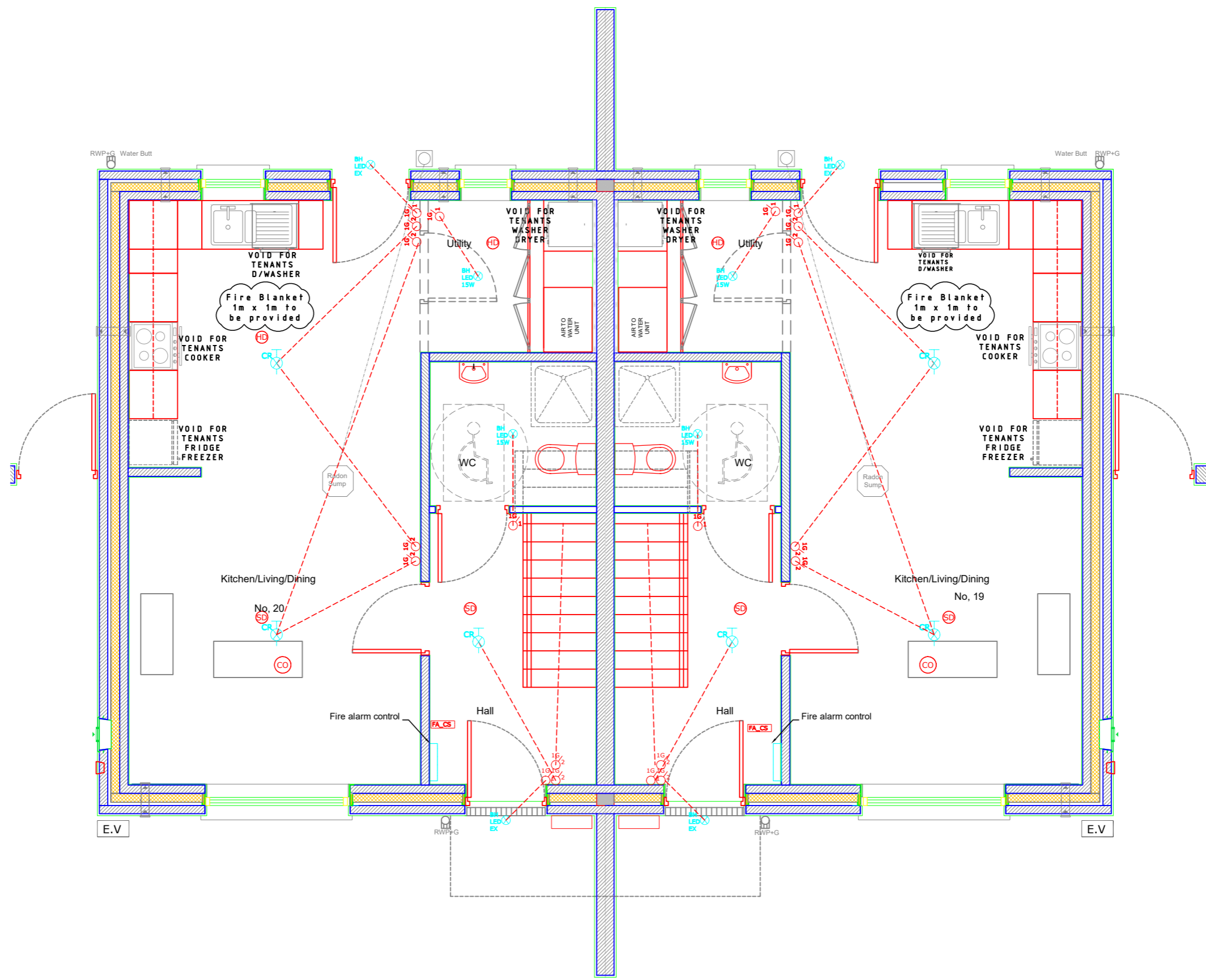
Legend, Electrical Services

- Single Switched Socket 400mm FFL
- Single Switched Socket High Level, Extractor Fan
- Single Switched Socket 400mm FFL, Under Counter
- Double Switched Socket 400mm FFL
- Double Switched Socket 1200mm FFL
- Double Switched Socket Under Counter 400mm FFL
- Switched Fused Disconnection (Spur)
- Switched Fused Disconnection (Spur) 16A
- Switched Fused Disconnection (Spur) Dish Washer 20A
- Fused Disconnection (Spur) Booster Pump
- Isolator Heat Pump EXT
- Fused Disconnection (Spur) 45A Shower
- Switched Disconnection (Spur) 45A, Cooker
- Data & Telephone
- TV Junction Box
- Access Terminating Box
- Data & Telephone Box
- Fibre Terminal Box
- Data Patch Panel
- Data Point
- External Terminating Unit
- Heating control unit
- Room temperature stat
- Telephone
- TV socket
- Motorised Valve
- Switch 1 Gang 1 Way
- Switch 1 Gang 2 Way
- Switch 2 Gang 1 Way
- Switch 3 Gang 1 Way
- Door Bell Push Button
- Door Bell Chime
- Shaver Light
- Smoke Head
- Heat Detector
- Carbon monoxide detector
- Fire Alarm Control Switch
- Mechanical Extraction Control Switch
- External Temperature Sensor
- Ceiling Rose
- LED Bulk Fitting Head External
- LED Bulk Fitting Head Internal
- Main Distribution/Consumer Unit
- ESB Meter Cabinet
- EIR Incoming
- Electric Vehicle Charging Point, Isolator & Charger complete with DCL Protection

Legend, Intruder Alarm

- Sounder
- Strobe Sounder
- Door/Window Contact
- Intruder Alarm Panel

NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services

Rev. No.	Revision Description	Date

Project Stage: Planning

Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Lighting, Fire Alarm Ground Floor 19 & 20

Comhairle Contae Chorcaí
 Ailtirí | Stúirthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

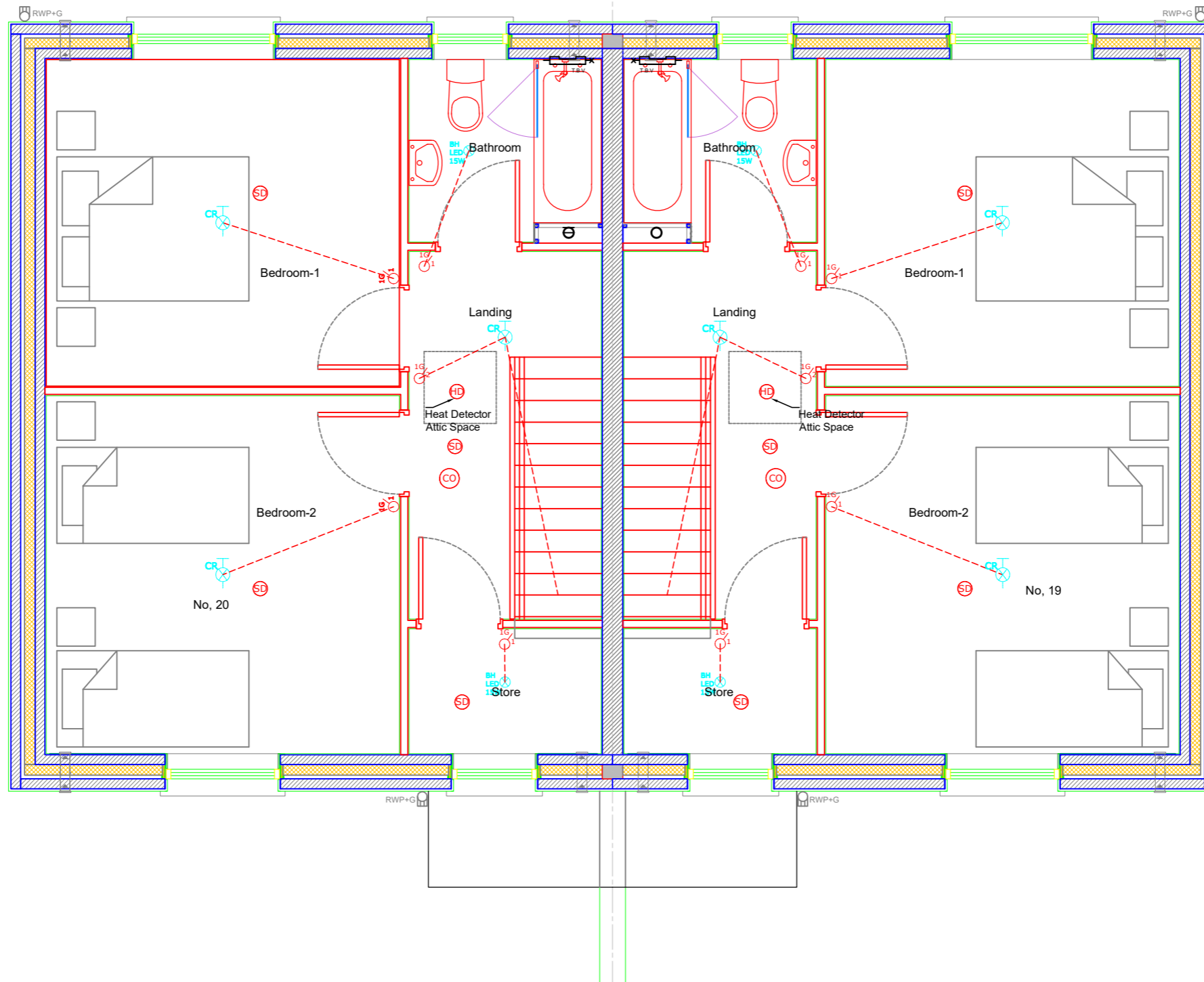
Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-218	Sheet: A3
Date: Feb. 23	Scale: N/A
Issue for: Planning	Sheet: A3

Legend, Electrical Services

- Single Switched Socket 400mm FFL
- Single Switched Socket High Level, Extractor Fan
- Single Switched Socket 400mm FFL, Under Counter
- Double Switched Socket 400mm FFL
- Double Switched Socket 1200mm FFL
- Double Switched Socket Under Counter 400mm FFL
- Switched Fused Disconnection (Spur)
- Switched Fused Disconnection (Spur) 16A
- Switched Fused Disconnection (Spur) Dish Washer 20A
- Fused Disconnection (Spur) Booster Pump
- Isolator Heat Pump EXT
- Fused Disconnection (Spur) 45A Shower
- Switched Disconnection (Spur) 45A, Cooker
- Data & Telephone
- TV Junction Box
- Access Terminating Box
- Data & Telephone Box
- Fibre Terminal Box
- Data Patch Panel
- Data Point
- External Terminating Unit
- Heating control unit
- Room temperature stat
- Telephone
- TV socket
- Motorised Valve
- Switch 1 Gang 1 Way
- Switch 1 Gang 2 Way
- Switch 2 Gang 1 Way
- Switch 3 Gang 1 Way
- Door Bell Push Button
- Door Bell Chime
- Shaver Light
- Smoke Head
- Heat Detector
- Carbon monoxide detector
- Fire Alarm Control Switch
- Mechanical Extraction Control Switch
- External Temperature Sensor
- Ceiling Rose
- LED Bulk Fitting Head External
- LED Bulk Fitting Head Internal
- Main Distribution/Consumer Unit
- ESB Meter Cabinet
- EIR Incoming
- Electric Vehicle Charging Point, Isolator & Charger complete with DCL Protection

Legend, Intruder Alarm

- Sounder
- Strobe Sounder
- Door/Window Contact
- Intruder Alarm Panel



NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.

Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services

Rev. No.	Revision Description	Date

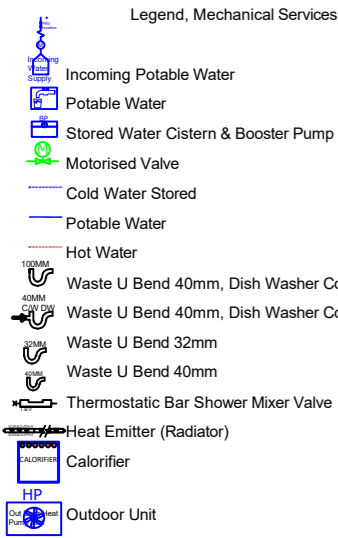
Project Stage: Planning

Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Lighting, Fire Alarm, First Floor 19 & 20

Comhairle Contae Chorcaí
 Ailgí | Stúirthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Snr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-219	
Date: Feb. 23	Scale: N/A
Issue for: Planning	Sheet: A3



Ventilation heat Loss calculations based on S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems in dwellings
 Building fabric heat Loss calculations based on S.R. 50-1 2021 NSAI, building services - codes of practice - part 1 water based heating systems in dwellings
 Heat emitters based on Low flow & return temperature annex H, S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems
 Ventilation to; Buildings Regulations 2019 Technical Guidance Document F
 Ventilation

Calculated general ventilation rate based on occupancy of the dwelling [TGD F - 1.2.2.2]: @ 5 l/s plus 4 l/s person = 5 + (4*4) = 21

Calculated general ventilation rate based on internal floor area of the dwelling [TGD F - 1.2.2.2]: 83 m² at 0.3 l/s/m² (0.3 x 81) = 24.3 l/s

Continuous extract ventilation rate of the dwelling is: 24.3 l/s
 Overall minimum boost extract ventilation rate requirement [TGD F - Table 1]: = Kitchen + Utility + Toilet + Bathroom l/s = 37l/s

25% capacity requirement over general ventilation rate of the dwelling [TGD F - 1.2.2.3]: = 30.375l/s
 Total capacity of the system l/s = 37l/s

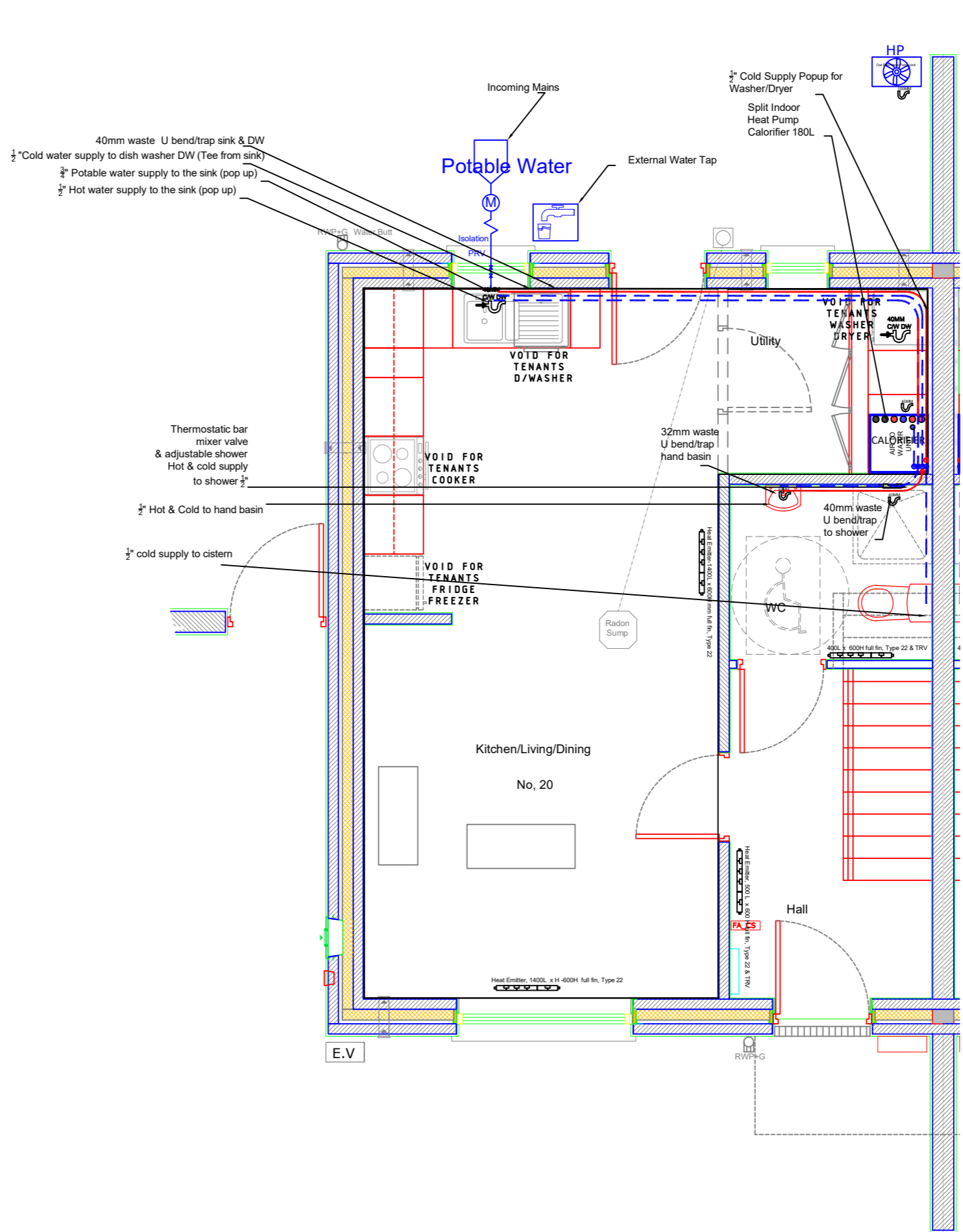
Room with MEV extract grid (s) Room general extract airflow rate (l/s) adjusted proportionally
 Kitchen = 8.5 l/s
 Utility = 5.3l/s
 Toilet = 5.3l/s
 Bathroom = 5.3l/s

A humidity sensitive air inlet and demand controlled extraction system to be installed
 Total Ventilation 49,700mm²

Heat Emitter Selection						
Heat Emitters Based on Low Flow & Return Temperature Annex H, S.R. 50-1 2021 NSAI Building Services - Codes of Practice - Part 1 Water Based Heating Systems	Delta T Heat Emitters Degrees C	Heat Loss Rooms Watts	Emitters Based on Low Delta T Watts Heat output @ Δ T 50°C.	Type	Length mm	Height mm
Kitchen & Living Room	21.5	1453	5008	22	1400	600
Hall	21.5	242	873	22	500	600
Toilet	19.5	203	873	22	400	600
Landing	21.5	162	545	22	400	450
Bathroom	19.5	234	873	22	500	600
Bedroom 2	21.5	358	1235	22	700	600
Bedroom 1	21.5	413	1235	22	700	600
Storeroom	21.5	118	387	11	400	300

Heat Emitter Selection	
Calorifier Internal Hot Water Storage	200L
Booster Pump & Cold Water Store	212L

Heat Pump	
Split/Mono	
kW	4.3



NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.

Heat loss and emitters have been sized to S.R. 50-1 2021 NSAI Building Services - Codes of Practice - Part 1 Water Based Heating Systems in Dwellings and Heat loss calculation and radiator sizing for heat pump systems (SEAI)
 The flow temperature of heat pump is calculated at around 45°C with a return temperature of 40°C, the heat emitters detailed in the drawing have been sized using a conversion factor and a typical emitter manufacturer with a ΔT of 50°C, the contractor should obtain conversion factors for low temperature emitters from the supplier/manufacturer and agree with the engineer. Higher out put emitters (increased fins and surface area) influence the final size selection.

- Notes
- Final locations to be agreed on site
 - Drawing to be read in conjunction with other relevant service drawings and specifications
 - Soil and vent pipe-work below ground level shall be the remit of the main contractor
 - Mechanical contractor shall be responsible for all connections to sanitary ware and fitting of same
 - All exposed wastes, traps and supports within the toilet area must be metal manufacture and chrome plated
 - Access/inspection covers at the base of stacks above floor level.

Rev. No.	Revision Description	Date

Project Stage: Planning

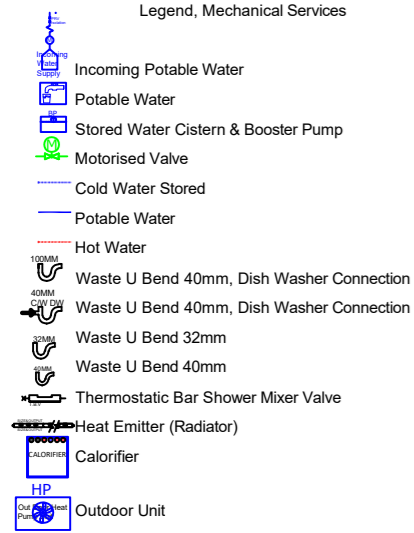
Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Mechanical Layout Ground Floor

Comhairle Contae Chorcaí
 Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-241	Sheet: A3
Date: Oct.2023 Scale: 1:50	Issue for: Planning

Legend, Mechanical Services



Ventilation heat Loss calculations based on S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems in dwellings
 Building fabric heat Loss calculations based on S.R. 50-1 2021 NSAI, building services - codes of practice - part 1 water based heating systems in dwellings
 Heat emitters based on Low flow & return temperature annex H, S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems

Ventilation to; Buildings Regulations 2019
 Technical Guidance Document F
 Ventilation

Calculated general ventilation rate based on occupancy of the dwelling [TGD F - 1.2.2.2]: @ 5 l/s plus 4 l/s person = 5 + (4*4) = 21

Calculated general ventilation rate based on internal floor area of the dwelling [TGD F - 1.2.2.2]: 83 m² at 0.3 l/s/m² (0.3 x 81) = 24.3 l/s

Continuous extract ventilation rate of the dwelling is: 24.3 l/s
 Overall minimum boost extract ventilation rate requirement [TGD F - Table 1]: = Kitchen + Utility + Toilet + Bathroom l/s = 37l/s

25% capacity requirement over general ventilation rate of the dwelling [TGD F - 1.2.2.3]: = 30.375l/s
 Total capacity of the system l/s = 37l/s

Room with MEV extract grid (s) Room general extract airflow rate (l/s) adjusted proportionally
 Kitchen = 8.5 l/s
 Utility = 5.3l/s
 Toilet = 5.3l/s
 Bathroom = 5.3l/s

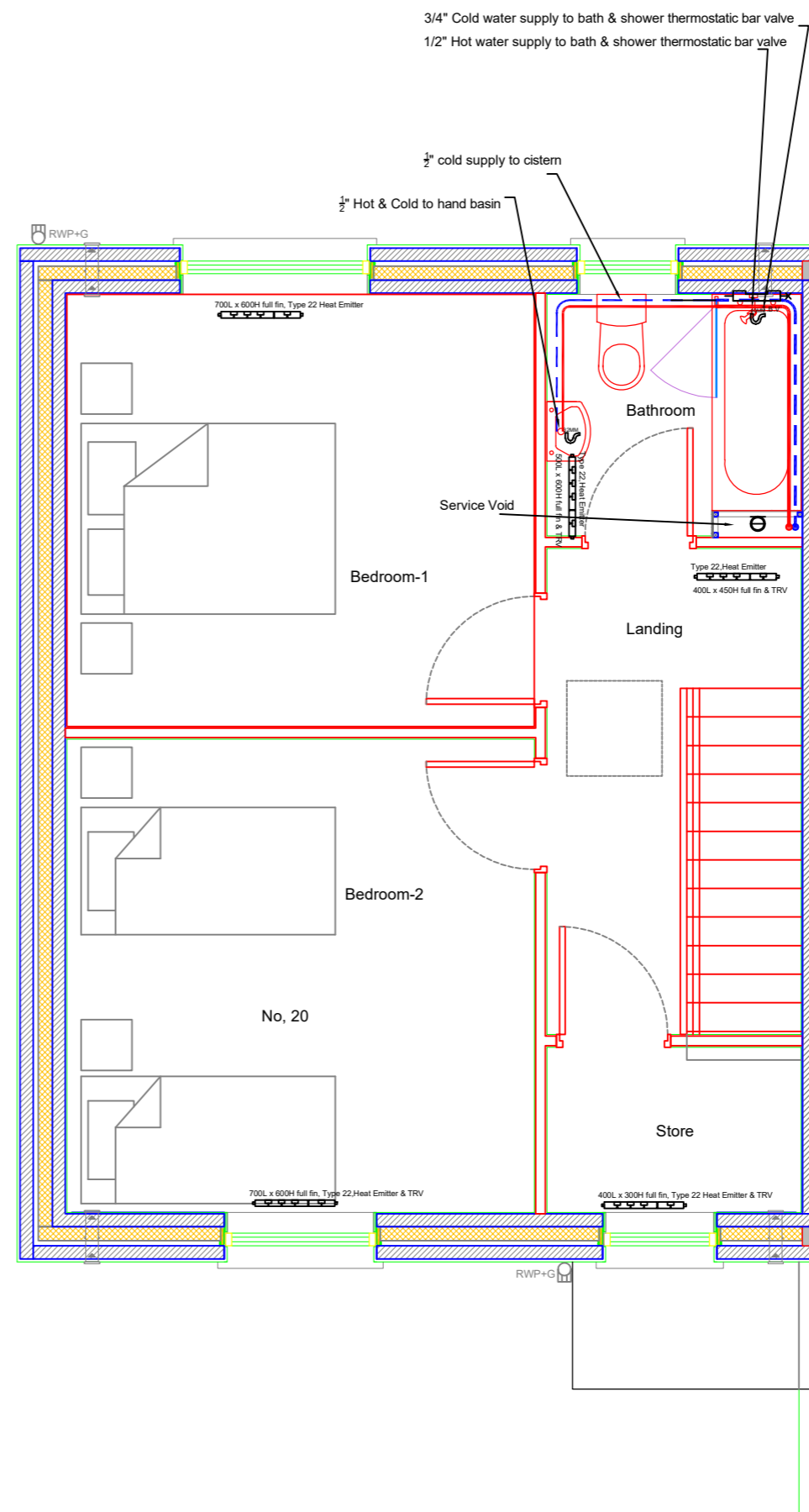
A humidity sensitive air inlet and demand controlled extraction system to be installed

Total Ventilation 49,700mm²

Heat Emitter Selection						
Heat Emitters Based on Low Flow & Return Temperature Annex H, S.R. 50-1 2021 NSAI Building Services - Codes of Practice - Part 1 Water Based Heating Systems	Delta T Heat Emitters Degrees C	Heat Loss Rooms Watts	Emitters Based on Low Delta T Watts Heat output @ Δ T 50°C.	Type	Length mm	Height mm
Kitchen & Living Room	21.5	1453	5008	22	1400	600
Hall	21.5	242	873	22	1400	600
Toilet	19.5	203	873	22	400	600
Landing	21.5	162	545	22	400	450
Bathroom	19.5	234	873	22	500	600
Bedroom 2	21.5	358	1235	22	700	600
Bedroom 1	21.5	413	1235	22	700	600
Storeroom	21.5	118	387	11	400	300

Heat Emitter Selection	
Calorifier Internal Hot Water Storage	200L
Booster Pump & Cold Water Store	212L

Heat Pump	
Split/Mono	
kW	4.3



NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.

Heat loss and emitters have been sized to S.R. 50-1 2021 NSAI Building Services - Codes of Practice - Part 1 Water Based Heating Systems in Dwellings and Heat loss calculation and radiator sizing for heat pump systems (SEAI)
 The flow temperature of heat pump is calculated at around 45°C with a return temperature of 40°C, the heat emitters detailed in the drawing have been sized using a conversion factor and a typical emitter manufacturer with a ΔT of 50°C, the contractor should obtain conversion factors for low temperature emitters from the supplier/manufacturer and agree with the engineer. Higher out put emitters (increased fins and surface area) influence the final size selection.

- Notes
- Final locations to be agreed on site
 - Drawing to be read in conjunction with other relevant service drawings and specifications
 - Soil and vent pipe-work below ground level shall be the remit of the main contractor
 - Mechanical contractor shall be responsible for all connections to sanitary ware and fitting of same
 - All exposed wastes, traps and supports within the toilet area must be metal manufacture and chrome plated
 - Access/inspection covers at the base of stacks above floor level.

Rev. No.	Revision Description	Date

Project Stage: Planning

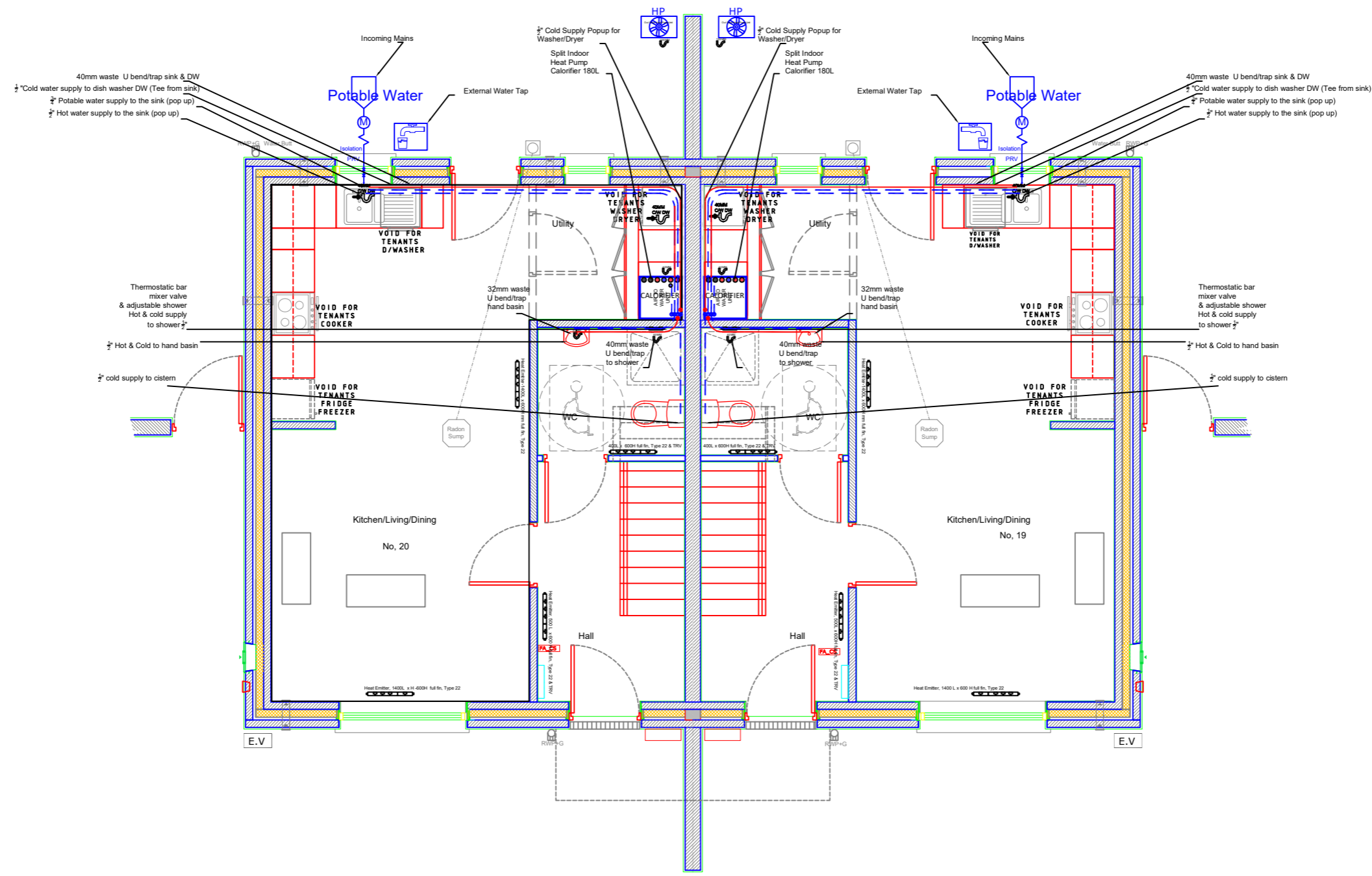
Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Mechanical Layout First Floor

Comhairle Contae Chorcaí
 Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-242	Sheet: A3
Date: Oct.2023 1:50	Scale: Planning

- Legend, Mechanical Services**
- Incoming Potable Water
 - Potable Water
 - Stored Water Cistern & Booster Pump
 - Motorised Valve
 - Cold Water Stored
 - Potable Water
 - Hot Water
 - Waste U Bend 40mm, Dish Washer Connection
 - Waste U Bend 40mm, Dish Washer Connection
 - Waste U Bend 32mm
 - Waste U Bend 40mm
 - Thermostatic Bar Shower Mixer Valve
 - Heat Emitter (Radiator)
 - Calorifier
 - Outdoor Unit



NOTE:

1. THIS DRAWING IS COPYRIGHT.
2. THIS DRAWING MUST NOT BE SCALED.
3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.

- Notes**
1. Final locations to be agreed on site
 2. Drawing to be read in conjunction with other relevant service drawings and specifications
 3. Soil and vent pipe-work below ground level shall be the remit of the main contractor
 4. Mechanical contractor shall be responsible for all connections to sanitary ware and fitting of same
 5. All exposed wastes, traps and supports within the toilet area must be metal manufacture and chrome plated
 6. Access/inspection covers at the base of stacks above floor level.

Rev. No.	Revision Description	Date
----------	----------------------	------

Project Stage: Planning

Project Title: Housing Development
19 & 20 Dr. Croke Place, Kilbrin.
















Drawing Title: Mechanical Layout Ground Floor 19 & 20

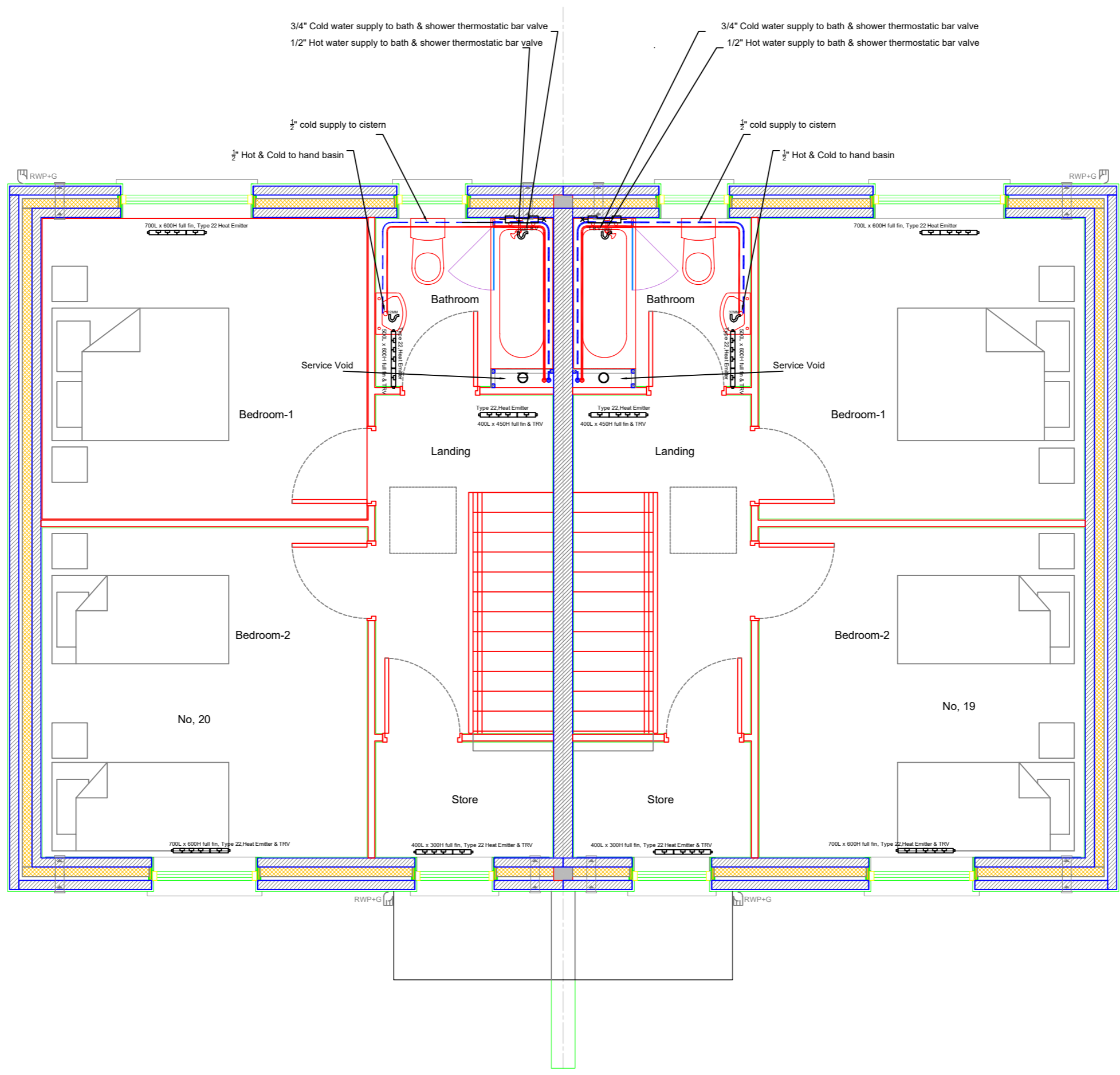
Comhairle Contae Chorcaí
Ailtirí | Stiúrthóireacht Tithíochta

Cork County Council
Architects | Housing Directorate

County Hall, Cork
Tel: (021) 4285433
e-mail: architects.housing@corccoco.ie

Job Reference: N2022014 Dwg. No.: DR-CCC-ME-PL-243 Date: Feb. 23	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Snr. Architect: R. Henry
Scale: N/A Issue for: Planning	Sheet: A3

- Legend, Mechanical Services**
-  Incoming Potable Water
 -  Potable Water
 -  Stored Water Cistern & Booster Pump
 -  Motorised Valve
 -  Cold Water Stored
 -  Potable Water
 -  Hot Water
 -  Waste U Bend 40mm, Dish Washer Connection
 -  Waste U Bend 40mm, Dish Washer Connection
 -  Waste U Bend 32mm
 -  Waste U Bend 40mm
 -  Thermostatic Bar Shower Mixer Valve
 -  Heat Emitter (Radiator)
 -  Calorifier
 -  Outdoor Unit



- NOTE:**
1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.

- Notes**
1. Final locations to be agreed on site
 2. Drawing to be read in conjunction with other relevant service drawings and specifications
 3. Soil and vent pipe-work below ground level shall be the remit of the main contractor
 4. Mechanical contractor shall be responsible for all connections to sanitary ware and fitting of same
 5. All exposed wastes, traps and supports within the toilet area must be metal manufacture and chrome plated
 6. Access/inspection covers at the base of stacks above floor level.

Rev. No.	Revision Description	Date

Project Stage: Planning


Project Title: Housing Development
19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Mechanical Layout First Floor 19 & 20

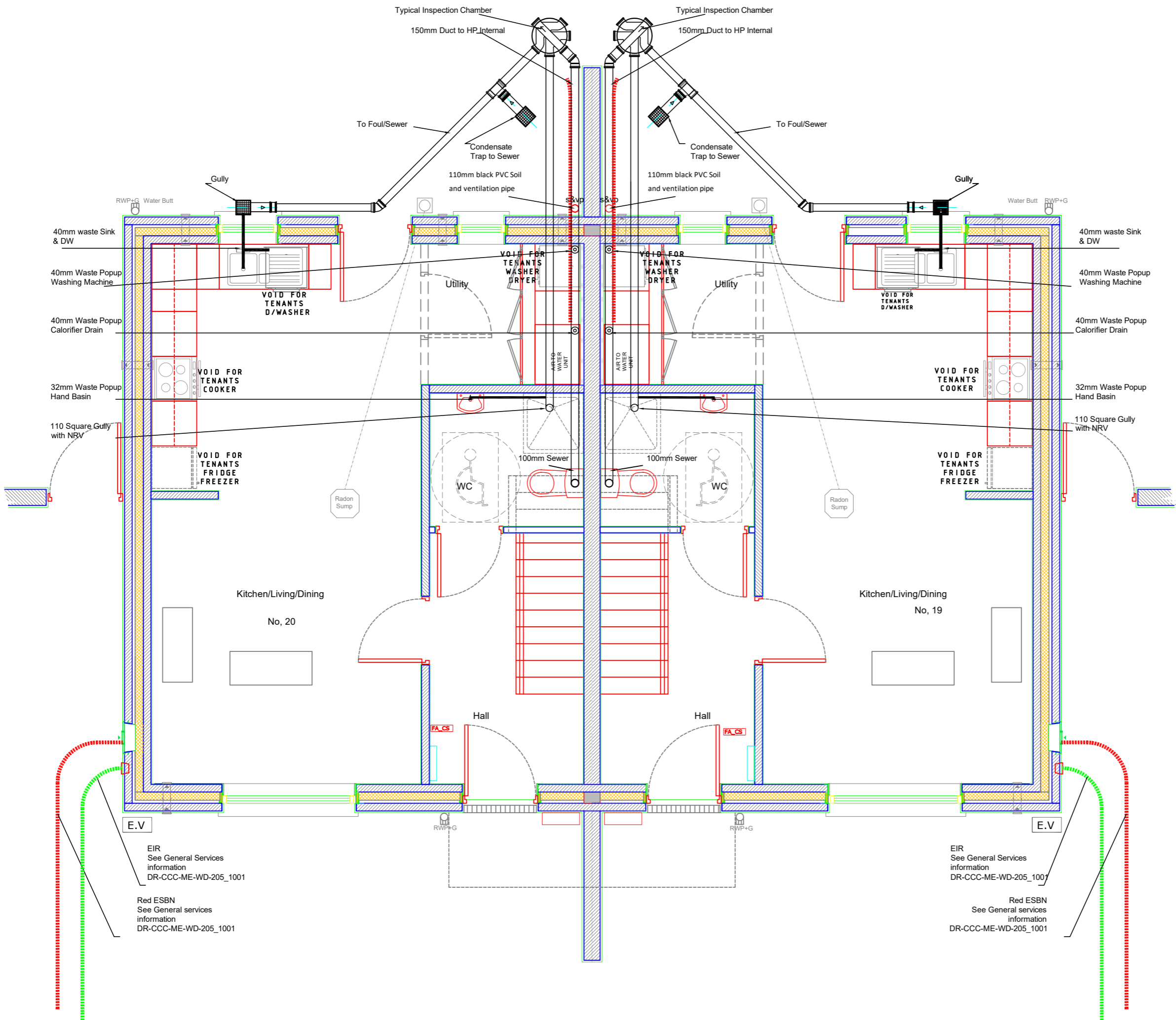


Comhairle Contae Chorcaí
Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
Architects | Housing Directorate

County Hall, Cork
Tel: (021) 4285433
e-mail: architects.housing@corccoco.ie

Job Reference: N2022014 Dwg. No.: DR-CCC-ME-PL-244 Date: Oct.2023	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Snr. Architect: R. Henry
Scale: N/A Issue for: Planning	Sheet: A3 

NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services

Rev. No.	Revision Description	Date

Project Stage: Planning

Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Drain & Ducting

Comhairle Contae Chorcaí
 Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Snr. Architect: R. Henry
Dwg. No.: DR-CCC-PL-256	Issue for: Planning
Date: Oct.2023	Scale: 1:50
Sheet: A3	Sheet: A3

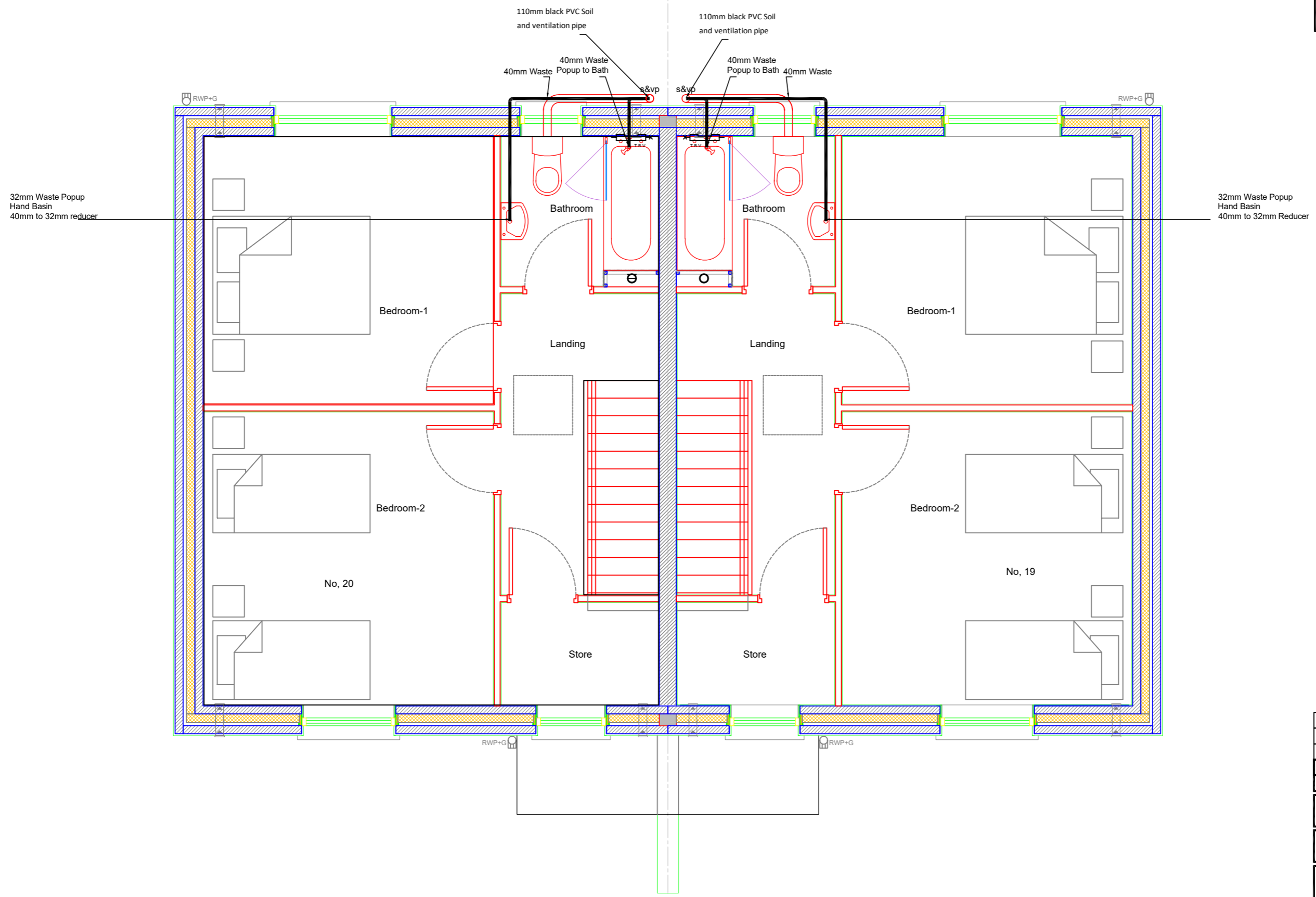
EIR
 See General Services
 information
 DR-CCC-ME-WD-205_1001

Red ESNB
 See General services
 information
 DR-CCC-ME-WD-205_1001

EIR
 See General Services
 information
 DR-CCC-ME-WD-205_1001

Red ESNB
 See General services
 information
 DR-CCC-ME-WD-205_1001

NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services

Rev. No.	Revision Description	Date
----------	----------------------	------

Project Stage: Planning






Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Drain & Ducting

Comhairle Contae Chorcaí
 Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Snr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-257	Sheet: A3
Date: Oct.2023	Scale: 1:50
Issue for: Planning	Rebuilding Ireland

Legend, Mechanical Extraction

-  Mechanical extraction unit
-  Flush mounted demand control extract grille
-  Humidity controlled demand ventilation
7000mm2/3500mm2 equivalent area
-  Stainless steel kitchen extract hood
-  Mechanical extraction control

Calculated general ventilation rate based on occupancy of the dwelling [TGD F - 1.2.2.2]: @ 5 l/s plus 4 l/s person = 5 + (4*4) = 21

Calculated general ventilation rate based on internal floor area of the dwelling [TGD F - 1.2.2.2]: 83 m2 at 0.3 l/s/m2 (0.3 x 81) = 24.3 l/s

Continuous extract ventilation rate of the dwelling is: 24.3 l/s
Overall minimum boost extract ventilation rate requirement [TGD F - Table 1]: = Kitchen + Utility + Toilet + Bathroom l/s = 37l/s

25% capacity requirement over general ventilation rate of the dwelling [TGD F - 1.2.2.3]: = 30.375l/s
Total capacity of the system l/s = 37l/s

Room with MEV extract grid (s) Room general extract airflow rate (l/s) adjusted proportionally
Kitchen = 8.5 l/s
Utility = 5.3l/s
Toilet = 5.3l/s
Bathroom = 5.3l/s

A humidity sensitive air inlet and demand controlled extraction system to be installed

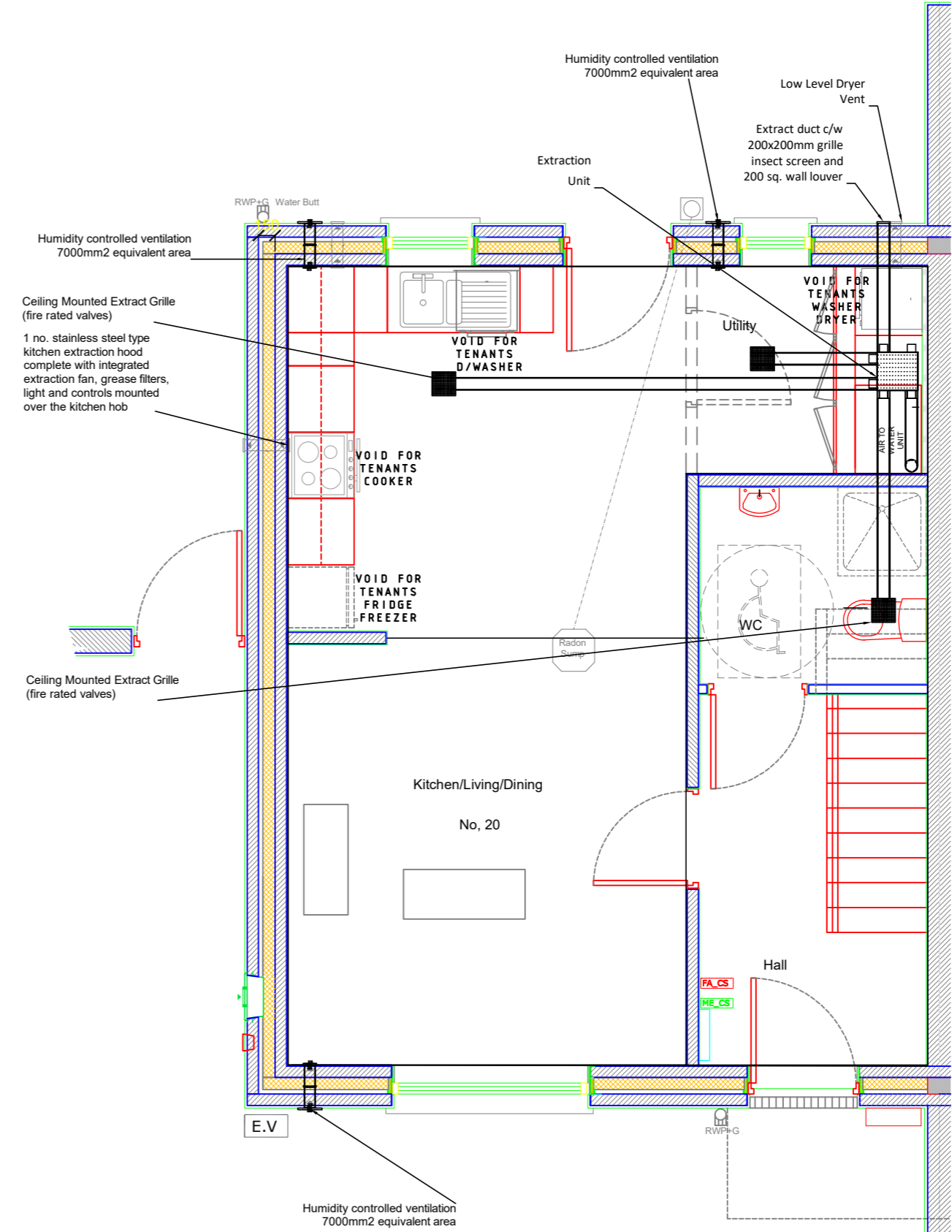
Total Ventilation 49,700mm2

Minimum total equivalent area of background ventilators providing general ventilation 42,000mm2 + 7000mm2 /10m > 70m2
Total area = 81m2
Background ventilators = 42,000mm2 + 7,700mm2 = 49,700mm2

Ventilation heat Loss calculations based on S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems in dwellings
Building fabric heat Loss calculations based on S.R. 50-1 2021 NSAI, building services - codes of practice - part 1 water based heating systems in dwellings
Heat emitters based on Low flow & return temperature annex H, S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems

Ventilation to; Buildings Regulations 2019 Technical Guidance Document F Ventilation

- NOTE:
1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



- Notes
1. Final locations to be agreed on site
 2. Drawing to be read in conjunction with other relevant service drawings and specifications
 3. Soil and vent pipe-work below ground level shall be the remit of the main contractor
 4. Mechanical contractor shall be responsible for all connections to sanitary ware and fitting of same
 5. All exposed wastes, traps and supports within the toilet area must be metal manufacture and chrome plated
 6. Access/inspection covers at the base of stacks above floor level.


Rev. No.	Revision Description	Date

Project Stage: Tender






Project Title: Housing Development Planning

Drawing Title: Ventilation Ground Floor

Comhairle Contae Chorcaí
Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
Architects | Housing Directorate
County Hall, Cork
Tel: (021) 4285433
e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-271	Sheet: A3
Date: Feb. 23	Scale: 1:50
Issue for: Planning	

Legend, Mechanical Extraction

-  Mechanical extraction unit
-  Flush mounted demand control extract grille
-  Humidity controlled demand ventilation
7000mm²/3500mm² equivalent area
-  Stainless steel kitchen extract hood
-  Mechanical extraction control

Calculated general ventilation rate based on occupancy of the dwelling [TGD F - 1.2.2.2]: @ 5 l/s plus 4 l/s person = 5 + (4*4) = 21

Calculated general ventilation rate based on internal floor area of the dwelling [TGD F - 1.2.2.2]: 83 m² at 0.3 l/s/m² (0.3 x 81) = 24.3 l/s

Continuous extract ventilation rate of the dwelling is: 24.3 l/s
Overall minimum boost extract ventilation rate requirement [TGD F - Table 1]: = Kitchen + Utility + Toilet + Bathroom l/s = 37l/s

25% capacity requirement over general ventilation rate of the dwelling [TGD F - 1.2.2.3]: = 30.375l/s
Total capacity of the system l/s = 37l/s

Room with MEV extract grid (s) Room general extract airflow rate (l/s) adjusted proportionally
Kitchen = 8.5 l/s
Utility = 5.3l/s
Toilet = 5.3l/s
Bathroom = 5.3l/s

A humidity sensitive air inlet and demand controlled extraction system to be installed

Total Ventilation 49,700mm²

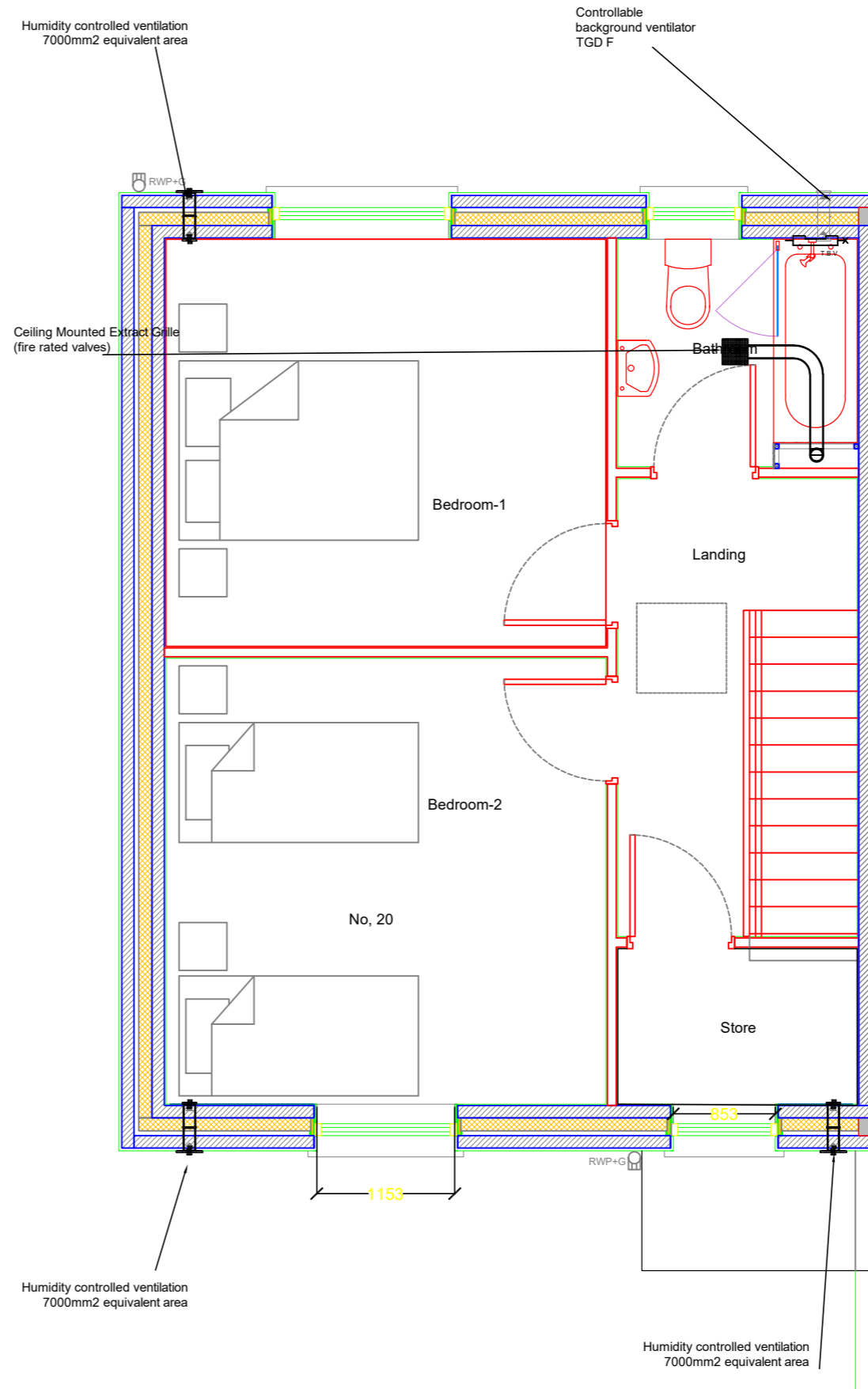
Minimum total equivalent area of background ventilators providing general ventilation 42,000mm² + 7000mm² /10m > 70m²
Total area = 81m²
Background ventilators = 42,000mm² + 7,700mm² = 49,700mm²

Ventilation heat Loss calculations based on S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems in dwellings
Building fabric heat Loss calculations based on S.R. 50-1 2021 NSAI, building services - codes of practice - part 1 water based heating systems in dwellings
Heat emitters based on Low flow & return temperature annex H, S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems

Ventilation to; Buildings Regulations 2019 Technical Guidance Document F Ventilation

- NOTE:
1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.

Final Locations to be agreed on site
The drawings detail the functional requirements and arrangements of the services



Rev. No.	Revision Description	Date

Project Stage: Planning






Project Title: Housing Development
19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Ventilation First Floor

Comhairle Contae Chorcaí
Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
Architects | Housing Directorate
County Hall, Cork
Tel: (021) 4285433
e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-272	Sheet: A3
Date: Oct.2023	Scale: 1:50
Issue for: Planning	Sheet: A3

Legend, Mechanical Extraction

-  Mechanical extraction unit
-  Flush mounted demand control extract grille
-  Humidity controlled demand ventilation
7000mm²/3500mm² equivalent area
-  Stainless steel kitchen extract hood
-  Mechanical extraction control

Calculated general ventilation rate based on occupancy of the dwelling [TGD F - 1.2.2.2]: @ 5 l/s plus 4 l/s person = 5 + (4*4) = 21

Calculated general ventilation rate based on internal floor area of the dwelling [TGD F - 1.2.2.2]: 83 m² at 0.3 l/s/m² (0.3 x 81) = 24.3 l/s

Continuous extract ventilation rate of the dwelling is: 24.3 l/s
Overall minimum boost extract ventilation rate requirement [TGD F - Table 1]: = Kitchen + Utility + Toilet + Bathroom l/s = 37l/s

25% capacity requirement over general ventilation rate of the dwelling [TGD F - 1.2.2.3]: = 30.375l/s
Total capacity of the system l/s = 37l/s

Room with MEV extract grid (s) Room general extract airflow rate (l/s) adjusted proportionally
Kitchen = 8.5 l/s
Utility = 5.3l/s
Toilet = 5.3l/s
Bathroom = 5.3l/s

A humidity sensitive air inlet and demand controlled extraction system to be installed

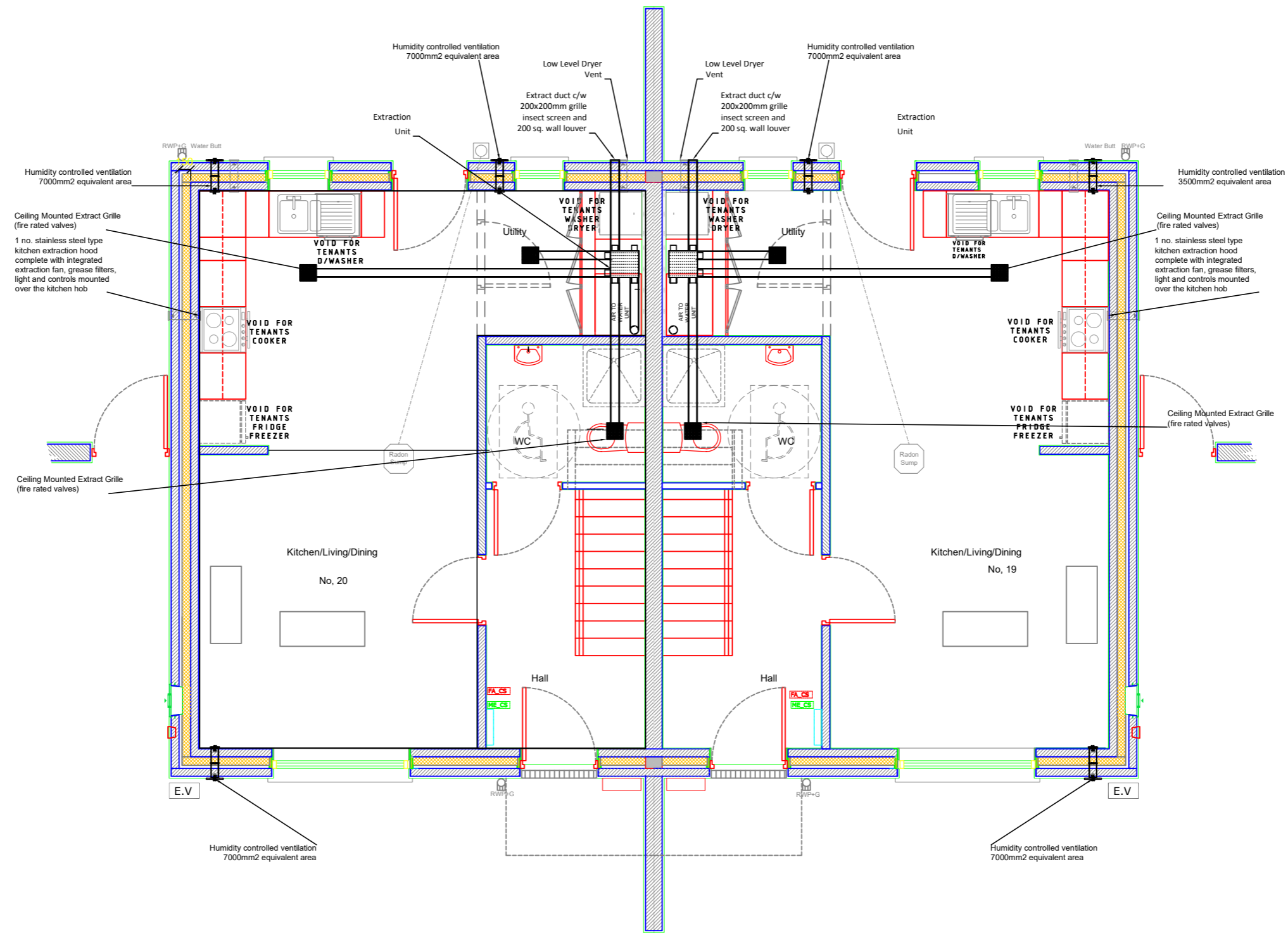
Total Ventilation 49,700mm²

Minimum total equivalent area of background ventilators providing general ventilation 42,000mm² + 7000mm² /10m > 70m²
Total area = 81m²
Background ventilators = 42,000mm² + 7,700mm² = 49,700mm²

Ventilation heat Loss calculations based on S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems in dwellings
Building fabric heat Loss calculations based on S.R. 50-1 2021 NSAI, building services - codes of practice - part 1 water based heating systems in dwellings
Heat emitters based on Low flow & return temperature annex H, S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems

Ventilation to; Buildings Regulations 2019 Technical Guidance Document F Ventilation

- NOTE:
1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



Final Locations to be agreed on site
The drawings detail the functional requirements and arrangements of the services

Rev. No.	Revision Description	Date

Project Stage: Planning






Project Title: Housing Development
19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Ventilation Ground Floor 19 & 20

Comhairle Contae Chorcaí
Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
Architects | Housing Directorate
County Hall, Cork
Tel: (021) 4285433
e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-PL-273	Sheet: A3
Date: Oct.2023	Scale: N/A
Issue for: Planning	Rebuilding Ireland logo

Legend, Mechanical Extraction

-  Mechanical extraction unit
-  Flush mounted demand control extract grille
-  Humidity controlled demand ventilation
7000mm²/3500mm² equivalent area
-  Stainless steel kitchen extract hood
-  Mechanical extraction control

Calculated general ventilation rate based on occupancy of the dwelling [TGD F - 1.2.2.2]: @ 5 l/s plus 4 l/s person = 5 + (4*4) = 21

Calculated general ventilation rate based on internal floor area of the dwelling [TGD F - 1.2.2.2]: 83 m² at 0.3 l/s/m² (0.3 x 81) = 24.3 l/s

Continuous extract ventilation rate of the dwelling is: 24.3 l/s
Overall minimum boost extract ventilation rate requirement [TGD F - Table 1]: = Kitchen + Utility + Toilet + Bathroom l/s = 37l/s

25% capacity requirement over general ventilation rate of the dwelling [TGD F - 1.2.2.3]: = 30.375l/s
Total capacity of the system l/s = 37l/s

Room with MEV extract grid (s) Room general extract airflow rate (l/s) adjusted proportionally
Kitchen = 8.5 l/s
Utility = 5.3l/s
Toilet = 5.3l/s
Bathroom = 5.3l/s

A humidity sensitive air inlet and demand controlled extraction system to be installed

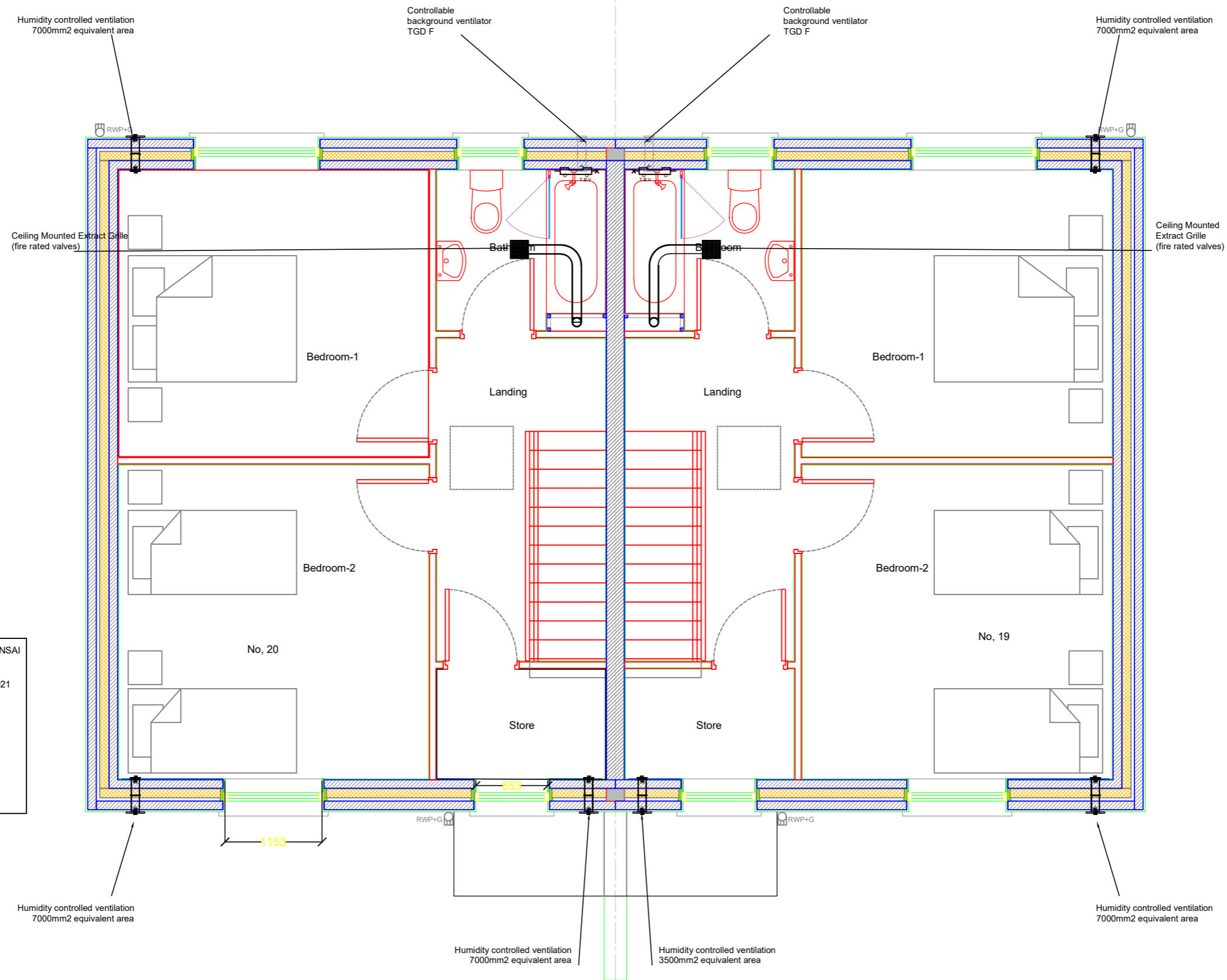
Total Ventilation 49,700mm²

Minimum total equivalent area of background ventilators providing general ventilation 42,000mm² + 7000mm² /10m > 70m²
Total area = 81m²
Background ventilators = 42,000mm² + 7,700mm² = 49,700mm²

Ventilation heat Loss calculations based on S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems in dwellings
Building fabric heat Loss calculations based on S.R. 50-1 2021 NSAI, building services - codes of practice - part 1 water based heating systems in dwellings
Heat emitters based on Low flow & return temperature annex H, S.R. 50-1 2021 NSAI building services - codes of practice - part 1 water based heating systems

Ventilation to; Buildings Regulations 2019 Technical Guidance Document F Ventilation

- NOTE:
1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



Final Locations to be agreed on site
The drawings detail the functional requirements and arrangements of the services

Rev. No.	Revision Description	Date

Project Stage: Planning

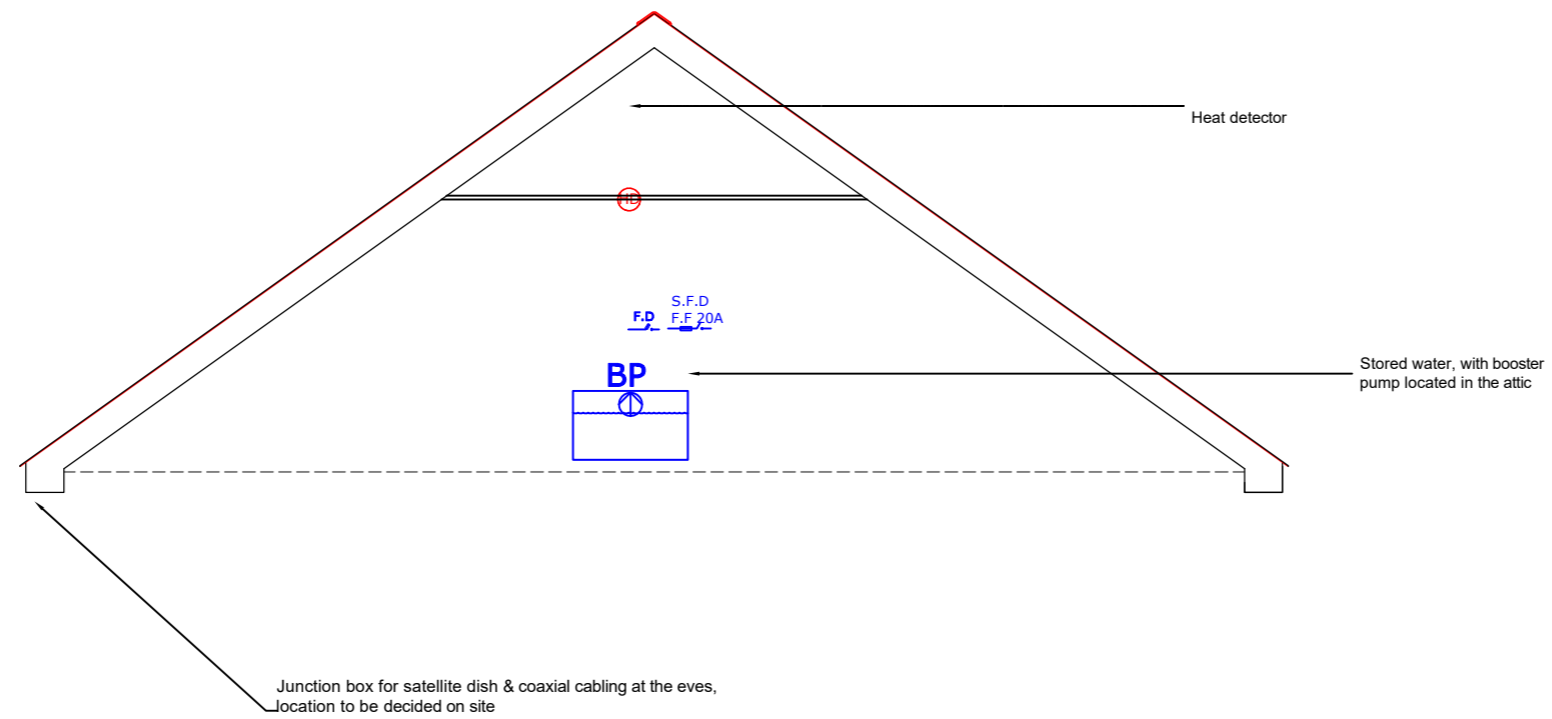
Project Title: Housing Development
19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Ventilation First Floor 19 & 20

Comhairle Contae Chorcaí
Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
Architects | Housing Directorate
County Hall, Cork
Tel: (021) 4285433
e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Sr. Architect: R. Henry
Dwg. No.: DR-CCC-ME-PL-274	Sheet: A3
Date: Oct.2023	Scale: N/A
Issue for: Planning	Rebuilding Ireland

NOTE:
 1. THIS DRAWING IS COPYRIGHT.
 2. THIS DRAWING MUST NOT BE SCALED.
 3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
 4. FOR ANY DISCREPANCIES FOUND, CONSULT WITH DESIGN OFFICE.
 5. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIFICATION DOCUMENTS.



Final Locations to be agreed on site
 The drawings detail the functional requirements and arrangements of the services


Rev. No.	Revision Description	Date
----------	----------------------	------



Project Stage: Planning

Project Title: Housing Development
 19 & 20 Dr. Croke Place, Kilbrin.

Drawing Title: Attic


Comhairle Contae Chorcaí
 Ailtirí | Stiúrthóireacht Tithíochta
Cork County Council
 Architects | Housing Directorate
 County Hall, Cork
 Tel: (021) 4285433
 e-mail: architects.housing@corkcoco.ie

Job Reference: N2022014	Design Team: Architect: JC Technician: TOF Surveyor: RB Engineer: JF Snr. Architect: R. Henry
Dwg. No.: DR-CCC-MEPL-286	Date: Oct. 2023
Scale: 1:50	Issue for: Planning
Sheet: A3	

DOCUMENT TRANSMITTAL		DJF ENGINEERING SERVICES LTD	
CLIENT:	CorkCoCo	CONSULTING ENGINEERS • PROJECT MANAGERS	
PROJECT:	Kilbrin	Tramore House Reeveswood Douglas Road Cork	
Reference	5005	 TEL (021) 2392424 EMAIL info@djfes.com www.djfes.com	
			

DISTRIBUTION (1, 2, 3, etc., = number of prints. D = disk, E = emailed, W = websharing, U = USB)

Client																		
CorkCoCo	Sinead Kelleher	E																
	Linda Roberts	E																
	Ronan Brosnan	E																
	Patricia O'flynn	E																
	John Fleming	E																
DJF	Fergus Humphries	E																
	Sean Hegarty	E																

PURPOSE OF ISSUE
 Pre = Preliminary, Pla = Planning, FSC = Fire Cert, Dis = Discussion,
 Fla = Foreshore Lease Application Ten = Tender, Con = Construction, Rec = Record

Doc No. / Dwg. No.	Document / Drawing Title	Date	Size	Current	Rev	Pla												
				17	11	23												
5000-01-001	General Drawing Notes	A4	0	0														
5000-01-002	General Drainage Notes	A4	0	0														
5000-02-009	Trench Backfill and Bedding	A3	0	0														
5000-02-010	Concrete Protection Slab, Bed, Haunch and Surround to Pipes	A3	0	0														
5000-02-019	Private Side Inspections Chamber	A3	0	0														
5000-02-070	Access Junction	A3	A	A														
5000-02-110	Drainage Precast Concrete Gully	A4	0	0														
5000-02-112	Drainage Gully Grating	A4	0	0														
5000-03-550	Foundation/Excavation Detail	A4	0	0														
5005-101	Drainage Layout	A3	B	B														
5005-102	Drainage Layout	A3	B	B														
5005-105	Drainage Details Sheet 3	A4	B	B														
5005-106	Drainage Details Sheet 4	A3	A	A														
5005-RT-001	Drainage Impact Assessment	A4	A	A														
			-															
			-															
			-															
			-															
			-															
			-															
			-															
			-															
			-															
			-															
			-															

ISSUED BY: Cristina P.

CHECKED BY: Fergus Humphries

GENERAL DRAWING NOTES:

1. Drawings are not to be scaled.
2. All dimensions are in millimeters unless noted otherwise.
3. All levels are in meters unless noted otherwise.
4. All levels to be checked on site.
5. Figured dimensions only to be used.
6. All dimensions to be site checked.
7. All drawings are to be read in conjunction with all other Tender, Construction, Contract and Detail Drawings, Specifications, Bill of Quantities and Documents.
8. The Contractor shall be responsible for checking all dimensions and levels shown against all other drawings which pertain to this part of the works.
9. The Contractor is to ensure that all works are to be undertaken in accordance with good building practice and current Building Regulations (including Technical Guidance Documents A to M inclusive and all relevant amendments).
10. The Contractor is to refer to Project Standard Details in addition to the drawings and specifications.
11. Use information, setting out, dimensions etc. from Hard copies & PDF files of Drawings issued by DJF. All other file types including AutoCad and Revit are issued for information purposes only.
12. If in doubt, request clarification from DJF.

GENERAL NOTES:

1. These Notes are to be read in conjunction with all other Tender, Construction and Contract Drawings, Details, Specifications, Bill of Quantities and Documents.
2. The Contractor is to ensure that all works will be undertaken in accordance with good building practice and current Building Regulations (including Technical Guidance Documents A to M inclusive and all relevant amendments).
3. If in doubt, request clarification from DJF.



Status	CONSTRUCTION
Client	DETAILS

Project Title	Notes
Drawing Title	General Drawing Notes

0	ISSUED FOR CONSTRUCTION	PH	SM	26.03.21
REV	DETAILS	BY	(CMT)	DATE
Drawing No.	5000-01-001	Rev	0	
Scales	N.T.S			-A4

DRAINAGE NOTES:

1. Refer to architectural drawings for all setting out of internal below ground drainage & for cover & invert levels.
2. The Contractor shall be responsible for checking all dimensions and levels shown against all other drawings pertaining to this part of the works.
3. Refer to architects drawings for locations of rainwater downpipes, soil vent pipes and soil stacks.
4. All internal pipework to be concrete encased.
5. All external pipework with less than 900mm cover to crown in unpaved areas and 1200mm cover to crown in paved areas to be concrete encased.
6. Concrete encasement to consist of minimum 150mm grade C12/15 leanmix concrete.
7. Rocker pipes should be provided at all locations where:
 - 7.1. A pipe enters or leaves a manhole, pumping station or other rigid structure.
 - 7.2. A pipe enters or leaves a concrete encasement.
 - 7.3. At any location as directed by the Engineer.
 - 7.4. Rocker pipe joint to be located no more than 150mm from the outside face of the structure to which the pipework is serving.

The effective length of the rocker pipe should be:

 - Pipe diameter 150mm to 600mm: 0.60m
 - Pipe diameter 600mm to 750mm: 1.00m
 - Pipe diameter greater than 750mm: 1.25m
8. All rocker pipes are to be formed by cutting and trimming a length of spigot & socket pipe to form a spigot at the cut end, thereby forming spigot & socket joints at both ends of the rocker pipe.
9. All manholes shown are precast concrete with minimum 150mm concrete surround unless noted otherwise.
10. Road gullies to be precast concrete with "LION" lockable type covers, with ductile iron grating D400 to comply with I.S. EN 124:2015-2.
11. All lines to road gullies to be 150mm Ø UPVC pipes unless noted otherwise.
12. All foul pop-ups to be 100mmØ UPVC unless noted otherwise.
13. All foul spurs to pop-ups to be 100mm Ø UPVC SN4 @ 1:40 falls unless noted otherwise.
14. All internal manholes to have lockable double sealed covers & frames.(KMHD 600L in stainless steel by Richmond Trading or equivalent)
15. All manhole covers to be Class D Heavy Duty ductile iron cover. Cover and frame to I.S. EN 124:2015-2.
16. Channel drain to be type ACO Multi Drain Heelguard with stainless steel QuickLock Grating or equivalent. Load Class B125 at front doors, Load Class C250 everywhere else.
17. All spurs to rainwater pipes to be 100mm Ø UPVC SN4 @ 1:40 falls unless noted otherwise.
18. Storm lines between manholes to be 225mm Ø Ridgidrain ADS Polyethylene Pipes or equivalent unless noted otherwise.
19. Foul lines between manholes to be 150mm Ø UPVC SN8 Unless Noted Otherwise. All internal foul lines to be 100mm Ø UPVC SN4 @ 1:40 falls unless noted otherwise.
20. All foul lines from internal gullies to be 100mm Ø UPVC SN4 @ 1:40 falls unless noted otherwise.
21. All foul lines from inspection chamber at site boundary to mainline to be 100mm Ø UPVC SN8 @ 1:40 falls unless noted otherwise.
22. All spur connections shown on lines to be 45° 'Y' bends unless noted otherwise.
23. All French Drains to be 150mm Ø perforated UPVC pipe wrapped in geotextile typically laid above retaining wall footings and surrounded in minimum 200mm of clean washed stone unless noted otherwise.
24. All drainage materials and workmanship to comply with local authority & DJF Specification.

25. Setting out of pop-ups internally to be coordinated by Contractor in conjunction with Architects Drawings.
26. All Design and Installation Forms are to be included in the Handover File.

GENERAL NOTES:

1. These Notes are to be read in conjunction with all other Tender, Construction and Contract Drawings, Details, Specifications, Bill of Quantities and Documents.
2. The Contractor is to ensure that all works will be undertaken in accordance with good building practice and current Building Regulations (including Technical Guidance Documents A to M inclusive and all relevant amendments).
3. If in doubt, request clarification from DJF.

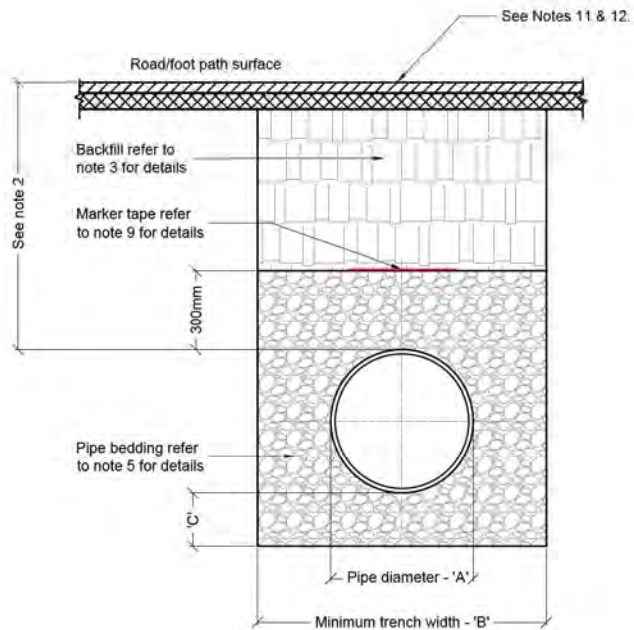


Status	CONSTRUCTION
Client	DETAILS

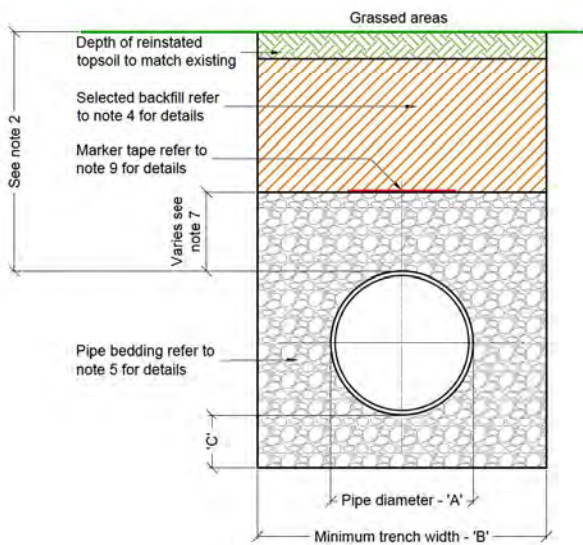
Project Title	Notes
Drawing Title	General Drainage Notes

0	ISSUED FOR CONSTRUCTION	PH	SM	26.03.21
REV	DETAILS	BY	ICWD	DATE
Drawing No.	5000-01-002	Rev	0	
Scales	N.T.S			-A4

- All dimensions are in millimeters (mm) unless noted otherwise.
- The minimum depth of cover from the finished surface to the crown of gravity pipes without protection should be as follows:
 - Gardens and pathways without any possibility of vehicular access - depth not less than 0.5m. (this would normally relate to drains in private property, shallow pipes of this nature are undesirable and should be installed in accordance with the current building regulations).
 - 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 0.75 m.
 - 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.
 - Depths of sewers in gated estates shall be similar to that outlined above.
 - Agricultural land and public open space - depth not less than 0.9 m.
 - Other roadways, highways and parking areas with unrestricted access to vehicles with a gross vehicle weight in excess of 7.5 tonnes - depth not less than 1.2m.
- Clause 804 / 808 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 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 Transport Infrastructure Ireland 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 Engineer 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 provided to Engineer in advance of the commencement of works.
- Selected excavated material complying with the requirements of "acceptable material" as outlined on clause 601 of the TII specification for roadworks, table 6/1, class 8, class 2. May be used in green-field areas above granular pipe surround material subject to review by Engineer.
- Pipe bedding shall comply with WIS 4-08-02 and IGN 4-08-01. The pipe bedding granular material shall be 14mm to 5mm (d/D 2/14) graded aggregate or 10mm (d/D 4/10) single sized aggregate to is EN 13242.
- In soft ground conditions (CBR < 5) the material should be excavated and disposed of in accordance with the waste management act and clause 804 / 808 material 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, including piling etc. may be required where the depth of soft material is excessive. Such arrangements shall be subject to assessment by Engineer before advancing with the work.
- In green field areas, type B backfill (selected excavated material complying with the requirements of "acceptable material" as outlined on clause 601 of the TII specification for roadworks, table 6/1, class 8, class 2.) will be allowed above the side haunch granular material in the case of rigid pipes. A granular surround of a minimum, depth of 150mm above the crown of the pipe is required for flexible pipes and type B material may be used as backfill above this. All rising mains in greenfield areas shall have a minimum cover of 300mm of granular material above the external crown of the pipe.
- 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 actual depth of the trench with the void filled with clause 804 / 808 material in accordance with the Transport Infrastructure Ireland specification for road works. The granular material shall be laid above this void backfill material.
- Non degradable marker tape should be installed at the top of pipe bedding layer for sewers and rising mains. it should run continuously around manholes. 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 discharge manhole.
- Trench widths for pipe sizes ≤80mm may be <500mm, subject to consideration being given to the trench depth, health & safety & construction access requirements.
- New road construction & surface finish to be to Engineer/Irish Water requirements.
- 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



Trench Backfill and Bedding
 Cross section in roads
 Scale N.T.S



Trench Backfill and Bedding
 Cross section in grassed areas
 Scale N.T.S

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)
≤100	100
150 - 450	200

GENERAL DETAIL NOTES:

- This Detail is not to be scaled.
- This Detail is to be read in conjunction with all other Tender, Construction and Contract Drawings, Details, Specifications, Bill of Quantities and Documents.
- The Contractor is to ensure that all works will be undertaken in accordance with good building practice and current Building Regulations (including Technical Guidance Documents A to M inclusive and all relevant amendments).
- If in doubt, request clarification from DJF.

Irish Water Detail STD-WW-07

Where services are intended to be taken in charge by a Service Provider, Service Provider Details take precedence over the above details.

DJF
 DJF ENGINEERING SERVICES LTD.
 Consulting Engineers • Project Managers
 Trimwood House, Blessington, Douglas Road, Co. Wick, T12 RW0W
 (0478) 868888

Client

DETAILS

Project Title

Underground Services

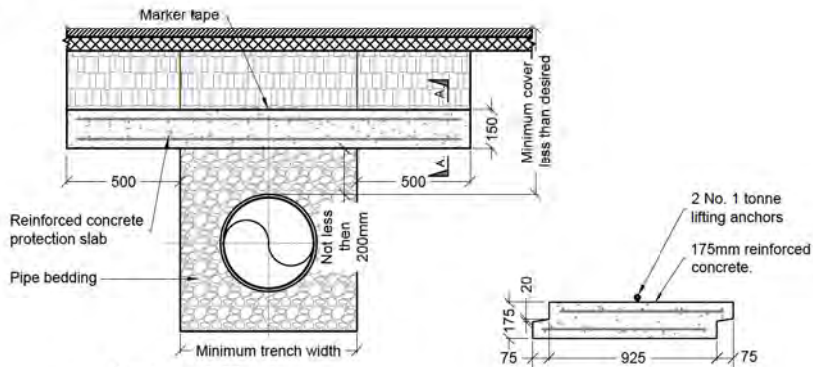
Status

CONSTRUCTION

Drawing Title

Trench Backfill and Bedding

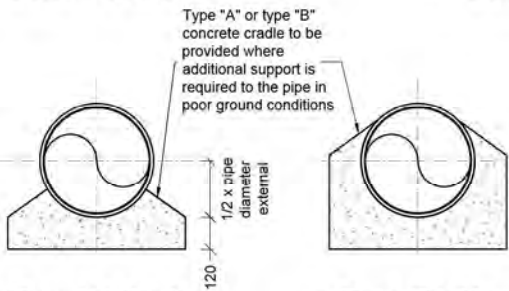
0	ISSUED FOR CONSTRUCTION	18/05/2021
REV	DETAILS	BY DATE SIZE
Scales	Drawing No.	Rev
N.T.S	-A3	5000-02-009 0



Reduced Cover

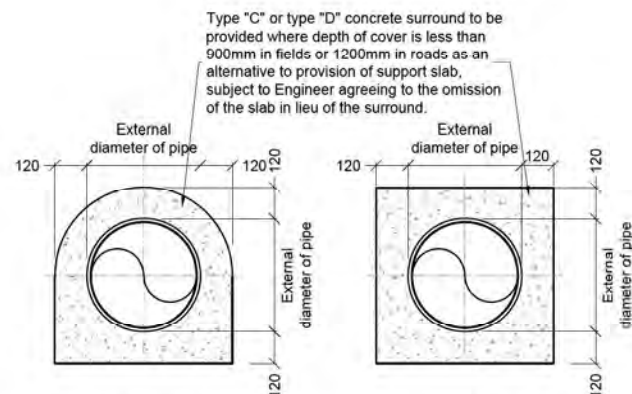
Protection Slab Detail
Scale N.T.S

Section A-A
Scale N.T.S



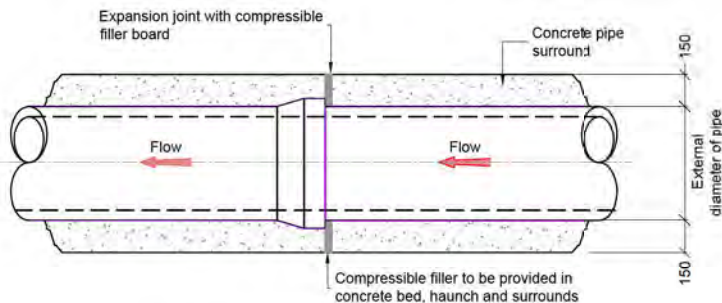
Type 'A' (Bed)
Scale N.T.S

Type 'B' (Haunch)
Scale N.T.S



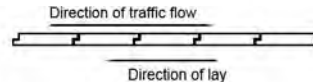
Type 'C' (Surround)
Scale N.T.S

Type 'D' (Surround)
Scale N.T.S



Spigot and Socket Joint
Scale N.T.S

- For any slabbing works to be carried out within the vicinity of the pipeline, a method statement is to be submitted for review by Engineer.
- Marker tape to be placed above the slab and along the direction of the pipeline
- Concrete to be grade C30/35
- Minimum cover to steel reinforcement = 40mm
- Slabs to be designed for use under a HB25 load in accordance with BS5400-2. Design to be submitted to Engineer for assessment prior to installation.
- 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 Engineer.
- 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.



- 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 Engineer.
- All dimensions are in millimeters (mm) unless noted otherwise.
- Concrete bed and haunches may be required to provide additional support in poor ground conditions. Proposals to be provided to Engineer with geotechnical report supporting their use.
- Concrete surrounds shall have a minimum thickness of 150mm with an absolute minimum depth of cover above the external crown of the pipe of 750mm.
- All concrete to be in accordance with IS EN 206 and to be grade C16/20 to IS EN206
- The haunches and surrounds to be formed using form work to provide a rough cast finish.
- Expansion joints in the concrete shall be provided at all pipe joints to allow for pipe flexibility, compressible filler board to be in accordance with BS EN 622-1 and BS EN 622-4, and to be 18mm thick.
- Polyethylene and uPVC pipes shall be wrapped in plastic sheeting having a composition in accordance with BS 6076 before being cast into concrete.
- Bituminous material shall not be put in contact with PE or PVC pipes.

GENERAL DETAIL NOTES:

- This Detail is not to be scaled.
- This Detail is to be read in conjunction with all other Tender, Construction and Contract Drawings, Details, Specifications, Bill of Materials and Documents.
- The Contractor is to ensure that all works will be undertaken in accordance with good building practice and current Building Regulations (including Technical Guidance Documents A to M inclusive and all relevant amendments).
- If in doubt, request clarification from DJF.

Irish Water Detail STD-WW-8

Where services are intended to be taken in charge by a Service Provider, Service Provider Details take precedence over the above details.

DJF
ENGINEERING SERVICES LTD.
Consulting Engineers • Project Managers
Tralee House, Ravenhill Road, Dublin 15, Ireland
Tel: 01 452 8888

Client

DETAILS

Project Title

Underground Services

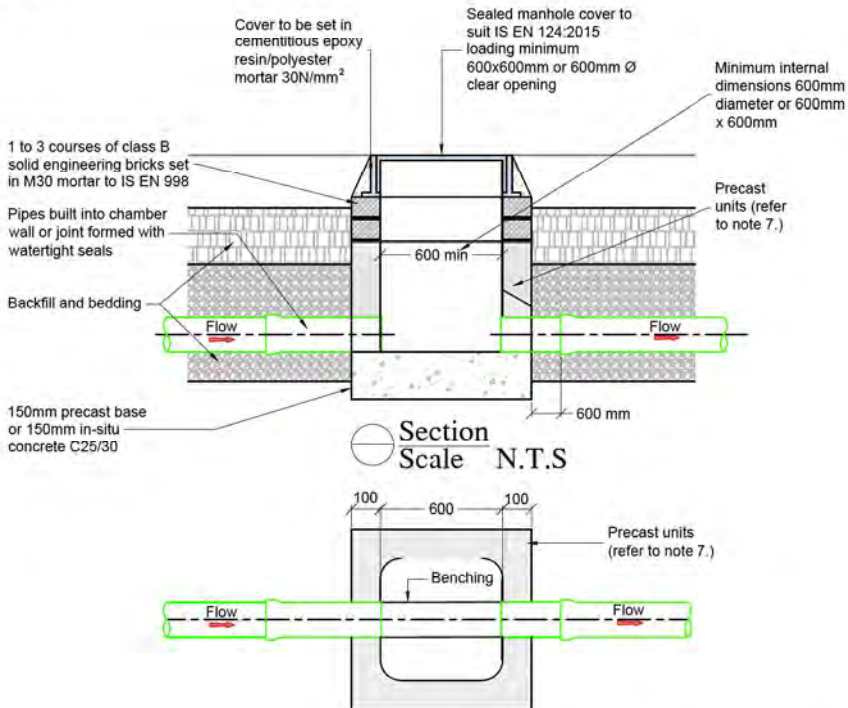
Status

CONSTRUCTION

Drawing Title

Concrete Protection Slab, Bed, Haunch, and Surround, to Pipes

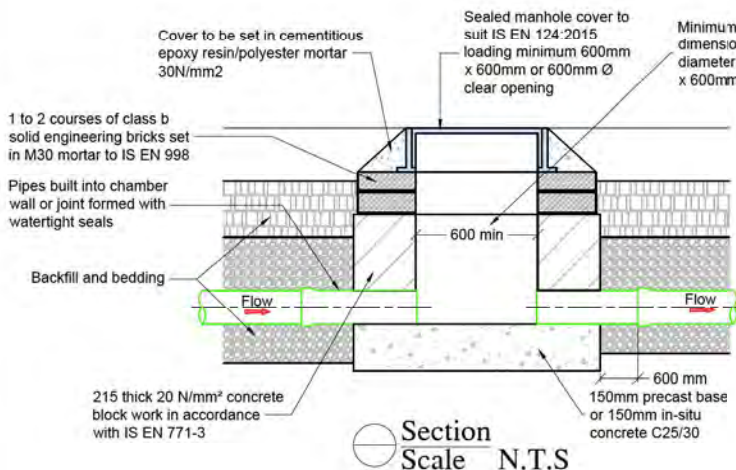
0	ISSUED FOR CONSTRUCTION	FN	025	28.03.21
REP	DETAILS	BY	DRG	SAFE
Scales	Drawing No.	Rev		
N.T.S	-A3	5000-02-010	0	



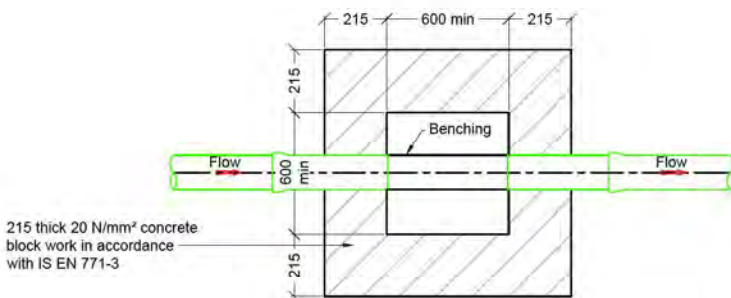
Section Scale N.T.S

Floor plan Inspection Chamber (Precast Concrete Construction) Scale N.T.S

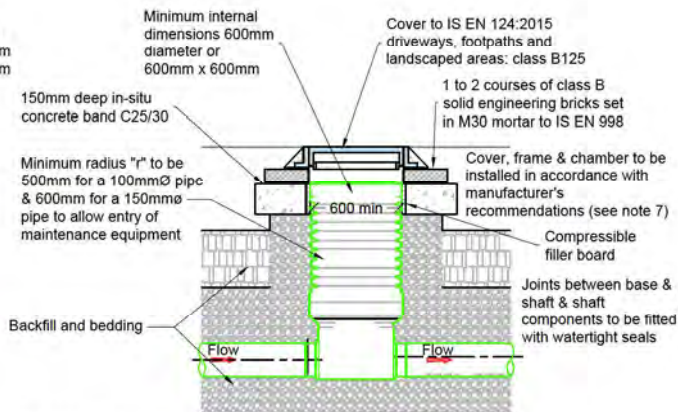
1. All dimensions are in millimetres (mm) unless noted otherwise.
2. An inspection chamber should be located at or within 1m of the property boundary at the upstream end of each service connection on the private side of the curtilage, if practicable, consult with Engineer on alternative locations.
3. 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 never be overlain with surface dressing, topsoil, etc.
5. Covers and frames shall be suitable for road and traffic conditions subject to review by Engineer.
6. 200mm all around, 100mm deep concrete plinth around covers in green areas.
7. Proprietary prefabricated chamber units may also be used, subject to review by Engineer - see detail below.
8. Chambers shall be surrounded by a minimum of 150mm compacted clause 804 or clause 808 material.
9. Maximum depth from cover level to invert of pipe = 1.2m. Internal dimensions greater than 600 x 600mm or 600mm Ø required where depth exceeds 1.2m - consult with Engineer.
10. Smaller inspection chambers with internal dimensions of 450mm Ø OR 450 x 450mm may be permitted subject to approval by Engineer where confined physical conditions exist.
11. Prefabricated units should have water tight joints and should be interlocking to prevent lateral movement of individual sections of the unit



Section Scale N.T.S



Floor plan Inspection Chamber (Block Work Construction) Scale N.T.S



Proprietary inspection chambers to be installed in accordance with manufacturer's recommendations

Section - Proprietary Inspection Chamber to EN 13598-2 (Flexible material) Scale N.T.S

(Maximum depth from cover level to soffit of pipe: 1.2m)

GENERAL DETAIL NOTES:

1. This Detail is not to be scaled.
2. This Detail is to be read in conjunction with all other Tender, Construction and Contract Drawings, Details, Specifications, Bill of Quantities and Documents.
3. The Contractor is to ensure that all works will be undertaken in accordance with good building practice and current Building Regulations (including Technical Guidance Documents A to M inclusive and all relevant amendments).
4. If in doubt, request clarification from DJF.

Irish Water Detail STD-WW-13

Where services are intended to be taken in charge by a Service Provider, Service Provider Details take precedence over the above details.

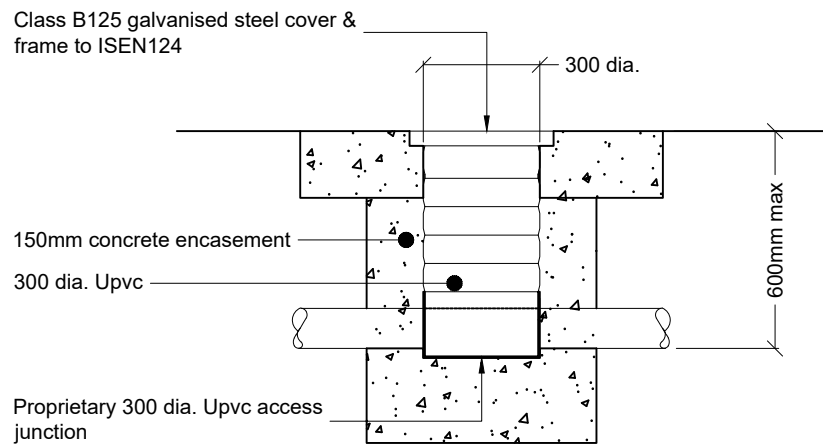
Client: **DETAILS**

Project Title: **Underground Services**

Status: **CONSTRUCTION**

Drawing Title: **Private Side Inspection Chamber**

0	ISSUED FOR CONSTRUCTION	10	19	26.03.21
REV	DETAILS	BY	DATE	DATE
Scales	N.T.S	Drawing No.	5000-02-019	Rev
	-A3		0	



Typical Access Junction detail
Scale 1:20

- GENERAL DETAIL NOTES:**
1. This Detail is not to be scaled.
 2. This Detail is to be read in conjunction with all other Tender, Construction and Contract Drawings, Details, Specifications, Bill of Quantities and Documents.
 3. The Contractor is to ensure that all works will be undertaken in accordance with good building practice and current Building Regulations (including Technical Guidance Documents A to M inclusive and all relevant amendments).
 4. If in doubt, request clarification from DJF.

DJF
ENGINEERING SERVICES LTD.
Consulting Engineers • Project Managers
Tramore House, Reeveswood, Douglas Road, Cork, T12 R8XW
Tel: (021) 2392424 Email: info@djf.ie.com Web: www.djf.ie.com

Client

DETAILS

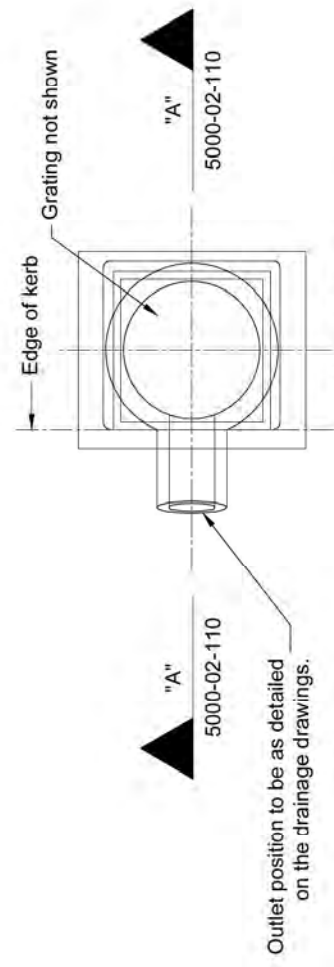
Project Title

Underground Services

Status **INFORMATION**

Drawing Title **Access Junction**

A	ISSUED FOR INFORMATION	EH	SH	15.11.23
REV	DETAILS	BY	CHKD	DATE
Scales	Drawing No.	Rev		
N.T.S	-A3 5000-02-070	A		

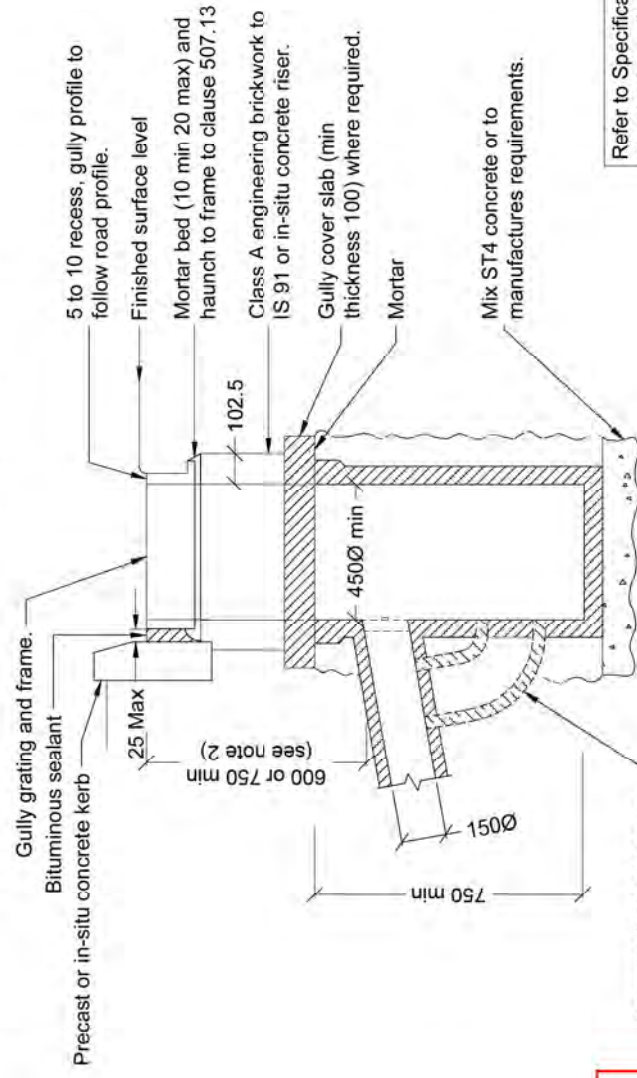


Plan View
Scale NTS

Gully Cover Slab
Scale NTS

- Notes:
1. All dimensions are in millimeters.
 2. The minimum depth from the top of the grating to the top of the gully outlet is to be 750 when the connecting pipe is under a carriageway or a hard shoulder and 600 elsewhere.
 3. Precast concrete gullies and cover slabs shall be to IS EN 1917 or BS 5911-6.
 4. Where a gully has a trap the stoppers shall comply with the requirements of BS 5911-4 and IS EN 1917.

Outlet position to be as detailed on the drainage drawings.



Untrapped outlet shown in outline. Trapped outlet and plug shown dotted.

Section A - A
Scale NTS

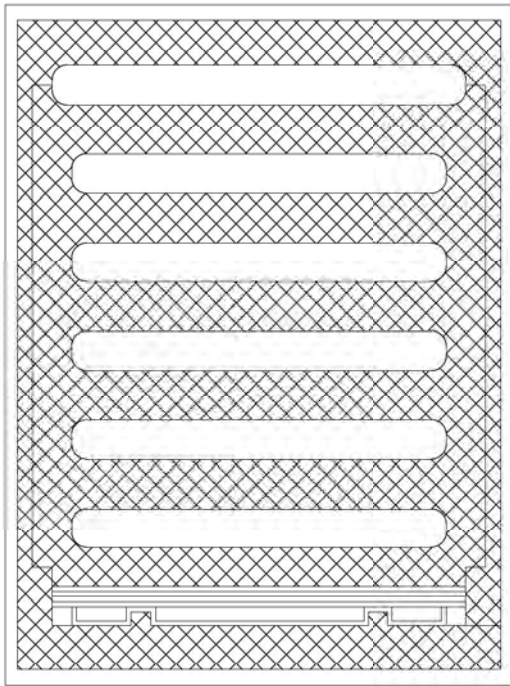
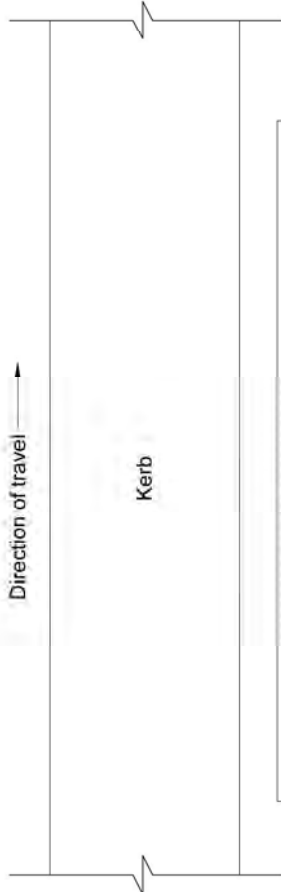
Refer to Specifications, Project Drawings, Standard Detail Drawings and other General Note Drawings for additional information.

Refer to TII Document CC-SCD-00510

- GENERAL DETAIL NOTES:**
1. This Detail is not to be scaled.
 2. This Detail is to be read in conjunction with all other Tender, Construction and Contract Drawings, Details, Specifications, Bill of Quantities and Documents.
 3. The Contractor is to ensure that all works will be undertaken in accordance with good building practice and current Building Regulations (including Technical Guidance Documents A to M) inclusive and all relevant amendments).
 4. If in doubt, request clarification from DJF.

<p>DJF ENGINEERING SERVICES LTD. Consulting Engineers + Project Managers Tramore House, Reavinstwood, Douglas Road, Cork, T12 R8XW Tel: (001) 286244 Email: info@djf.ie Web: www.djf.ie</p>	Client	Project Title	Status
		Underground Services	CONSTRUCTION
	DETAILS	Drawing Title	Scale
		Drainage Precast Concrete Gully	N.T.S
		Drawing No.	Rev
		5000-02-110	0

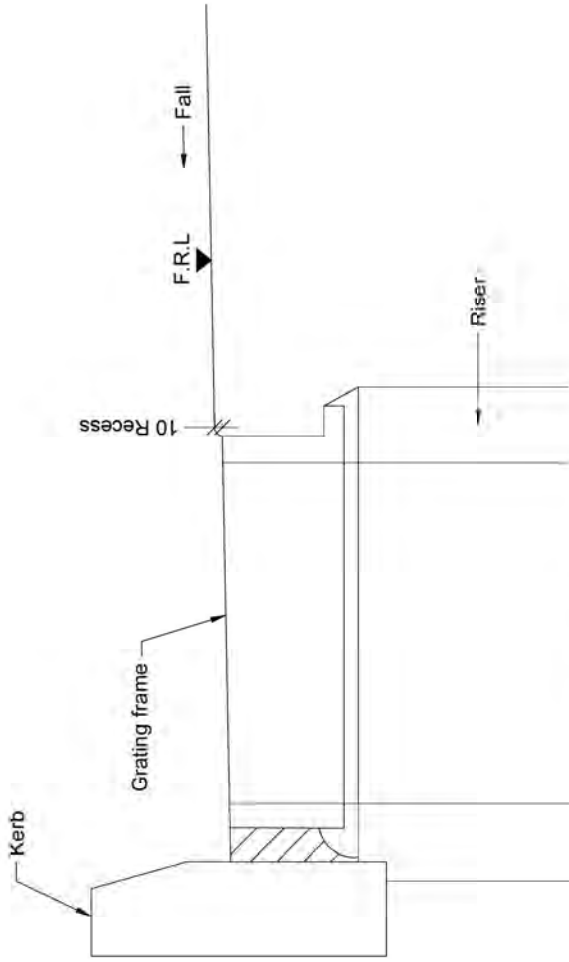
REV	ISSUED FOR CONSTRUCTION	PAUSE (SUSPENDED)	DATE
0			



Indicative Gully Grating Detail
Scale NTS

Notes:

1. All dimensions are in millimetres.
2. Gully grating to comply with IS EN 124:2015-2
3. Gully grating to be provided with a locking in accordance with clause 508.4.



Gully Profile
Scale NTS

TII Document CC-SCD-00512

GENERAL DETAIL NOTES:

1. This Detail is not to be scaled.
2. This Detail is to be read in conjunction with all other Tender, Construction and Contract Drawings, Details, Specifications, Bill of Materials and Documents.
3. The Contractor is to ensure that all works will be undertaken in accordance with good building practice and current Building Regulations (including Technical Guidance Documents A to M) inclusive and all relevant amendments).
4. If in doubt, request clarification from DJF.

DJF
ENGINEERING SERVICES LTD.
Consulting Engineers • Project Managers
Tramore House, Reavinstwood, Douglas Road, Cork, T12 RBXW
Tel: (00353) 2282424 Email: info@djf.ie.com Web: www.djf.ie.com

Client

DETAILS

Project Title

Underground Services

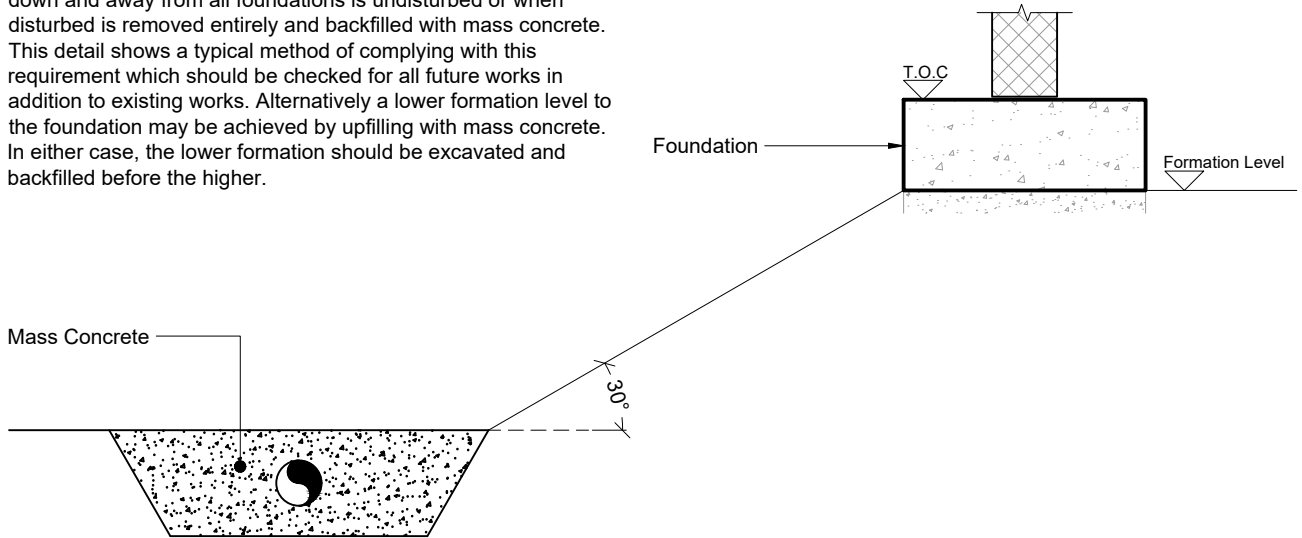
Status: **CONSTRUCTION**

Drawing Title: **Drainage Gully Grating**

0.	DESIGN FOR CONSTRUCTION:	REV.	DATE
	REV.	DATE	DATE
Species		Drawing No.	Rev
N.T.S.		5000-02-112	0

NOTE:

It is essential to check that all ground within a 30° line extending down and away from all foundations is undisturbed or when disturbed is removed entirely and backfilled with mass concrete. This detail shows a typical method of complying with this requirement which should be checked for all future works in addition to existing works. Alternatively a lower formation level to the foundation may be achieved by upfilling with mass concrete. In either case, the lower formation should be excavated and backfilled before the higher.



Foundation/Excavation Detail
Scale N.T.S

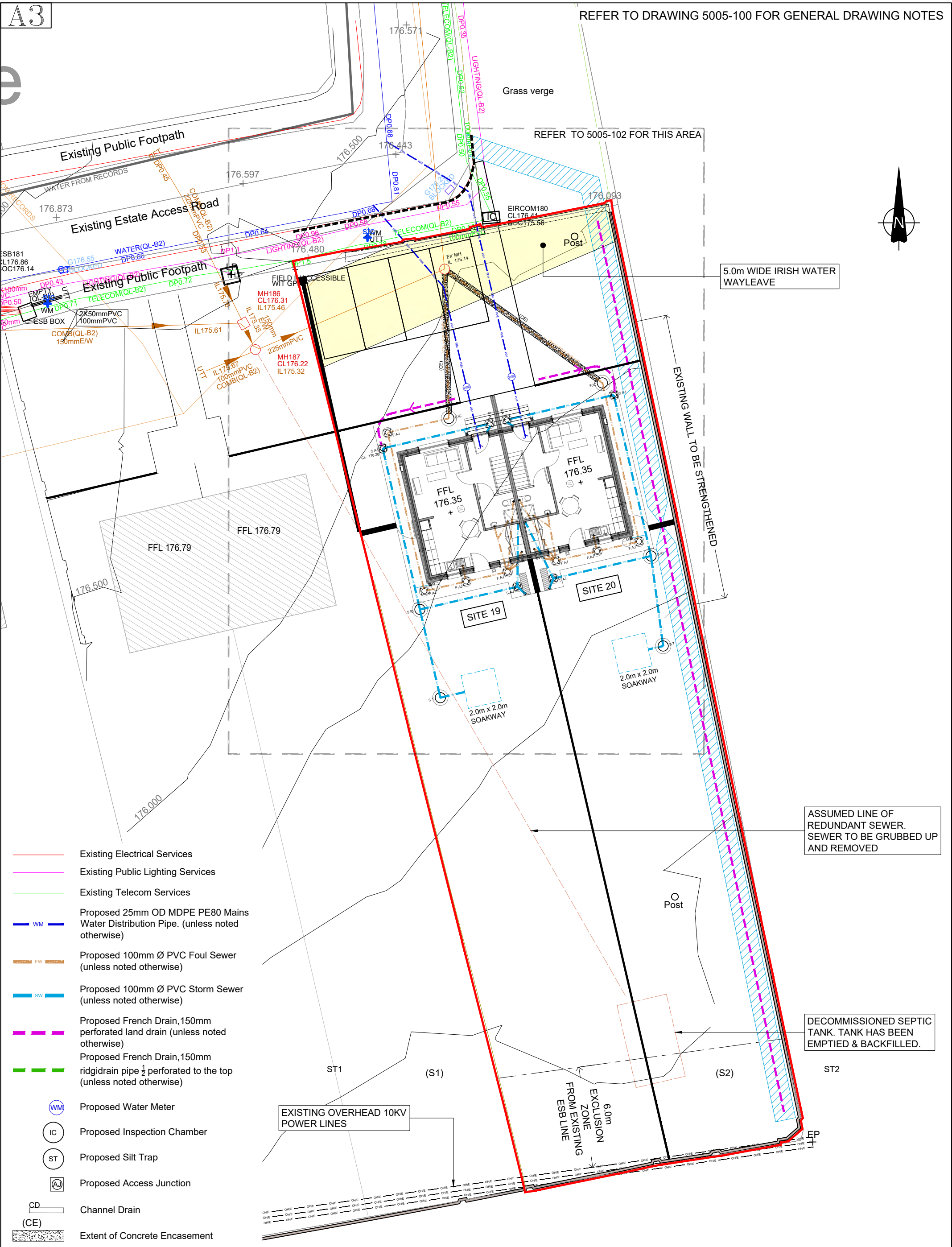
- GENERAL DETAIL NOTES:**
1. This Detail is not to be scaled.
 2. This Detail is to be read in conjunction with all other Tender, Construction and Contract Drawings, Details, Specifications, Bill of Quantities and Documents.
 3. The Contractor is to ensure that all works will be undertaken in accordance with good building practice and current Building Regulations (including Technical Guidance Documents A to M inclusive and all relevant amendments).
 4. If in doubt, request clarification from DJF.

DJF
DJF ENGINEERING SERVICES LTD.
 Consulting Engineers • Project Managers
 Tramore House, Reeveswood, Douglas Road, Cork. T12 R8XW
 Tel: (021) 2382424 Email: info@djf.ie.com Web: www.djf.ie.com

Status	CONSTRUCTION
Client	DETAILS

Project Title	Site Structures
Drawing Title	Foundation/Excavation Detail

0	ISSUED FOR CONSTRUCTION	FH	SH	23.02.23
REV	DETAILS	BY	CHK'D	DATE
Drawing No.	5000-03-550	Rev	0	
Scales	1:25	-A4		



- Existing Electrical Services
- Existing Public Lighting Services
- Existing Telecom Services
- WM — Proposed 25mm OD MDPE PE80 Mains Water Distribution Pipe. (unless noted otherwise)
- FW — Proposed 100mm Ø PVC Foul Sewer (unless noted otherwise)
- SW — Proposed 100mm Ø PVC Storm Sewer (unless noted otherwise)
- - - Proposed French Drain, 150mm perforated land drain (unless noted otherwise)
- - - Proposed French Drain, 150mm rigidrain pipe 1/2 perforated to the top (unless noted otherwise)
- WM Proposed Water Meter
- IC Proposed Inspection Chamber
- ST Proposed Silt Trap
- AJ Proposed Access Junction
- Channel Drain
- (CE) Extent of Concrete Encasement

DJF
ENGINEERING SERVICES LTD.
Consulting Engineers • Project Managers
Tramore House, Reeveswood, Douglas Road, Cork, T12 R8XW
Tel: (021) 2392424 Email: info@djf.ie.com Web: www.djf.ie.com

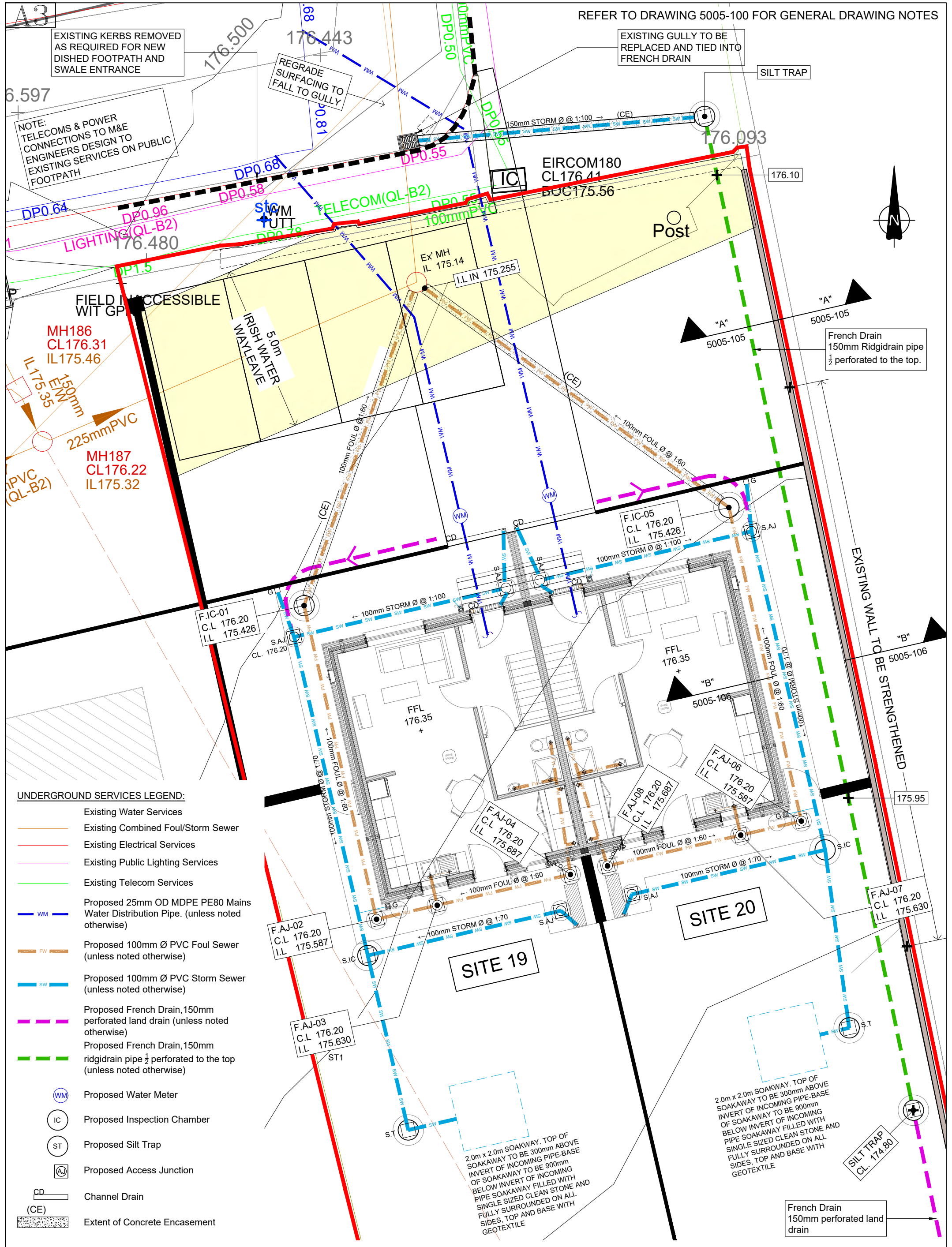
Client
 Cork County Council
Comhairle Contae Chorcaí

Project Title
**Proposed Housing Development
19 + 20
Dr. Croke Place, Kilbrin**

Status
PLANNING

Drawing Title
Drainage Layout

B	ISSUED FOR PLANNING	RH	SH	16.11.23
A	ISSUED FOR PLANNING	FH	SH	13.07.23
REV	DETAILS	BY	CHKD	DATE
1:100	-A3	5005-101	B	



REFER TO DRAWING 5005-100 FOR GENERAL DRAWING NOTES

EXISTING KERBS REMOVED AS REQUIRED FOR NEW DISHED FOOTPATH AND SWALE ENTRANCE

NOTE: TELECOMS & POWER CONNECTIONS TO M&E ENGINEERS DESIGN TO EXISTING SERVICES ON PUBLIC FOOTPATH

FIELD ACCESSIBLE WIT GP

MH186
CL176.31
IL175.46

IRISH WATER 5.0m WAYLEAVE

MH187
CL176.22
IL175.32

- UNDERGROUND SERVICES LEGEND:**
- Existing Water Services
 - Existing Combined Foul/Storm Sewer
 - Existing Electrical Services
 - Existing Public Lighting Services
 - Existing Telecom Services
 - WM Proposed 25mm OD MDPE PE80 Mains Water Distribution Pipe. (unless noted otherwise)
 - FW Proposed 100mm Ø PVC Foul Sewer (unless noted otherwise)
 - SW Proposed 100mm Ø PVC Storm Sewer (unless noted otherwise)
 - Proposed French Drain, 150mm perforated land drain (unless noted otherwise)
 - Proposed French Drain, 150mm ridgidrain pipe 1/2 perforated to the top (unless noted otherwise)
 - WM Proposed Water Meter
 - IC Proposed Inspection Chamber
 - ST Proposed Silt Trap
 - AJ Proposed Access Junction
 - Channel Drain
 - Extent of Concrete Encasement

2.0m x 2.0m SOAKWAY. TOP OF SOAKAWAY TO BE 300mm ABOVE INVERT OF INCOMING PIPE. BASE OF SOAKAWAY TO BE 900mm BELOW INVERT OF INCOMING PIPE. SOAKAWAY FILLED WITH SINGLE SIZED CLEAN STONE AND FULLY SURROUNDED ON ALL SIDES, TOP AND BASE WITH GEOTEXTILE

French Drain 150mm perforated land drain

DJF
DJF ENGINEERING SERVICES LTD.
Consulting Engineers • Project Managers
Tramore House, Reeveswood, Douglas Road, Cork, T12 R8XW
Tel: (021) 2392424 Email: info@djf.ie.com Web: www.djf.ie.com

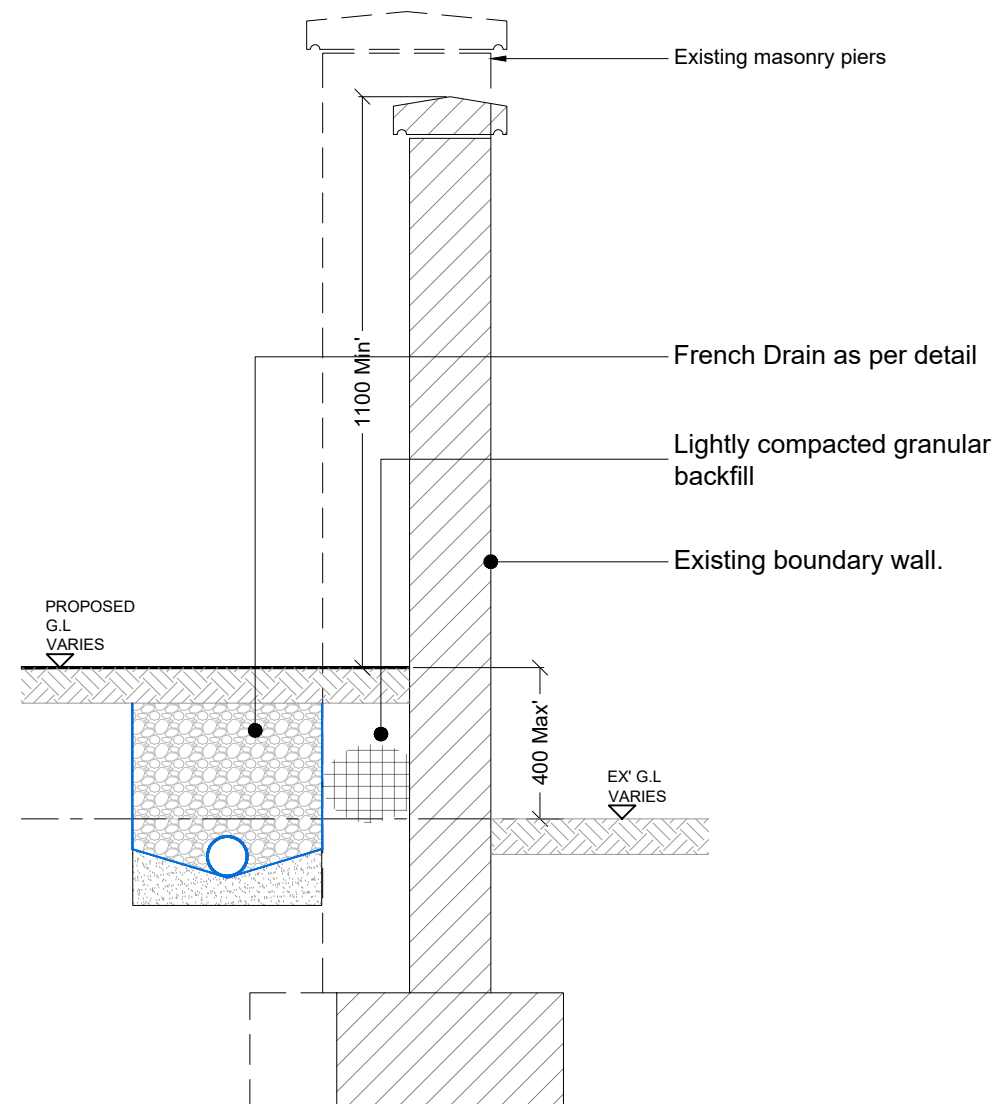
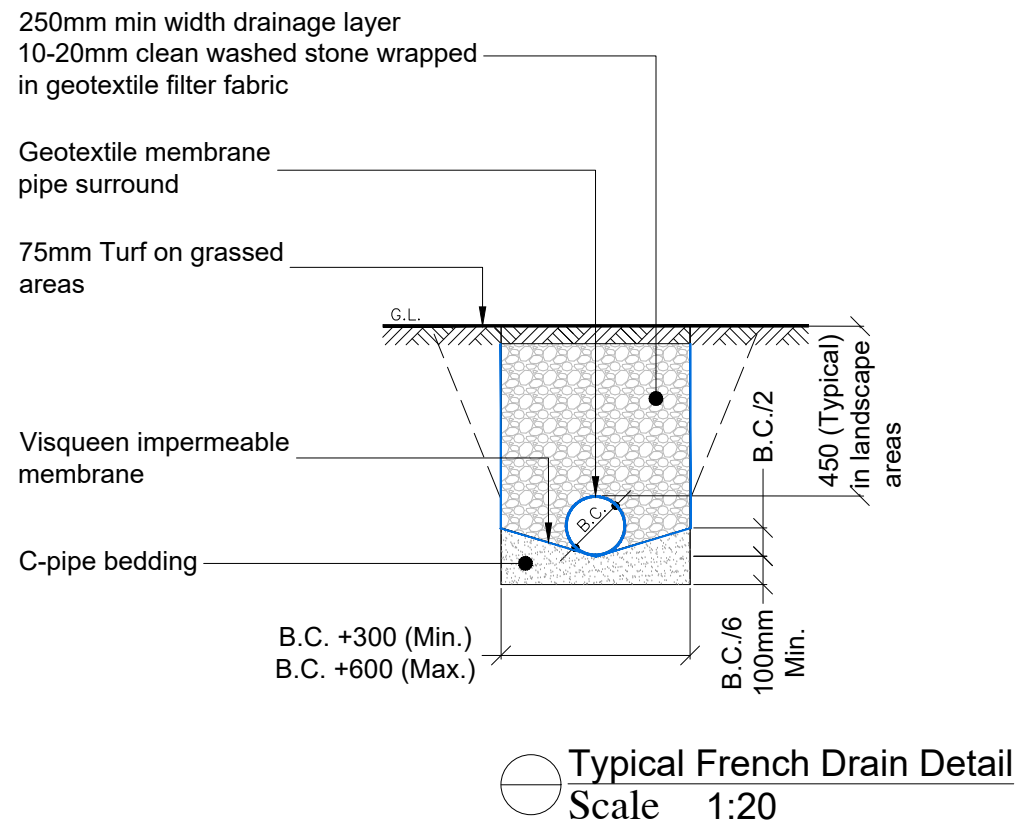
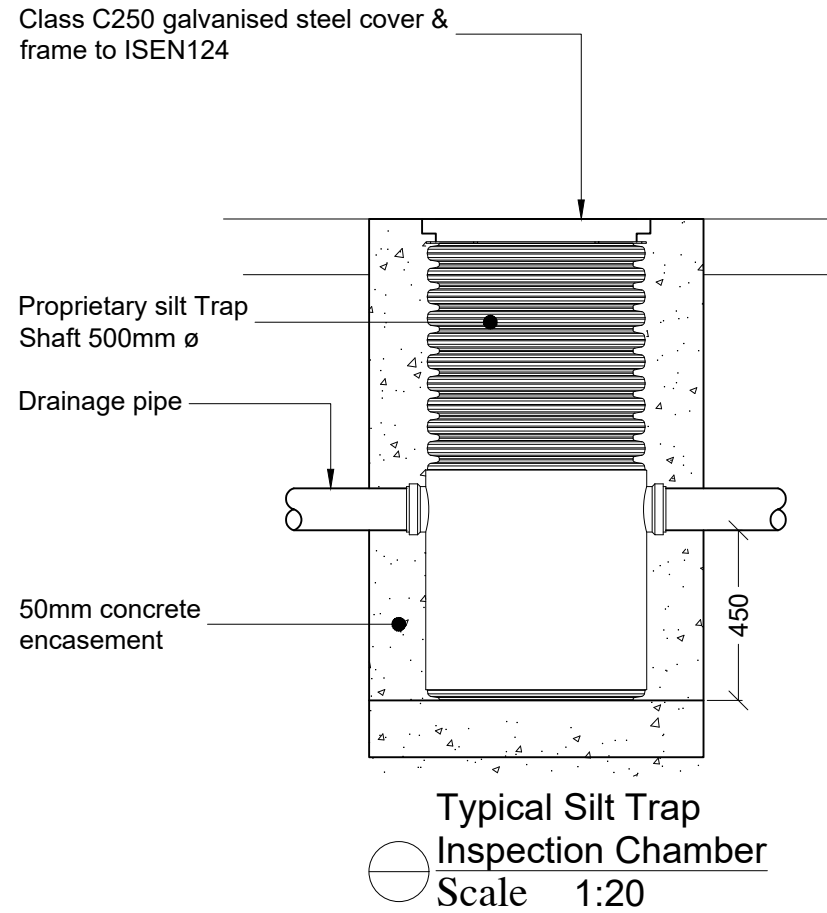
Client
Cork County Council
Comhairle Contae Chorcaí

Project Title
Proposed Housing Development 19 + 20
Dr. Croke Place, Kilbrin

Status
PLANNING

Drawing Title
Drainage Layout

REV	ISSUED FOR PLANNING	BY	SH	DATE
A	ISSUED FOR PLANNING	PH	SH	13.07.23
B	ISSUED FOR PLANNING	PH	SH	16.11.23
Scale	1:100	Drawing No.	5005-102	Rev
				B



B	ISSUED FOR PLANNING	FH	SH	16.11.23
A	ISSUED FOR PLANNING	FH	SH	13.07.23
REV	DETAILS	BY	CHKD	DATE

DJF
DJF ENGINEERING SERVICES LTD.
Consulting Engineers • Project Managers
Tramore House, Reeveswood, Douglas Road, Cork, T12 RBXW
Tel: (001) 2392424 Email: info@djf.ie www: www.djf.ie

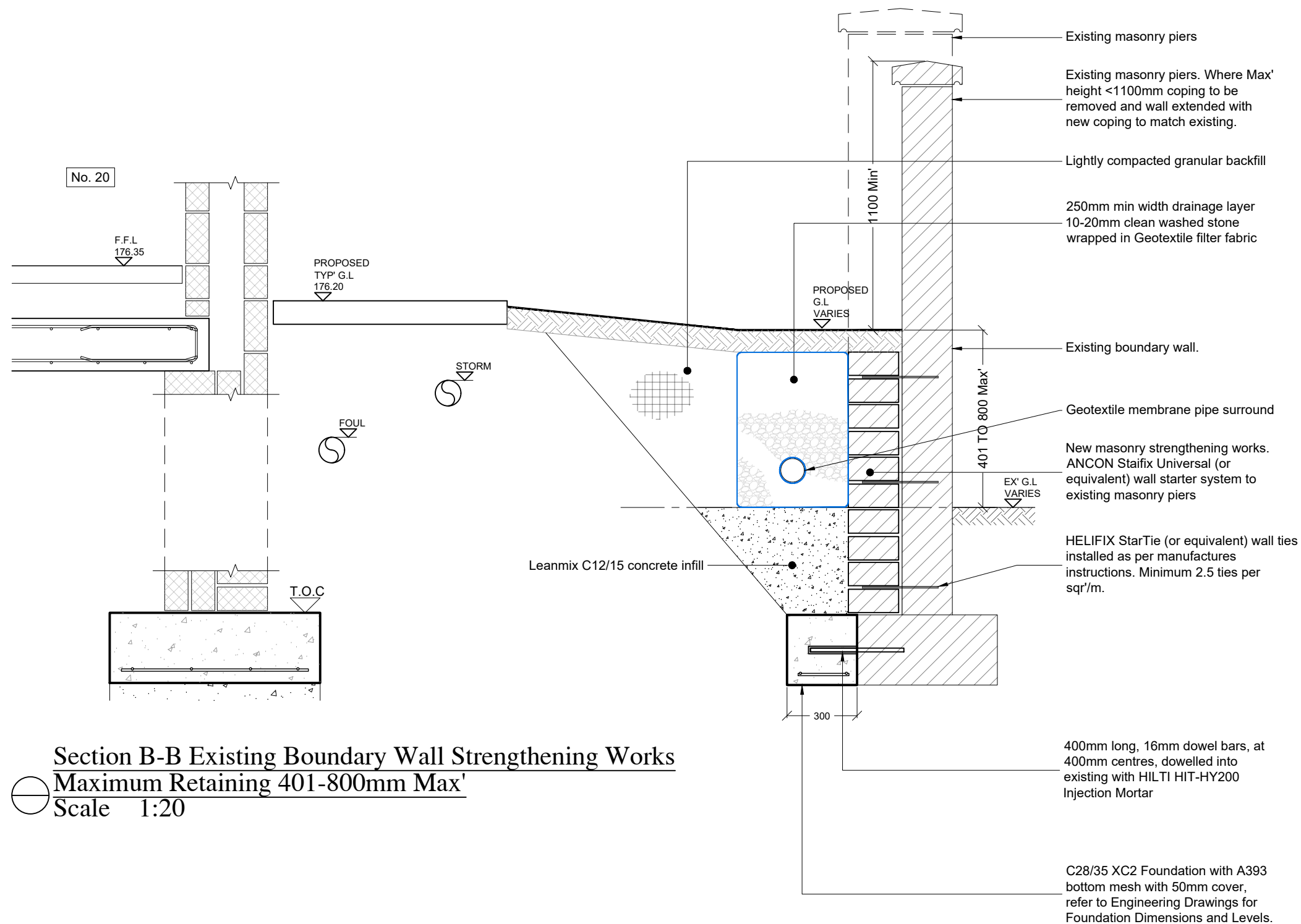
Cork County Council
Comhairle Contae Chorcaí

Status **PLANNING**

Project Title
**Proposed Housing Development
Dr. Croke Place, Kilbrin**

Drawing Title
**Drainage Details
Sheet 3**

Scales	Drawing No.	Rev
As Shown - A3	5005-105	B



Section B-B Existing Boundary Wall Strengthening Works
Maximum Retaining 401-800mm Max'
 Scale 1:20

NOTES

1. The contractor shall be responsible for checking all dimensions and all levels shown against all other drawings pertaining to this part of works.
2. Clauses referred to on this drawing are the clauses in the national roads authority's latest specification for road and bridge works U.N.O.
3. All drainage materials and workmanship to comply with local authority specification.
4. All dimension in millimetres unless noted otherwise.
5. Any reference to National Authority Standards should include any amendments, revisions, or updates relevant to that standard.

A	ISSUED FOR PLANNING	FH	SH	16.11.23
REV	DETAILS	BY	CHKD	DATE

DJF
 DJF ENGINEERING SERVICES LTD.
 Consulting Engineers • Project Managers
 Tramore House, Reeveswood, Douglas Road, Cork, T12 RBXW
 Tel: (001) 2392424 Email: info@djf.ie Web: www.djf.ie

Cork County Council
 Comhairle Contae Chorcaí

Status **PLANNING**

Project Title
Proposed Housing Development
Dr. Croke Place, Kilbrin

Drawing Title
Drainage Details
Sheet 4

Scales	Drawing No.	Rev
As Shown - A3	5005-106	A



CLIENT:

PROJECT:

**19 & 20, Dr Croke Place,
Kilbrin**

DOCUMENT TITLE:

Preliminary Engineering Report

DJF Engineering Services Ltd.

Tramore House, Reeveswood, Douglas, Cork, Ireland

Tel: 021-2392424 • Email: info@djfes.com • Web: www.djfes.com

Issue	Date	Issue Description	Approvals	
			By	Approved
A	01/03/2023	Client Issue	CM	SH

Contents

- 1.0 Introduction**
- 2.0 Ground Conditions**
- 3.0 Existing Utilities**
- 4.0 Potential Abnormals**
- 5.0 Foundations**
- 6.0 Water & Drainage**
- 7.0 Finished Floor Levels**
- 8.0 Ground Floor Slabs**
- 9.0 Safety Review**

1.0 Introduction

- 1.1 Cork County Council are currently developing a site with 2 no. social houses at no. 17 & 18 Dr. Croke Place, Kilbrin. These houses are under construction at the time of writing of this report. DJF Engineering Services are providing Civil/Structural Engineering, PSDP & Assigned Certifier services for this development.

Cork County Council Architect's Department have already developed preliminary designs for two number additional houses namely 19 & 20 Dr. Croke Place on an adjacent site to the site of houses 17 & 18 currently under construction.

Cork County Council requested that DJF carry out preliminary assessments and design for these additional houses to include:

- Assessment of ground conditions on the site for 19 & 20
- Assessment of existing services
- Reviewing previous site investigation reports
- Set the optimum ffl of the 19 20 semi-detached dwellings
- Advise on expected foundation depth
- Advise on requirement for ground bearing or suspended ground floor slabs
- Safety review of proposed designs
- Preliminary services layout drawing showing outcome of assessment including proposed foul drainage layout, proposed surface water layout (incl. soakaways), recommended ffl, recommended foundation formation levels, and recommendations for ground floor slabs.

Note the following are outside of the scope:

- Detailed design for no.'s 19 & 20
- Additional site visits
- Site investigation costs
- Irish Water pre-connection enquiry (assumed by CCC or not required for now)
- Wayleave maps

2.0 Ground Conditions

- 2.1 OCB Geotechnical carried out a previous site investigation at the adjacent site in 2019. This is included in the appendices.
- 2.2 OCB's exploratory holes generally encountered:
- TOPSOIL / MADE GROUND: Soft dark brown slightly sandy gravelly silty Clay with low cobble content and frequent roots and rootlets was encountered from ground surface to 0.15m.
 - MADE GROUND: Soft/firm greyish brown slightly sandy gravelly silty Clay with low cobble content, occasional construction debris / rubbish and occasional rootlets was encountered from 0.15m to 0.75m.
 - Stiff yellowish brown, becoming by 1.0m light brown, slightly sandy gravelly CLAY/SILT with medium to high cobble content and a trace of rootlets from 0.75m to 1.3m. This soil has a high plasticity.
 - Medium strong dark grey SILTSTONE, distinctly to highly weathered with penetrative light brown discolouration and very closely spaced discontinuities with dark brown to black iron oxide staining was encountered from 1.3m to the termination depth of 1.75m. This material is interpreted as the Cloone Flagstone Formation.
 - Dynamic probes DP1 and DP2 encountered effective refusal at 1.6m and 1.3m BGL.
- 2.3 In February 2023, in preparation for this report, DJF inspected a trial hole excavated to the rear of no. 19.
- 2.4 This trial hole indicated the following ground conditions in no. 19:
- 0.3m TOPSOIL / MADE GROUND with rootlets
 - 0.4m firm gravelly CLAY/SILT with cobbles
 - Dense angular GRAVEL / weathered SILTSTONE (shale)

Notes:

- Trial hole was excavated approx. 10m from rear building line of no. 17 & 18 in future rear garden of no. 19.
- Trial hole excavated with mini digger to 1.6m depth approximately
- Ground level measured at approx. +175.2m (original ground level is difficult to estimate due to spoil heaped in the area)
- No groundwater encountered



Trial hole to rear of no. 19



Material excavated from trial hole to rear of no. 19

3.0 Existing Utilities

- 3.1 Apex Surveys carried out a previous utility survey at the adjacent site. This included part of the sites for no.'s 19 & 20.
- 3.2 There are existing watermain, foul sewer, telecoms and electrical utilities in close proximity to the site of no. 19 & 20. Existing surveyed services are shown on the drawing in the appendices.
- 3.3 In addition, a previously covered foul manhole was discovered on the site of no. 19 during the construction of no.'s 17 & 18.



Previously covered foul manhole north of no. 19

Invert of foul manhole (in front of future no. 19) was surveyed to be c.1.65m below FFL of no 18 (+176.79) i.e. IL = +175.14 approx.

A temporary connection as shown above was added to this manhole by the contractor for no. 17 & 18 for their welfare facilities

- 3.4** A redundant septic tank is located in the future rear gardens to no.'s 19 & 20. This is being emptied and filled with stone as part of the scope of works for no.'s 17 & 18 at the time of writing of this report.



Redundant Septic tank to rear of no. 19 & 20

4.0 Potential Abnormals

- 4.1 The following potential abnormal items arose from the above investigations:
- Clear site.
 - Excavating topsoil and made ground under building footprint and hardstanding areas
 - Filling under building footprint and hardstanding areas
 - Retaining structure inside existing site Eastern boundary wall to retain additional fill required due to raised ground levels around and in front of new dwellings
 - Raising/reconstructing portion of Eastern boundary wall to provide privacy screening
 - Desilt, clean and inspect existing road gullies and storm drains.
 - Allow for an additional road gully at the roadside in front of no. 19.
 - Remove redundant drainage pipes shown on Irish Water record drawings.

5.0 Foundations

- 5.1 Shallow strip foundations are suitable for this site bearing below the TOPSOIL and MADE GROUND at a depth of at least 0.9m below original ground levels
- 5.2 The recommended formation level for the proposed semi-detached dwellings is +174.565m AOD.
- 5.3 For cost estimation, design details of foundations and foundation widths can be assumed to be similar to those used for no.'s 17 & 18.
- 5.4 The recommended Top of Concrete level for foundations is +174.865m AOD.

6.0 Water & Drainage

- 6.1** Surface water is proposed to be discharge to ground via a soakaway excavated into the very permeable gravel encountered in the trial hole. Refer to the sketch drawing in the appendices for further details.
- 6.2** Foul wastewater from both dwellings is proposed to discharge to the Irish Water sewer located north of no.20. Refer to the sketch drawing in the appendices for further details. A pre connection enquiry to Irish Water will need to be made to progress these connections and confirm that new connections are feasible.
- 6.3** Water for the dwellings is proposed to be provided from the existing watermain on the road. Refer to the sketch drawing in the appendices for further details. A pre connection enquiry to Irish Water will need to be made to progress these connections and confirm that new connections are feasible.

7.0 Finished Floor Levels

- 7.1** We would recommend that the finished floor level for the dwellings at this site be set at 176.55m AOD. This level is dictated by existing road & path levels, and the level of the existing foul drainage.
- 7.2** The proposed FFL is 1685mm above the Top of Concrete foundation level as advised above.

8.0 Ground Floor Slabs

- 8.1** Ground bearing slabs bearing on suitable imported fill below the Made Ground are suitable for this site due to the depth of fill required to bring up ground floor levels.
- 8.2** For cost estimation, design details can be assumed to be similar to those used for no.'s 17 & 18.

9.0 Safety Review

9.1 By reference to the Safety Health & Welfare of Work (Construction) Regulations 2013 a Project Supervisor for Design Process (PSDP) and a Project Supervisor for Construction Stage (PSCS) will be required to be appointed.

We would recommend that the Lead Designers of the project would be appointed PSDP, while the main contractor be appointed PSCS.

9.2 The Designers of the project, at detailed design stage, will be required to issue Detailed Design Risk Assessments to the PSDP.

9.3 From an initial review, key safety hazards on the site include the following:

- Overhead lines to the rear of the site
- Construction within an occupied housing estate
- Rodent infestation due to redundant septic tank

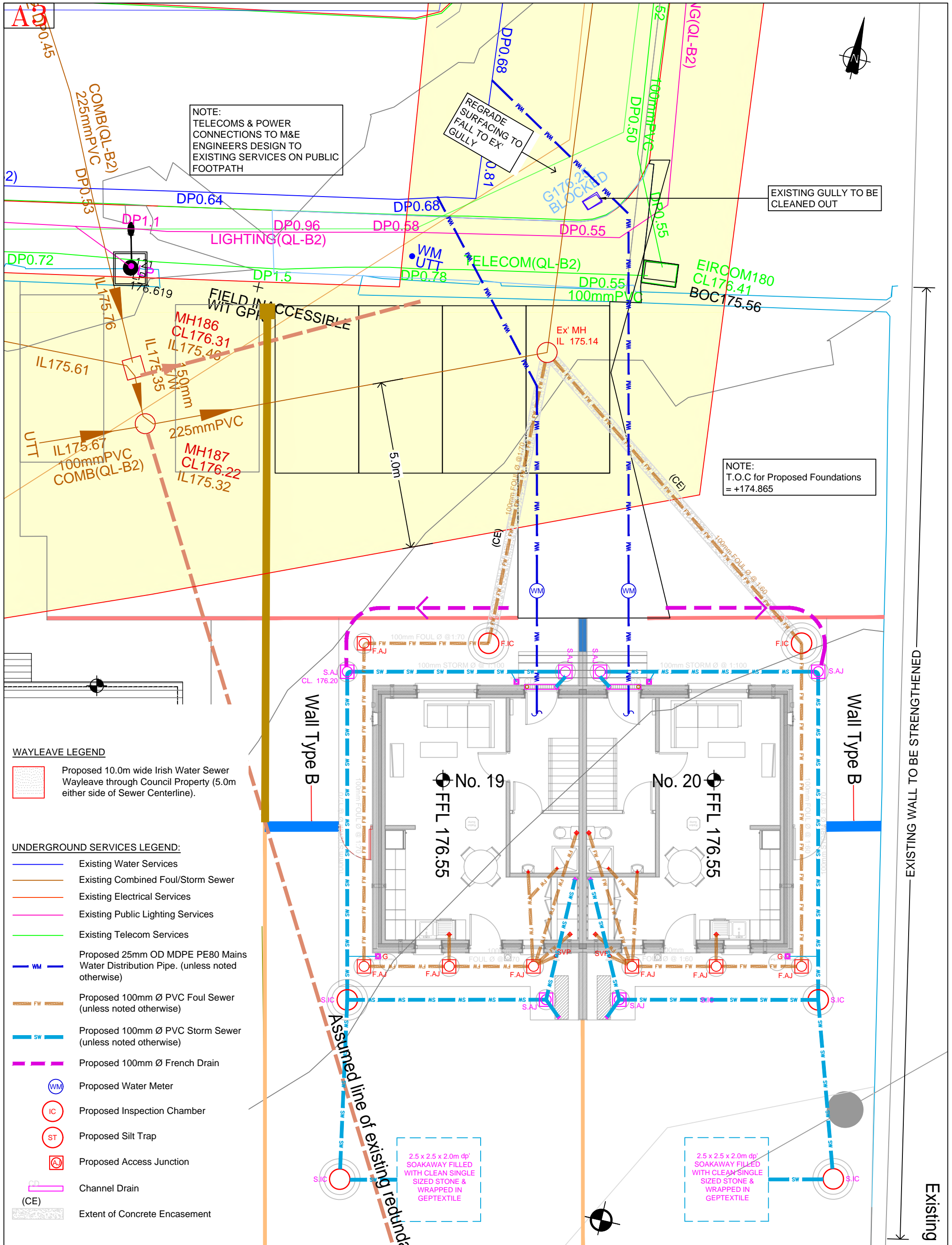
Appendices

Appendix 1

Preliminary Services Layout
Drawing

Appendix 2

Geotechnical Investigation
Report



NOTE:
TELECOMS & POWER
CONNECTIONS TO M&E
ENGINEERS DESIGN TO
EXISTING SERVICES ON PUBLIC
FOOTPATH

REGRADE
SURFACING TO
FALL TO EX
GULLY

EXISTING GULLY TO BE
CLEANED OUT

NOTE:
T.O.C for Proposed Foundations
= +174.865

WAYLEAVE LEGEND

Proposed 10.0m wide Irish Water Sewer
Wayleave through Council Property (5.0m
either side of Sewer Centerline).

UNDERGROUND SERVICES LEGEND:

- Existing Water Services
- Existing Combined Foul/Storm Sewer
- Existing Electrical Services
- Existing Public Lighting Services
- Existing Telecom Services
- Proposed 25mm OD MDPE PE80 Mains
Water Distribution Pipe. (unless noted
otherwise)
- Proposed 100mm Ø PVC Foul Sewer
(unless noted otherwise)
- Proposed 100mm Ø PVC Storm Sewer
(unless noted otherwise)
- Proposed 100mm Ø French Drain
- Proposed Water Meter
- Proposed Inspection Chamber
- Proposed Silt Trap
- Proposed Access Junction
- Channel Drain
- (CE) Extent of Concrete Encasement

Assumed line of existing road

2.5 x 2.5 x 2.0m dp'
SOAKAWAY FILLED
WITH CLEAN SINGLE
SIZED STONE &
WRAPPED IN
GEPTEXTILE

2.5 x 2.5 x 2.0m dp'
SOAKAWAY FILLED
WITH CLEAN SINGLE
SIZED STONE &
WRAPPED IN
GEPTEXTILE

EXISTING WALL TO BE STRENGTHENED

Existing

DJF
ENGINEERING SERVICES LTD.
Consulting Engineers • Project Managers
Tramore House, Reeveswood, Douglas Road, Cork, T12 R8XW
Tel: (081) 2308494 Email: info@djf.ie

Client
Cork County Council
Comhairle Contae Chorcaí

Project Title
Proposed Housing
Development
Dr. Croke Place, Kilbrin

Status
INFORMATION

Drawing Title
Preliminary
Services Layout for
Sites 19 & 20

A ISSUED FOR INFORMATION		BY SH	DATE 07.03.23
REV DETAILS		BY	DATE
Scales	Drawing No.	Rev	
1:100	-A3	4089-Skt-005 A	



Dr. Croke Place, Kilbrin, Mallow, Co. Cork Infill Housing Development Site Investigation

Primary Authors: Mark Nyhan / Andrew Garne

Client: Comhairle Contae Chorcaí /
Cork County Council

Client's Representative: DJF Engineering Services Ltd

Completed: 23rd October 2019

Report No.: OCB19-079

File Location: OCB19-079/Report



CONTENTS

Document Control Sheet

Note on: Methods of describing soils and rocks & abbreviations used on exploratory hole logs

1	AUTHORITY.....	5
2	SCOPE.....	5
3	DESCRIPTION OF SITE	5
4	SITE OPERATIONS	6
	4.1 Trial Pit.....	6
	4.2 Slit Trench.....	7
	4.3 Dynamic probes.....	7
	4.4 In-situ CBR testing.....	7
5	LABORATORY WORK.....	7
	5.1 Geotechnical laboratory testing of soils	7
	5.2 Environmental laboratory testing of soils.....	8
6	GROUND CONDITIONS	8
	6.1 General geology of the area	8
	6.2 Ground types encountered during investigation of the site	8
	6.3 Groundwater.....	9
7	DISCUSSION	9
	7.1 Proposed construction.....	9
	7.2 Recommendations for construction	9
	7.3 Access roads, car parks and hard standing	10
	7.4 Site Contamination and Waste Disposal.....	10
8	REFERENCES	12



APPENDICES

Appendix A	Site and Exploratory Hole Location Plans
Appendix B	Trial Pit Log
Appendix C	Trial Pit Photographs
Appendix D	Slit Trench Log
Appendix E	Slit Trench Photographs
Appendix F	Dynamic Probe Logs
Appendix G	In-situ CBR Test Data
Appendix H	Geotechnical Laboratory Test Results
Appendix I	Environmental Laboratory Test Results



Document Control Sheet

Report No.: OCB19-079

Project title: Dr. Croke Place, Kilbrin, Mallow, Co. Cork
Infill Housing Development

Client: Cork County Council / Comhairle Contae Chorcaí

Client's Representative: DJF Engineering Services Ltd

Revision	Status	Report prepared by:	Report reviewed by:	Report approved by:	Issue date
003	Final	Mark Nyhan / Andrew Garne	Glen Byrne	Michael O'Connell	23 rd October 2019

The works were conducted in accordance with:

UK Specification for Ground Investigation 2nd Edition, published by ICE Publishing (2012)

British Standards Institute (2010) BS 5930:1999 + A2: 2010, Code of practice for site investigations. Incorporating Amendment Nos. 1 and 2, as partially replaced by:

- BS EN 1997-2:2007: Eurocode 7. Geotechnical design. Ground investigation and testing
- BS EN ISO 22475-1:2006: Geotechnical investigation and testing. Sampling methods and groundwater measurements. Technical principles for execution
- BS EN ISO 14688-1:2002/Amd 1:2013: Geotechnical investigation and testing. Identification and classification of soil. Identification and description
- BS EN ISO 14688-2:2004/Amd 1:2013: Geotechnical investigation and testing. Identification and classification of soil. Principles for a classification
- BS EN ISO 14689-1:2003: Geotechnical investigation and testing. Identification and classification of rock. Identification and description
- BS EN ISO 22476-2:2005/Amd 1:2011: Geotechnical investigation and testing. Field testing. Dynamic probing
- BS EN ISO 22476-3:2005/Amd 1:2011: Geotechnical investigation and testing. Field testing. Standard penetration test



METHODS OF DESCRIBING SOILS AND ROCKS

Soil and rock descriptions are based on the guidance in Section 6 of BS 5930: 1999 + A2: 2010, The Code of Practice for Site Investigation. The amendments revised the Standard to remove text superseded by BS EN ISO 14688-1:2002, BS EN ISO 14688-2:2004 and EN ISO 14689-1:2003 and refers to the relevant standard for each affected subclause. However, the following terms are used in the description of fine-grained soils, where applicable:

- Soft to Firm: fine-grained soil with consistency description close to the boundary between soft and firm soil (Table 13 of BS5930).
- Firm to Stiff: fine-grained soil with consistency description close to the boundary between firm and stiff soil (Table 13 of BS5930).

Abbreviations used on exploratory hole logs	
U	Nominal 100mm diameter undisturbed open tube sample
P	Nominal 100mm diameter undisturbed piston sample
B	Bulk disturbed sample
D	Small disturbed sample
W	Water sample
ES / EW	Soil sample for environmental testing / Water sample for environmental testing
SPT	Standard penetration test using a split spoon sampler (small disturbed sample obtained)
SPT (C)	Standard penetration test using 60-degree solid cone
x,x/x,x,x,x	Blows per increment during the standard penetration test. The initial two values relate to the seating drive (150mm) and the remaining four to the 75mm increments of the test length. The length achieved is stated (mm) for any test increment less than 75mm
N=X	SPT blow count 'N' given by the summation of the blows 'X' required to drive the full test length (300mm)
N=X/Z	Incomplete standard penetration test where the full test length was not achieved. The blows 'X' represent the total blows for the given test length 'Z' (mm)
V VR	Shear vane test (borehole) Hand vane test (trial pit) Shear strength stated in kPa V: undisturbed vane shear strength VR: remoulded vane shear strength
dd/mm/yy: 1.0 dd/mm/yy: dry	Date & water level at the borehole depth at the end of shift and the start of the following shift
Abbreviations relating to rock core - reference Clause 44.4.4 of BS 5930: 1999	
TCR (%)	Total Core Recovery: Ratio of rock/soil core recovered (both solid and non-intact) to the total length of core run.
SCR (%)	Solid Core Recovery: Ratio of solid core to the total length of core run. Solid core has a full diameter, uninterrupted by natural discontinuities, but not necessarily a full circumference and is measured along the core axis between natural fractures.
RQD (%)	Rock Quality Designation: Ratio of total length of solid core pieces greater than 100mm to the total length of core run.
FI	Fracture Index: Number of natural discontinuities per metre over an indicated length of core of similar intensity of fracturing.
NI	Non-Intact: Used where the rock material was recovered fragmented, for example as fine to coarse gravel size particles.
AZCL	Assessed zone of core loss: The estimated depth range where core was not recovered.
DIF	Drilling induced fracture: A fracture of non-geological origin brought about by the rock coring.



Dr. Croke Place, Kilbrin, Mallow, Co. Cork – Infill Housing Development

1 AUTHORITY

On the instructions of Consulting Engineers, DJF Engineering Services Ltd, acting on the behalf of Cork County Council / Comhairle Contae Chorcaí, a ground investigation was undertaken at eight (8) sites in County Cork to provide geotechnical and environmental information for input to the design and construction of a proposed residential development.

This report is for Dr. Croke Place, Kilbrin, Mallow, Co. Cork. It details the work carried out both on site and in the geotechnical and chemical testing laboratories; it contains a description of the sites and the works undertaken, the exploratory hole logs and the laboratory test results. A discussion on the recommendation for construction is also provided.

All information given in this report is based upon the ground conditions encountered during the site investigation works, and on the results of the laboratory and field tests performed. However, there may be conditions at the site's that have not been taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions between or below exploratory holes. It should be noted that groundwater levels usually vary due to seasonal and/or other effects and may at times differ to those measured during the investigation.

This report was prepared by OCB Geotechnical Ltd for the use of Cork County Council / Comhairle Contae Chorcaí and DJF Engineering Services Ltd in response to particular instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

2 SCOPE

The extent of the investigation, as instructed by DJF Engineering Services Ltd, included trial pits, a slit trench, dynamic probing, in-situ CBR testing, laboratory testing, and the preparation of a report on the findings.

3 DESCRIPTION OF SITE

As shown on the site location plans in Appendix A, the works were conducted at Dr. Croke Place, Kilbrin, where it is proposed to construct new housing units for Cork County Council / Comhairle Contae Chorcaí.



Kilbrin village is located approximately 7km northeast of Kanturk. Dr. Croke Place is located on the south side of the village, approximately 70m west of the village crossroads. The site consists of the western of two undeveloped lots at the southeast corner of Dr. Croke Place. The two undeveloped properties are surrounded by agricultural land to the east and south and by existing houses at Dr. Croke Place to the west and north across the road.

The site is a rectangular-shaped property measuring approximately 56m north-south by 17m east-west. It has an even ground surface and, at the time of the site investigation, was partially overgrown with weeds, briars, gorse bushes and small willow and sycamore trees. The site is bounded by concrete block walls to the north, west and south and partially by a concrete post and wire fence to the east. There is a 6m-wide gap in the concrete block wall along the north side of the site providing access to the two empty lots at the southeast corner of Dr. Croke Place.

The site is located in a relative upland area and ground surface elevation slopes gently to the southeast. Underground services are located along Dr. Croke Place and the northern portion of the site. A sewer pipeline and manholes are located at the northern portion of the site and a 200mm diameter corrugated PVC sewer pipe was uncovered by the slit trench near the north end of the site. An overhead 10kV electric power line runs along the south side of the site.

The site is presented on the site and exploratory hole location plans in Appendix A.

4 SITE OPERATIONS

Site operations, which were conducted between 30th August and 17th October 2019, included:

- One (1) Trial Pit
- One (1) Slit Trench
- Two (2) Continuous Dynamic Probes
- CBR Field Tests at one (1) location.

The exploratory holes and in situ tests were located as instructed by DJF Engineering Services Ltd as shown on the exploratory hole location plans in Appendix A.

4.1 Trial Pit

One (1) trial pit was excavated using a 3-tonne tracked excavator fitted with a 900mm wide bucket to a depth of 1.75m.

Disturbed (small tub and bulk bag) samples were taken at standard depth intervals and at change of strata. Groundwater was not encountered during excavation. The stability of the trial pit walls was noted on completion.

Appendix B presents the trial pit log with photographs of the pit and arising provided in Appendix C.

4.2 Slit Trench

One (1) slit trench was excavated using a combination of a 3-tonne excavator and hand digging to expose the underground services.

Appendix D presents the slit trench log with photographs of the trench provided in Appendix E.

4.3 Dynamic probes

Two (2) dynamic probes (DP1 and DP2) were put down to refusal. The probes were put down using a Dando Terrier rig using the DPSH-B method as described in BSEN ISO 22476-2. The method entails a 63.5kg hammer falling 750mm onto a 90° cone of 50.5mm diameter.

Probing was conducted from ground surface after ensuring locations were free of services. Probing was conducted continuously until effective refusal was encountered at depths of 1.6m and 1.3m BGL.

Appendix F provides the dynamic probe logs in the form of plots, against depth, of the number of blows per 100mm penetration.

4.4 In-situ CBR testing

In-situ California Bearing Ratio (CBR) testing was conducted at one location (CBR1) using a Controls Group field CBR test set to evaluate the strength of shallow soils. Testing was carried at two depths: at 0.5m and 1.0m.

CBR field test data and calculations are provided in Appendix G.

5 LABORATORY WORK

Upon their receipt in the laboratory, all disturbed samples were carefully examined and accurately described and their descriptions incorporated into the borehole logs.

5.1 Geotechnical laboratory testing of soils

Laboratory testing of soils comprised:



- **soil classification:** moisture content measurement, Atterberg Limit tests and particle size distribution analysis.
- **soil chemistry:** pH and water soluble sulphate content

Laboratory testing of soils samples was carried out in accordance with British Standards Institute (1990) *BS 1377:1990, Methods of test for soils for civil engineering purposes. Parts 1 to 9.*

Laboratory test results are presented in Appendix H.

5.2 Environmental laboratory testing of soils

In addition, environmental testing, as specified by DJF Engineering Services Ltd, was conducted by ELS/Chemtest on a selected environmental sample (TP1 0.3m to 0.7m).

Results of environmental testing are presented in Appendix I.

6 GROUND CONDITIONS

6.1 General geology of the area

Teagasc soil mapping indicates that surficial soils consist primarily of Glacial Till derived chiefly from Namurian rocks.

According to Geological Survey of Ireland (GSI) online mapping, the soils are underlain by bedrock of the Lower Carboniferous age Cloone Flagstone Formation which consists of greywackes, siltstones and silty shales. The greywackes are uniformly bedded, fine-grained and show turbidite structures. Some shale units show extensive slumping, and flute, groove and load casts in the overlying sandstone. The bedrock occurs on the north flank of the west-southwest to east-northeast trending Kanturk-Doneraile anticline (upfold).

The bedrock underlying the site is classified as a locally important aquifer, bedrock which is moderately productive only in local zones, and groundwater vulnerability is classified as medium. No karst features are reported in the site vicinity.

6.2 Ground types encountered during investigation of the site

A summary of the ground types encountered in the exploratory holes is listed below, in approximate stratigraphic order. Trial pit TP1 encountered

- **TOPSOIL / MADE GROUND:** Soft dark brown slightly sandy gravelly silty Clay with low cobble content and frequent roots and rootlets was encountered from ground surface to 0.15m.
- **MADE GROUND:** Soft/firm greyish brown slightly sandy gravelly silty Clay with low cobble content, occasional construction debris / rubbish and occasional rootlets was encountered from 0.15m to

0.75m.

- Stiff yellowish brown, becoming by 1.0m light brown, slightly sandy gravelly CLAY/SILT with medium to high cobble content and a trace of rootlets from 0.75m to 1.3m. This soil has a high plasticity.
- Medium strong dark grey SILTSTONE, distinctly to highly weathered with penetrative light brown discolouration and very closely spaced discontinuities with dark brown to black iron oxide staining was encountered from 1.3m to the termination depth of 1.75m. This material is interpreted as the Cloone Flagstone Formation.
- Dynamic probes DP1 and DP2 encountered effective refusal at 1.6m and 1.3m BGL.

6.3 Groundwater

Groundwater was not encountered at the site during August 2019.

7 DISCUSSION

7.1 Proposed construction

It is proposed to construct new housing units.

No further details were available to OCB Geotechnical at the time of preparing this report.

7.2 Recommendations for construction

It is recommended that excavations for building foundations and associated infrastructure be taken to below any Topsoil / Subsoil (and Made Ground where encountered locally) in order to minimize the possibility of excessive settlement. The structures should be founded within the stiff clay-silt/weathered rock at a minimum depth of 0.75m (from the trial pit). Due to the limited information available, a maximum allowable bearing capacity of 100kPa is recommended with a maximum anticipated settlement of 25mm.

The base of foundation excavations should be thoroughly inspected by an experienced engineer and the required bearing capacity verified in-situ. Any soft/loose soils should be removed with the resultant void backfilled with leanmix concrete or granular engineering fill (Class 6 or similar approved material). A consistent bearing stratum should be provided across each structure in order to limit differential settlements.

Given the generally fine grained/cohesive nature of the soils at most of the proposed formation levels, excavations for foundations and drainage devices are likely to be relatively stable. However, any instability can be minimised by battering the side slopes at two vertical to one horizontal (2V:1H) and by limiting the duration that the excavation is open. This slope should be reduced to one vertical to two horizontal (1V:2H) in areas of granular material. Groundwater control, if required, should be possible by pumping from sumps formed in the base of excavations.

The use of ground bearing floor slabs is considered appropriate following the removal of any loose/soft material and their replacement using well-graded well-compacted granular fill. However, a suspended floor slab should be adopted where the difference in levels of the proposed floor and the base of loose/soft soils is greater than 600mm.

7.3 Access roads, car parks and hard standing

In-situ CBR test results ranged from 7.3% (at 0.5m) to 17.7% (at 1m). Based on the strata descriptions and the results of the in-situ and laboratory tests, the following design CBR values are appropriate.

- less than 2% at locations where the sub-grade is formed in Subsoil, soft clay or Made Ground, if encountered, (due to its inherent variability), requiring a 600mm thick capping.
- A value of 4% below a depth of about 0.75m, is appropriate where firm or stiff clay is encountered at sub-formation level, requiring a 300mm thick capping.

Although the CBR values obtained from in-situ tests frequently suggest good construction conditions, caution is advised due to the presence of obstructions (cobbles and boulders) within the Glacial Till. The values stated are based on Table 2.1 of volume 7 section 2 of the Design Manual for Roads and Bridges, assuming average construction conditions.

The use of geosynthetics in the construction of paved areas, will be beneficial, particularly in areas of Made Ground. These could include a geosynthetic (e.g., a geogrid) at subgrade level with further benefit gained by incorporating further layer(s) within the capping/sub-base layer.

7.4 Site Contamination and Waste Disposal

Selected soil samples were analysed for potential contaminants and waste acceptance criteria (WAC) including:

- Total organic carbon (TOC)
- Carbonates
- 13 Metals
- Mono aromatic hydrocarbons (MAH)
- Volatile organic compound MTBE
- Total petroleum hydrocarbons (TPH)



- Polycyclic aromatic hydrocarbons (PAH)
- Polychlorinated biphenols (PCB)
- Asbestos
- WAC leachate analysis (short leaching test L/S 10:1) including metals, chloride, fluoride, sulphate, dissolved organic carbon and phenols.

The results of the laboratory analysis are presented in Appendix I.

In the initial examination of the potential risk of site contamination, the laboratory results for total concentrations in soil have been compared to the following available assessment criteria relevant to the proposed land use and soil disposal:

- Draft Soil Trigger Levels for Soil Recovery Facilities published by the Irish EPA in December 2017;
- Dutch Soil Remediation Circular 2013, published by the Ministry for Environment and Infrastructure in July 2013, which includes Target Values and Intervention Values for soil remediation;
- Contaminated Land Exposure Assessment (CLEA) Soil Guideline Values (SGVs) published by the UK Department for Environment, Food and Rural Affairs and the Environment Agency in 2009. These relate arsenic, nickel, mercury, selenium, cadmium, benzene, toluene, ethylbenzene, xylenes, and phenol.

All parameters were measured at levels which were below the relevant published guideline values as compared with the above standards and guidance.

Any potential contamination identified during site development by visual or olfactory means should be investigated, including further laboratory testing, and appropriate health and safety, waste disposal and remediation measures should be implemented.

If the recorded soil contaminant concentrations are to be included in an assessment to support a planning application the recorded results could be compared to Generic Assessment Criteria (GAC) following an assessment and site investigation designed to meet the UK Environment Agency CLR11 approach to contaminated investigations. GAC are contaminant concentration values used for comparison purposes to assess the risk associated with contaminant concentrations found on site and are derived using largely generic assumptions about the characteristic and behaviour of source, pathway and receptor pollutant linkages.



The leaching test results were compared to Landfill Waste Acceptance Criteria (WAC) compliance values for inert waste. Based on the results, material from the site may potentially be classified as Stable non-reactive hazardous waste due to Selenium levels which were above the “Inert” levels. It is likely that these chemicals are naturally elevated in soils from this area. It is recommended that the receiving facility is contacted as soon as possible in order to properly classify the waste. Any material excavated for off-site disposal would require a waste classification following the guidance in the EPA Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous (EPA, 2015).

8 REFERENCES

BS 1377: 1990. *Methods of test for soils for civil engineering purposes*. British Standards Institution, London.

BS 5930: 2015. *Code of practice for ground investigations*. British Standards Institution, London.

BS EN 1997-2: 2007. *Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing*. British Standards Institution, London.

BS EN ISO 14688-1: 2002. *Geotechnical investigation and testing - Identification and classification of soil - Part 1 Identification and description*. British Standards Institution, London.

BS EN ISO 14689-1: 2003. *Geotechnical investigation and testing - Identification and classification of rock - Part 1 Identification and description*. British Standards Institution, London.

Building Research Establishment, 2005. BRE Special Digest 1, Concrete in aggressive ground.

BS EN 12457-2: 2002 Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges. One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 4 mm (without or with size reduction).

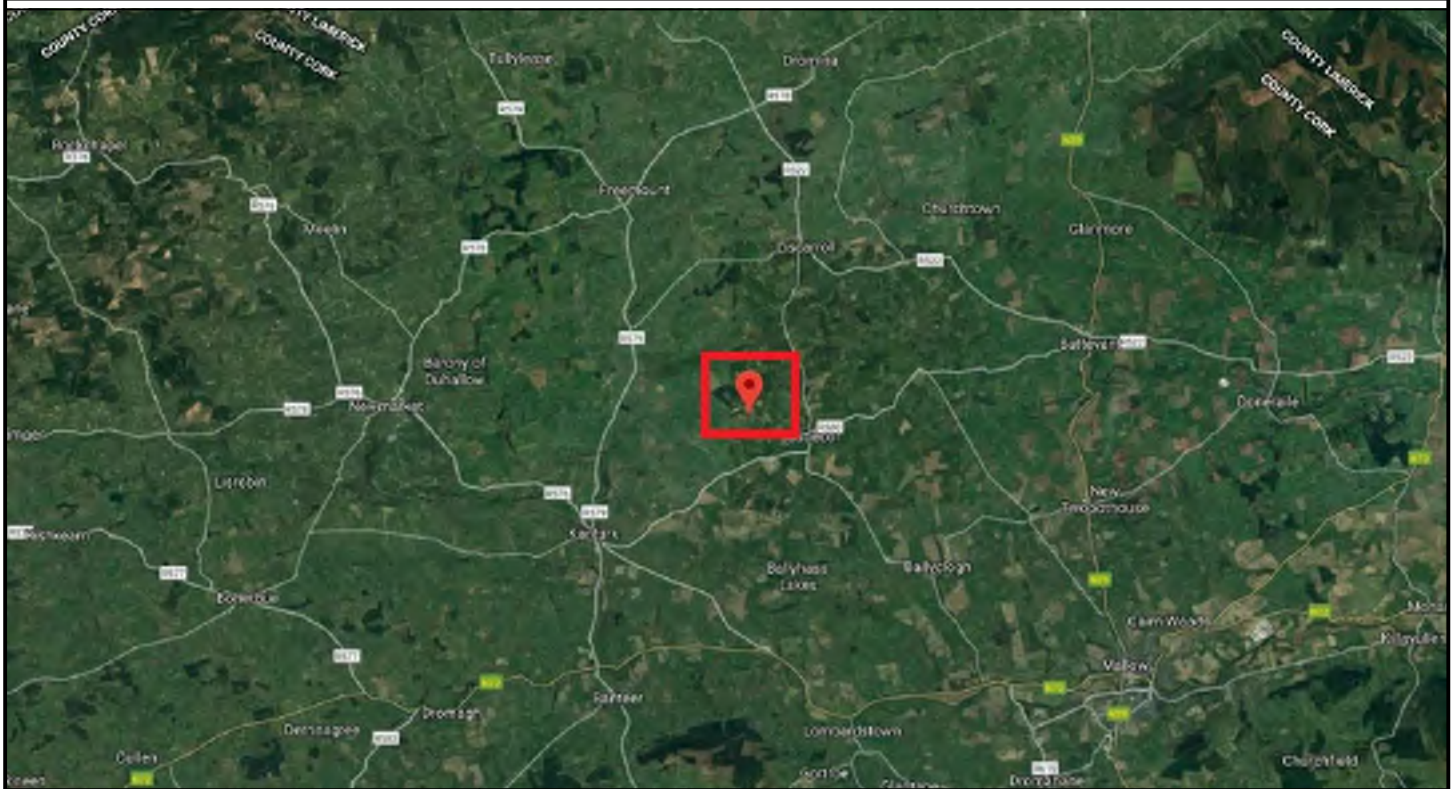
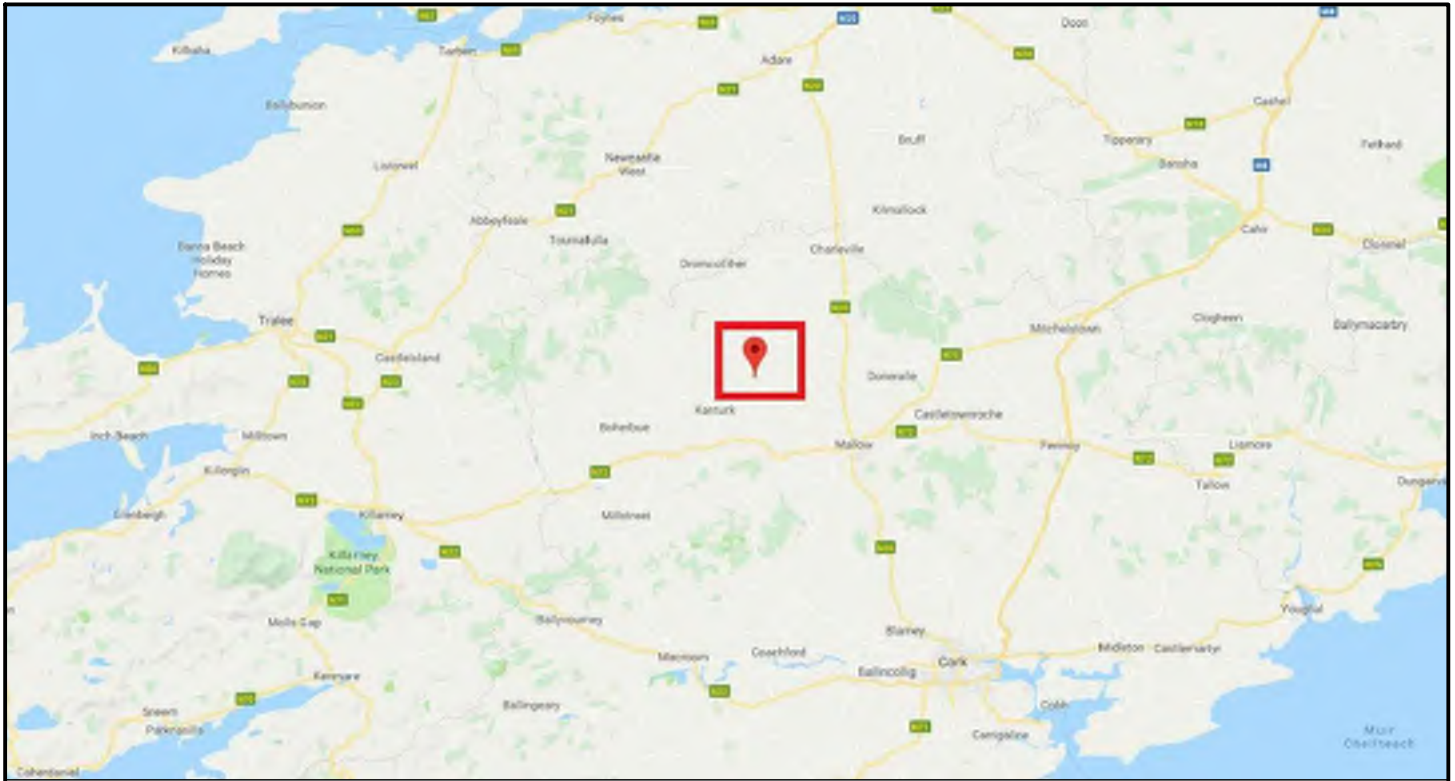
Environmental Protection Agency / An Ghníomhaireacht um Chaomhnú Comhshaoil, Draft Guidance Note on Soil Recovery Waste Acceptance Criteria. December 2017.
<http://www.epa.ie/pubs/consultation/soilrecoveryconsultation/>

Environmental Protection Agency / An Ghníomhaireacht um Chaomhnú Comhshaoil, Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous. 1st June 2015
https://www.epa.ie/pubs/reports/waste/stats/wasteclassification/EPA_Waste_Classification_2015_Web.pdf

Environment Agency UK (2009). Soil Guideline Values (SGVs).
<https://www.gov.uk/government/collections/land-contamination-technical-guidance>

Soil Remediation Circular 2013, Ministry for Environment and Infrastructure, The Hague, Netherlands.
<https://rwsenvironment.eu/subjects/soil/legislation-and/soil-remediation/>

Appendix A Site and Exploratory Hole Location Plans



**Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.**

SITE LOCATION MAPS	
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Image © 2019 Maxar Technologies



Infill Housing Development,
 Dr. Croke Place, Kilbrin,
 Mallow, Co. Cork.

Exploratory Hole Locations	
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019

Appendix B

Trial Pit Log



Project No.: 19-079 - Kilbrin	Project Name: Infill Housing Developments for Cork County Council - Eight Sites	Trial Pit No.: TP1
Co-ordinates: E N	Client: Comhairle Contae Chorcaí / Cork County Council	Sheet 1 of 1
Method: Excavation	Client's Representative: DJF Engineering Services Ltd	Scale: 1:20
Plant: Terex TC29	Ground Level: mOD	Driver: RK
	Date: 30/08/2019	Logger: MN

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m) (Thickness)	Legend	Description	Water
0.30 - 0.70 0.30 - 0.70	B1 D2			(0.15) 0.15 (0.60)		TOPSOIL / MADE GROUND: Soft dark brown slightly sandy gravelly silty Clay with low cobble content and frequent roots and rootlets, moist.	
0.80 - 1.30 0.80 - 1.30	B3 D4			0.75 (0.55)		MADE GROUND: Soft/firm greyish brown slightly sandy gravelly silty Clay with low cobble content, occasional construction debris / rubbish and occasional rootlets, moist. Debris includes concrete, tarmac, plastic and metal fragments. Sand fine to coarse. Gravel fine to coarse, angular to subangular.	0.5
1.30 - 1.75	B5			1.30 (0.45) 1.75		Stiff yellowish brown, becoming by 1.0m light brown, slightly sandy gravelly CLAY/SILT with medium to high cobble content and a trace of rootlets, moist. Sand fine to coarse. Gravel fine to coarse. Gravel and cobbles angular to subangular siltstone and fine grained sandstone.	1.0
						Medium strong dark grey SILTSTONE, distinctly to highly weathered with penetrative light brown discolouration. Discontinuities: Very closely spaced, planar to slightly stepped, slightly rough with dark brown to black iron oxide staining on surfaces. A little brown slightly sandy silty clay infilling on discontinuities. Recovered as angular tabular gravel to cobble and occasional small boulder size fragments (up to 220 x 60 x 20 mm). (Cloone Flagstone Formation)	1.5
						End of trial pit at 1.750m	2.0 2.5 3.0 3.5

Remarks	Water Strikes:		Stability: Slight spalling above 0.75m
	Struck at (m):	Remarks:	
			Width: 1.00 Length: 2.70

Appendix C

Trial Pit Photographs



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019

KILBRIN
TP1



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

T.PIT1

Trial Pit Photographs

Client:

Cork County Council

Engineer:

DJF Engineering Services Ltd

Date:

August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	T.PIT1
	Trial Pit Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019

Appendix D

Slit Trench Log

Appendix E Slit Trench Photographs



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	S.T01
	Slit Trench Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	S.T01
	Slit Trench Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	S.T01
	Slit Trench Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	S.T01
	Slit Trench Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	S.T01
	Slit Trench Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019



Infill Housing Development,
Dr. Croke Place, Kilbrin,
Mallow, Co. Cork.

	S.T01
	Slit Trench Photographs
Client:	Cork County Council
Engineer:	DJF Engineering Services Ltd
Date:	August 2019

Appendix F

Dynamic Probe Logs



Probe Log

Borehole No.

DP1

Sheet 1 of 1

Project Name: Infill Housing Developments for
Cork County Council - Eight Sites

Project No.
19-079 - Kilbrin

Co-ords: -

Hole Type
DP

Location: Dr. Croke Place, Kilbrin, Mallow, Co. Cork

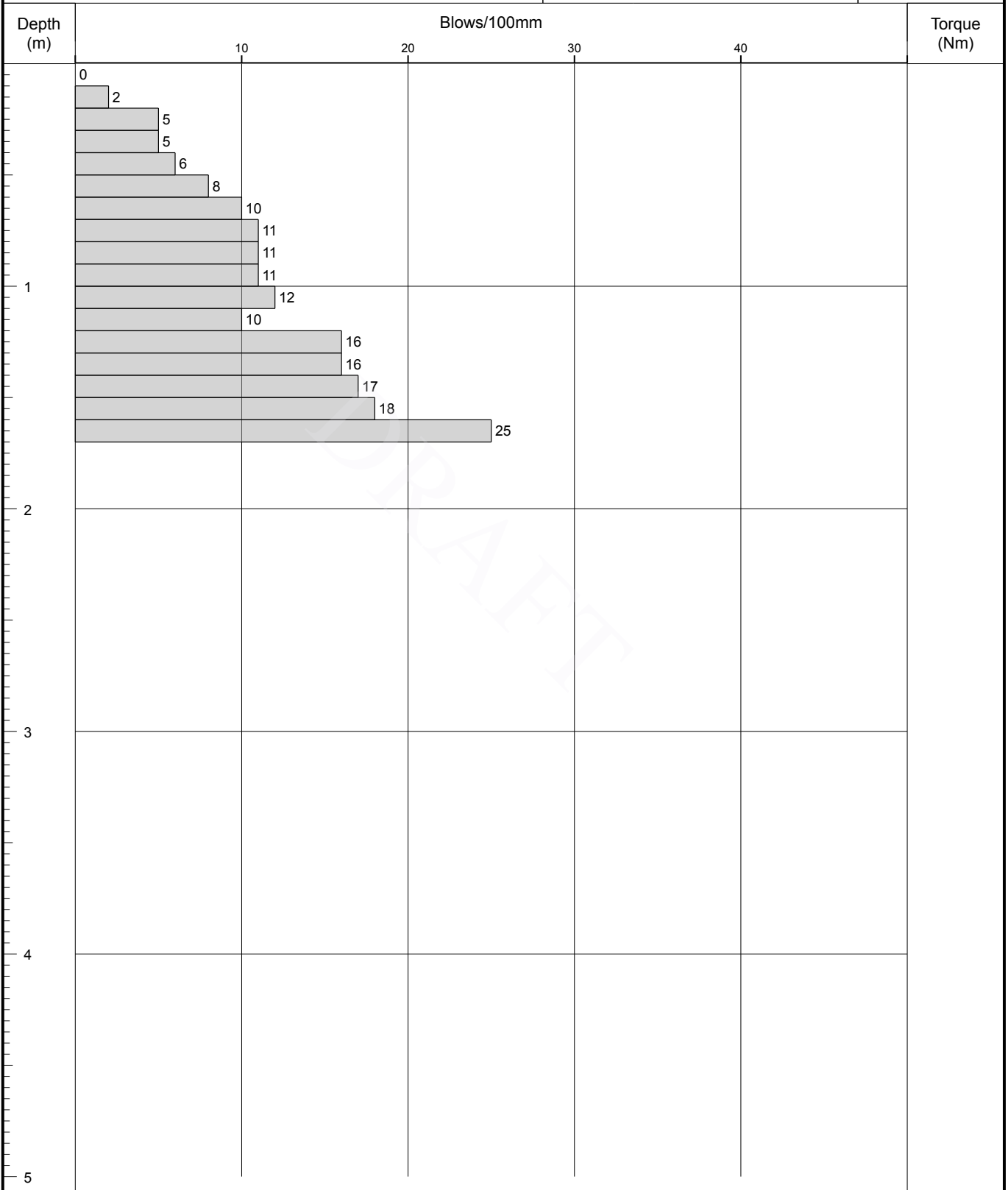
Level:

Scale
1:25

Client: Comhairle Contae Chorcaí / Cork County Council

Dates: 04/09/2019 -

Logged By



Remarks
ADVANCED UNDER OWN WEIGHT FROM G.L TO
0.10M

Fall Height 750

Cone Base Diameter 50

Hammer Wt 64

Final Depth 1.60

Probe Type DPSH-B

Log Scale 1:25





Probe Log

Borehole No.

DP2

Sheet 1 of 1

Project Name: Infill Housing Developments for Cork County Council - Eight Sites

Project No. 19-079 - Kilbrin

Co-ords: -

Hole Type DP

Location: Dr. Croke Place, Kilbrin, Mallow, Co. Cork

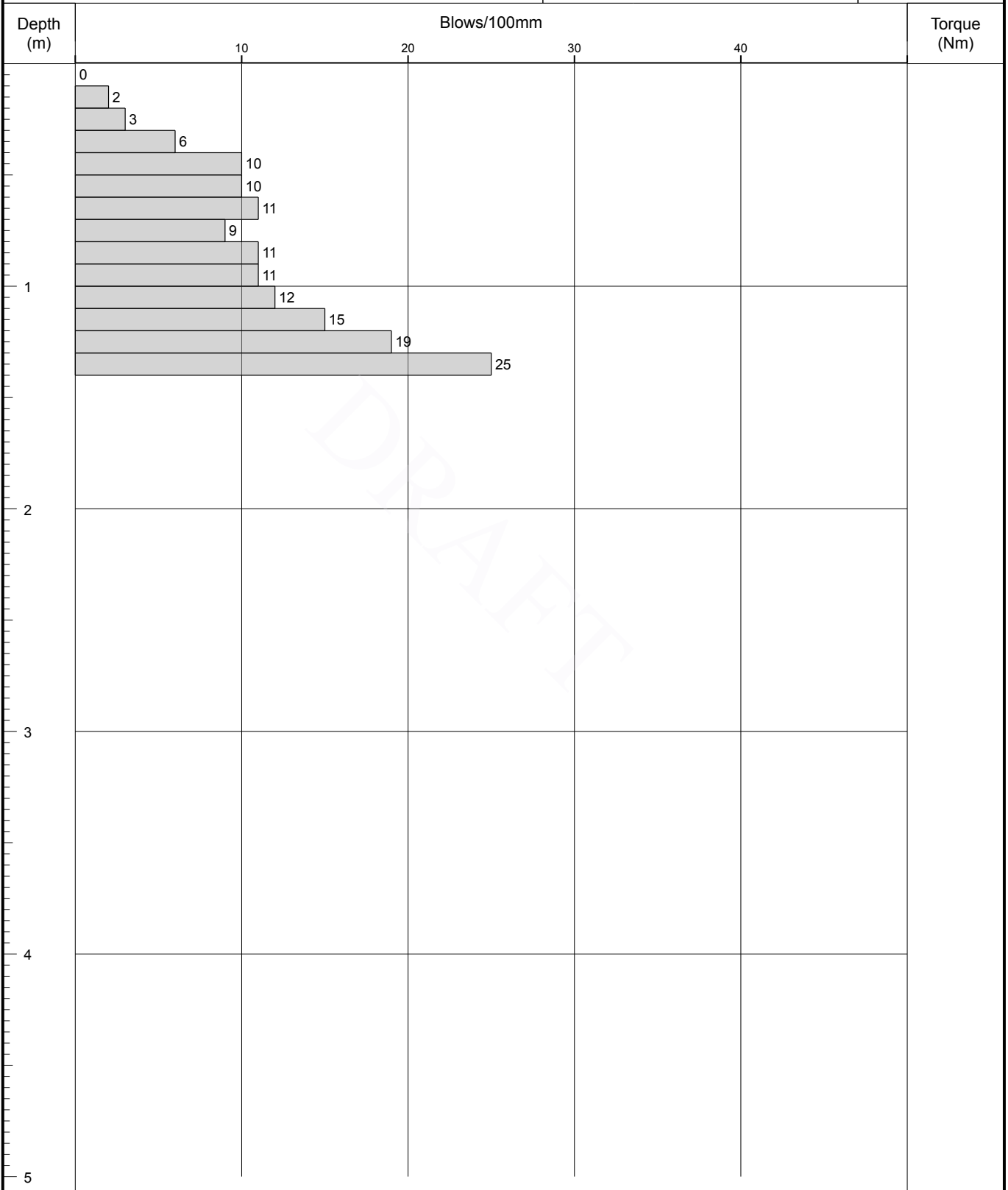
Level:

Scale 1:25

Client: Comhairle Contae Chorcaí / Cork County Council

Dates: 04/09/2019 -

Logged By



Remarks
ADVANCED UNDER OWN WEIGHT FROM G.L TO 0.10M

Fall Height 750

Cone Base Diameter 50

Hammer Wt 64

Final Depth 1.30

Probe Type DPSH-B

Log Scale 1:25



Appendix G

In-situ CBR Test Data

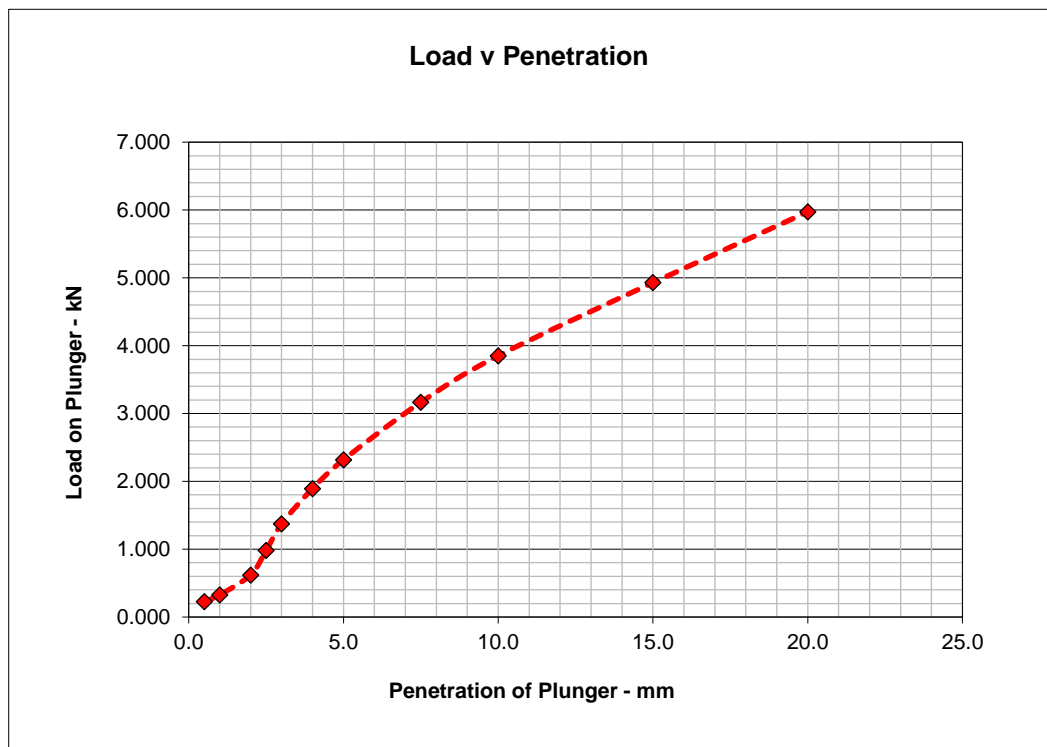
CBR TEST DATA

OCB Geotechnical Ltd

Project Name	Dr. Croke Place, Kilbrin, Co. Cork	Date	17/10/19
Project No.	19-079-6	Operator	DS
Test Location	CBR1	Depth	0.5m

Penetration (mm)	Standard load (kg)	
2.5	1370	$I_{2.5} = \frac{\text{Load at 2.5mm penetration}}{1370} \times 100$
5	2055	
7.5	2630	$I_5 = \frac{\text{Load at 5mm penetration}}{2055} \times 100$
10	3180	
12.5	3600	

Penetration (mm)	Load Reading (Divisions)	Load Reading (kN)	Standard Load (Kg)	Load (Kg)	CBR (%)
0.5	7	0.228		23	
1	10	0.326		33	
2	19	0.620		63	
2.5	30	0.979	1370	100	7.3
3	42	1.371		140	
4	58	1.893		193	
5	71	2.317	2055	236	11.5
7.5	97	3.166		323	
10	118	3.851		393	
15	151	4.928		503	
20	183	5.973		609	



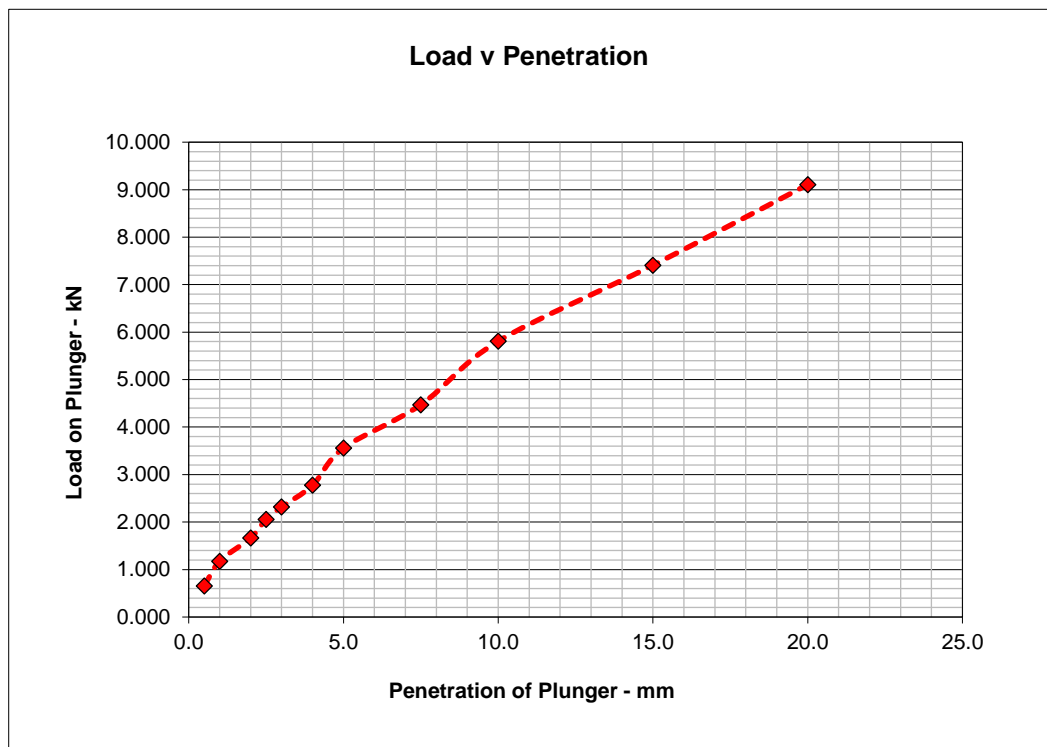
CBR TEST DATA

OCB Geotechnical Ltd

Project Name	Dr. Croke Place, Kilbrin, Co. Cork	Date	17/10/19
Project No.	19-079-6	Operator	DS
Test Location	CBR1	Depth	1.0m

Penetration (mm)	Standard load (kg)	$I_{2.5} = \frac{\text{Load at 2.5mm penetration}}{1370} \times 100$
2.5	1370	
5	2055	$I_5 = \frac{\text{Load at 5mm penetration}}{2055} \times 100$
7.5	2630	
10	3180	
12.5	3600	

Penetration (mm)	Load Reading (Divisions)	Load Reading (kN)	Standard Load (Kg)	Load (Kg)	CBR (%)
0.5	20	0.653		67	
1	36	1.175		120	
2	51	1.664		170	
2.5	63	2.056	1370	210	15.3
3	71	2.317		236	
4	85	2.774		283	
5	109	3.557	2055	363	17.7
7.5	137	4.471		456	
10	178	5.809		592	
15	227	7.409		755	
20	279	9.106		929	



Appendix H Geotechnical Soil Laboratory Test Results



LABORATORY TEST REPORT

DETERMINATION OF MOISTURE CONTENT - BS 1377 PART 2 : 1990 - Oven Drying Method

Project:	Kilbrin, Cork	Job No.:	PL
Client:	OCB Geotechnical Unit 1 Carrigogna Midleton Co Cork	Lab Ref. No.:	ST 91345
Project No:	1909-127	Date Received:	18/09/2019
Order No:	19-079	Date Reported:	26/09/2019
Originator:	Mark Nyhan	Date Tested:	25/09/2019
		Material:	Soil
		Visual Description:	Light Gravelly Clay
		Specification	Client

Sample Details

TP1 - Sample 4 Type D

Certificate of sampling:	No	Location	TP1 0.8-1.3m
Supplier:	Client Info	Date of Sampling:	Client Info.
Source:	Client Info.	Sampled By:	Client
Sampling Reason:	Request		

Results

TEST	RESULT	SAMPLE No.
Moisture Content (%)	16.2	TP1 - Sample 4 Type D

Tested in accordance with the above specifications

Approved Signature
JAMES FISHER TESTING SERVICES (IRELAND) LTD.

James Ward, Operations Manager





LABORATORY TEST REPORT

To determine the Plastic Limit, Liquid Limit and Plasticity Index of a sample
in accordance with BS 1377 : Part 2 : 1990 - Cl. 4.4, 5.3

Project:	Kilbrin, Cork	Job No.:	19-079
Client:	OCB Geotechnical Unit 1 Carrigogna Midleton Co Cork	Lab Ref. No.:	ST 91346
Order No.:	1909-127	Date Received:	18/09/2019
Originator:	Mark Nyhan	Date Reported:	07/10/2019
		Date Tested:	03/10/2019
		Material:	Soil
		Specification:	Client

Sample Details

TP1 Sample 3 Type B

Supplier:	Client Info	Date of Sampling:	Client Info
Source:	Client Info.	Sampled By:	Client
Sample Location:	TP1 0.8-1.3m	Sampling Reason	Request

Results

Sample Preparation Method	Washed
Liquid Limit (%)	55
Plastic Limit (%)	36
Plasticity Index	19

Tested in accordance with the above specifications

Approved Signature

JAMES FISHER TESTING SERVICES (IRELAND) LTD.

James Ward, Operations Manager





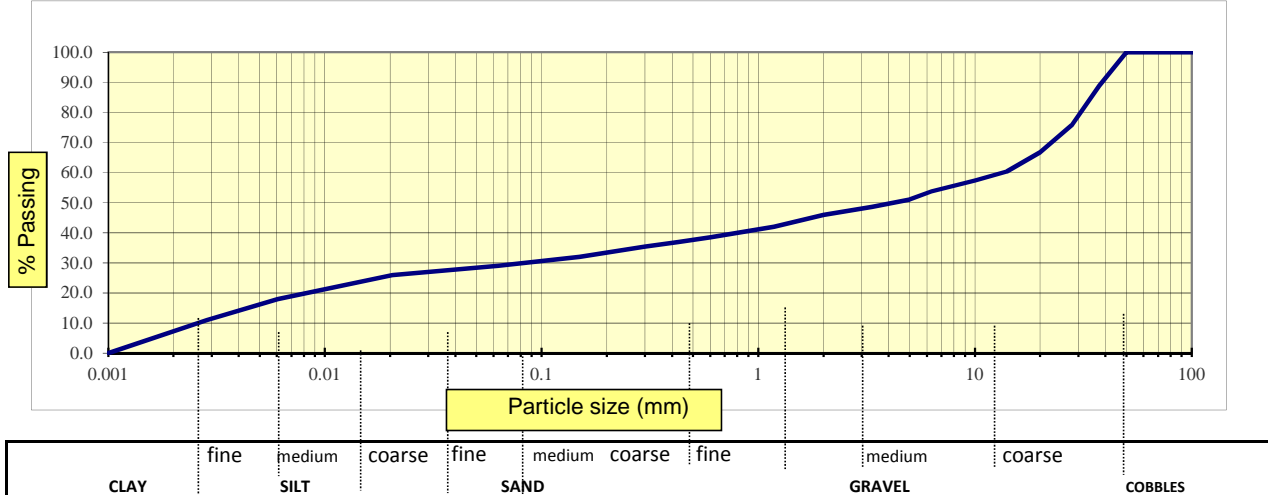
LABORATORY TEST REPORT

Determination of Particle Size Distribution - BS 1377 : Part 2 : 1990

Determination of Particle Size Distribution (Hydrometer Sedimentation) - BS 1377 : Part 2 : 1990 Cl. 9.5

Project:	Kilbrin, Cork	Job No:	19-079
Client:	OCB Geotechnical Unit 1 Carrigogna Midleton Co Cork	Lab Ref No.:	ST 91347
Order No:	1909-127	Date Received:	18/09/2019
Originator:	Mark Nyhan	Date Reported:	01/10/2019
		Date Tested:	27/09/2019
		Material:	Soil
		Visual Description	Light Gravelly Clay

Client Ref.	TP1 Type B Sample 3	BS Sieve Size	% Passing	Specification
Location:	TP1 Type B Sample 3	125 mm	100	
Supplier:	Client Info.	100 mm	100	
Source:	Client Info.	90 mm	100	
Depth (m):	0.8-1.3m	75 mm	100	
Sampling Reason:	Client Request	63 mm	100	
Sampled By:	Client	50 mm	100	
Specification:	Client	37.5 mm	89	
Preparation Method:	Without Organics Preparation	28 mm	76	
Notes:	Disturbed sample from cleanout	20 mm	67	
		14 mm	60	
		10 mm	57	
		6.3 mm	54	
		5 mm	51	
		3.35 mm	49	
		2 mm	46	
		1.18 mm	42	
		0.6 mm	39	
		0.425 mm	37	
		0.3 mm	35	
		0.15 mm	32	
		0.063 mm	29	
		0.0205 mm	26	
		0.0060 mm	18	
		0.0029 mm	11	



Tested in accordance with BS 1377: Part 2 : 1990 Clause 9.2 and 9.5
Sedimentation by Hydrometer - Not UKAS

James Ward

Approved Signature
JAMES FISHER TESTING SERVICES (IRELAND) LTD.

James Ward, Operations Manager



LABORATORY TEST REPORT

To determine the pH Value of Soils
in accordance with BS 1377 : Part3 : 1990 - Clause 9, Electrometric Method

Project:	Kilbrin, Cork	Job No.:	1909-127
Client:	OCB Geotechnical Unit 1 Carrigogna Midleton Co. Cork	Lab Ref. No.:	ST 91348
Order No.:	19-079	Date Received:	18/09/2019
Originator:	Mark Nyhan	Date Reported:	09/10/2019
		Material:	Soil
		Date Tested:	09/10/2019
		Specification:	Client

Sample Details **TP1 0.8-1.3m Sample 3 Type B**

Supplier:	Client Info.	Date of Sampling:	Client Info
Source:	Client Info.	Sampled By:	Client
Sample Location:	TP1 0.8-1.3m	Sampling Reason:	Routine

Results

Parameter	RESULT
pH Value	7.7

Comments:

* 95% Confidence Limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Tested in accordance with the above specifications
Subcontracted to a laboratory UKAS accredited for this testing



PP

Approved Signature
JAMES FISHER TESTING SERVICES (IRELAND) LTD.

James Ward, Operations Manager





LABORATORY TEST REPORT

To determine the Sulphate Aqueous Extract as SO4
in accordance with TRL-477 (Water Soluble Sulphate)

Project:	Kilbrin, Cork	Job No.:	1909-127
Client:	OCB Geotechnical Unit 1 Carrigogna Midleton Co. Cork	Lab Ref. No.:	ST 91348
Order No.:	19-079	Date Received:	18/09/2019
Originator:	Mark Nyhan	Date Reported:	09/10/2019
		Material:	Soil
		Date Tested:	09/10/2019
		Specification:	Client

Sample Details

TP1 0.8-1.3m Sample 3 Type B

Supplier:	Client Info	Date of Sampling:	Client Info.
Source:	Client Info	Sampled By:	Client
Sample Location:	TP1 0.8-1.3m	Sampling Reason:	Routine

Parameter	RESULT
Water Soluble Sulfate Content (SO4) (mg/l)	14

Comments:

None

Tested in accordance with the above specifications
Subcontracted to a laboratory UKAS accredited for this testing

PP

Approved Signature
JAMES FISHER TESTING SERVICES (IRELAND) LTD.

James Ward, Operations Manager



Appendix I Environmental Laboratory Test Results



Final Report

Report No.: 19-31628-1

Initial Date of Issue: 02-Oct-2019

Client Environmental Laboratory Services Ltd

Client Address: Acorn Business Campus
Mahon Industrial Park
Blackrock
Cork
Ireland

Contact(s): Emer Kearney
Results

Project OCB GEO - Kilbrin

Quotation No.: Q19-16857 **Date Received:** 20-Sep-2019

Order No.: 5864 **Date Instructed:** 20-Sep-2019

No. of Samples: 1

Turnaround (Wkdays): 5 **Results Due:** 26-Sep-2019

Date Approved: 02-Oct-2019

Approved By:



Details: Amy Parekh-Pross, Technical Projects
Manager

Project: OCB GEO

Client: Environmental Laboratory Services Ltd	Chemtest Job No.:		19-31628		
Quotation No.: Q19-16857	Chemtest Sample ID.:		892282		
Order No.: 5864	Client Sample Ref.:		164687/006		
	Client Sample ID.:		Kilbrin		
	Sample Location:		TP01		
	Sample Type:		SOIL		
	Top Depth (m):		0.30		
	Bottom Depth (m):		0.70		
	Asbestos Lab:		DURHAM		
Determinand	Accred.	SOP	Units	LOD	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-
Moisture	N	2030	%	0.020	17
Arsenic	U	2450	mg/kg	1.0	14
Barium	U	2450	mg/kg	10	32
Cadmium	U	2450	mg/kg	0.10	0.28
Chromium	U	2450	mg/kg	1.0	21
Molybdenum	U	2450	mg/kg	2.0	< 2.0
Antimony	N	2450	mg/kg	2.0	< 2.0
Copper	U	2450	mg/kg	0.50	20
Mercury	U	2450	mg/kg	0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	26
Lead	U	2450	mg/kg	0.50	15
Selenium	U	2450	mg/kg	0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	44
Chromium (Trivalent)	N	2490	mg/kg	1.0	21
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Total Organic Carbon	U	2625	%	0.20	[A] 1.7
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[A] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[A] < 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	[A] < 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[A] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[A] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[A] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[A] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[A] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[A] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[A] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[A] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] < 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[A] < 1.0

Project: OCB GEO

Client: Environmental Laboratory Services Ltd	Chemtest Job No.:		19-31628		
Quotation No.: Q19-16857	Chemtest Sample ID.:		892282		
Order No.: 5864	Client Sample Ref.:		164687/006		
	Client Sample ID.:		Kilbrin		
	Sample Location:		TP01		
	Sample Type:		SOIL		
	Top Depth (m):		0.30		
	Bottom Depth (m):		0.70		
	Asbestos Lab:		DURHAM		
Determinand	Accred.	SOP	Units	LOD	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[A] < 10
Benzo[j]fluoranthene	N	2700	mg/kg	0.10	[A] < 0.10
Total Of 17 PAH's	N	2700	mg/kg	2.0	[A] < 2.0
Benzene	U	2760	µg/kg	1.0	[A] < 1.0
Toluene	U	2760	µg/kg	1.0	[A] < 1.0
Ethylbenzene	U	2760	µg/kg	1.0	[A] < 1.0
m & p-Xylene	U	2760	µg/kg	1.0	[A] < 1.0
o-Xylene	U	2760	µg/kg	1.0	[A] < 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	[A] < 1.0
PCB 28	U	2815	mg/kg	0.010	[A] < 0.010
PCB 52	U	2815	mg/kg	0.010	[A] < 0.010
PCB 90+101	U	2815	mg/kg	0.010	[A] < 0.010
PCB 118	U	2815	mg/kg	0.010	[A] < 0.010
PCB 153	U	2815	mg/kg	0.010	[A] < 0.010
PCB 138	U	2815	mg/kg	0.010	[A] < 0.010
PCB 180	U	2815	mg/kg	0.010	[A] < 0.010
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	[A] < 0.10

Results - Single Stage WAC

Project: OCB GEO

Chemtest Job No: 19-31628				Landfill Waste Acceptance Criteria			
Chemtest Sample ID: 892282				Limits			
Sample Ref: 164687/006							
Sample ID: Kilbrin							
Sample Location: TP01							
Top Depth(m): 0.30							
Bottom Depth(m): 0.70							
Sampling Date (\$):							
Determinand	SOP	Accred.	Units		Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon					3	5	6
Loss on Ignition					--	--	10
Total BTEX					6	--	--
Total PCBs (7 congeners)					1	--	--
TPH Total WAC (Mineral Oil)					500	--	--
Total (of 17) PAHs					100	--	--
pH					--	>6	--
Acid Neutralisation Capacity					--	To evaluate	To evaluate
Euate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1450	U	0.0044	< 0.050	0.5	2	25
Barium	1450	U	0.0039	< 0.50	20	100	300
Cadmium	1450	U	0.00034	< 0.010	0.04	1	5
Chromium	1450	U	0.032	0.32	0.5	10	70
Copper	1450	U	0.0069	0.069	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0026	< 0.050	0.5	10	30
Nickel	1450	U	0.0055	0.055	0.4	10	40
Lead	1450	U	0.0032	0.032	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7	5
Selenium	1450	U	0.020	0.20	0.1	0.5	7
Zinc	1450	U	0.0044	< 0.50	4	50	200
Chloride	1220	U	10	100	800	15000	25000
Fluoride	1220	U	0.42	4.2	10	150	500
Sulphate	1220	U	5.4	54	1000	20000	50000
Total Dissolved Solids	1020	N	85	850	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	21	210	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
892282	164687/006	Kilbrin	TP01		A	Amber Glass 250ml
892282	164687/006	Kilbrin	TP01		A	Miscellaneous

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8- C10, >C10-C12, >C12-C16, >C16- C21, >C21- C35, >C35- C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
- < "less than"
- > "greater than"
- \$ This information has been supplied by the client and can affect the integrity of test data.

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

CORK COUNTY COUNCIL

PLANNING & DEVELOPMENT & FORESHORE (AMENDMENT) ACT 2022 PLANNING & DEVELOPMENT ACT 2000 (as amended)

Notice is hereby given, pursuant to the provisions of the Planning and Development and Foreshore (Amendment) Act 2022 and in accordance with the requirements of the Planning and Development (Section 179A) Regulations 2023 that Cork County Council propose to undertake the following development:

SCHEDULE

LOCATION	NATURE & EXTENT OF DEVELOPMENT	OFFICES AT WHICH PLANS AND PARTICULARS MAY BE INSPECTED
Lands at Dr. Croke Place, Garranmacgarrett, Kilbrin In the townland of: Garranmacgarrett, Co. Cork.	<ul style="list-style-type: none">• The construction of 2no. two storey – two bed residential units• New parking area• Hard landscaping, including footpaths• Soft landscaping including green areas and planting• Connection to public utilities.• All associated site works.	Housing Directorate, Floor 4, County Hall, Cork
		Cork County Council, Kanturk Mallow Municipal District Offices, Annabella, Mallow, Co. Cork

The plans and particulars may be inspected as follows:

1. By visiting the stated offices above.
2. Online at the following address:
<https://www.corkcoco.ie/en/resident/planning-and-development/public-consultations>
3. On receipt of a written request the Council will post or email a copy of the plans and particulars to a member of the public who wishes to receive a copy.
4. The request should be headed: 'Housing Scheme at Dr. Croke Place, Kilbrin', and addressed to the Housing Directorate, Cork County Council, Floor 4 Co. Hall, Cork or emailing part8housing@corkcoco.ie, stating whether you wish to have the plans etc. sent in hard copy form or by email.

As per Article 81A of the Planning and Development (Section 179A) Regulations 2023 an Environmental Impact Assessment (EIA) screening determination has been made and concludes that

there is no real likelihood of significant effects on the environment arising from the proposed development once standard industry environmental management systems are in place. A determination has been made that an **EIA is not required**. A determination has been made that the proposed development **is not required to undergo an appropriate assessment (AA)** under the Habitats Directive.

As per Article 81A a person may question the validity of any decision of the planning authority by way of an application for judicial review, under Order 84 of the Rules of the Superior Courts (S.I. No. 15 of 1986), in accordance with sections 50 and 50A of the Act.

Plans and particulars of the proposed development will be available for inspection and/or purchase at the locations outlined above (see Point No. 1 above) on each day during which the said offices are open for the transaction of business (excluding Bank Holidays) for a period beginning on 16th February 2024 and ending on 17th April 2024.

**Director of Services, Housing Directorate,
Cork County Council**

It should be noted that the Freedom of Information Act applies to all records held by Cork County Council

SITE NOTICE

CORK COUNTY COUNCIL

PLANNING & DEVELOPMENT & FORESHORE (AMENDMENT) ACT 2022 PLANNING & DEVELOPMENT ACT 2000 (as amended)

Notice is hereby given, pursuant to the provisions of the Planning and Development and Foreshore (Amendment) Act 2022 and in accordance with the requirements of the Planning and Development (Section 179A) Regulations 2023 that Cork County Council propose to undertake the following development:

SCHEDULE

LOCATION	NATURE & EXTENT OF DEVELOPMENT	OFFICES AT WHICH PLANS AND PARTICULARS MAY BE INSPECTED
Lands at Dr. Croke Place, Garranmacgarrett, Kilbrin in the townlands of: Garranmacgarrett, Co. Cork.	<ul style="list-style-type: none">• The construction of 2no. two storey – two bed residential units• New parking area• Hard landscaping, including footpaths• Soft landscaping including green areas and planting• Connection to public utilities.• All associated site works.	<p>Housing Directorate, Floor 4, County Hall, Cork</p> <hr/> <p>Cork County Council, Kanturk Mallow Municipal District Offices, Annabella, Mallow, Co. Cork</p>

The plans and particulars may be inspected as follows:

1. By visiting the stated offices above.
2. Online at the following address:
<https://www.corkcoco.ie/en/resident/planning-and-development/public-consultations>
3. On receipt of a written request the Council will post or email a copy of the plans and particulars to a member of the public who wishes to receive a copy.
4. The request should be headed: ‘Housing Scheme at Dr. Croke Place, Kilbrin’, and addressed to the Housing Directorate, Cork County Council, Floor 4 Co. Hall, Cork or emailing part8housing@corkcoco.ie, stating whether you wish to have the plans etc. sent in hard copy form or by email.

As per Article 81A of the Planning and Development (Section 179A) Regulations 2023 an Environmental Impact Assessment (EIA) screening determination has been made and concludes that there is no real likelihood of significant effects on the environment arising from the proposed development once standard industry environmental management systems are in place. A determination has been made that an **EIA is not required**. A determination has been made that the proposed development **is not required to undergo an appropriate assessment (AA)** under the Habitats Directive.

As per Article 81A a person may question the validity of any decision of the planning authority by way of an application for judicial review, under Order 84 of the Rules of the Superior Courts (S.I. No. 15 of 1986), in accordance with sections 50 and 50A of the Act.

Plans and particulars of the proposed development will be available for inspection and/or purchase at the locations outlined above (see Point No. 1 above) on each day during which the said offices are open for the transaction of business (excluding Bank Holidays) for a period beginning on 16th February 2024 and ending on 17th April 2024.

**Director of Services, Housing Directorate,
Cork County Council**

It should be noted that the Freedom of Information Act applies to all records held by Cork County Council