15-MAR-2022

Author Barry O'Neill

Project ref 2020_0205

Purpose Environmental Impact Assessment

Version P.01.03

Building Services
Consulting Engineers
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ENVIRONMENTAL IMPACT ASSESSMENT
UTILITY REPORT

655nr DWELLING DEVELOPMENT
At BOHERBOY
SAGGART
Co. Dublin

Architect Davey Smith Architects
McCrossan O'Rourke Manning Architects

Services Engineers BBSC Consulting Engineers

Planning Consultant Armstrong Fenton Associates

On Behalf of Kelland Homes Ltd.
Durkin Estates Ltd

Revision	Date of Issue	Reason For Issue	By	Chk'd
P.01.00	мр а !w нлнн	PLANNING	BON	BON

PROPOSED DEVELOPMENT

Kelland Homes Ltd and Durkan Estates Ireland Ltd are applying to An Bord Pleanála for permission for a strategic housing development at a site at Boherboy, Saggart, County Dublin. To the immediate north of the site is the Carrigmore residential estate, to the west are agricultural lands and a single dwelling, to the east is the Corbally residential estate while to the south is the Boherboy Road. The proposed application represents the development of the entire Boherboy Neighbourhood as identified in the Fortunestown Local Area Plan (2012).

The development will consist of 655 no. dwellings, comprised of 257 no. 2, 3 & 4 bed, 2 & 3 storey detached, semi-detached & terraced houses, 152 no. 1, 2 & 3 bed duplex units in 17 no. 2-3, 3-4 & 4 storey blocks, and 246 no. 1, 2 & 3 bed apartments in 9 no. buildings ranging in height from 2, 2-5, 4-5 & 5 storeys, and a 2 storey crèche (693m²).

Access to the development will by via one no. vehicular access point from the Boherboy Road, along with proposed upgrade works to Boherboy Road to include the provision of a roadside footpath along the front of the site at the Boherboy Road, continuing eastwards to the junction with the N81 Blessington Road (for an overall distance of c.370m). The proposed development also provides for pedestrian and cyclist connectivity to the adjoining Carrigmore Park to the north-east, and vehicular, pedestrian and cyclist connections to adjoining developments at Corbally Heath to the east and Carrigmore Green to the north.

The proposed development provides for (i) all associated site development works above and below ground, including surface water attenuation & an underground foul sewerage pumping station at the northern end of the site, (ii) public open spaces (c. 3Ha), including alongside the Corbally Stream, which will accommodate the provision of pedestrian / cyclist links to Carrigmore Park to the north-east, (iii) communal open spaces (c. 6062m²), (iv) hard and soft landscaping and boundary treatments, (v) undercroft, basement & surface car parking (919 no. spaces including EV parking), (vi) bicycle parking (914 no. bicycle parking spaces), (vii) bin & bicycle storage, (viii) public lighting, and (ix), plant (M&E), utility services & 5 no. ESB sub-stations, all on an overall application site area of 18.3ha. In accordance with the Fortunestown Local Area Plan (2012) an area of approx. 1.42ha within the site is reserved as a future school site.

Contents

1 PURPOSE OF REPORT

Kelland Homes Ltd and Durkan Estates Ireland Ltd. appointed BBSC, January 2020 to study the impact on the Existing Utility

The development will be over multiple phases.

It shall comprise Apartments, landlord areas, civic amenity, creche as outlined in Section 1 above

2 POTABLE WATER

The requirements for potable drinking water shall be EN806 all parts, Irish Water Standards.

Refer to the Civil and Structural Engineers for details of the site water distribution and expected water usage.

However, in order to comply with Irish Waters Terms and Conditions, each unit or dwelling will require 227 litres of potable water to EN806 all parts per unit.

Irish Waters forms for applications shall be processed and application applied for as part of the planning conditions and as a notified body all aspects of their requirements for early utility planning shall be complied with the form being submitted on or shortly after the lodgement of the planning permission process. (https://www.water.ie/connections/get-connected/housing-development.xml)

The daily storage rate is determined at 150m³ and an expected average hourly demand of 21 l/s

In addition to the above figures allowance for fire hydrant flow rates shall also be included as per the Local Fire Fighting Requirements and as per Part B requirements, in the order of 25 to 35l/s (86 to 126m³/hr) range to Irish Water network modelling requirements.

The development will be supplied with 2 or more connections to each phase and tie in with the existing Irish Water network grid, each connection to be metered. Multiple connections will be required for fire fighting and daily demand requirements.

Water pipes, valves, meters shall all be to EN806 with plastic MDPE for in ground distribution and PEX-AL-PEX above ground distribution so.

Refer to Appendix 1 for details of calculations related to potable water requirements

3 FOUL AND WASTE WATER

Refer to the Civil and Structural Engineers for details of the site foul and waste water distribution and expected flow rates and usage.

Irish Waters forms for applications shall be processed and application applied for as part of the planning conditions and as a notified body all aspects of their requirements for early utility planning shall be complied with the form being submitted on or shortly after the lodgement of the planning permission process. (https://www.water.ie/connections/get-connected/housing-development.xml)

4 NATURAL GAS

The development is expected to be supplied with Natural Gas for cooking requirements.

Gas shall enter the site at a number of locations to Bord Gais requirements.

The gas may require an Area Gas step down facility and is subject to Bord Gais Network analysis, which is beyond scope of this study.

Gas shall be in road, to IS 813, IS 820 requirements as per Bord Gais requirements.

5 TELECOMS

Telecoms shall be routed in ground from a road side cabinets, secure, to each unit within the development. It is expected to provide Fibre to each unit or apartment and run from the nodes to dwelling in dedicated ducts or cable trays. The design is vendor neutral.

Manholes, cabinets shall be provided as required to allow for a one to one connection with both radial ring and spurs to the dwellings being provided.

Refer to the Telecommunication Assessment Report.

6 ELECTRICITY

The entire electrical installation, within buildings, street furniture etc. will be to IS10101 National rules of

The ESB network rules regarding housing estates shall be adhered to.

Power shall enter on a ring basis from 2 or more locations, to ESB final design. The Power shall be stepped down using substations or substation kiosks to suit.

From the substation power shall be feed via 125 wavin ducts to mini pillars and then feed to each dwelling. Apartments shall be feed from the sub stations to a meter cabinet with CT cut outs to suit and then feed via cable trays to each dwelling.

6.1 DWELLING LOADINGS

Each unit shall be allowed 16 KVA as per ESB recommendations to allow for heat pumps used for space heating and Electrical Vehicle charging.

For load estimation purposes each block of houses shall be feed from localised mini pillars, providing power up to 12 houses.

Refer to Appendix 2 for details of block loadings

In summary Load of between 2.8MVA and 3.5MVA is expected subject to ESB standard load estimation internal modelling

6.2 ELECTRICAL CHARGING

In additional a fast electrical charger for suitable vehicles shall be provided on 1 per 10 remaining car parking spaces to be located at suitable locations (to ESB or others agreements).

Ducting in paving shall be allowed for running to manholes to facilitate the future install of same.

The following is contained in the South County Development Plan 2016-2022

Section / Policy	Commentary pertaining to proposed development
11.4.3 CAR PARKING FOR ELECTRIC VEHICLES The Electric Transport Programme (2008) contains a target for 10% of the national road transport fleet to be electrically powered by 2020. To facilitate the use of electrically operated cars and bicycles in line with National Policy, all developments shall provide facilities for the charging of battery operated cars at a rate of up to 10% of the total car parking spaces. The remainder of the parking spaces should be constructed to be capable of accommodating future charging points, as required. The Planning Authority will also consult with ESB Networks to continue the roll-out of Rapid Charge points throughout the County. Particular emphasis will be placed on the provision of such spaces within centres of commercial activity, as outlined by Movement Framework Plans, Area Access Plans and other strategic planning documents.	1 dwelling 1 car parking space spaces shall be provided with car chargers, 3.7kw in size Community Provision 1 in 20 of visitor car parking spaces shall be provided with car chargers, 22kw in size located on a neighbour level 20+ spaces, subject to analysis by ESB Networks, Tesla etc. will be provided with or provision for future fast charging in the range of 50 to 350kw. These chargers are commercial in nature and exceed ESB guidelines for domestic levels of connection Note that latest generation of chargers require 350kw to be supplied as fast as the vehicle can accept Ducting will be provided for all site car parking in accordance with Part L 2021 section 1.4.6.

6.3 SUB STATIONS

Based on the loads above some 7 to 10 sub stations of between 350KVA and 750KVA will be required to be supplied subject to ESB calculations, diversity, geography, routing, redundancy etc.

Refer to Appendix 3 for proposed location of Sub Stations.

6.4 METERING

All dwellings and other units, streetlights shall be metered in accordance with ESB metering requirements

Apartments, Maisonette common areas will be metered on an block by block basis with each block having a dedicated meter room.

6.5 EXISTING OVERHEAD LINES

Existing overhead lines to be diverted to in ground ducts with access via standard arrangements being provided, wayleaves etc. to ESBN requirements for same in accordance with

South Dublin County Development Plan 2016-2022 IE4 Objective 2: To co-operate with the relevant agencies to facilitate the undergrounding of all electricity, telephone and television cables in urban areas wherever possible, in the interests of visual amenity and public health.

7 STREET LIGHTING

Street lighting shall be suppled in accordance with local County Councils Street lighting requirements, namely the South Dublin County Councils SDCC Public Lighting Specification.

The final level of lighting shall be agreed prior to commencement of works with the Public Lighting section of SDCC.

Power shall be run generally in paving and under road crossings to suit design.

Power shall be feed in accordance with ESB requirements for unmetered street lighting, however meters shall be provided to suit requirements.

Street Lighting will by means of poles and LED lights.

Zebra crossings, traffic lights shall be supplied with power and laid out to NRA rules and standards for same, to Civil Engineers details.

8 WAY LEAVES

Where any way leave is existing, following grant of planning permission, discussions and agreement with the relevant utility shall be entered into so as to ensure the safety and security of supply.

9 PRINCIPLE STANDARDS

Building Regulations

- Technical Guidance Documents as A through M as published and set out in Law, Department of the Environment, relevant edition relates to date of publication and date of building.

Potable Water

- Irish Water Publication, Guide to connect Water and wastewater Business, housing and mixed use developments
- BS EN 806-1:2000. Specifications for installations inside buildings conveying water for human consumption. General.
- BS EN 806-2:2005. Specifications for installations inside buildings conveying water for human consumption. Design
- BS EN 806-3:2006. Specifications for installations inside buildings conveying water for human consumption. Pipe sizing. Simplified method
- BS EN 806-4:2010. Specifications for installations inside buildings conveying water for human consumption. Installation
- BS EN 806-5:2012. Specifications for installations inside buildings conveying water for human consumption. Operation and maintenance

Foul And Waste Water (M&E only, above ground)

- Part F and G of the building Regulations.

Natural Gas

- RGII - Registered gas installers technical guidance document 2017
- IS 813:2014 Domestic gas installations
- IS 820:2010 Non-domestic gas installations
- Gas Network Ireland publication - Guidelines for Designers and Builders – Domestic Sites

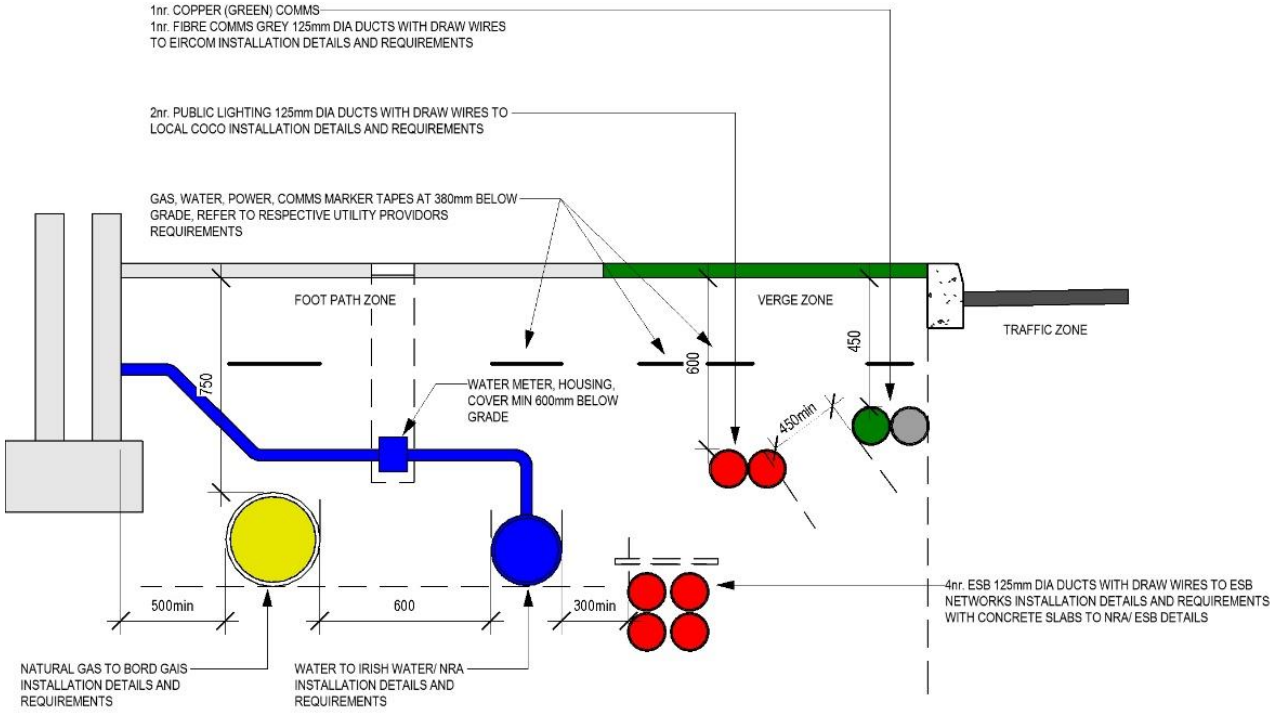
General Electrical Standards

- IS10101 National Rules for Electrical Installation
- ESB Publication, Housing Schemes: Guidebook for ESB Networks Standards for Electrical Services

Street Lighting

- SI 291 of 2013
- IS EN 13201-2:2015 Road Lighting – Part 2
- BS 5489-1:2013 Code of Practice for the Design of Road Lighting Part 1
- ESB Publication, Housing Schemes: Guidebook for ESB Networks Standards for Electrical Services

10 SITE SERVICES CO-ORDINATION DRAWINGS (TYPICAL)



NOTES
1. BUILDER, MECHANICAL, ELECTRICAL CONTRACTORS TO CONFIRM ALL SPACING WITH UTILITY PROVIDORS PRIOR TO INSTALLATION
2. SUBMIT ALL DETAILS TO DESIGN TEAM FOR APPROVALS
3. REFER TO NRA DOCUMENTS, ESB, IRISH WATER, TELCOMS PROVIDORS SPECIFICATIONS, DRAWINGS, VENDORS DETAILS PRIOR TO INSTALLATION WORKS
4. ALL DUCTS BELOW GROUND TO CONFORM TO IS 370:2007
5. ALL CONTRACTORS, PRIOR TO DIGGING CONTACT ALL PROVIDORS
6. ALL CONTRACTORS TO COMPLETE THE REQUIREMENTS OF Code of Practice For Avoiding Danger From Underground Services, Health and Safety Authority (by virtue of Section 60 of the Safety, Health and Welfare at Work Act 2005) SITE SAFETY STATMENTS, METHODS OF WORKS ETC. TO ENSURE NO LEAKS OR BREAKS OF SERVICES

Sample of Service Co-ordination in ground

APPENDIX 1

Above Ground Potable Water calculations

EN806, SR50-3:2021 Water Flow Calculations Above Ground

Unit Description	Qty.	Beds	Water Storage (lts)	Fill Time (hrs)	Showers	Bath/ shower	Sinks	WC	WHB	LU	Flowrate l/s (LU)	Flow rate LU+ Fill (l/s)
House A	10	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House B	35	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
House B1	32	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
House B2	22	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
House C	11	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
House D	7	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House D1	3	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House E	18	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House E1	1	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House F	6	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House F1	1	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House G	15	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House G1	3	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House J1	4	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House J	13	4 bed	227	2	2	1	1	3	3	27	0.8	0.832
House H1	2	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
House H	8	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
House H1	6	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
House H	24	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
House H	28	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
House K	2	2 bed	227	2	1	1	1	3	3	24	0.75	0.782
House K	6	2 bed	227	2	1	1	1	3	3	24	0.75	0.782
Duplex Block A	9	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	9	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
	2	1 bed	227	2	1		1	2	1	9	0.4	0.432
Duplex Block B	8	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	8	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Duplex Block C	8	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	8	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Duplex Block D	5	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	5	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Duplex Block E	6	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	6	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Duplex Block F	2	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	4	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Duplex Block G	6	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	6	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Duplex Block H	6	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	6	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Duplex Block I	4	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	8	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Duplex Block J	8	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
Duplex Block K1 to K4	8	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	8	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Duplex Block L1 to L2	2	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	2	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Duplex Block X1 to X2	4	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
	2	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
	2	1 bed	227	2	1		1	2	1	9	0.4	0.432
Apartment Block A one bed	26	1 bed	227	2	1		1	2	1	9	0.4	0.432
Apartment Block A two bed	84	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Apartment Block B one bed	6	1 bed	227	2	1		1	2	1	9	0.4	0.432
Apartment Block B two bed	14	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Apartment Block B three bed	1	3 bed	227	2	1	1	1	3	3	24	0.75	0.782

Unit Description	Qty.	Beds	Water Storage (lts)	Fill Time (hrs)	Showers	Bath/ shower	Sinks	WC	WHB	LU	Flowrate l/s (LU)	Flow rate LU+ Fill (l/s)
Apartment Block C one bed	18	1 bed	227	2	1		1	2	1	9	0.4	0.432
Apartment Block C two bed	67	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Apartment Block C three bed	6	3 bed	227	2	1	1	1	3	3	24	0.75	0.782
Apartment Y1 to Y6 one bed	6	1 bed	227	2	1		1	2	1	9	0.4	0.432
Apartment Y1 to Y7 two bed	6	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Apartment Y1 to Y8 one bed	6	1 bed	227	2	1		1	2	1	9	0.4	0.432
Apartment Y1 to Y9 two bed	6	2 bed	227	2	1	1	1	2	2	22	0.6	0.632
Total	655									1358		

Notes
EN806 loading units applied
EN806 flow rates applied
Irish Water Storage requirements applied

Main incomer requirement

Kitchen Sinks	655nr * 1 LU = 655LU	
	from EN806 requires	2.70 l/s
Tank fill requirement		
Total storage	655dwellings x 227 lts = 148,685lts	
	rounded to 150m³.	
	Fill time 2 hrs	
Flow rate required for tanks		20.83 l/s
Fire Hydrants		25.00 l/s
Total Flow		48.70 l/s
Plus Allowance for other uses		**50.00l/s**

The development is expected to have a loading of up to 50l/s subject to diversity

Calculation is based on ISEN806 and SR50-3:2021 requirements
Creche water demand has been allowed in above
School water demand not included.

APPENDIX 2

Electrical Block Loading Calculations

BOHERBOY DEVELOPMENT

Electrical Estimate Loading Calculations

Reference	Neighbourhood	Unit Mix	Units	Mini Pillar House		Apartment	Landlord	Commercial	Sub loading
				NR	KVA	KVA	KVA	KVA	KVA
SUB-001		HOUSES		7					
UNIT			58.0		311.5				
TYPE									
		DUPLEX							
			16.0	1		68.5	3.5		
			4.0	1		26.5	3.5		
			4.0	1		26.5	3.5		
			20.0			82.5	3.5		
		Streetlights		4			2		
	TOTAL								**529.5**
SUB-002		HOUSES		7					
UNIT			52.0		290.5				
TYPE									
		DUPLEX							
			4.0	1		26.5	3.5		
			4.0	1		26.5	3.5		
			16.0			68.5	3.5		
			10.0			47.5	3.5		
			12.0			54.5	3.5		
		Streetlights		4			2		
	TOTAL								**533.5**
SUB-003	**SCHOOL**	ESTIMATE						500	
UNIT	**CRECHE**	ESTIMATE						125	
TYPE		Streetlights		4			2		
	TOTAL								**627**
SUB-004	**BLOCK C (ah)**	CORE 1	46			179.5			
BRICK &		LANDLORD	19.2				19.2		
METER RM		CORE 2	45			176.0			
		LANDLORD	19.2				19.2		
	TOTAL								**393.9**
SUB-005	**BLOCK A**	CORE 1 & 4	55			211.0			
BRICK &		LANDLORD	21.7				21.7		
METER RM		CORE 2 & 3	55			211.0			
		LANDLORD	21.7				21.7		
	TOTAL								**465.4**
SUB-006	**2**	HOUSES		7					
UNIT			60.0		318.5				
TYPE									
		Streetlights		4			2		
	TOTAL								**320.5**
SUB-007		HOUSES		7					
UNIT			58.0		311.5				
TYPE									
		DUPLEX							
			12.0	1		54.5	3.5		
		APARTMENTS							
		CORE 1	29			120.0			
		LANDLORD	19.2				19.2		
		Streetlights		4			2		
	TOTAL								**510.7**

BOHERBOY DEVELOPMENT

Electrical Estimate Loading Calculations

Reference	Neighbourhood	Unit Mix	Units	Mini Pillar	House	Apartment	Landlord	Commercial	Sub loading
				NR	KVA	KVA	KVA	KVA	KVA
SUB-008		HOUSES		7					
UNIT			58.0		311.5				
TYPE									
		DUPLEX							
			12.0	1		54.5	3.5		
			12.0	1		54.5	3.5		
			6.0			33.5	3.5		
		Streetlights		4			2		
	TOTAL								**466.5**
	DEVELOPMENT TOTAL								**3847.0**

APPENDIX 3

Proposed ESB Substation Locations subject to application and agreement of ESB

SHEET SIZE A4

ALL TRANSFORMER LOCATIONS AND ZONES TO ESB NETWORKS
FINAL DESIGN REQUIREMENT AT FUTURE DATE
PRESENTED HERE FOR INFORMATION ONLY

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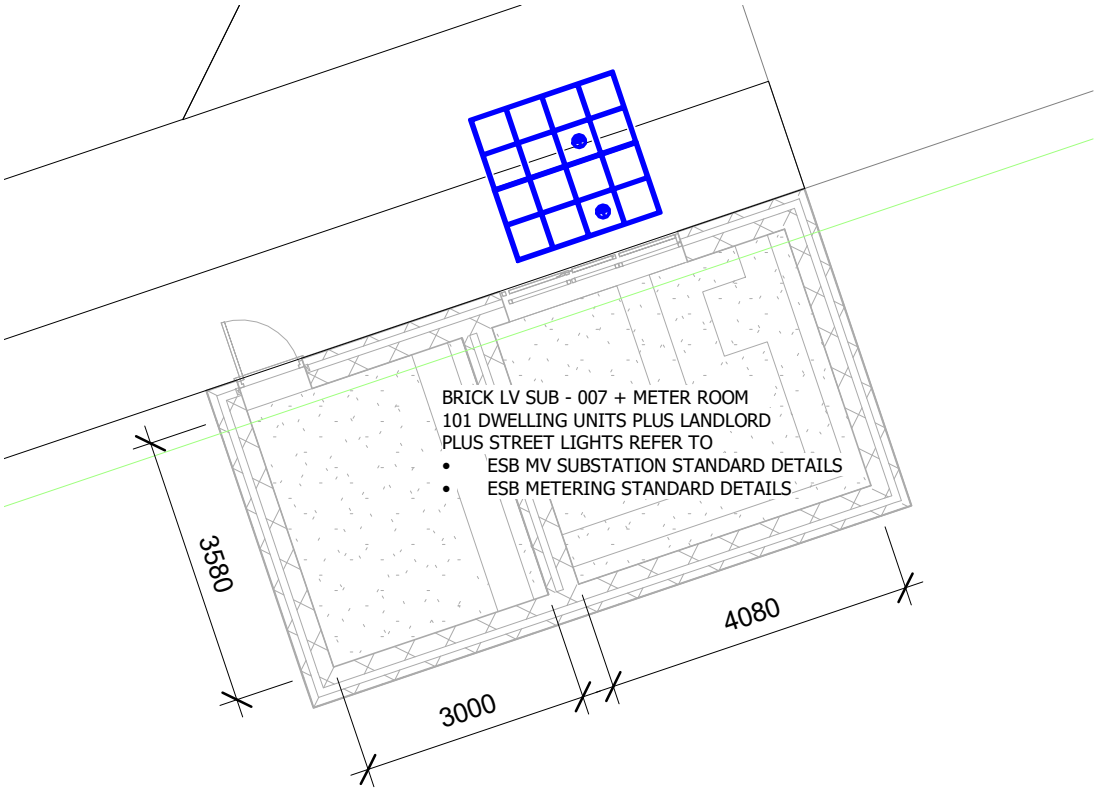
BBSC

PROPOSED RESIDENTIAL DEVELOPMENT,
LANDS AT BOHERBOY, SAGGART, DUBLIN
2020_1109 -BBY-BBSC-E-6000- PROPOSED ESB

Scale 1 : 2500

21/07/2021 14:39:44



2 62_L00 BLOCK A

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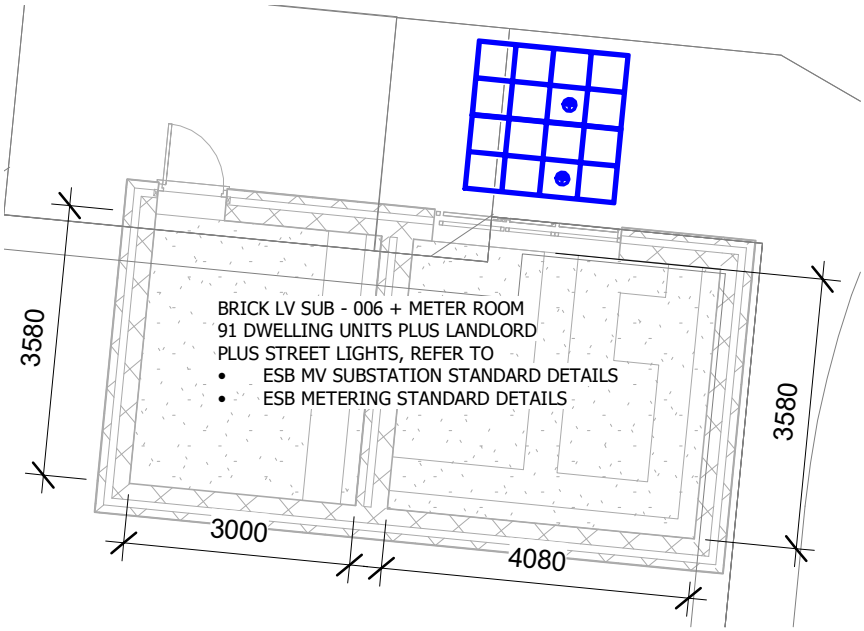

IMAGE OF INTERGRATED ESB SUBSTATION
IN AN APARTMENT BLOCK

1 62_L00 BLOCK C

1 : 100

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PROPOSED RESIDENTIAL DEVELOPMENT,
LANDS AT BOHERBOY, SAGGART, DUBLIN
2020_1109 -BBY-BBSC-E-6001- BLOCK A,C SUBSTATIONS

Scale 1 : 100

21/07/2021 14:43:52

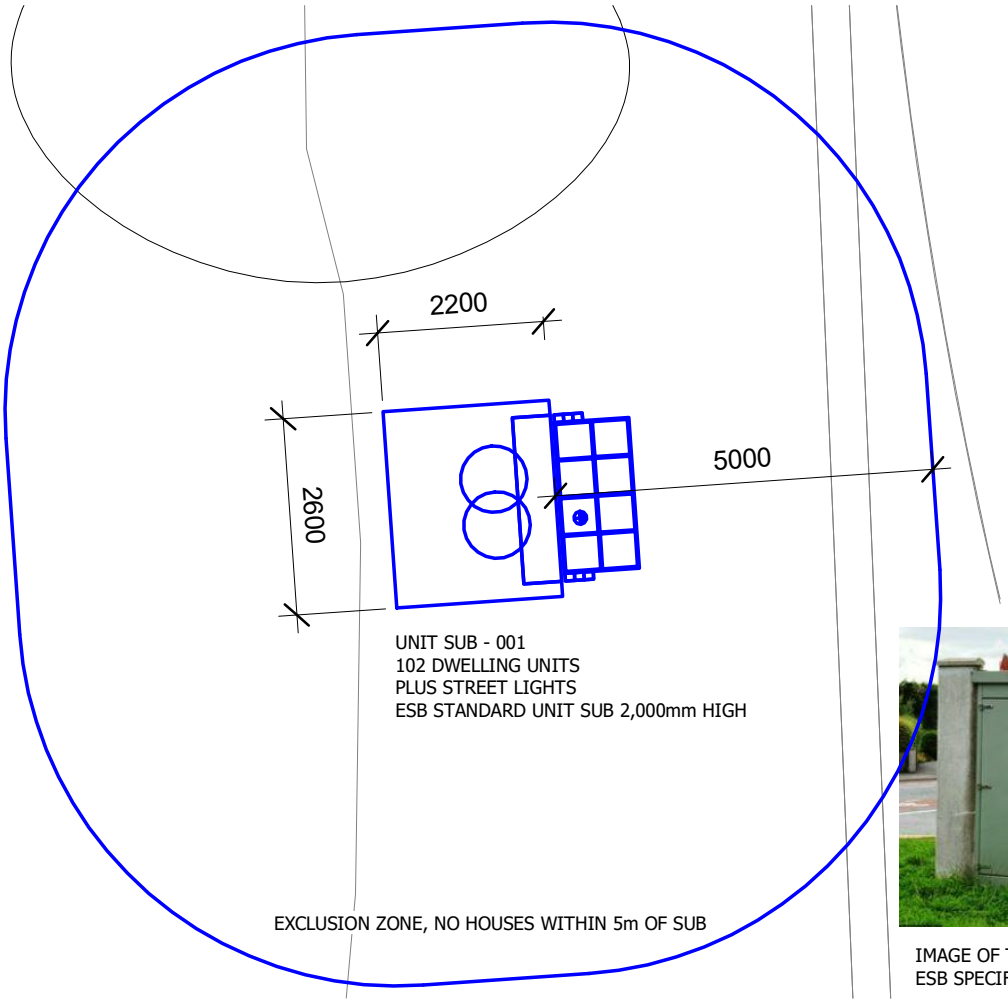

IMAGE OF TYPICAL UNIT STANDALONE SUB TO ESB SPECIFICATIONS

1 62_L00 SUB-001

1 : 100

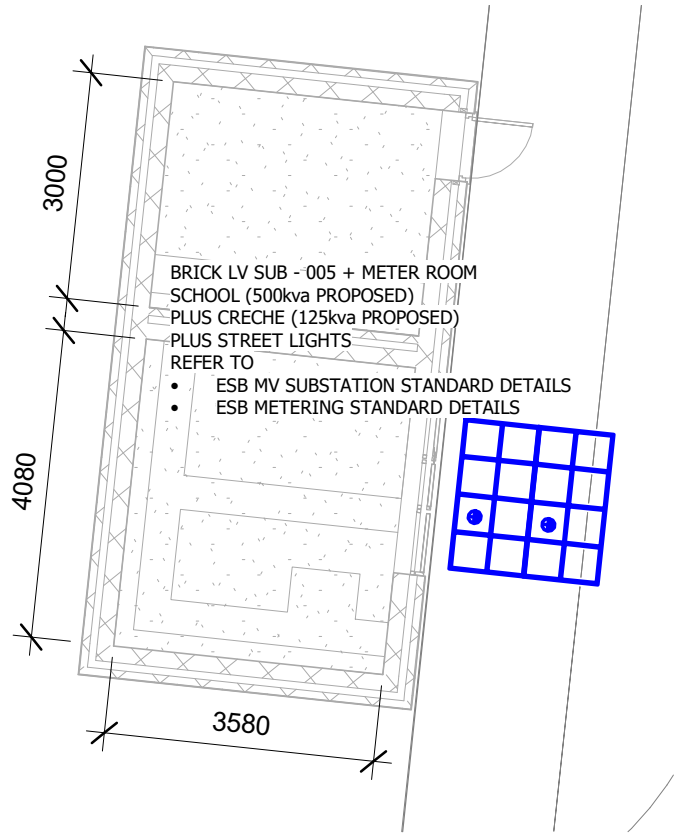

IMAGE OF STANDALONE SUB STATION TO ESB SPECIFICATIONS

2 62_L00 SCHOOL SUB

1 : 100

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PROPOSED RESIDENTIAL DEVELOPMENT,
LANDS AT BOHERBOY, SAGGART, DUBLIN
2020_1109 -BBY-BBSC-E-6002- SCHOOL SUBSTATION & TYPICAL UNIT SUB

Scale 1 : 100

21/07/2021 14:43:56

APPENDIX 4

ESB Drawing

PROPOSED ESBN OVERHEAD DIVERSION

ESB Networks

TITLE:

20190522-040_A0

COLOUR CODE:

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

DATE: 22-May-2019

** SCALE: 1:1000

** SCALE WHEN PRINTED ON AN A0 PAGE
XY COORDINATES DISPLAYED IN IRISH GRID COORDINATE SYSTEM

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WARNING

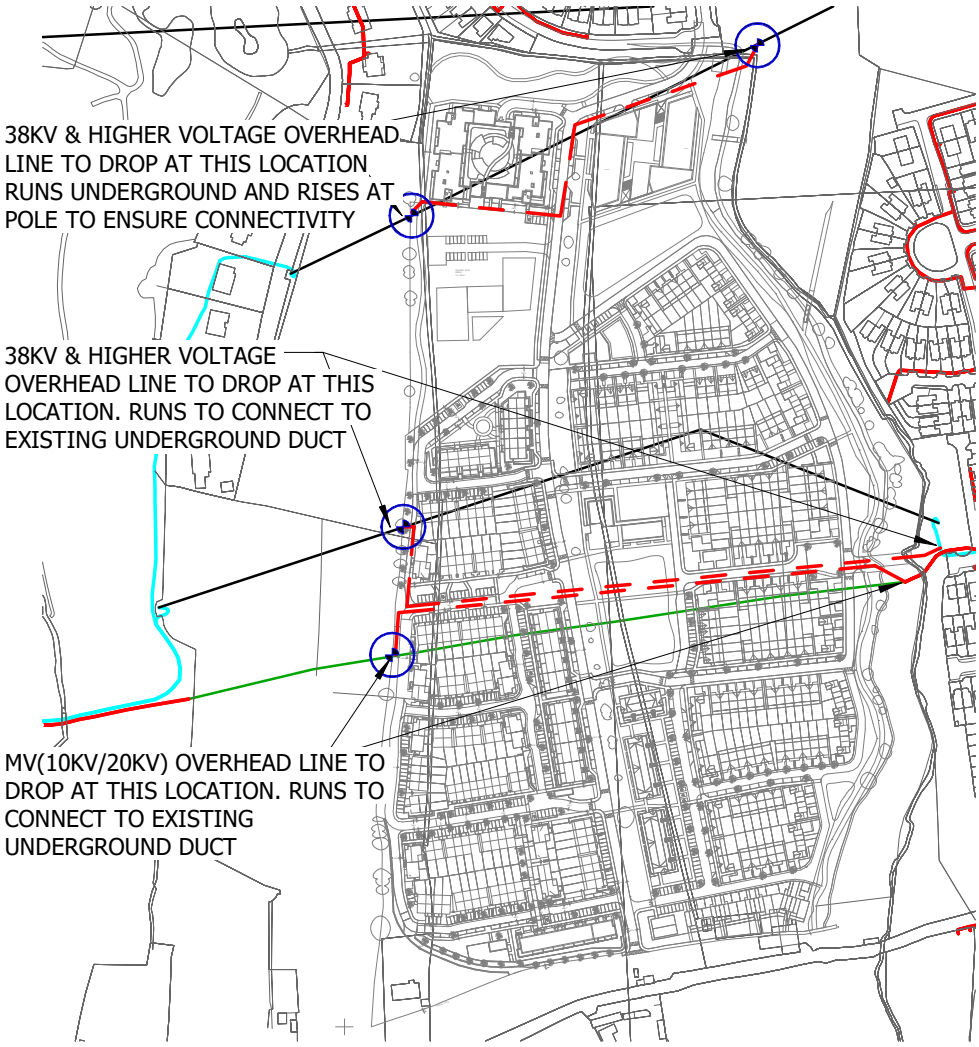
THIS MAP INDICATES THE APPROXIMATE LOCATION OF ESB TRANSMISSION (400KV, 220KV, 110KV, 38KV) AND DISTRIBUTION (20KV, 10KV, 230V/400V) UNDERGROUND CABLES AND OVERHEAD LINES IN THE GENERAL AREA OF THE PROPOSED WORKS. ESB NETWORKS TAKES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE MAP. IT IS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

ESB NETWORKS HAS ISSUED THIS MAP AS A PDF DOCUMENT. IF VIEWING A PAPER VERSION OF THIS MAP, THE VIEWER MUST ENSURE THAT IT HAS BEEN PRINTED IN COLOUR TO FIT TO AN A0 (OR LARGER) PAGESIZE AND THAT EACH OF THE COLOURS INDICATED ON THE COLOUR CODE LEGEND ABOVE ARE CLEAR AND DISTINCT FROM EACH OTHER TO MAINTAIN A CORRECT REPRESENTATION OF THE ELECTRICAL NETWORK INFORMATION.

PLEASE NOTE THAT THERE ARE: HIGH VOLTAGE (38KV AND HIGHER VOLTAGES) OVERHEAD LINES AND UNDERGROUND CABLES ON THIS MAP. IF YOU INTEND WORKING, OR UNDERTAKING DEVELOPMENT WITHIN A CORRIDOR EXTENDING 40 METRES ON EITHER SIDE OF ANY HIGH VOLTAGE OVERHEAD LINES OR WITHIN A CORRIDOR EXTENDING 5 METRES ON EITHER SIDE OF ANY HIGH VOLTAGE UNDERGROUND CABLES YOU MUST CONTACT THE DESIGNATED PARTIES IN ADVANCE OF THE WORKS:

FOR HIGH VOLTAGE OVERHEAD LINES: (38KV AND HIGHER VOLTAGES)
CONTACT: ALAN BROWN, ESB TRANSMISSION, KYLEMORE WAY,
DUBLIN 8, D08-E398. PHONE: 087 9273970 EMAIL: ALAN.BROWN@ESB.IE

FOR HIGH VOLTAGE UNDERGROUND CABLES: (38KV AND HIGHER VOLTAGES)
CONTACT: GARETH PAISLEY, ESB TRANSMISSION, KYLEMORE WAY,
DUBLIN 8, D08-E398. PHONE: 087 9374867 EMAIL: GARETH.PAISLEY@ESB.IE



FINAL ROUTES TO ESB NETWORKS FINAL DESIGN REQUIREMENT AT FUTURE DATE
PRESENTED HERE FOR INFORMATION ONLY

BUILDING SERVICES ENGINEERS
[p] 086 386 7097
[e] barry.oneill@bbsc.ie
[w] www.bbsc.ie

BBSC

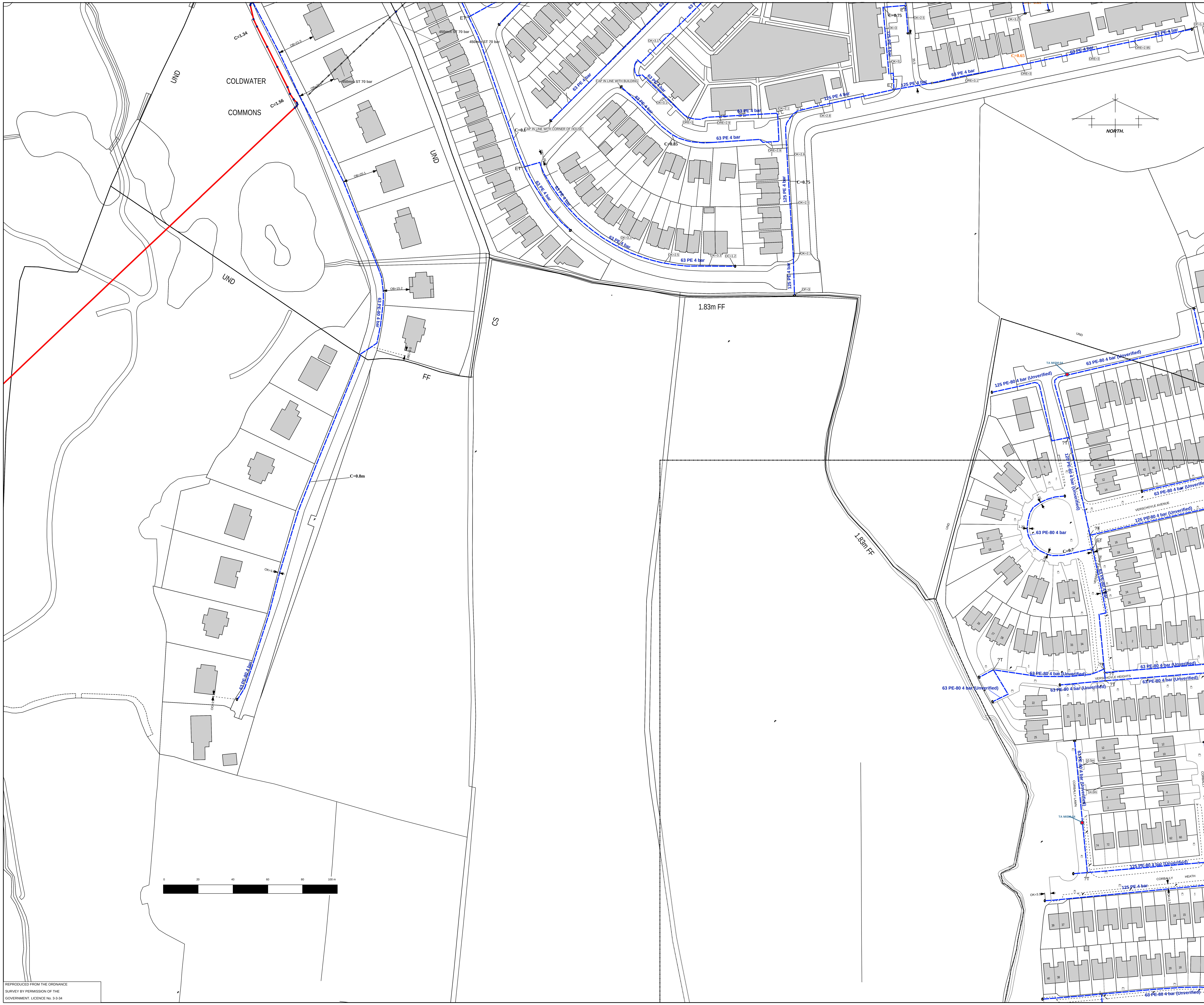
PROPOSED RESIDENTIAL DEVELOPME
LANDS AT BOHERBOY, SAGGART, DUBLIN
2020_1109 -BBOY-BBSC-E-6003- PROPOSED ES
OVERHEAD DIVERSIONS

Scale 1 : 5000

13/10/2 3:16

APPENDIX 5

Bord Gais Drawing



Important Safety Notice:

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

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

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

Legal Notice:

Gas Networks Ireland (GNI) and its affiliates, accept no responsibility for the accuracy of any information contained in this document including data concerning location and technical designation of the gas distribution and transmission network (the Information). The Information should not be relied on for accurate distance or depth of cover measurements.

Any representations and warranties, express or implied, are excluded to the fullest extent permitted by law. No liability shall be accepted for any loss or damage including, without limitation, direct, indirect or consequential loss, arising out of or in connection with the use or re-use of the Information.

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

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

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

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

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

Design Department - CORK

Gas Networks Ireland

GAS NETWORK INFORMATION

Issue: BBSC	
Location: Boherboy Dublin 24	
Plot Date: 20/05/2019	Contact: B O' Neill
Plotted by: KOC	Scale: 1:1000

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Not Archived - Alternative : |Network Maintenance Dublin|2019_Kevin Plots

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