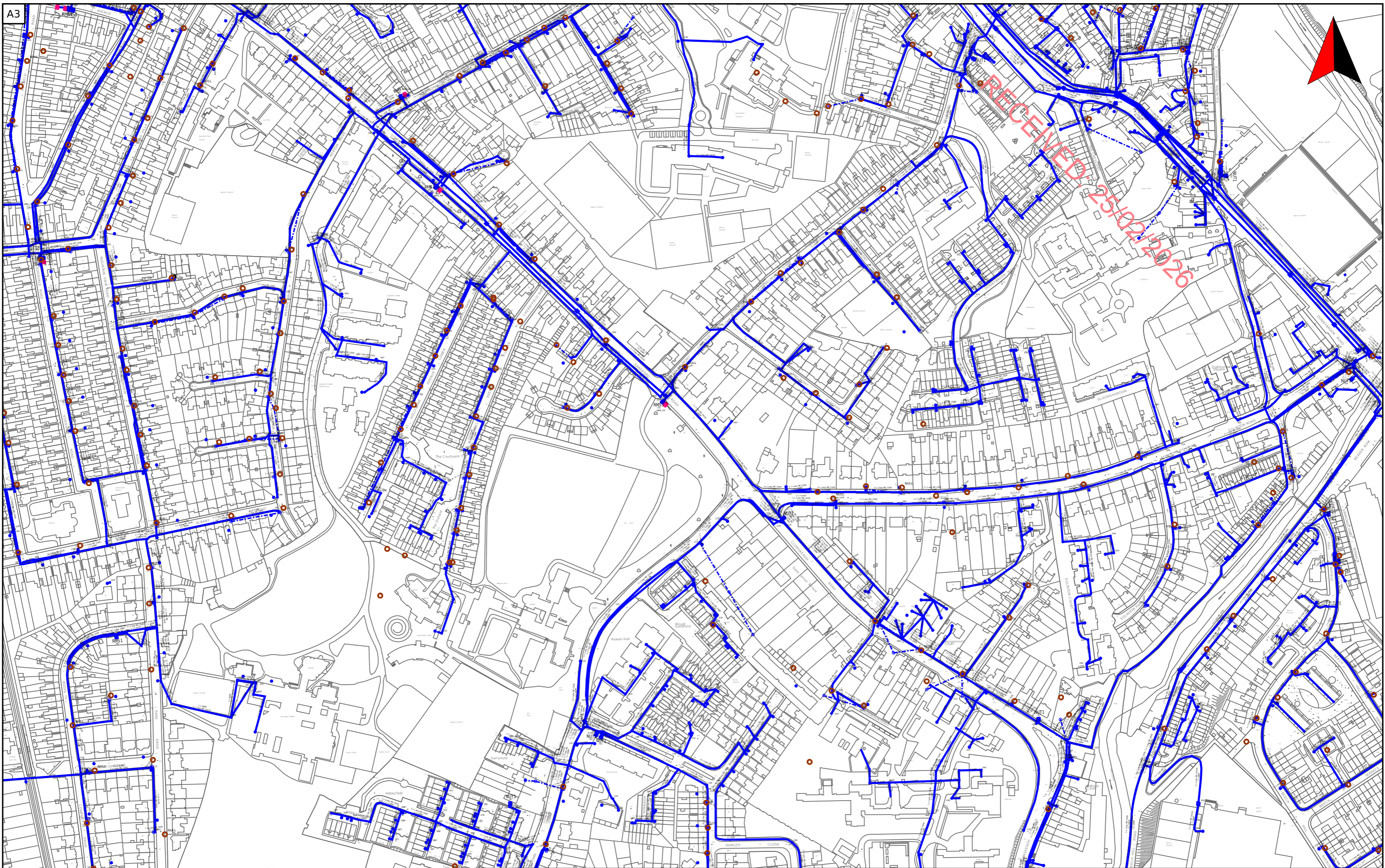
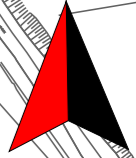


RECEIVED: 25/02/2026

Appendix 16.1

ESB Networks Utility Plans



RECEIVED
25/10/2025

open eir Civil Engineering Infrastructure Service

Scale:
1:3500

Irish National Grid
Centre XY: 717088 N,
731259 m

Date
07/10/2025

Smallworld
Powered by GE

THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND SHOULD NOT BE DISCLOSED TO ANY THIRD PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF open eir. THE DRAWING MAY NOT BE PHOTOCOPIED OR REPRODUCED IN ANY WAY.

THE INFORMATION GIVEN IS COMPILED FROM PASSIVE ACCESS RECORDS AND IS BELIEVED TO BE CORRECT. THERE MAY, HOWEVER, BE DEPARTURES FROM THE COURSE(S) AND DEPTH(S) SHOWN OR INDICATED. THERE MAY ALSO BE ITEMS OF open eir INFRASTRUCTURE OF WHICH NO RECORDS IS HELD. THE INFORMATION IS GIVEN WITHOUT PREJUDICE TO THE LEGAL RIGHTS OF open eir TO COMPENSATION SHOULD open eir INFRASTRUCTURE BE DAMAGED.





TITLE: 20200217-018_A3

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: 17-Feb-2020

** SCALE: 1:2000

** SCALE WHEN PRINTED ON AN A3 PAGE
XY COORDINATES DISPLAYED IN IRISH GRID COORDINATE SYSTEM

WARNING

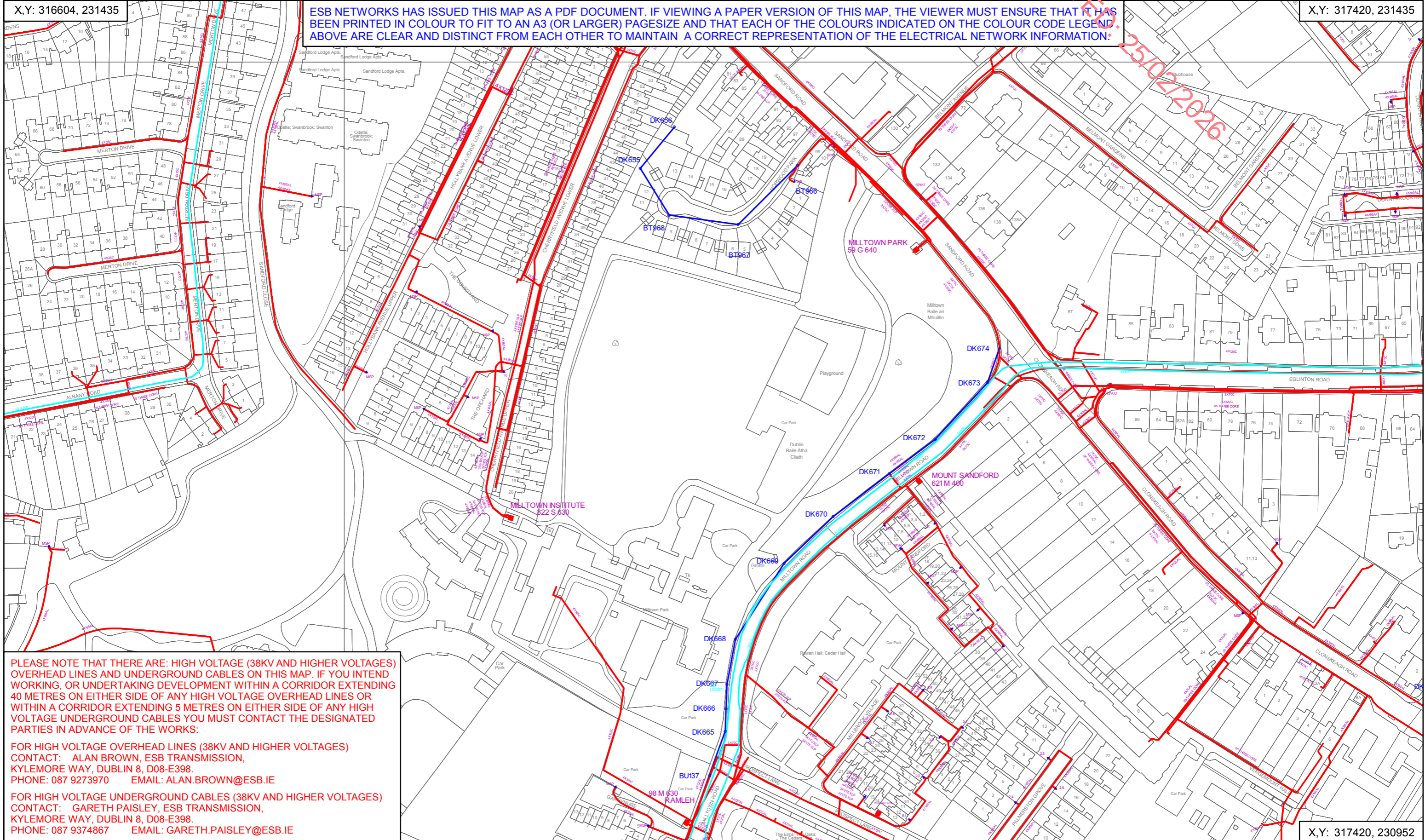
THIS MAP INDICATES THE APPROXIMATE LOCATION OF ESB TRANSMISSION (400KV, 220KV, 110KV, 38KV) AND DISTRIBUTION (20KV, 10KV, 230V/400V) UNDERGROUND CABLES AND OVERHEAD LINES IN THE GENERAL AREA OF THE PROPOSED WORKS. ESB NETWORKS TAKES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE MAP. IT IS 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.

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X,Y: 316604, 231435

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 A3 (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.

X,Y: 317420, 231435

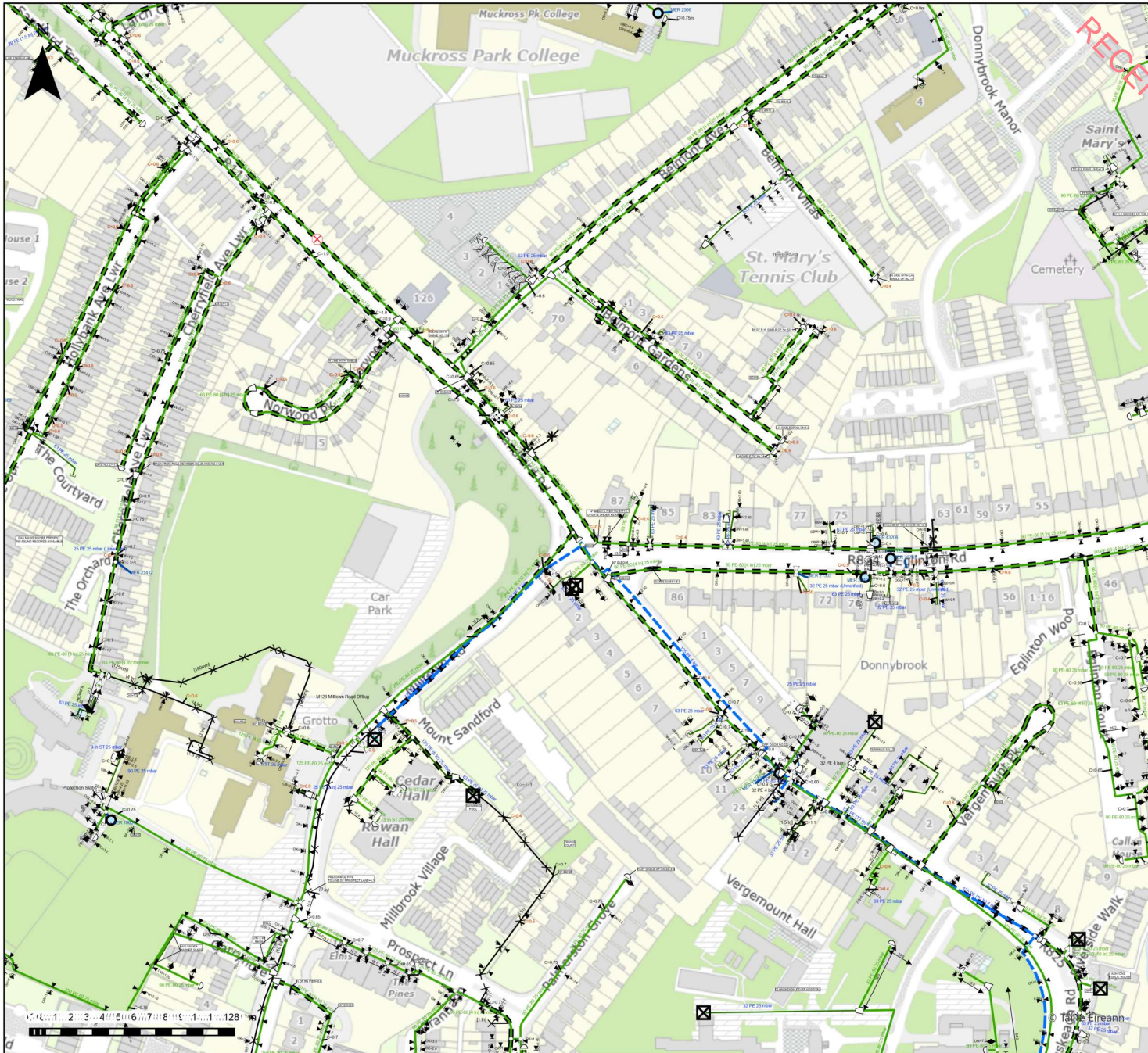


PLEASE NOTE THAT THERE ARE: HIGH VOLTAGE (38KV AND HIGHER VOLTAGES) OVERHEAD LINES AND UNDERGROUND CABLES ON THIS MAP. IF YOU INTEND WORKING, OR UNDERTAKING DEVELOPMENT WITHIN A CORRIDOR EXTENDING 40 METRES ON EITHER SIDE OF ANY HIGH VOLTAGE OVERHEAD LINES OR WITHIN A CORRIDOR EXTENDING 5 METRES ON EITHER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

X,Y: 317420, 230952



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 1800 427 747.

All work in the vicinity of the gas network must be completed in accordance with the current edition of the Health and Safety Authority publication, 'Code of Practice For Avoiding Danger From Underground Services' which is available from the Health and Safety Authority (0818 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 service and transmission network ("the Information"). The Information should not be relied on for accuracy as to location 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 or in connection with the use or re-use of the Information.

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	Aurora Telecom Duct	
	Aurora Telecom Sub Duct	
	Aurora Telecom Inserted Gas Pipe	

Aurora Telecom Queries - 01-8926166 (Office Hours)
 Aurora_Network_Queries@gasnetworks.ie
 Aurora Telecom Emergency Only 1800 427399 / 01 2030120

	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
	Abandoned Pipe

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

** Please contact GNI on 1800-427747 for specific information

	1800 42 77 47 In Emergency call 1800 20 50 50	
--	---	--

GAS NETWORK INFORMATION

Description: test	
Location: 717120.731265	
Plot Date: 07/10/2025 12:18	Scale: 2500 @ A3
Plotted By: 1022	Ref ID: 1022_07102025121813



Legend

- Location
- Sewer Manholes**
 - Standard
 - Backdrop
- Sewer Inlets**
 - Catchpit
 - Other; Unknown
- Sewer Mains (Irish Water)**
 - Gravity - Combined
 - Gravity - Foul
- Sewer Lateral Lines**
 - Sewer Lateral Lines



Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator

Scale @ A3: 1:2,016

Drawing No.: IW-AGG-2018-000

Drawn By: Mo Ismail

Checked By: <Add Name>

Approved By: <Add Name>

Drawn Date: 24/11/2025

Checked Date: <dd/mm/yyyy>

Approved Date: <dd/mm/yyyy>



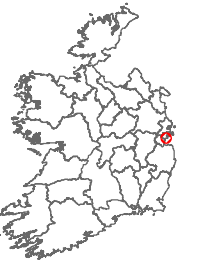
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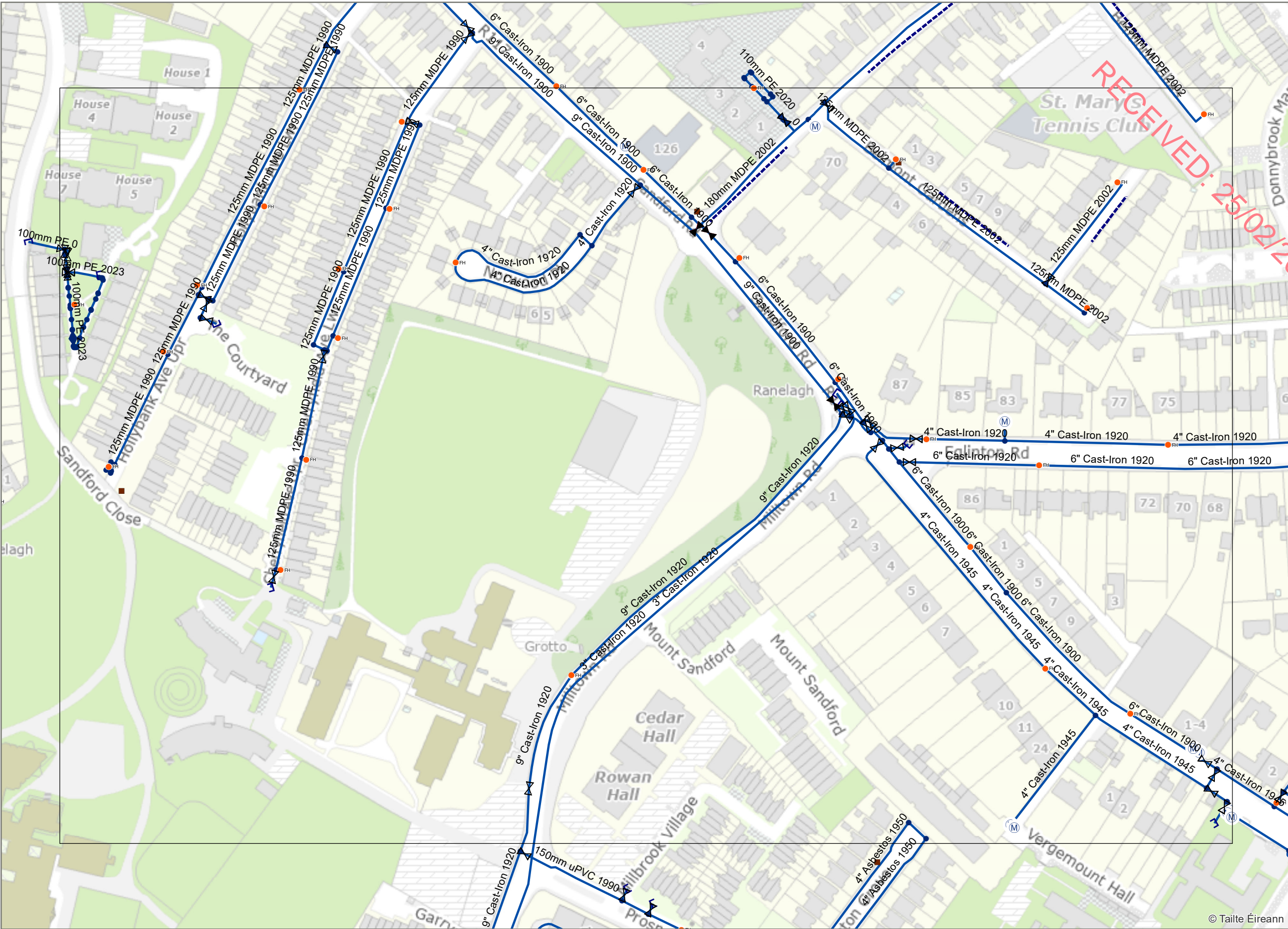
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Sewer Network Sandford Road, Ranelagh, Co. Dublin

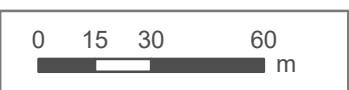
© Tailte Éireann



RECEIVED: 25/02/2026



- Legend**
- Location
 - ⊗ Sluice Valve Open
 - ⊘ Sluice Valve Closed
 - Boundary Valves**
 - ⊗ Closed
 - Non Boundary Valves**
 - ⊗ Open
 - Air Control Valves**
 - ◆ Air Control Valves
 - Non Boundary Meter**
 - Ⓜ Meter
 - Water Hydrants**
 - ^{FH} Fire Hydrant
 - Water Fittings**
 - ⌈ Cap
 - Other Fitting
 - Pressure Monitoring Point**
 - Pressure Monitoring Point
 - Water Mains(Irish Water Owned)**
 - Potable Water
 - - - Water Abandoned Lines



Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator

Scale @ A3:	1:2,016
Drawing No.:	IW-AGG-2018-000
Drawn By:	Mo Ismail
Checked By:	<Add Name>
Approved By:	<Add Name>
Drawn Date	24/11/2025
Checked Date:	<dd/mm/yyyy>
Approved Date:	<dd/mm/yyyy>

Water Distribution Sandford Road, Ranelagh, Co.Dublin

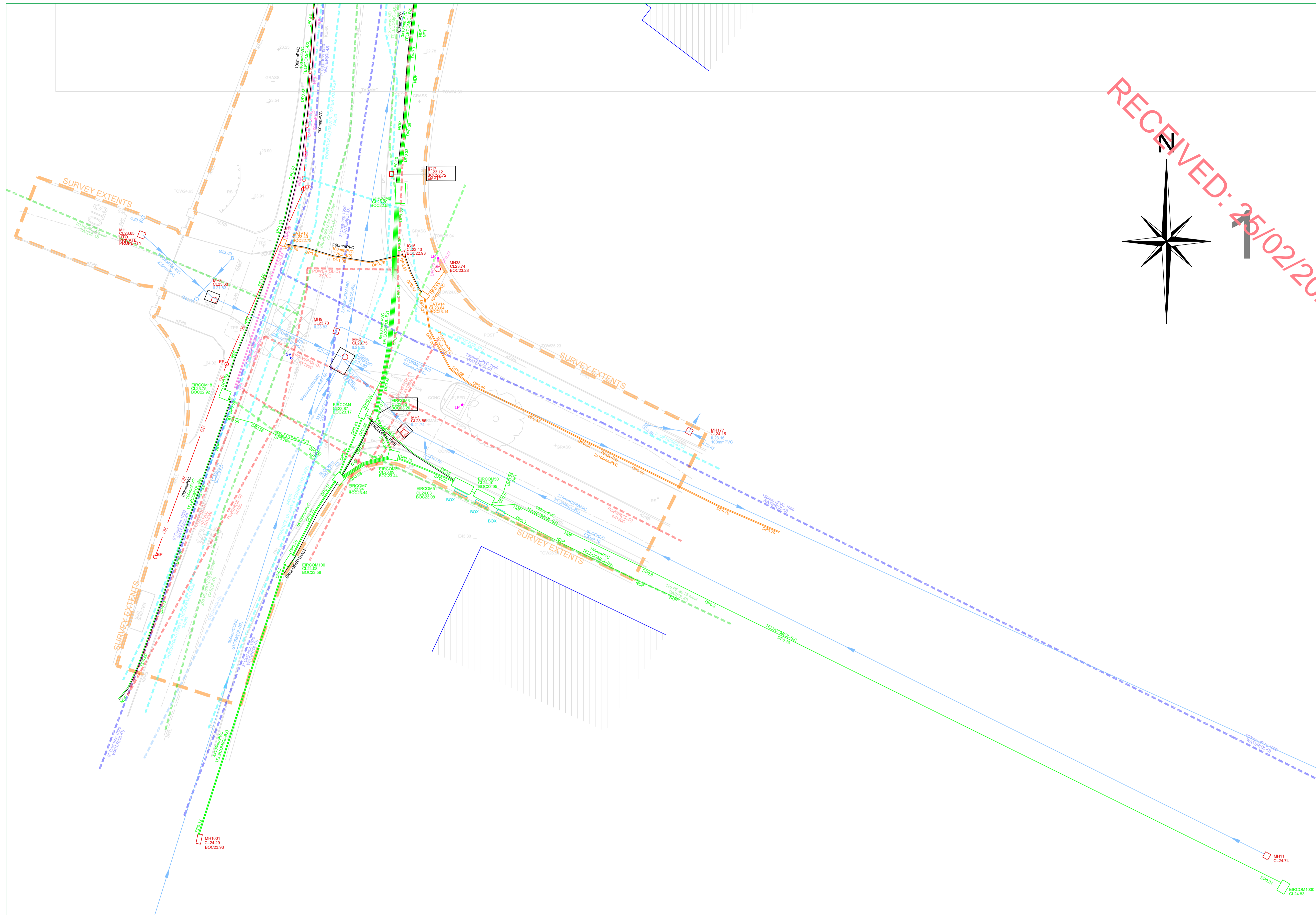
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Appendix 16.2

GPR Utility Survey



RECEIVED: 25/02/2024

PAS 128: 2014 (Quality of Survey Level Outputs):

DESKTOP UTILITY RECORDS SEARCH QL-D	Drafted from utility records
SITE RECONNAISSANCE QL-C	Location Demonstrated by visual reference to street furniture or evidence of previous streetworks, ie - reinstatement scars
DETECTION QL-B4	A segment of utility suspected to exist but has not been detected by a geophysical technique
QL-B3	Horizontal location only of the utility detected by one of the geophysical techniques used
QL-B2	Horizontal and vertical location of the utility detected by one of the geophysical techniques used
QL-B1	Horizontal and vertical location of the utility detected by multiple geophysical techniques
VERIFICATION QL-A	Horizontal and vertical location of the top and/or bottom of the utility

Apex Surveys Ltd. Disclaimer - Utility Survey

The Survey aims to map existing utilities and sub-surface structures and provide information with respect to pipe size, material type and drainage connectivity. However utility surveying is limited by the following guidelines and it may not be possible to accurately survey, define and locate all services and sub-surface features. Please note that not all buried pipes, cables and ducts can be detected and mapped in consideration of their depth, location, material type, geology and proximity to other utilities. Even an appropriate and professionally executed survey may not be able to achieve 100% detection rate. Although all reasonable steps have been taken to locate all features, there is no guarantee that all utilities and underground structures will be located and shown on the drawing.

- The following is a non-exhaustive list of the limitations of utility surveys:
- Depth of Utility:** The depth and size of a utility affect the signal response and the degree with which a utility can be located. Due to attenuation of the radar signal with depth, resolution is restricted, hence making identification of utilities more difficult with increasing depth.
 - Size of Utility:** The smaller the diameter of a utility the more difficult it is to locate. This difficulty increases with depth.
 - Soil Conditions:** The depth penetration and quality of the data depends on the ground conditions of the site. GPR Surveying works best within high resistivity material. Clay overburden can impair GPR Surveying. Poor data may be a result of areas with high conductivity.
 - Utility Congestion:** Where different utilities converge together into a service corridor or cross paths it becomes difficult to isolate a specific utility and to map its route. The reflected signal will display a single response to multiple utilities. Therefore multiple utilities may appear to be a single utility. Where similar services run on close proximity, separation may be impossible.
 - Signal Jumping:** Signal from surrounding services may 'jump' to a highly conductive line masking its true identity.
 - Shadowing:** (of deeper utilities by shallower objects) Shallow utilities will mask the existence of deeper utilities where they are in close proximity. Also, high reflective materials close to the surface i.e rebar may hide deeper anomalies.
 - Surface Obstructions:** The GPR system relies on a relatively flat and even surface on which to perform radar passes. If ground obstructions such as vehicles, organic material (long grass, scrub) or undulating ground surface are present then the acquired data will be of lower resolution and in some cases not viable.
 - Loss of signal:** It is not always possible to trace the entire length of each underground service.
 - Connections between manholes:** Connections between manhole chambers are assumed to be straight.
 - Non-metallic objects:** Nonmetallic objects are amongst the most difficult to trace therefore successful tracing of non-metallic pipes/ utilities may be limited.
 - Fiber Optic Cables:** Fiber optic cables may not be possible to locate except where laid with a built in tracer wire or similar conductor system.
 - Defective / flooded manholes or pipework:** It may not be possible to establish connections between flooded or defective manholes or pipework.
 - Acute bends in pipework:** It may not be possible to trace a pipe past an acute bend.
- Accuracy estimates:**
- Local accuracy is determined by referring to the manufacturers guidelines for the detector used.
 - In ideal conditions the spatial accuracies for the underground utilities may be +1-5% for Radiolocation and +1-10% of depth for the GPR to 2.5m deep. However variations within the subsurface, depth below the ground, close proximity of other services and local magnetic, atmospheric or ground conditions, bends, lateral service connections and any of the other limitations listed in this disclaimer may alter this estimated accuracy.
 - Plan accuracies of + or - 150mm may be achieved but this figure will depend on the depth of service below ground level. However variations within the subsurface, depth below the ground, close proximity of other services and local magnetic, atmospheric or ground conditions, bends, lateral service connections and any of the other limitations listed in this disclaimer may alter this estimated accuracy.
 - DP represents distance from the surface level to the top of the service/ target
 - Where technically possible, depth indications will be given. These along with plan positions should be used for guidance only and wherever critical accuracy is required these should be confirmed by the client by undertaking trial excavations or similar.

Record Drawing Information

- Services which have been untraceable are shown from records where possible or available. These lines are annotated as "Taken From Records" or "From Records".
- Existing record information showing underground services is often incomplete and with unknown accuracies therefore it should be regarded as indicative only.
- Where Apex Surveys issue a utility drawing, this should be read in conjunction with all available public or private utility records.
- Apex Surveys endeavor to add relevant Public Utility record information onto the final drawing. However, we would recommend that direct contact is made with the asset owner or statutory undertaker.
- We shall not be held responsible for the accuracy, or otherwise, of the location of a service, as issued by the utility provider and therefore shown as "Taken from Records" on the drawing.

The following have been excluded from the survey:

- Location of individual service feeds to properties or buildings as access would be required into each property to apply direct connections to inlet points and this would significantly increase the scope of works, survey cost and also cause possible disruption to occupants.
- Pot ended or disconnected cables or terminated short lengths of pipe.
- Internal building services.
- Small diameter cables less than 20mm diameter or pipes less than 40mm diameter.
- Above ground services unless specifically requested.
- Lifting manholes which require longer than 10 minutes effort using standard heavy duty apparatus.

All works carried out by Apex Surveys conforms to the guidelines set out by The Survey Association (TSA) and PAS:128 Standard for utility mapping

www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

STREET FURNITURE :	SERVICES :	UNDERGROUND LEGEND :
BOLLARDS BS+ BUS STOP CB CRASH BARRIER EP+ GATE TR+ ELECTRICITY POLE TP+ TELEPHONE POLE ER+ EARTHING ROD LP+ LAMP POST MKR+ MARKER POST SIGN POST TL+ TRAFFIC LIGHT TB TELEPHONE BOX POST POST POST BOX RS-RS CAST-IRON BH+ CONCRETE TRIAL PIT TPIT+ DIAMETER DIA	AIR VALVE AV ARMSTRONG JUNCTION AJ CABLE TV IC COVER LEVEL CATV EIRCOM BOX EIRCOM EIRCOM JUNCTION BOX EIRCOM BOX ELECTRICAL CABLE PIT ECP ESAT COVER ESB ESAT COVER ESB BOX FIRE HYDRANT FH GAS VALVE GV INSPECTION COVER G MANHOLE MH SEPTIC TANK SV SLUICE VALVE SV+ DOWNPIPE DP EARTHENWARE E/W NO FURTHER TRACE N/FT OFFSITE O/S	WATER MAIN GAS MAIN STORM DRAIN FOU L SEWER COMBINED SEWER ELECTRIC CABLE ELECTRIC LIGHTING EIRCOM FIBRE OPTIC CABLE BROADBAND CABLE TV TRAFFIC AND SIGNAL CABLE CCTV IRRIGATION PIPE EMPTY DUCT GPR ANOMALY UNKNOWN CABLE OHEAD ELECTRICITY OHEAD TELECOM

SHEET LAYOUT :

PLAN PRODUCED BY:

APEX SURVEYS

CONTACT INFORMATION:

Apex Surveys
Unit 78 Dunboyne Business Park
Dunboyne, Co. Meath, Ireland
www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

CLIENT:

D.B.F.L.

GRID SYSTEM: Irish Transverse Mercator
DATUM: Main Head (OSGM15)
NOTES: Drawing Contains Scale Factor

REVISIONS:		
No.	Date	Description
001	04/03/20	Original Drawing
002	06/11/20	Additional Information Added

PROJECT:

Sandford Park, Miltown

SCALE :	1/200 A1	DATE :	04/03/2020
DRG No:	4234	DESCRIPTION :	2D Utilities
SHEET:	1 of 10	SURVEYED BY :	Mario Gaspar
		PROCESSED BY :	Apex Surveys
		CHECKED BY :	Alan Brady



PAS 128: 2014 (Quality of Survey Level Outputs):

DESKTOP UTILITY RECORDS SEARCH QL-D Drafted from utility records
SITE RECONNAISSANCE QL-C Location Demonstrated by visual reference to street furniture or evidence of previous streetworks, ie - reinstatement scars
DETECTION
QL-B4 A segment of utility suspected to exist but has not been detected by a geophysical technique
QL-B3 Horizontal location only of the utility detected by one of the geophysical techniques used
QL-B2 Horizontal and vertical location of the utility detected by one of the geophysical techniques used
QL-B1 Horizontal and vertical location of the utility detected by multiple geophysical techniques
VERIFICATION
QL-A Horizontal and vertical location of the top and/or bottom of the utility

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The Survey aims to map existing utilities and sub-surface structures and provide information with respect to pipe size, material type and drainage connectivity. However utility surveying is limited by the following guidelines and it may not be possible to accurately survey, define and locate all services and sub-surface features. Please note that not all buried pipes, cables and ducts can be detected and mapped in consideration of their depth, location, material type, geology and proximity to other utilities. Even an appropriate and professionally executed survey may not be able to achieve 100% detection rate. Although all reasonable steps have been taken to locate all features, there is no guarantee that all utilities and underground structures will be located and shown on the drawing.

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- Surface Obstructions:** The GPR system relies on a relatively flat and even surface on which to perform radar passes. If ground obstructions such as vehicles, organic material (long grass, scrub) or undulating ground surface are present then the acquired data will be of lower resolution and in some cases not viable.
- Loss of signal:** It is not always possible to trace the entire length of each underground service.
- Connections between manholes:** Connections between manhole chambers are assumed to be straight.
- Non-metallic objects:** Non-metallic objects are amongst the most difficult to trace therefore successful tracing of non-metallic pipes/ utilities may be limited.
- Fiber Optic Cables:** Fiber optic cables may not be possible to locate except where laid with a built in tracer wire or similar conductor system.
- Defective / flooded manholes or pipework:** It may not be possible to establish connections between flooded or defective manholes or pipework.
- Acute bends in pipework:** It may not be possible to trace a pipe past an acute bend.

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- In ideal conditions the spatial accuracies for the underground utilities may be +1-5% for Radiodetection and +1-10% of depth for the GPR to 2.5m deep. However variations within the subsurface, depth below the ground, close proximity of other services and local magnetic, atmospheric or ground conditions, bends, lateral service connections and any of the other limitations listed in this disclaimer may alter this estimated accuracy.
- Plan accuracies of + or - 150mm may be achieved but this figure will depend on the depth of service below ground level. However variations within the subsurface, depth below the ground, close proximity of other services and local magnetic, atmospheric or ground conditions, bends, lateral service connections and any of the other limitations listed in this disclaimer may alter this estimated accuracy.
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- Internal building services.
- Small diameter cables less than 20mm diameter or pipes less than 40mm diameter.
- Above ground services unless specifically requested.
- Lifting manholes which require longer than 10 minutes effort using standard heavy duty apparatus.

All works carried out by Apex Surveys conforms to the guidelines set out by The Survey Association (TSA) and PAS:128 Standard for utility mapping

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00353 1 691 0156

STREET FURNITURE :	SERVICES :	UNDERGROUND LEGEND :
BOLLARDS BUS STOP CRASH BARRIER GATE ELECTRICITY POLE TELEPHONE POLE EARTHING ROD LAMP POST MARKER POST SIGN POST TRAFFIC LIGHT TELEPHONE BOX POST POST BOX ROADSIGN BORE HOLE TRIAL PIT 	AIR VALVE ARMSTRONG JUNCTION CABLE TV IC COVER LEVEL EIRCOM COVER EIRCOM JUNCTION BOX ELECTRICAL CABLE PIT ESAT COVER ESB COVER ESB JUNCTION BOX FIRE HYDRANT GAS VALVE INSPECTION COVER MANHOLE SLUICE VALVE 	WATER MAIN GAS MAIN STORM DRAIN FOUL SEWER COMBINED SEWER ELECTRIC CABLE ELECTRIC LIGHTING EIRCOM FIBRE OPTIC CABLE BROADBAND CABLE TV TRAFFIC AND SIGNAL CABLE CCTV IRRIGATION PIPE EMPTY DUCT GPR ANOMALY UNKNOWN CABLE O'HEAD ELECTRICITY O'HEAD TELECOM

SHEET LAYOUT :

PLAN PRODUCED BY:

APEX SURVEYS

CONTACT INFORMATION:

Apex Surveys
Unit 78 Dunboyne Business Park
Dunboyne, Co. Meath, Ireland
www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

CLIENT:

D.B.F.L.

GRID SYSTEM: Irish Transverse Mercator
DATUM: Main Head (OSGM15)
NOTES: Drawing Contains Scale Factor

REVISIONS:		
No.	Date	Description
001	04/03/20	Original Drawing
002	06/11/20	Additional Information Added

PROJECT:

Sandford Park, Milltown

SCALE :	1/200 A1	DATE :	04/03/2020
DRG No:	4234	DESCRIPTION :	2D Utilities
SHEET:	2 of 10	SURVEYED BY :	Mario Gaspar
		PROCESSED BY :	Apex Surveys
		CHECKED BY :	Alan Brady



PAS 128: 2014 (Quality of Survey Level Outputs):

DESKTOP UTILITY RECORDS SEARCH QL-D	Drafted from utility records
SITE RECONNAISSANCE QL-C	Location Demonstrated by visual reference to street furniture or evidence of previous streetworks, ie - reinstatement scars
DETECTION QL-B4	A segment of utility suspected to exist but has not been detected by a geophysical technique
QL-B3	Horizontal location only of the utility detected by one of the geophysical techniques used
QL-B2	Horizontal and vertical location of the utility detected by one of the geophysical techniques used
QL-B1	Horizontal and vertical location of the utility detected by multiple geophysical techniques
VERIFICATION QL-A	Horizontal and vertical location of the top and/or bottom of the utility

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The following is a non-exhaustive list of the limitations of utility surveys:

- Depth of Utility:** The depth and size of a utility affect the signal response and the degree with which a utility can be located. Due to attenuation of the radar signal with depth, resolution is restricted, hence making identification of utilities more difficult with increasing depth.
- Size of Utility:** The smaller the diameter of a utility the more difficult it is to locate. This difficulty increases with depth.
- Soil Conditions:** The depth penetration and quality of the data depends on the ground conditions of the site. GPR Surveying works best within high resistivity material. Clay overburden can impair GPR Surveying. Poor data may be a result of areas with high conductivity.
- Utility Congestion:** Where different utilities converge together into a service corridor or cross paths it becomes difficult to isolate a specific utility and to map its route. The reflected signal will display a single response to multiple utilities. Therefore multiple utilities may appear to be a single utility. Where similar services run on close proximity, separation may be impossible.
- Signal Jumping:** Signal from surrounding services may 'jump' to a highly conductive line masking its true identity.
- Shadowing:** (of deeper utilities by shallower objects) Shallow utilities will mask the existence of deeper utilities where they are in close proximity. Also, high reflective materials close to the surface i.e. rebar may hide deeper anomalies.
- Surface Obstructions:** The GPR system relies on a relatively flat and even surface on which to perform radar passes. If ground obstructions such as vehicles, organic material (long grass, scrub) or undulating ground surface are present then the acquired data will be of lower resolution and in some cases not viable.
- Loss of signal:** It is not always possible to trace the entire length of each underground service.
- Connections between manholes:** Connections between manhole chambers are assumed to be straight.
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- Acute bends in pipework:** It may not be possible to trace a pipe past an acute bend.

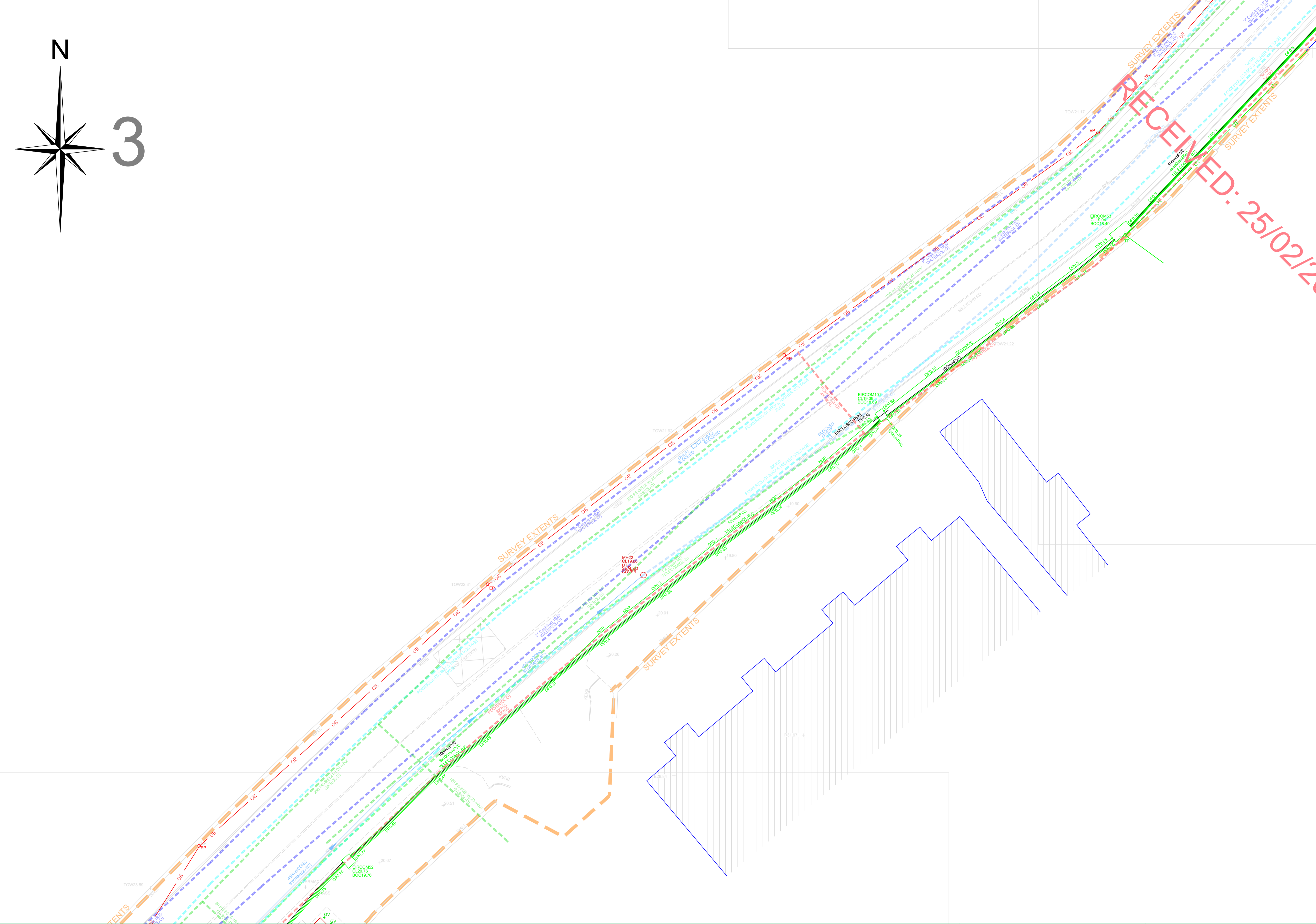
Accuracy estimates:

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- Plan accuracies of + or - 150mm may be achieved but this figure will depend on the depth of service below ground level. However variations within the subsurface, depth below the ground, close proximity of other services and local magnetic, atmospheric or ground conditions, bends, lateral service connections and any of the other limitations listed in this disclaimer may alter this estimated accuracy.
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RECEIVED: 25/02/2024

www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

STREET FURNITURE :

BOLLARDS	BD +
BUS STOP	BS +
CRASH BARRIER	CB
GATE	GP +
ELECTRICITY POLE	EP +
TELEPHONE POLE	TP +
EARTHING ROD	ER +
LAMP POST	LP +
MARKER POST	MKR +
SIGN POST	SP +
TRAFFIC LIGHT	TL +
TELEPHONE BOX	TB
POST	POST
POST BOX	POST BOX
ROADSIGN	RS-RS
BORE HOLE	BH +
TRIAL PIT	TPIT +

SERVICES :

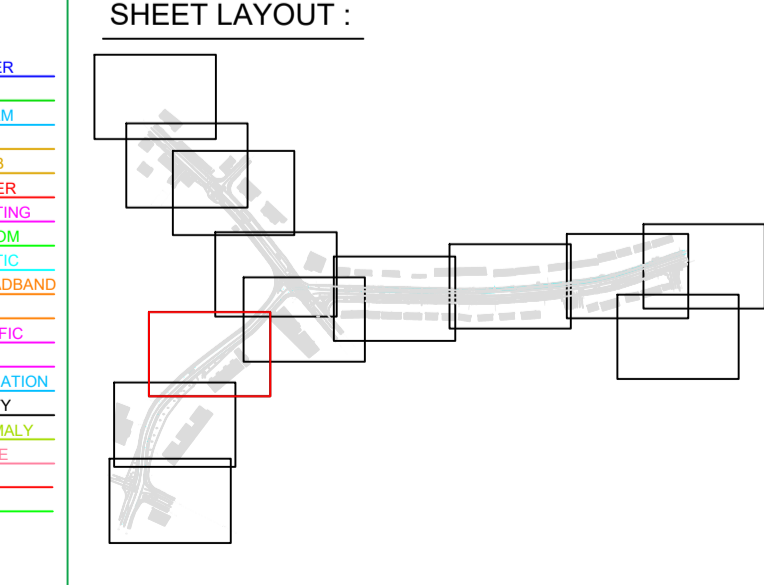
AIR VALVE	AV
ARMSTRONGS JUNCTION	AJ
CABLE TV IC	CATV
GATE	GP
EIRCOM JUNCTION BOX	EIRCOM BOX
ELECTRICAL CABLE PIT	ECP
ESAT COVER	ESAT
ESB COVER	ESB
ESB JUNCTION BOX	ESB BOX
FIRE HYDRANT	FH
GAS VALVE	GV
GULLY	G
INSPECTION COVER	IC
MANHOLE	MH
SEPTIC TANK	SEPTIC
SLUICE VALVE	SV

LEVELS :

BED LEVEL	+BED101.50
FLOOR LEVEL	+FL101.50
INVERT LEVEL	+IL101.50
ROAD LEVEL	+R101.50
SOFFIT LEVEL	+SL101.50
SPT LEVEL	+S101.50
TOP OF WALL LEVEL	+TOW101.50
WATER LEVEL	+WL101.50
SURVEY CONTROL STATION	SOR
UNABLE TO OPEN	UTO
UNABLE TO TRACE	UTT

UNDERGROUND LEGEND :

WATER MAIN	WATER
GAS MAIN	GAS
STORM DRAIN	STORM
FOUL SEWER	FOUL
COMBINED SEWER	COMB
ELECTRIC CABLE	POWER
ELECTRIC LIGHTING	LIGHTING
EIRCOM	EIRCOM
FIBRE OPTIC CABLE	F.OPTIC
BROADBAND	BROADBAND
CABLE TV	TRAFFIC
TRAFFIC AND SIGNAL CABLE	CCTV
IRRIGATION PIPE	IRRIGATION
EMPTY DUCT	EMPTY
GPR ANOMALY	ANOMALY
UNKNOWN CABLE	CABLE
O'HEAD ELECTRICITY	HE
O'HEAD TELECOM	HT



PLAN PRODUCED BY:

APEX SURVEYS

CONTACT INFORMATION:

Apex Surveys
Unit 78 Dunboyne Business Park
Dunboyne, Co. Meath, Ireland
www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

CLIENT:

D.B.F.L.

GRID SYSTEM: Irish Transverse Mercator
DATUM: Malin Head (OSGM15)
NOTES: Drawing Contains Scale Factor

REVISIONS:

No.	Date	Description
001	04/03/20	Original Drawing
002	06/11/20	Additional Information Added

PROJECT:

Sandford Park, Miltown

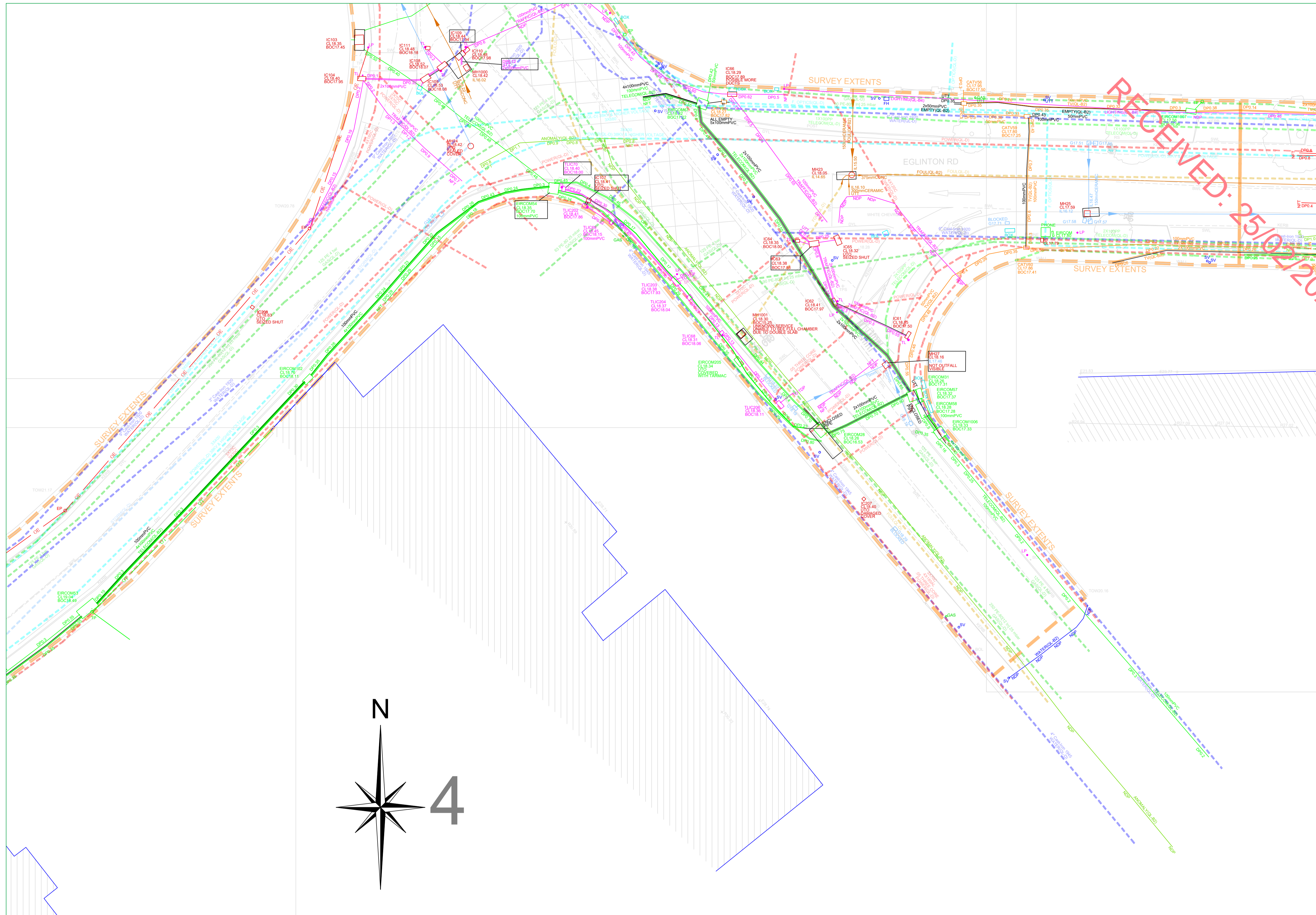
SCALE : 1/200 A1

DATE : 04/03/2020

DRG No: 4234

SHEET: 3 of 10

DESCRIPTION :	2D Utilities
SURVEYED BY :	Mario Gaspar
PROCESSED BY :	Apex Surveys
CHECKED BY :	Alan Brady



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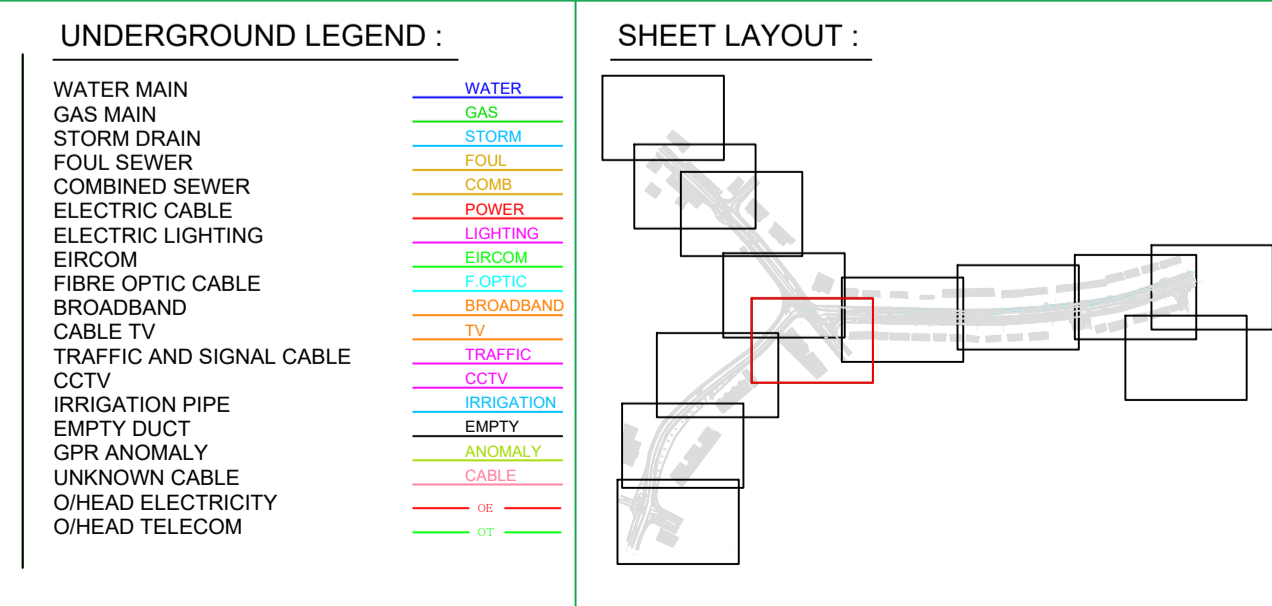
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00353 1 691 0156

STREET FURNITURE :	SERVICES :	UNDERGROUND LEGEND :
BOLLARDS BS+ BUS STOP CB CRASH BARRIER EP+ GATE TP+ ELECTRICITY POLE LP+ TELEPHONE POLE MKR+ EARTHING ROD SIGN+ LAMP POST TB MARKER POST TB SIGN POST TB TRAFFIC LIGHT TB TELEPHONE BOX TB POST TB POST BOX TB RS-RS TB BORE HOLE BH+ TRIAL PIT TPIT+	AIR VALVE AV ARMSTRONGS JUNCTION AJ CABLE TV IC COVER LEVEL CL EIRCOM COVER EIRCOM EIRCOM JUNCTION BOX EIRCOM BOX ELECTRICAL CABLE PIT ECP ESAT COVER ESB ESAT COVER ESB BOX FIRE HYDRANT FH GAS VALVE G GULLY G INSPECTION COVER IC MANHOLE MH SEPTIC TANK ST SLUICE VALVE SV	WATER MAIN GAS MAIN STORM DRAIN FOULED SEWER COMBINED SEWER ELECTRIC CABLE ELECTRIC LIGHTING EIRCOM FIBRE OPTIC CABLE BROADBAND CABLE TV TRAFFIC AND SIGNAL CABLE CCTV IRRIGATION PIPE EMPTY DUCT GPR ANOMALY UNKNOWN CABLE OHEAD ELECTRICITY OHEAD TELECOM



PLAN PRODUCED BY:

CONTACT INFORMATION:

Apex Surveys
Unit 78 Dunboyne Business Park
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00353 1 691 0156

CLIENT:	D.B.F.L.	
GRID SYSTEM:	Irish Transverse Mercator	
DATUM:	Main Head (OSGM15)	
NOTES:	Drawing Contains Scale Factor	
REVISIONS:		
No.	Date	Description
001	04/03/20	Original Drawing
002	06/11/20	Additional Information Added

PROJECT:	Sandford Park, Miltown	
SCALE :	1/200 A1	DATE : 04/03/2020
DRG No:	4234	DESCRIPTION : 2D Utilities
SHEET:	4 of 10	SURVEYED BY : Mario Gaspar
		PROCESSED BY : Apex Surveys
		CHECKED BY : Alan Brady

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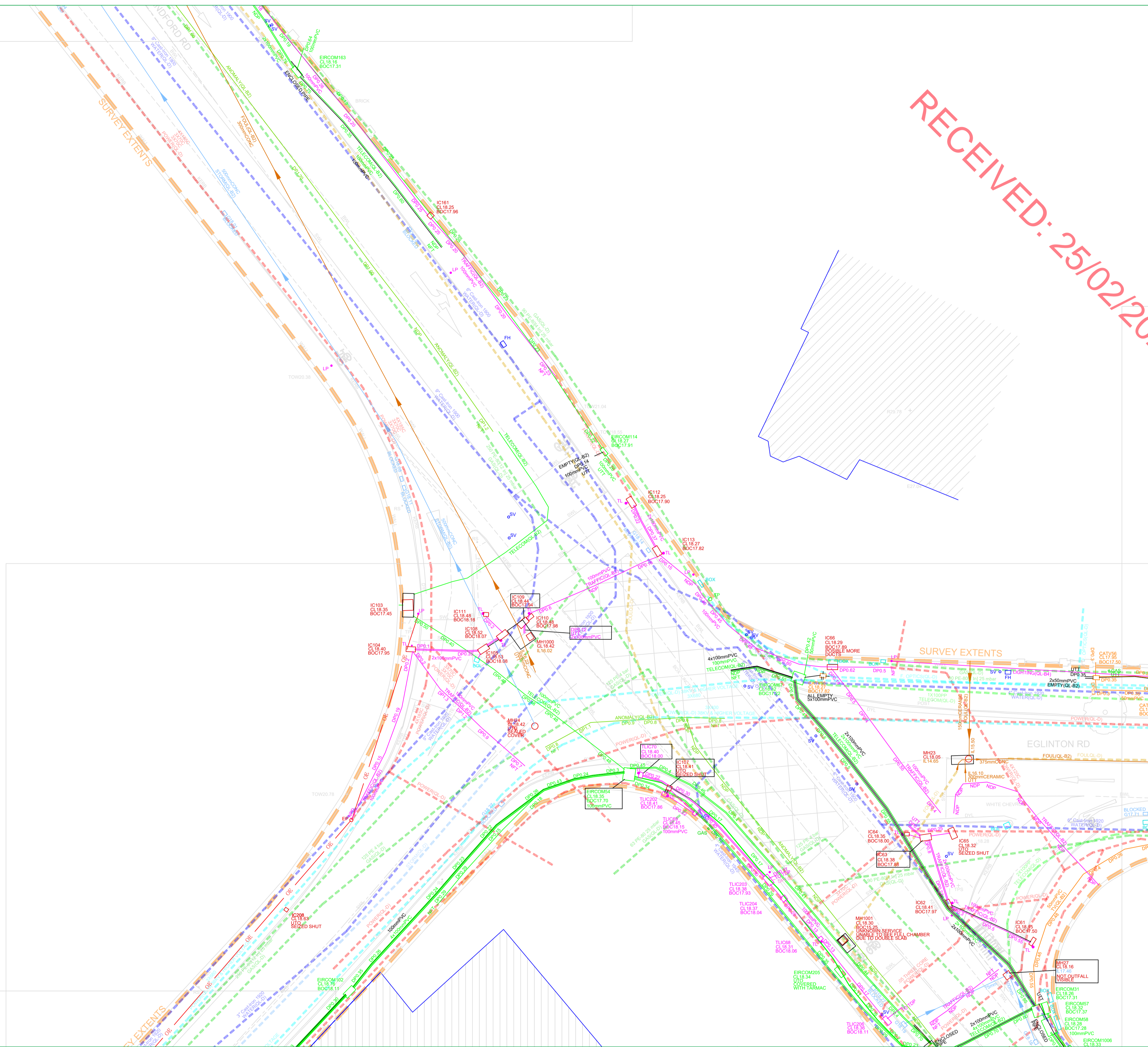
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RECEIVED: 25/02/2024



STREET FURNITURE :

BOLLARDS	BD +
BUS STOP	BS +
CRASH BARRIER	CB
GATE	EP +
ELECTRICITY POLE	TR +
TELEPHONE POLE	ER +
EARTHING ROD	LP +
LAMP POST	MKR +
MARKER POST	TL +
SIGN POST	TB
TRAFFIC LIGHT	POST BOX
TELEPHONE BOX	RS-RS
POST BOX	BH +
ROADSIGN	TRPT +
BORE HOLE	
TRIAL PIT	

SERVICES :

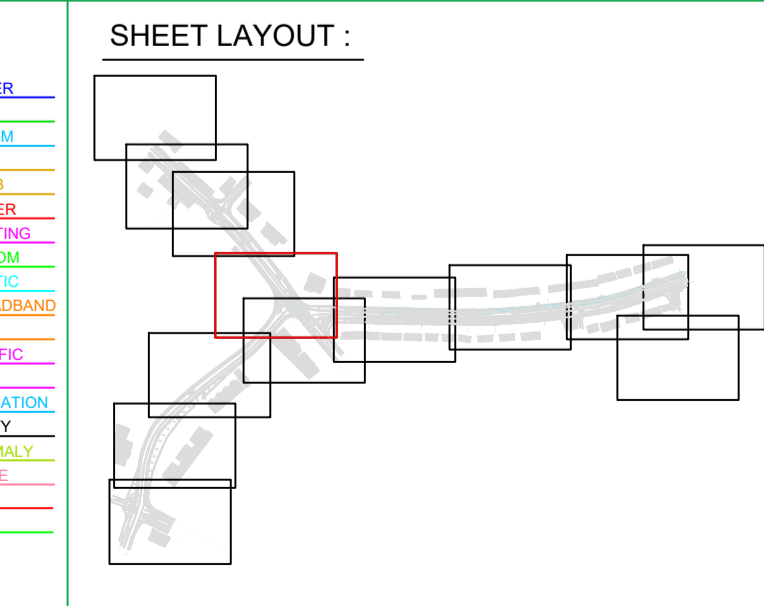
AIR VALVE	AV
ARMSTRONG JUNCTION	AJ
CABLE TV IC	CATV
COVER LEVEL	OL
EIRCOM COVER	EIRCOM
EIRCOM JUNCTION BOX	EIRCOM BOX
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GULLY	G
INSPECTION COVER	IC
MANHOLE	MH
SEPTIC TANK	ST
SLUICE VALVE	SV

LEVELS :

BED LEVEL	+BED101.50
FLOOR LEVEL	+FL101.50
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TOP OF WALL LEVEL	+TOW101.50
WATER LEVEL	+WL101.50
SURVEY CONTROL STATION	CS

UNDERGROUND LEGEND :

WATER MAIN	WATER
GAS MAIN	GAS
STORM DRAIN	STORM
FOUL SEWER	FOUL
COMBINED SEWER	COMB
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ELECTRIC LIGHTING	LIGHTING
EIRCOM	EIRCOM
FIBRE OPTIC CABLE	F.OPTIC
BROADBAND	BROADBAND
CABLE TV	TV
TRAFFIC AND SIGNAL CABLE	TRAFFIC
CCTV	CCTV
IRRIGATION PIPE	IRRIGATION
EMPTY DUCT	EMPTY
GPR ANOMALY	ANOMALY
UNKNOWN CABLE	CABLE
OHEAD ELECTRICITY	HE
OHEAD TELECOM	HT



APEX SURVEYS

www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

PLAN PRODUCED BY:

APEX SURVEYS

CONTACT INFORMATION:

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CLIENT:

D.B.F.L.

GRID SYSTEM: Irish Transverse Mercator
DATUM: Main Head (OSGM15)
NOTES: Drawing Contains Scale Factor

REVISIONS:

No.	Date	Description
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002	06/11/20	Additional Information Added

PROJECT:

Sandford Park, Miltown

SCALE : 1/200 A1

DATE : 04/03/2020

DRG No: 4234

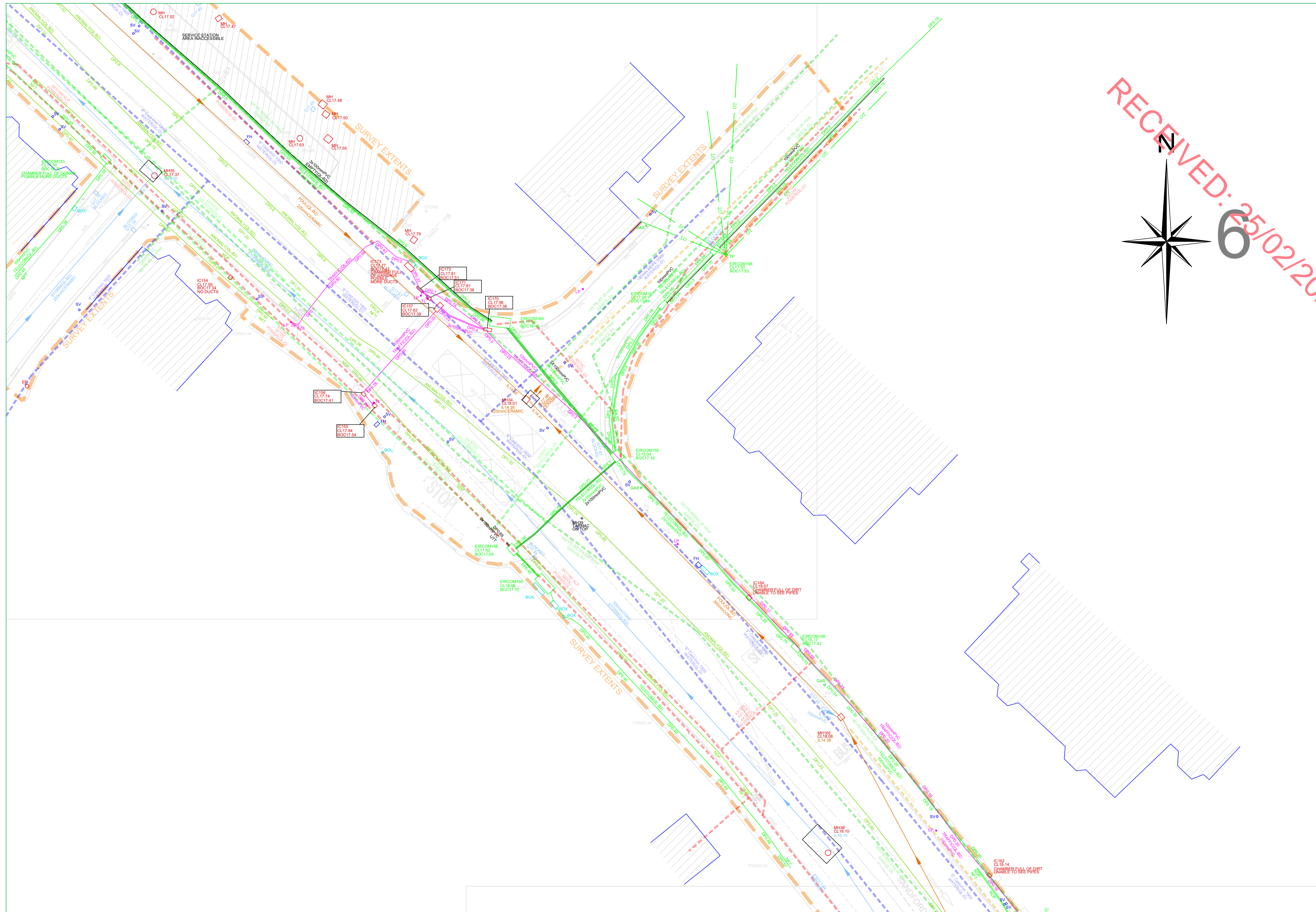
SHEET: 5 of 10

DESCRIPTION : 2D Utilities

SURVEYED BY : Mario Gaspar

PROCESSED BY : Apex Surveys

CHECKED BY : Alan Brady



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www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

STREET FURNITURE :	SERVICES :	UNDERGROUND LEGEND :
<ul style="list-style-type: none"> BOLLARDS BS+ BUS STOP CB GATE EP+ ELECTRICITY POLE ER+ TELEPHONE POLE LP+ EARTHING ROD MKR+ LAMP POST SIGN MARKER POST TB TELEPHONE BOX POST POST BOX RS-RS ROADSIGN BH+ BORE HOLE TPIT+ TRIAL PIT 	<ul style="list-style-type: none"> AIR VALVE AV ARMSTRONG JUNCTION AJ CABLE TV IC COVER LEVEL CATV EIRCOM COVER EIRCOM EIRCOM JUNCTION BOX EIRCOM BOX ELECTRICAL CABLE PIT ECP ESAT COVER ESB ESB COVER ESB BOX ESB JUNCTION BOX ESB FIRE HYDRANT FH GAS VALVE GV GULLY G INSPECTION COVER I MANHOLE MH SEPTIC TANK S SLUICE VALVE SV 	<ul style="list-style-type: none"> WATER MAIN WATER GAS MAIN GAS STORM DRAIN STORM POUL SEWER POUL COMBINED SEWER COMB ELECTRIC CABLE POWER ELECTRIC LIGHTING LIGHTING EIRCOM EIRCOM FIBRE OPTIC CABLE F.OPTIC BROADBAND BROADBAND TV TV TRAFFIC AND SIGNAL CABLE TRAFFIC CCTV CCTV IRRIGATION PIPE IRRIGATION EMPTY DUCT EMPTY GPR ANOMALY ANOMALY UNKNOWN CABLE CABLE O'HEAD ELECTRICITY O'HEAD O'HEAD TELECOM TELECOM

SHEET LAYOUT :

PLAN PRODUCED BY:

CONTACT INFORMATION:

Apex Surveys
Unit 78 Dunboyne Business Park
Dunboyne, Co. Meath, Ireland
www.apexsurveys.ie
info@apexsurveys.ie
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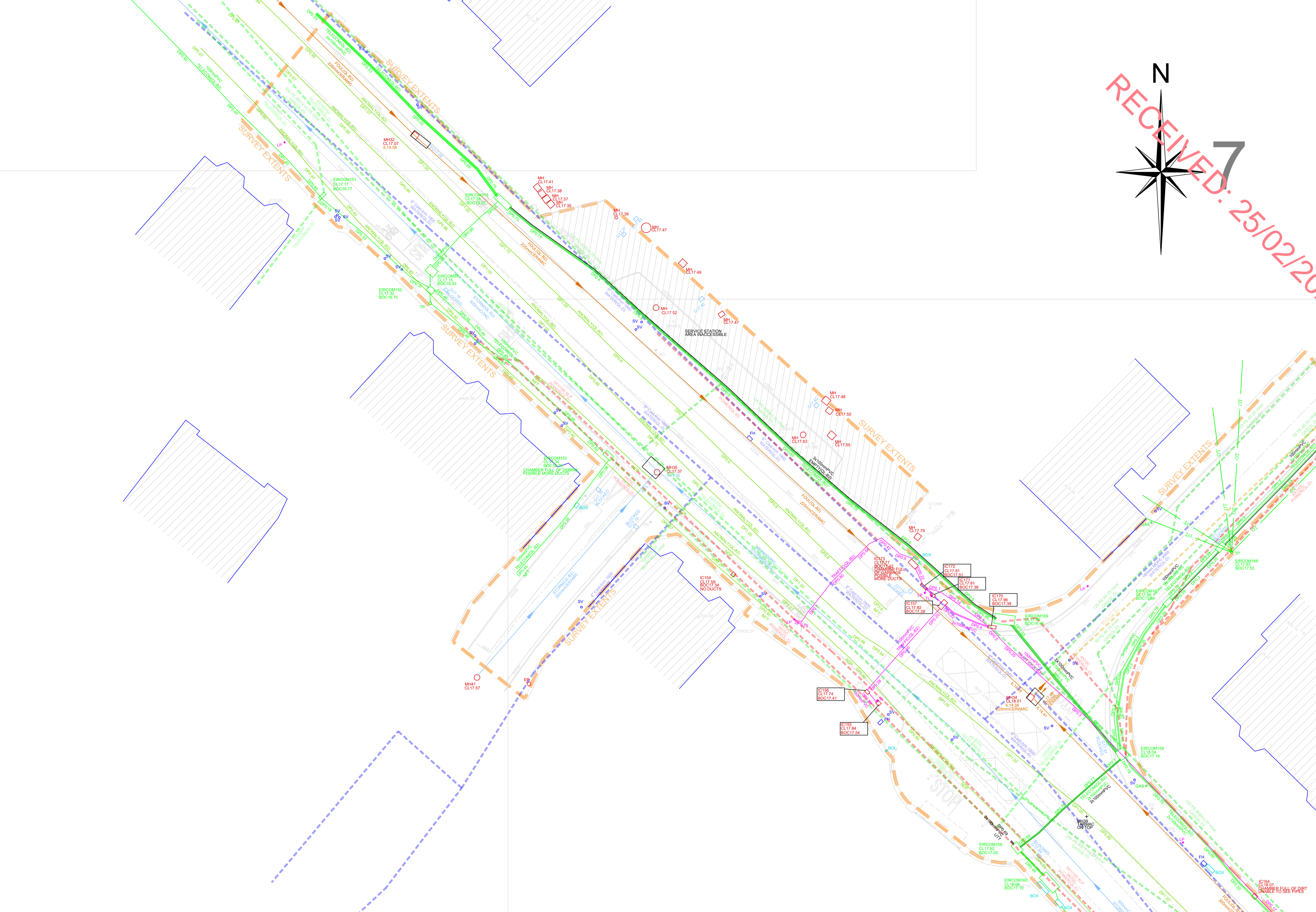
CLIENT: D.B.F.L.

GRID SYSTEM: Irish Transverse Mercator
DATUM: Main Head (OSGM15)
NOTES: Drawing Contains Scale Factor

REVISIONS:		
No.	Date	Description
001	04/03/20	Original Drawing
002	06/11/20	Additional Information Added

PROJECT: Sandford Park, Miltown

SCALE :	1/200 A1	DATE :	04/03/2020
DRG No:	4234	DESCRIPTION :	2D Utilities
SHEET:	6 of 10	SURVEYED BY :	Mario Gaspar
		PROCESSED BY :	Apex Surveys
		CHECKED BY :	Alan Brady



PAS 128: 2014 (Quality of Survey Level Outputs):

DESKTOP UTILITY RECORDS SEARCH	QL-D	Drafted from utility records
SITE RECONNAISSANCE	QL-C	Location Demonstrated by visual reference to street furniture or evidence of previous streetworks, ie - reinstatement scars
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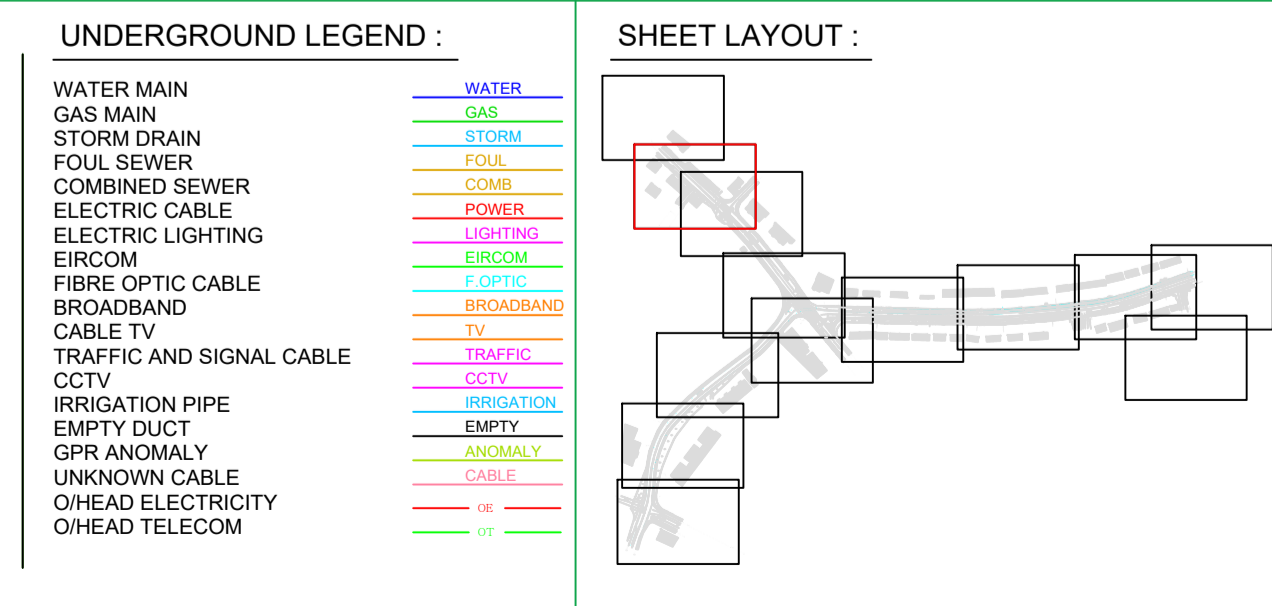
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CLIENT:

D.B.F.L.

GRID SYSTEM: Irish Transverse Mercator
DATUM: Main Head (OSGM15)
NOTES: Drawing Contains Scale Factor

REVISIONS:

No.	Date	Description
001	04/03/20	Original Drawing
002	06/11/20	Additional Information Added

PROJECT:

Sandford Park, Miltown

SCALE : 1/200 A1

DATE : 04/03/2020

DRG No: 4234

SHEET: 7 of 10

DESCRIPTION : 2D Utilities

SURVEYED BY : Mario Gaspar

PROCESSED BY : Apex Surveys

CHECKED BY : Alan Brady

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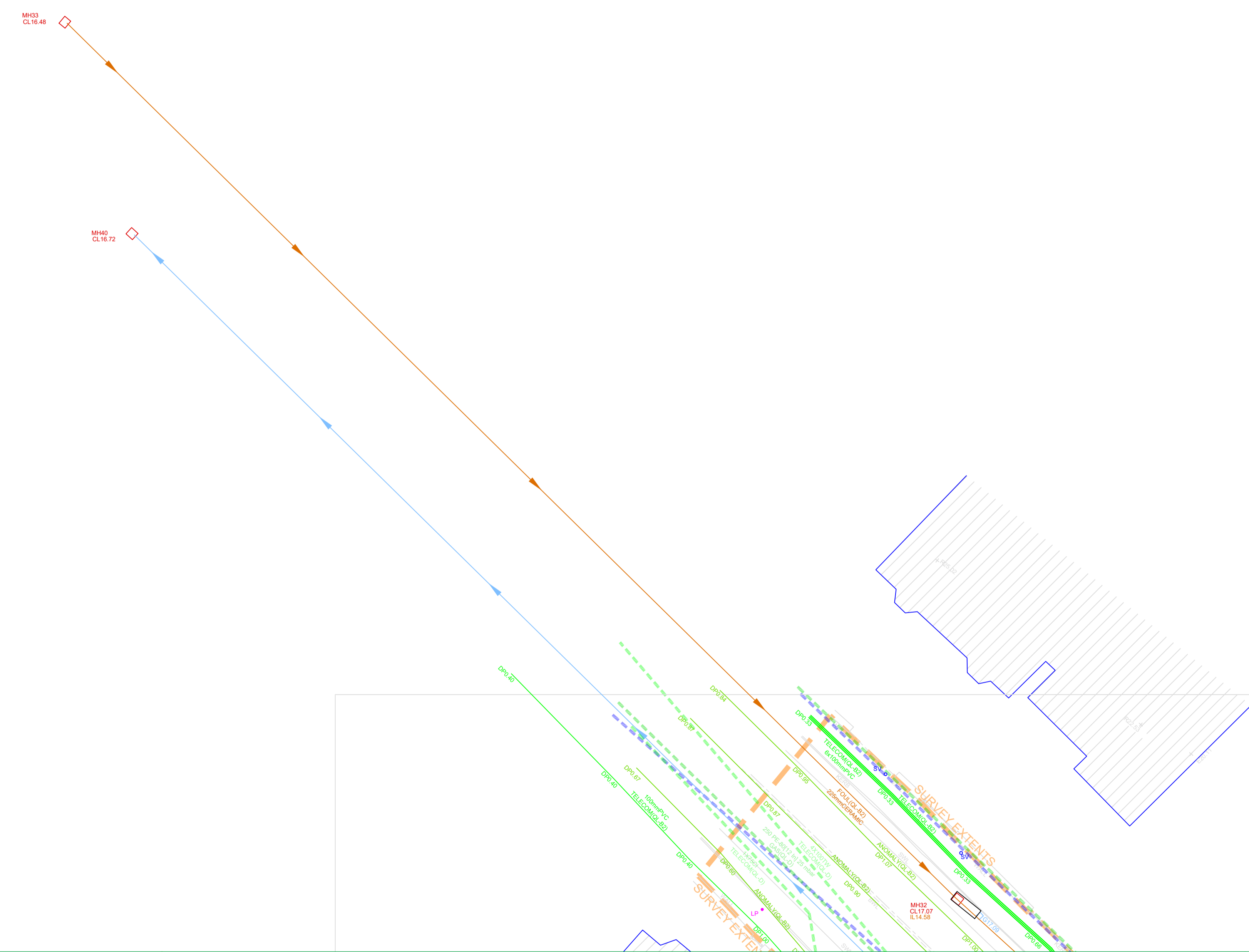
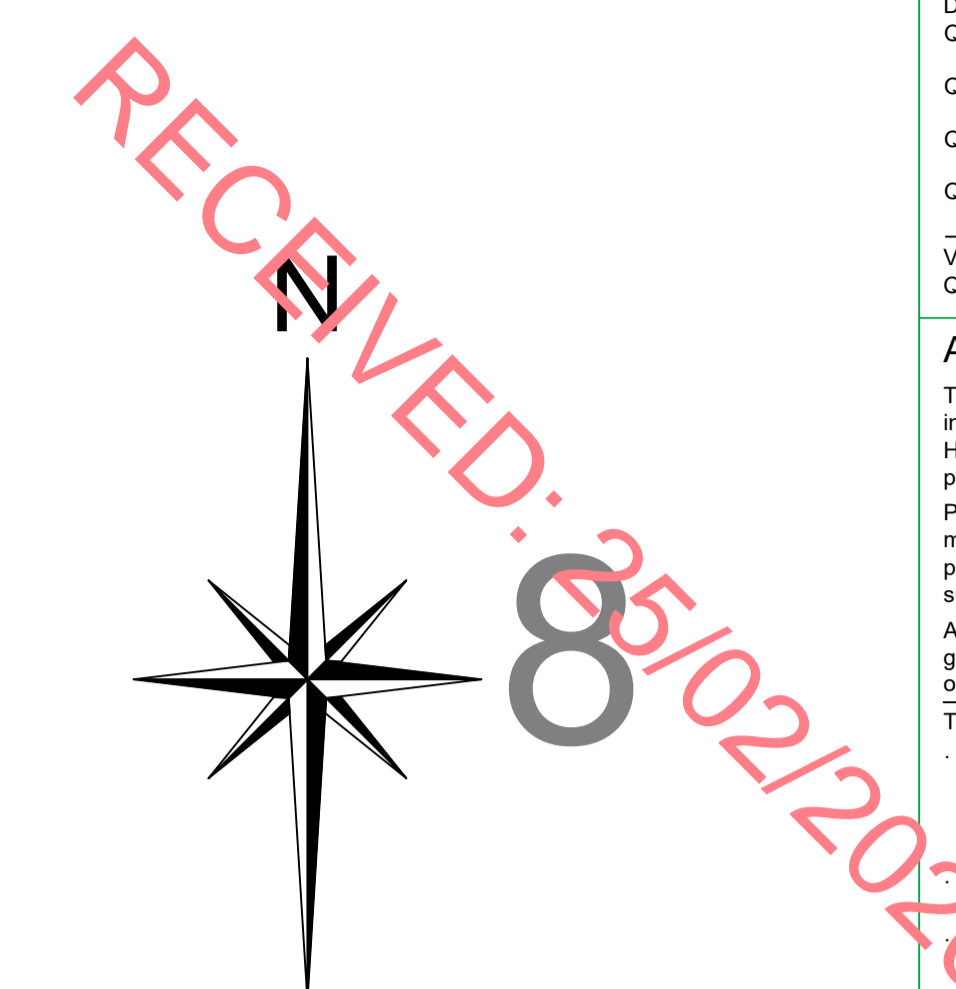
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BOLLARDS	BD +	AIR VALVE	AV	BED LEVEL	+BED101.50
BUS STOP	BS +	ARMSTRONG JUNCTION	AJ	FLOOR LEVEL	+FL101.50
CRASH BARRIER	CB	CABLE TV IC	CATV	INVERT LEVEL	+IL101.50
GATE	EP +	COVER LEVEL	CL	ROAD LEVEL	+101.50
ELECTRICITY POLE	EP +	EIRCOM COVER	EIRCOM	SOFFIT LEVEL	+SL101.50
TELEPHONE POLE	TP +	EIRCOM JUNCTION BOX	EIRCOM JB	SPOT LEVEL	+101.50
EARTHING ROD	ER +	ELECTRICAL CABLE PIT	ECP	TOP OF WALL LEVEL	+TOW101.50
LAMP POST	LP +	ESAT COVER	ESAT	WATER LEVEL	+WL101.50
MARKER POST	MKR +	ESB COVER	ESB	SURVEY CONTROL STATION	
SIGN POST	SIGN	ESB JUNCTION BOX	ESB JB		
TRAFFIC LIGHT	TL +	FIRE HYDRANT	FH		
TELEPHONE BOX	TB	GAS VALVE	GV		
POST	POST	INSPECTION COVER	IC		
POST BOX	BS-RS	MANHOLE	MH		
ROADSIGN	BH +	SEPTIC TANK	ST		
BORE HOLE	BH +	SLUICE VALVE	SV		
TRIAL PIT	TPIT +				
BOTTOM OF CHAMBER	BOC	DOWNPIPE	DP	START OF RUN	SOR
CAST-IRON	CI	EARTHENWARE	EW	UNABLE TO OPEN	UTO
CONCRETE	CONC	NO FURTHER TRACE	NFT	UNABLE TO TRACE	UTT
DIAMETER	DIA	OFFSITE	O/S		

UNDERGROUND LEGEND :		SHEET LAYOUT :	
WATER MAIN	WATER	Sheet 1	Sheet 2
GAS MAIN	GAS	Sheet 3	Sheet 4
STORM DRAIN	STORM	Sheet 5	Sheet 6
FOUL SEWER	FOUL	Sheet 7	Sheet 8
COMBINED SEWER	COMB	Sheet 9	Sheet 10
ELECTRIC CABLE	POWER	Sheet 11	Sheet 12
ELECTRIC LIGHTING	LIGHTING	Sheet 13	Sheet 14
EIRCOM	EIRCOM	Sheet 15	Sheet 16
FIBRE OPTIC CABLE	F. OPTIC	Sheet 17	Sheet 18
BROADBAND	BROADBAND	Sheet 19	Sheet 20
CABLE TV	TV	Sheet 21	Sheet 22
TRAFFIC AND SIGNAL CABLE	TRAFFIC	Sheet 23	Sheet 24
CCTV	CCTV	Sheet 25	Sheet 26
IRRIGATION PIPE	IRRIGATION	Sheet 27	Sheet 28
EMPTY DUCT	EMPTY	Sheet 29	Sheet 30
GPR ANOMALY	ANOMALY	Sheet 31	Sheet 32
UNKNOWN CABLE	CABLE	Sheet 33	Sheet 34
O/H EAD ELECTRICITY	O/H	Sheet 35	Sheet 36
O/H EAD TELECOM	TELECOM	Sheet 37	Sheet 38

PLAN PRODUCED BY:

APEX SURVEYS

CONTACT INFORMATION:

Apex Surveys
Unit 78 Dunboyne Business Park
Dunboyne, Co. Meath, Ireland
www.apexsurveys.ie
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CLIENT:		PROJECT:	
D.B.F.L.		Sandford Park, Miltown	
GRID SYSTEM:	Irish Transverse Mercator	SCALE :	1/200 A1
DATUM:	Main Head (OSGM15)	DRG No:	4234
NOTES:	Drawing Contains Scale Factor	DATE :	04/03/2020
REVISIONS:		DESCRIPTION :	2D Utilities
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SHEET:		8 of 10	
SURVEYED BY :		Mario Gaspar	
PROCESSED BY :		Apex Surveys	
CHECKED BY :		Alan Brady	

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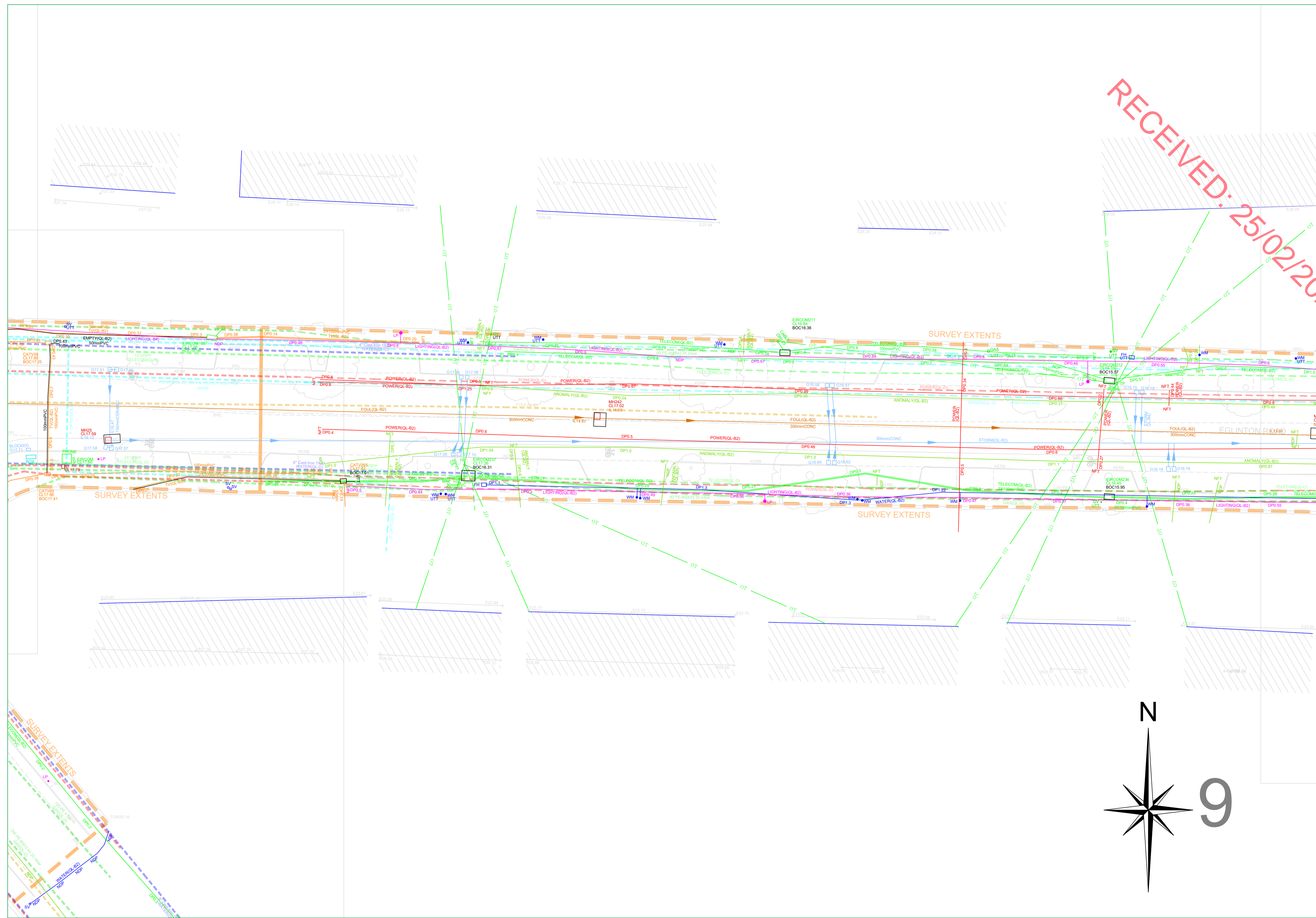
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APEX SURVEYS
www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

STREET FURNITURE :	SERVICES :	UNDERGROUND LEGEND :
BOLLARDS BS+ BUS STOP CB CRASH BARRIER EP+ GATE ER+ ELECTRICITY POLE LP+ TELEPHONE POLE MKR+ EARTHING ROD SIGN+ LAMP POST TB MARKER POST POST+ SIGN POST POST BOX TRAFFIC LIGHT RS-RS TELEPHONE BOX BH+ POST TRIPT+	AIR VALVE AV ARMSTRONGS JUNCTION AJ CABLE TV IC COVER LEVEL CATV EIRCOM COVER EIRCOM EIRCOM JUNCTION BOX EIRCOM BOX ELECTRICAL CABLE PIT ECP ESAT COVER ESB ESAT COVER ESB BOX FIRE HYDRANT FH GAS VALVE G INVERT LEVEL INV INSPECTION COVER IC MANHOLE MH SEPTIC TANK SEPTIC SLUICE VALVE SV	WATER MAIN WATER GAS MAIN GAS STORM DRAIN STORM FOULED SEWER FOULED COMBINED SEWER COMB ELECTRIC CABLE POWER ELECTRIC LIGHTING LIGHTING EIRCOM EIRCOM FIBRE OPTIC CABLE F.OPTIC BROADBAND BROADBAND CABLE TV TRAFFIC TRAFFIC AND SIGNAL CABLE TRAFFIC IRRIGATION PIPE IRRIGATION EMPTY DUCT EMPTY GPR ANOMALY ANOMALY UNKNOWN CABLE CABLE OHEAD ELECTRICITY OHEAD TELECOM TELECOM

LEVELS :	SHEET LAYOUT :
BED LEVEL +BED101.50 FLOOR LEVEL +FL101.50 INVERT LEVEL +IL101.50 ROAD LEVEL +RL101.50 SOFFIT LEVEL +SL101.50 SPOT LEVEL +SL101.50 TOP OF WALL LEVEL +TOW101.50 WATER LEVEL +WL101.50 SURVEY CONTROL STATION	STOPCOCK SERVICE BOX (UNKNOWN) TRAFFIC COVER VENT WATER METER UNABLE TO OPEN UNABLE TO TRACE

PLAN PRODUCED BY:
APEX SURVEYS

CONTACT INFORMATION:
Apex Surveys
Unit 78 Dunboyne Business Park
Dunboyne, Co. Meath, Ireland
www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

CLIENT:	PROJECT:
D.B.F.L.	Sandford Park, Miltown
GRID SYSTEM: Irish Transverse Mercator DATUM: Main Head (OSGM15) NOTES: Drawing Contains Scale Factor	SCALE : 1/200 A1 DATE : 04/03/2020
REVISIONS:	DRG No: 4234
No. Date Description 001 04/03/20 Original Drawing 002 06/11/20 Additional Information Added	SHEET: 9 of 10
	DESCRIPTION : 2D Utilities SURVEYED BY : Mario Gaspar PROCESSED BY : Apex Surveys CHECKED BY : Alan Brady

PAS 128: 2014 (Quality of Survey Level Outputs):

DESKTOP UTILITY RECORDS SEARCH	QL-D	Drafted from utility records
SITE RECONNAISSANCE	QL-C	Location Demonstrated by visual reference to street furniture or evidence of previous streetworks, ie - reinstatement scars
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VERIFICATION	QL-A	Horizontal and vertical location of the top and/or bottom of the utility

Apex Surveys Ltd. Disclaimer - Utility Survey

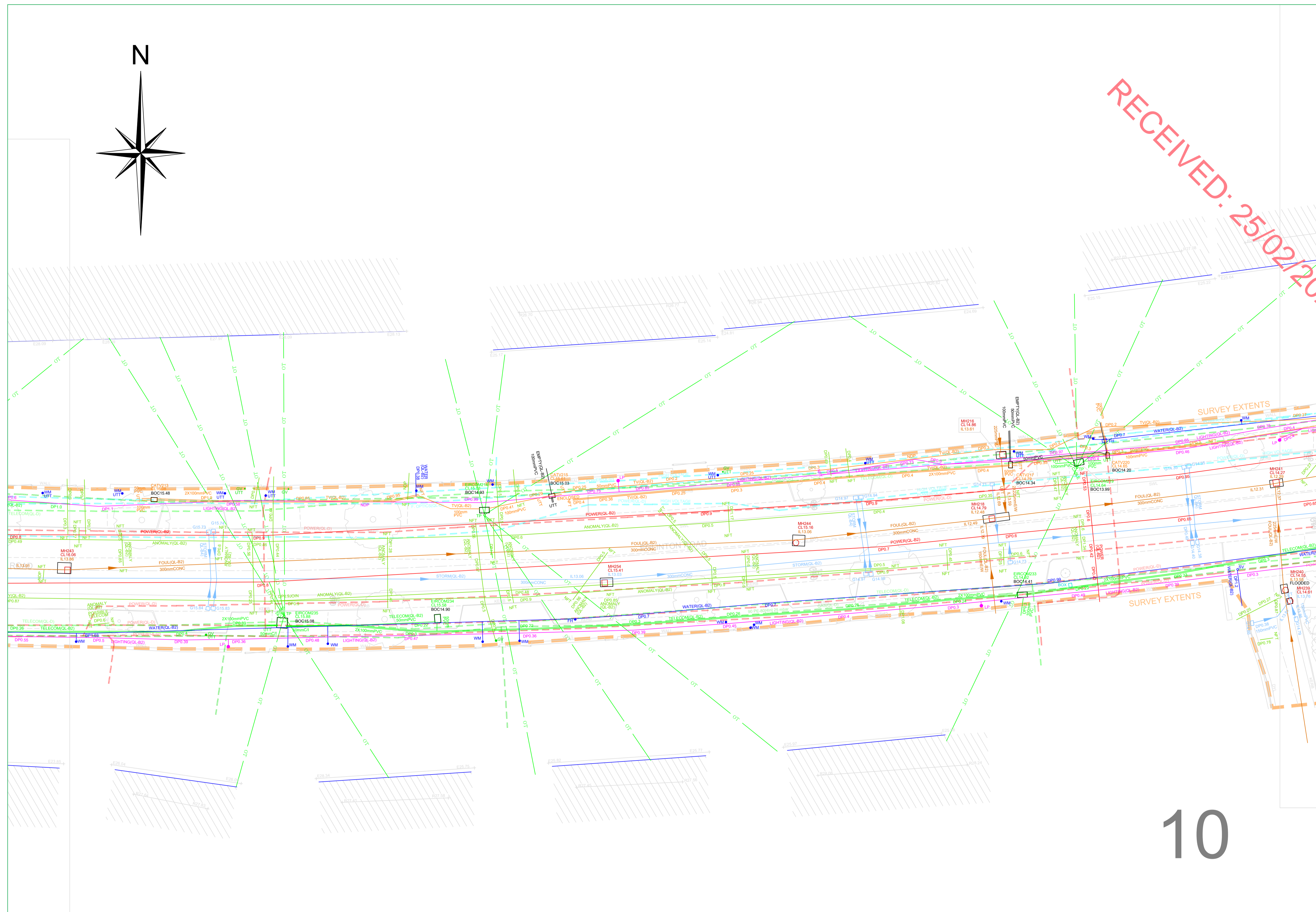
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- Depth of Utility:** The depth and size of a utility affect the signal response and the degree with which a utility can be located. Due to attenuation of the radar signal with depth, resolution is restricted, hence making identification of utilities more difficult with increasing depth.
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 - Soil Conditions:** The depth penetration and quality of the data depends on the ground conditions of the site. GPR Surveying works best within high resistivity material. Clay overburden can impair GPR Surveying. Poor data may be a result of areas with high conductivity.
 - Utility Congestion:** Where different utilities converge together into a service corridor or cross paths it becomes difficult to isolate a specific utility and map its route. The reflected signal will display a single response to multiple utilities. Therefore multiple utilities may appear to be a single utility. Where similar services run on close proximity, separation may be impossible.
 - Signal Jumping:** Signal from surrounding services may 'jump' to a highly conductive line masking its true identity.
 - Shadowing:** (of deeper utilities by shallower objects) Shallow utilities will mask the existence of deeper utilities where they are in close proximity. Also, high reflective materials close to the surface i.e. rebar may hide deeper anomalies.
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10

APEX SURVEYS
www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

STREET FURNITURE :	SERVICES :	UNDERGROUND LEGEND :
BOLLARDS BS+ BUS STOP CB CRASH BARRIER EP ELECTRICITY POLE TP+ TELEPHONE POLE ER+ EARTHING ROD LP+ LAMP POST MKR+ MARKER POST SIGN POST TL+ TRAFFIC LIGHT TB TELEPHONE BOX POST GULLY POST BOX CAST-IRON RIS-RIS BORE HOLE BH+ TRIAL PIT TPIT+	AIR VALVE AV ARMSTRONGS JUNCTION AJ CABLE TV IC COVER LEVEL CATV GATE EIRCOM EIRCOM BOX EIRCOM BOX EIRCOM JUNCTION BOX ECP ELECTRICAL CABLE PIT ESAT ESAT COVER ESB ESAT COVER ESB BOX FIRE HYDRANT FH GAS VALVE GV GULLY INSPECTION COVER G MANHOLE IC SEPTIC TANK NH SLUICE VALVE SV DOWNPIPE DP EARTHENWARE E/W NO FURTHER TRACE NFT OFFSITE O/S	WATER MAIN GAS MAIN STORM DRAIN FOUJL SEWER COMBINED SEWER ELECTRIC CABLE ELECTRIC LIGHTING EIRCOM FIBRE OPTIC CABLE BROADBAND CABLE TV TRAFFIC AND SIGNAL CABLE CCTV IRRIGATION PIPE EMPTY DUCT GPR ANOMALY UNKNOWN CABLE OHEAD ELECTRICITY OHEAD TELECOM

STOPCOCK
SERVICE BOX (UNKNOWN)
TRAFFIC COVER
VENT
WATER METER

LEVELS :
BED LEVEL +BED101.50
FLOOR LEVEL +FL101.50
INVERT LEVEL +IL101.50
ROAD LEVEL +RL101.50
SOFFIT LEVEL +SL101.50
SPOT LEVEL +101.50
TOP OF WALL LEVEL +TOW101.50
WATER LEVEL +WL101.50
SURVEY CONTROL STATION

START OF RUN
UNABLE TO OPEN
UNABLE TO TRACE

SOR
UTO
UTT

SHEET LAYOUT :

PLAN PRODUCED BY:

APEX SURVEYS

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CLIENT:

D.B.F.L.

GRID SYSTEM: Irish Transverse Mercator
DATUM: Main Head (OSGM15)
NOTES: Drawing Contains Scale Factor

REVISIONS:		
No.	Date	Description
001	04/03/20	Original Drawing
002	06/11/20	Additional Information Added

PROJECT:

Sandford Park, Miltown

SCALE :	1/200 A1	DATE :	04/03/2020
DRG No:	4234	DESCRIPTION :	2D Utilities
SHEET:	10 of 10	SURVEYED BY :	Mario Gaspar
		PROCESSED BY :	Apex Surveys
		CHECKED BY :	Alan Brady

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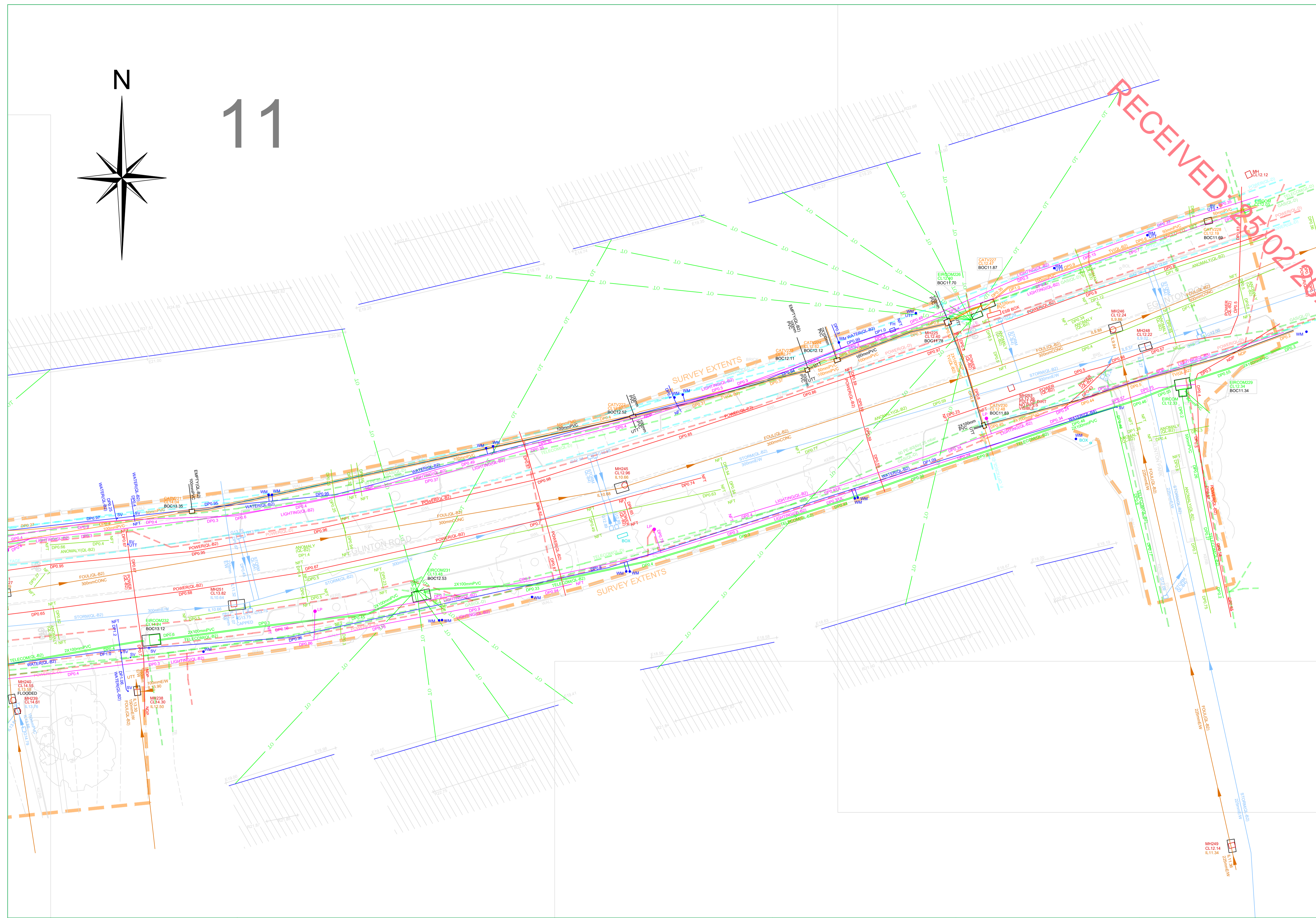
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STOPCOCK	LEVELS :	WATER MAIN	WATER
ARMSTRONG JUNCTION	+BED101.50	WATER MAIN	WATER
TRAFFIC COVER	+FL101.50	GAS MAIN	GAS
VENT	+IL101.50	STORM DRAIN	STORM
WATER METER	+101.50	FOUILL SEWER	FOUILL
	+SL101.50	COMBINED SEWER	COMB
	+101.50	ELECTRIC CABLE	POWER
	+101.50	ELECTRIC LIGHTING	LIGHTING
	+101.50	EIRCOM	EIRCOM
	+WL101.50	FIBRE OPTIC CABLE	F.OPTIC
		BROADBAND	BROADBAND
		CABLE TV	CABLE TV
		TRAFFIC AND SIGNAL CABLE	TRAFFIC
		CCTV	CCTV
		IRRIGATION PIPE	IRRIGATION
		EMPTY DUCT	EMPTY
		GPR ANOMALY	ANOMALY
		UNKNOWN CABLE	CABLE
		OHEAD ELECTRICITY	HE
		OHEAD TELECOM	TT

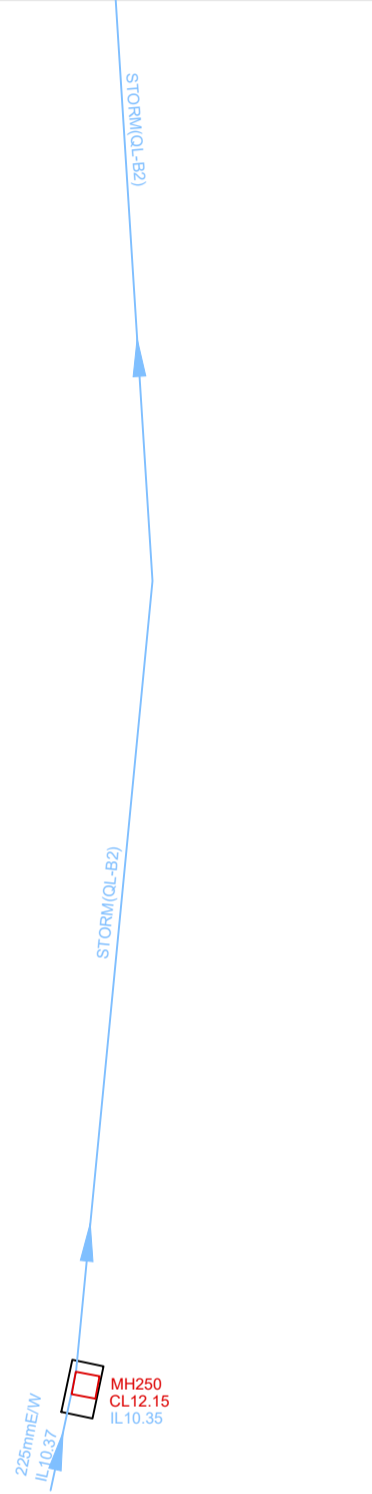
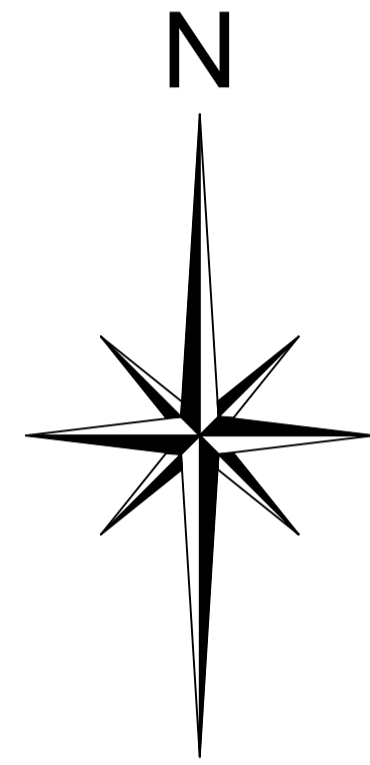
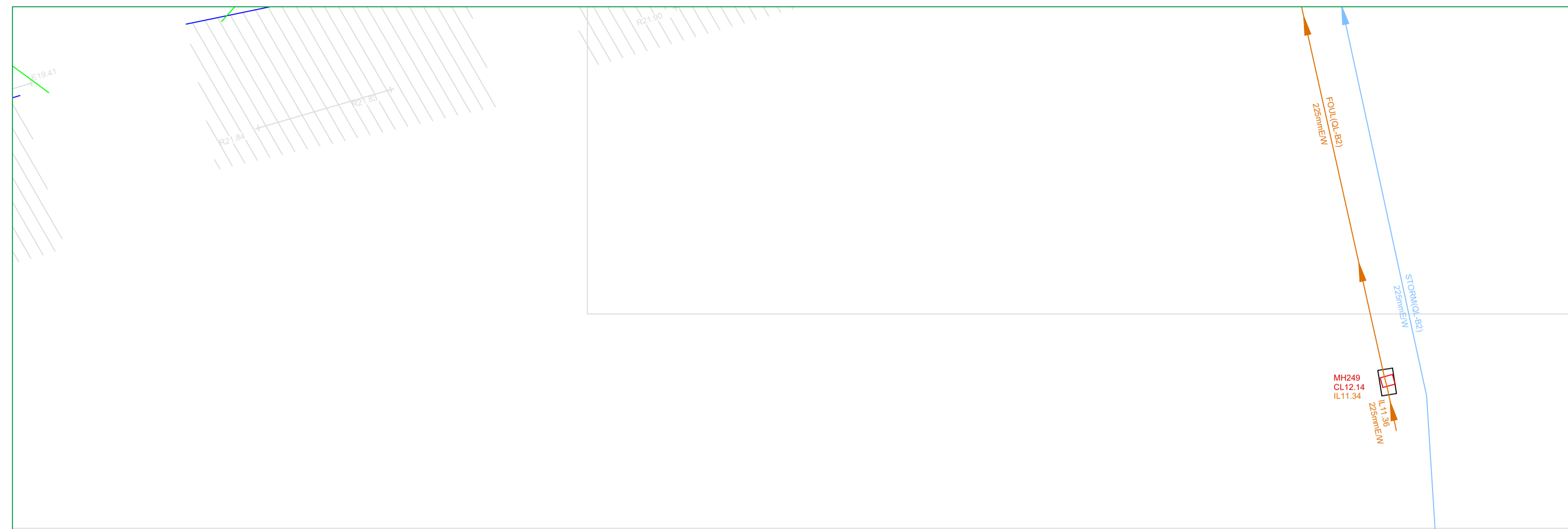
PLAN PRODUCED BY:

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CLIENT:	GRID SYSTEM:
D.B.F.L.	Irish Transverse Mercator
	DATUM: Main Head (OSGM15)
	NOTES: Drawing Contains Scale Factor
	REVISIONS:
	No. Date Description
	001 04/03/20 Original Drawing
	002 06/11/20 Additional Information Added

PROJECT:	SCALE :	DATE :
Sandford Park, Miltown	1/200 A1	04/03/2020
	DRG No:	DESCRIPTION :
	4234	2D Utilities
	SHEET:	SURVEYED BY :
	11 of 10	Mario Gaspar
		PROCESSED BY :
		Apex Surveys
		CHECKED BY :
		Alan Brady



RECEIVED: 25/02/2024

13

PAS 128: 2014 (Quality of Survey Level Outputs):

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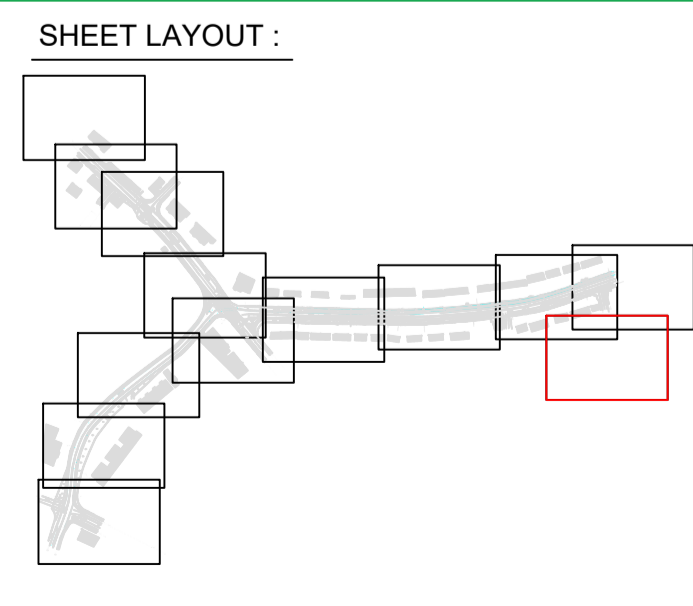
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- Above ground services unless specifically requested.
- Lifting manholes which require longer than 10 minutes effort using standard heavy duty apparatus.

All works carried out by Apex Surveys conforms to the guidelines set out by The Survey Association (TSA) and PAS:128 Standard for utility mapping

www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

STREET FURNITURE :		SERVICES :		UNDERGROUND LEGEND :	
BOLLARDS	BD +	AIR VALVE	AV □	WATER MAIN	WATER
BUS STOP	BS +	ARMSTRONGS JUNCTION	AJ □	GAS MAIN	GAS
CRASH BARRIER	CB	CABLE TV IC	CA TV □	STORM DRAIN	STORM
GATE	EP +	COVER LEVEL	CL	FOUL SEWER	FOUL
ELECTRICITY POLE	EP +	EIRCOM COVER	EIRCOM □	COMBINED SEWER	COMB
TELEPHONE POLE	TP +	EIRCOM JUNCTION BOX	EIRCOM BOX □	ELECTRIC CABLE	POWER
EARTHING ROD	ER +	ELECTRICAL CABLE PIT	ECP □	ELECTRIC LIGHTING	LIGHTING
LAMP POST	LP +	ESAT COVER	ESAT □	EIRCOM	EIRCOM
MARKER POST	MKR +	ESB COVER	ESB □	FIBRE OPTIC CABLE	F.OPTIC
SIGN POST	SIGN	ESB JUNCTION BOX	ESB BOX □	BROADBAND	BROADBAND
TRAFFIC LIGHT	TL +	FIRE HYDRANT	FH □	CABLE TV	TRAFFIC
TELEPHONE BOX	TB	GAS VALVE	GV □	TRAFFIC AND SIGNAL CABLE	CCTV
POST	POST +	GULLY	G □	IRRIGATION PIPE	IRRIGATION
POST BOX	POST BOX	INSPECTION COVER	IC □	EMPTY DUCT	EMPTY
ROADSIGN	RS-RS	MANHOLE	MH □	GPR ANOMALY	ANOMALY
BORE HOLE	BH +	SEPTIC TANK	SEPTIC □	UNKNOWN CABLE	CABLE
TRIAL PIT	TPIT +	SLUICE VALVE	SV +	O'HEAD ELECTRICITY	HK
				O'HEAD TELECOM	TT



PLAN PRODUCED BY:

APEX SURVEYS

CONTACT INFORMATION:

Apex Surveys
Unit 78 Dunboyne Business Park
Dunboyne, Co. Meath, Ireland
www.apexsurveys.ie
info@apexsurveys.ie
00353 1 691 0156

CLIENT:

D.B.F.L.

GRID SYSTEM: Irish Transverse Mercator
DATUM: Main Head (OSGM15)
NOTES: Drawing Contains Scale Factor

REVISIONS:

No.	Date	Description
001	04/03/20	Original Drawing
002	06/11/20	Additional Information Added

PROJECT:

Sandford Park, Miltown

SCALE : 1/200 A1

DATE : 04/03/2020

DRG No: 4234

SHEET: 13 of 10

DESCRIPTION : 2D Utilities

SURVEYED BY : Mario Gaspar

PROCESSED BY : Apex Surveys

CHECKED BY : Alan Brady