Strategic Housing Development, Blackrock, Dundalk, Co. Louth

Environmental Impact Assessment Report
Volume 3 – Appendices

Kingsbridge Consultancy Ltd.

21st June 2019

Volume 3 Part A

Appendix A. Planning / Engineering Drawings

Appendix A. Planning / Engineering Drawings

A.1. Architectural Drawings

A.2. Engineering Drawings

The Chapel, Mount St.Anne's, Milltown, Dublin 6
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architecture urban design

DRAWING REGISTER ISSUE SHEET
Action Key: AR = as requested, P = preliminary, CR = comment & return, FA = for approval, PL = planning, TS = tender set, BQ = bill of quantities, FI = for information, C = for construction

Job No.
1806

PROPOSED RESIDENTIAL DEVELOPMENT at BLACKROCK, DUNDALK, CO. LOUTH

ACTION	PL															
DATE	5/15/2019															

Job Stage	PLANNING

Distribution

Client	Kingsbridge Consultancy Ltd.					X														
Main Contractor																				
Project Manager																				
QS																				
Structural/Civil Engineer	Finn Design Partnership					X														
MEP Services Engineers																				
Fire Consultant																				
Landscape Architect	Mullin Design Accociates					X														
Planning Consultant	Declan Brassil and Co					X														
Environmental Consultant	Atkins Global					X														
Conservation Architect																				
Project Supervisor Design Stage																				
Acoustic Engineer																				
Assigned Certifier																				
Meath County Council																				
An Bord Pleanala																				

Dwg Number	Description	Scale	@Sheet Size	Revision	Status															
Support Documentation																				
1806-OMP-XX-XX-DC-A-XX-01001	Issue Sheet	N/A	A3		Planning	-														
1806-OMP-ZZ-ZZ-SA-A-XX-616001	Housing Quality Assessment	N/A	A3		Planning	-														
1806-OMP-ZZ-ZZ-SA-A-XX-616002	Housing Quality Assessment Apartments	N/A	A3		Planning	-														
1806-OMP-ZZ-ZZ-SA-A-XX-616003	Housing Quality Assessment Duplexes	N/A	A3		Planning	-														
1806-OMP-ZZ-ZZ-SA-A-XX-616004	Schedule of Accommodation	N/A	A4		Planning	-														
1806-OMP-ZZ-ZZ-SA-A-XX-616005	Design Statement	N/A	A3		Planning	-														
General Arrangement																				
1806-OMP-00-ZZ-DR-A-XX-10001	Site Location Map	1:1000	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-10002	Site Survey	1:1000	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-10003	Proposed Masterplan	1:1000	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-10004	Proposed Site Layout Plan (Sheet 1 of 3)	1:500	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-10005	Proposed Site Layout Plan (Sheet 2 of 3)	1:500	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-10006	Proposed Site Layout Plan (Sheet 3 of 3)	1:500	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-10007	Site plan - Taking in Charge	1:1000	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-10008	Proposed Site Layout Plan + Zoning Map	1:2500	@A3		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-30000	Proposed Site Section A-A	1:200/500	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-30001	Proposed Site Section B-B	1:200/500	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-30002	Proposed Site Section C-C	1:200/500	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-30003	Proposed Site Sections 1-1, 2-2, 3-3, 4-4, 5-5,6-6 & 7-7	1:200	@A0		Planning	-														
1806-OMP-00-ZZ-DR-A-XX-30004	Proposed Site Sections 8-8, 9-9 & 10-10	1:200	@A0		Planning	-														
1806-OMP-DB-00-DR-A-XX-10000	DISABILITY BUNGALOW - Proposed Floor Plans	1:100	@A3		Planning	-														
1806-OMP-DB-00-DR-A-XX-20000	DISABILITY BUNGALOW - Elevations	1:100	@A3		Planning	-														
1806-OMP-DB-00-DR-A-XX-20001	DISABILITY BUNGALOW - Section A-A & Elevations.	1:100	@A3		Planning	-														
1806-OMP-BLX-ZZ-DR-A-XX-10000	Block A/B/C/E/F/G - Ground, First & Second Floor Plans	1:200	@A3		Planning	-														
1806-OMP-BLX-ZZ-DR-A-XX-10001	Block A/B/C/E/F/G - Third Floor Plan & Roof Plan	1:200	@A3		Planning	-														
1806-OMP-BLX-ZZ-DR-A-XX-10002	Block A & B - Undercroft Car Parking Plans & Section A-A	1:200	@A1		Planning	-														
1806-OMP-BLX-ZZ-DR-A-XX-10003	Block A & B - Undercroft Car Parking Sections B-B, C-C & D-D	1:200	@A1		Planning	-														
1806-OMP-BLX-ZZ-DR-A-XX-10004	Block F - Undercroft Car Parking Plans & Sections E-E	1:200	@A1		Planning	-														
1806-OMP-BLX-ZZ-DR-A-XX-20000	Block A/B/C/E/F/G - Front & Rear Elevations	1:200	@A3		Planning	-														
1806-OMP-BLX-ZZ-DR-A-XX-20001	Block A/B/C/E/F/G - Typical Section A-A & Side Elevations	1:200	@A3		Planning	-														
1806-OMP-BLX-ZZ-DR-A-XX-20002	Block A & F - Side Elevations (showing undercroft entance/exit)	1:200	@A3		Planning	-														
1806-OMP-BLD-ZZ-DR-A-XX-10000	Block D - Ground & First Floor Plans	1:200	@A3		Planning	-														
1806-OMP-BLD-ZZ-DR-A-XX-10001	Block D - Second Floor Plan & Roof Plan	1:200	@A3		Planning	-														
1806-OMP-BLD-ZZ-DR-A-XX-20000	Block D - Front & Rear Elevations	1:200	@A3		Planning	-														
1806-OMP-BLD-ZZ-DR-A-XX-20001	Block D - Section A-A & Side Elevations	1:200	@A3		Planning	-														
1806-OMP-CR-00-DR-A-XX-10000	CHILDCARE FACILITY - Proposed Floor Plans	1:200/500	@A3		Planning	-														
1806-OMP-CR-00-DR-A-XX-20000	CHILDCARE FACILITY - Section A-A & Elevations	1:200	@A3		Planning	-														
1806-OMP-DPX-00-DR-A-XX-10000	DUPLEX UNITS - Ground & First Floor Plans	1:200	@A3		Planning	-														
1806-OMP-DPX-00-DR-A-XX-10001	DUPLEX UNITS - Second Floor Plan & Roof Plan	1:200	@A3		Planning	-														
1806-OMP-DPX-00-DR-A-XX-20000	DUPLEX UNITS - Section A-A & Elevations	1:200	@A3		Planning	-														

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Dwg Number	Description	Scale	@Sheet Size	Revision	Status															
1806-OMP-DPX-00-DR-A-XX-20001	DUPLEX UNITS -Sections & Elevations	1:200	@A3		Planning	-														
1806-OMP-HTA-00-DR-A-XX-10000	DETACHED HOUSE TYPE A - Proposed Floor Plans	1:100	@A3		Planning	-														
1806-OMP-HTA-00-DR-A-XX-20000	DETACHED HOUSE TYPE A - Section A-A & Elevations	1:100	@A3		Planning	-														
1806-OMP-HTA-00-DR-A-XX-20001	DETACHED HOUSE TYPE A & A1 - Plans & Elevations.	1:100	@A3		Planning	-														
1806-OMP-HTB-00-DR-A-XX-10000	DETACHED HOUSE TYPE B - Proposed Floor Plans	1:100	@A3		Planning	-														
1806-OMP-HTB-00-DR-A-XX-20000	DETACHED HOUSE TYPE B - Section A-A & Elevations	1:100	@A3		Planning	-														
1806-OMP-HTB-00-DR-A-XX-20001	DETACHED HOUSE TYPE B - Elevations	1:100	@A3		Planning	-														
1806-OMP-HTC-00-DR-A-XX-10000	DETACHED HOUSE TYPE C - Proposed Floor Plans	1:100	@A3		Planning	-														
1806-OMP-HTC-00-DR-A-XX-20000	DETACHED HOUSE TYPE C - Elevations	1:100	@A3		Planning	-														
1806-OMP-HTC-00-DR-A-XX-20001	DETACHED HOUSE TYPE C - Section A-A & Elevations	1:100	@A3		Planning	-														
1806-OMP-HTC1-00-DR-A-XX-10000	DETACHED HOUSE TYPE C1 - Proposed Floor Plans	1:100	@A3		Planning	-														
1806-OMP-HTC1-00-DR-A-XX-20000	DETACHED HOUSE TYPE C1 - Elevations	1:100	@A3		Planning	-														
1806-OMP-HTC1-00-DR-A-XX-20001	DETACHED HOUSE TYPE C1 - Section A-A & Elevations	1:100	@A3		Planning	-														
1806-OMP-HTD-00-DR-A-XX-10000	DETACHED HOUSE TYPE D - Proposed Floor Plans	1:100	@A3		Planning	-														
1806-OMP-HTD-00-DR-A-XX-20000	DETACHED HOUSE TYPE D - Section A-A & Elevations	1:100	@A3		Planning	-														
1806-OMP-HTD-00-DR-A-XX-20001	DETACHED HOUSE TYPE D - Elevations.	1:100	@A3		Planning	-														
1806-OMP-HTE-00-DR-A-XX-10000	SEMI-D/DETACHED HOUSE TYPE E-Proposed Floor Plans	1:100	@A3		Planning	-														
1806-OMP-HTE-00-DR-A-XX-20000	SEMI-D/DETACHED HOUSE TYPE E - Section A-A & Elevations	1:100	@A3		Planning	-														
1806-OMP-HTE-00-DR-A-XX-20001	SEMI-D/DETACHED HOUSE TYPE E - Elevations.	1:100	@A3		Planning	-														
1806-OMP-HTF-00-DR-A-XX-10000	DETACHED HOUSE TYPE F - Proposed Floor Plans	1:100	@A3		Planning	-														
1806-OMP-HTF-00-DR-A-XX-20000	DETACHED HOUSE TYPE F - Section A-A & Elevations	1:100	@A3		Planning	-														
1806-OMP-HTF-00-DR-A-XX-20001	DETACHED HOUSE TYPE F - Elevations.	1:100	@A3		Planning	-														
1806-OMP-HTG-00-DR-A-XX-10000	HOUSE TYPE G & G1- Proposed Floor Plans	1:100/200	@A3		Planning	-														
1806-OMP-HTG-00-DR-A-XX-20000	HOUSE TYPE G & G1 - Section A-A & Elevations	1:100	@A3		Planning	-														
1806-OMP-HTG-00-DR-A-XX-20001	HOUSE TYPE G & G1- Elevations	1:100	@A3		Planning	-														
1806-OMP-HTH-00-DR-A-XX-10000	HOUSE TYPE H - Proposed Floor Plans	1:100	@A3		Planning	-														
1806-OMP-HTH-00-DR-A-XX-20000	HOUSE TYPE H - Elevations	1:100	@A3		Planning	-														
1806-OMP-HTH-00-DR-A-XX-20001	HOUSE TYPE H - Section A-A & Elevations.	1:100	@A3		Planning	-														
1806-OMP-HTH1-00-DR-A-XX-10000	HOUSE TYPE H1 - Proposed Floor Plans	1:100	@A3		Planning	-														
1806-OMP-HTH1-00-DR-A-XX-20000	HOUSE TYPE H1 - Elevations	1:100	@A3		Planning	-														
1806-OMP-HTH1-00-DR-A-XX-20001	HOUSE TYPE H1 - Section A-A & Elevations	1:100	@A3		Planning	-														
1806-OMP-HTI-00-DR-A-XX-10000	HOUSE TYPE I, I1, I2 - Proposed Floor Plans	1:100/200	@A3		Planning	-														
1806-OMP-HTI-00-DR-A-XX-20000	HOUSE TYPE I, I1, I2 - Front & Rear Elevations	1:100/200	@A3		Planning	-														
1806-OMP-HTI-00-DR-A-XX-20001	HOUSE TYPE I, I1, I2 - Section A-A & Side Elevations	1:100/200	@A3		Planning	-														
1806-OMP-HTJ-00-DR-A-XX-10000	HOUSE TYPE J, J1, J2 - Proposed Floor Plans	1:100/200	@A3		Planning	-														
1806-OMP-HTJ-00-DR-A-XX-20000	HOUSE TYPE J, J1, J2 - Front & Rear Elevations	1:100/200	@A3		Planning	-														
1806-OMP-HTJ-00-DR-A-XX-20001	HOUSE TYPE J, J1, J2 - Section A-A & Side Elevations	1:100/200	@A3		Planning	-														

Site Notice
Location 1 of 3.

Site Notice
Location 2 of 3.

Site Notice
Location 3 of 3.

Site Area: 17.9 Ha.

Site Location Map
scale 1:1000

Site Location Map

Site Boundary outlined in Red

Right of Way shown in Yellow

OS Map Series: 1:2500 ref. 1702-D
ITM Centre Point Co-ordinate: X,Y =706798, 804325

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum

Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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Dublin
The Chapel
Mount St. Anne's
Milltown, Dublin 6
D06 XN52 Ireland

Cork
26 South Mall
Cork City
Co. Cork
T12 R2RV Ireland

Project No.:	1806	**Scale @ A0:**	1:1000
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	RN	**Current Rev.:**	01
Model No.:	1806-OMP-00-ZZ-DR-A-XX-10001		
Purpose:	Planning		

Project: Residential Development at
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Site Location Map
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-10001

Suitability - Checked By - Date

Site Notice
Location 1 of 3.

Site Notice
Location 2 of 3.

Site Notice
Location 3 of 3.

Site Area: 17.9 Ha.

Existing Site Survey
scale 1:1000

Existing Site Survey

Site Boundary outlined in Red

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Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	RN	**Current Rev.:**	01
Model No.:	1806-OMP-00-ZZ-DR-A-XX-10002		
Purpose:	Planning		

Project: Residential Development at
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Existing Site Survey
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-10002

Suitability - Checked By - Date

Proposed Masterplan
scale 1:1000

Proposed Masterplan

Site Boundary outlined in Red

Right of Way shown in Yellow

Housing mix & Typologies:

Unit Type	Description	no. of beds	area (m²)	no. of units
HOUSES				
TA	Detached	5	196.5	22
TB	Detached	5	176.5	19
TC	Detached	4	151.8	10
TC1	Detached (corner unit)	4	153.4	7
TD	Detached	4	146	3
TE	Det/Semi-D	4	138.5	23
TF	Detached	4	137.4	7
TG	Semi-D/Det.	4	120.8	50
TH	Detached (corner unit)	3	117.3	9
TH1	Detached	3	110	9
TI	Semi-D/Ter.	3	102	37
TJ	Semi-D/Ter./D.	3	92	61
DB	Detached (disability bungalow)	4	158.5	1
APARTMENTS + DUPLEXES				
1Bed	Block A/B/C/D E/F/G	1	52/ 56	64
2Bed	Block A/B/C/D E/F/G	2	78/80/83	149
2Bed	GF Apt. below Duplexes	2	84/86 82	06
3Bed	Duplexes	3	117/118	06
Total:				483

Housing mix:

Detached:	105 units	(21.7%)
Semi-Detached:	114 units	(23.6%)
Terraced:	39 units	(8.1%)
Duplexes:	06 units	(1.3%)
GF Apt. below Duplexes:	06 units	(1.3%
Apartments:	213 units	(44%)

Total Residential units: 483 units

Total House units: 258 units
Total GF Apart. + Duplexes above: 12 units
Total apartment units: 213 units

Housing typologies:

Total 5 bed:	41 units	(8.5%)
Total 4 bed:	101 units	(20.9%)
Total 3 bed:	116 units	(24%)
Total 3 bed Duplexes:	06 units	(1.3%)
2 bed GF apt. below duplexes:	06 units	(1.3%)
2 bed Apartments:	149 units	(30.8%)
1 bed Apartment:	64 units	(13.2%)

Total Residential units: 483 units (100%)

Site area: c. 179,566m2 / 17.9 Ha.
Road works: c. 4,170m2 / 0.4 Ha.
Zoned open space: 37,150m2 / 3.7 Ha.
Developable area: c. 138,246m2 / 13.8 Ha.
Site Density: 35 units per hectare
Public open space provided: 14,050m2 / 1.4 Ha.
(10.2% of developable area)
Site coverage: 20% Plot Ratio: 0.38.

Carparking Provision:

Total House units: 258 units (257+1no.DB)	518 no. spaces	(2no./unit+4no.DB)
Total GF Apart. + Duplexes:12 units	12 no. spaces	(1no./unit)
Total apartment units: 213 units	213 no. spaces	(1no./unit)
Total visitors spaces:	57 no. spaces	(1no./ 4 apt.)
Total Creche spaces (staff+drop-off)	24 no. spaces	
Total carparking spaces:	824 no. spaces	

Bicycle parking Provision:

Total residents spaces (apt.)	392 no. spaces (1no./bedroom)
Total visitors spaces (apt.)	112 no. spaces (0.5no./ apt. unit)
Total Creche spaces	8 no. spaces
Total bicycle spaces:	512 no. spaces

Revision Description	Date	Rev. No.	Issued by
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Project Lead:	RN	Date Printed:	15/05/2019
Drawn By:	RN/KG	Current Rev.:	01
Model No.:	1806-OMP-00-ZZ-DR-A-XX-10003		
Purpose:	PLANNING		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Proposed Masterplan
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-10003

Suitability - Checked by - Date

Proposed Site Layout Plan (Sheet 1 of 3)

Site Boundary outlined in Red

Right of Way shown in Yellow

OS Map Series: 1:2500 ref. 1702-D
ITM Centre Point Co-ordinate: X,Y =706798, 804325

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Unit Type	Description	no. of beds	area (m^2)	no. of units
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Duplexes: 06 units (1.3%)
GF Apt. below Duplexes: 06 units (1.3%
Apartments: 213 units (44%)

Total Residential units: 483 units

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Total 4 bed: 101 units (20.9%)
Total 3 bed: 116 units (24%)

Total 3 bed Duplexes: 06 units (1.3%)

2 bed GF apt.
below duplexes: 06 units (1.3%)

2 bed Apartments: 149 units (30.8%)
1 bed Apartment: 64 units (13.2%)

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Total Creche spaces 8 no. spaces
Total bicycle spaces: 512 no. spaces

KEY PLAN

Proposed Site Layout Plan (Sheet 1 of 3)
scale 1:500

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Project No.: 1806 **Scale @** A0: 1:500
Project Lead: RN **Date Printed:** 15/05/2019
Drawn By: RN **Current Rev.:** 01
Model No.: 1806-OMP-00-ZZ-DR-A-XX-10004
Purpose: Planning

Project: Residential Development at
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Proposed Site Layout Plan (Sheet 1 of 3)
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-10004

Suitability - Checked By - Date

Proposed Site Layout Plan (Sheet 2 of 3)

Site Boundary outlined in Red

Right of Way shown in Yellow

OS Map Series: 1:2500 ref. 1702-D
ITM Centre Point Co-ordinate: X,Y =706798, 804325

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum

Housing mix & Typologies:

Unit Type	Description	no. of beds	area (m^2)	no. of units
HOUSES				
TA	Detached	5	196.5	22
TB	Detached	5	176.5	19
TC	Detached	4	151.8	10
TC1	Detached (corner unit)	4	153.4	7
TD	Detached	4	146	3
TE	Det/Semi-D	4	138.5	23
TF	Detached	4	137.4	7
TG	Semi-D/Det.	4	120.8	50
TH	Detached (corner unit)	3	117.3	9
TH1	Detached	3	110	9
TI	Semi-D/Ter.	3	102	37
TJ	Semi-D/Ter./D.	3	92	61
DB	Detached (disability bungalow)	4	158.5	1
APARTMENTS + DUPLEXES				
1Bed	Block A/B/C/D E/F/G	1	52/ 56	64
2Bed	Block A/B/C/D E/F/G	2	78/80/83	149
2Bed	GF Apt. below Duplexes	2	84/86 82	06
3Bed	Duplexes	3	117/118	06
Total:				483

Housing mix:

Detached:	105 units (21.7%)
Semi-Detached:	114 units (23.6%)
Terraced:	39 units (8.1%)
Duplexes:	06 units (1.3%)
GF Apt. below Duplexes:	06 units (1.3%
Apartments:	213 units (44%)

Total Residential units: 483 units

Total House units: 258 units
Total GF Apart. + Duplexes above: 12 units
Total apartment units: 213 units

Housing typologies:

Total 5 bed:	41 units (8.5%)
Total 4 bed:	101 units (20.9%)
Total 3 bed:	116 units (24%)
Total 3 bed Duplexes:	06 units (1.3%)
2 bed GF apt. below duplexes:	06 units (1.3%)
2 bed Apartments:	149 units (30.8%)
1 bed Apartment:	64 units (13.2%)

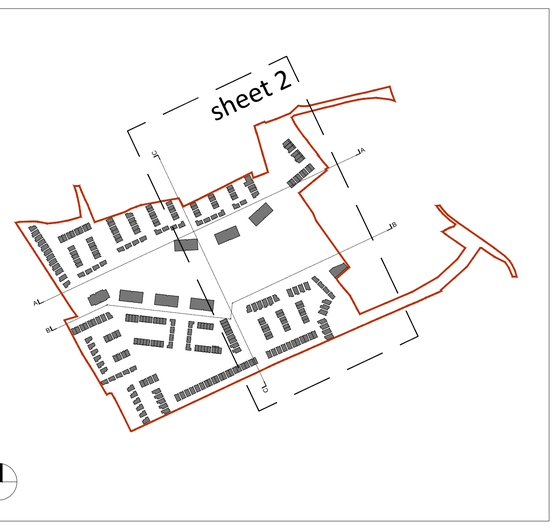
Total Residential units: 483 units (100%)
Site area: c. 179,566m2 / 17.6 Ha.
Road works: c .4,170m2 / 0.4 Ha.
Zoned open space: 37,150m2 / 3.7 Ha.
Developable area: c. 138,246m2 / 13.8 Ha.
Site Density: 35 units per hectare
Public open space provided: 14,050m2 / 1.4 Ha.
(10.2% of developable area)
Site coverage: 20% Plot Ratio: 0.38.

Carparking Provision:

Total House units: 258 units (257+1no.DB)	518 no. spaces	(2no./unit+4no.DB)
Total GF Apart. + Duplexes:12 units	12 no. spaces	(1no./unit)
Total apartment units: 213 units	213 no. spaces	(1no./unit)
Total visitors spaces:	57 no. spaces	(1no./ 4 apt.)
Total Creche spaces (staff+drop-off)	24 no. spaces	
Total carparking spaces:	824 no. spaces	

Bicycle parking Provision:

Total residents spaces (apt.)	392 no. spaces (1no./bedroom)
Total visitors spaces (apt.)	112 no. spaces (0.5no./ apt. unit)
Total Creche spaces	8 no. spaces
Total bicycle spaces:	512 no. spaces



KEY PLAN

Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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Cork City
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T12 R2RV Ireland

Project No.:	1806	**Scale @** A0:	1:500
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	RN	**Current Rev.:**	01
Model No.:	1806-OMP-00-ZZ-DR-A-XX-10004		
Purpose:	Planning		

Project: Residential Development at
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Proposed Site Layout Plan (Sheet 2 of 3)
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-10005

Suitability - Checked By - Date

Proposed Site Layout Plan (Sheet 2 of 3)

Site Boundary outlined in Red

Right of Way shown in Yellow

OS Map Series: 1:2500 ref. 1702-D
ITM Centre Point Co-ordinate: X,Y =706798, 804325

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum

Housing mix & Typologies:

Unit Type	Description	no. of beds	area (m^2)	no. of units
HOUSES				
TA	Detached	5	196.5	22
TB	Detached	5	176.5	19
TC	Detached	4	151.8	10
TC1	Detached (corner unit)	4	153.4	7
TD	Detached	4	146	3
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TF	Detached	4	137.4	7
TG	Semi-D/Det.	4	120.8	50
TH	Detached (corner unit)	3	117.3	9
TH1	Detached	3	110	9
TI	Semi-D/Ter.	3	102	37
TJ	Semi-D/Ter./D.	3	92	61
DB	Detached (disability bungalow)	4	158.5	1
APARTMENTS + DUPLEXES				
1Bed	Block A/B/C/D E/F/G	1	52/ 56	64
2Bed	Block A/B/C/D E/F/G	2	78/80/83	149
2Bed	GF Apt. below Duplexes	2	84/86 82	06
3Bed	Duplexes	3	117/118	06
Total:				483

Housing mix:
Detached: 105 units (21.7%)
Semi-Detached: 114 units (23.6%)
Terraced: 39 units (8.1%)
Duplexes: 06 units (1.3%)
GF Apt. below Duplexes: 06 units (1.3%
Apartments: 213 units (44%)

Total Residential units: 483 units

Total House units: 258 units
Total GF Apart. + Duplexes above: 12 units
Total apartment units: 213 units

Housing typologies:
Total 5 bed: 41 units (8.5%)
Total 4 bed: 101 units (20.9%)
Total 3 bed: 116 units (24%)

Total 3 bed Duplexes: 06 units (1.3%)

2 bed GF apt.
below duplexes: 06 units (1.3%)

2 bed Apartments: 149 units (30.8%)
1 bed Apartment: 64 units (13.2%)

Total Residential units: 483 units (100%)
Site area: c. 179,566m2 / 17.6 Ha.
Road works: c .4,170m2 / 0.4 Ha.
Zoned open space: 37,150m2 / 3.7 Ha.
Developable area: c. 138,246m2 / 13.8 Ha.
Site Density: 35 units per hectare
Public open space provided: 14,050m2 / 1.4 Ha.
(10.2% of developable area)
Site coverage: 20% Plot Ratio: 0.38.

Carparking Provision:
Total House units: 258 units (257+1no.DB) 518 no. spaces (2no./unit+4no.DB)
Total GF Apart. + Duplexes:12 units 12 no. spaces (1no./unit)
Total apartment units: 213 units 213 no. spaces (1no./unit)
Total visitors spaces: 57 no. spaces (1no./ 4 apt.)
Total Creche spaces (staff+drop-off) 24 no. spaces
Total carparking spaces: 824 no. spaces

Bicycle parking Provision:
Total residents spaces (apt.) 392 no. spaces (1no./bedroom)
Total visitors spaces (apt.) 112 no. spaces (0.5no./ apt. unit)
Total Creche spaces 8 no. spaces
Total bicycle spaces: 512 no. spaces

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Planning	15/05/2019	01	RD

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Project No.:	1806	**Scale @ A0:**	1:500
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	RN	**Current Rev.:**	01
Model No.:	1806-OMP-00-ZZ-DR-A-XX-10004		
Purpose:	Planning		

Project: Residential Development at
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Proposed Site Layout Plan (Sheet 3 of 3)
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-10006

Suitability - Checked By - Date

Proposed Site Layout Plan (Sheet 3 of 3)
scale 1:500

open space 3,263m²
Part V
Part V
Part V
Pump House
Creche car park 24 no.
Creche outdoor playarea 660m²
Connection to adjoining lands
Connection to adjoining lands
Connection to adjoining lands
Connection to adjoining lands
Site Notice Location 3 of 3.
MAIN SITE ACCESS
A
B
BM 6.94
BM 3.42
3.97
3.42
3.10
3.38
3.50
5.71

Site Notice
Location 1 of 3.

Site Notice
Location 2 of 3.

Site Notice
Location 3 of 3.

Site Area: 17.9 Ha.

SITE PLAN - TAKING IN CHARGE
scale 1:1000

Site Plan - Taking in Charge

Site Boundary outlined in Red

Area to be Taking in Charge by Local Authority - 86,393m² / 8.6ha

OS Map Series: 1:2500 ref. 1702-D
ITM Centre Point Co-ordinate: X,Y =706798, 804325

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum

Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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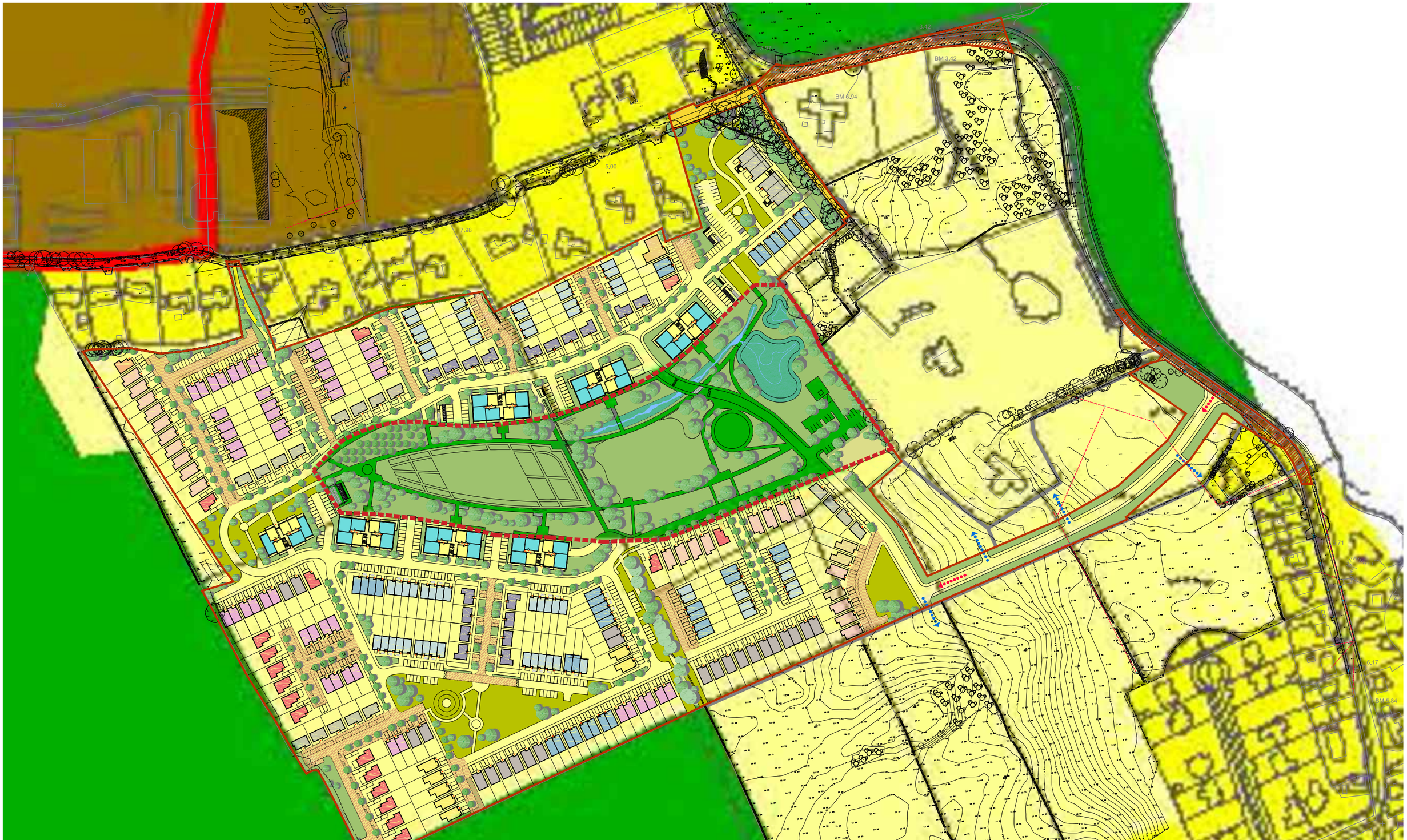
Project No.:	1806	**Scale @ A0:**	1:1000
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	RN/KG	**Current Rev.:**	01
Model No.:	1806-OMP-00-ZZ-DR-A-XX-10007		
Purpose:	PLANNING		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Site Plan - Taking in Charge
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-10007

Suitability - Checked By - Date



PROPOSED SITE LAYOUT PLAN + ZONING MAP
SCALE 1:2500

OS Map Series: 1:2500 ref. 1702-D
ITM Centre Point Co-ordinate: X,Y =706798, 804325

All dimensions in millimeters
All levels (metres) are related to Malin Head Datum

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Planning	15/05/2019	01	RD

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Project No.: 1806 **Scale @** A3: 1:2500
Project Lead: RN **Date Printed:** 15/05/2019
Drawn By: KG **Current Rev.:** 01
Model No.: 1806-OMP-00-ZZ-DR-A-XX-10008
Purpose: PLANNING

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Proposed Site Layout Plan + Zoning Map
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-10008

Suitability - Checked By - Date

Proposed Site Section A-A
scale 1:500

Site Section A-A. Part 1 of 3
scale 1:200

Site Section A-A. Part 2 of 3
scale 1:200

Site Section A-A. Part 3 of 3
scale 1:200

Proposed Site Section A-A

Site Boundary outlined in Red

Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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Project No.: 1806 **Scale @ A0:** As Shown
Project Lead: RN **Date Printed:** 15/05/2019
Drawn By: KG **Current Rev.:** 01
Model No.: 1806-OMP-00-ZZ-DR-A-XX-30000
Purpose: Planning

Project: Residential Development at
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Proposed Site Section A-A
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-30000

Suitability - Checked By - Date

Proposed Site Section B-B
scale 1:500

Site Section B-B. Part 1 of 3
scale 1:200

Site Section B-B. Part 2 of 3
scale 1:200

Site Section B-B. Part 3 of 3
scale 1:200

Proposed Site Section B-B

Site Boundary outlined in Red

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Planning	15/05/2019	01	RD

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Project No.:	1806	**Scale @ A0:**	As Shown
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-00-ZZ-DR-A-XX-30001		
Purpose:	Planning		

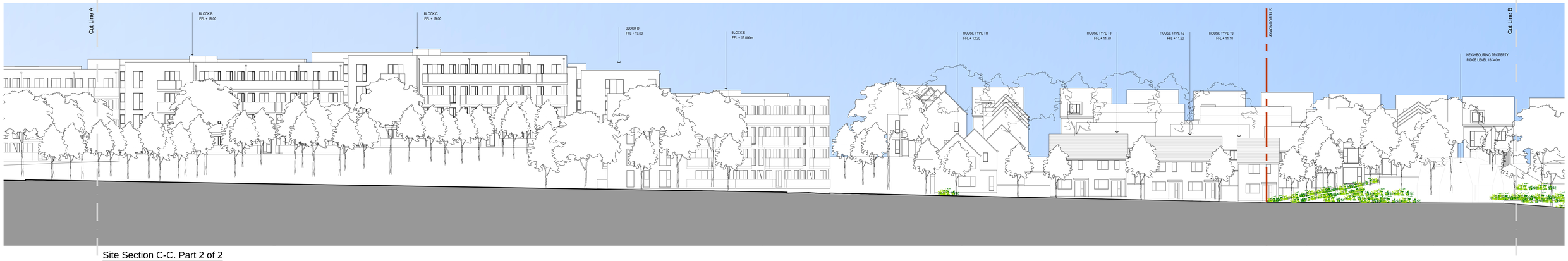
Project: Residential Development at Blackrock, Dundalk, Co. Louth
Location:
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Proposed Site Section B-B
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-30001

Suitability: Checked By: Date:

Proposed Site Section C-C
scale 1:500

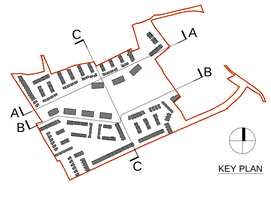
Site Section C-C. Part 1 of 2
scale 1:200



Site Section C-C. Part 2 of 2
scale 1:200

Proposed Site Section C-C

Site Boundary outlined in Red



KEY PLAN

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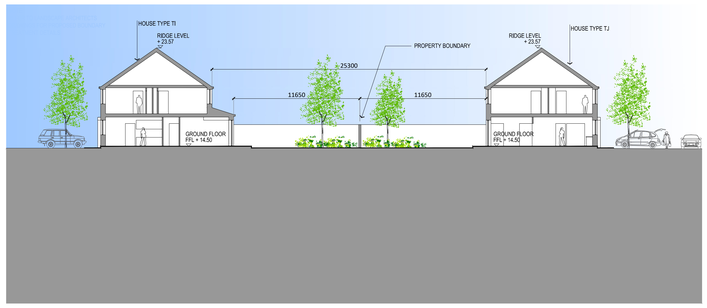
Project No.:	1806	**Scale @ A0:**	As Shown
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-00-ZZ-DR-A-XX-30002		
Purpose:	Planning		

Project: Residential Development at
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Proposed Site Section C-C
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-30002

Suitability: Checked By: Date:



Site Section 1-1
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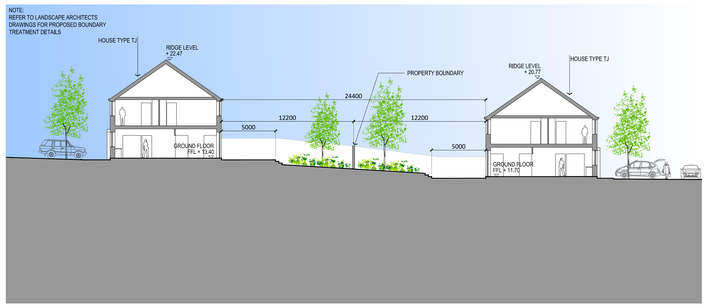

Site Section 2-2
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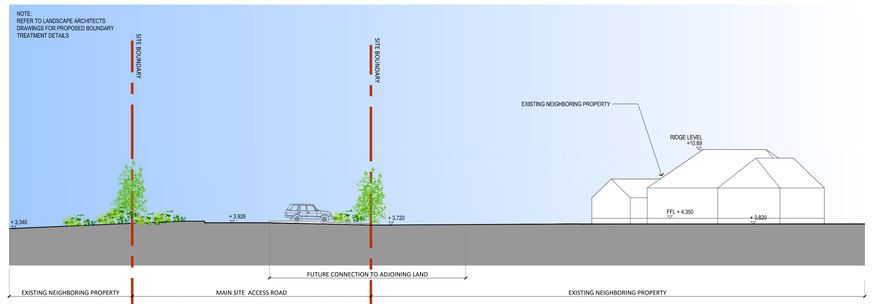
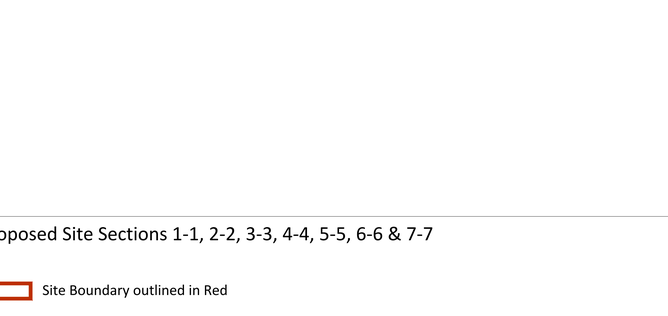
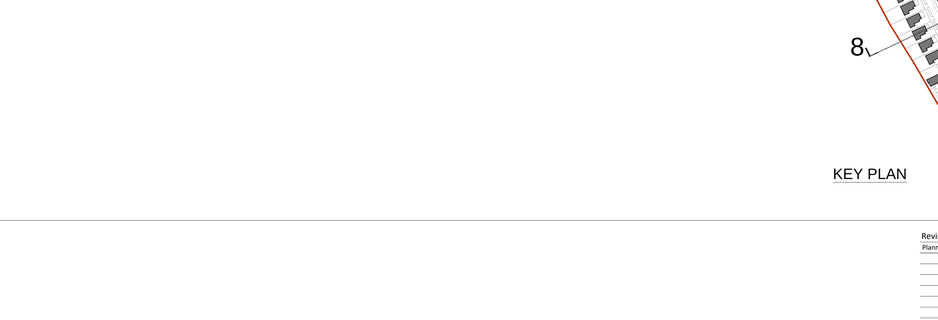


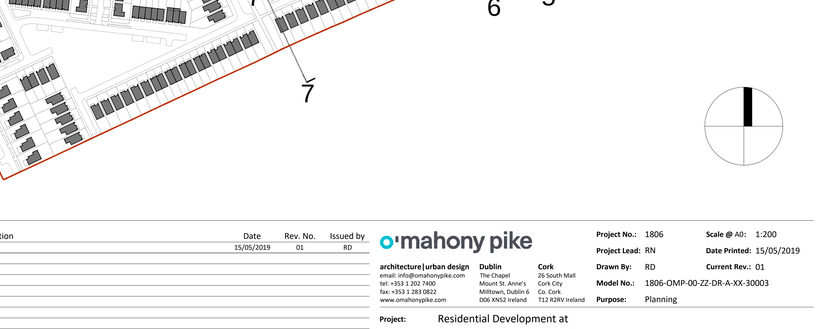
Site Section 3-3 (Future Connection To Adjoining Land)
scale 1:200



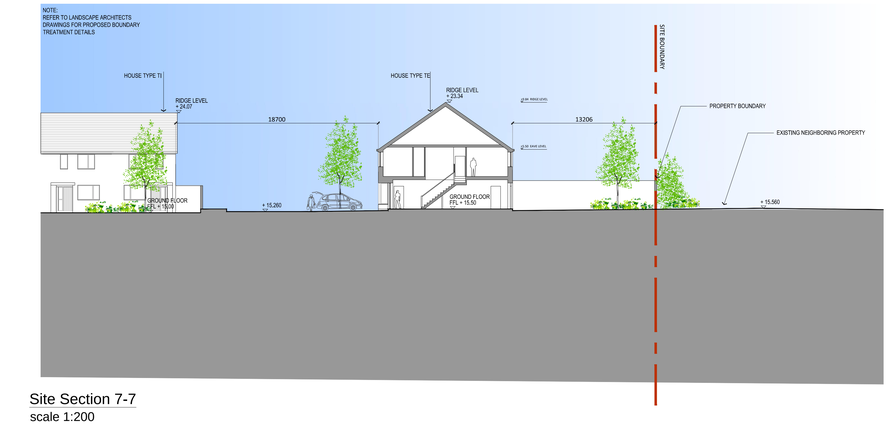
Site Section 4-4 (Future Connection To Adjoining Land)
scale 1:200



Site Section 5-5 (Future Connection To Adjoining Land)
scale 1:200



Site Section 6-6 (Future Connection To Adjoining Land)
scale 1:200



Site Section 7-7
scale 1:200

KEY PLAN

Proposed Site Sections 1-1, 2-2, 3-3, 4-4, 5-5, 6-6 & 7-7

Site Boundary outlined in Red

Revision Description	Date	Rev. No.	Issued by
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Project No.:	1806	**Scale @** A0:	1:200
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	RD	**Current Rev.:**	01
Model No.:	1806-OMP-00-ZZ-DR-A-XX-30003		
Purpose:	Planning		

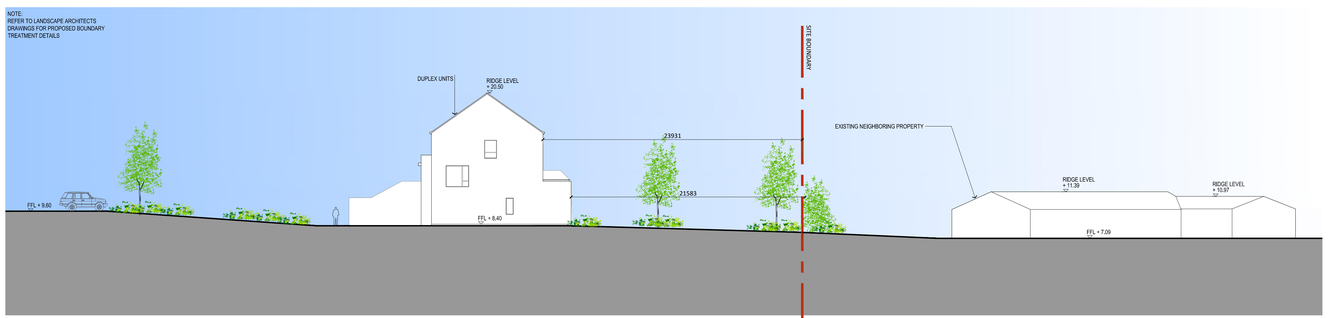
Project: Residential Development at
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Proposed Site Sections 1-1, 2-2, 3-3, 4-4, 5-5, 6-6 & 7-7
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-30003

Suitability: Checked By: Date

Site Section 8-8
scale 1:200

Site Section 9-9
scale 1:200



Site Section 10-10
scale 1:200

KEY PLAN

Proposed Site Sections 8-8, 9-9 & 10-10

Site Boundary outlined in Red

Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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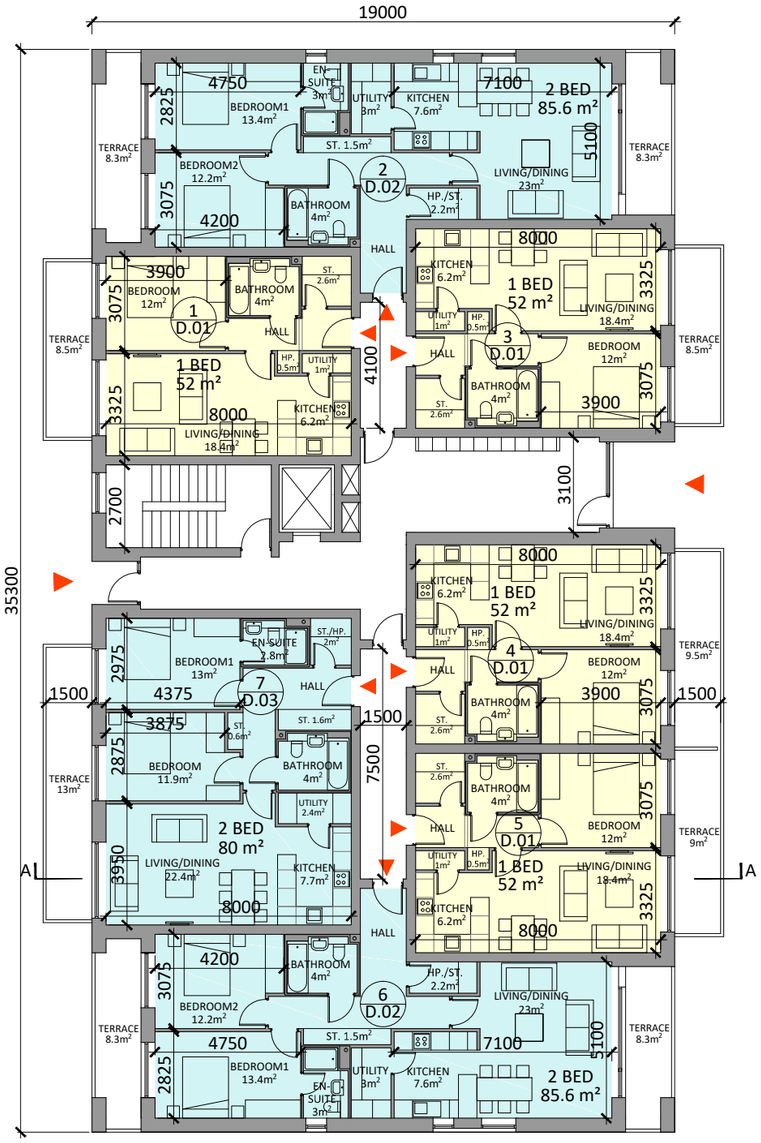
Project No.:	1806	**Scale @ A0:**	1:200
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	RD	**Current Rev.:**	01
Model No.:	1806-OMP-00-ZZ-DR-A-XX-30003		
Purpose:	Planning		

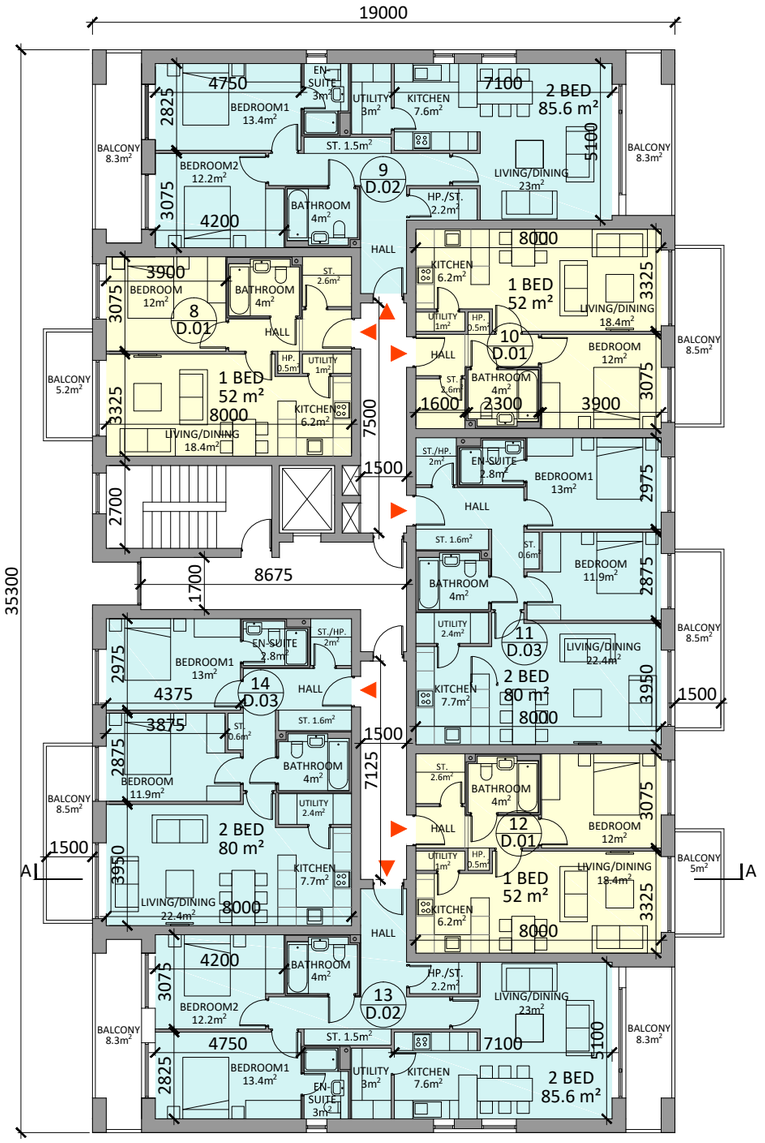
Project: Residential Development at
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Proposed Site Sections 8-8, 9-9 &10-10
Drawing No.: 1806-OMP-00-ZZ-DR-A-XX-30004

Suitability - Checked By - Date



Ground Floor Plan
scale 1:200



First Floor Plan
scale 1:200

Block D - Ground & First Floor Plans

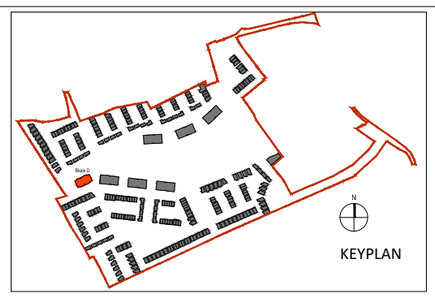
scale 1:200

3 Storey Apartment Block Type D

107
A.01

Apartments are tagged to show unit number & apartment type; the unit number is in the top section of the tag, e.g. 107 and the apartment type is in the lower section of the tag, e.g. A.01

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum



Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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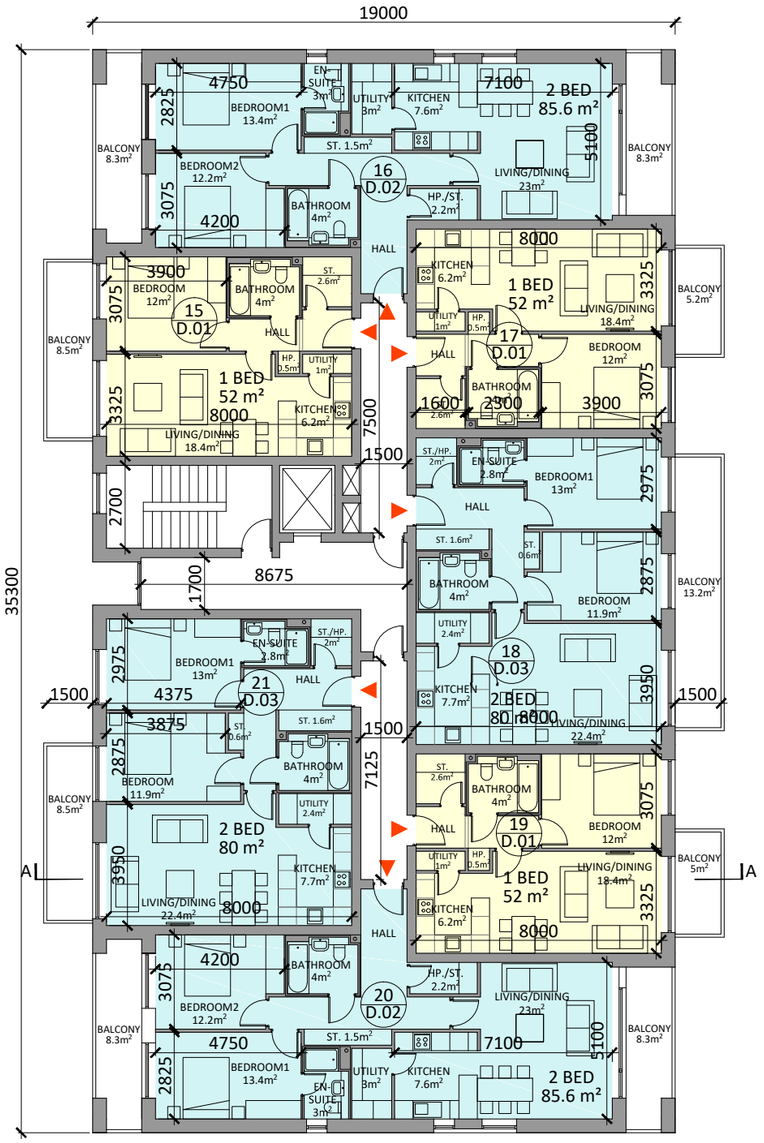
Project No.:	1806	**Scale @** A3:	1:200
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-BLD-ZZ-DR-A-XX-10000		
Purpose:	Planning		

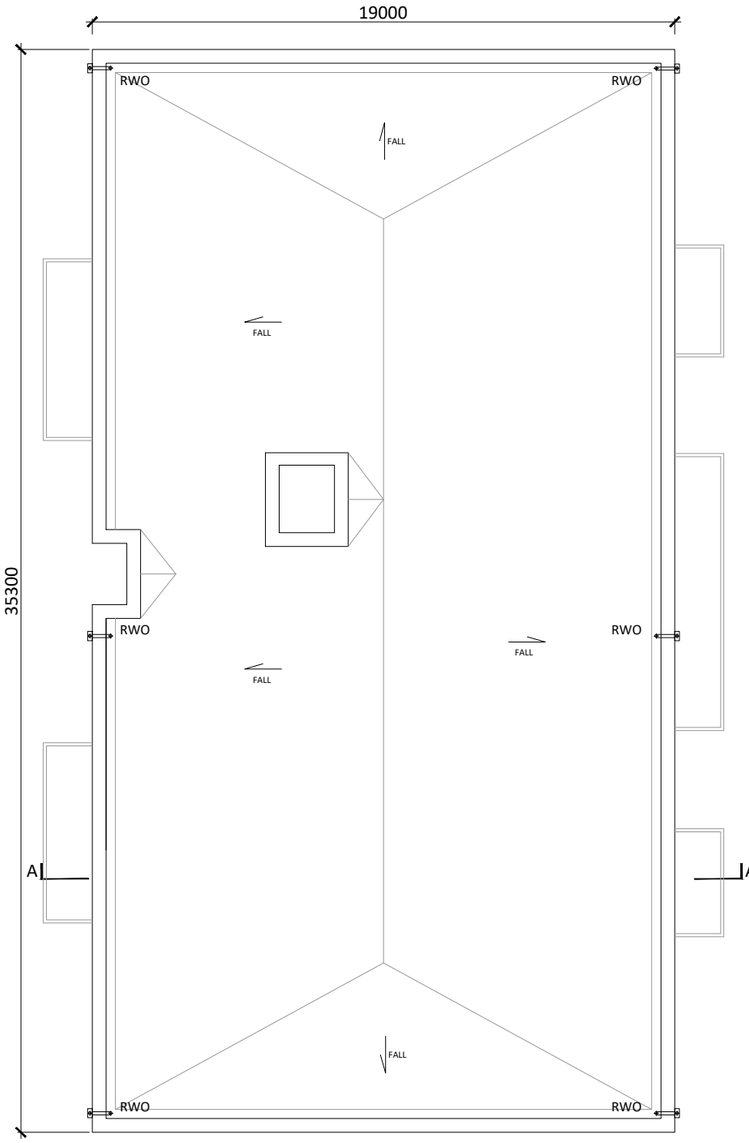
Project: Residential Development At
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Block D - Ground & First Floor Plans
Drawing No.: 1806-OMP-BLD-ZZ-DR-A-XX-10000

Suitability - Checked By - Date



Second Floor Plan
scale 1:200



Roof Plan
scale 1:200

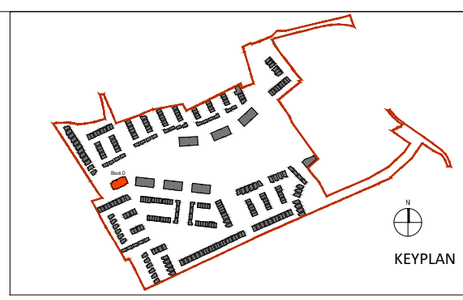
Block D - Second Floor Plan & Roof Plan
scale 1:200

3 Storey Apartment Block Type D

107
A.01

Apartments are tagged to show unit number & apartment type; the unit number is in the top section of the tag, e.g. 107 and the apartment type is in the lower section of the tag, e.g. A.01

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum



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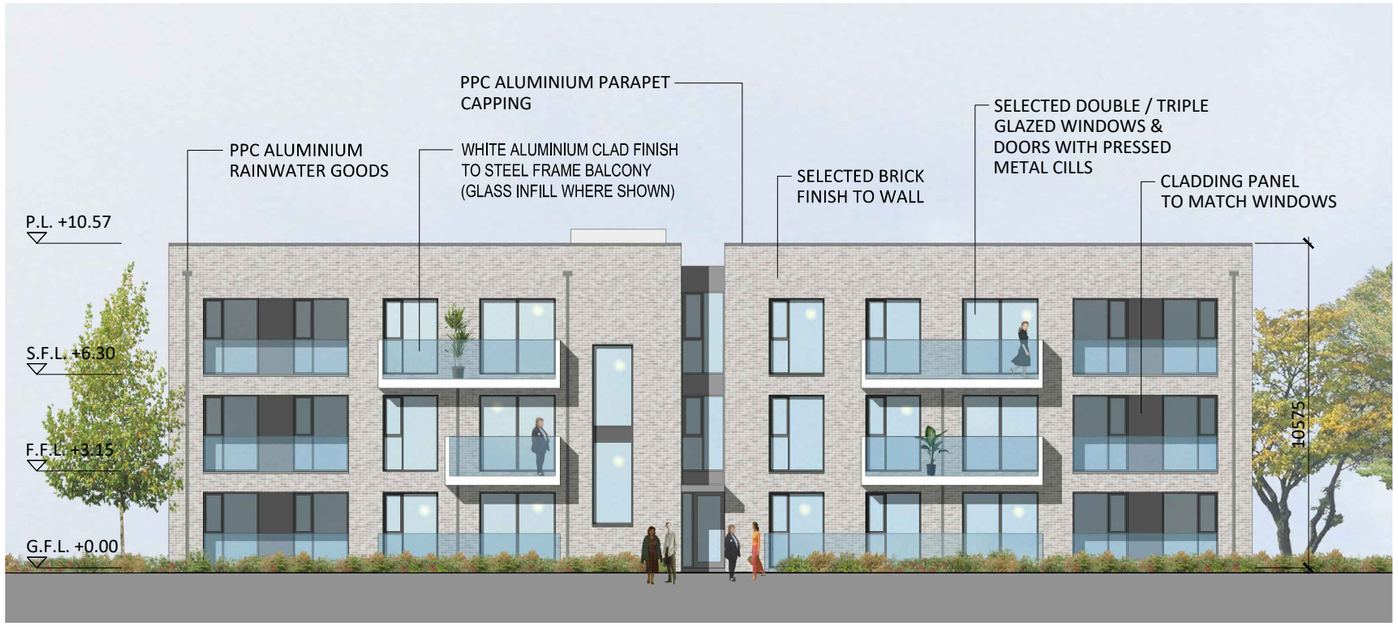
Project No.:	1806	**Scale @** A3:	1:200
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-BLD-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development At
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Block D - Second Floor Plan & Roof Plan
Drawing No.: 1806-OMP-BLD-ZZ-DR-A-XX-10001

Suitability - Checked By - Date



Front Elevation (Street Elevation)
scale 1:200

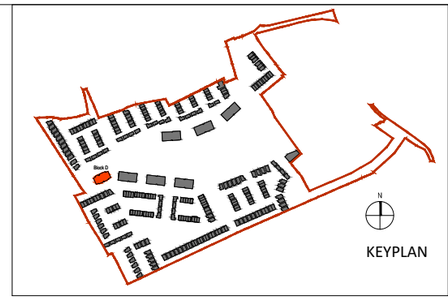
Rear Elevation (Elevation to Parkland)
scale 1:200

Block D - Front & Rear Elevations

scale 1:200

3 Storey Apartment Block

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum



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Project No.:	1806	**Scale @** A3:	1:200
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-BLD-ZZ-DR-A-XX-20000		
Purpose:	Planning		

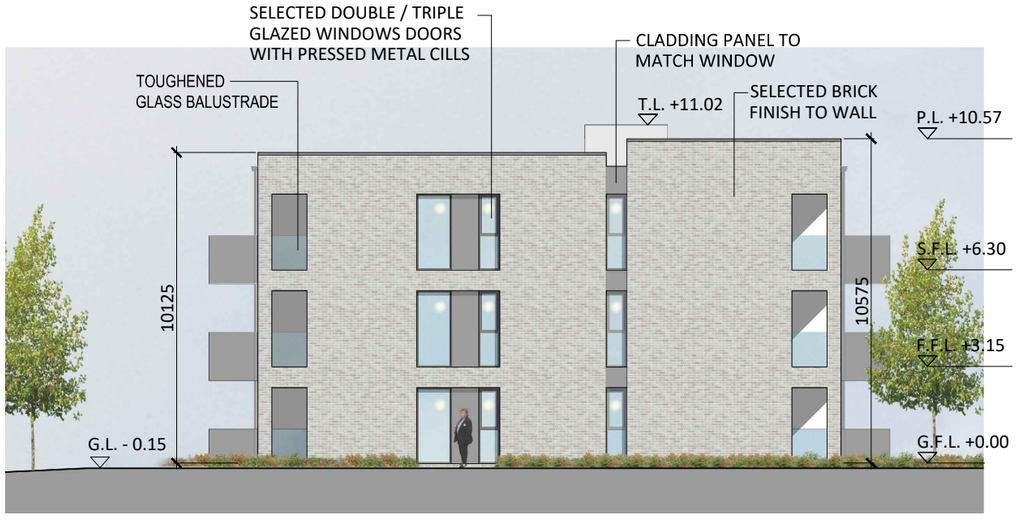
Project: Residential Development At
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Block D - Front & Rear Elevations
Drawing No.: 1806-OMP-BLD-ZZ-DR-A-XX-20000

Suitability - Checked By - Date

Section A-A
scale 1:200

Block D - Gable 1 Elevation
scale 1:200



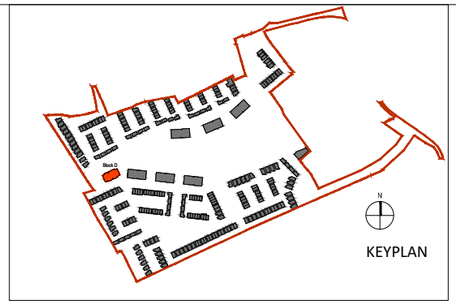
Block D - Gable 2 Elevation
scale 1:200

Block D - Section A-A & Side Elevations

scale 1:200

3 Storey Apartment Block

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum



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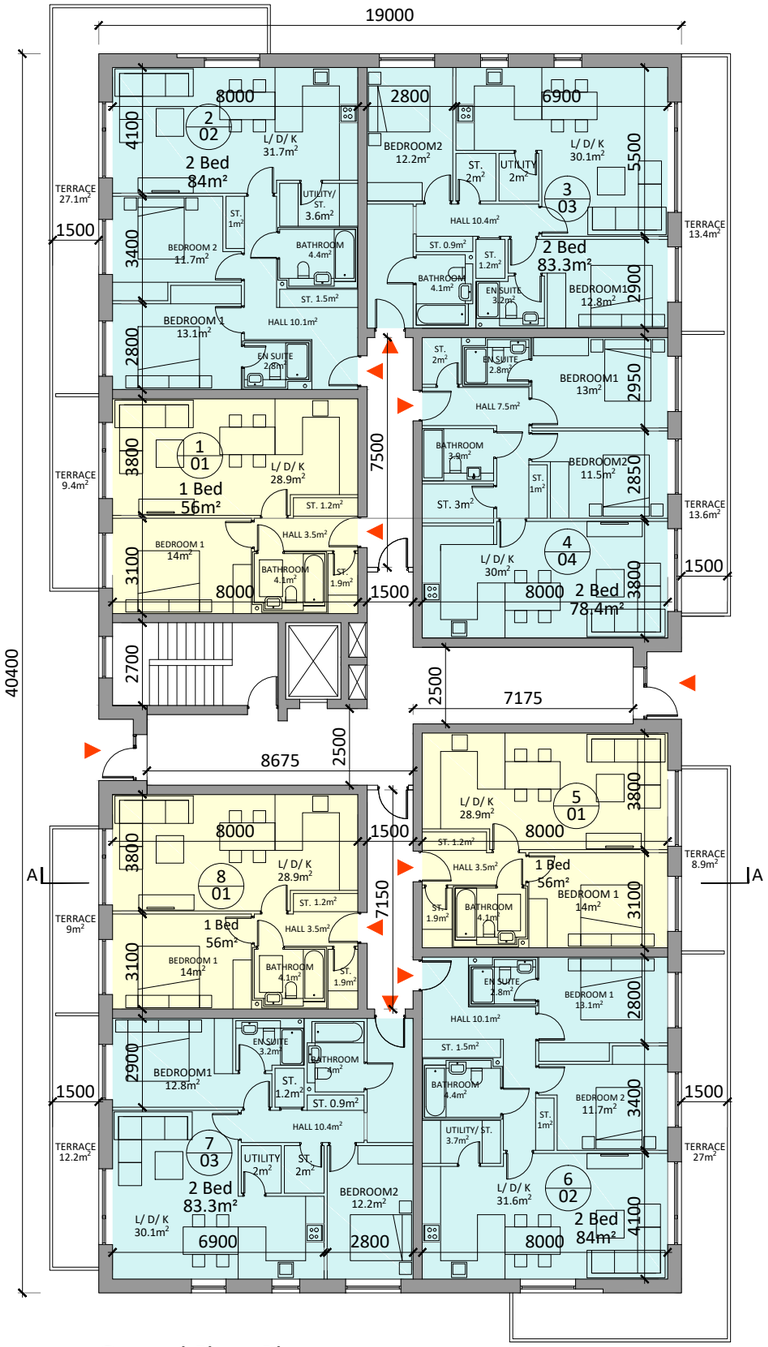
Project No.:	1806	**Scale @** A3:	1:200
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-BLD-ZZ-DR-A-XX-20000		
Purpose:	Planning		

Project: Residential Development At
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

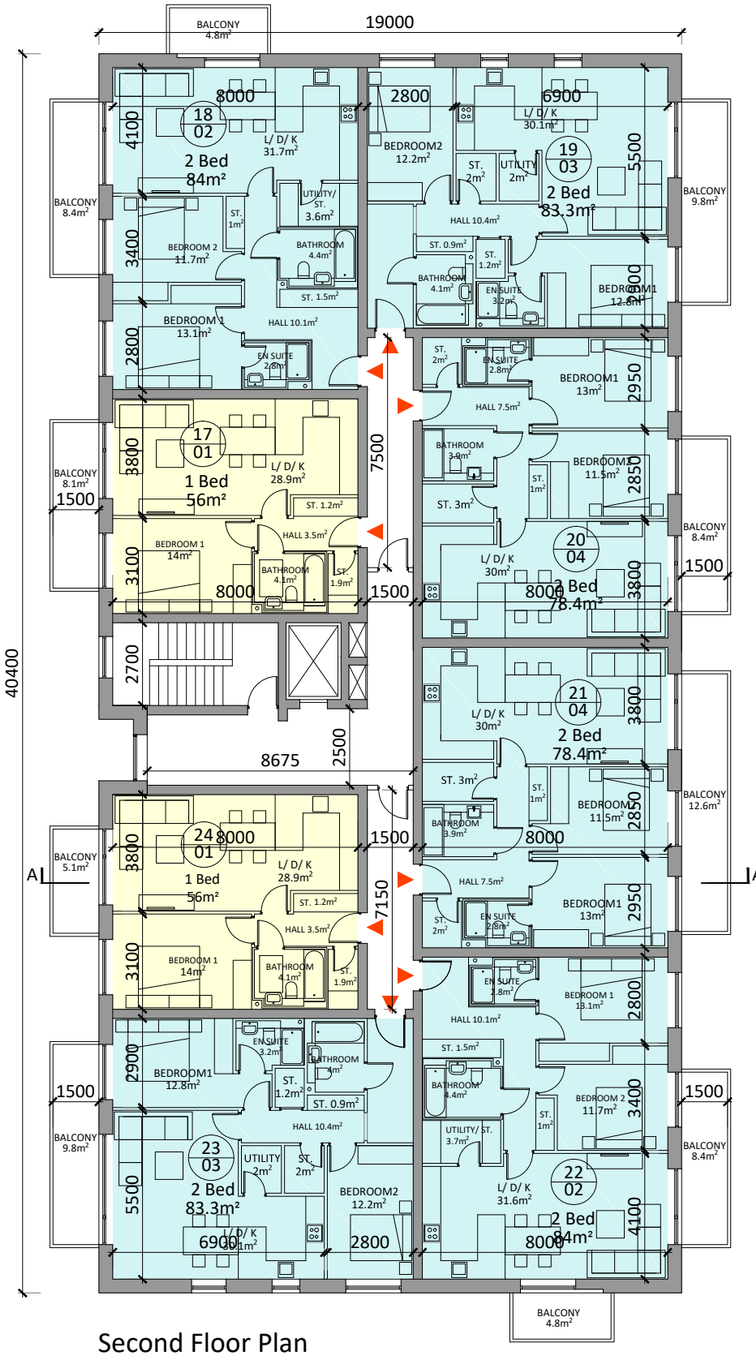
Drawing Title: Block D - Section A-A & Side Elevations
Drawing No.: 1806-OMP-BLD-ZZ-DR-A-XX-20001

Suitability - Checked By - Date



Ground Floor Plan
scale 1:200

First Floor Plan
scale 1:200



Second Floor Plan
scale 1:200

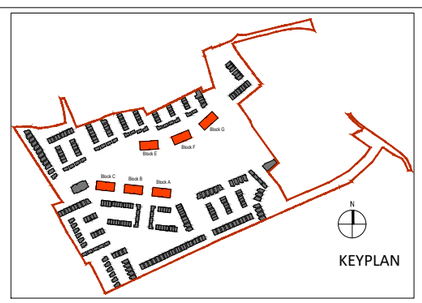
Block A/B/C/E/F/G - Ground, First & Second Floor Plans
scale 1:200

4 Storey Apartment Block

107
A.01

Apartments are tagged to show unit number & apartment type; the unit number is in the top section of the tag, e.g. 107 and the apartment type is in the lower section of the tag, e.g. A.01

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum



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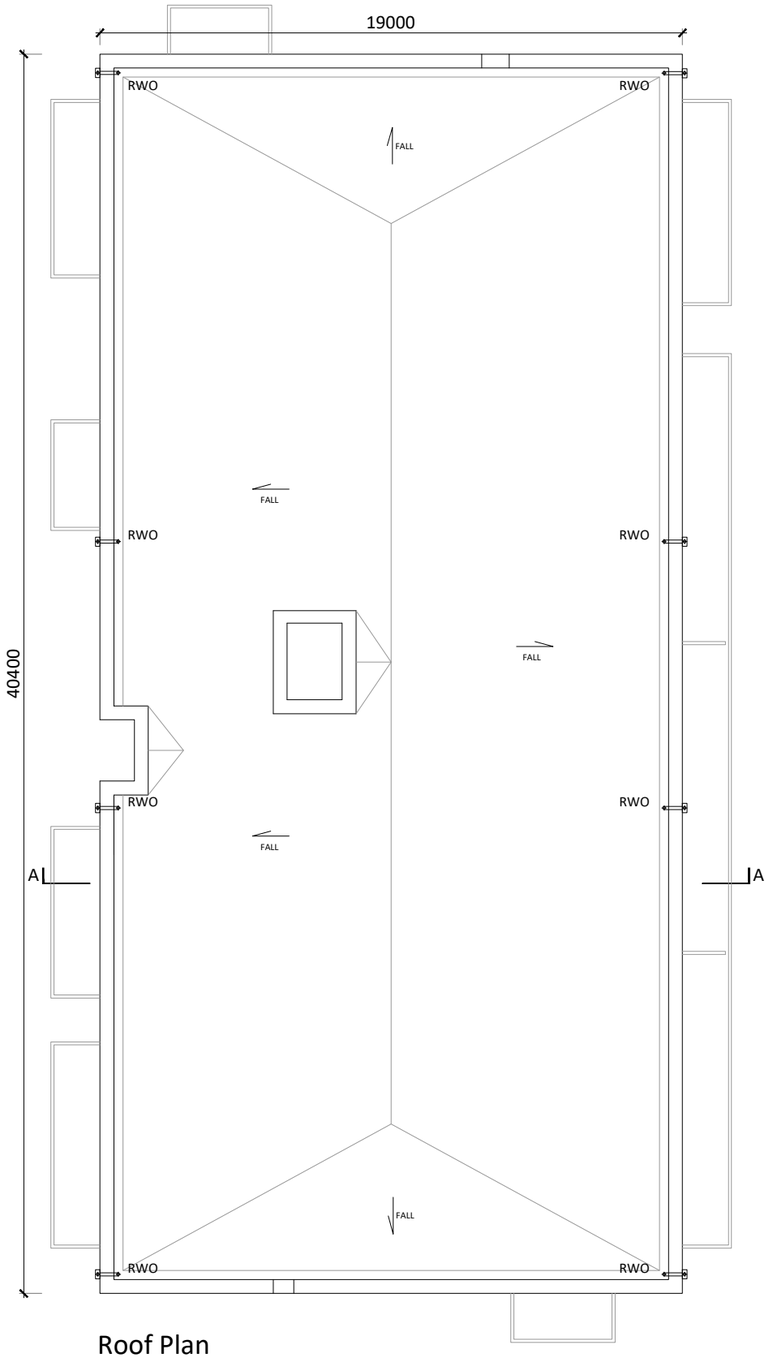
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-BLX-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development At
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Block A/B/C/E/F/G - Ground, First & Second Floor Plans
Drawing No.: 1806-OMP-BLX-ZZ-DR-A-XX-10000

Suitability - Checked By - Date

Third Floor Plan
scale 1:200



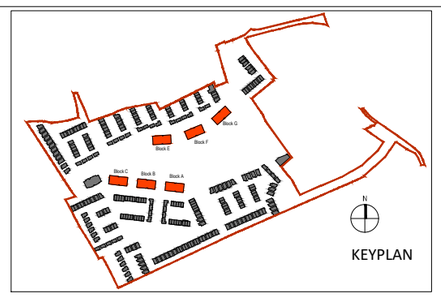
Roof Plan
scale 1:200

Block A/B/C/E/F/G - Third Floor Plan & Roof Plan
scale 1:200

4 Storey Apartment Block

107 / A.01 — Apartments are tagged to show unit number & apartment type; the unit number is in the top section of the tag, e.g. 107 and the apartment type is in the lower section of the tag, e.g. A.01

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum



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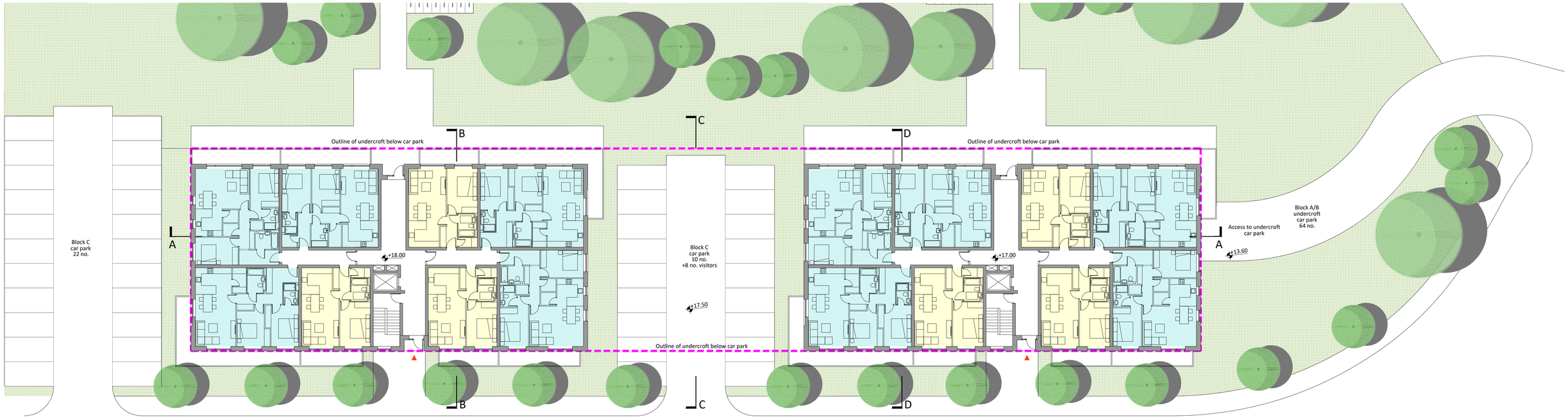
Purpose:	Planning		

Project: Residential Development At
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

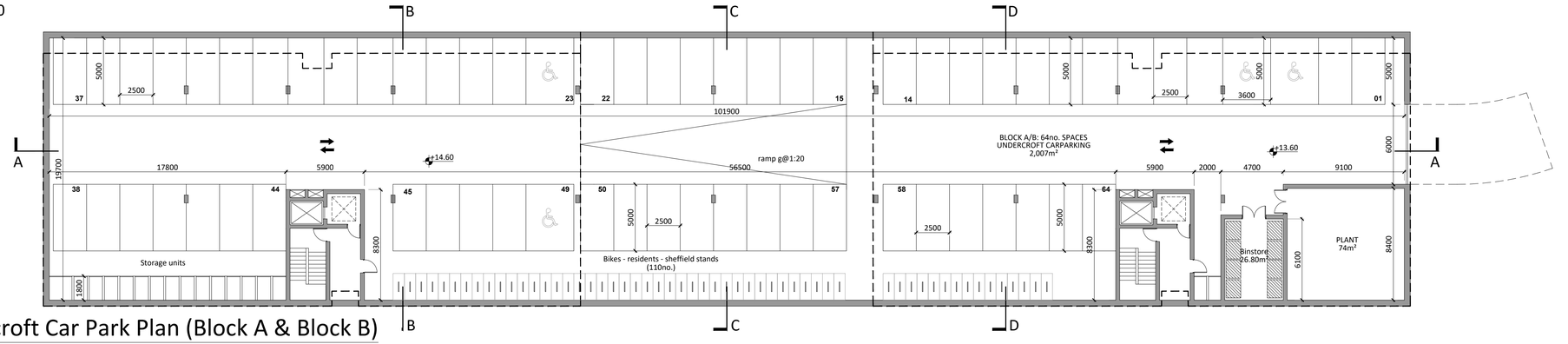
Drawing Title: Block A/B/C/E/F/G - Third Floor Plan & Roof Plan
Drawing No.: 1806-OMP-BLX-ZZ-DR-A-XX-10001

Suitability - Checked By - Date



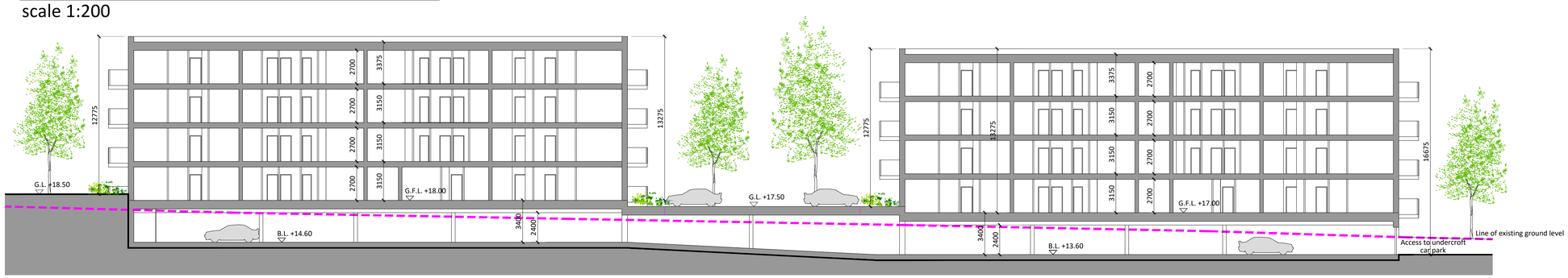
Ground Floor Level (Block A & Block B)

scale 1:200



Undercroft Car Park Plan (Block A & Block B)

scale 1:200



Section A-A Ground Floor Level (Block A & Block B)

scale 1:200

Undercroft Car Parking Apartment Block A & Block B - Plans & Section A-A

scale 1:200

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Project Lead:	RN	**Date Printed:**	15/05/2019
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Model No.:	1806-OMP-BLX-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development At
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Undercroft Car Parking Apartment Block A & Block B - Plans & Section A-A
Drawing No.: 1806-OMP-BLX-ZZ-DR-A-XX-10002

Suitability - Checked By - Date

Section B-B (Block B)

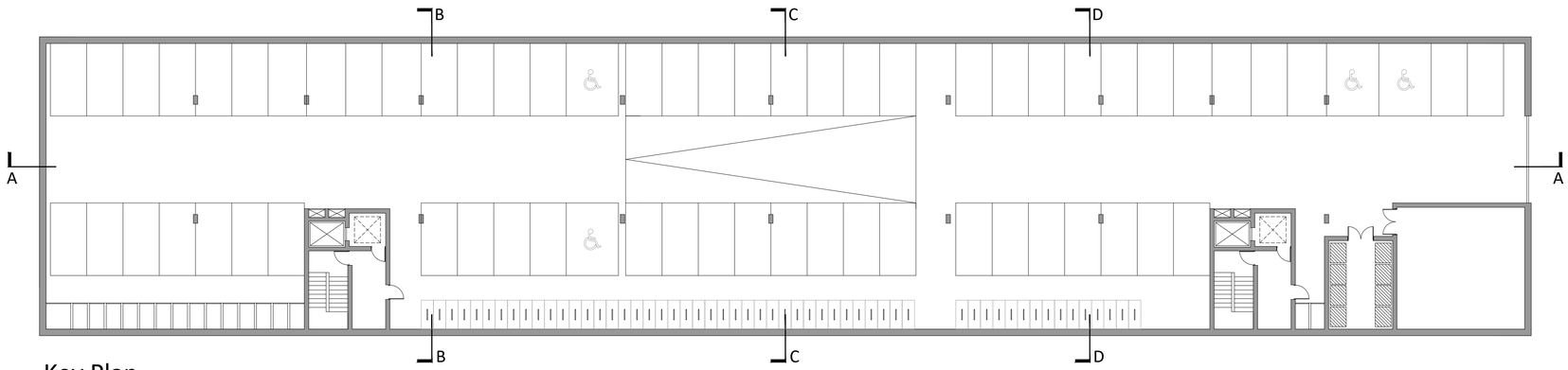
scale 1:200

Section D-D (Block A)

scale 1:200

Section C-C (Through Surface Parking)

scale 1:200

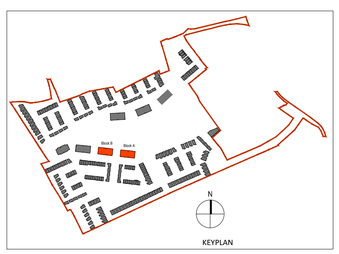


Key Plan

scale 1:200

Undercroft Car Parking Apartment Block A & Block B - Sections B-B, C-C & D-D

scale 1:200



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Project No.: 1806
Scale @ A1: 1:200
Project Lead: RN
Date Printed: 15/05/2019
Drawn By: RD
Current Rev.: 01
Model No.: 1806-OMP-BLX-ZZ-DR-A-XX-10000
Purpose: PLANNING

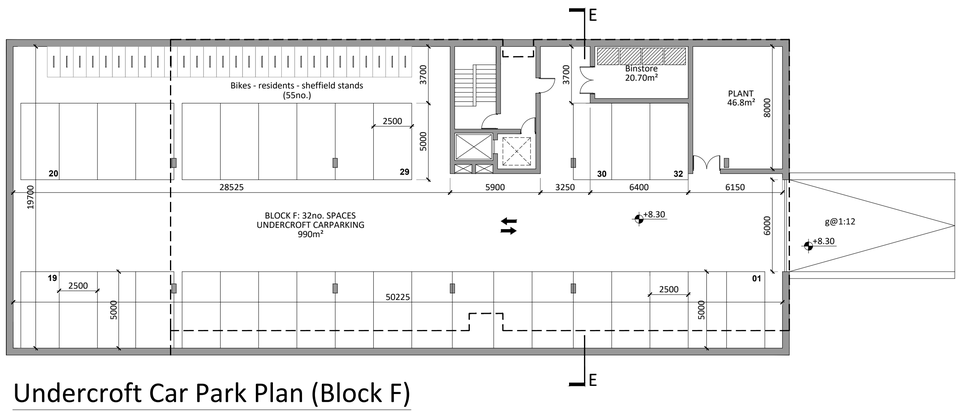
Project: Residential Development At
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Undercroft Car Parking Apartment Block A & Block B - Sections B-B, C-C & D-D
Drawing No.: 1806-OMP-BLX-ZZ-DR-A-XX-10003

Suitability - Checked By - Date

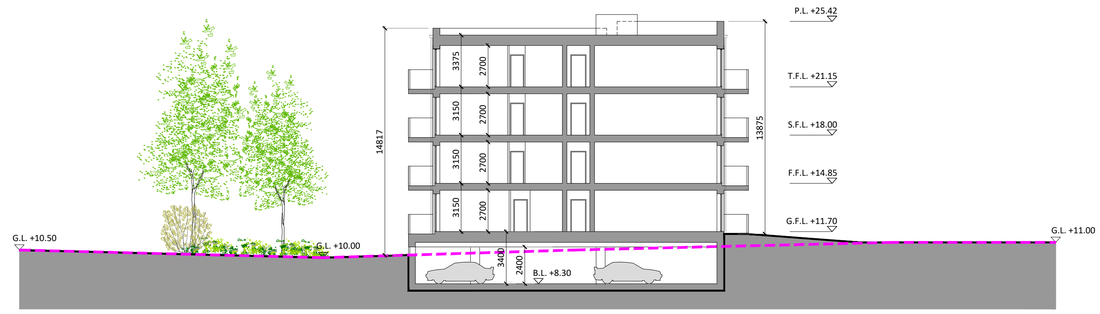
Ground Floor Level (Block F)

scale 1:200



Undercroft Car Park Plan (Block F)

scale 1:200

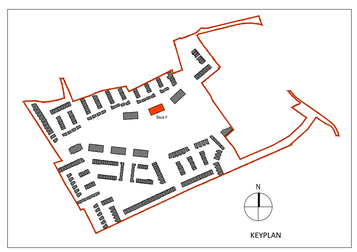


Section E-E (Block F)

scale 1:200

Undercroft Car Parking Apartment Block F - Plans & Section E-E

scale 1:200



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Project No.:	1806	**Scale @** A1:	1:200
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Model No.:	1806-OMP-BLX-ZZ-DR-A-XX-10000		
Purpose:	PLANNING		

Project: Residential Development At
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Client: Kingsbridge Consultancy Ltd.

Drawing Title: Undercroft Car Parking Apartment Block F - Plans & Section E-E
Drawing No.: 1806-OMP-BLX-ZZ-DR-A-XX-10004

Suitability - Checked By - Date

Front Elevation (Street Elevation)
scale 1:200

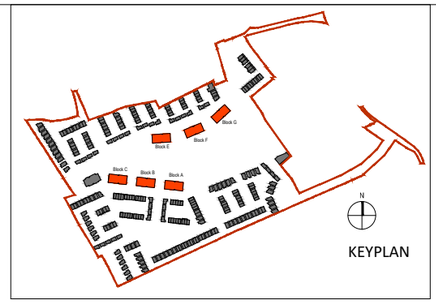
Rear Elevation (Elevation to Parkland)
scale 1:200

Block A/B/C/E/F/G - Front & Rear Elevations

scale 1:200

4 Storey Apartment Block

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum



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Purpose:	Planning		

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Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Block A/B/C/E/F/G - Front & Rear Elevations
Drawing No.: 1806-OMP-BLX-ZZ-DR-A-XX-20000

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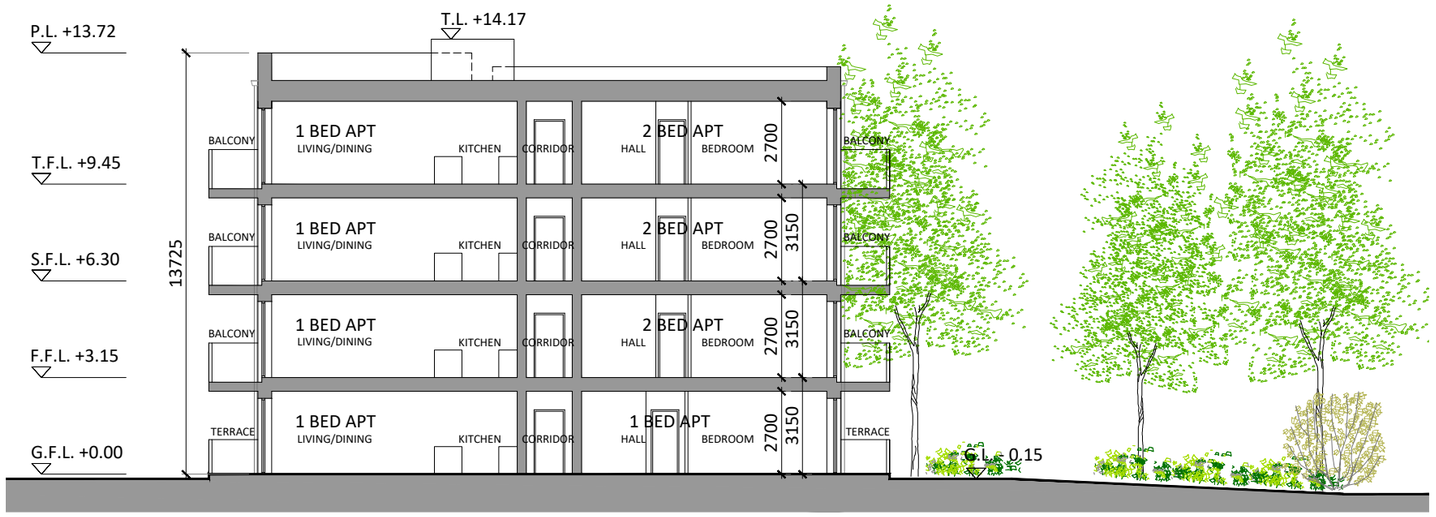

Typical Section A-A
scale 1:200

Typical Block - Gable 1 Elevation
scale 1:200

Typical Block - Gable 2 Elevation
scale 1:200

Block A/B/C/E/F/G - Typical Section A-A & Side Elevations
scale 1:200

4 Storey Apartment Block

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum

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Purpose:	Planning		

Project: Residential Development At
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: Block A/B/C/E/F/G - Typical Section A-A & Side Elevations
Drawing No.: 1806-OMP-BLX-ZZ-DR-A-XX-20001

Suitability - Checked By - Date

Block A Side Elevation
scale 1:200

Block F Side Elevation
scale 1:200

Block A & F Side Elevations
(Showing undercroft entrance/ exit)
scale 1:200

4 Storey Apartment Block

All dimensions in millimeters
All levels (in metres) are related to Malin Head Datum

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Project No.:	1806	**Scale @** A3:	1:200
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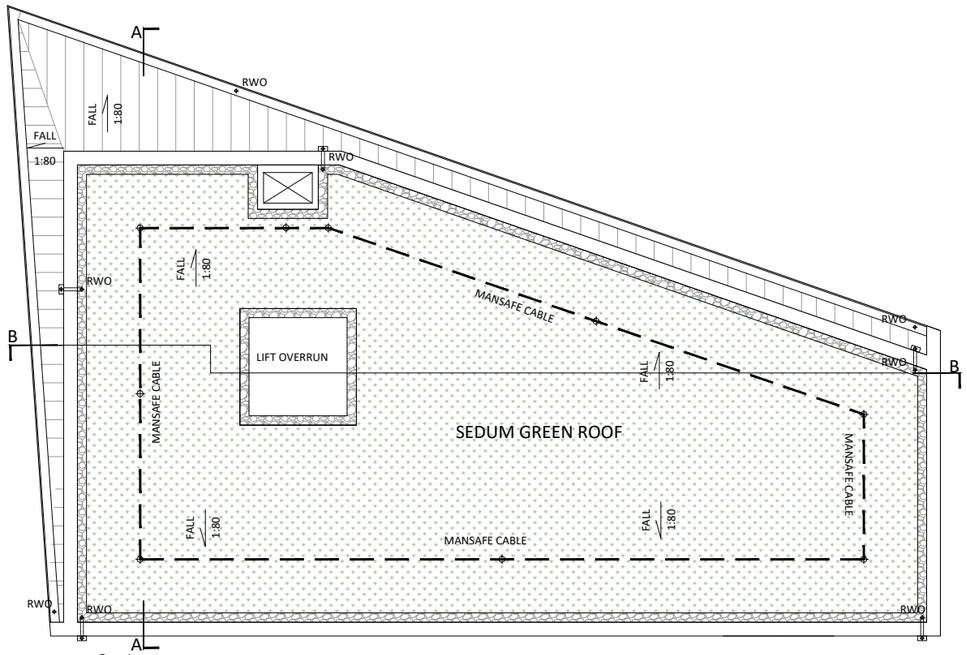
Purpose:	Planning		

Project: Residential Development At
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

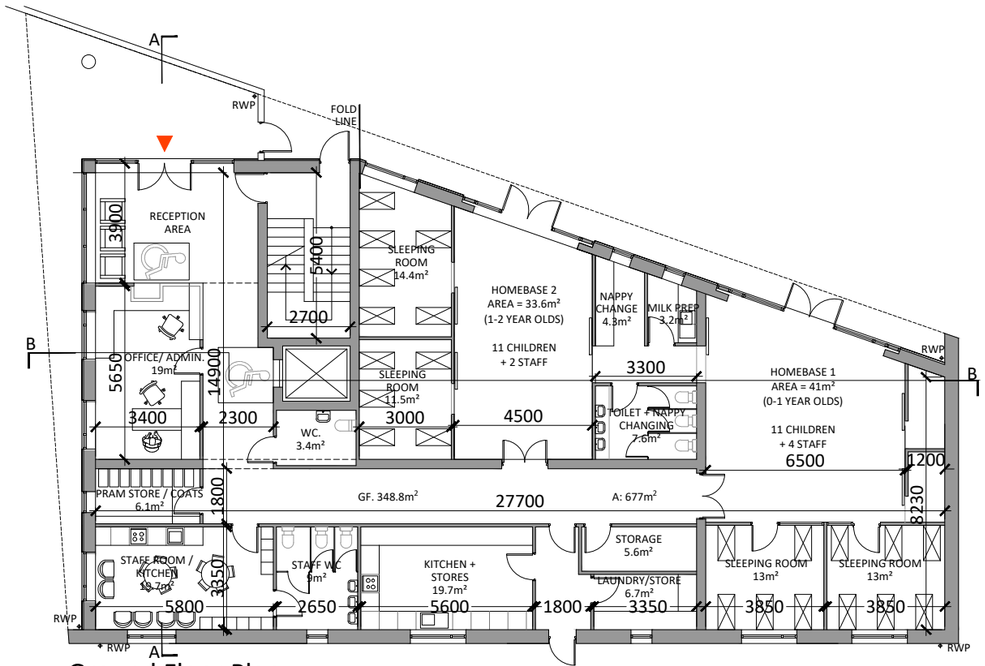
Drawing Title: Block A & F Side Elevations
Drawing No.: 1806-OMP-BLX-ZZ-DR-A-XX-20002

Suitability - Checked By - Date

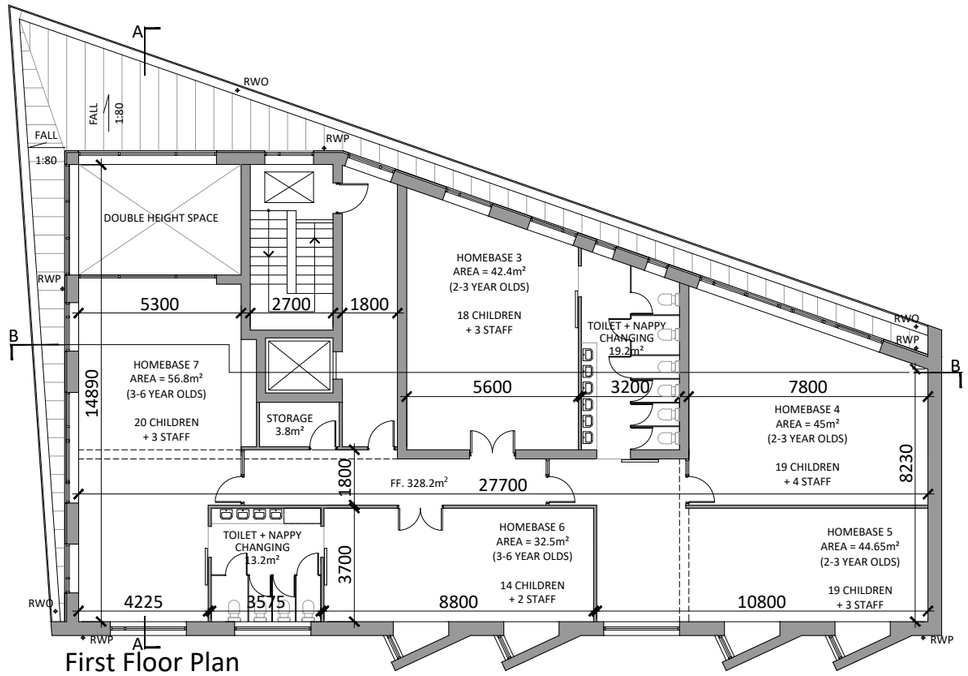
Context Plan
scale 1:500



Roof Plan
scale 1:200



Ground Floor Plan
scale 1:200



First Floor Plan
scale 1:200

CHILDCARE FACILITY
STOREYS: 2
AREA: 677m²
CAPACITY: 112 CHILDREN

115 / T1 — Houses are tagged to show number & type; the house number is in the top section of the tag, e.g. 115 and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM

Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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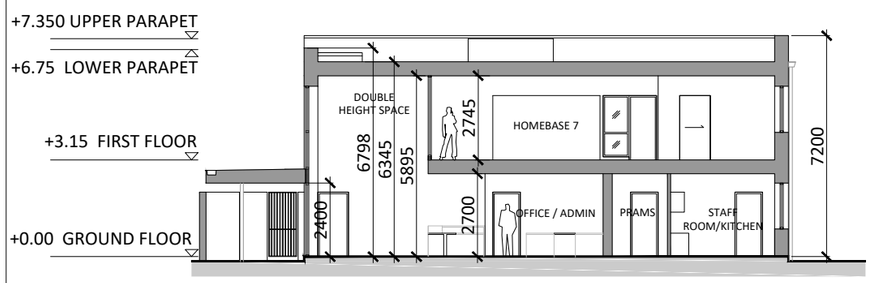
Cork: 26 South Mall, Cork City, Co. Cork, T12 R2RV Ireland

Project No.:	1806	**Scale @ A3:**	As Shown
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-CR-ZZ-DR-A-XX-10000		
Purpose:	Planning		

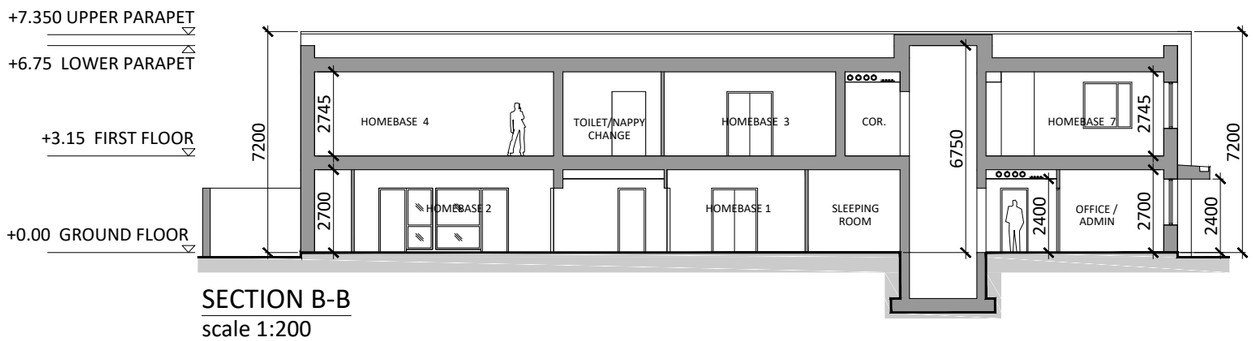
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: CHILDCARE FACILITY - Proposed Floor Plans
Drawing No.: 1806-OMP-CR-00-DR-A-XX-10000

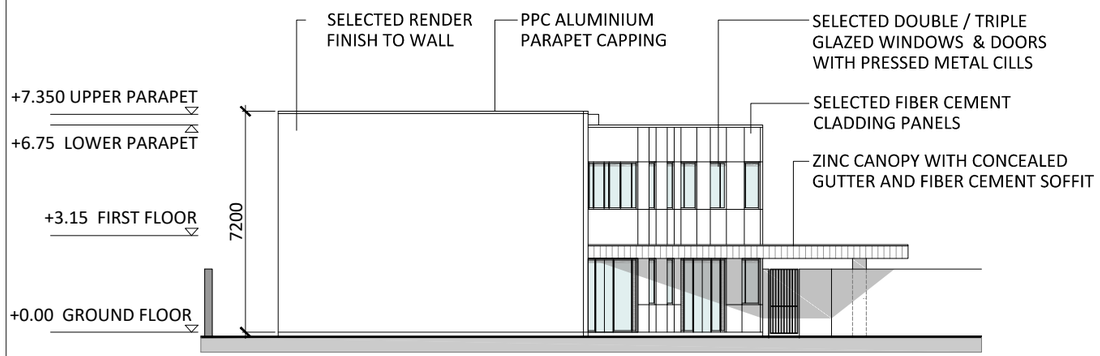
Suitability - Checked By - Date



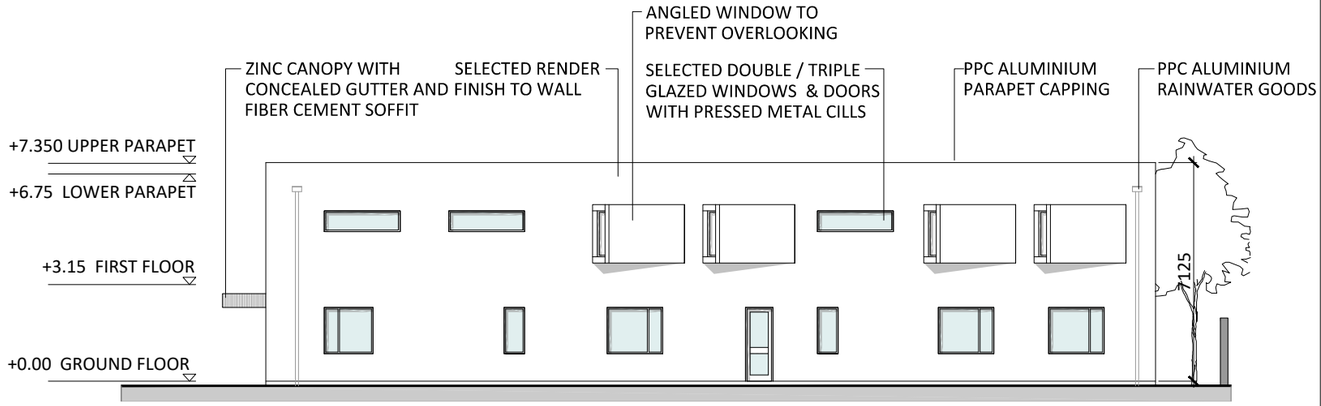
SECTION A-A
scale 1:200



SECTION B-B
scale 1:200



EAST ELEVATION
scale 1:200



SOUTH ELEVATION
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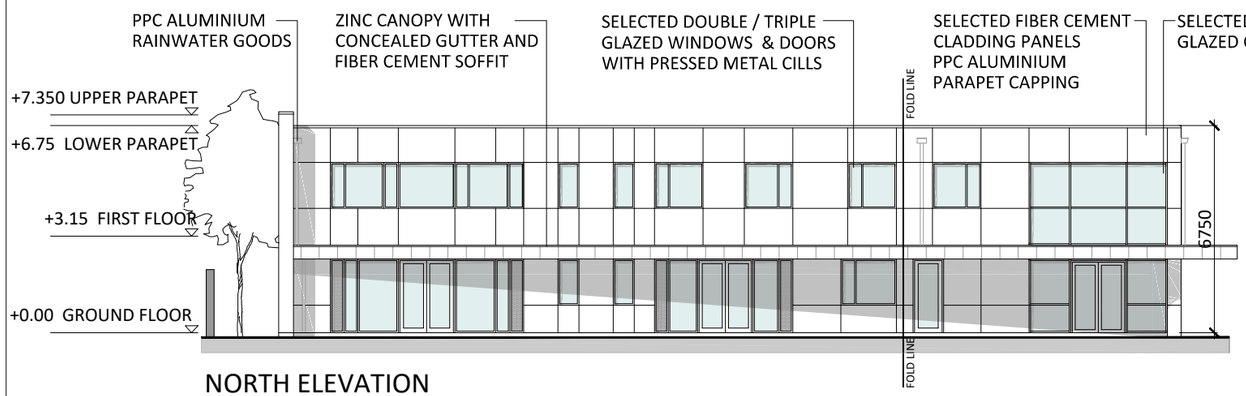
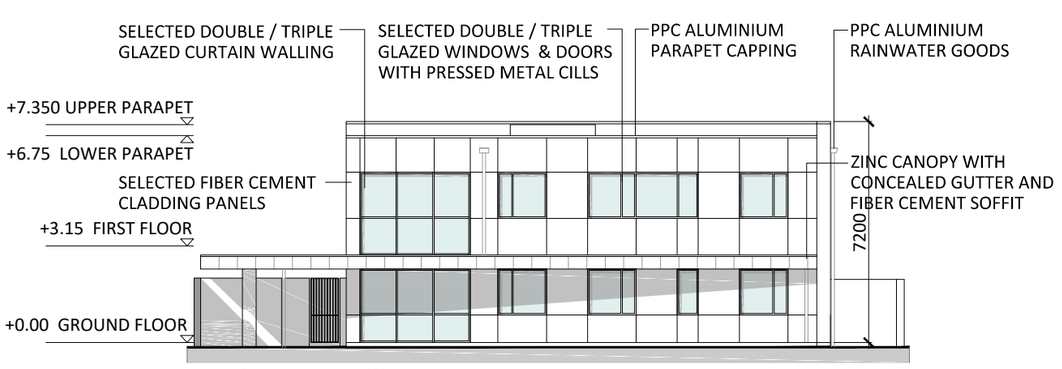


NORTH ELEVATION
scale 1:200



WEST ELEVATION
scale 1:200

CHILDCARE FACILITY

STOREYS: 2
AREA: 677m²
CAPACITY: 112 CHILDREN

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ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM

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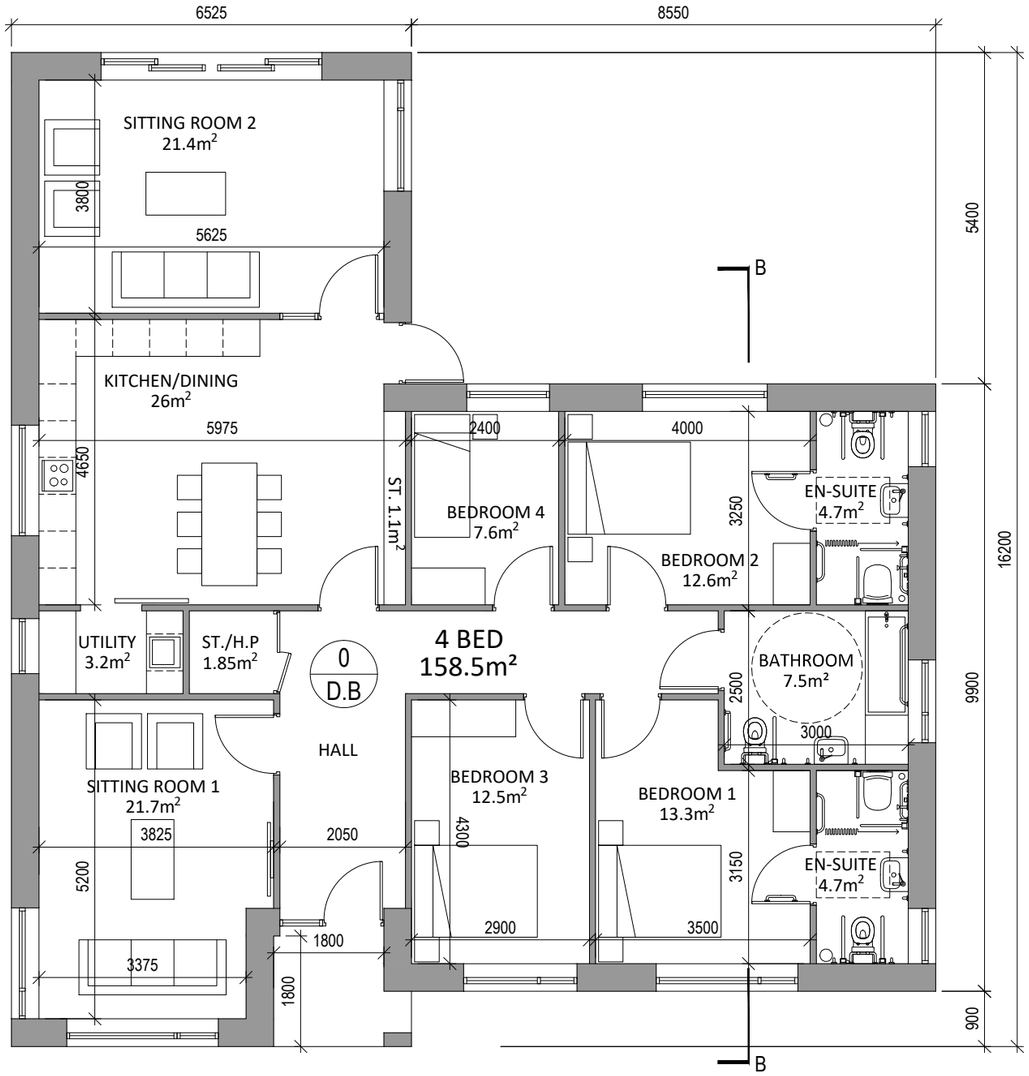
Project No.:	1806	**Scale @** A3:	1:200
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-CR-ZZ-DR-A-XX-10000		
Purpose:	Planning		

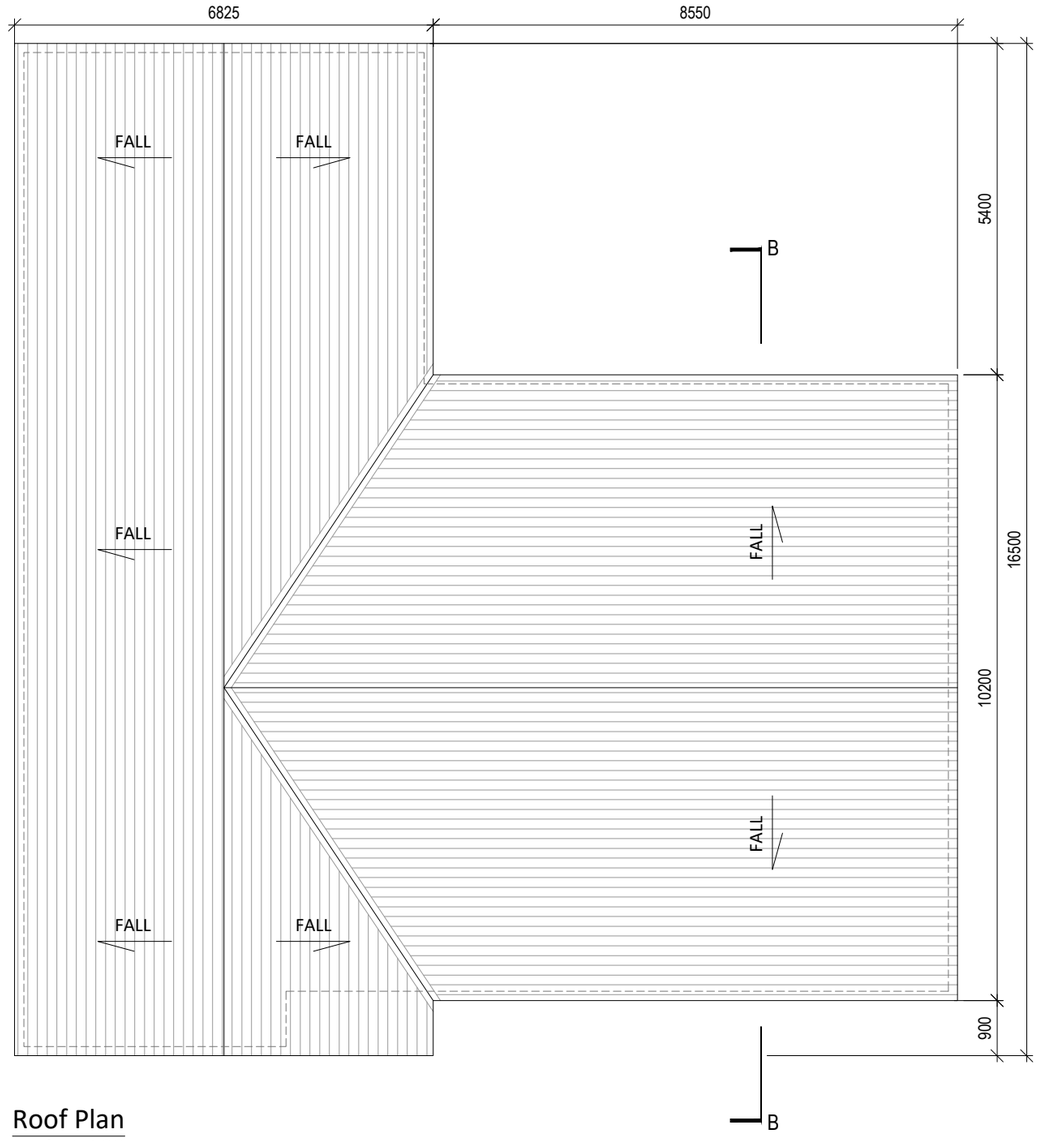
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: CHILDCARE FACILITY - Section & Elevations
Drawing No.: 1806-OMP-CR-00-DR-A-XX-20000

Suitability - Checked By - Date



Ground Floor Plan
scale 1:100



Roof Plan
scale 1:100

DISABILITY BUNGALOW - Proposed Floor Plans

1 STOREY - 4 BED DETACHED HOUSE
a: 158.5 m²

115 / T1 — Houses are tagged to show number & type; the house number is in the top section of the tag, e.g. 115 and the house type is in the lower section of the tag, e.g. T1

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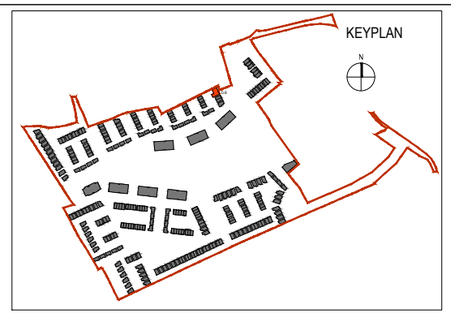

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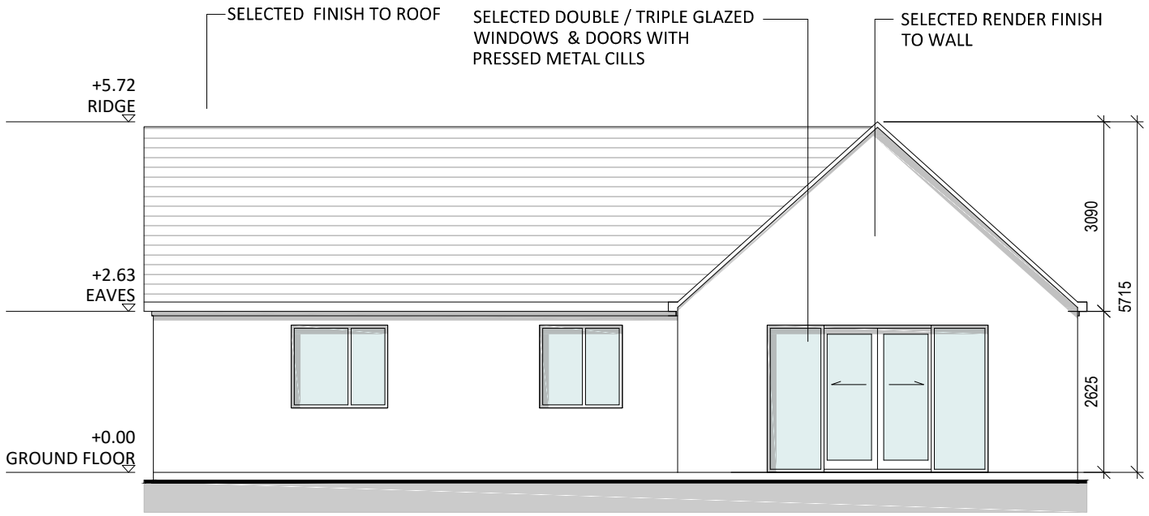
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DISABILITY BUNGALOW - Proposed Floor Plans
Drawing No.: 1806-OMP-DB-00-DR-A-XX-10000

Suitability - Checked By - Date

Front Elevation (North East)
scale 1:100



Rear Elevation (South West)
scale 1:100

DISABILITY BUNGALOW - Elevations

1 STOREY - 4 BED DETACHED HOUSE
a: 158.5 m^2

115
T1

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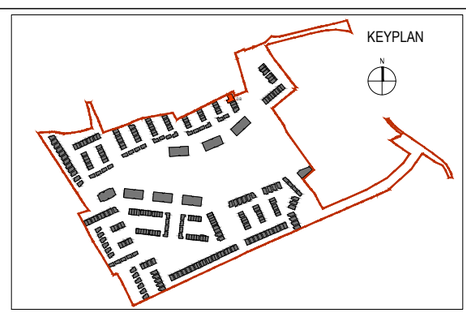
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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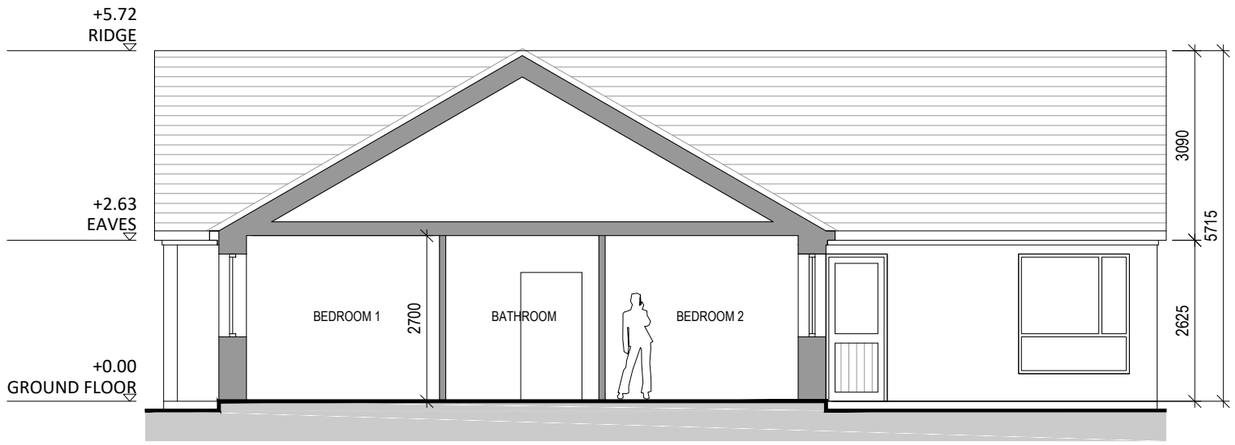
Purpose:	Planning		

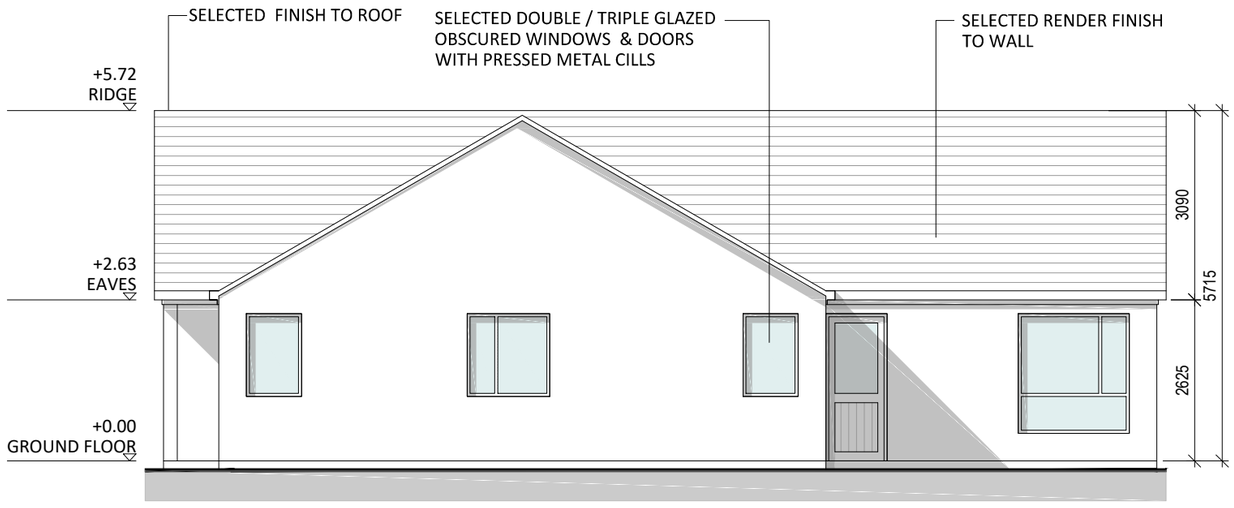
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DISABILITY BUNGALOW - Elevations
Drawing No.: 1806-OMP-DB-00-DR-A-XX-20000

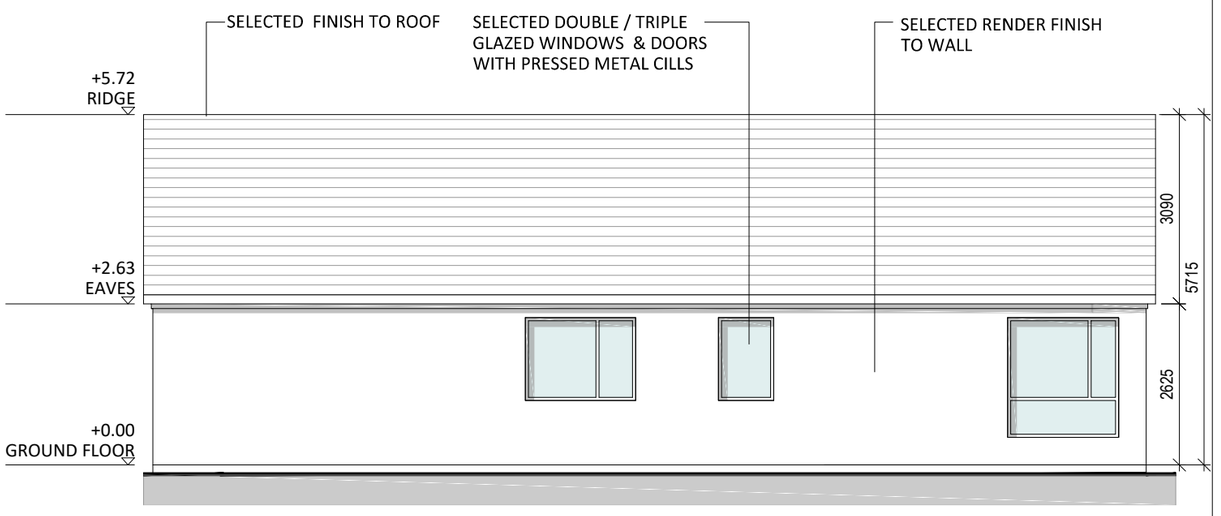
Suitability - Checked By - Date



Section A-A
scale 1:100



Side Elevation (North West)
scale 1:100



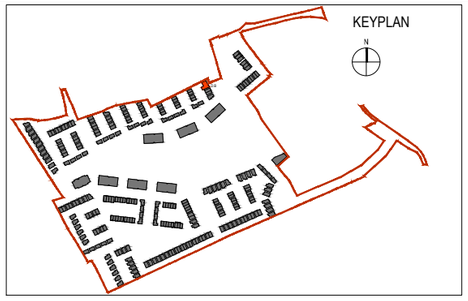
Side Elevation (South East)
scale 1:100

DISABILITY BUNGALOW - Section A-A & Elevations

1 STOREY - 4 BED DETACHED HOUSE
a: 158.5 m^2

115 / T1 — Houses are tagged to show number & type; the house number is in the top section of the tag, e.g. 115 and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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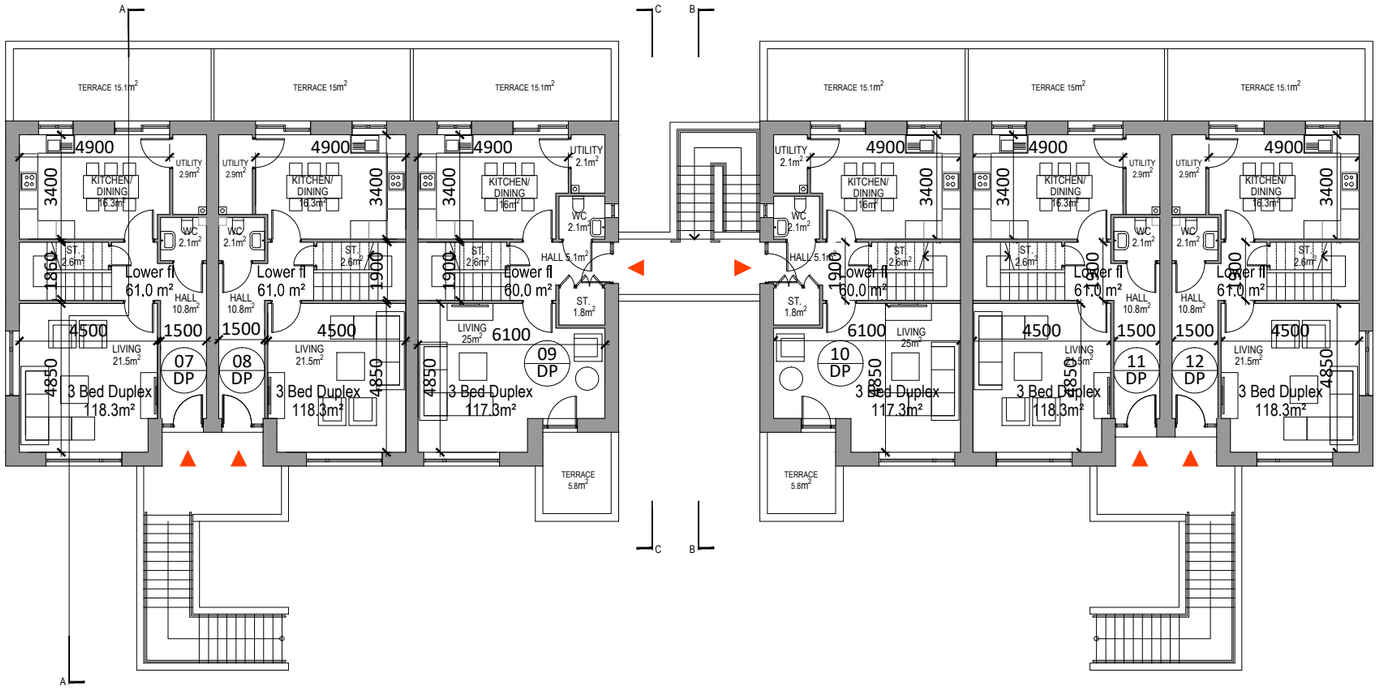
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-DB-ZZ-DR-A-XX-10000		
Purpose:	Planning		

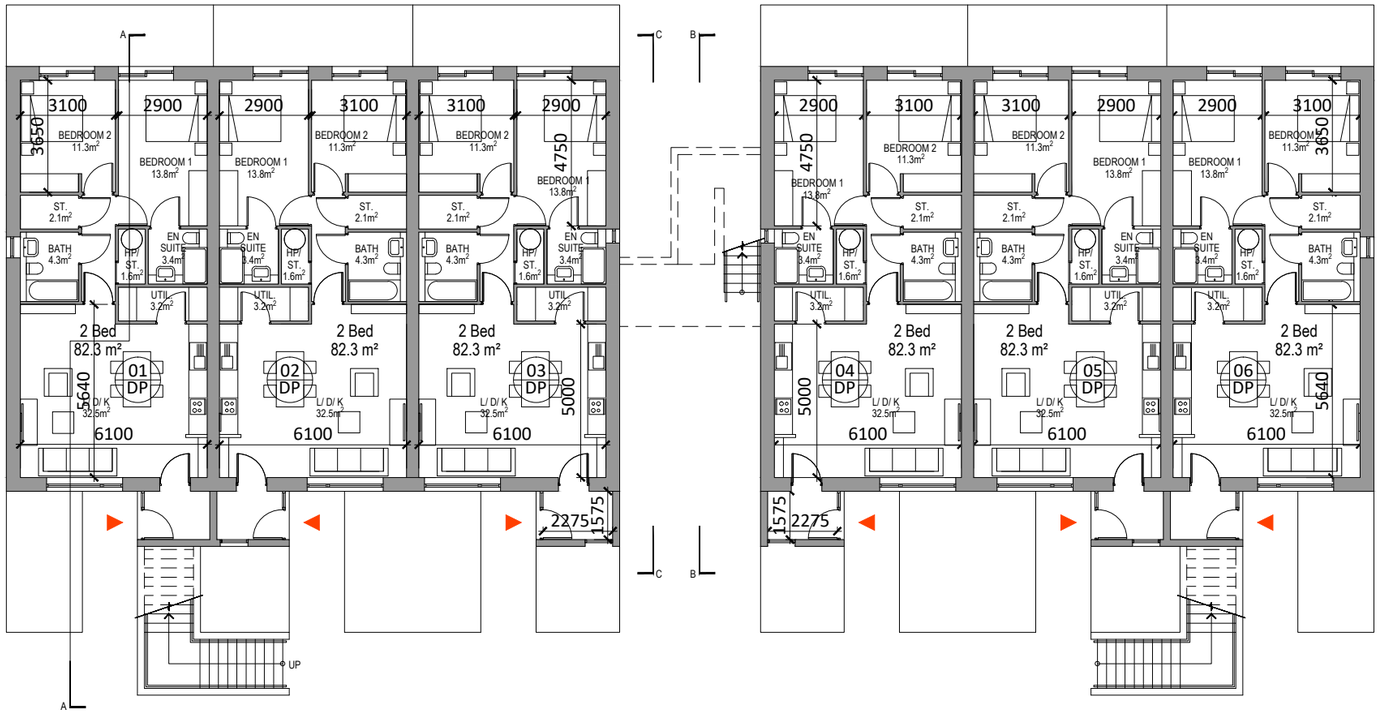
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DISABILITY BUNGALOW - Section A-A & Elevations.
Drawing No.: 1806-OMP-DB-00-DR-A-XX-20001

Suitability - Checked By - Date



3 Bed Duplexes
First Floor Plan
scale 1:200



2 Bed Apartments
Ground Floor Plan
scale 1:200

DUPLEXES - GROUND & FIRST FLOOR PLANS

2 BED GROUND FLOOR APARTMENT: 82.3m²
3 BED UPPER LEVEL DUPLEX: 117.3m² / 118.3m²

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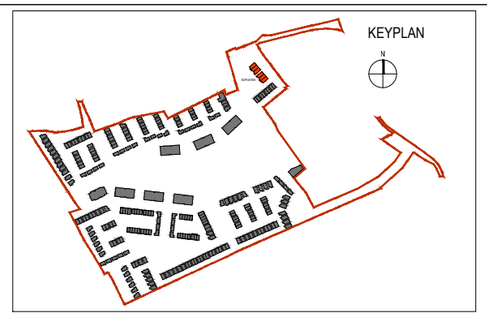

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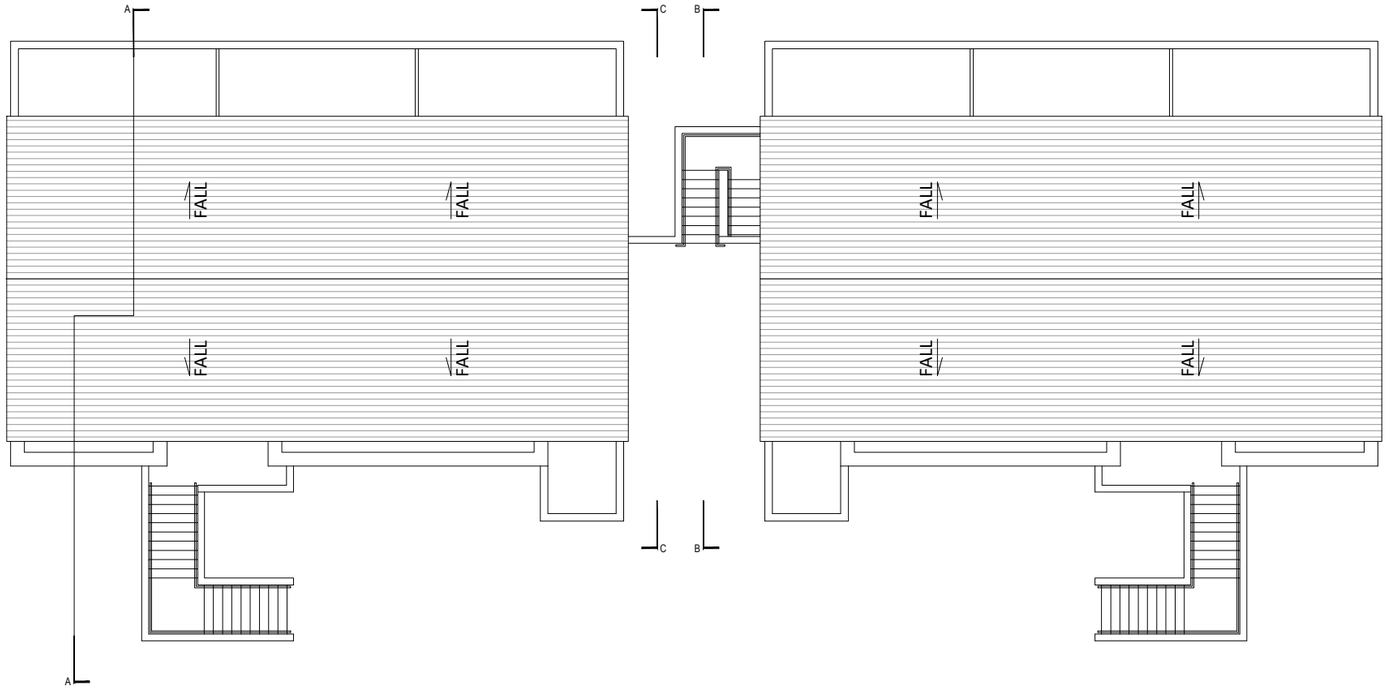
Project No.:	1806	**Scale @** A3:	1:200
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-DPX-ZZ-DR-A-XX-10000		
Purpose:	Planning		

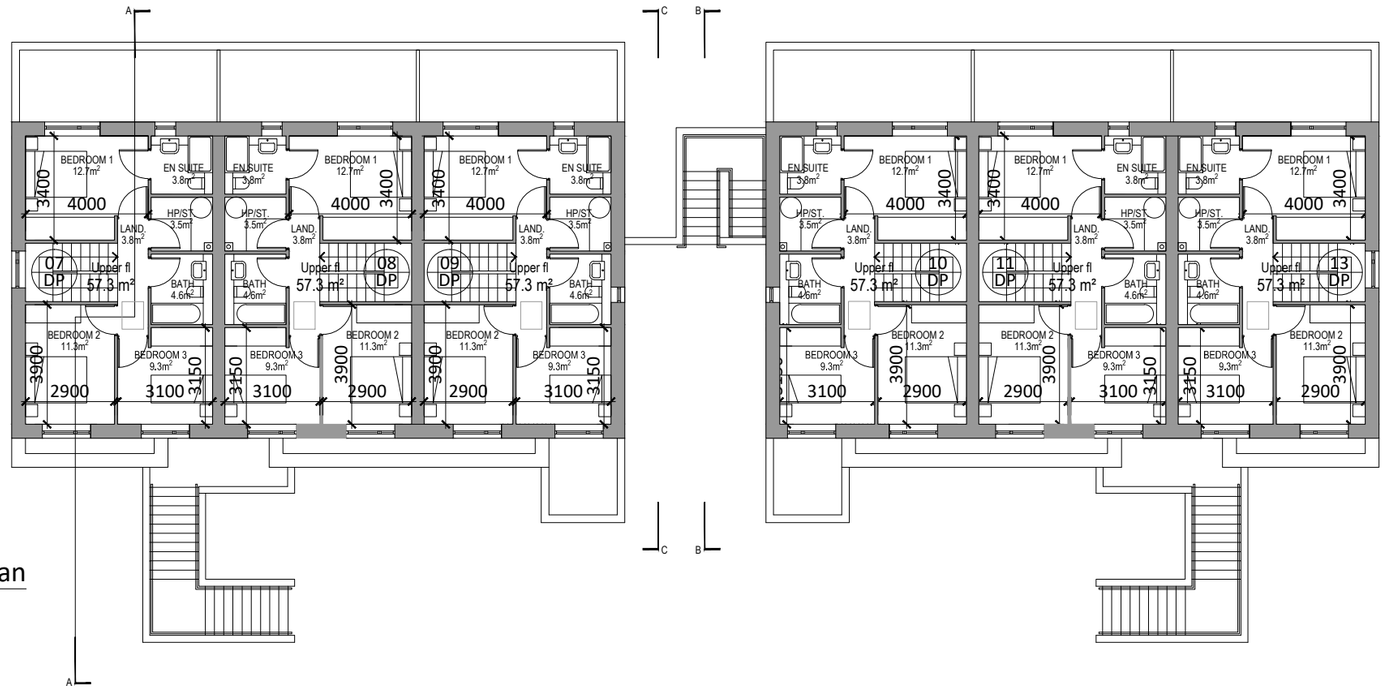
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DUPLEXES - Ground & First Floor Plans
Drawing No.: 1806-OMP-DPX-00-DR-A-XX-10000

Suitability - Checked By - Date



Roof Plan
scale 1:200



3 Bed Duplexes
Second Floor Plan
scale 1:200

DUPLEXES - SECOND FLOOR PLAN & ROOF PLAN

2 BED GROUND FLOOR APARTMENT: 82.3m²
3 BED UPPER LEVEL DUPLEX: 117.3m² / 118.3m²

115 / T1

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ALL DIMENSIONS IN MILLIMETERS
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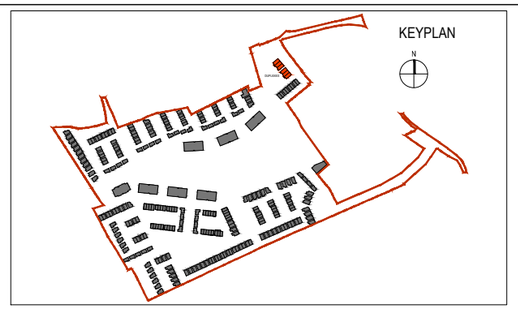

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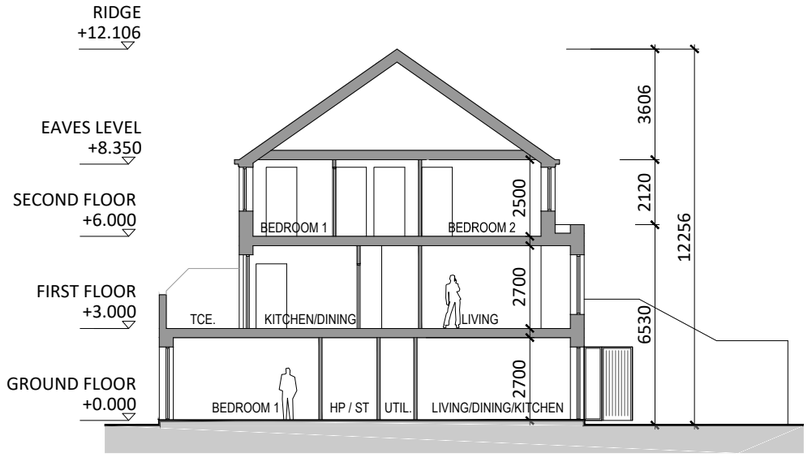
Model No.:	1806-OMP-DPX-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DUPLEXES - Second Floor Plan & Roof Plan
Drawing No.: 1806-OMP-DPX-00-DR-A-XX-10001

Suitability - Checked By - Date



SECTION A-A
scale 1:200

FRONT ELEVATION
scale 1:200

REAR ELEVATION
scale 1:200

DUPLEXES - SECTION A-A & ELEVATIONS

2 BED GROUND FLOOR APARTMENT: 82.3m²
3 BED UPPER LEVEL DUPLEX: 117.3m² / 118.3m²

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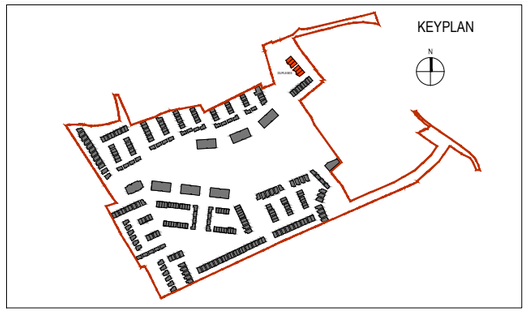

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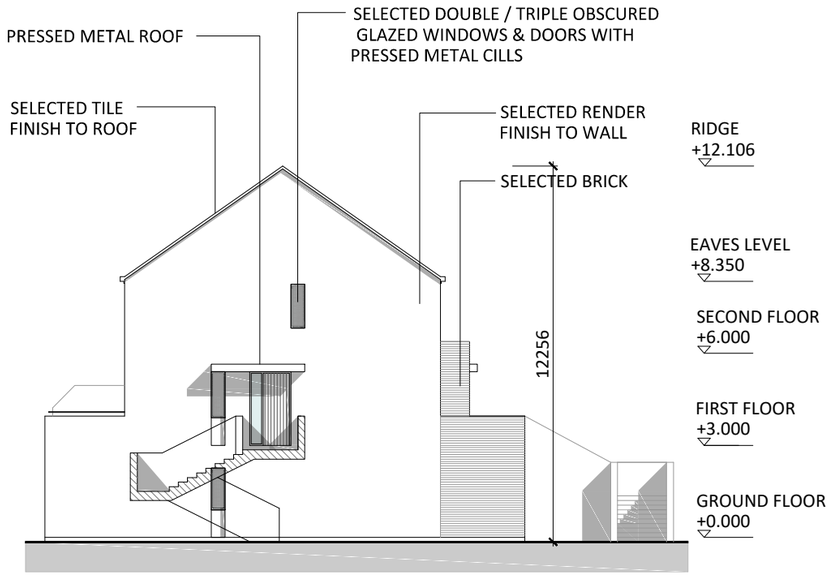
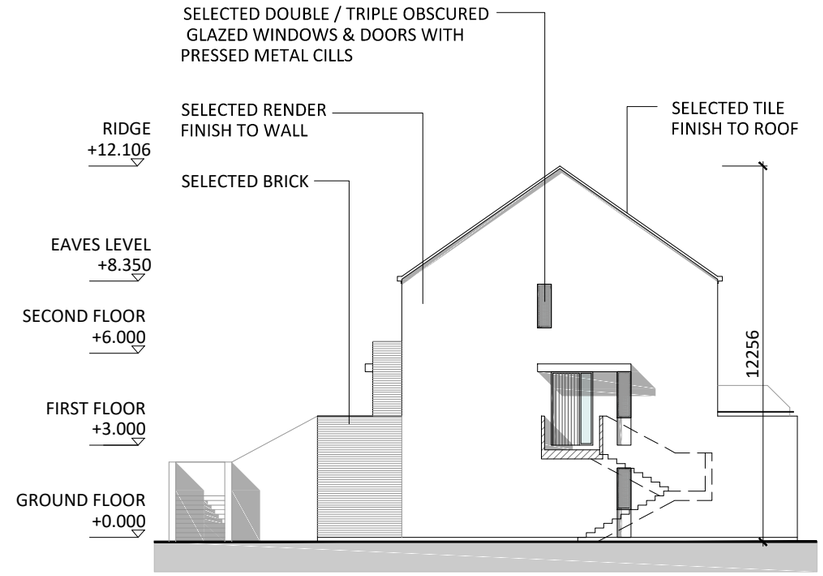
Date Printed:	15/05/2019
Current Rev.:	01

Project:	Residential Development
Location:	Blackrock, Dundalk, Co. Louth
Client:	Kingsbridge Consultancy Ltd.
Drawing Title:	DUPLEXES - Section A-A & Elevations
Drawing No.:	1806-OMP-DPX-00-DR-A-XX-20000

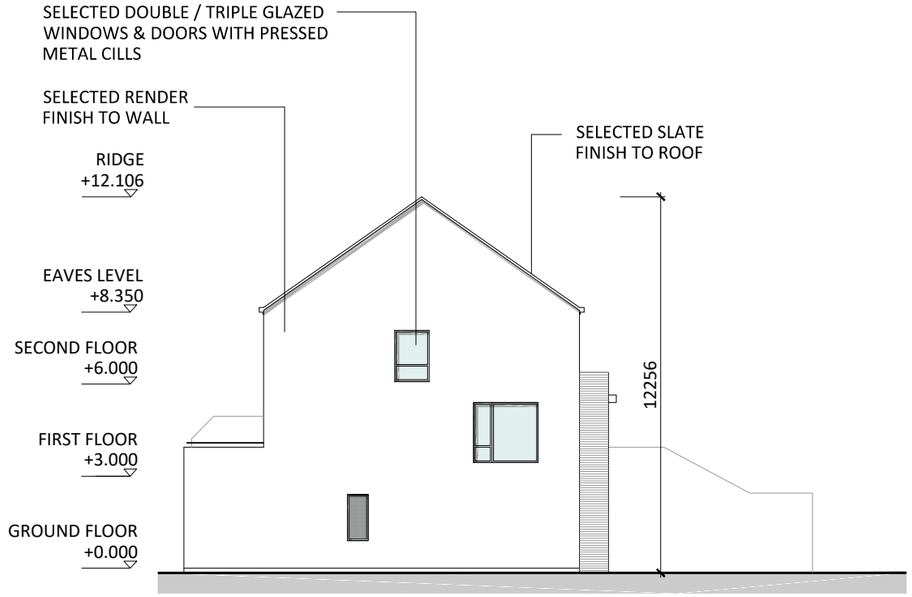
Suitability - Checked By - Date



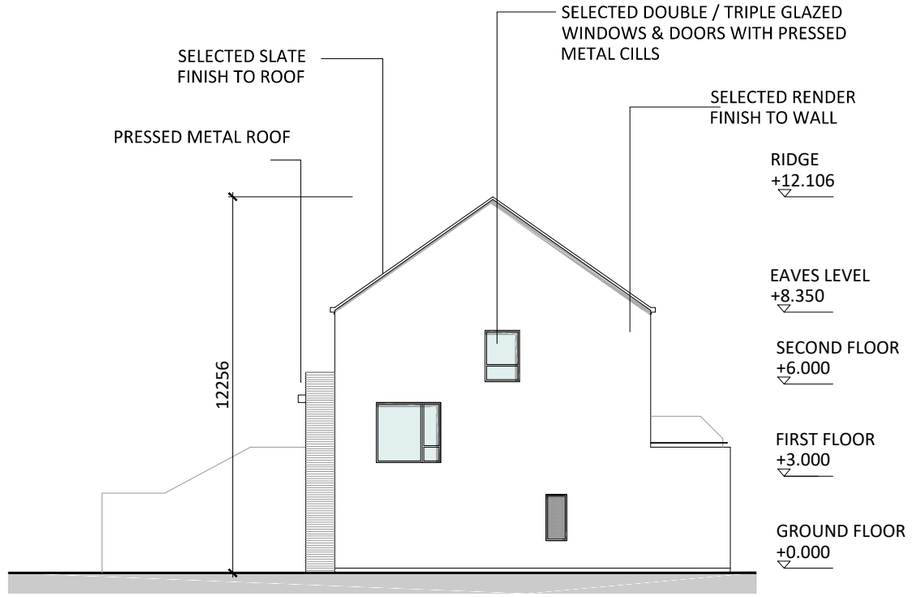
SECTION B-B
scale 1:200



SECTION C-C
scale 1:200



LEFT GABLE ELEVATION
scale 1:200



RIGHT GABLE ELEVATION
scale 1:200

DUPLEXES - SECTIONS & ELEVATIONS

2 BED GROUND FLOOR APARTMENT: 82.3m²
3 BED UPPER LEVEL DUPLEX: 117.3m² / 118.3m²

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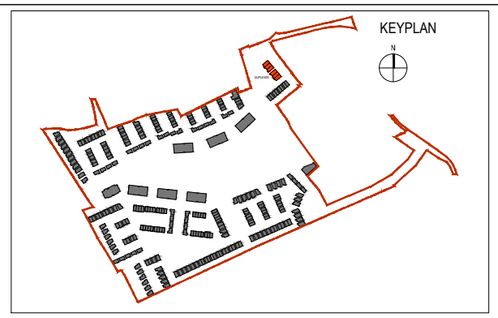

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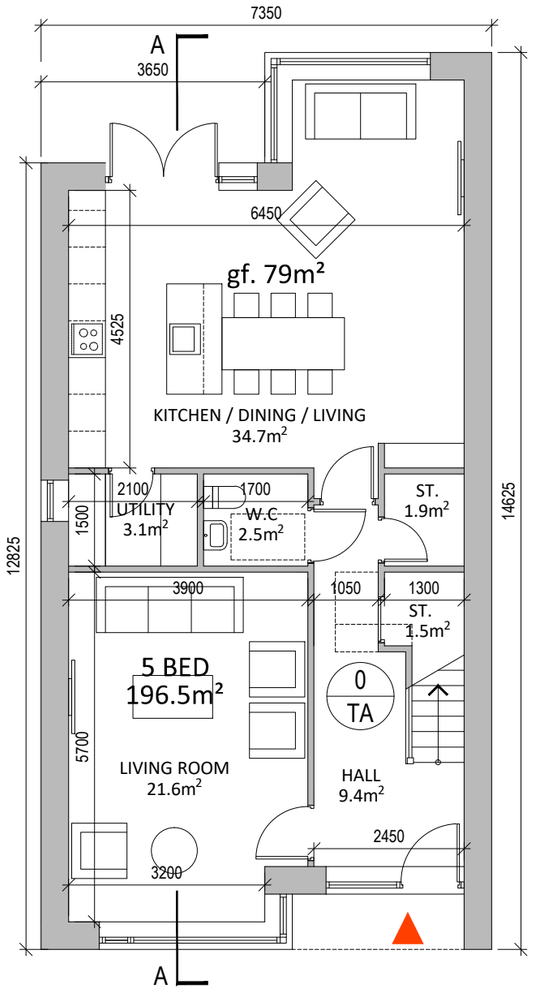
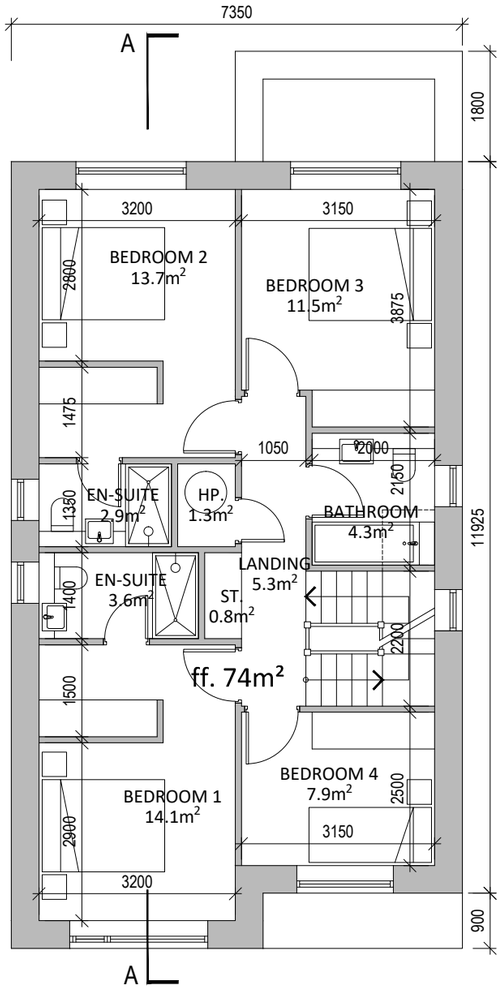
Drawing Title: DUPLEXES - Sections & Elevations
Drawing No.: 1806-OMP-DPX-00-DR-A-XX-20001

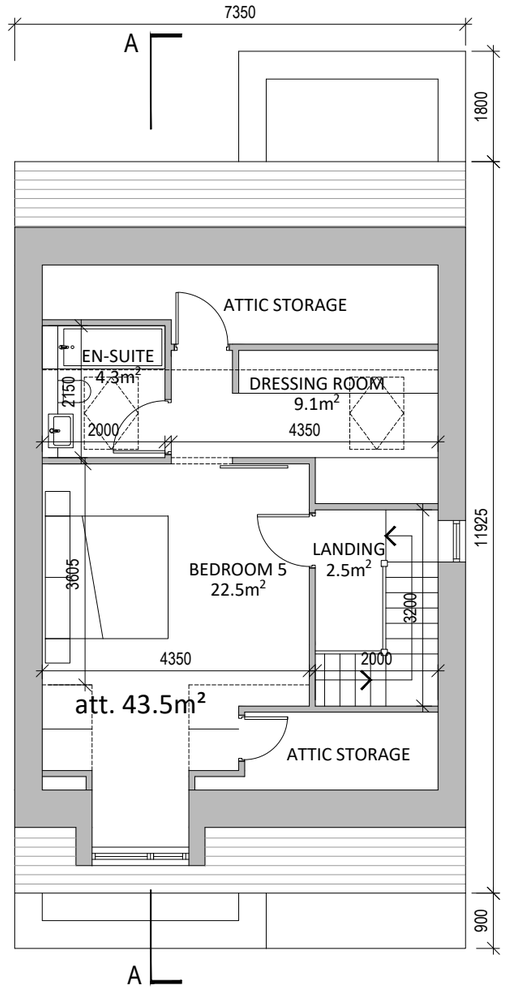
Suitability - Checked By - Date



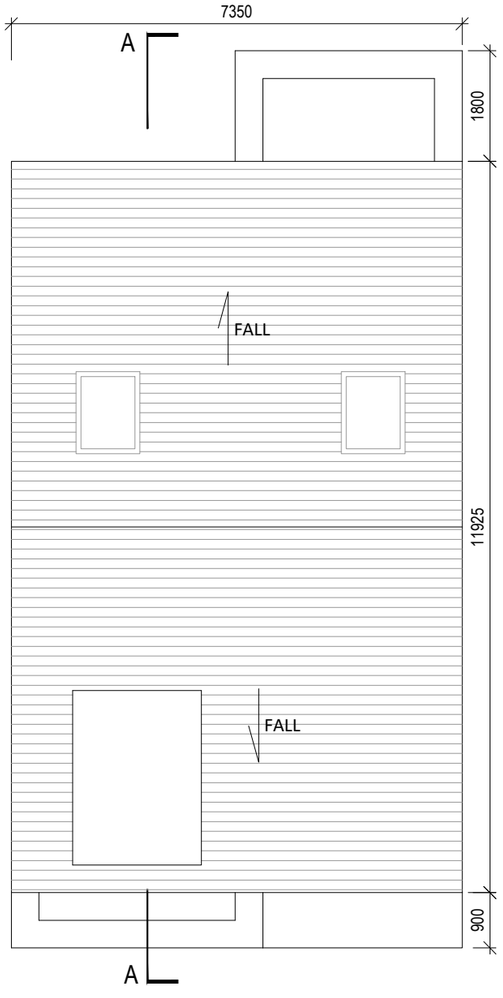
Ground Floor Plan
scale 1:100



First Floor Plan
scale 1:100



Attic Floor Plan
scale 1:100



Roof Plan
scale 1:100

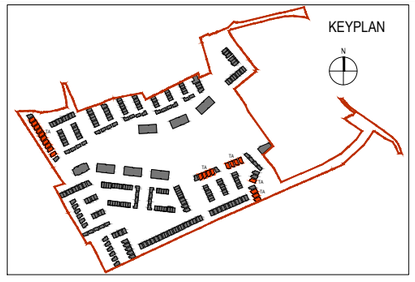
DETACHED HOUSE TYPE A - Proposed Floor Plans

5 BED - 3 STOREY DETACHED HOUSE
a: 196.5 m²

115
T1

Houses are tagged to show number & type;
the house number is in the top section of the tag, e.g. 115
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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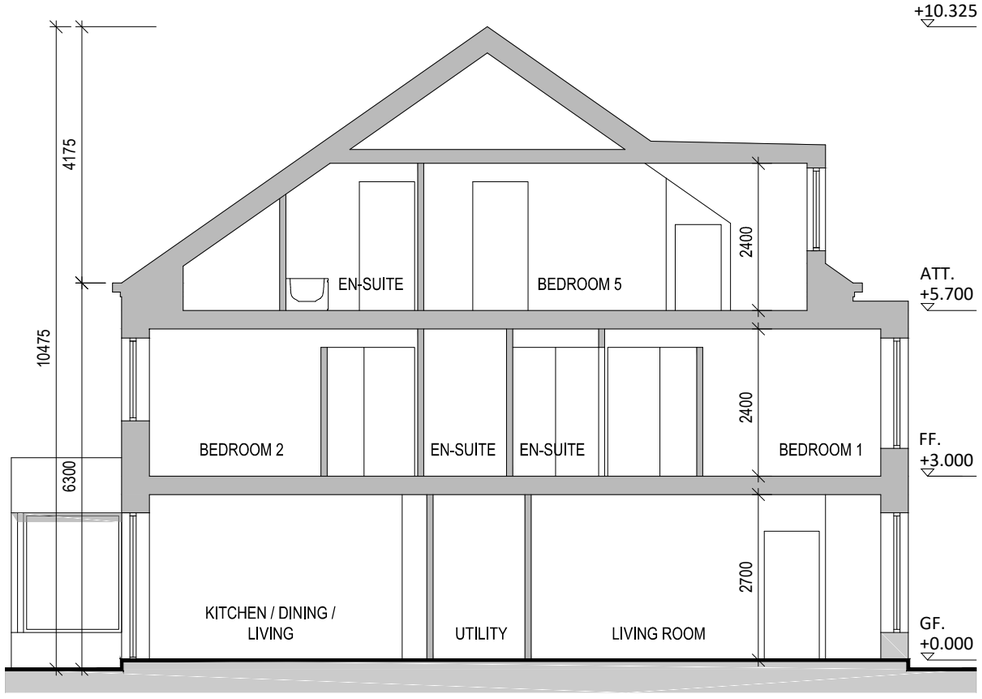
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	
Model No.:	1806-OMP-HTA-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

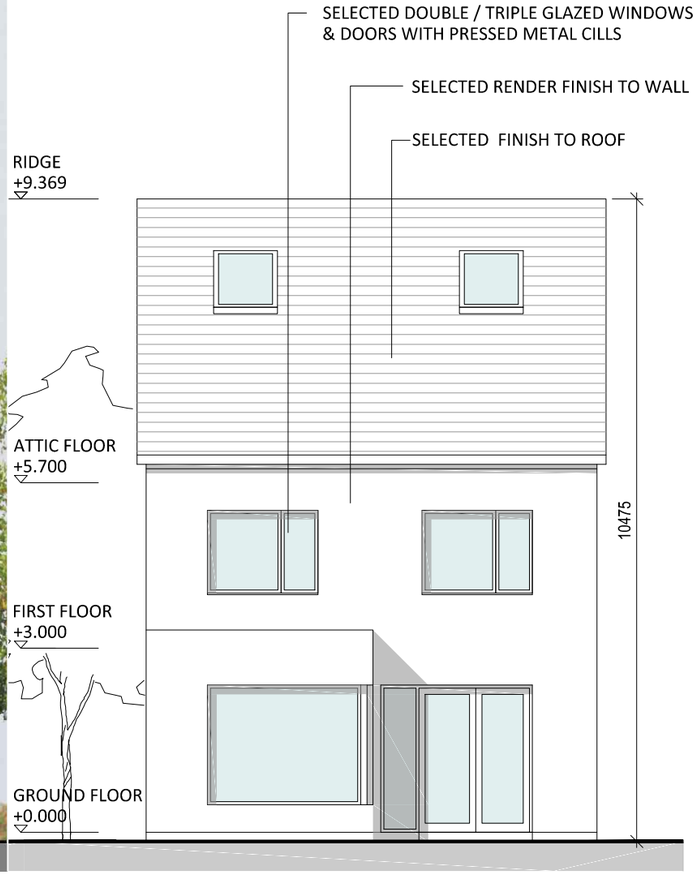
Drawing Title: DETACHED HOUSE TYPE A - Proposed Floor Plans
Drawing No.: 1806-OMP-HTA-00-DR-A-XX-10000

Suitability - Checked By - Date



SECTION A-A
scale 1:100

FRONT ELEVATION
scale 1:100

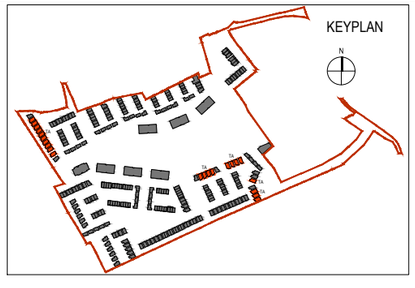


REAR ELEVATION
scale 1:100

DETACHED HOUSE TYPE A - Section A-A & Elevations.

5 BED - 3 STOREY DETACHED HOUSE
a: 196.5 m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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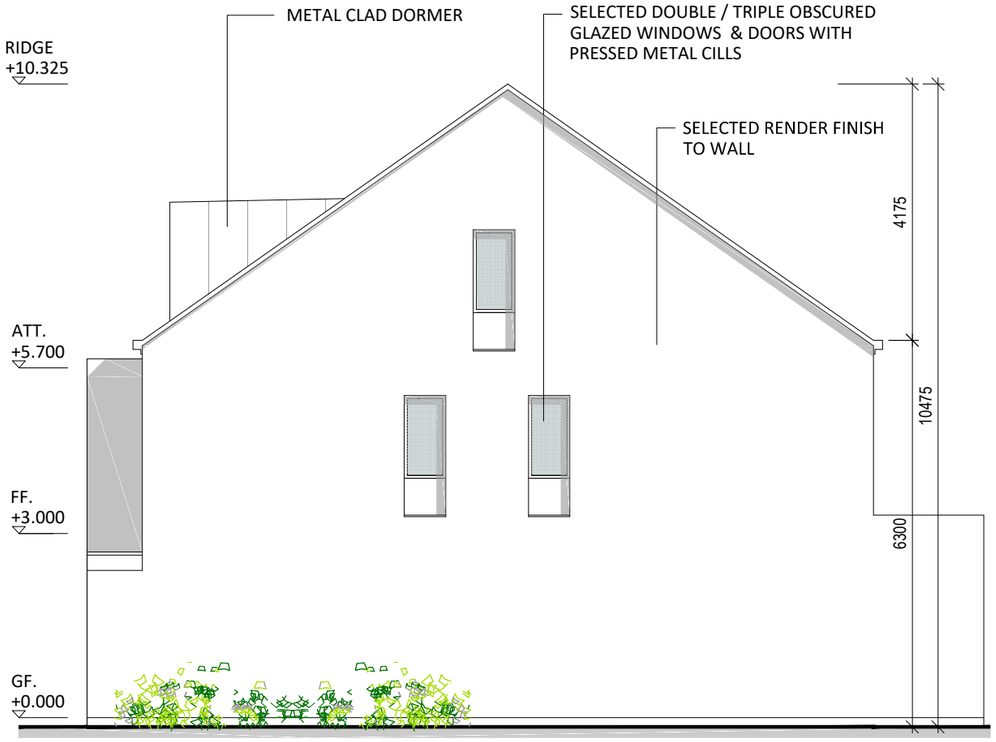
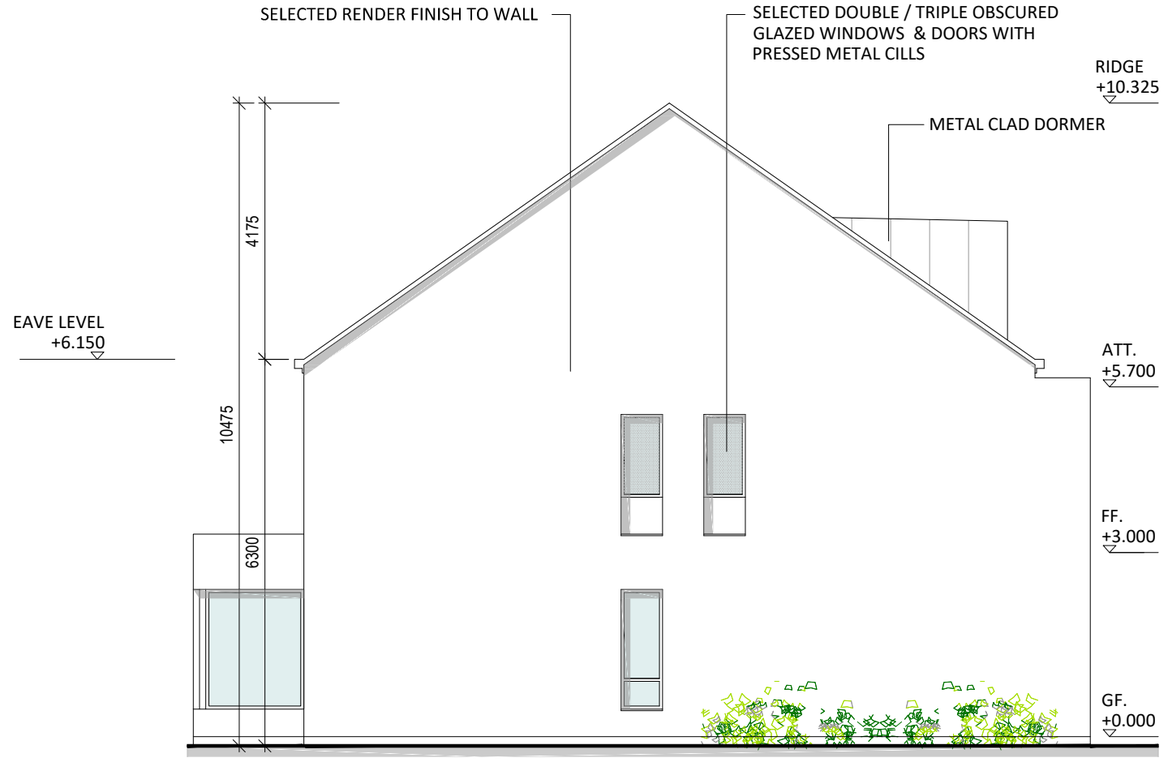
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTA-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project:	Residential Development
Location:	Blackrock, Dundalk, Co. Louth
Client:	Kingsbridge Consultancy Ltd.
Drawing Title:	DETACHED HOUSE TYPE A - Section A-A & Elevations
Drawing No.:	1806-OMP-HTA-00-DR-A-XX-20000

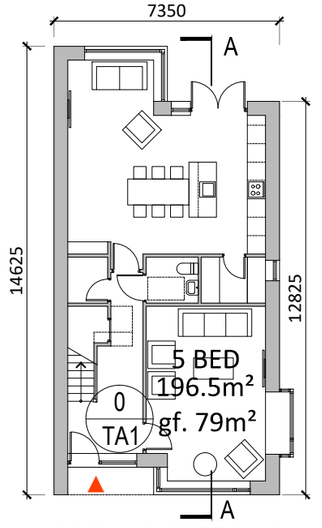
Suitability - Checked By - Date



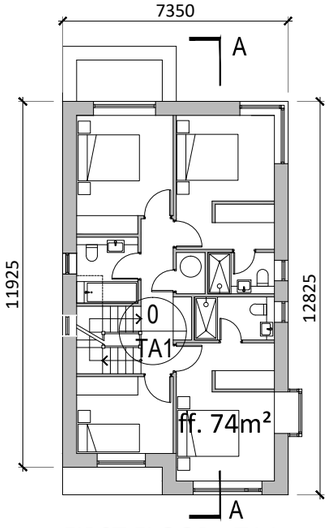
GABLE 1 ELEVATION
scale 1:100



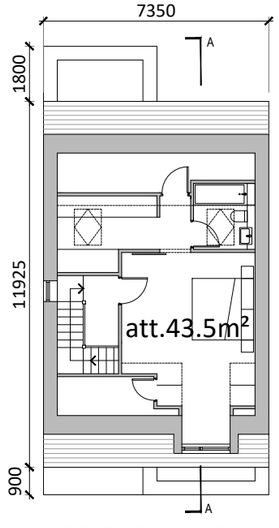
GABLE 2 ELEVATION
scale 1:100



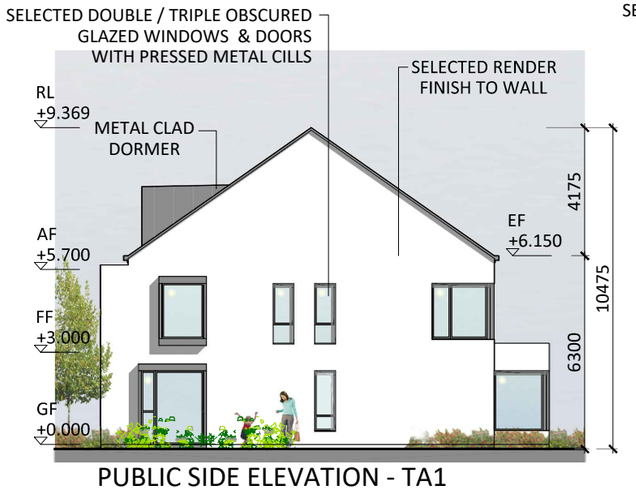
GROUND FLOOR - TA1
scale 1:200



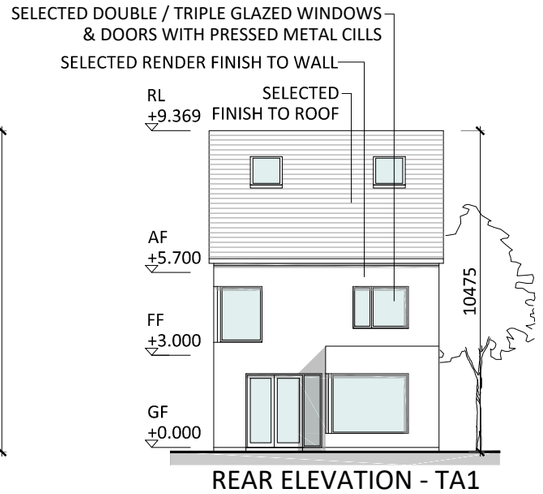
FIRST FLOOR - TA1
scale 1:200



ATTIC LEVEL - TA1
scale 1:200



PUBLIC SIDE ELEVATION - TA1
scale 1:200

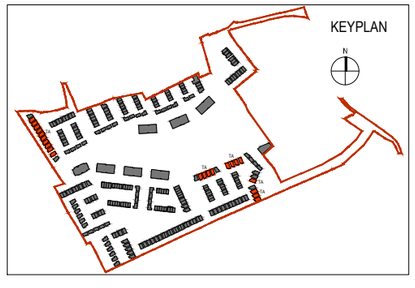


REAR ELEVATION - TA1
scale 1:200

DETACHED HOUSE TYPE A & A1 - Plans & Elevations.

5 BED - 3 STOREY DETACHED HOUSE
a: 196.5 m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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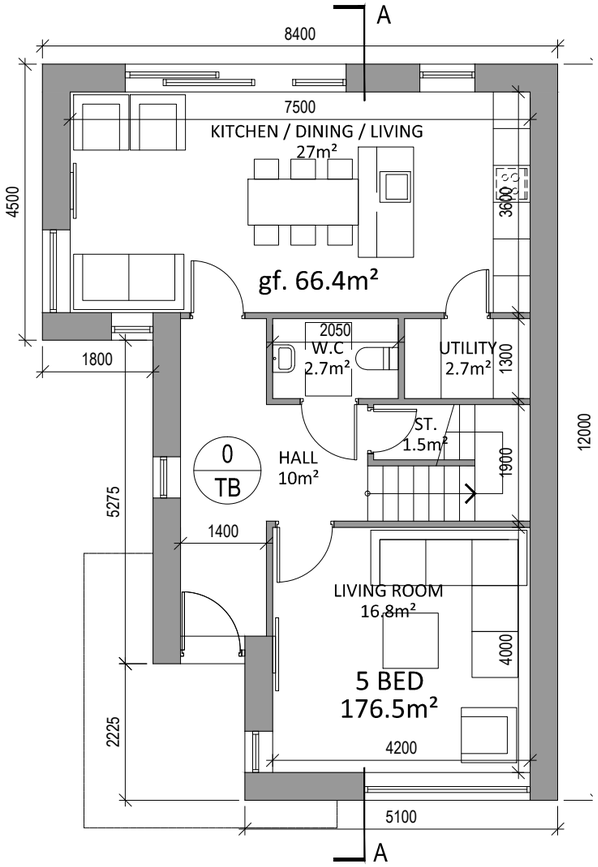
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTA-ZZ-DR-A-XX-10000		
Purpose:	Planning		

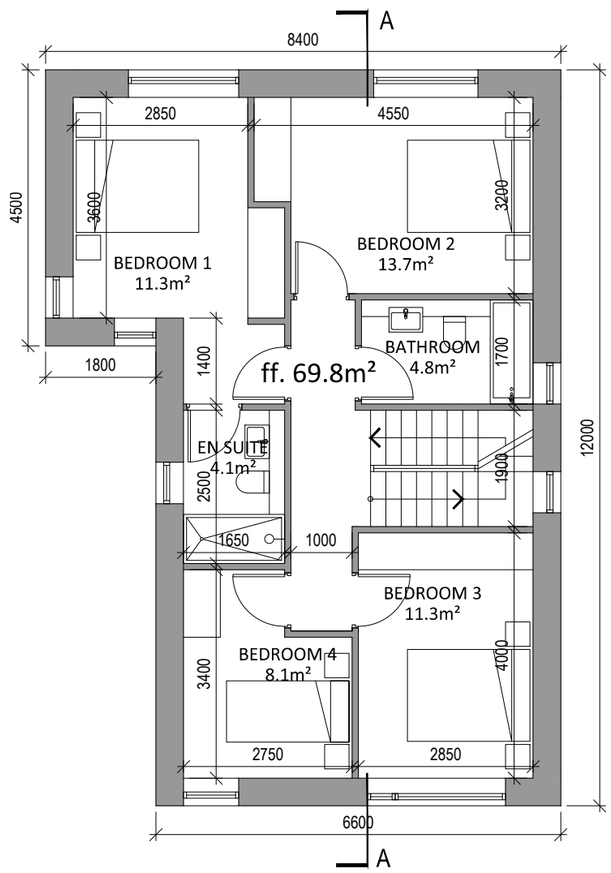
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE A & A1 - Plans & Elevations
Drawing No.: 1806-OMP-HTA-00-DR-A-XX-20001

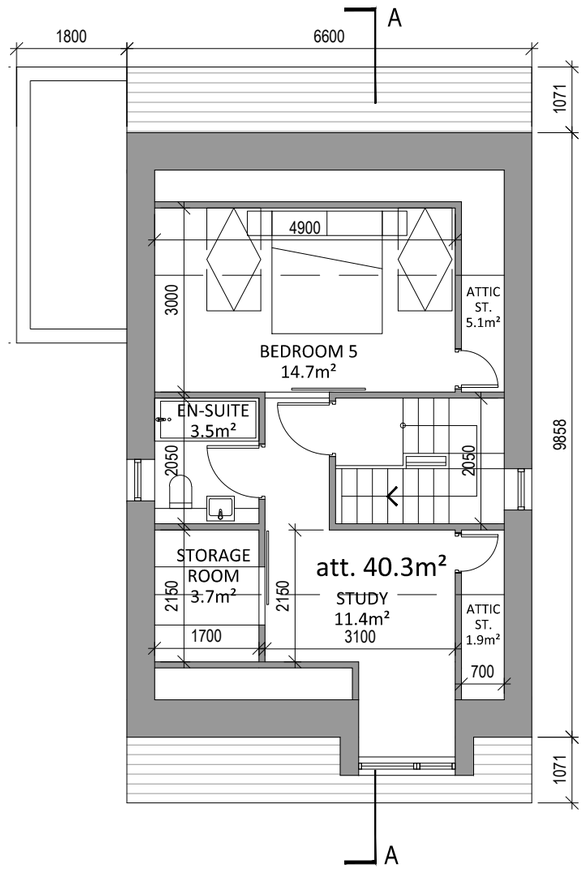
Suitability - Checked By - Date



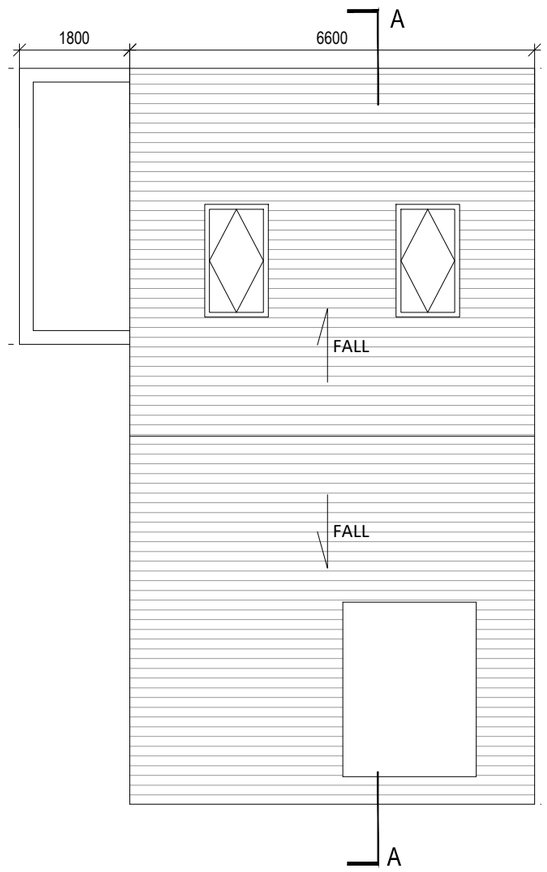
Ground Floor Plan
scale 1:100



First Floor Plan
scale 1:100



Attic Floor Plan
scale 1:100



Roof Plan
scale 1:100

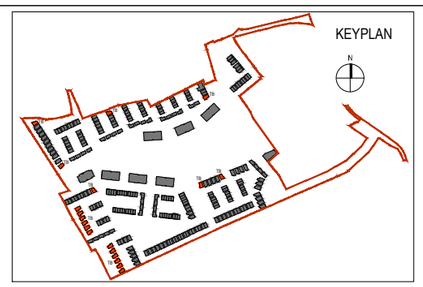
DETACHED HOUSE TYPE B - Proposed Floor Plans

5 BED - 3 STOREY DETACHED HOUSE
a: 176.5 m^2

115
T1

Houses are tagged to show number & type;
the house number is in the top section of the tag, e.g. 115
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTB-ZZ-DR-A-XX-10000		
Purpose:	Planning		

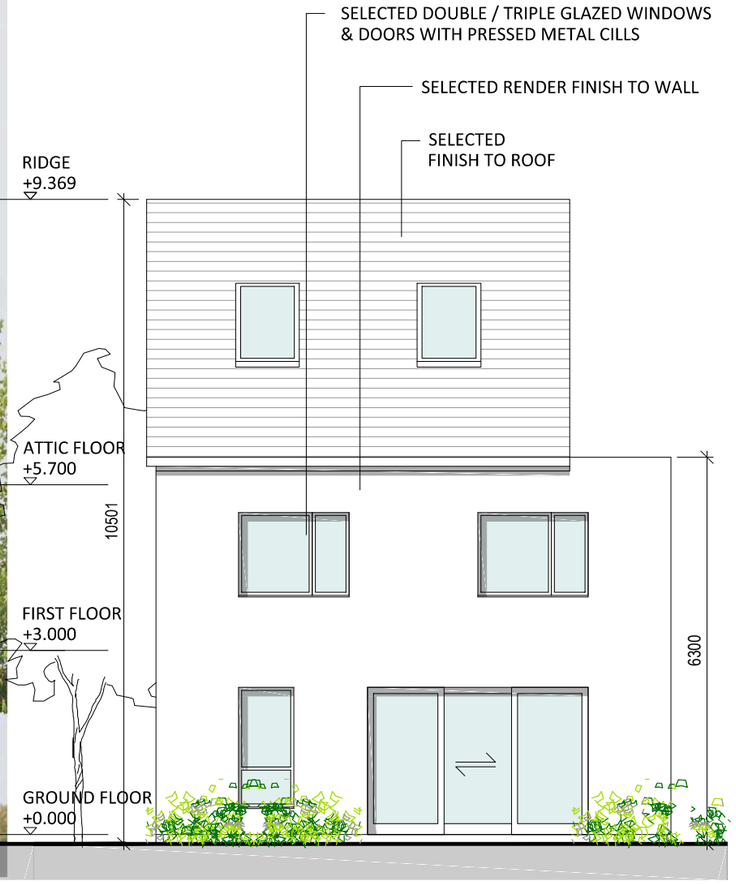
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE B - Proposed Floor Plans
Drawing No.: 1806-OMP-HTB-00-DR-A-XX-10000

Suitability - Checked By - Date

SECTION A-A
scale 1:100

FRONT ELEVATION
scale 1:100

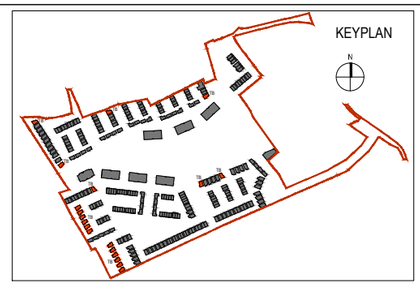


REAR ELEVATION
scale 1:100

DETACHED HOUSE TYPE B - Section A-A & Elevations.

5 BED - 3 STOREY DETACHED HOUSE
a: 176.5 m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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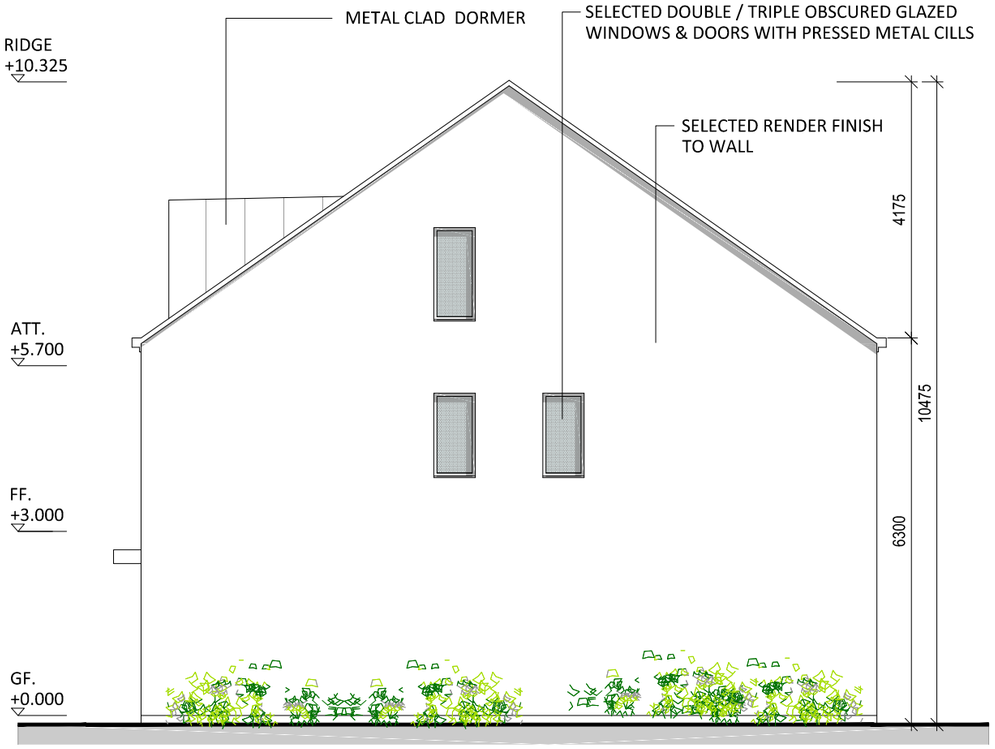
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTB-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project:	Residential Development
Location:	Blackrock, Dundalk, Co. Louth
Client:	Kingsbridge Consultancy Ltd.
Drawing Title:	DETACHED HOUSE TYPE B - Section A-A & Elevations
Drawing No.:	1806-OMP-HTB-00-DR-A-XX-20000

Suitability - Checked By - Date



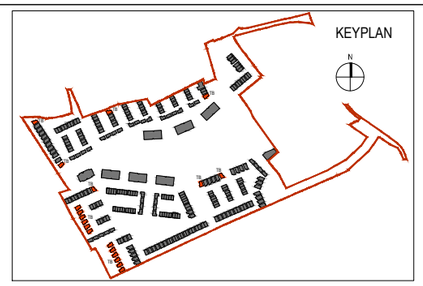
GABLE ELEVATION
scale 1:100

SIDE PUBLIC ELEVATION
scale 1:100

DETACHED HOUSE TYPE B - Elevations.

5 BED - 3 STOREY DETACHED HOUSE
a: 176.5 m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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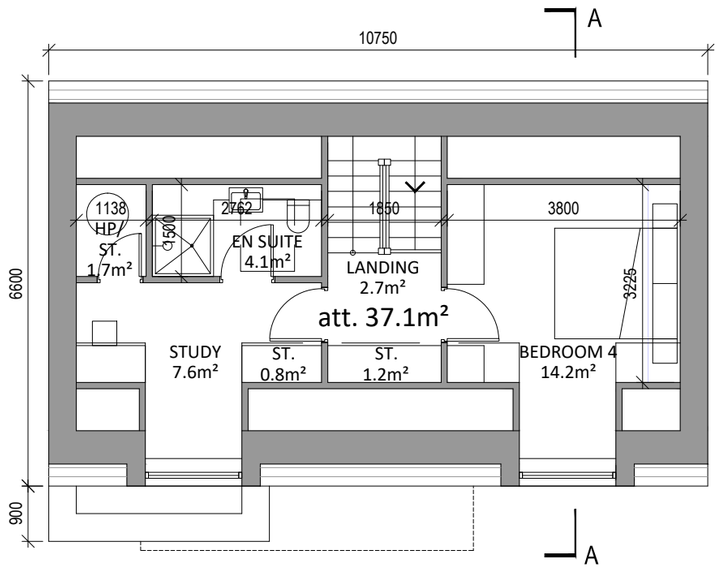
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTB-ZZ-DR-A-XX-10000		
Purpose:	Planning		

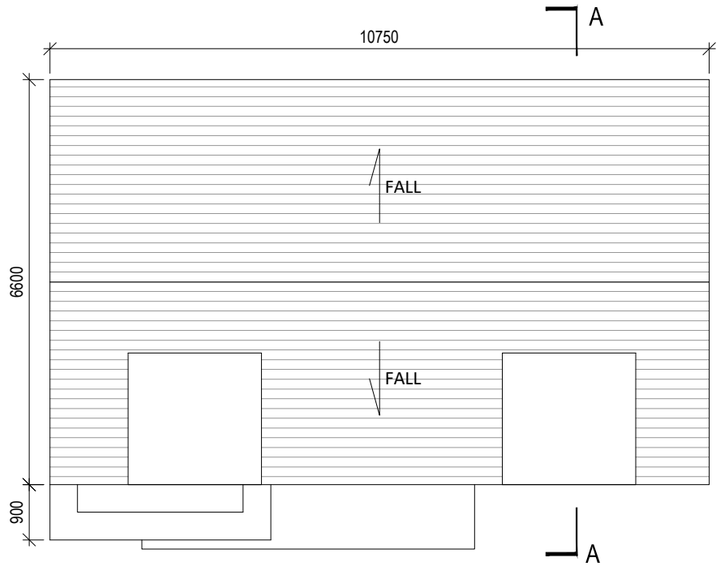
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE B - Elevations
Drawing No.: 1806-OMP-HTB-00-DR-A-XX-20001

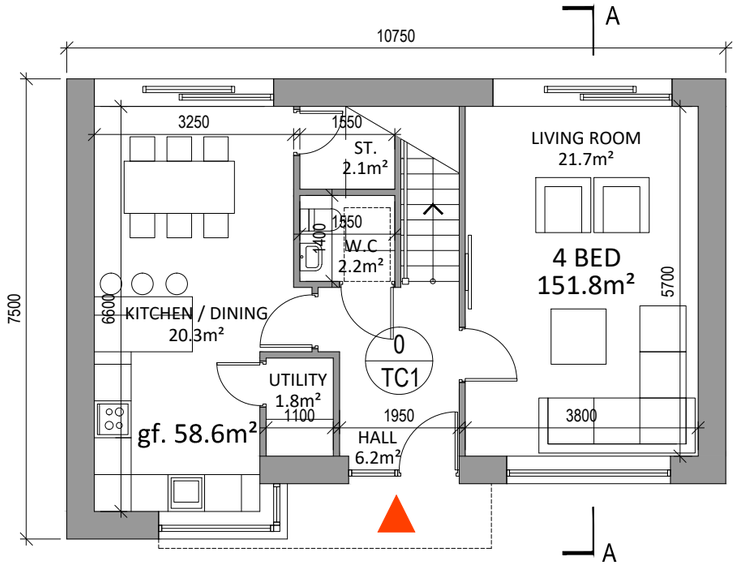
Suitability - Checked By - Date



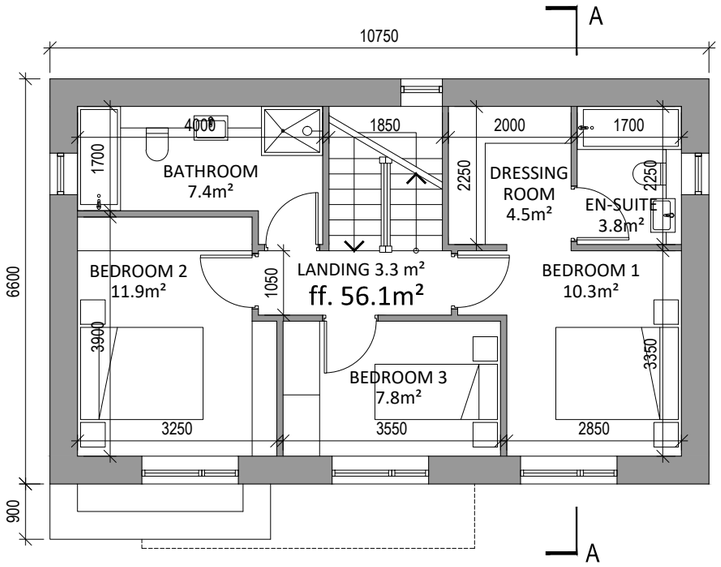
Attic Floor Plan
scale 1:100



Roof Plan
scale 1:100



Ground Floor Plan
scale 1:100



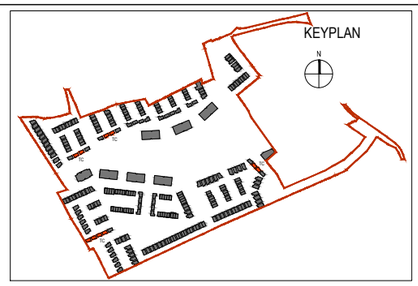
First Floor Plan
scale 1:100

DETACHED HOUSE TYPE C - Proposed Floor Plans

4 BED - 3 STOREY DETACHED HOUSE
a: 151.8m^2

115 / T1 — Houses are tagged to show number & type; the house number is in the top section of the tag, e.g. 115 and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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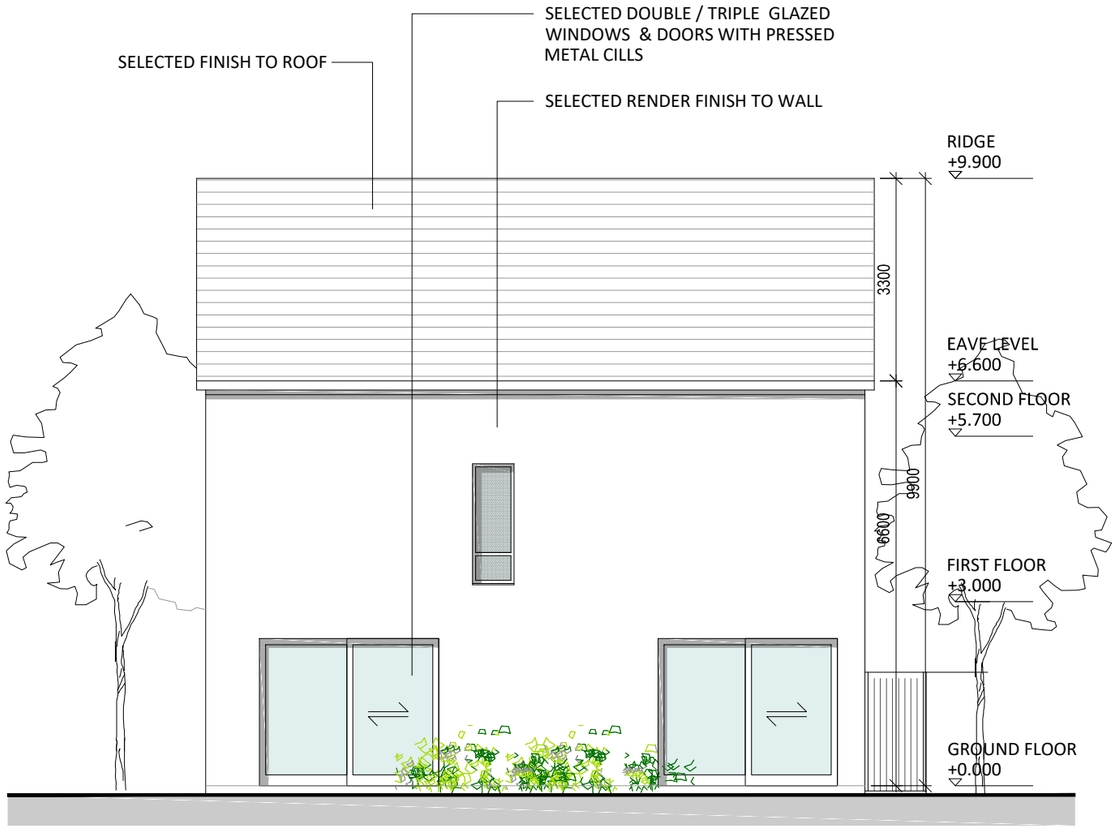
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTC-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project:	Residential Development
Location:	Blackrock, Dundalk, Co. Louth
Client:	Kingsbridge Consultancy Ltd.
Drawing Title:	DETACHED HOUSE TYPE C - Proposed Floor Plans
Drawing No.:	1806-OMP-HTC-00-DR-A-XX-10000

Suitability - Checked By - Date

FRONT ELEVATION
scale 1:100

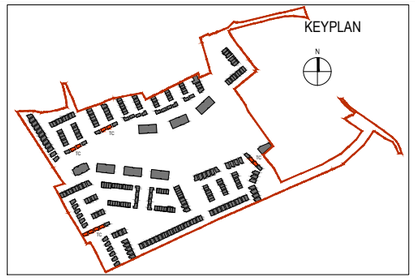


REAR ELEVATION
scale 1:100

DETACHED HOUSE TYPE C - Elevations.

4 BED - 3 STOREY DETACHED HOUSE
a: 151.8m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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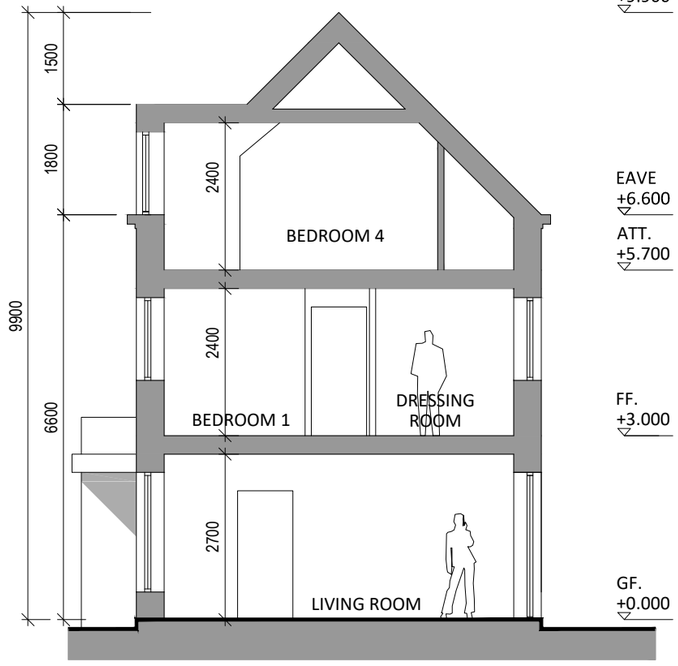
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTC-ZZ-DR-A-XX-10000		
Purpose:	Planning		

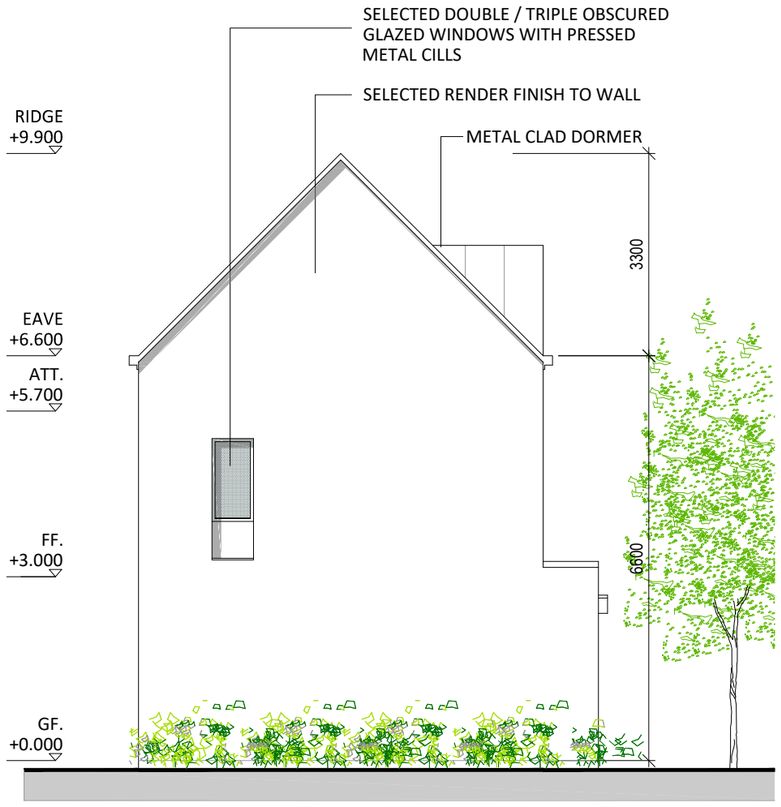
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE C - Elevations
Drawing No.: 1806-OMP-HTC-00-DR-A-XX-20000

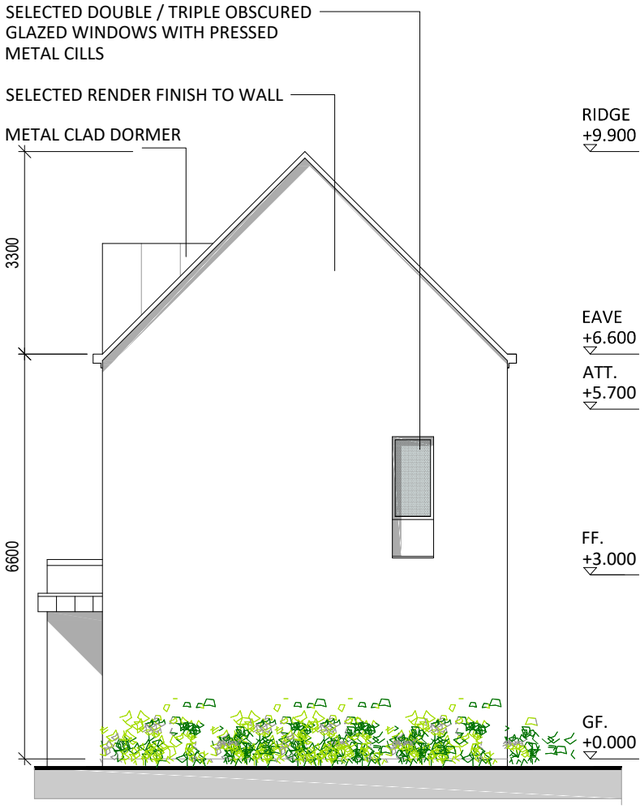
Suitability - Checked By - Date



SECTION A-A
scale 1:100



LEFT GABLE ELEVATION
scale 1:100

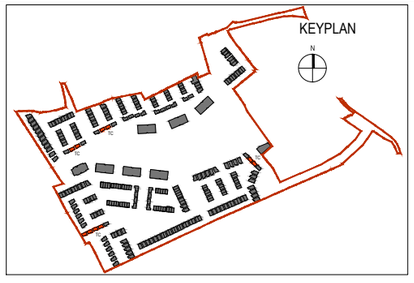


RIGHT GABLE ELEVATION
scale 1:100

DETACHED HOUSE TYPE C - Section A-A & Elevations.

4 BED - 3 STOREY DETACHED HOUSE
a: 151.8m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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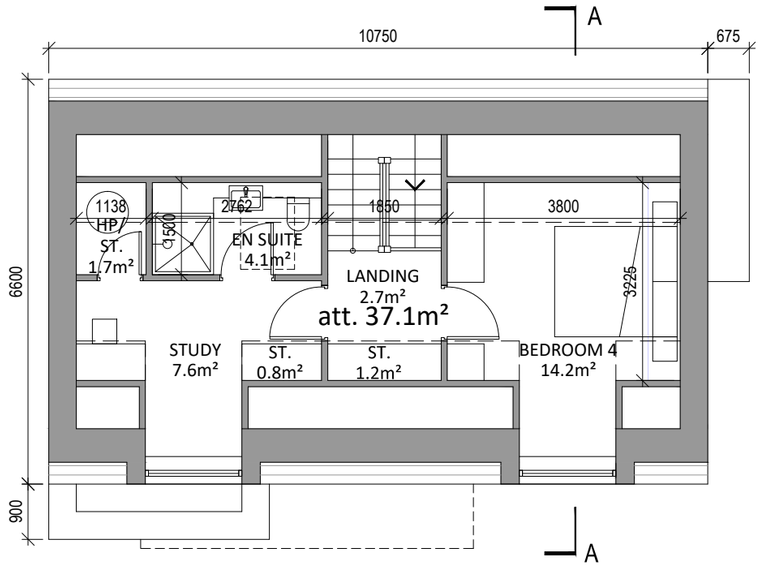
Cork City
Co. Cork
T12 R2RV Ireland

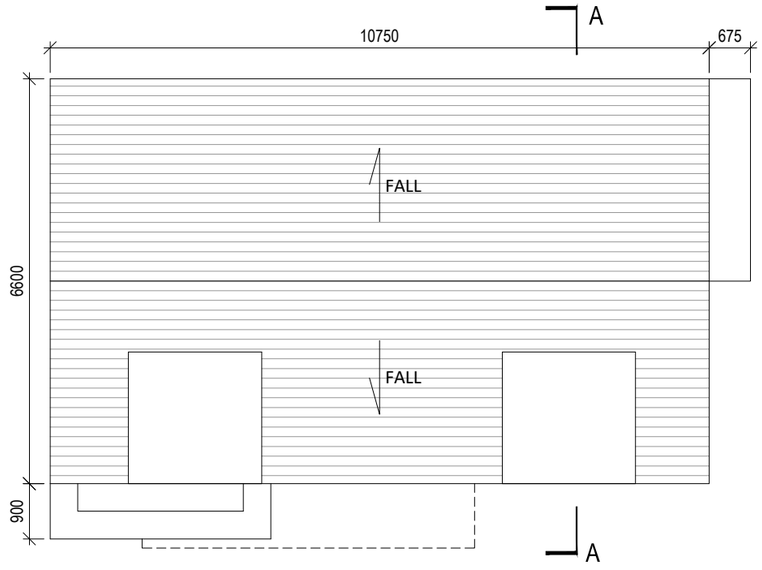
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	Kg	**Current Rev.:**	01
Model No.:	1806-OMP-HTC-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project:	Residential Development
Location:	Blackrock, Dundalk, Co. Louth
Client:	Kingsbridge Consultancy Ltd.
Drawing Title:	DETACHED HOUSE TYPE C - Section A-A & Elevations
Drawing No.:	1806-OMP-HTC-00-DR-A-XX-20001

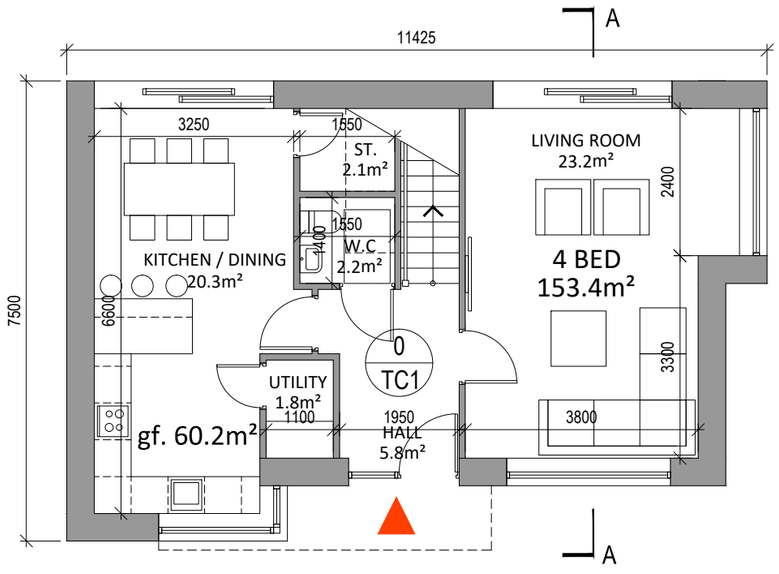
Suitability - Checked By - Date



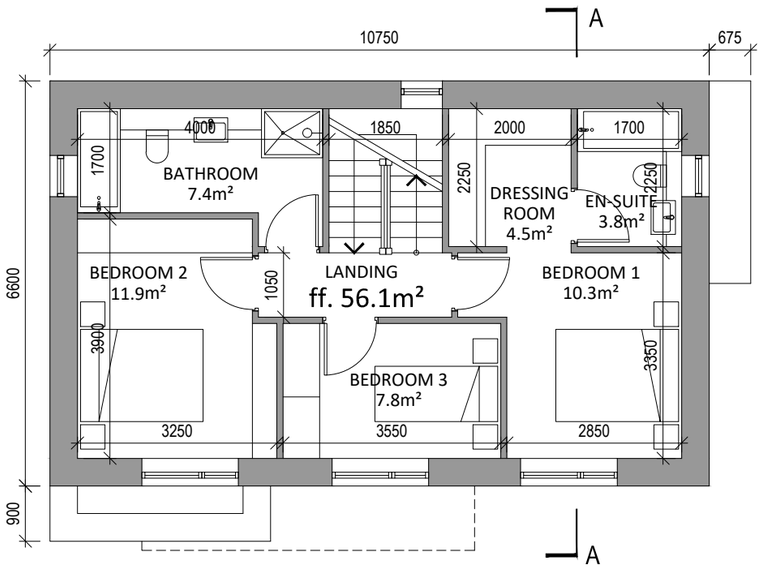
Attic Floor Plan
scale 1:100



Roof Plan
scale 1:100



Ground Floor Plan
scale 1:100



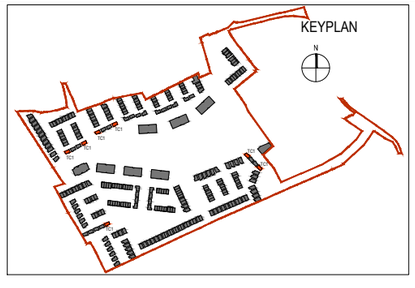
First Floor Plan
scale 1:100

DETACHED HOUSE TYPE C1 - Proposed Floor Plans

4 BED - 3 STOREY DETACHED HOUSE
a: 153.4 m²

115 / T1 — Houses are tagged to show number & type;
the house number is in the top section of the tag, e.g. 115
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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Planning	15/05/2019	01	RD

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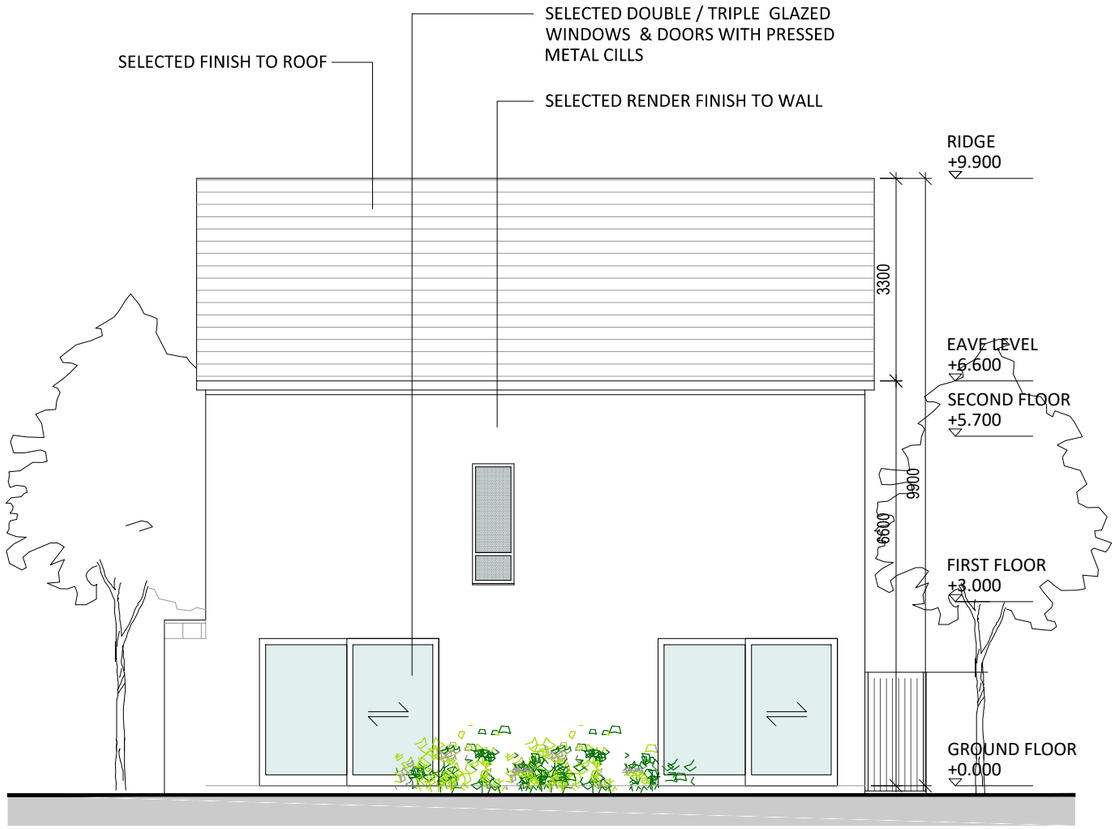
Project No.:	1806
Scale @ A3:	1:100
Project Lead:	RN
Date Printed:	15/05/2019
Drawn By:	KG
Current Rev.:	01
Model No.:	1806-OMP-HTC1-ZZ-DR-A-XX-10000
Purpose:	Planning

Project:	Residential Development
Location:	Blackrock, Dundalk, Co. Louth
Client:	Kingsbridge Consultancy Ltd.
Drawing Title:	DETACHED HOUSE TYPE C1 - Proposed Floor Plans
Drawing No.:	1806-OMP-HTC1-00-DR-A-XX-10000

Suitability - Checked By - Date

FRONT ELEVATION
scale 1:100

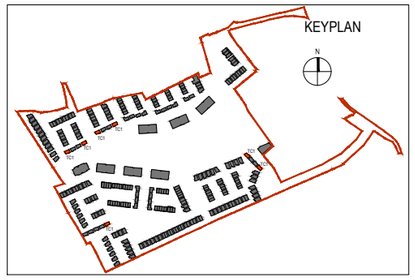


REAR ELEVATION
scale 1:100

DETACHED HOUSE TYPE C1 - Elevations.

4 BED - 3 STOREY DETACHED HOUSE
a: 153.4 m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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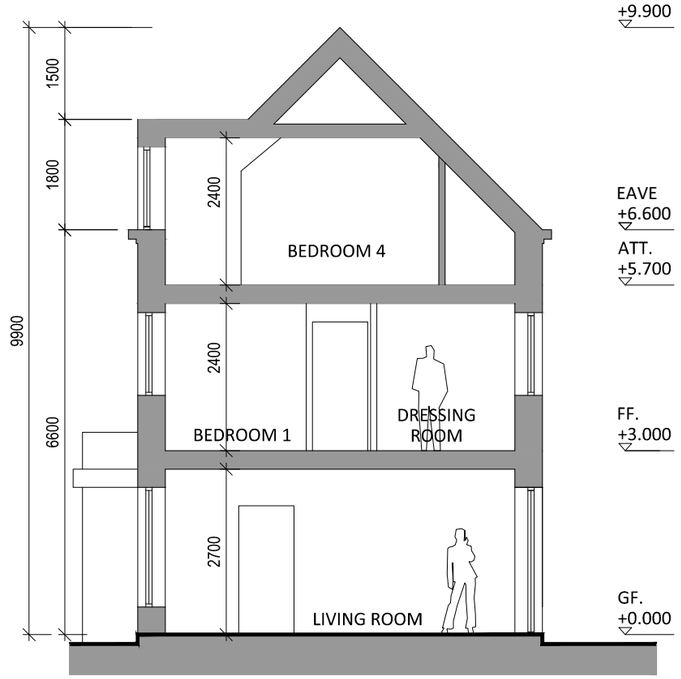
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTC1-ZZ-DR-A-XX-10000		
Purpose:	Planning		

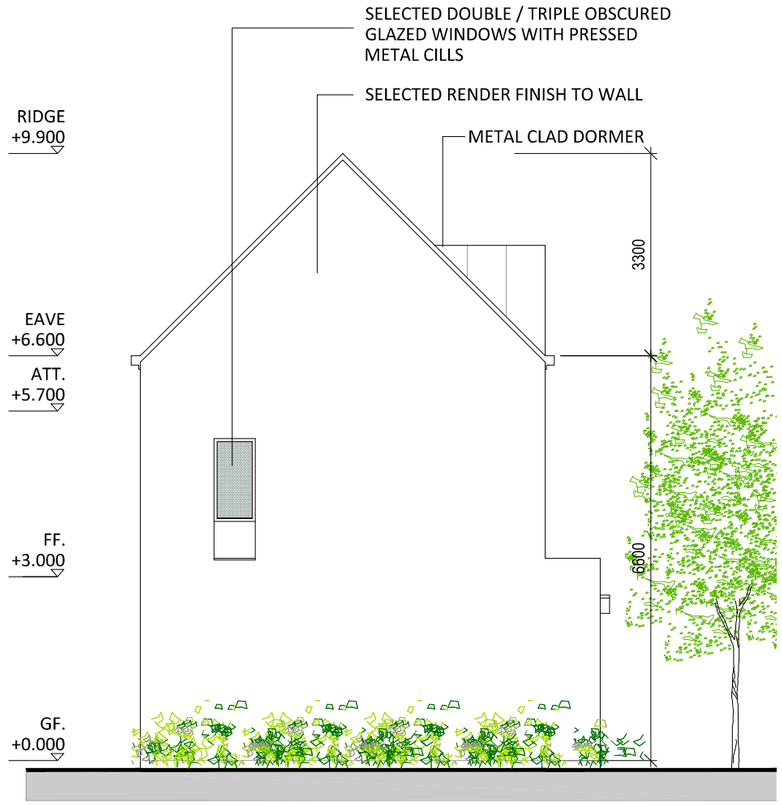
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE C1 - Elevations
Drawing No.: 1806-OMP-HTC1-00-DR-A-XX-20000

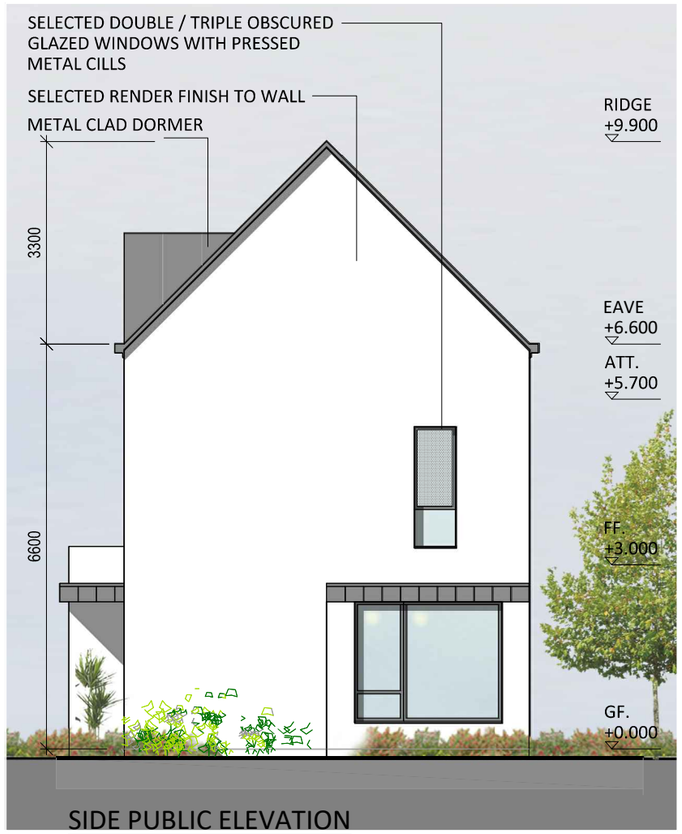
Suitability - Checked By - Date



SECTION A-A
scale 1:100



GABLE ELEVATION
scale 1:100

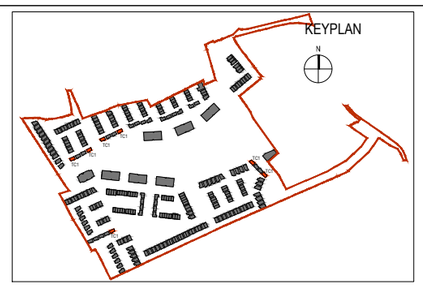


SIDE PUBLIC ELEVATION
scale 1:100

DETACHED HOUSE TYPE C1 - Section A-A & Elevations.

4 BED - 3 STOREY DETACHED HOUSE
a: 153.4 m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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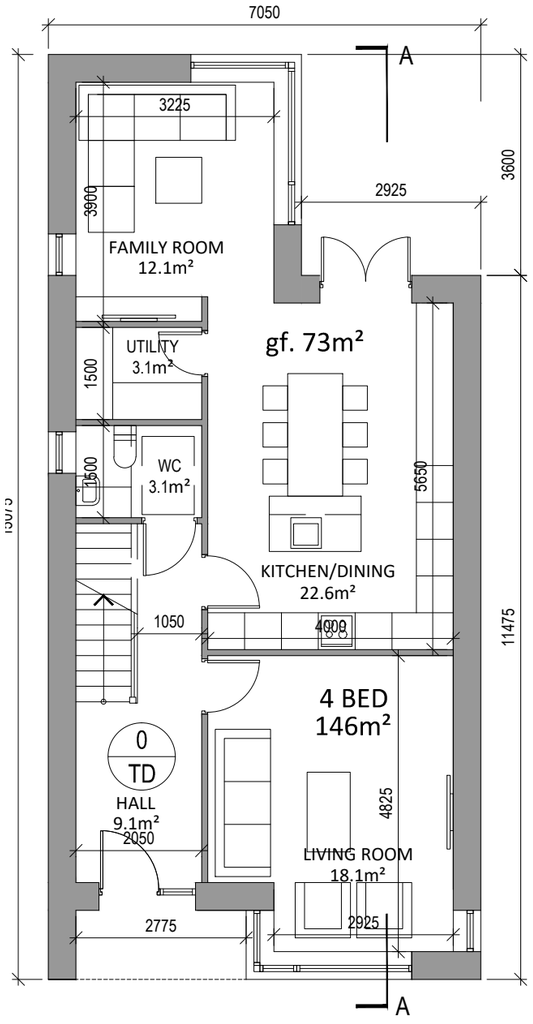
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTC1-ZZ-DR-A-XX-10000		
Purpose:	Planning		

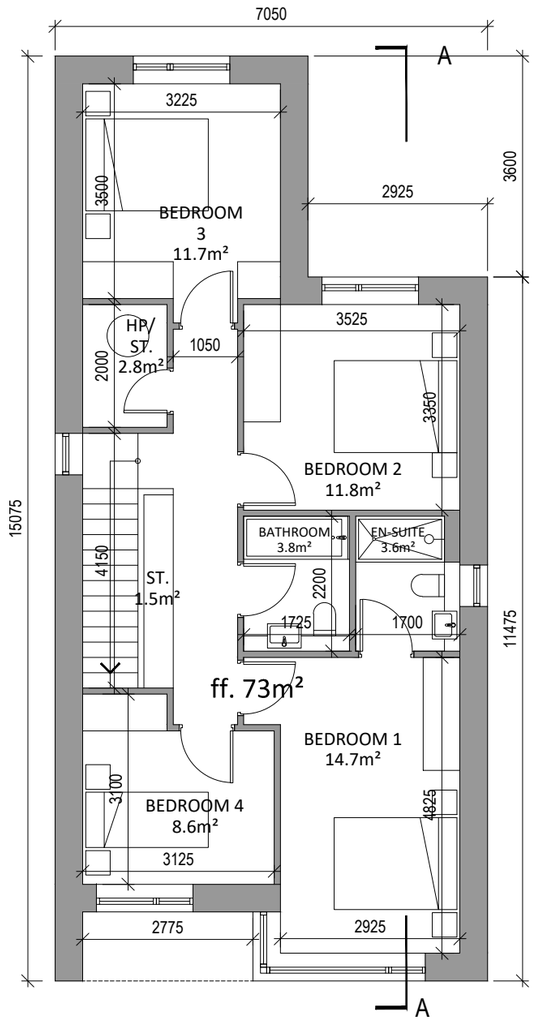
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE C1 - Section A-A & Elevations
Drawing No.: 1806-OMP-HTC1-00-DR-A-XX-20001

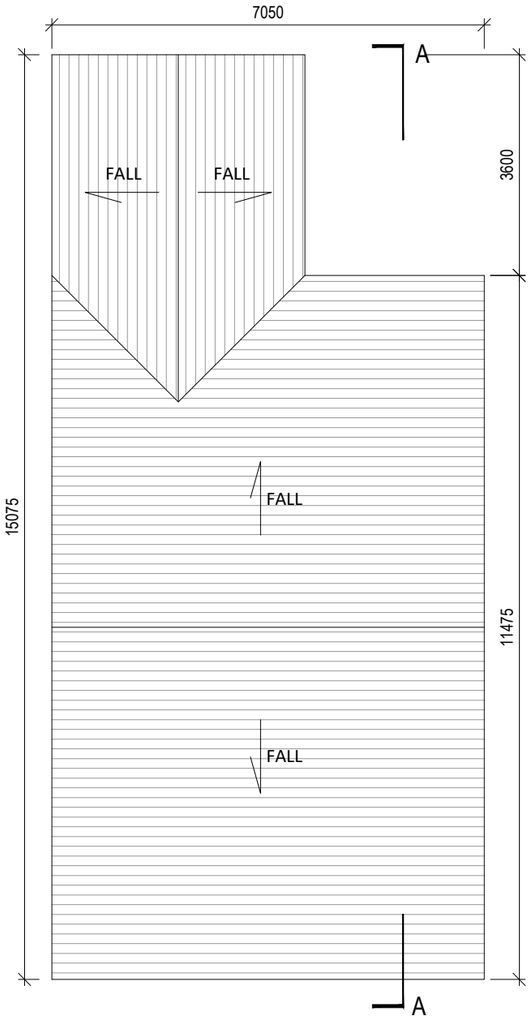
Suitability - Checked By - Date



Ground Floor Plan
scale 1:100



First Floor Plan
scale 1:100



Roof Plan
scale 1:100

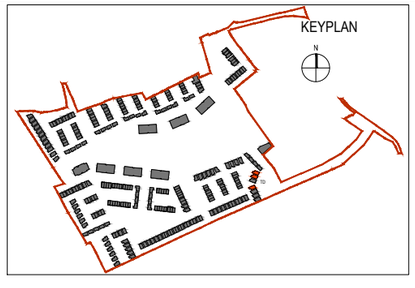
DETACHED HOUSE TYPE D - Proposed Floor Plans

3 BED - 2 STOREY DETACHED HOUSE
a: 146.0m^2

115
T1

Houses are tagged to show number & type;
the house number is in the top section of the tag, e.g. 115
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTD-ZZ-DR-A-XX-10000		
Purpose:	Planning		

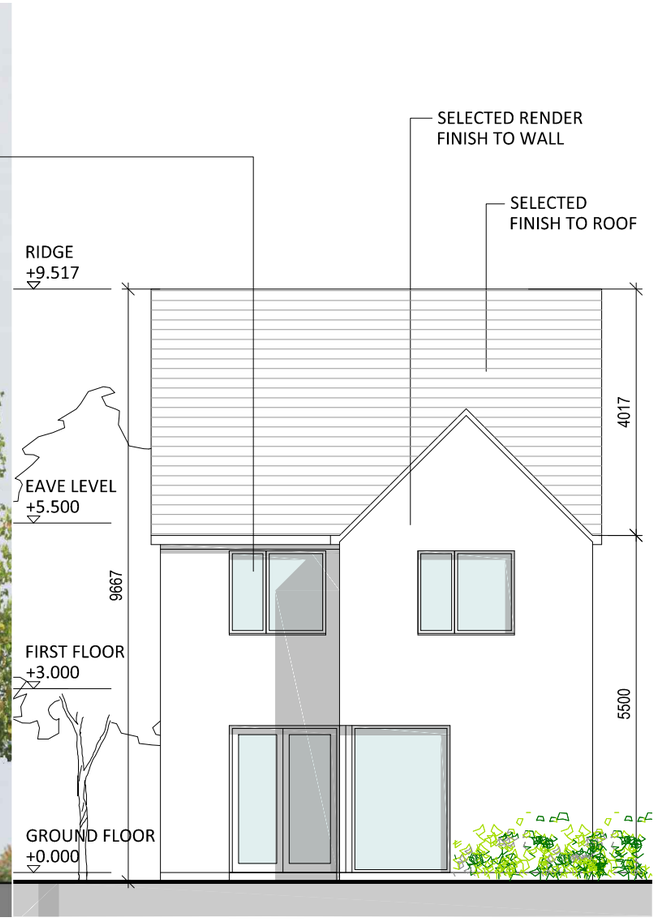
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE D - Proposed Floor Plans
Drawing No.: 1806-OMP-HTD-00-DR-A-XX-10000

Suitability - Checked By - Date

SECTION A-A
scale 1:100

FRONT ELEVATION
scale 1:100

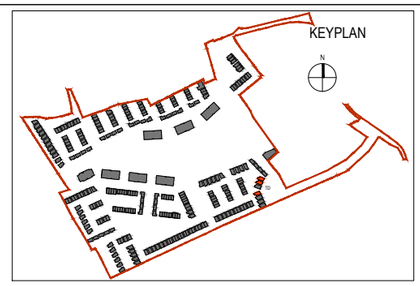


REAR ELEVATION
scale 1:100

DETACHED HOUSE TYPE D - Section A-A & Elevations.

3 BED - 2 STOREY DETACHED HOUSE
a: 146.0m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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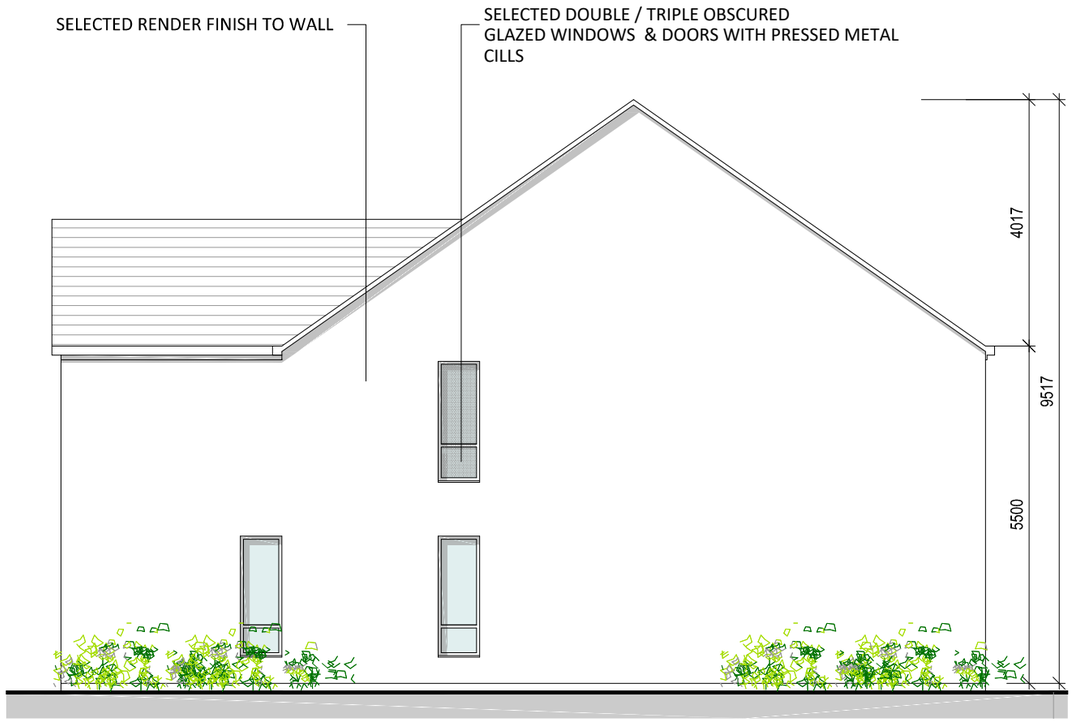
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTD-ZZ-DR-A-XX-10000		
Purpose:	Planning		

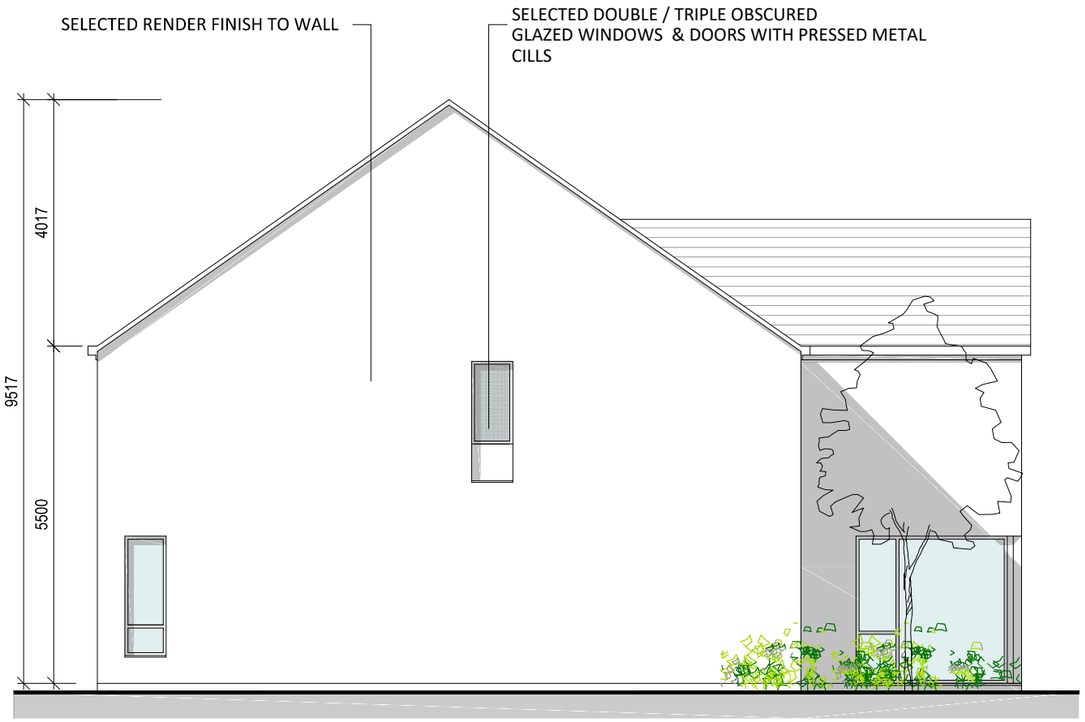
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE D - Section A-A & Elevations
Drawing No.: 1806-OMP-HTD-00-DR-A-XX-20000

Suitability - Checked By - Date



GABLE 1 ELEVATION
scale 1:100

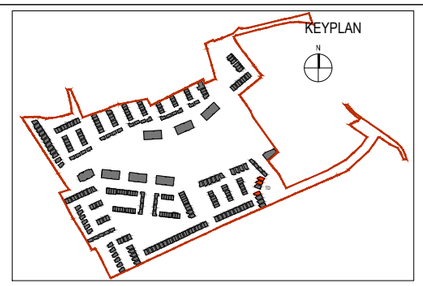


GABLE 2 ELEVATION
scale 1:100

DETACHED HOUSE TYPE D - Elevations.

3 BED - 2 STOREY DETACHED HOUSE
a: 146.0m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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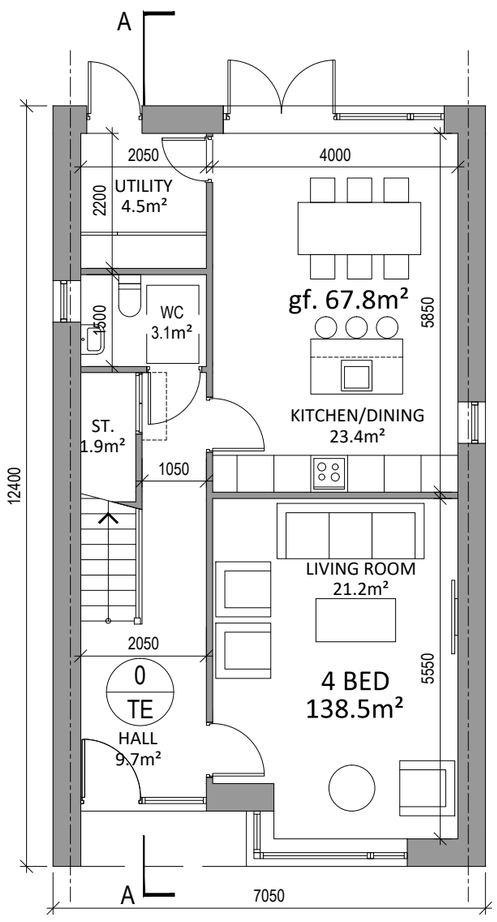
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTD-ZZ-DR-A-XX-10000		
Purpose:	Planning		

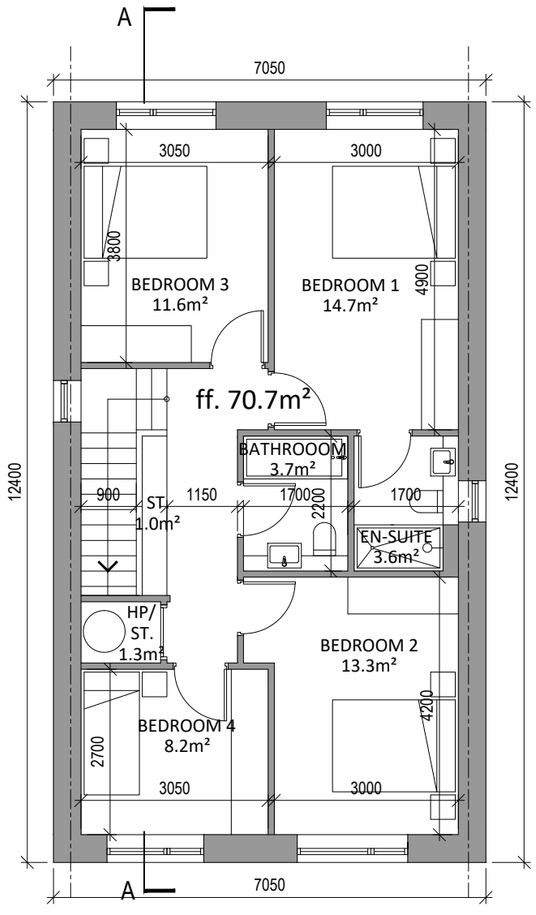
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE D - Elevations
Drawing No.: 1806-OMP-HTD-00-DR-A-XX-20001

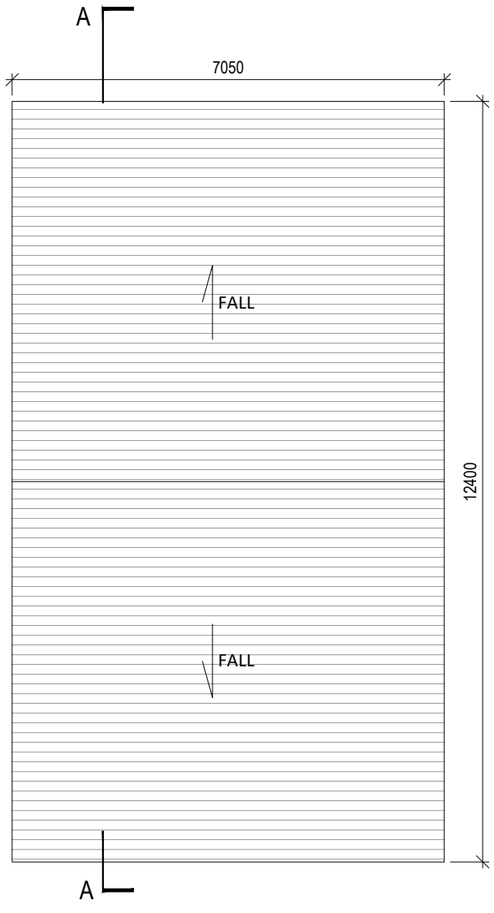
Suitability - Checked By - Date



Ground Floor Plan
scale 1:100



First Floor Plan
scale 1:100



Roof Plan
scale 1:100

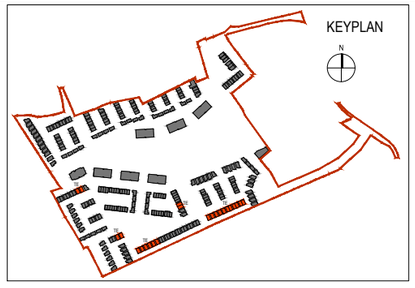
SEMI-D. / DETACHED HOUSE TYPE E - Proposed Floor Plans

4 BED - 2 STOREY SEMI-D / DETACHED HOUSE
a: 138.5m^2

115
T1

Houses are tagged to show number & type;
the house number is in the top section of the tag, e.g. 115
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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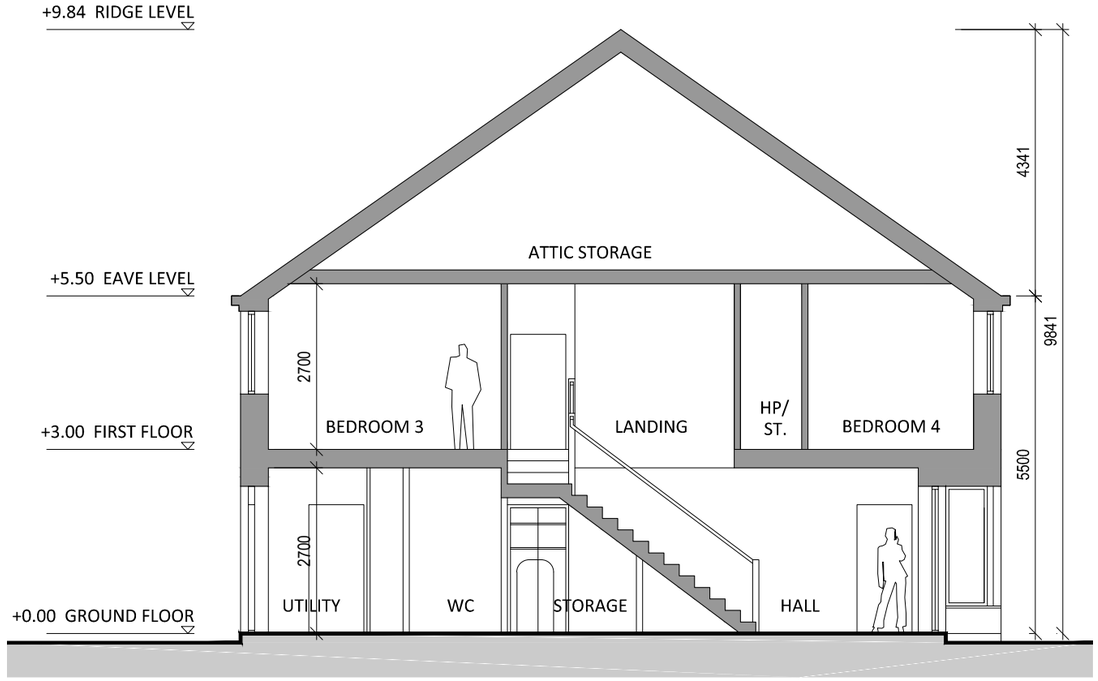
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTE-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd

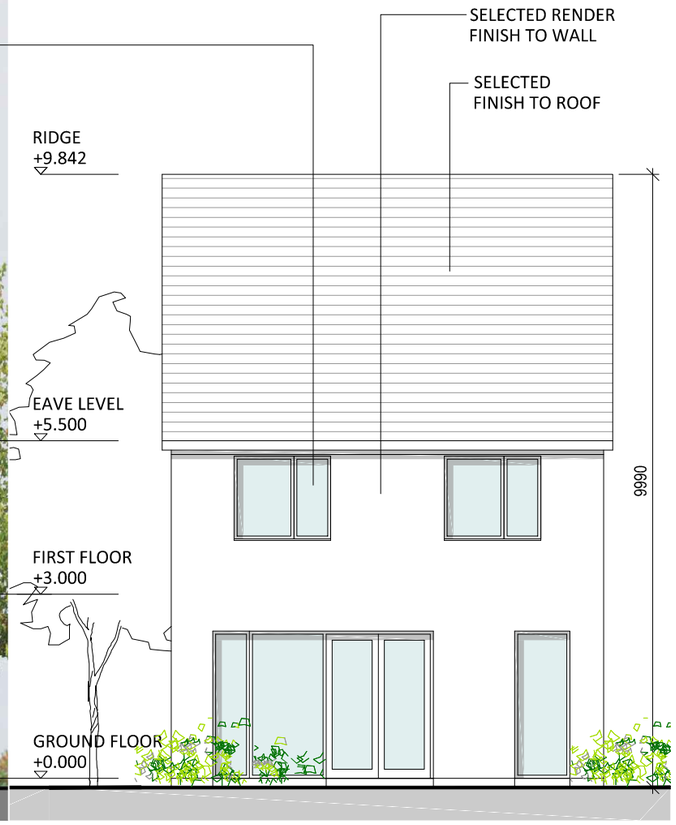
Drawing Title: SEMI-D/DETACHED HOUSE TYPE E-Proposed Floor Plans
Drawing No.: 1806-OMP-HTE-00-DR-A-XX-10000

Suitability - Checked By - Date



SECTION A-A
scale 1:100

FRONT ELEVATION
scale 1:100

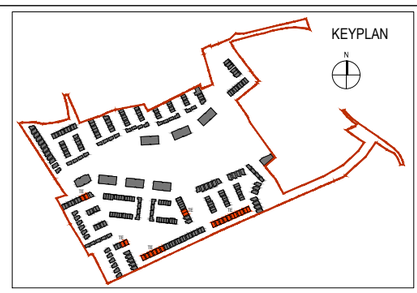


REAR ELEVATION
scale 1:100

SEMI-D. / DETACHED HOUSE TYPE E - Section A-A & Elevations.

4 BED - 2 STOREY SEMI-D / DETACHED HOUSE
a: 138.5m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTE-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
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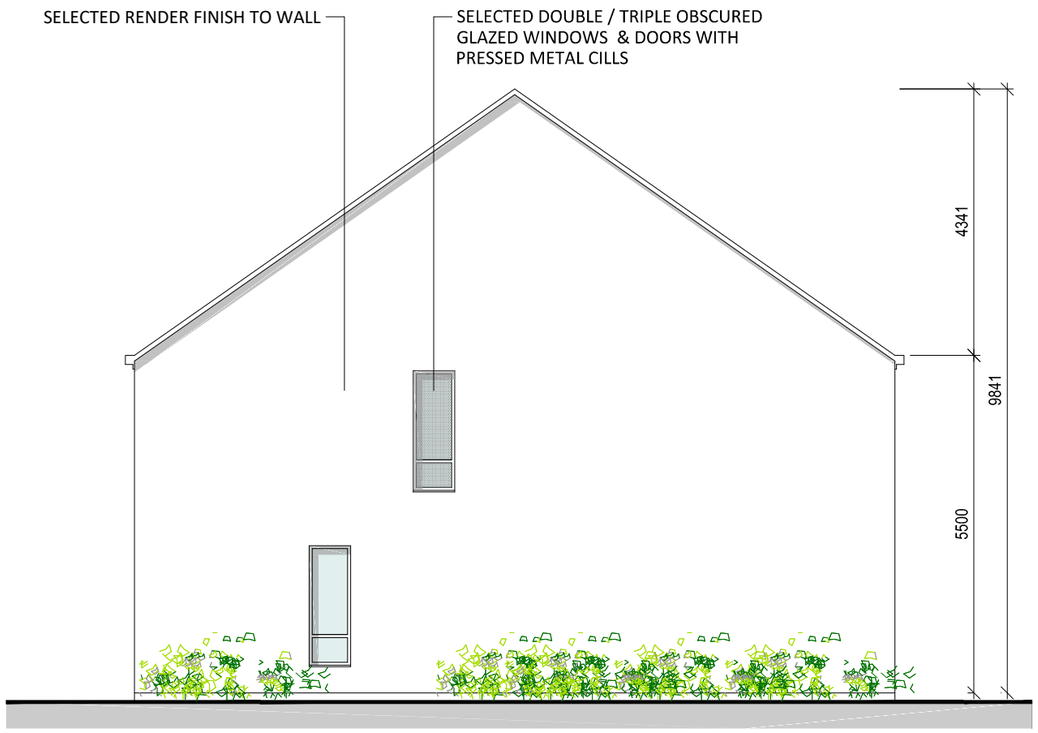
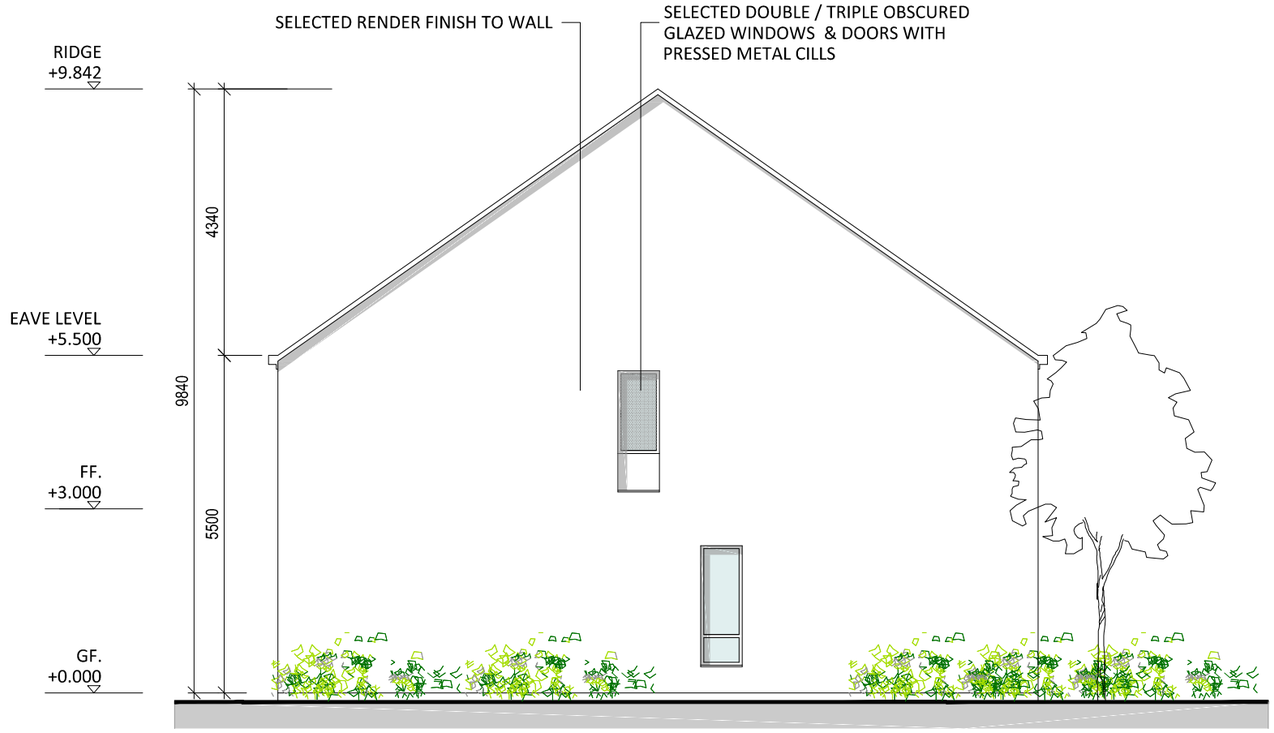
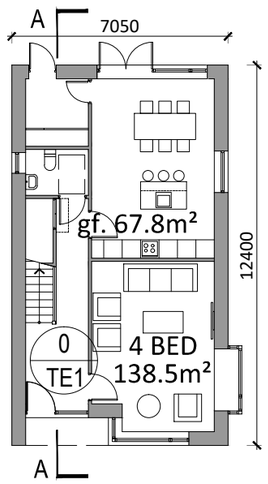
Drawing Title: SEMI-D/DETACHED HOUSE TYPE E - Section A-A & Elevations
Drawing No.: 1806-OMP-HTE-00-DR-A-XX-20000
Suitability - Checked By - Date



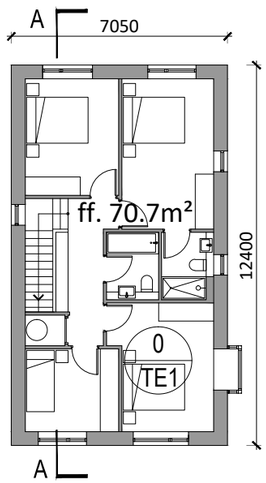
GABLE 1 ELEVATION
scale 1:100



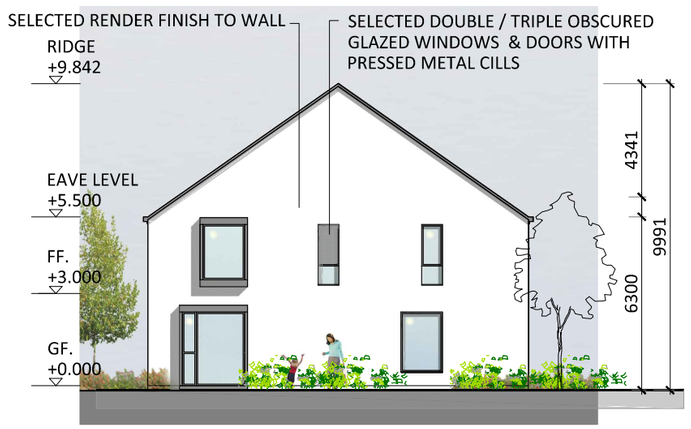
GABLE 2 ELEVATION
scale 1:100



GROUND FLOOR - TE1
scale 1:200



FIRST FLOOR - TE1
scale 1:200

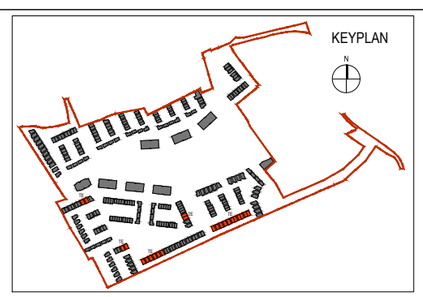


PUBLIC SIDE ELEVATION - TE1
scale 1:200

SEMI-D. / DETACHED HOUSE TYPE E & E1 - Plans & Elevations.

4 BED - 2 STOREY SEMI-D / DETACHED HOUSE
a: 138.5m²

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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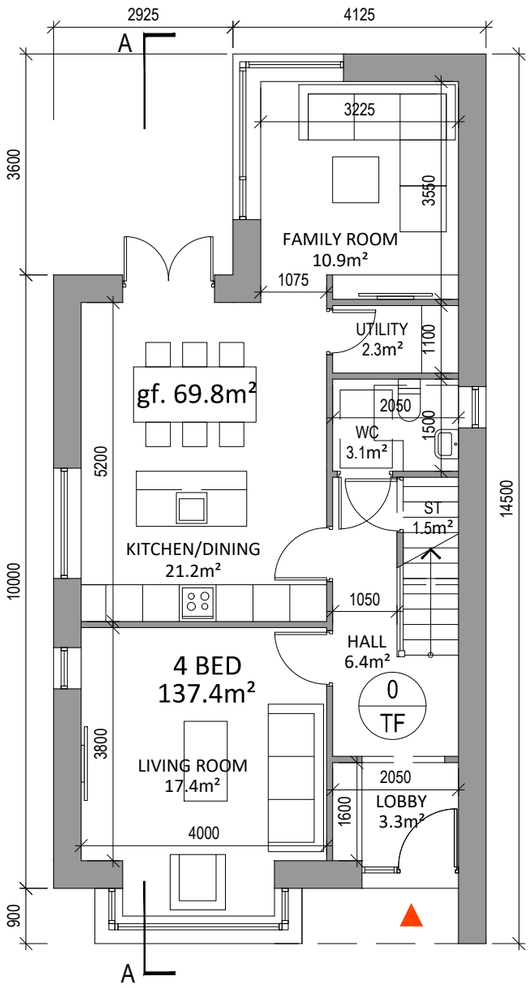
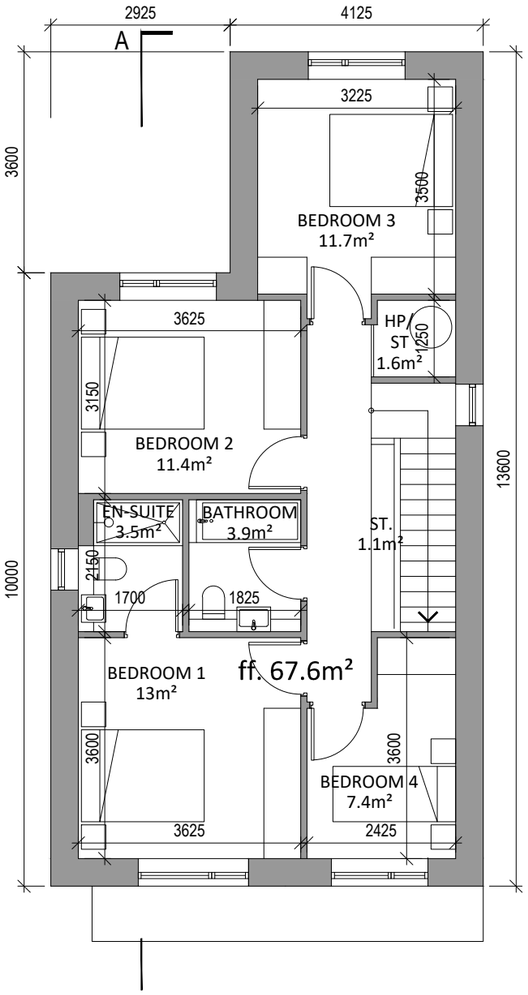
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTE-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd

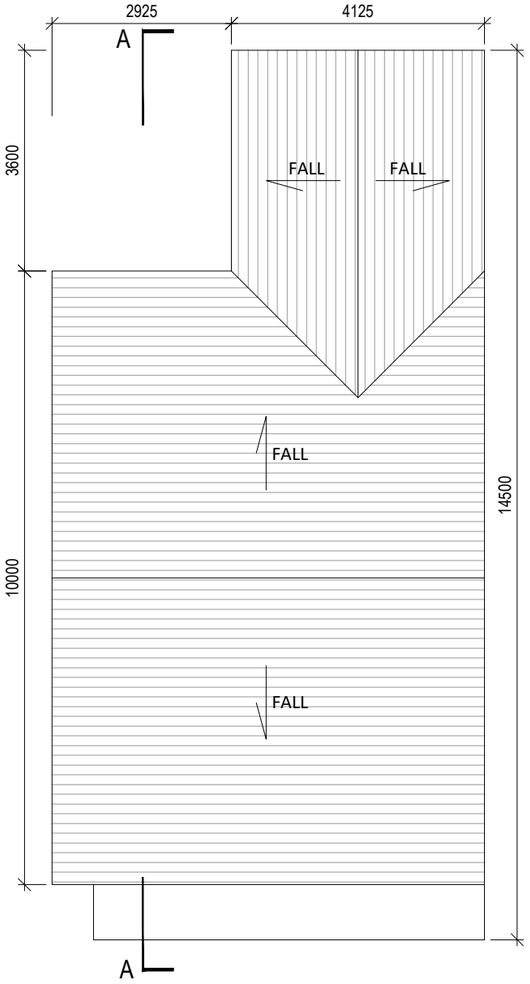
Drawing Title: SEMI-D/DETACHED HOUSE TYPE E & E1 Plans/Elevations **Suitability - Checked By - Date**
Drawing No.: 1806-OMP-HTE-00-DR-A-XX-20001



Ground Floor Plan
scale 1:100



First Floor Plan
scale 1:100



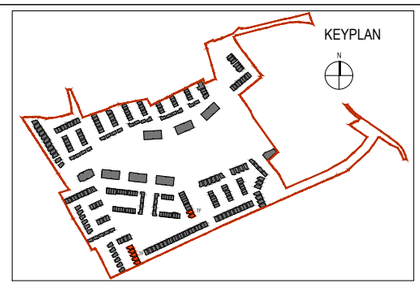
Roof Plan
scale 1:100

DETACHED HOUSE TYPE F - Proposed Floor Plans

4 BED - 2 STOREY DETACHED HOUSE
a: 137.4m^2

115 / T1 — Houses are tagged to show number & type; the house number is in the top section of the tag, e.g. 115 and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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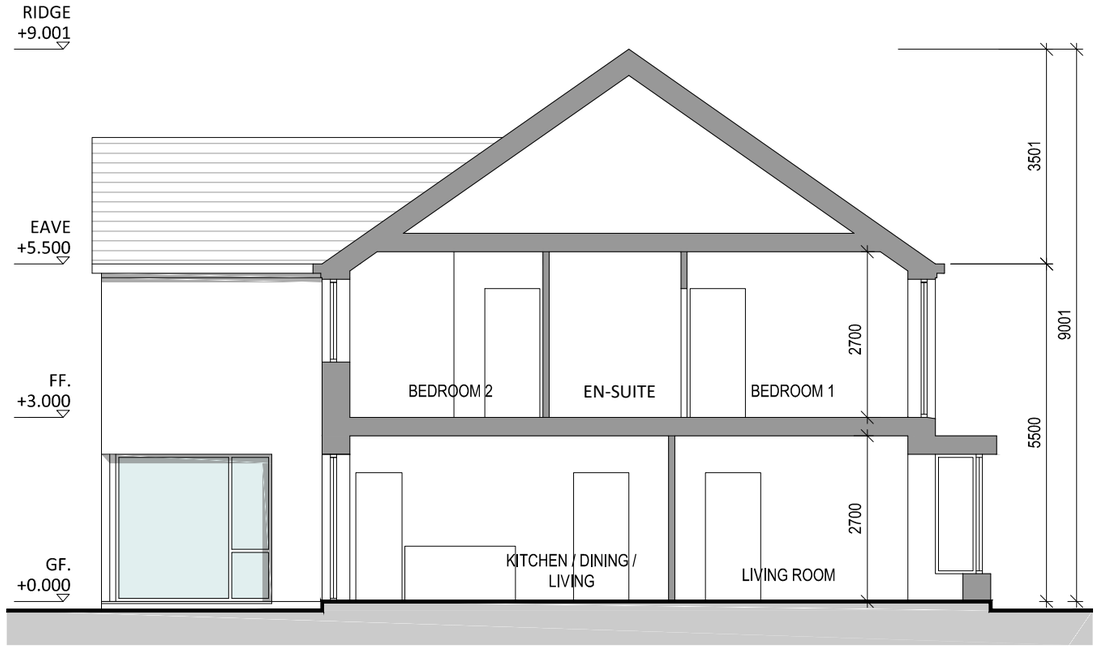
T12 R2RV Ireland

Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTF-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

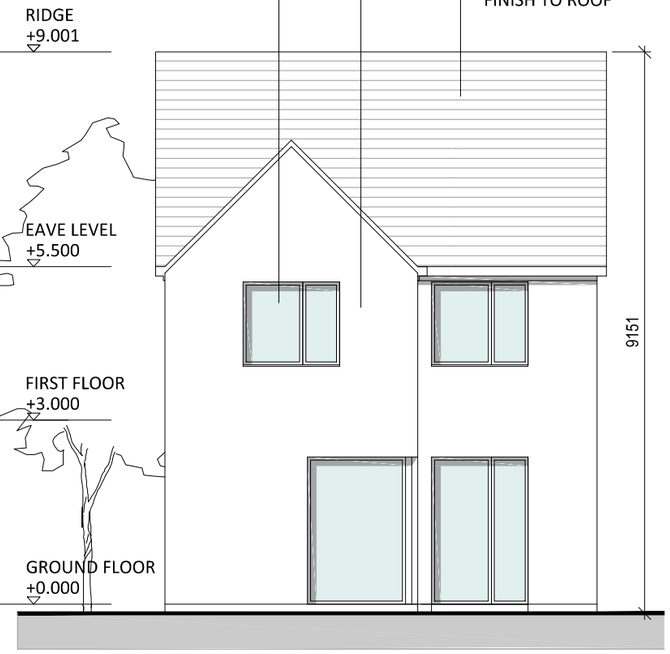
Drawing Title: DETACHED HOUSE TYPE F - Proposed Floor Plans
Drawing No.: 1806-OMP-HTF-00-DR-A-XX-10000

Suitability - Checked By - Date



SECTION A-A
scale 1:100

FRONT ELEVATION
scale 1:100

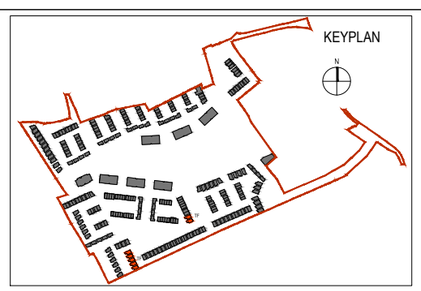


REAR ELEVATION
scale 1:100

DETACHED HOUSE TYPE F - Section A-A & Elevations.

4 BED - 2 STOREY DETACHED HOUSE
a: 137.4m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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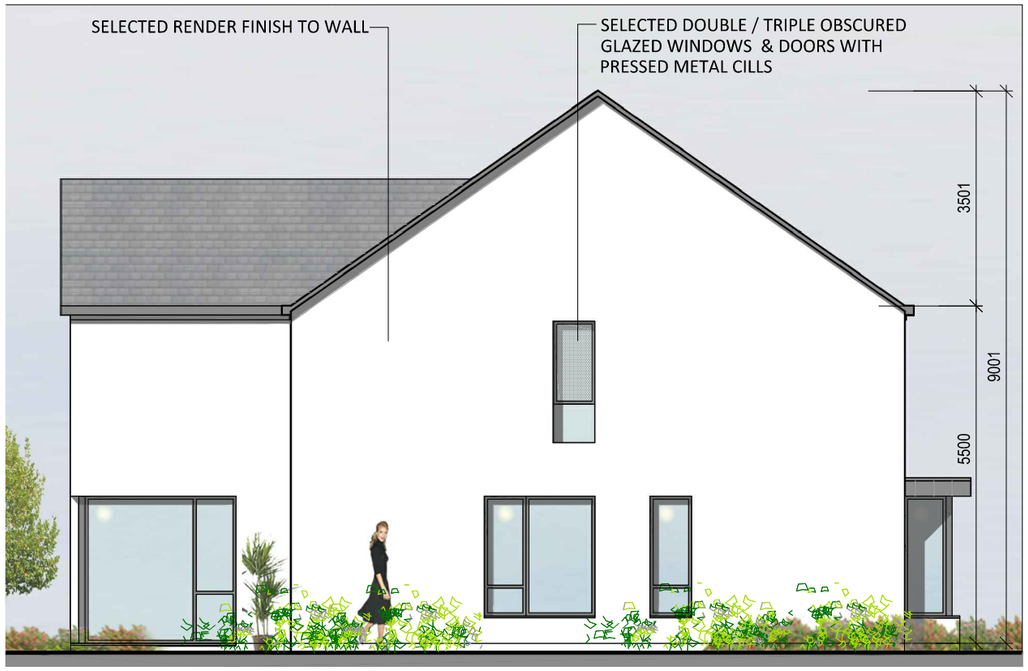
Model No.:	1806-OMP-HTF-ZZ-DR-A-XX-10000		
Purpose:	Planning		

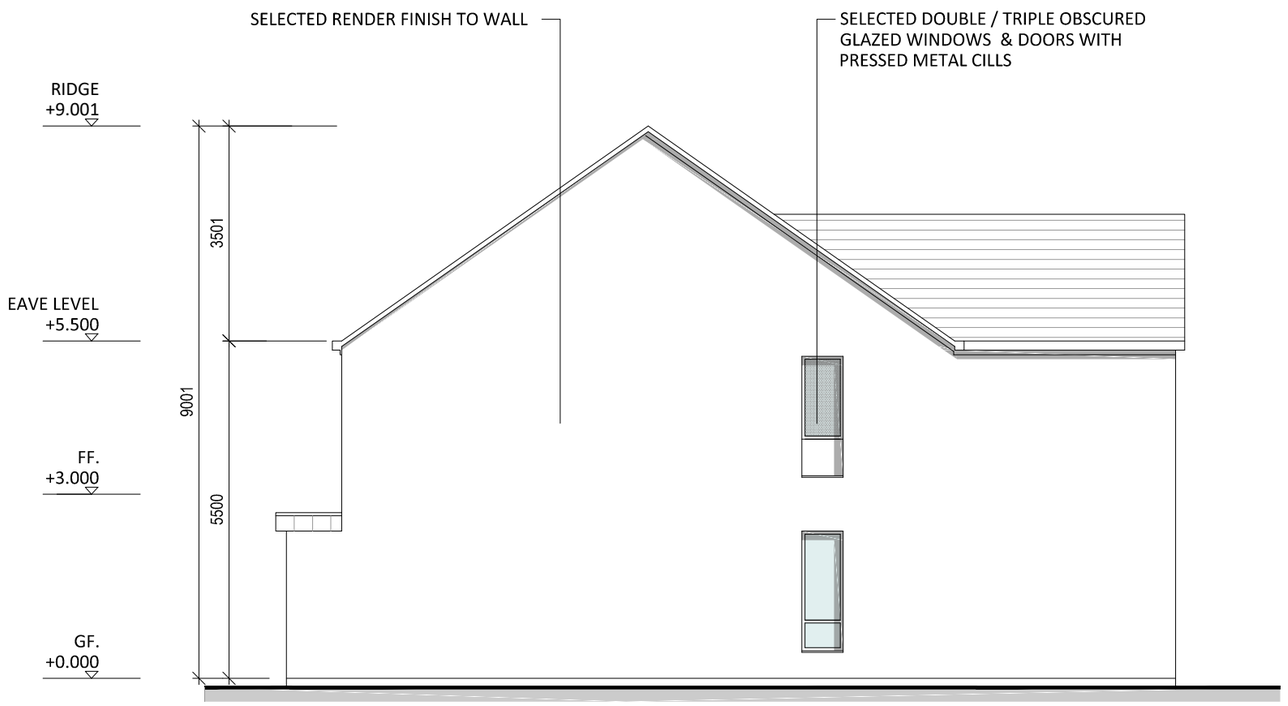
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE F - Section A-A & Elevations
Drawing No.: 1806-OMP-HTF-00-DR-A-XX-20000

Suitability - Checked By - Date



SIDE PUBLIC ELEVATION
scale 1:100

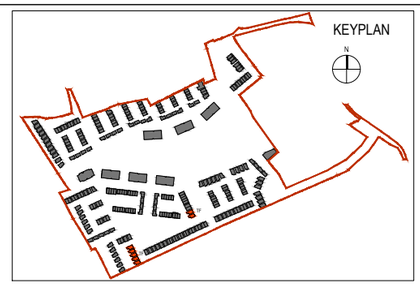


GABLE ELEVATION
scale 1:100

DETACHED HOUSE TYPE F - Elevations.

4 BED - 2 STOREY DETACHED HOUSE
a: 137.4m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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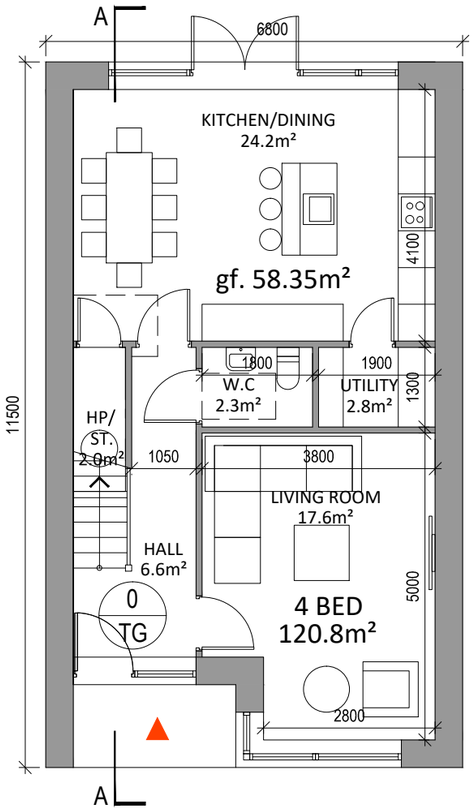
Purpose:	Planning		

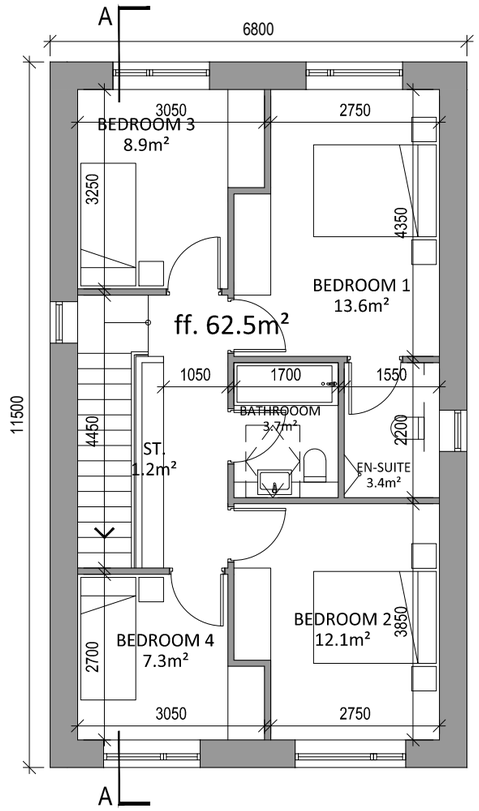
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: DETACHED HOUSE TYPE F - Elevations
Drawing No.: 1806-OMP-HTF-00-DR-A-XX-20001

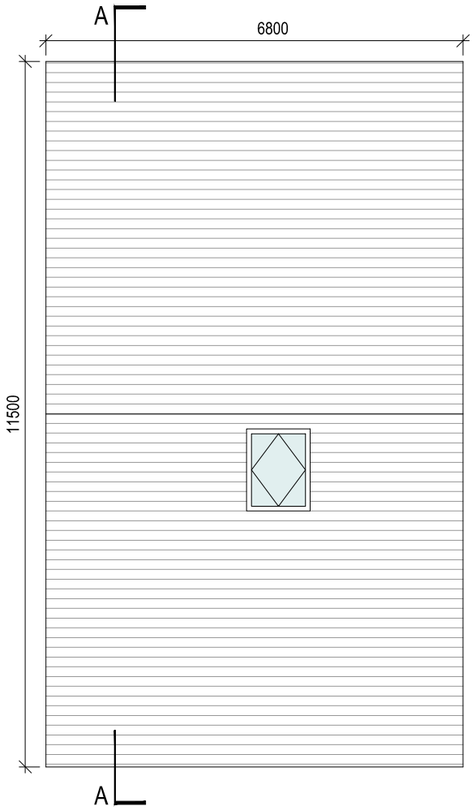
Suitability - Checked By - Date



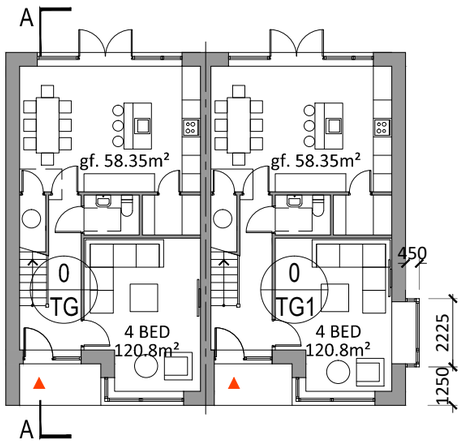
Ground Floor Plan
scale 1:100



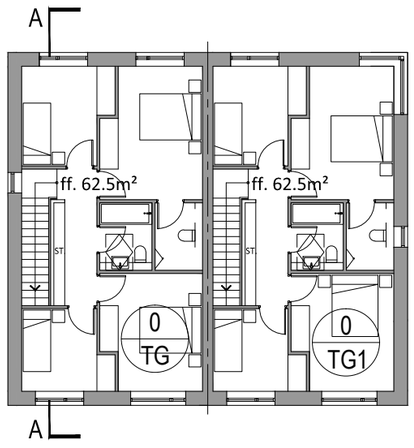
First Floor Plan
scale 1:100



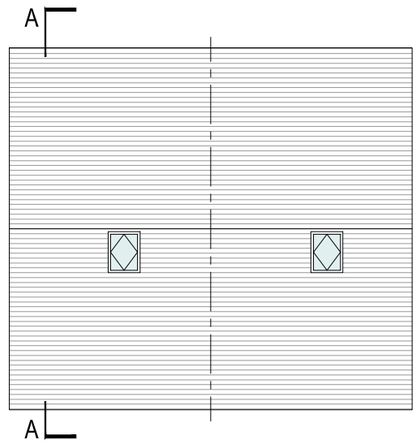
Roof Plan
scale 1:100



Ground Floor Plan (Semi-D)
scale 1:200



First Floor Plan (Semi-D)
scale 1:200



Roof Plan (Semi-D)
scale 1:200

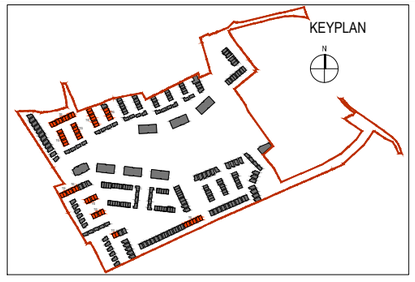
HOUSE TYPE G & G1 - Proposed Floor Plans

4 BED - 2 STOREY SEMI-D / DETACHED HOUSE
a: 120.8m²

115
T1

Houses are tagged to show number & type;
the house number is in the top section of the tag, e.g. 115
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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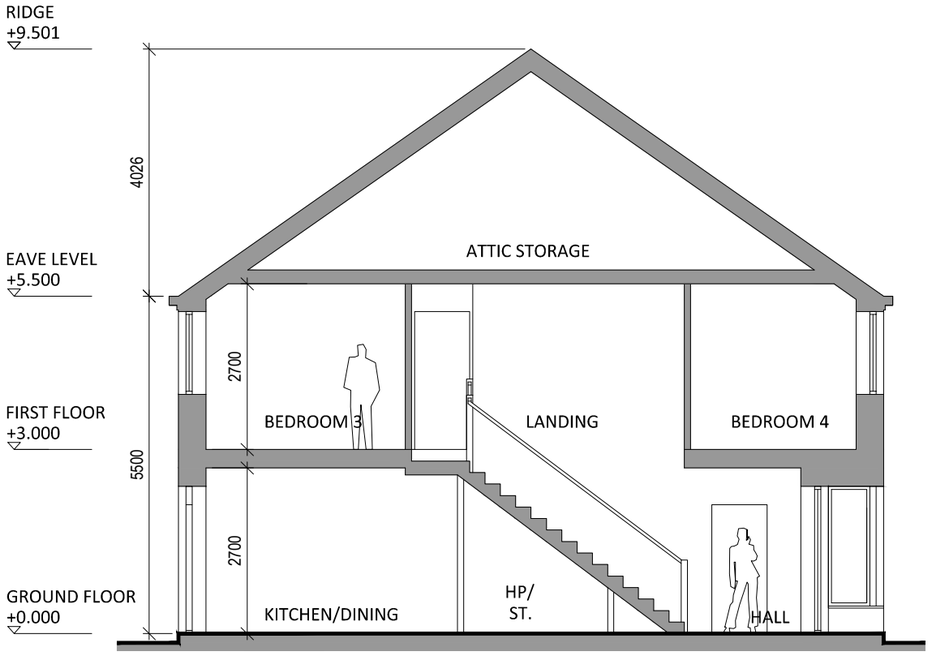
Project No.:	1806	**Scale @** A3:	1:100/200
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTG-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

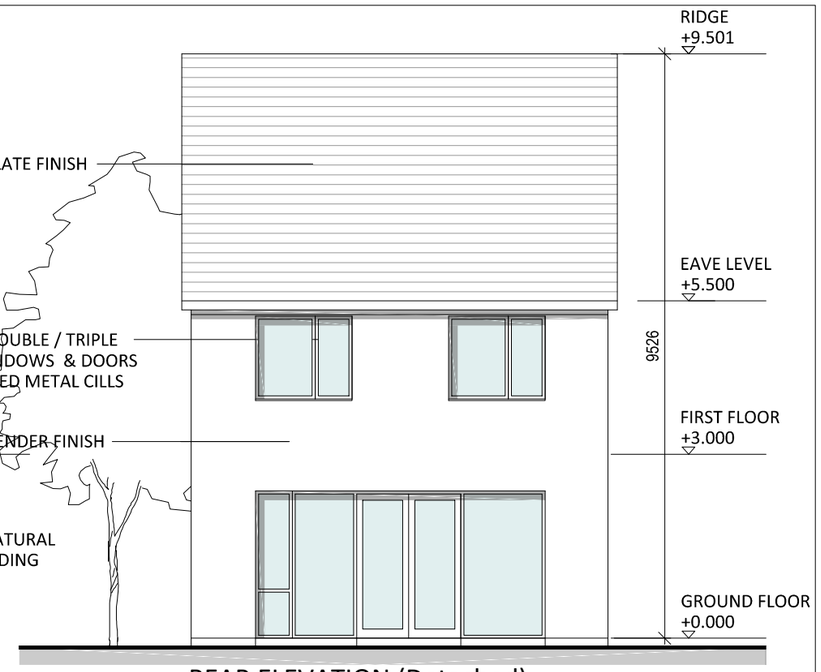
Drawing Title: HOUSE TYPE G & G1- Proposed Floor Plans
Drawing No.: 1806-OMP-HTG-00-DR-A-XX-10000

Suitability - Checked By - Date

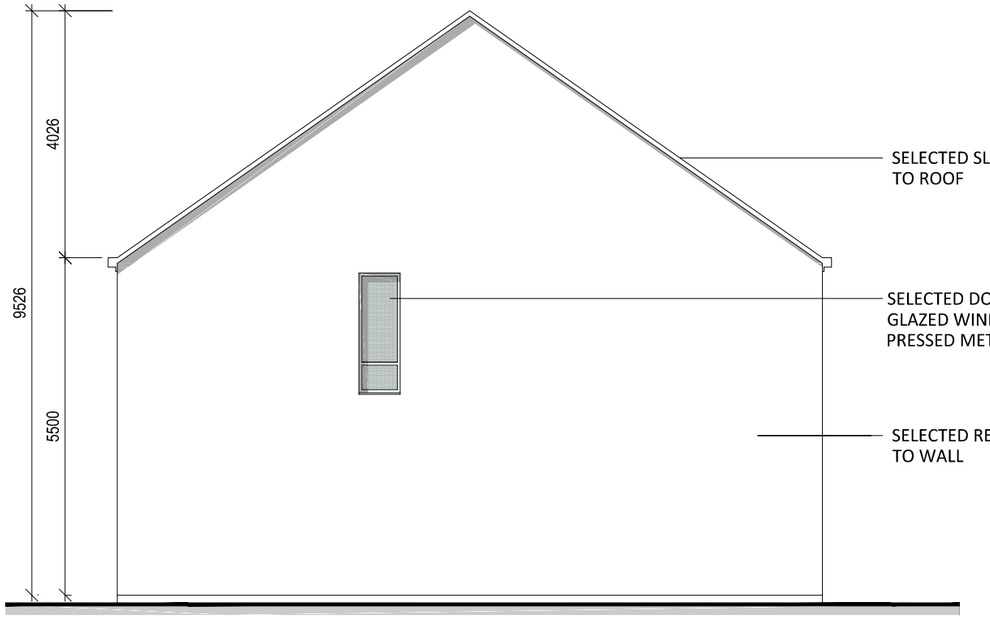


SECTION A-A
scale 1:100

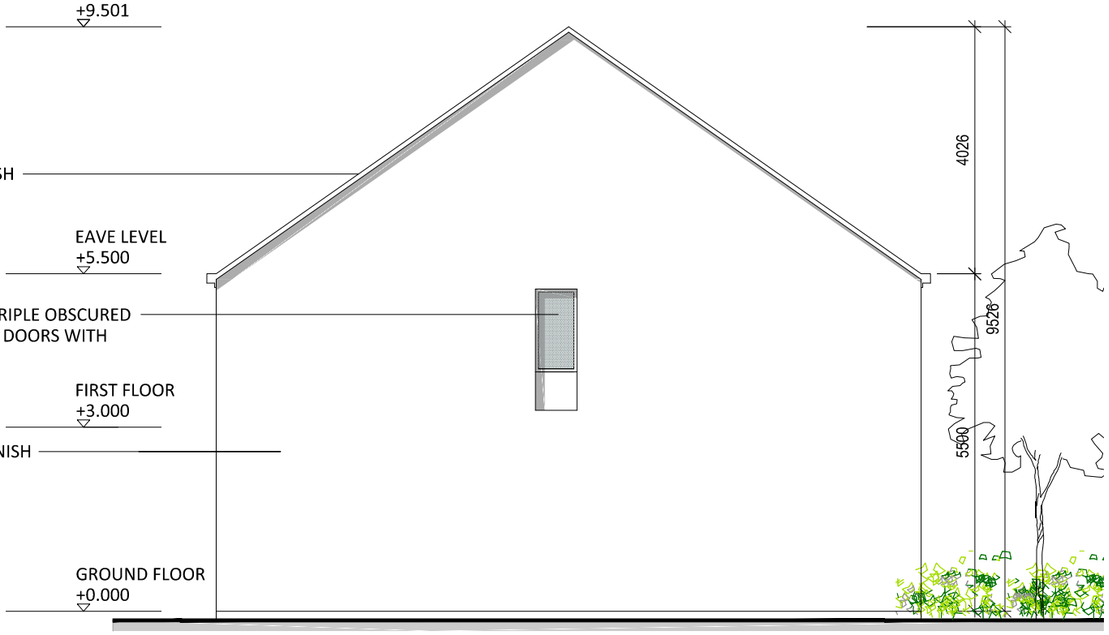
FRONT ELEVATION (Detached)
scale 1:100



REAR ELEVATION (Detached)
scale 1:100



SIDE ELEVATION G (Semi-D & Detached)
scale 1:100

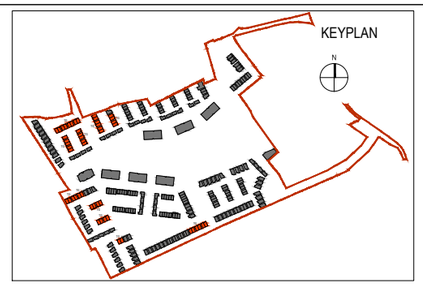


SIDE ELEVATION G1 (Semi-D & Detached)
scale 1:100

HOUSE TYPE G & G1- Section A-A & Elevations.

4 BED - 2 STOREY SEMI-D / DETACHED HOUSE
a: 120.8m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	KG	**Current Rev.:**	01
Model No.:	1806-OMP-HTG-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: HOUSE TYPE G & G1 - Section A-A & Elevations
Drawing No.: 1806-OMP-HTG-00-DR-A-XX-20000

Suitability - Checked By - Date

FRONT ELEVATION (Semi-D)
scale 1:100

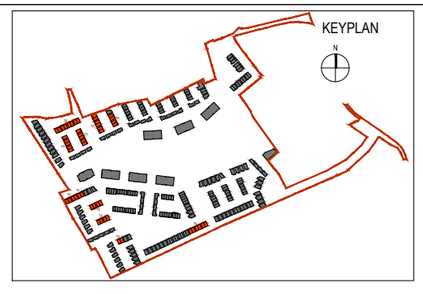
REAR ELEVATION (Semi-D)
scale 1:100

SIDE PUBLIC ELEVATION (G1)
scale 1:100

HOUSE TYPE G & G1 - Elevations.

4 BED - 2 STOREY SEMI-D / DETACHED HOUSE
a: 120.8m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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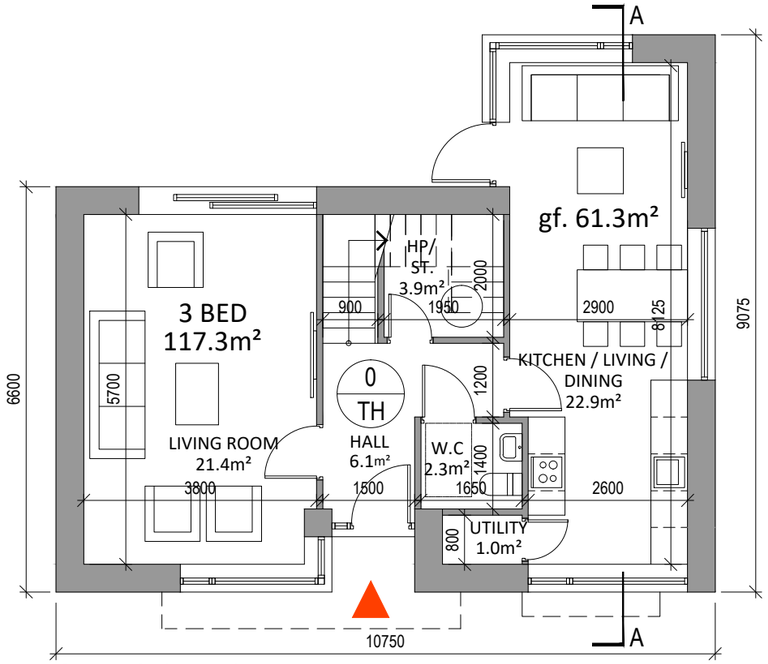
Purpose:	Planning		

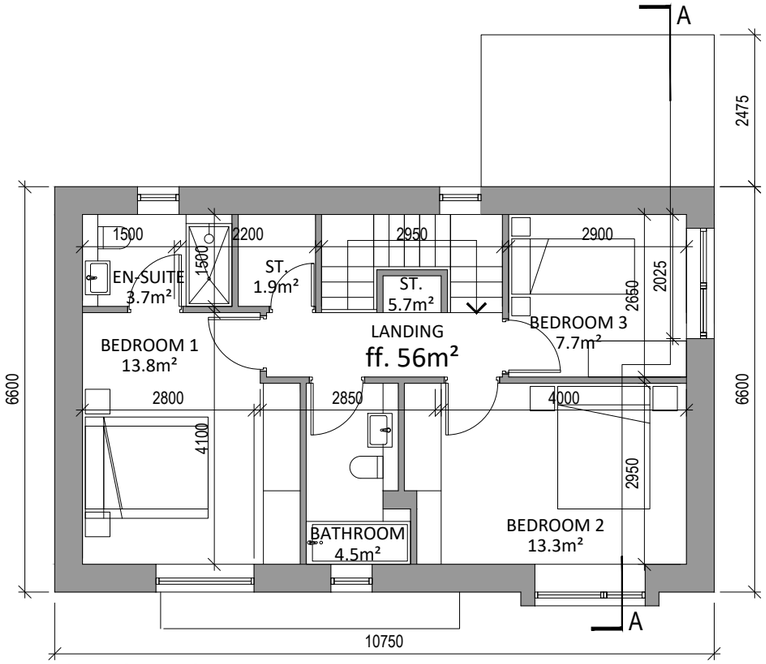
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: HOUSE TYPE G & G1- Elevations
Drawing No.: 1806-OMP-HTG-00-DR-A-XX-20001

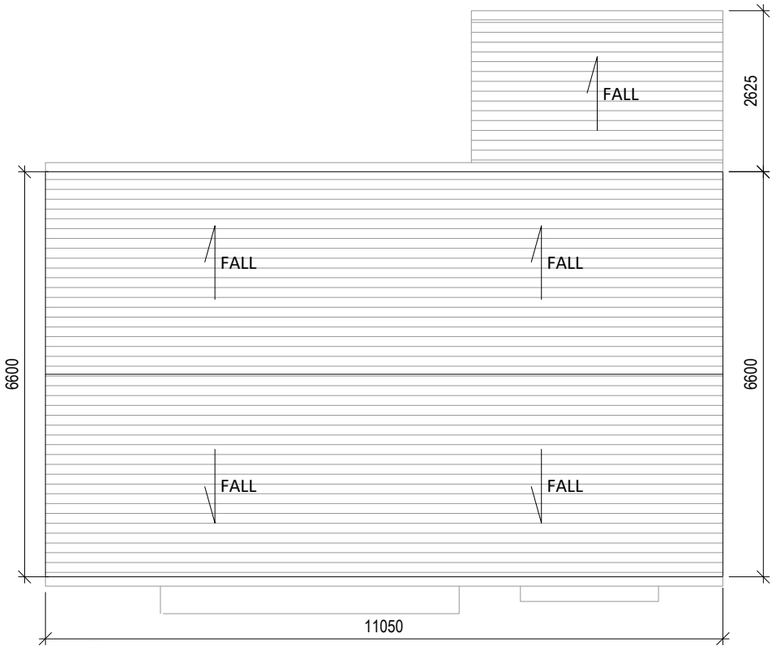
Suitability - Checked By - Date



Ground Floor Plan
scale 1:100



First Floor Plan
scale 1:100



Roof Plan
scale 1:100

HOUSE TYPE H - Proposed Floor Plans

3 BED - 2 STOREY DETACHED
a: 117.3m^2

115
T1

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and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
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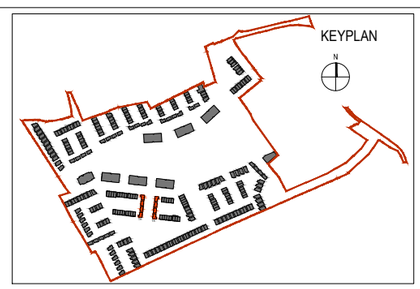

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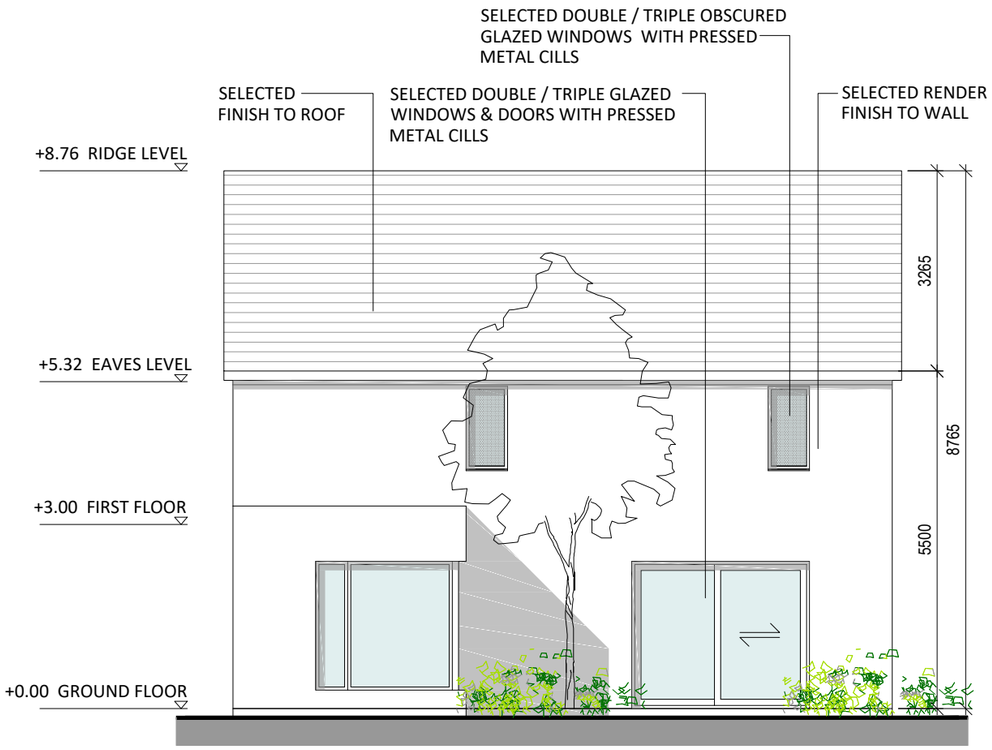
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-HTH-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: HOUSE TYPE H - Proposed Floor Plans
Drawing No.: 1806-OMP-HTH-00-DR-A-XX-10000

Suitability - Checked By - Date

FRONT ELEVATION
scale 1:100



REAR ELEVATION
scale 1:100

DETACHED HOUSE TYPE H - Elevations.

3 BED - 2 STOREY DETACHED
a: 117.3m^2

115
T1

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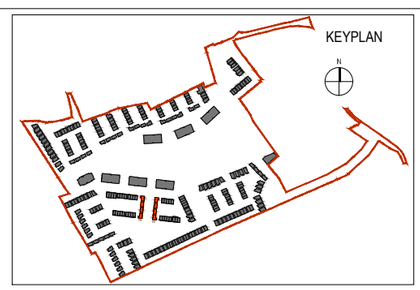

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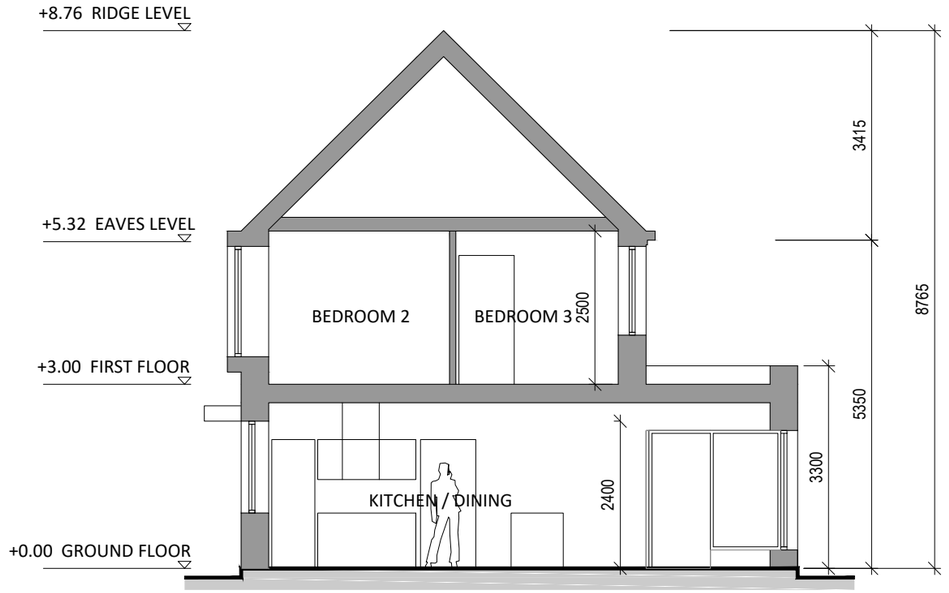
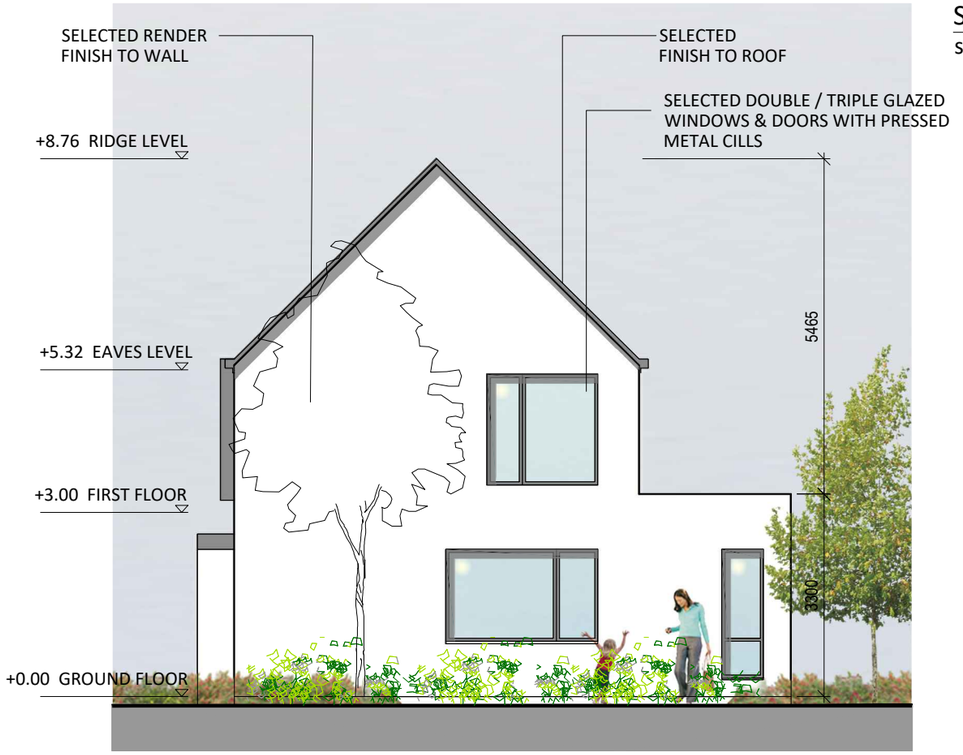
Drawing Title: HOUSE TYPE H - Elevations
Drawing No.: 1806-OMP-HTH-00-DR-A-XX-20000

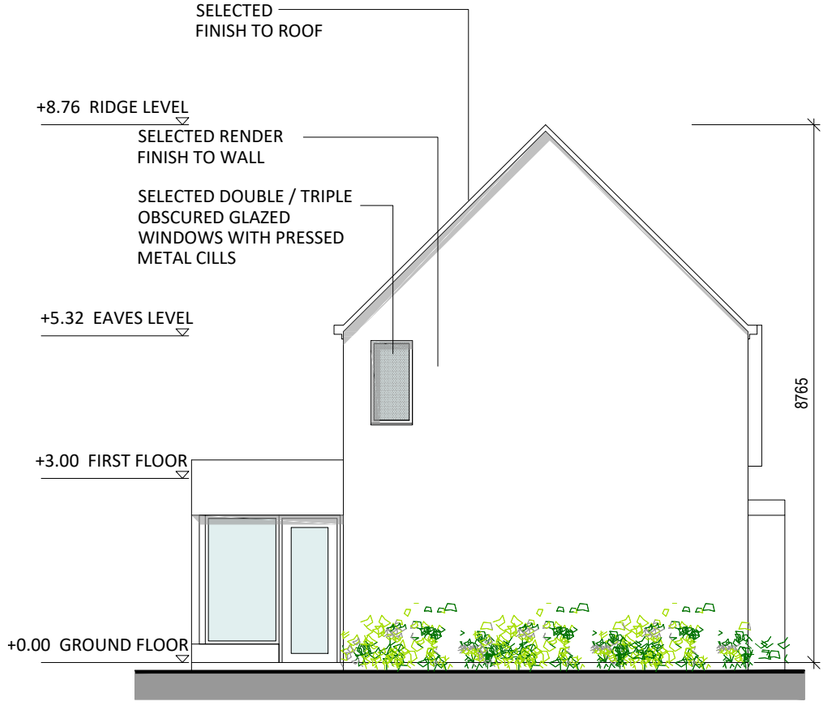
Suitability - Checked By - Date



SECTION A-A
scale 1:100



SIDE PUBLIC ELEVATION
scale 1:100



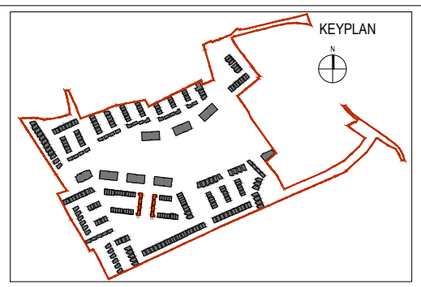
LEFT GABLE ELEVATION
scale 1:100

DETACHED HOUSE TYPE H - Section A-A & Elevations.

3 BED - 2 STOREY DETACHED
a: 117.3m^2

115 / T1 — Houses are tagged to show number & type;
the house number is in the top section of the tag, e.g. 115
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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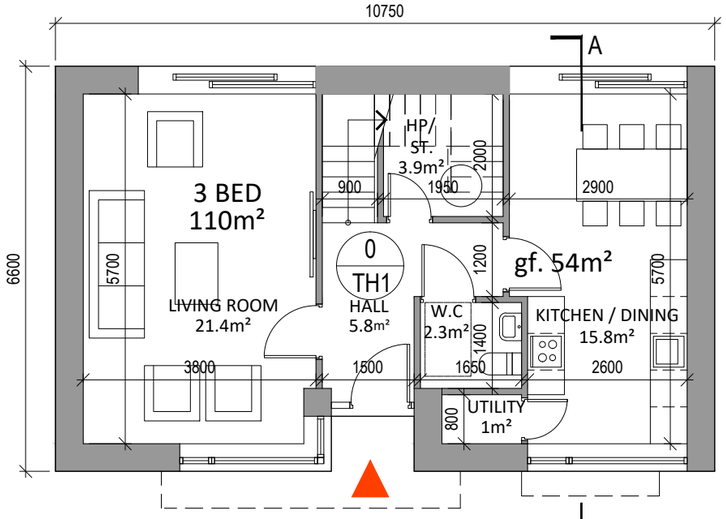
T12 R2RV Ireland

Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-HTH-ZZ-DR-A-XX-10000		
Purpose:	Planning		

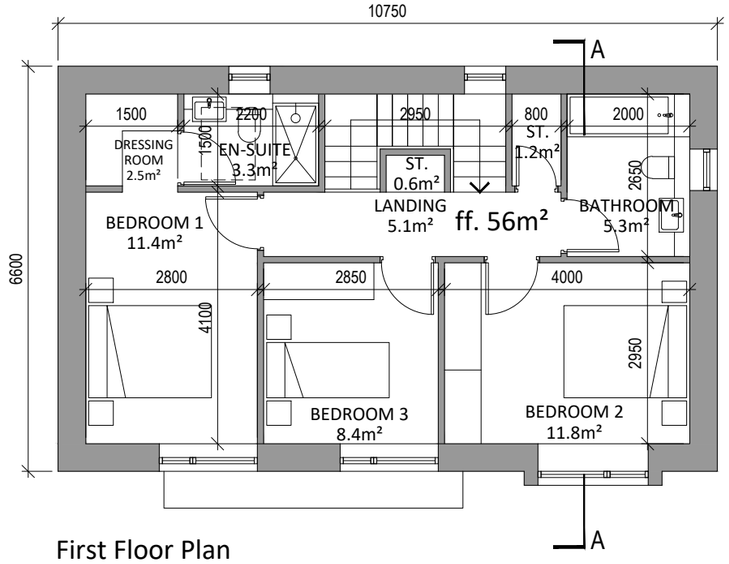
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: HOUSE TYPE H - Section A-A & Elevations
Drawing No.: 1806-OMP-HTH-00-DR-A-XX-20001

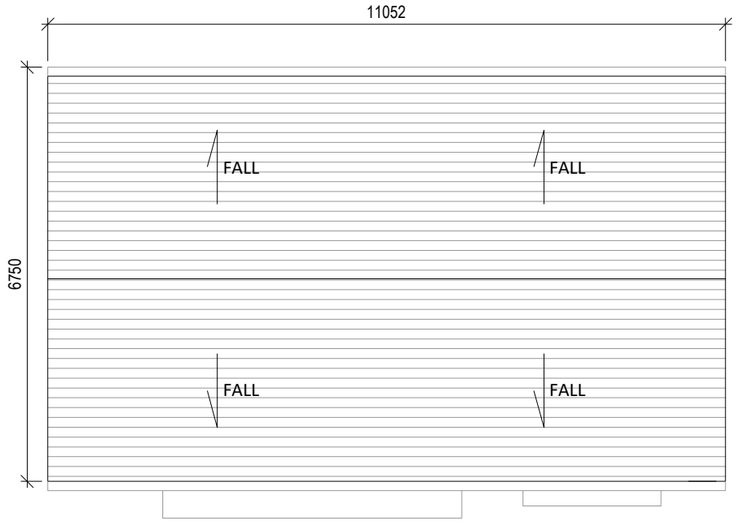
Suitability - Checked By - Date



Ground Floor Plan
scale 1:100



First Floor Plan
scale 1:100



Roof Plan
scale 1:100

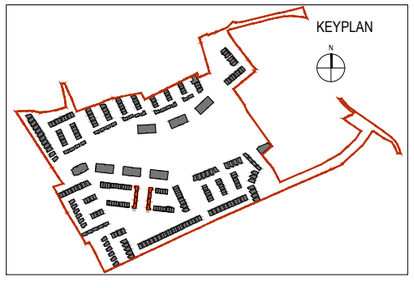
HOUSE TYPE H1 - Proposed Floor Plans

3 BED - 2 STOREY DETACHED
a: 110.0m^2

115
T1

Houses are tagged to show number & type;
the house number is in the top section of the tag, e.g. 115
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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Cork City
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T12 R2RV Ireland

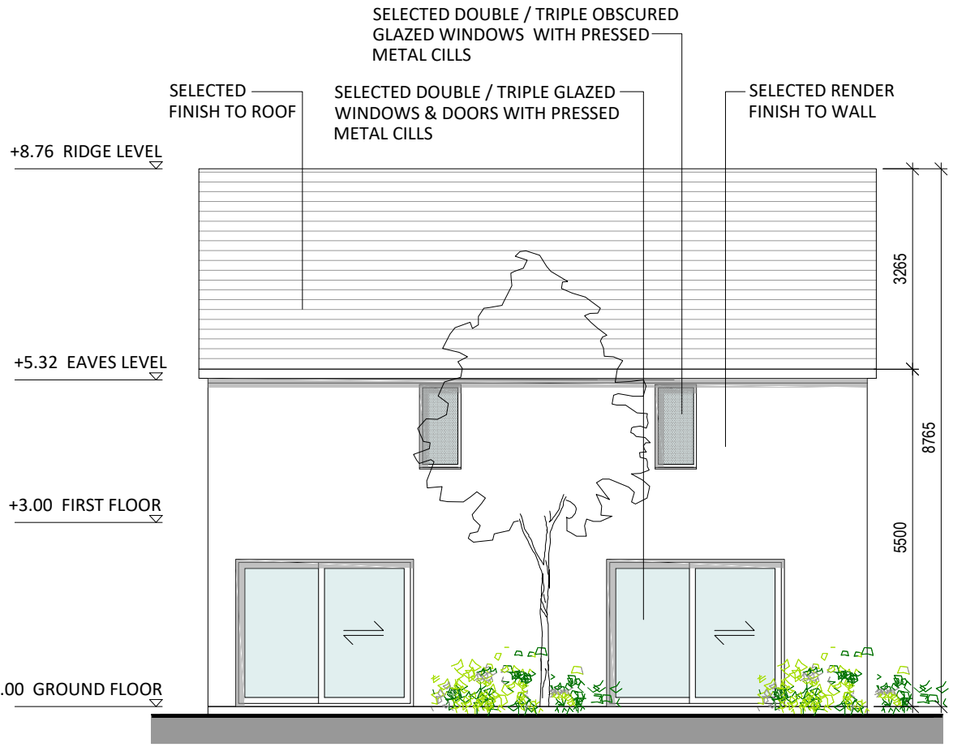
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2018
Drawn By:	BK	**Current Rev.:**	
Model No.:	1806-OMP-HTH1-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: HOUSE TYPE H1 - Proposed Floor Plans
Drawing No.: 1806-OMP-HTH1-00-DR-A-XX-10000

Suitability - Checked By - Date

FRONT ELEVATION
scale 1:100



REAR ELEVATION
scale 1:100

HOUSE TYPE H1 - Elevations.

3 BED - 2 STOREY DETACHED
a: 110.0m^2

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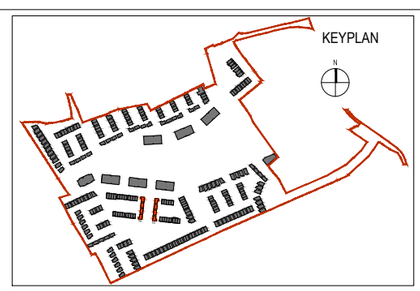
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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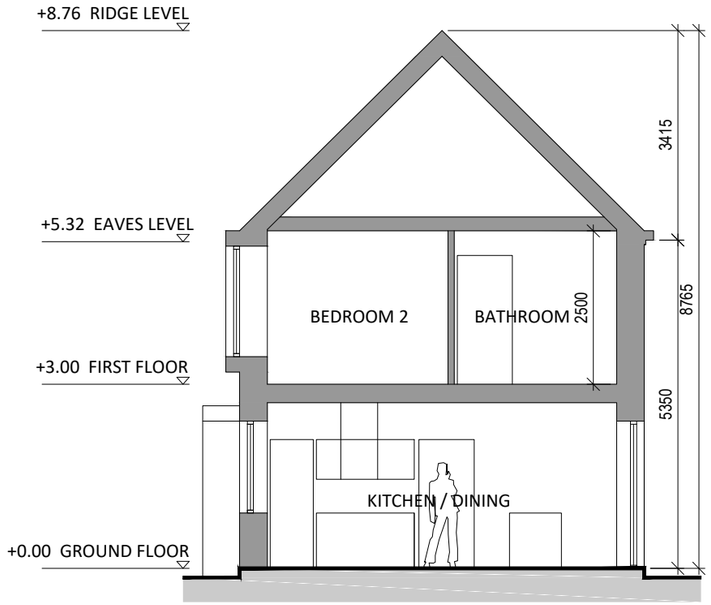
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-HTH1-ZZ-DR-A-XX-10000		
Purpose:	Planning		

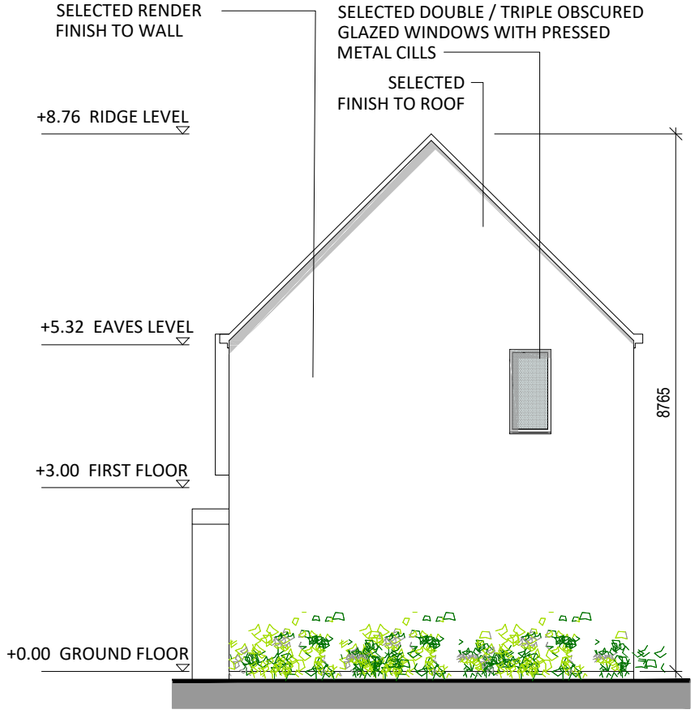
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: HOUSE TYPE H1 - Elevations
Drawing No.: 1806-OMP-HTH1-00-DR-A-XX-20000

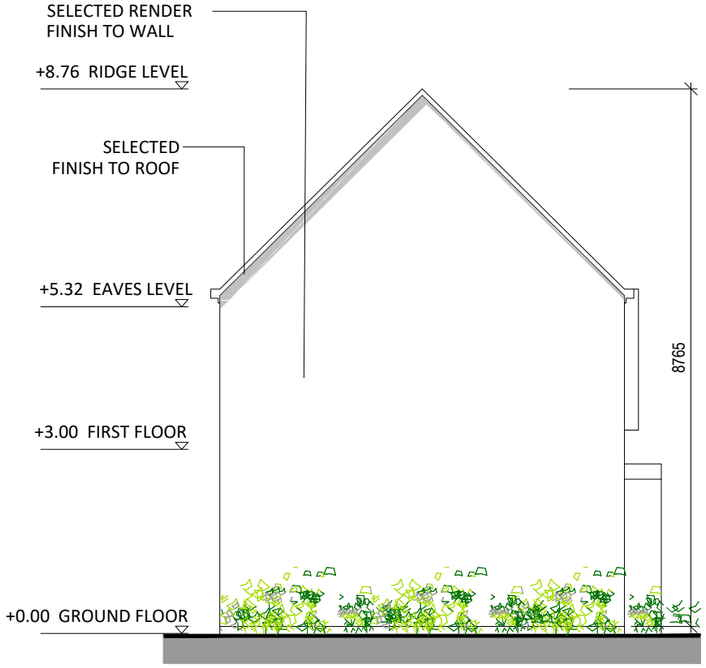
Suitability - Checked By - Date



SECTION A-A
scale 1:100



RIGHT GABLE ELEVATION
scale 1:100



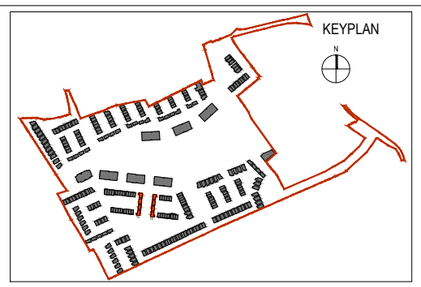
LEFT GABLE ELEVATION
scale 1:100

HOUSE TYPE H1 - Section A-A & Elevations.

3 BED - 2 STOREY DETACHED
a: 110.0m^2

115 / T1 — Houses are tagged to show number & type; the house number is in the top section of the tag, e.g. 115 and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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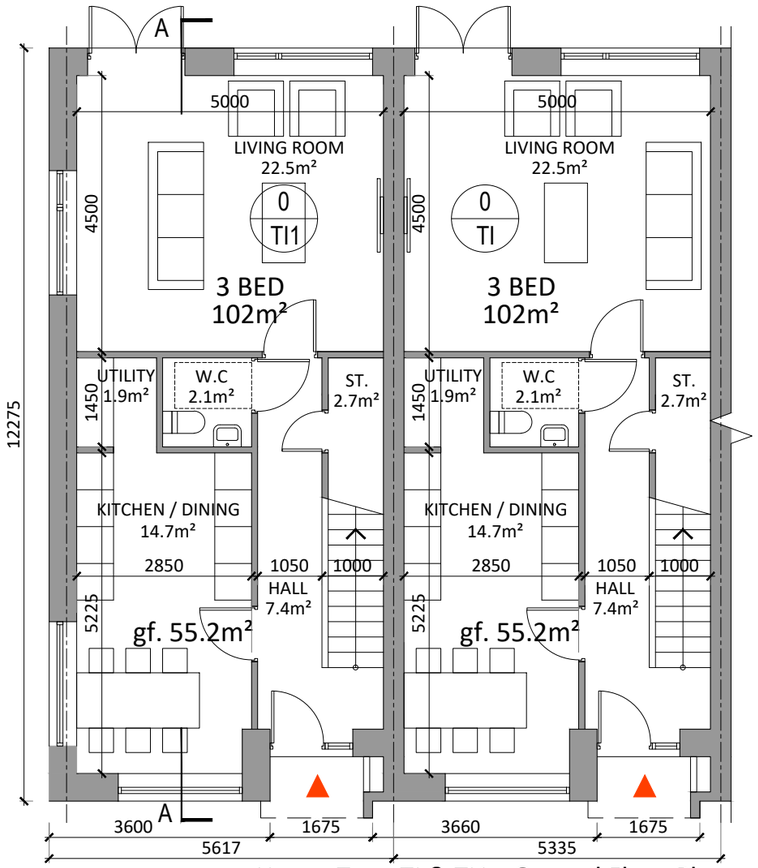
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-HTH1-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

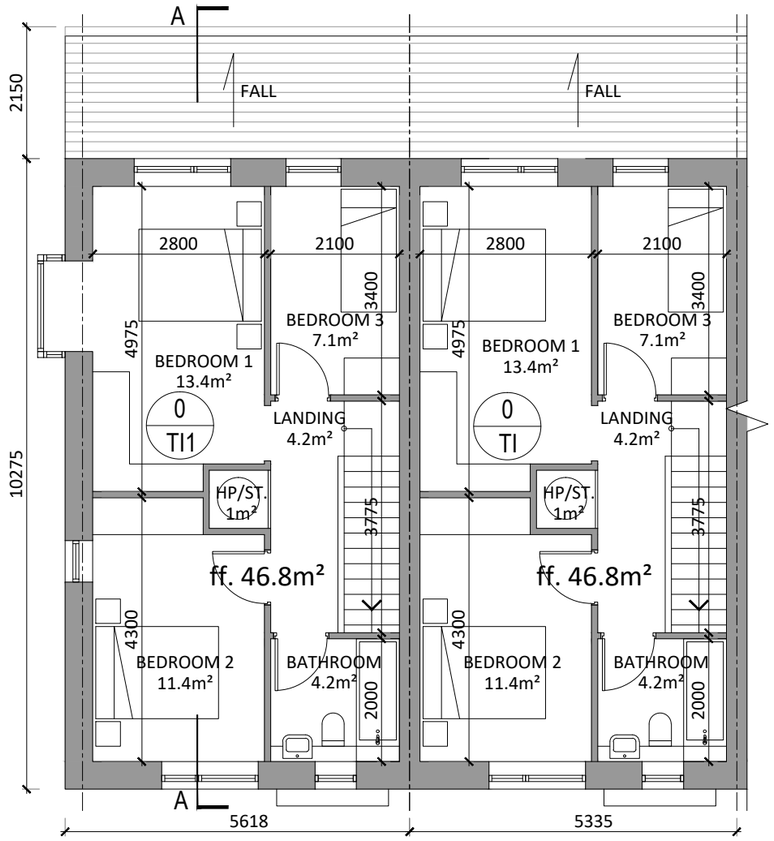
Drawing Title: HOUSE TYPE H1 - Section A-A & Elevations
Drawing No.: 1806-OMP-HTH1-00-DR-A-XX-20001

Suitability - Checked By - Date



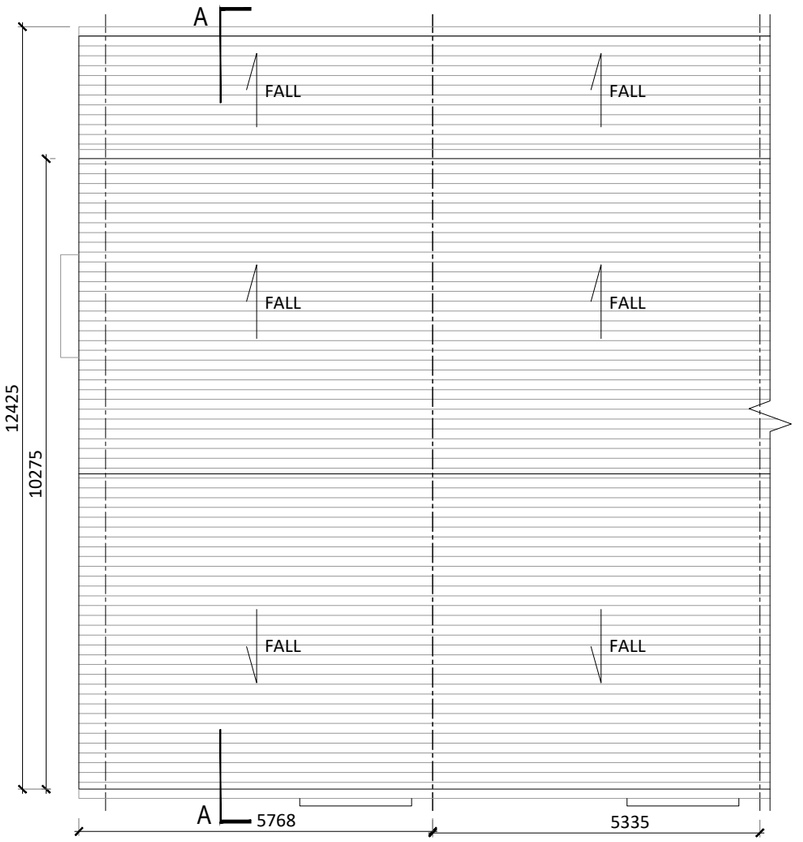
House Type TI & TI1 - Ground Floor Plan

scale 1:100



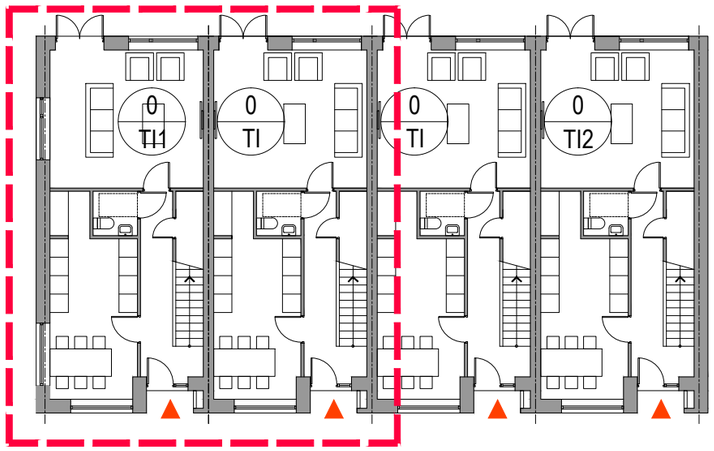
House Type TI & TI1 - First Floor Plan

scale 1:100



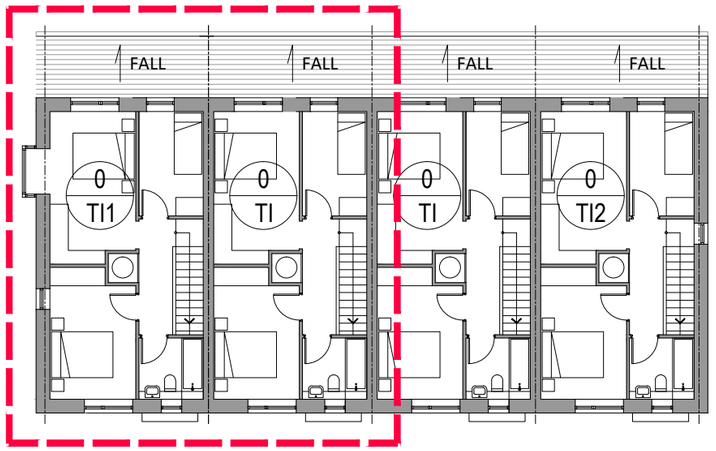
House Type TI & TI1 - Roof Plan

scale 1:100



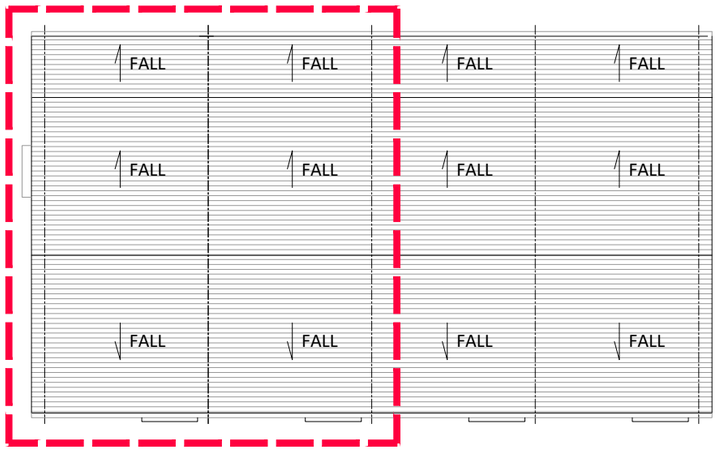
House Type TI, TI1, TI2 - Ground Floor Plan

scale 1:200



House Type TI, TI1, TI2 - First Floor Plan

scale 1:200



House Type TI, TI1, TI2 - Roof Plan

scale 1:200

HOUSE TYPE I, I1, I2 - Proposed Floor Plans

3 BED - 2 STOREY SEMI-DETACHED / TERRACED HOUSE
a: 102.0m^2

115 / T1 — Houses are tagged to show number & type;
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and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
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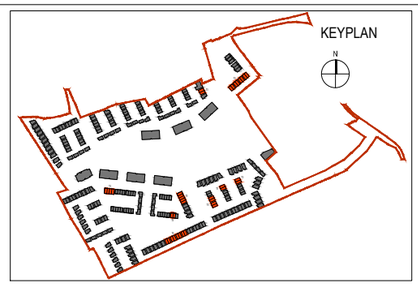

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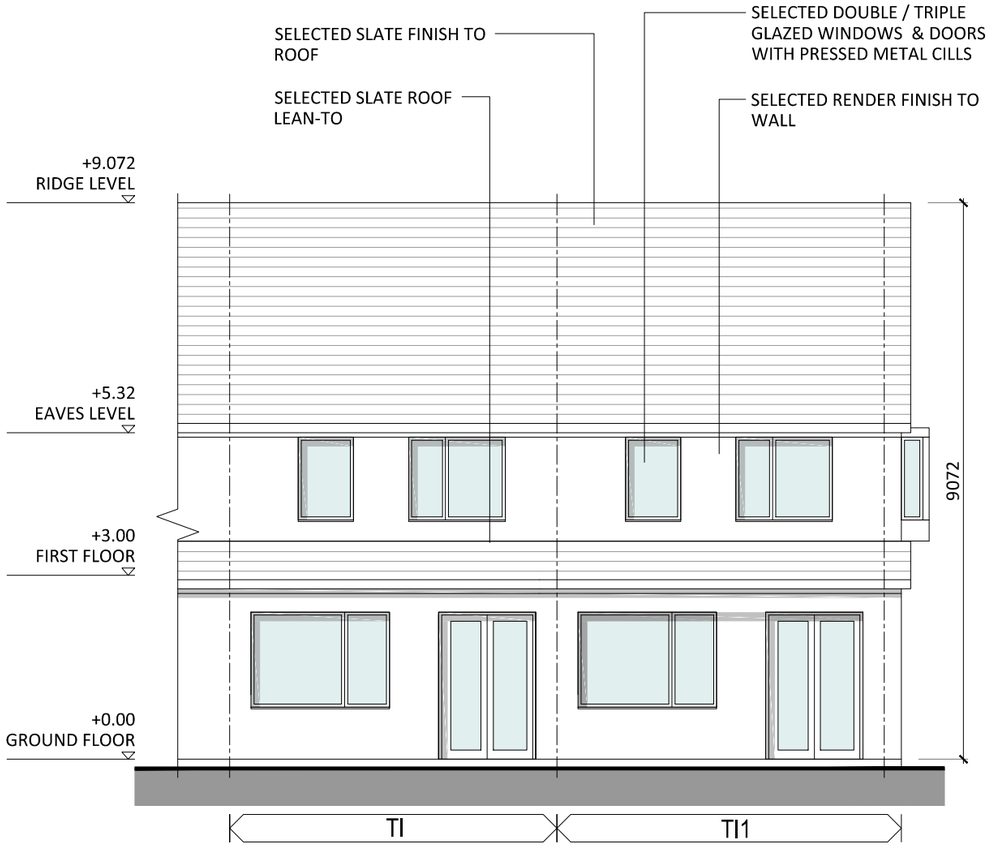
Project No.:	1806	Scale @ A3:	As Shown
Project Lead:	RN	Date Printed:	15/05/2019
Drawn By:	BK	Current Rev.:	01
Model No.:	1806-OMP-HTI-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project:	Residential Development
Location:	Blackrock, Dundalk, Co. Louth
Client:	Kingsbridge Consultancy Ltd.
Drawing Title:	HOUSE TYPE I, I1, I2 - Proposed Floor Plans
Drawing No.:	1806-OMP-HTI-00-DR-A-XX-10000

Suitability - Checked By - Date

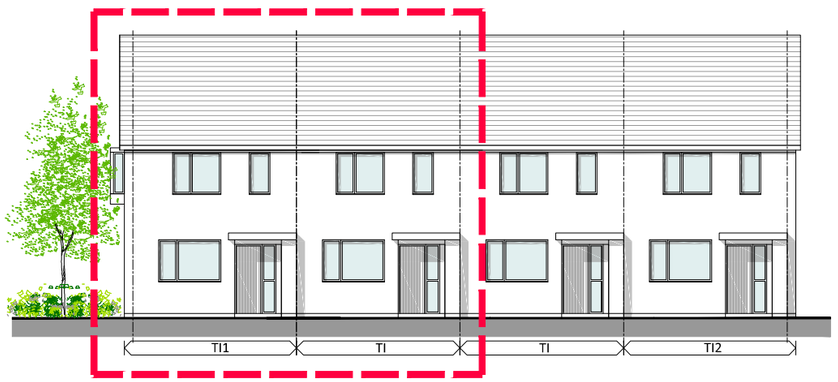
House Type TI & TI1 - Front Elevation

scale 1:100



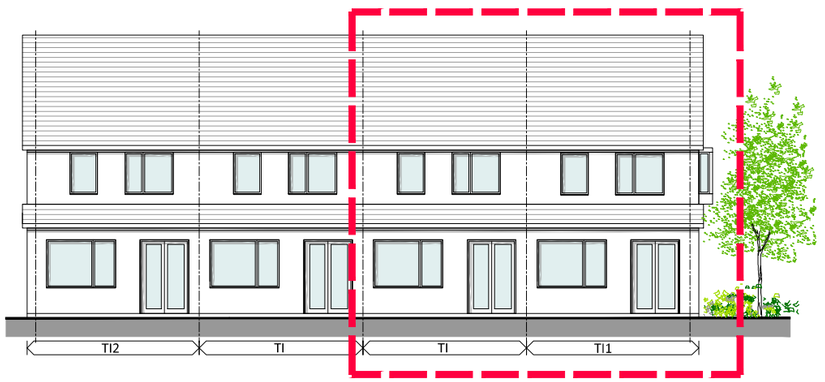
House Type TI & TI1 - Rear Elevation

scale 1:100



House Type TI, TI1, TI2- Front Elevation

scale 1:200



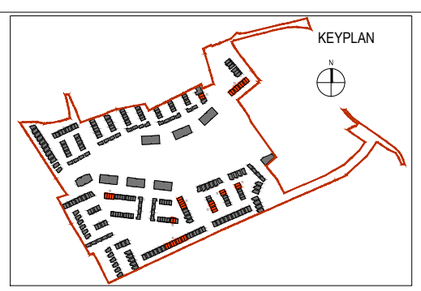
House Type TI, TI1, TI2 - Rear Elevation

scale 1:200

HOUSE TYPE I, I1, I2 - Front & Rear Elevations

3 BED - 2 STOREY SEMI-DETACHED / TERRACED HOUSE
a: 102.0m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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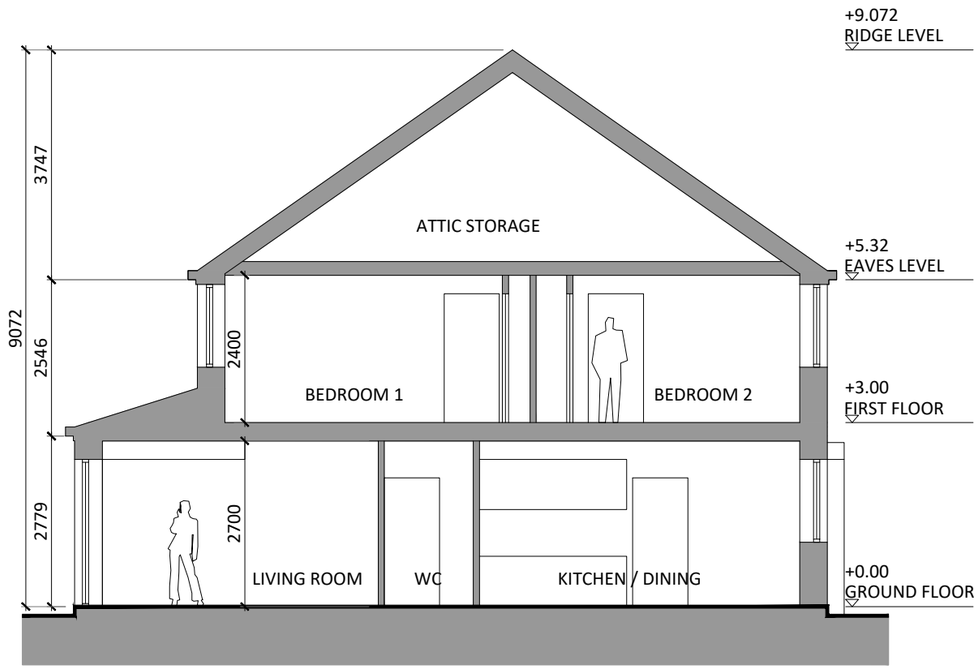
Project No.:	1806	**Scale @** A3:	1:100
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-HTI-ZZ-DR-A-XX-10000		
Purpose:	Planning		

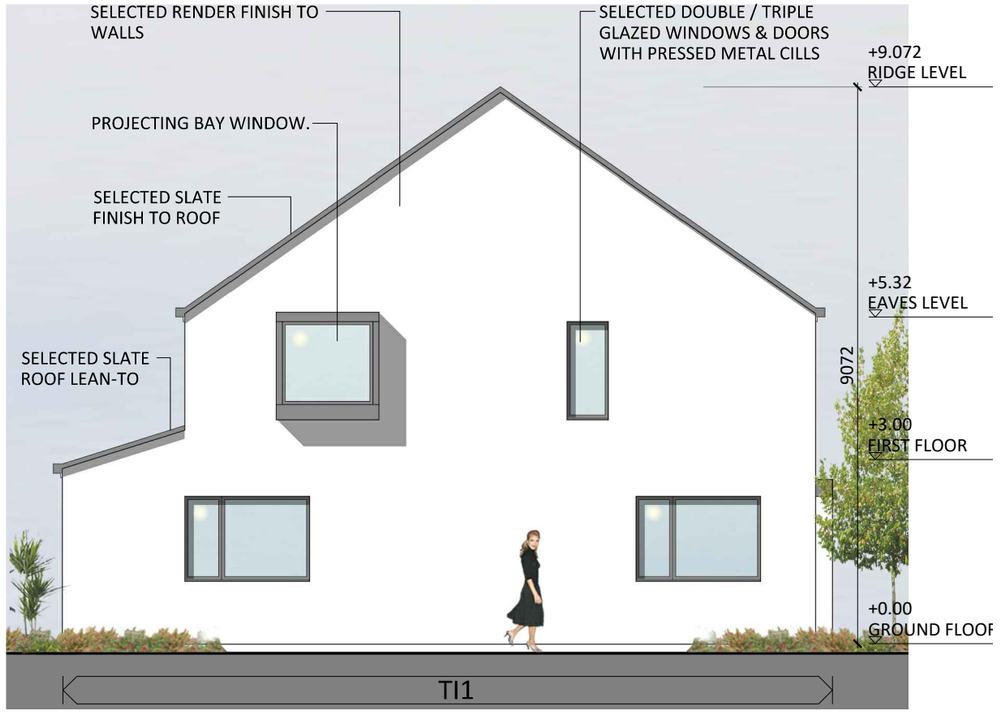
Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

Drawing Title: HOUSE TYPE I, I1, I2 - Front & Rear Elevations
Drawing No.: 1806-OMP-HTI-00-DR-A-XX-20000

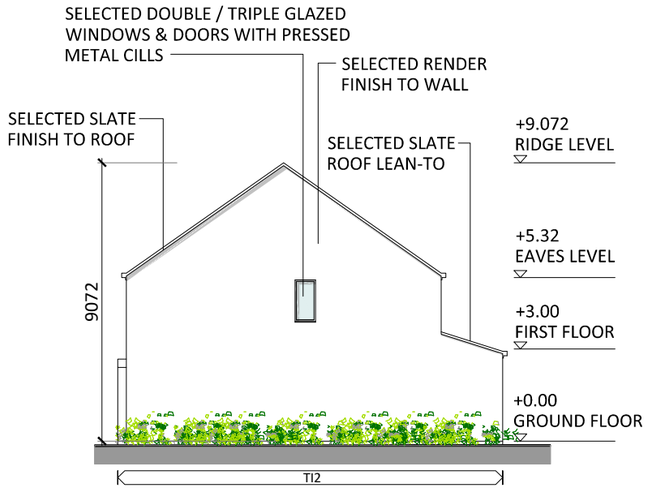
Suitability - Checked By - Date



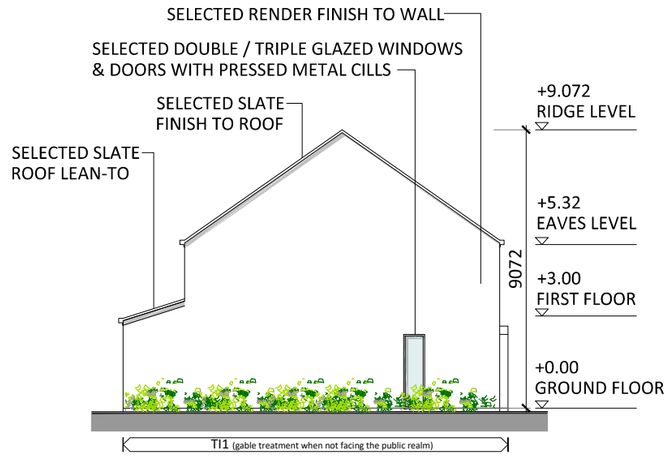
Section A-A
scale 1:100



House Type TI1 - Side Public Elevation
scale 1:100



House Type TI2 - Internal Side Elevation
scale 1:200

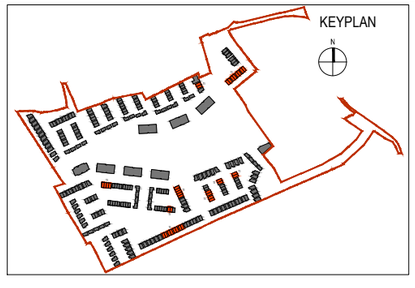


House Type TI1 - Internal Side Elevation
scale 1:200

HOUSE TYPE I, I1, I2 - Section A-A & Side Elevations

3 BED - 2 STOREY SEMI-DETACHED / TERRACED HOUSE
a: 102.0m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



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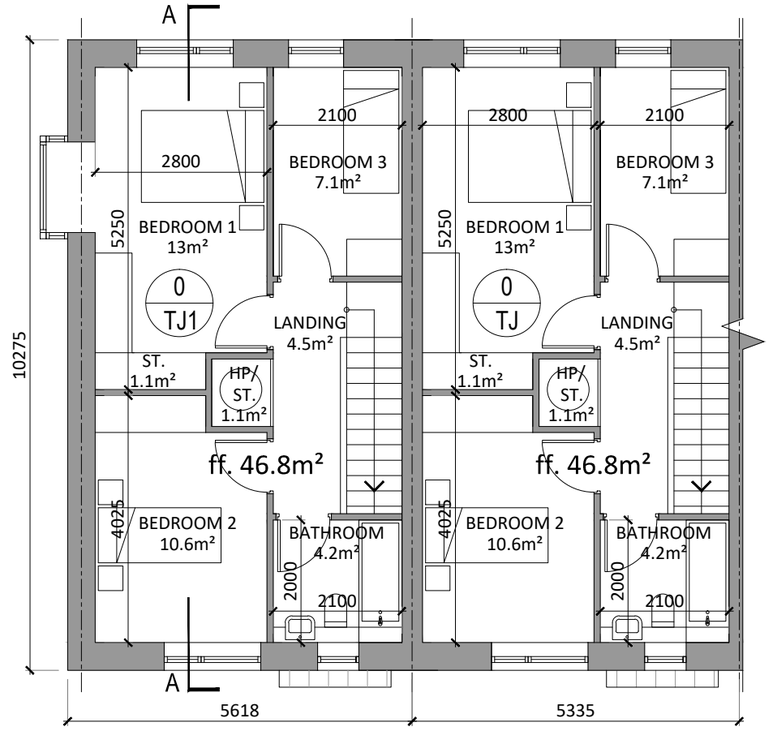
Project No.:	1806	**Scale @** A3:	1:200
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-HTI-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

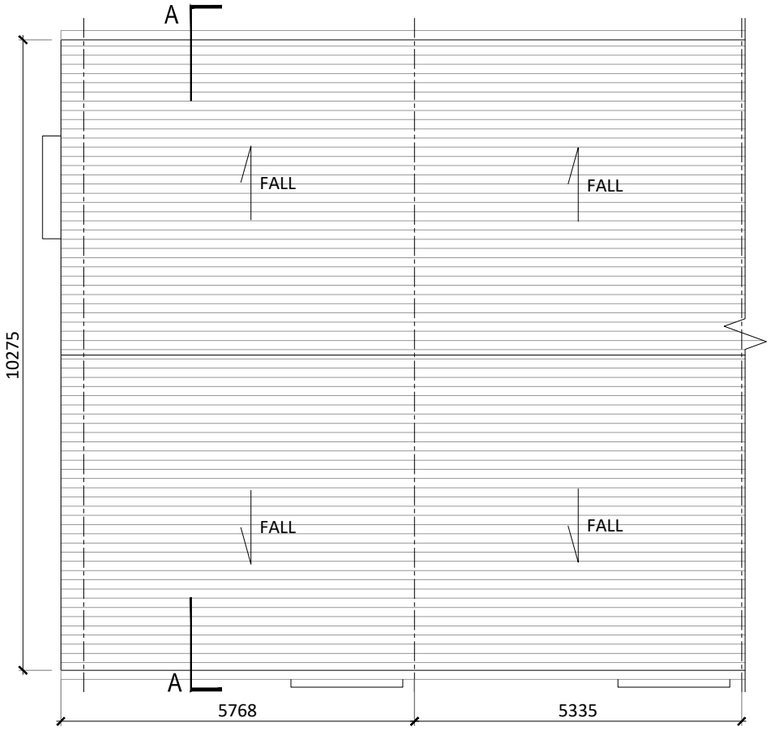
Drawing Title: HOUSE TYPE I, I1, I2 - Section A-A & Side Elevations
Drawing No.: 1806-OMP-HTI-00-DR-A-XX-20001

Suitability - Checked By - Date

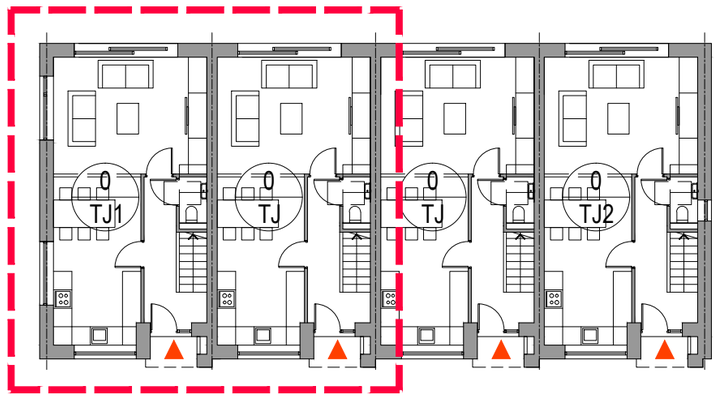
House Type TJ & TJ1 - Ground Floor Plan
scale 1:100



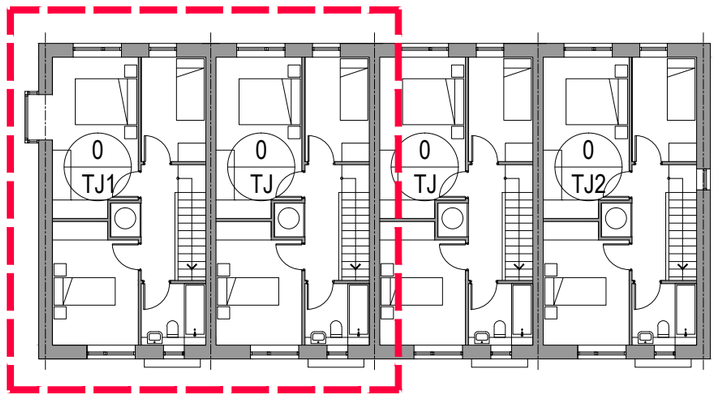
House Type TJ & TJ1 - First Floor Plan
scale 1:100



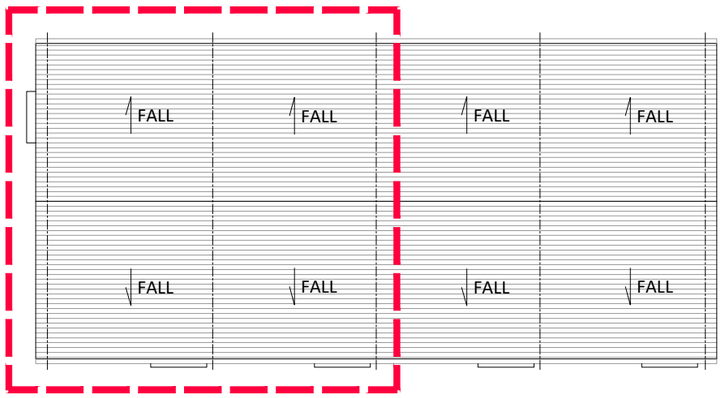
House Type TJ & TJ1 - Roof Plan
scale 1:100



House Type TJ, TJ1, TJ2 - Ground Floor Plan
scale 1:200



House Type TJ, TJ1, TJ2 - First Floor Plan
scale 1:200



House Type TJ, TJ1, TJ2 - Roof Plan
scale 1:200

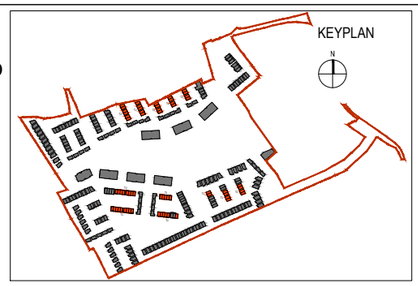
HOUSE TYPE J, J1, J2 - Proposed Floor Plans

3 BED - 2 STOREY SEMI-DETACHED / TERRACED HOUSE / DETACHED
a: 92.0m^2

115
T1

Houses are tagged to show number & type;
the house number is in the top section of the tag, e.g. 115
and the house type is in the lower section of the tag, e.g. T1

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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email: info@omahonypike.com
tel: +353 1 202 7400
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Dublin
The Chapel
Mount St. Anne's
Milltown, Dublin 6
D06 XN52 Ireland

Cork
26 South Mall
Cork City
Co. Cork
T12 R2RV Ireland

Project No.:	1806	**Scale @** A3:	As Shown
Project Lead:	RN	**Date Printed:**	15/05/2019
Drawn By:	BK	**Current Rev.:**	01
Model No.:	1806-OMP-HTJ-ZZ-DR-A-XX-10000		
Purpose:	Planning		

Project: Residential Development
Location: Blackrock, Dundalk, Co. Louth
Client: Kingsbridge Consultancy Ltd.

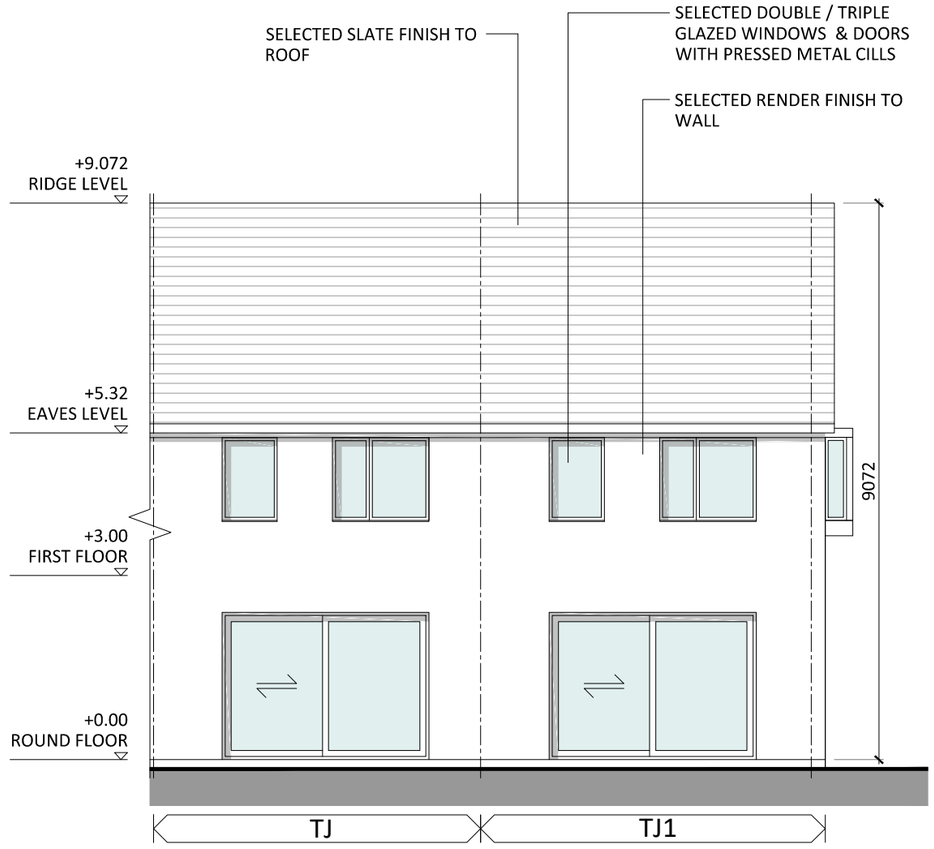
Drawing Title: HOUSE TYPE J, J1, J2 - Proposed Floor Plans
Drawing No.: 1806-OMP-HTJ-00-DR-A-XX-10000

Suitability - Checked By - Date

Front Elevation

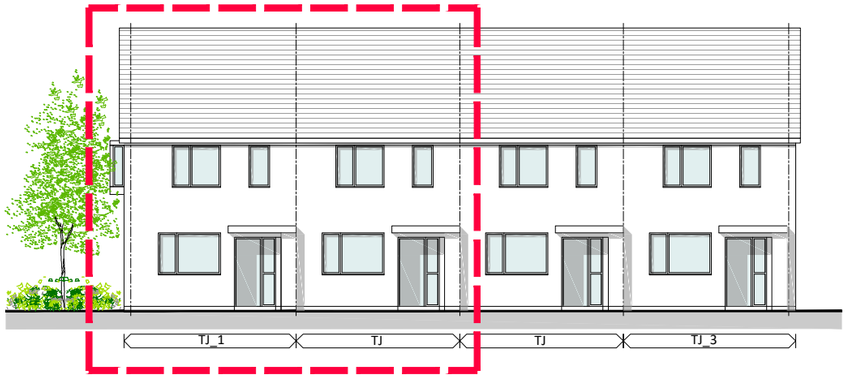
House Type TJ & TJ1 - Front Elevation

scale 1:100



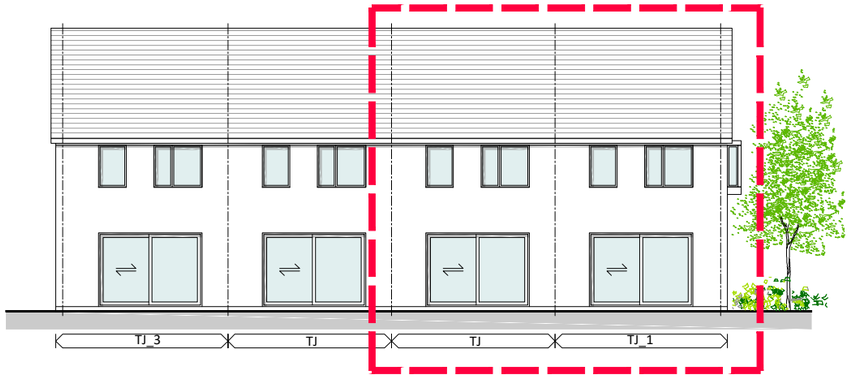
House Type TJ & TJ1 - Rear Elevation

scale 1:100



House Type TJ, TJ1, TJ2- Front Elevation

scale 1:200



House Type TJ, TJ1, TJ2 - Rear Elevation

scale 1:200

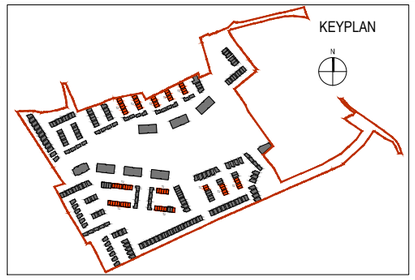
HOUSE TYPE J, J1, J2 - Front & Rear Elevations

3 BED - 2 STOREY SEMI-DETACHED / TERRACED HOUSE / DETACHED

a: 92.0m^2

ALL DIMENSIONS IN MILLIMETERS

ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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Dublin
The Chapel
Mount St. Anne's
Milltown, Dublin 6
D06 XN52 Ireland

Cork
26 South Mall
Cork City
Co. Cork
T12 R2RV Ireland

Project No.: 1806 **Scale @** A3: 1:100

Project Lead: RN **Date Printed:** 15/05/2019

Drawn By: BK **Current Rev.:** 01

Model No.: 1806-OMP-HTJ-ZZ-DR-A-XX-10000

Purpose: Planning

Project: Residential Development

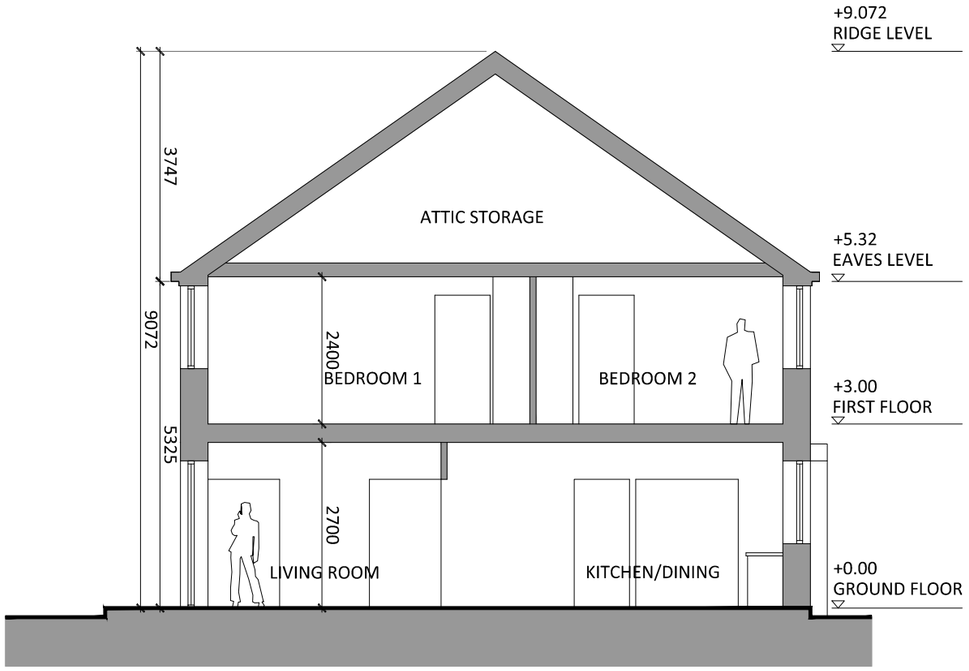
Location: Blackrock, Dundalk, Co. Louth

Client: Kingsbridge Consultancy Ltd.

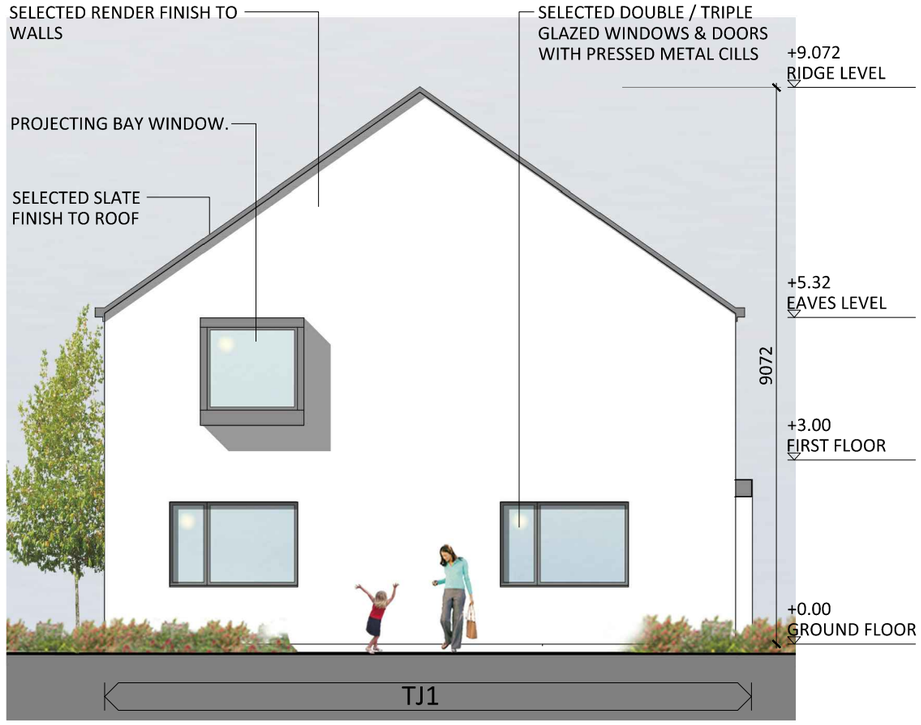
Drawing Title: HOUSE TYPE J, J1, J2 - Front & Rear Elevations

Drawing No.: 1806-OMP-HTJ-00-DR-A-XX-20000

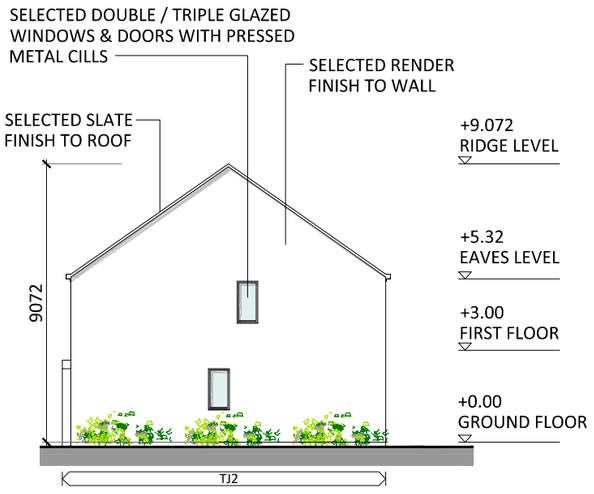
Suitability - Checked By - Date



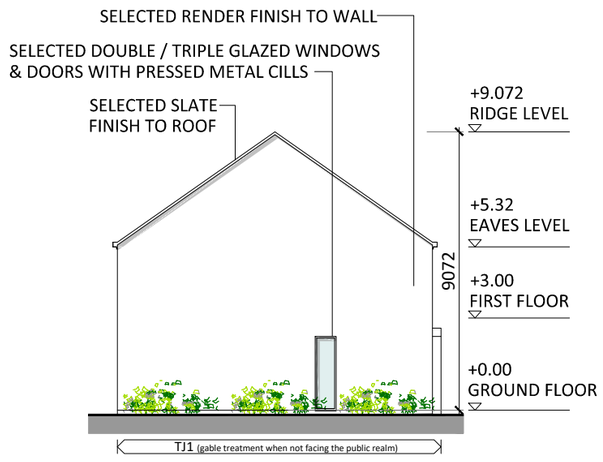
Section A-A
scale 1:100



House Type TJ1 - Side Public Elevation
scale 1:100



House Type TJ2 - Internal Side Elevation
scale 1:200

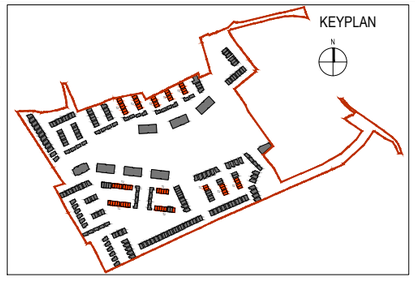


House Type TJ1 - Internal Side Elevation
scale 1:200

HOUSE TYPE J, J1, J2 - Section A-A & Side Elevations

3 BED - 2 STOREY SEMI-DETACHED / TERRACED HOUSE / DETACHED
a: 92.0m^2

ALL DIMENSIONS IN MILLIMETERS
ALL LEVELS (IN METERS) ARE RELATED TO MALIN HEAD DATUM



Revision Description	Date	Rev. No.	Issued by
Planning	15/05/2019	01	RD

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Dublin: The Chapel, Mount St. Anne's, Milltown, Dublin 6, D06 XN52 Ireland
Cork: 26 South Mall, Cork City, Co. Cork, T12 R2RV Ireland

Project No.:	1806
Project Lead:	RN
Drawn By:	BK
Model No.:	1806-OMP-HTJ-ZZ-DR-A-XX-10000
Purpose:	Planning
Scale @ A3:	1:200
Date Printed:	15/05/2019
Current Rev.:	01

Project:	Residential Development
Location:	Blackrock, Dundalk, Co. Louth
Client:	Kingsbridge Consultancy Ltd.
Drawing Title:	HOUSE TYPE J, J1, J2 - Section A-A & Side Elevations
Drawing No.:	1806-OMP-HTJ-00-DR-A-XX-20001

Suitability - Checked By - Date

Kingsbridge Consultancy Ltd

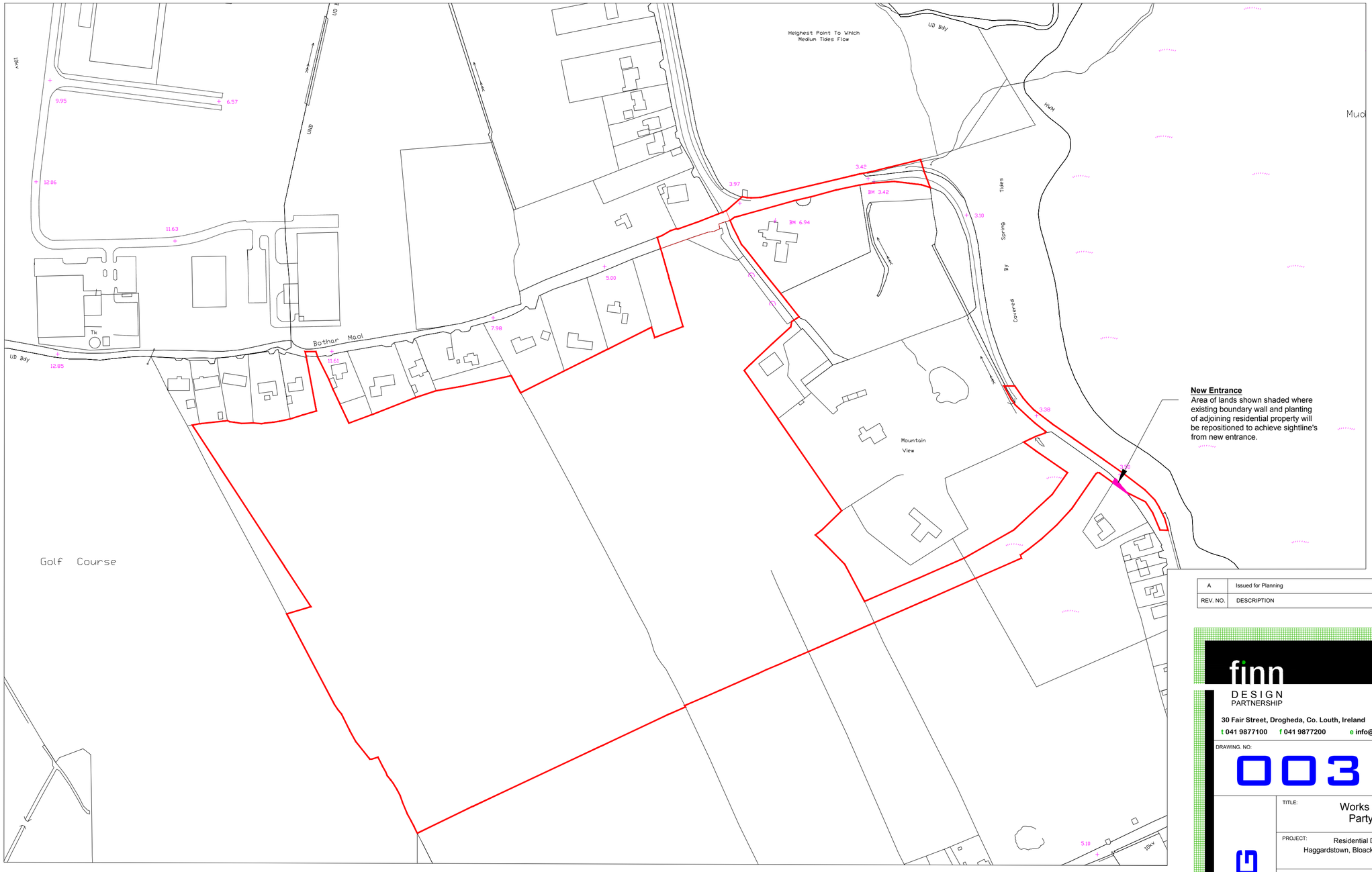
Residential Development @ Haggardstown, Blackrock, Co Louth

Planning Application Supporting Document List

Date 31st May 2019

Drawing #	Description	Copies
	Engineering & Services Report	14 #
	DMURS Statement of Consistency	" "
	Flood Risk Assessment	" "
1703-ENG-003	Proposed Works on Third Party Lands	14 #
1703-ENG-004	Proposed Works on Lands within Louth Co Council Charge	" "
1703-ENG-100	Service Roadways & Paving's Main Entrance	" "
1703-ENG-101	Service Roadways & Paving's - Zone 1	" "
1703-ENG-102	Service Roadways & Paving's - Zone 2	" "
1703-ENG-103	Service Roadways & Paving's - Zone 3	" "
1703-ENG-104	Service Roadways & Paving's - Zone 4	" "
1703-ENG-105	Roadways Longitudinal Sections (Sheet 1 of 4)	" "
1703-ENG-106	Roadways Longitudinal Sections (Sheet 2 of 4)	" "
1703-ENG-107	Roadways Longitudinal Sections (Sheet 3 of 4)	" "
1703-ENG-108	Roadways Longitudinal Sections (Sheet 4 of 4)	" "
1703-ENG-109	Pavement, Raised Table & Road Details	" "
1703-ENG-110	Storm Drainage Layout Main Entrance Roadway	" "
1703-ENG-111	Storm Drainage Layout - Zone 1	" "
1703-ENG-112	Storm Drainage Layout - Zone 2	" "
1703-ENG-113	Storm Drainage Layout - Zone 3	" "
1703-ENG-114	Storm Drainage Layout - Zone 4	" "
1703-ENG-115	Overall Storm Drainage Layout	" "
1703-ENG-116	Storm Drainage Network Map	" "
1703-ENG-117	Storm Drainage Longitudinal Sections (Sheet 1 of 3)	" "
1703-ENG-118	Storm Drainage Longitudinal Sections (Sheet 2 of 3)	" "
1703-ENG-119	Storm Drainage Longitudinal Sections (Sheet 3 of 3)	" "
1703-ENG-120	Wastewater Pumping Station Layout & Details	" "
1703-ENG-121	Foul Drainage Layout - Zone 1	" "
1703-ENG-122	Foul Drainage Layout - Zone 2	" "
1703-ENG-123	Foul Drainage Layout - Zone 3	" "
1703-ENG-124	Foul Drainage Layout - Zone 4	" "
1703-ENG-125	Overall Site Foul Drainage Layout	" "
1703-ENG-127	Foul Drainage Longitudinal Sections (Sheet 1 of 3)	" "
1703-ENG-128	Foul Drainage Longitudinal Sections (Sheet 2 of 3)	" "
1703-ENG-129	Foul Drainage Longitudinal Sections (Sheet 3 of 3)	" "
1703-ENG-130	Watermain Layout Main Entrance Roadway	" "
1703-ENG-131	Watermain Layout - Zone 1	" "
1703-ENG-132	Watermain Layout - Zone 2	" "
1703-ENG-133	Watermain Layout - Zone 3	" "
1703-ENG-134	Watermain Layout - Zone 4	" "
1703-ENG-135	Overall Site Watermain Layout	" "
1703-ENG-137	Watermain Details (Sheet 1 of 3)	" "
1703-ENG-138	Watermain Details (Sheet 2 of 3)	" "
1703-ENG-139	Watermain Details (Sheet 3 of 3)	" "
1703-ENG-140	Surface Drainage Details (Sheet 1 of 2)	" "
1703-ENG-141	Surface Drainage Details (Sheet 2 of 2)	" "
1703-ENG-142	Typical Swale, Inlet Kerb & Attenuation Pond/Basin Details	" "
1703-ENG-143	Foul Drainage Details (Sheet 1 of 3)	" "
1703-ENG-144	Foul Drainage Details (Sheet 2 of 3)	" "
1703-ENG-145	Foul Drainage Details (Sheet 3 of 3)	" "

Drawing #	Description	Copies
1703-ENG-147	Auto track Swept Path Analysis – Refuse Trucks (Sheet 1 of 2)	“ “
1703-ENG-148	Auto track Swept Path Analysis – Refuse Trucks (Sheet 2 of 2)	“ “
1703-ENG-150	Site Development - Phasing Plan	“ “
1703-ENG-151	Existing Watercourses & Services Plan	“ “



01 / 02 Site Location - Works on Third Party Lands
1:2500

N

LEGEND:
- Boundary of Proposed Development
- Works on Third Party Lnads

O.S. SHEET No. 1702-D

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REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

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CREATIVE ● INNOVATIVE
30 Fair Street, Drogheda, Co. Louth, Ireland
t 041 9877100 f 041 9877200 e info@finn.ie w www.finn.ie

DRAWING. NO: 003
REV. NO: A

ENG

TITLE: Works on Third Party Lands

PROJECT: Residential Development @ Haggardstown, Bloackrock, Dundalk, Co. Louth

CLIENT: Kingsbridge Consultancy Ltd
1st Floor, Block 1, Quayside Business Park
Dundalk, Co Louth

SCALE:	1:1000	DRAWN:	-
DATE:	/05	CHECKED:	P.Coyle

STATUS: Planning Permission

JOB NO: 1703

NOTES
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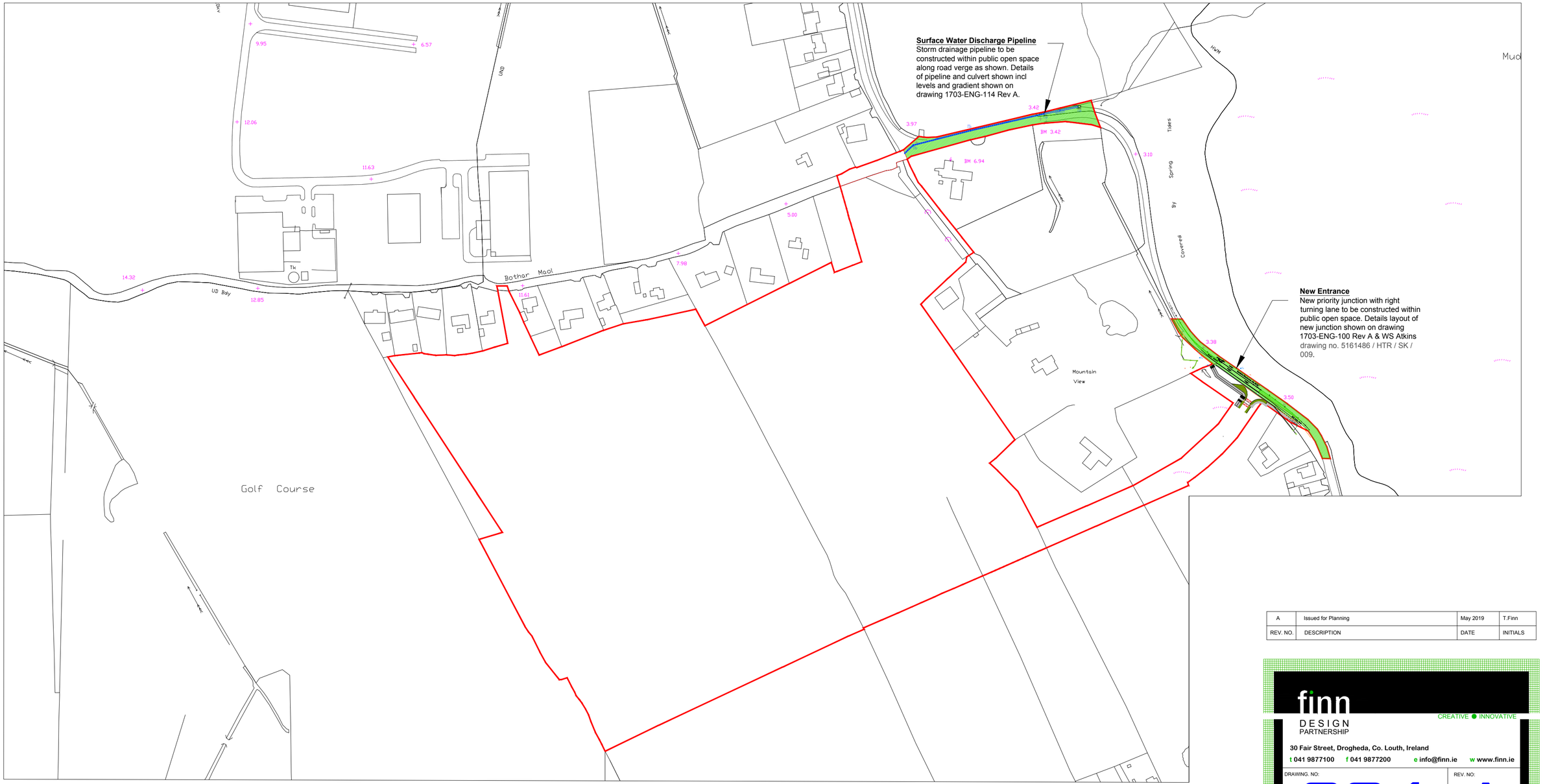
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

ARCHITECTURE ● LANDSCAPE ARCHITECTURE ● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT



01
02 Site Location - Areas under Louth Co Council Charge
1:2500

N

LEGEND:

Boundary of Proposed Development

Areas where works will be undertaken and which are within Louth Co Council Charge

O.S. SHEET No. 1702-D

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

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CREATIVE ● INNOVATIVE
30 Fair Street, Drogheda, Co. Louth, Ireland
t 041 9877100 f 041 9877200 e info@finn.ie w www.finn.ie

DRAWING. NO: 004
REV. NO: A

ENG

TITLE: Proposed Works on Lands within Louth Co Council Charge

PROJECT: Residential Development @ Haggardstown, Bloackrock, Dundalk, Co. Louth

CLIENT: Kingsbridge Consultancy Ltd
1st Floor, Block 1, Quayside Business Park
Dundalk, Co Louth

SCALE: 1:1000 DRAWN: -

DATE: May 2019 CHECKED: P.Coyle

STATUS: Planning Permission

JOB NO: 1703

Key Plan

NOTES:

MAXIMUM ROAD GRADIENT SHALL BE LESS THAN 1:20 (5%). IN CASES WHERE IT IS NECESSARY BECAUSE OF SITE TOPOGRAPHY GRADIENT HAVE BEEN INCREASED TO OF 1:12 (8.3%) FOR SHORT DISTANCES.
ROADS WILL HAVE CROSS FALL OF 2.5%. ROAD LIMIT IS 30KM/HR.

INTERNAL ROADS INCLUDE RESTRICTIVE ROAD BENDS AND VERTICAL TRAFFIC CALMING MEASURES TO PROMOTE LOW VEHICULAR SPEEDS .

ROADS 1 AND 2 PROVIDE THE MAIN ACCESS AND EGRESS TO ALL THE REMAINING STREETS INCLUDING HOME ZONES.
A COMBINATION OF VERTICAL DEFLECTIONS, FOOTPATHS TO BOTH SIDES, SHARED SURFACES (RAISED AND COLOURED) AND STREET PLANTING WILL PROVIDE THE PERCEPTION OF A NARROW STREET.
THE VERTICAL DEFLECTION ON ROAD NO.2 IS DESIGNED ACCORDING TO THE TRAFFIC MANAGEMENT GUIDELINES (DTTAS, 2012) AND WILL CONSIST OF RAISED SPEED CUSHIONS BETWEEN THE INSET KERBS TO SLOW TRAFFIC,

THE STREET LAYOUT PROVIDES PERMEABILITY FOR PEDESTRIANS AND CYCLISTS ALONG STREETS AND THROUGH OPEN SPACES

MEASURES HAVE BEEN INCLUDED TO REDUCE THE DOMINANCE OF THE VEHICLES IN FAVOUR OF PEDESTRIANS AND CYCLISTS.

STREET TREES WILL PROMOTE A SENSE OF ENCLOSURE ON ALL ESTATE ROADS HAVING A TRAFFIC CALMING EFFECT AND WILL ALSO ACT AS A BUFFER TO TRAFFIC NOISE AND POLLUTION.
LOWER PLANTING WILL BE USED IN VERGES AND BEDS ADJACENT TO THE ROADS.

STREET LIGHTING HAS BEENN DESIGNED IN ACCORDANCE WITH BS5489 CLASS 4 AND INCLUDES LED LUMINAIRES ON STANDARDS.

TACTILE PAVING WILL BE PLACED ON THE FOOTPATHS AT ALL CROSSING POINTS AND JUNCTIONS IN COMPLIANCE WITH SECTION 13.3 OF THE TRAFFIC MANAGEMENT GUIDELINES (2003)

SIGNAGE AND LINE MARKING THROUGHOUT THE ESTATE WILL BE IN ACCORDANCE WITH THE DEPARTMENT OF TRANSPORT TRAFFIC SIGNS MANUAL (2010)
JUNCTION DESIGN.

DESIGN OF THE JUNCTIONS ARE BASED ON REDUCING VEHICLE SPEED THROUGH THE JUNCTIONS WHERE RESTRICTIVE SPEED KERB RADII OF 6.0M HAS BEEN PROVIDED BETWEEN LINK AND LOCAL ROADS AND 3M PROVIDED AT THE JUNCTIONS BETWEEN LOCAL ROADS AND HOME ZONES.

AUTOTRACK SWEPT PATH ANALYSIS BEEN COMPLETED FOR A NUMBER OF THE CRITICAL JUNCTIONS USING A REFUSE TRUCK WHERE THE RESULTS ARE INCLUDED IN DRAWINGS 1703-ENG-145 & 146.

THE SPEED LIMIT OF THE R172 PUBLIC ROADWAY IS 50KM/H WHERE IT ABUTS THE SITE WHERE IT IS TAKEN THAT THE SPEED LIMIT FOR BOTHAR MAOL IS 30KM/H.

UNOBSTRUCTED VISIBILITY SPLAYS ARE PROVIDED AT MAIN ACCESS JUNCTIONS TO THE DEVELOPMENT FROM THE R172. SIGHT LINES OF 65.00M X 2.4 X 1.05 WILL BE PROVIDED IN ACCORDANCE WITH THE TECHNICAL NOTE PREPARED BY ATKINS DATED 8TH FEBRUARY 2018.

VISIBILITY SPLAYS HAVE BEEN ASSESSED FOR EACH PROPOSED JUNCTION BETWEEN THE ESTATE ROADS AND THE EXISTING PUBLIC ROADS ACCORDING TO DMURS 2013.

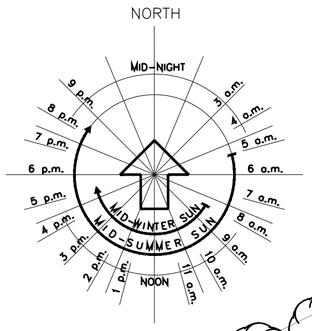
FOOTPATHS SHALL NOT BE LESS THAN 1.8M AND WILL BE PROVIDED THROUGHOUT THE DEVELOPMENT WHERE CONNECTIONS WILL BE PROVIDED TO TIE-IN TO EXISTING EXTERNAL PEDESTRIAN PATHS.

SHARED SURFACES WILL BE UTILIZED AT AT A NUMBER OF JUNCTIONS WITHIN THE HOME ZONES WHERE THE ROAD SURFACE WITH THE ZONES SHALL BE RAISED 75MM ABOVE THE CARRIAGEWAY WITH 1:15 RAMPS PAINTED WITH TRIANGULAR MARKINGS. DISTINGUISHING COLORED SURFACES WILL BE USED TO HIGHLIGHT SHARED SURFACE AND FLUSH KERBS WILL BE USED HELP MOVEMENT WITH THE AREAS.

DEDICATED PEDESTRIAN AND CYCLIST CROSSING POINTS ARE PROVIDED THROUGHOUT THE SCHEME AND AREA LOCATED TO PROVIDE THE SHORTEST ROUTE THROUGH THE DEVELOPMENT AND TO THE MAIN EXTERNAL ACCESS/CONNECTION POINTS.

ALL CROSSINGS ARE PROVIDED WITH EITHER DROPPED KERBS OR A RAISED FLAT TOP TREATMENT TO GIVE THE SENSE OF PEDESTRIAN/CYCLIST PRIORITY.

ALL INFORMAL PEDESTRIAN CROSSING FACILITIES ARE AT LEAST 2.0M WIDE.



Road Construction Thru Wetland Area

A low impact road building technique shall be used for the road construction through the wetlands area. It shall consist of Macadam wearing course, base course and roadbase on capping layer laid to crossfalls on geogrid matting on crushed rock on terram.

Construction shall be carried out in one phase at a time to avoid critical breeding and rearing seasons and when activities will have the least impacts on wetland habitat (e.g., winter or dry periods).

Erosion control measures shall be installed and maintained during the construction period.

Adequate drainage culverts (900mm Ø) shall be installed under the road construction to maintain water flows on either side of road construction.

All road drainage shall pass through silt trap and class 1 bypass separator prior to discharge to weltand area. (Ref to Drwg No 1703-ENG-110 RevA).

65.00m x 2.45m x 1.05m forward visibility splay at new entrance. Existing front boundary wall to to front of property shall be removed to achieve visibility.

2.0m wide pedestrian crossing raised 75mm above road surface with tactile paving at both ends.

3# vehicular entrances shall be provided from new access roadway into adjoining lands as shown.

Vertical alignment of existing road carriageway shall be raised as per longitudinal section Public Roadway R172. Carriageway shall incorporate new right turning lane with ghost islands as shown. New priority junction layout as per WS Atkins drawing no. 5161486 / HTR / SK / 009 included as Appendix A in Engineering & Services Report

Section of existing front boundary wall to adjoining residential property to be re-aligned to provided visibility splay for new entrance.

Main entrance roadway to incorporate speed reducing measure where the horizontal width of the carriageway is reduced to 2.70m single carriageway. Narrowing to include vertical alignment change where a 75mm high ramp shall be provided at both ends.

Road access point to adjoining residentially zoned lands to the South of the proposed development.

Refer to Drawing 1703-Eng-145 & 146 for Autotrack Analysis for Refuse Truck.

01 / 101 Entrance Road Layout (Road 1)
SCALE 1:500

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 / 6m — ROAD GRADIENT / ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING NO: 100 REV NO: A

ENG

TITLE: Service Roadways & Pavings Main Entrance Roadway

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd 1st Floor Quayside Business Park Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: P.Coyle

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
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2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
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6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

CIVIL, STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

NOTES:

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AUTOTRACK SWEPT PATH ANALYSIS BEEN COMPLETED FOR A NUMBER OF THE CRITICAL JUNCTIONS USING A REFUSE TRUCK WHERE THE RESULTS ARE INCLUDED IN DRAWINGS 1703-ENG-145 & 146.

THE SPEED LIMIT OF THE R172 PUBLIC ROADWAY IS 50KM/H WHERE IT ABUTS THE SITE WHERE IT IS TAKEN THAT THE SPEED LIMIT FOR BOTHAR MAOL IS 30KM/H.

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ALL CROSSINGS ARE PROVIDED WITH EITHER DROPPED KERBS OR A RAISED FLAT TOP TREATMENT TO GIVE THE SENSE OF PEDESTRIAN/CYCLIST PRIORITY.

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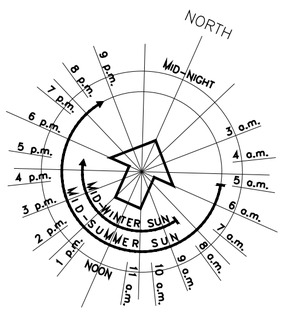
REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

01 Service Roadways & Pavings-Zone 1
102
SCALE 1:500



LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 / 6m — ROAD GRADIENT / ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

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Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 101 REV. NO: A

ENG

TITLE: Service Roadways & Pavings Zone 1

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd, 1st Floor Quayside Business Park, Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: P.Coyle

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

CIVIL, STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

ZONE 3 REFER TO DRAWING 1703-Eng-103

ZONE 1 REFER TO DRAWING 1703-Eng-101

Car Park 6

Road 12

Road 13

Road 14

Road 15

NORTH

MID-NIGHT

MID-SUMMER SUN

NOON

Key Plan

NOTES:

MAXIMUM ROAD GRADIENT SHALL BE LESS THAN 1:20 (5%). IN CASES WHERE IT IS NECESSARY BECAUSE OF SITE TOPOGRAPHY GRADIENT HAVE BEEN INCREASED TO OF 1:12 (8.3%) FOR SHORT DISTANCES.
ROADS WILL HAVE CROSS FALL OF 2.5%. ROAD LIMIT IS 30KM/HR.

INTERNAL ROADS INCLUDE RESTRICTIVE ROAD BENDS AND VERTICAL TRAFFIC CALMING MEASURES TO PROMOTE LOW VEHICULAR SPEEDS .

ROADS 1 AND 2 PROVIDE THE MAIN ACCESS AND EGRESS TO ALL THE REMAINING STREETS INCLUDING HOME ZONES.
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STREET LIGHTING HAS BEENN DESIGNED IN ACCORDANCE WITH BS5489 CLASS 4 AND INCLUDES LED LUMINAIRES ON STANDARDS.

TACTILE PAVING WILL BE PLACED ON THE FOOTPATHS AT ALL CROSSING POINTS AND JUNCTIONS IN COMPLIANCE WITH SECTION 13.3 OF THE TRAFFIC MANAGEMENT GUIDELINES (2003)

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LEGEND:

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- ROAD CENTRELINE
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- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 — ROAD GRADIENT
- 6m — ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
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- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
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- TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

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DRAWING. NO: 102 REV. NO: A

ENG

TITLE: Service Roadways & Pavings Zone 2

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk.

CLIENT: Kingsbridge Consultancy Ltd !st Floor Quayside Business Park Mill St, Dundalk, Co Louth

SCALE: 1:500 @ A1 DRAWN: P.Coyle

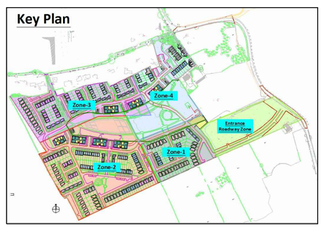
DATE: November 2018 CHECKED: -

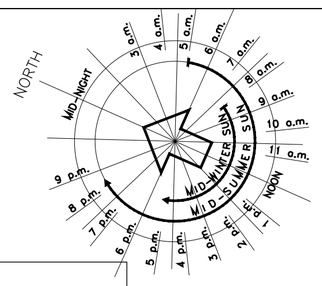
STATUS: Planning Permission

JOB NO: 1703

01 / 103 Service Roadways & Pavings-Zone 2
SCALE 1:500

Key Plan





NOTES:

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- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

ZONE 4 REFER TO DRAWING 1703-Eng-104

ZONE 2 REFER TO DRAWING 1703-Eng-102

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

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Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 103 REV. NO: A

ENG

TITLE: Service Roadways & Pavings Zone 3

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk.

CLIENT: Kingsbridge Consultancy Ltd !st Floor Quayside Business Park Mill St, Dundalk, Co Louth

SCALE: 1:500 @ A1 DRAWN: P.Coyle

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
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6. Sizes of proprietary items shall be checked with manufacturer.
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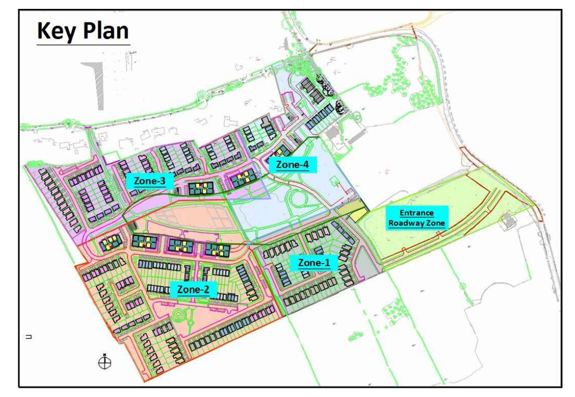
CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

01 / 103 Service Roadways & Pavings-Zone 3
SCALE 1:500



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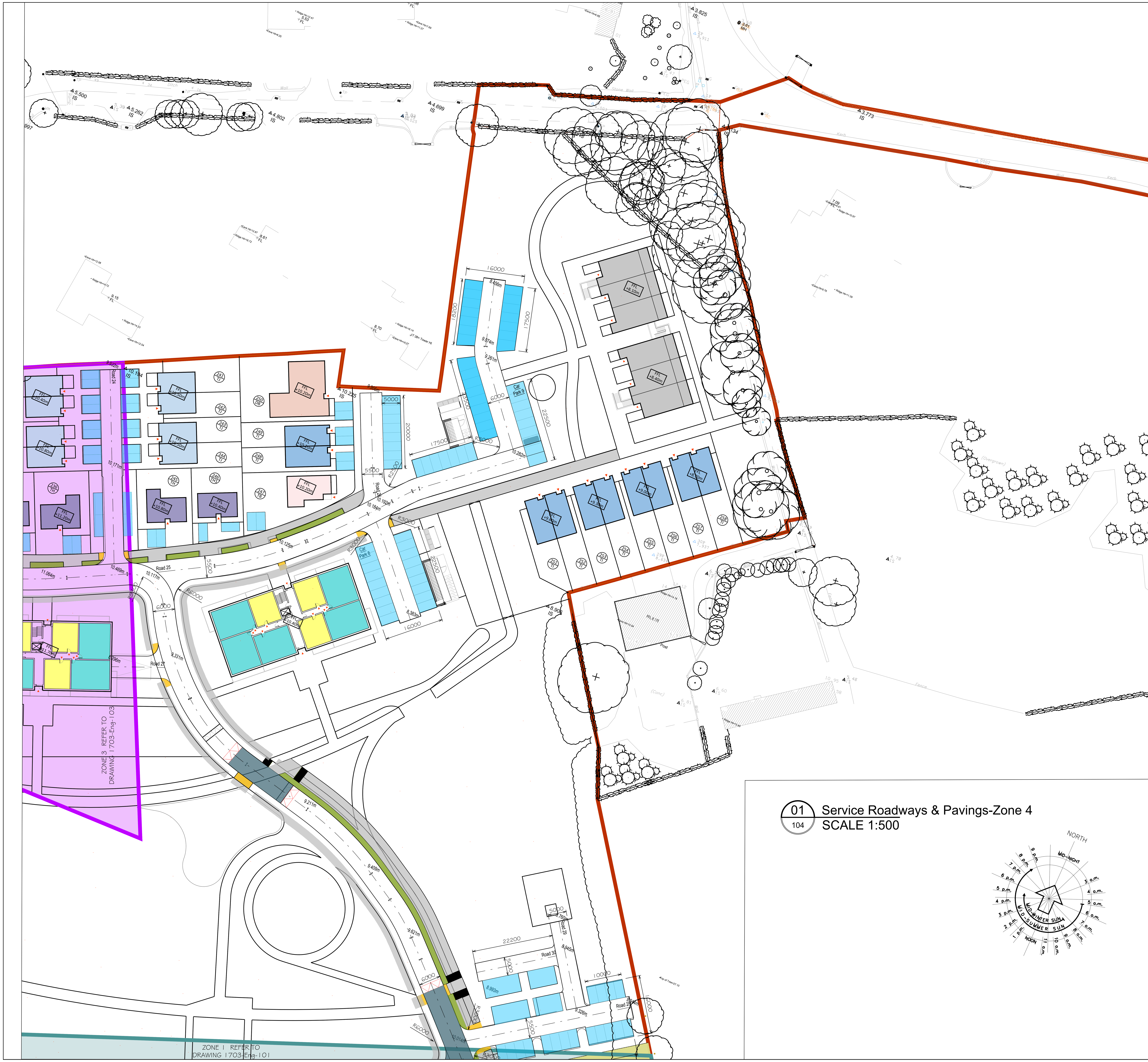

01 / 104 Service Roadways & Pavings-Zone 4
SCALE 1:500

LEGEND:

	ROAD EDGE (IN-SITU KERB)	1:40	ROAD GRADIENT
	FOOTPATH EDGE	6m	ROAD DIMENSION
	ROAD CENTRELINE		PERMEABLE PAVING TO CAR PARKS 1-8
	ROAD CHANNEL LINE		ROAD SURFACE
	ROAD RAMP		FOOTPATH SURFACE
	DROPPED KERB WITH TACTILE PAVING		RAISED TABLE
	CORDUROY PAVING		SHARED SURFACE - VEHICULAR (HOMEZONE)
	CAR DRIVEWAYS		PARKING
GFL 99.99	GROUND FLOOR LEVEL		GRASS/PLANTING
			TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

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DRAWING. NO: 104
REV. NO: A

ENG

TITLE: Service Roadways & Pavings Zone 4

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd, 1st Floor Quayside Business Park, Mill Street, Dundalk, Co Louth.

SCALE:	1:500 @ A1	DRAWN:	P.Coyle
DATE:	November 2018	CHECKED:	-

STATUS: Planning Permission

JOB NO: 1703

NOTES
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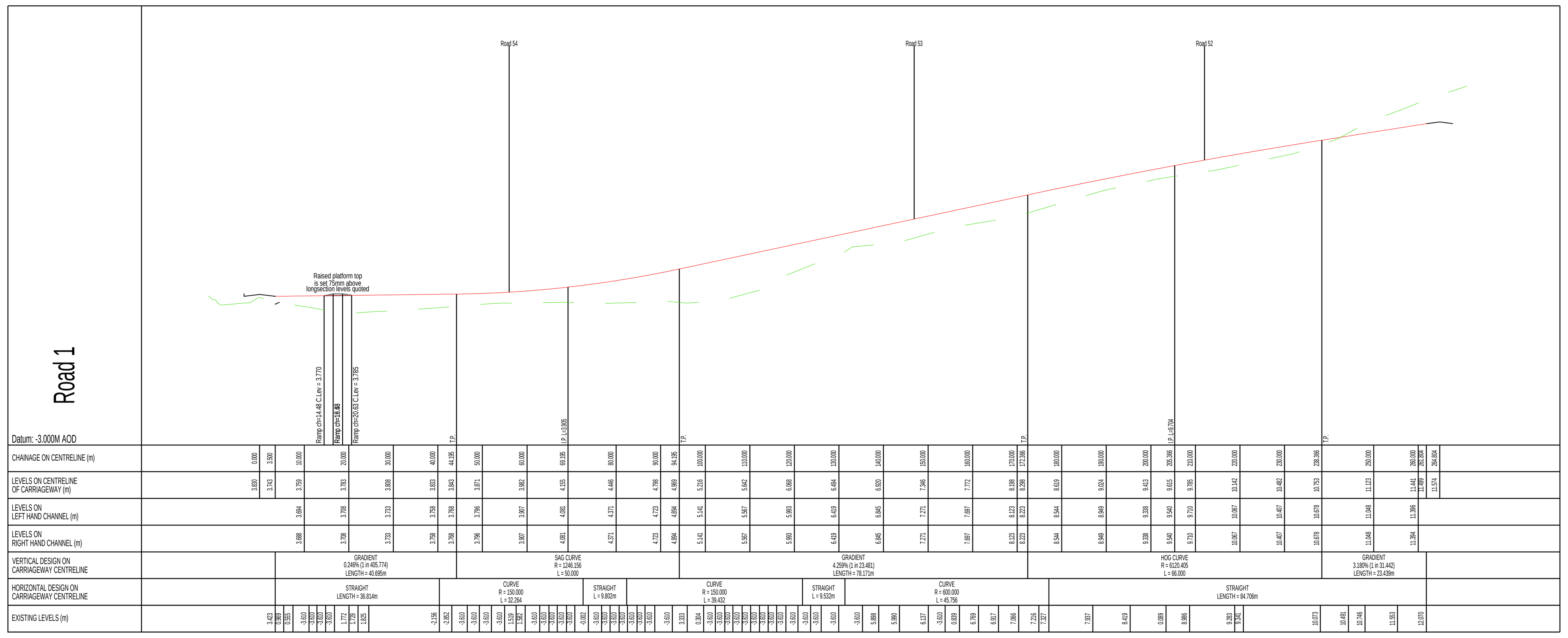
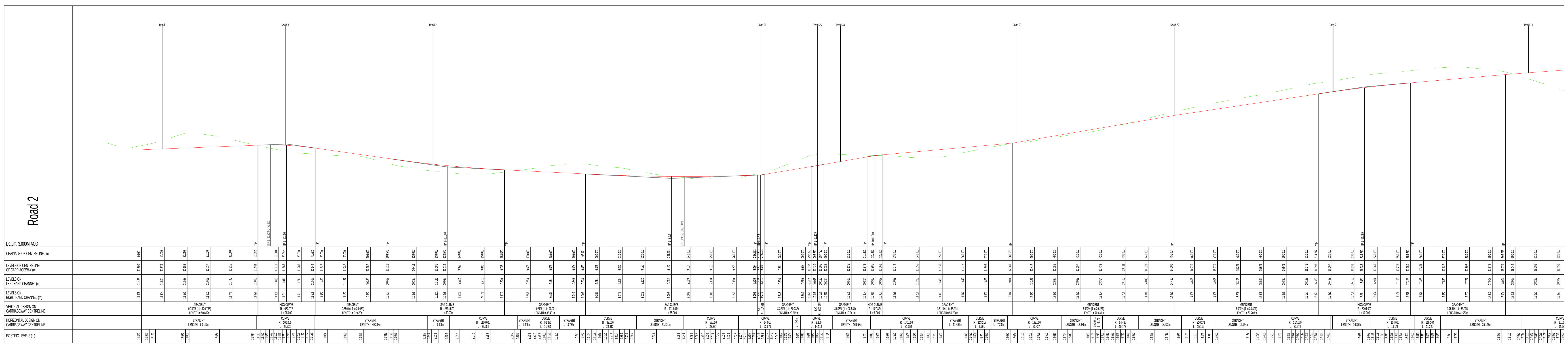
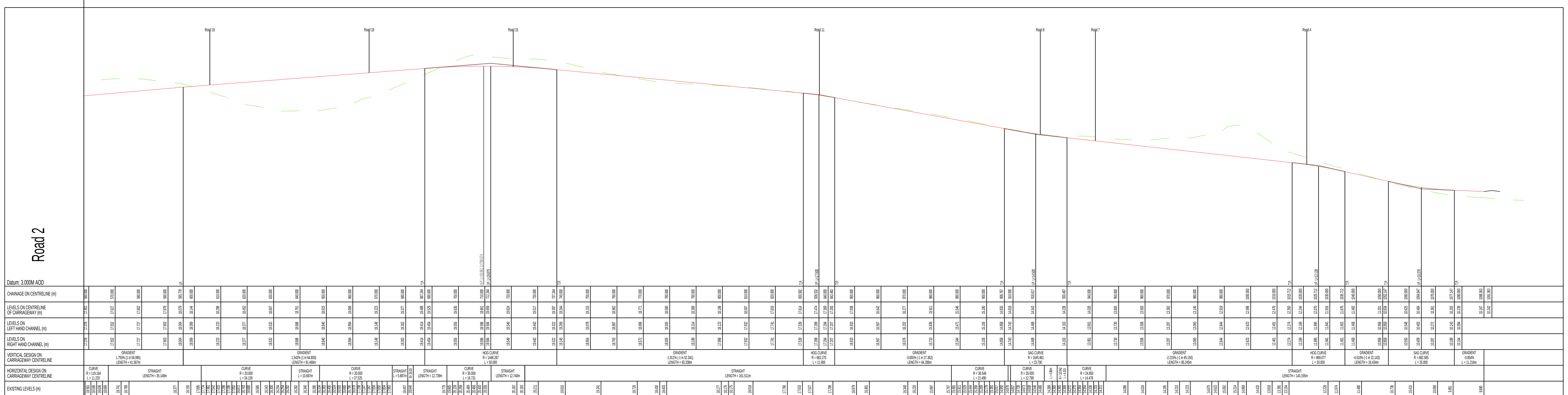
● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT





01 / 105 Road 2 Section Part 1
SCALE 1:1000



02 / 105 Road 2 Section Part 2
SCALE 1:1000

LEGEND:

Existing Ground Level

Proposed Road Alignment

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

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t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

eng

DRAWING. NO: 105

REV. NO: A

TITLE: Roadways Longitudinal Sections (Sheet 1 of 4)

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd, 1st Floor Quayside Business Park, Mill Street, Dundalk, Co Louth.

SCALE: 1:1000 @ A1

DRAWN: A. Armstrong

DATE: November 2018

CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

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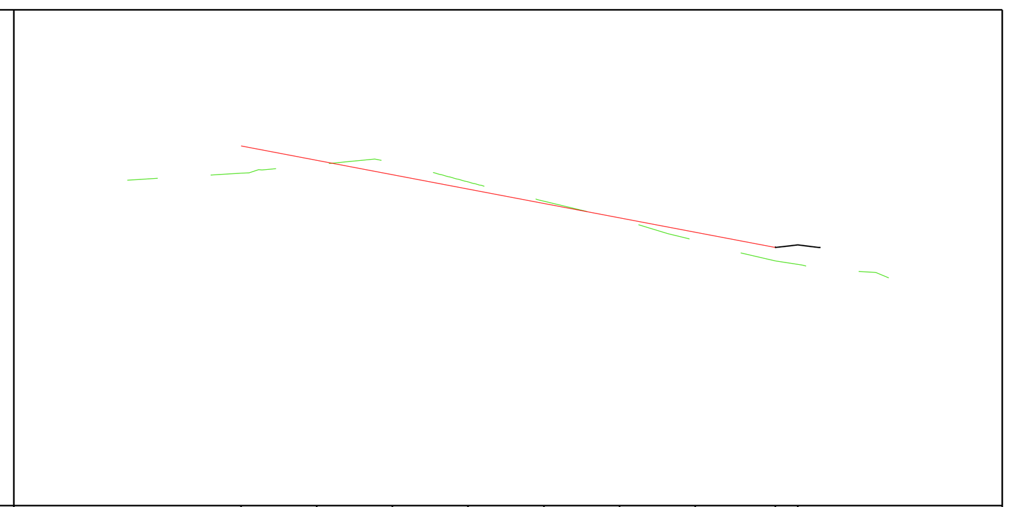
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

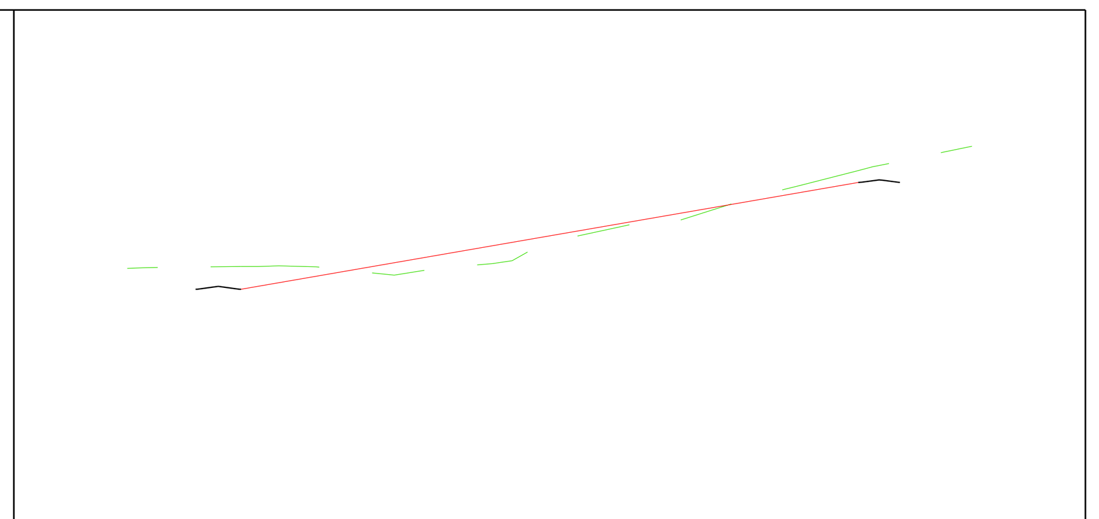
Road 3



Datum: 5.000M AOD

Row	Values
CHAINAGE ON CENTRELINE (m)	0.000, 10.000, 20.000, 30.000, 40.000, 50.000, 60.000, 70.563, 73.563
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	14.500, 14.120, 13.739, 13.359, 12.979, 12.599, 12.218, 11.817, 11.892
LEVELS ON LEFT HAND CHANNEL (m)	14.431, 14.051, 13.671, 13.290, 12.910, 12.530, 12.150
LEVELS ON RIGHT HAND CHANNEL (m)	14.431, 14.051, 13.671, 13.290, 12.910, 12.530, 12.150
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT -3.803% (-1 in 26.297) LENGTH = 70.563m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 23.777m; CURVE R = 20.000 L = 15.443; STRAIGHT LENGTH = 31.343m
EXISTING LEVELS (m)	13.783, 13.874, 14.096, 14.157, 14.000, 13.886, 13.783, 13.679, 13.575, 13.473, 13.373, 13.276, 13.179, 13.082, 12.873, 12.550, 12.186, 12.045, 11.717, 11.463

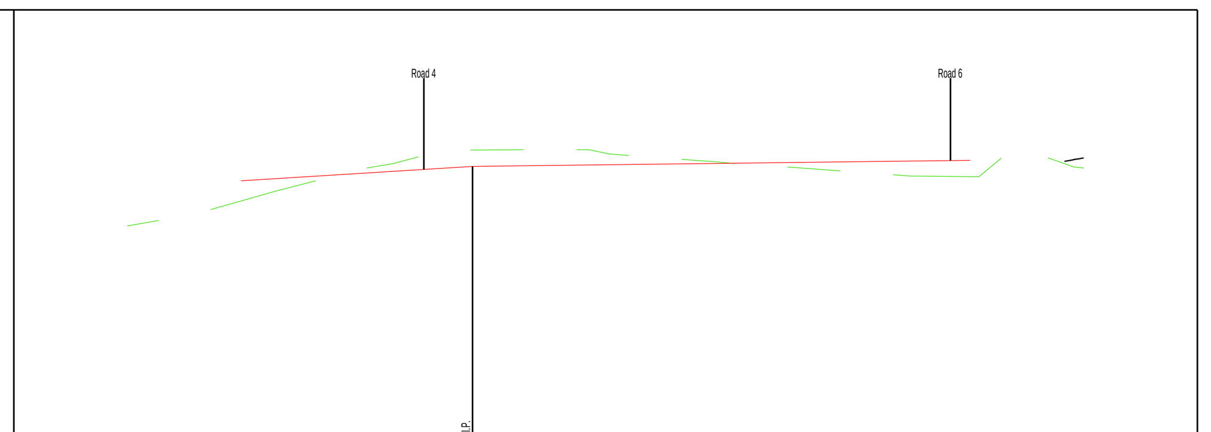
Road 4



Datum: 6.000M AOD

Row	Values
CHAINAGE ON CENTRELINE (m)	0.000, 3.000, 10.000, 20.000, 30.000, 40.000, 50.000, 60.000, 70.000, 80.000, 84.554, 87.304
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	12.209, 12.134, 12.376, 12.722, 13.067, 13.413, 13.759, 14.105, 14.451, 14.797, 14.954, 15.023
LEVELS ON LEFT HAND CHANNEL (m)	12.307, 12.653, 12.999, 13.344, 13.690, 14.036, 14.382, 14.728
LEVELS ON RIGHT HAND CHANNEL (m)	12.307, 12.653, 12.999, 13.344, 13.690, 14.036, 14.382, 14.728
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 3.459% (1 in 28.913) LENGTH = 81.554m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 81.554m
EXISTING LEVELS (m)	12.736, 12.735, 12.749, 12.727, 12.507, 12.657, 12.814, 12.890, 13.333, 13.860, 13.764, 14.574, 14.859, 15.268

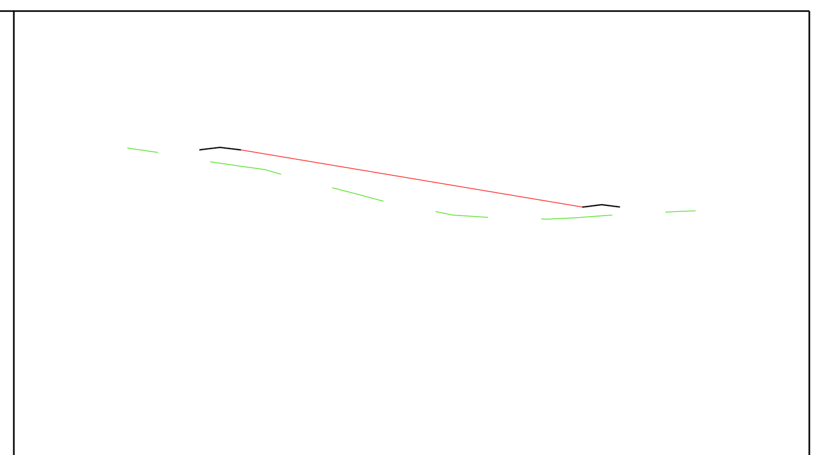
Road 5



Datum: 8.000M AOD

Row	Values
CHAINAGE ON CENTRELINE (m)	0.000, 10.000, 20.000, 30.622, 40.000, 50.000, 60.000, 70.000, 80.000, 90.000, 96.404
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	14.725, 14.848, 14.971, 15.102, 15.126, 15.151, 15.176, 15.201, 15.226, 15.251, 15.267
LEVELS ON LEFT HAND CHANNEL (m)	14.656, 14.779, 14.903, 15.034, 15.057, 15.082, 15.107, 15.132, 15.157, 15.182, 15.198
LEVELS ON RIGHT HAND CHANNEL (m)	14.656, 14.779, 14.903, 15.034, 15.057, 15.082, 15.107, 15.132, 15.157, 15.182, 15.198
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 1.232% (1 in 81.154) LENGTH = 30.622m; GRADIENT 0.250% (1 in 400.575) LENGTH = 65.781m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 96.404m
EXISTING LEVELS (m)	14.191, 14.460, 15.037, 15.183, 15.543, 15.548, 15.435, 15.220, 15.179, 15.090, 14.956, 14.850, 14.838

Road 6



Datum: 7.000M AOD

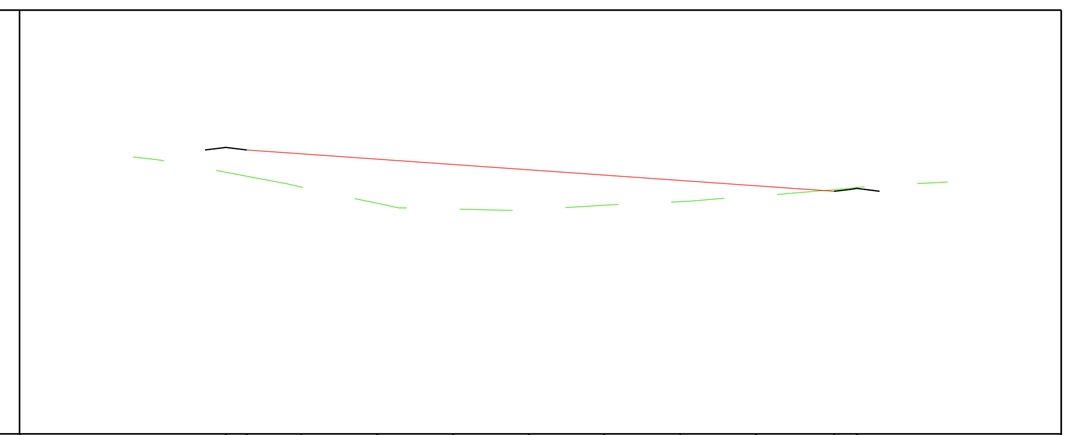
Row	Values
CHAINAGE ON CENTRELINE (m)	0.000, 2.750, 10.000, 20.000, 30.000, 40.000, 47.844, 50.344
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	15.260, 15.191, 14.949, 14.615, 14.281, 13.947, 13.686, 13.748
LEVELS ON LEFT HAND CHANNEL (m)	14.887, 14.553, 14.219, 13.885
LEVELS ON RIGHT HAND CHANNEL (m)	14.887, 14.553, 14.219, 13.885
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT -3.339% (-1 in 29.949) LENGTH = 45.094m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 45.094m
EXISTING LEVELS (m)	14.764, 14.675, 14.495, 14.027, 13.823, 13.477, 13.416, 13.368, 13.406

Road 7

Datum: 7.000M AOD

Row	Values
CHAINAGE ON CENTRELINE (m)	0.000, 3.000, 7.264, 10.000, 20.000, 30.000, 40.000, 47.328
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	13.999, 13.924, 13.790, 13.777, 13.730, 13.682, 13.635, 13.600
LEVELS ON LEFT HAND CHANNEL (m)	13.715, 13.702, 13.655, 13.607, 13.560, 13.525
LEVELS ON RIGHT HAND CHANNEL (m)	13.715, 13.702, 13.655, 13.607, 13.560, 13.525
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	G = -3.15%; GRADIENT -0.474% (-1 in 210.910) LENGTH = 40.064m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	CURVE R = 12.000 L = 19.534; L = 4.83m; CURVE R = 17.500 L = 15.591; L = 3.99m
EXISTING LEVELS (m)	14.360, 14.425, 14.416, 14.409, 14.405, 14.404, 14.406, 14.412, 14.420, 14.440, 14.588, 14.625, 14.684, 14.742, 14.800, 14.851, 14.890, 14.923, 14.959, 15.031

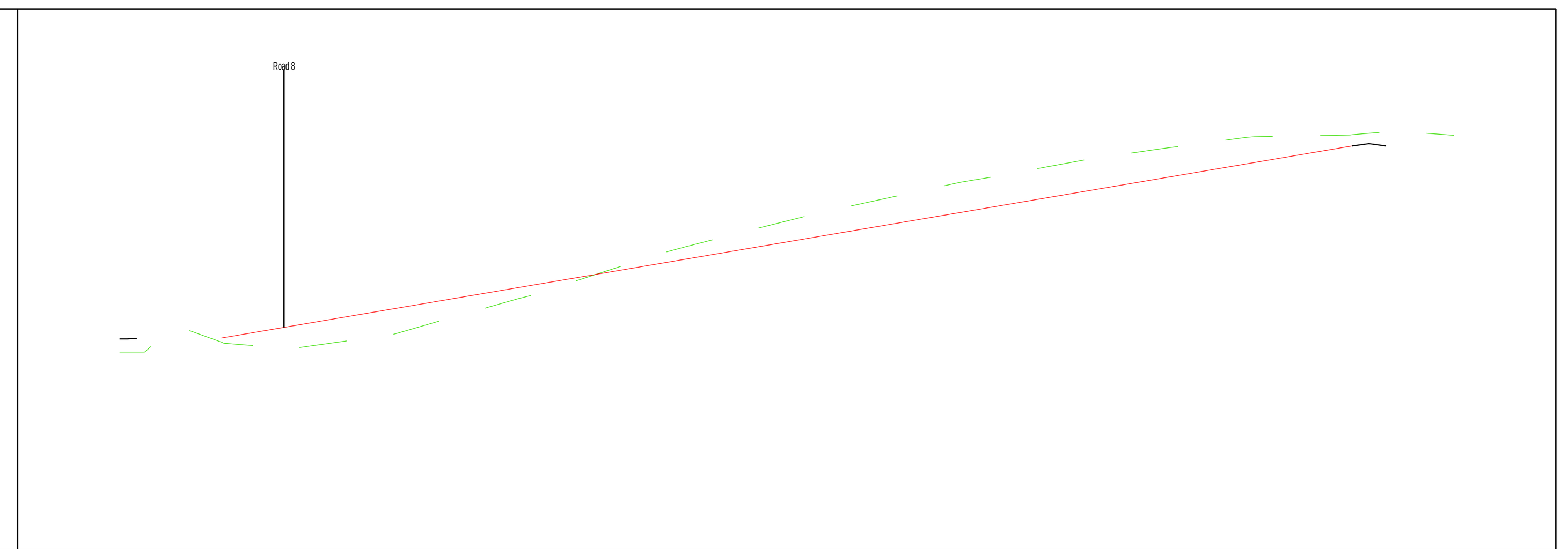
Road 8



Datum: 8.000M AOD

Row	Values
CHAINAGE ON CENTRELINE (m)	0.000, 2.750, 10.000, 20.000, 30.000, 40.000, 50.000, 60.000, 70.000, 80.345, 83.345
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	15.581, 15.513, 15.410, 15.269, 15.128, 14.987, 14.846, 14.705, 14.564, 14.419, 14.494
LEVELS ON LEFT HAND CHANNEL (m)	15.342, 15.201, 15.060, 14.919, 14.653, 14.512, 14.371
LEVELS ON RIGHT HAND CHANNEL (m)	15.342, 15.076, 14.935, 14.919, 14.653, 14.637, 14.496
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT -1.410% (-1 in 70.929) LENGTH = 77.595m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 65.596m; CURVE R = 25.000 L = 6.501; L = 5.50m
EXISTING LEVELS (m)	14.820, 14.649, 14.079, 13.980, 13.909, 14.072, 14.089, 14.161, 14.295, 14.328, 14.344, 14.460

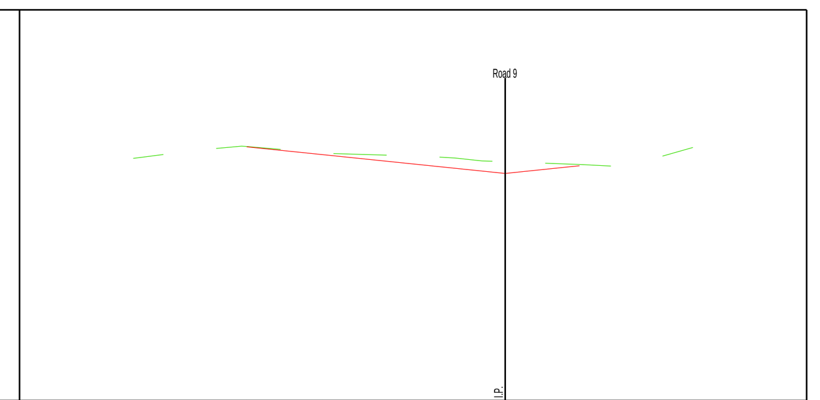
Road 9



Datum: 9.000M AOD

Row	Values
CHAINAGE ON CENTRELINE (m)	0.000, 10.000, 20.000, 30.000, 40.000, 50.000, 60.000, 70.000, 80.000, 90.000, 100.000, 110.000, 120.000, 130.000, 140.000, 150.000, 160.000, 166.506, 169.006
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	15.267, 15.607, 15.948, 16.288, 16.629, 16.969, 17.310, 17.651, 17.991, 18.332, 18.672, 19.013, 19.354, 19.694, 20.035, 20.375, 20.716, 20.938, 21.000
LEVELS ON LEFT HAND CHANNEL (m)	15.198, 15.538, 15.879, 16.220, 16.560, 16.901, 17.241, 17.582, 17.922, 18.263, 18.604, 18.944, 19.285, 19.625, 19.966, 20.307, 20.647
LEVELS ON RIGHT HAND CHANNEL (m)	15.198, 15.538, 15.879, 16.220, 16.560, 16.901, 17.241, 17.582, 17.922, 18.263, 18.604, 18.944, 19.285, 19.625, 19.966, 20.307, 20.647
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 3.406% (1 in 29.361) LENGTH = 166.506m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 166.506m
EXISTING LEVELS (m)	15.149, 15.053, 14.888, 15.208, 15.333, 15.441, 16.433, 16.556, 17.110, 17.801, 17.950, 18.346, 18.892, 19.103, 19.864, 20.079, 20.524, 20.628, 20.858, 21.185, 21.257

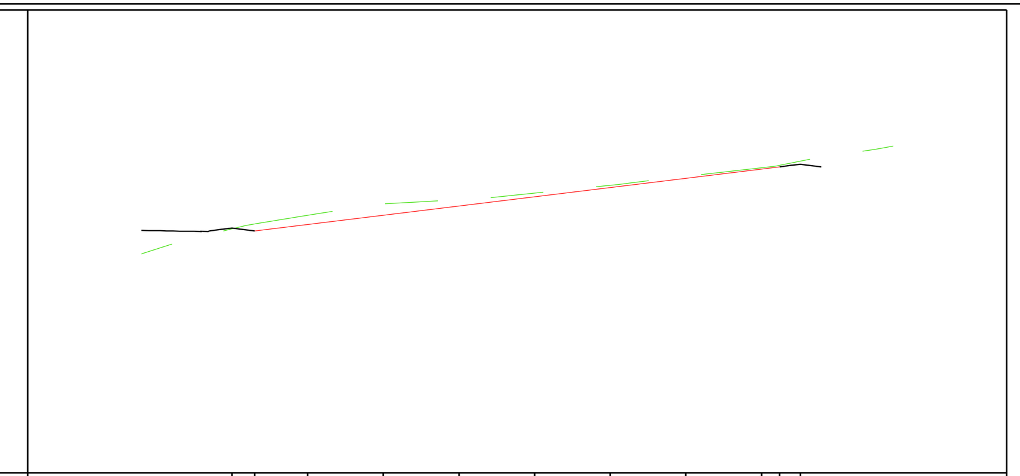
Road 10



Datum: 15.000M AOD

Row	Values
CHAINAGE ON CENTRELINE (m)	0.000, 10.000, 20.000, 30.000, 34.161, 40.000, 43.973
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	21.702, 21.496, 21.291, 21.085, 21.000, 21.120, 21.201
LEVELS ON LEFT HAND CHANNEL (m)	21.639, 21.434, 21.228, 21.023, 20.937, 21.057, 21.139
LEVELS ON RIGHT HAND CHANNEL (m)	21.639, 21.434, 21.228, 21.023, 20.937, 21.057, 21.139
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT -2.054% (-1 in 48.697) LENGTH = 34.161m; GRADIENT 2.050% L = 9.812m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 43.973m
EXISTING LEVELS (m)	21.707, 21.560, 21.526, 21.442, 21.402, 21.330, 21.246

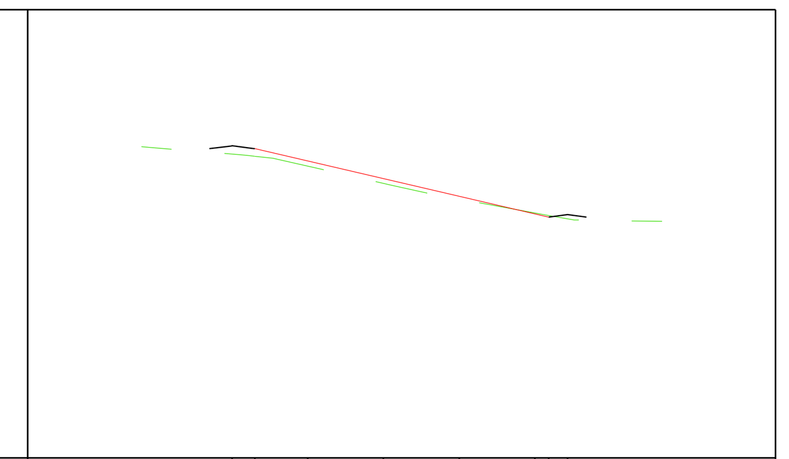
Road 11



Datum: 11.000M AOD

Row	Values
CHAINAGE ON CENTRELINE (m)	0.000, 3.000, 10.000, 20.000, 30.000, 40.000, 50.000, 60.000, 70.000, 72.399, 75.149
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	17.470, 17.395, 17.566, 17.810, 18.055, 18.299, 18.543, 18.788, 19.032, 19.091, 19.160
LEVELS ON LEFT HAND CHANNEL (m)	17.504, 17.749, 17.845, 18.089, 18.481, 18.576, 18.967
LEVELS ON RIGHT HAND CHANNEL (m)	17.503, 17.620, 17.990, 18.261, 18.353, 18.600, 18.975
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 2.444% (1 in 40.915) LENGTH = 69.399m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 69.399m
EXISTING LEVELS (m)	17.581, 17.796, 17.901, 18.093, 18.161, 18.265, 18.556, 18.625, 18.818, 19.132

Road 12



Datum: 12.000M AOD

Row	Values
CHAINAGE ON CENTRELINE (m)	0.000, 3.000, 10.000, 20.000, 30.000, 40.000, 41.815, 44.315
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	20.255, 20.180, 19.854, 19.388, 18.922, 18.456, 18.371, 18.434
LEVELS ON LEFT HAND CHANNEL (m)	19.785, 19.319, 18.853, 18.414
LEVELS ON RIGHT HAND CHANNEL (m)	19.785, 19.319, 18.853, 18.381
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT -4.660% (-1 in 21.459) LENGTH = 38.815m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 38.815m
EXISTING LEVELS (m)	19.979, 19.929, 19.209, 18.956, 18.416

LEGEND:

- Existing Ground Level (green dashed)
- Proposed Road Alignment (red)

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

finn DESIGN PARTNERSHIP — CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO:	106
REV. NO:	A
TITLE:	Roadways Longitudinal Sections (Sheet 2 of 4)
PROJECT:	Residential Development @ Haggardstown, Blackrock, Dundalk
CLIENT:	Kingsbridge Consultancy Ltd, 1st Floor Quayside Business Park, Mill Street, Dundalk, Co Louth.
SCALE:	1:1000 @ A1
DRAWN:	A. Armstrong
DATE:	November 2018
CHECKED:	-
STATUS:	Planning Permission
JOB NO:	1703

eng

NOTES

2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

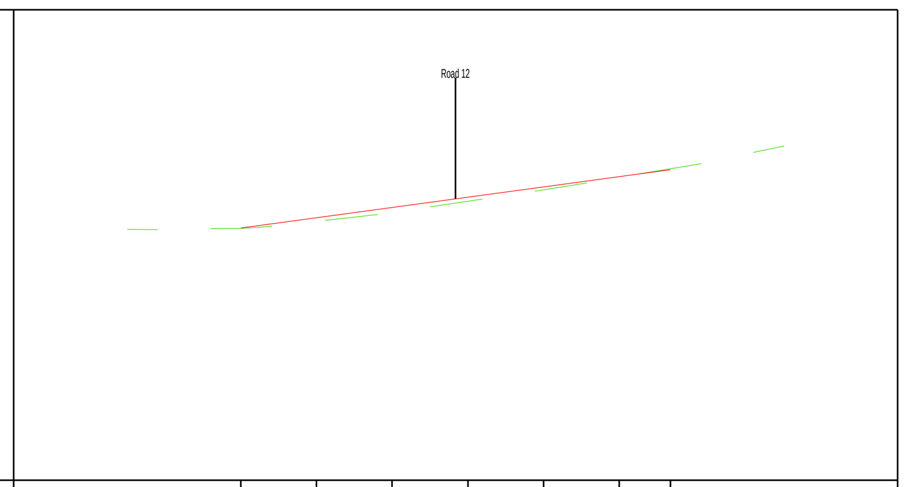
● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

LEGEND:

Existing Ground Level

Proposed Road Alignment

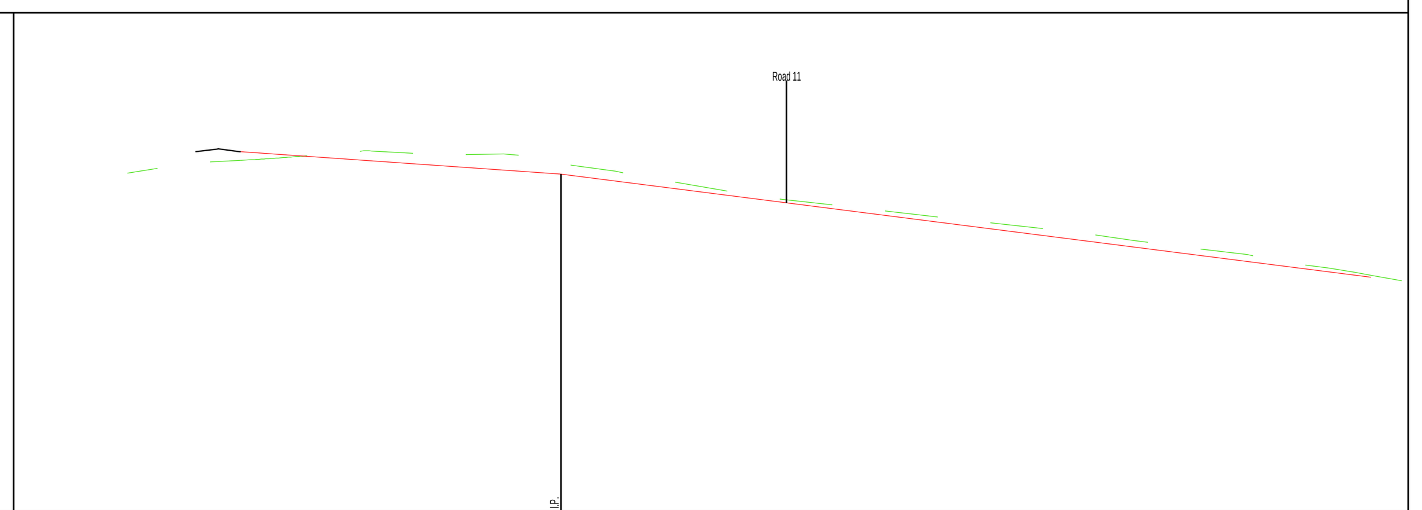
Road 13



Datum: 11.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	10.000	20.000	30.000	40.000	50.000	56.785
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	17.664	17.935	18.207	18.478	18.749	19.021	19.205
LEVELS ON LEFT HAND CHANNEL (m)	17.601	17.873	18.144	18.415	18.687	18.958	19.142
LEVELS ON RIGHT HAND CHANNEL (m)	17.601	17.873	18.144	18.415	18.687	18.958	19.142
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 2.713% (1 in 36.854) LENGTH = 56.785m						
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 56.785m						
EXISTING LEVELS (m)	17.656	17.682	17.980	18.430	18.748	18.922	19.232

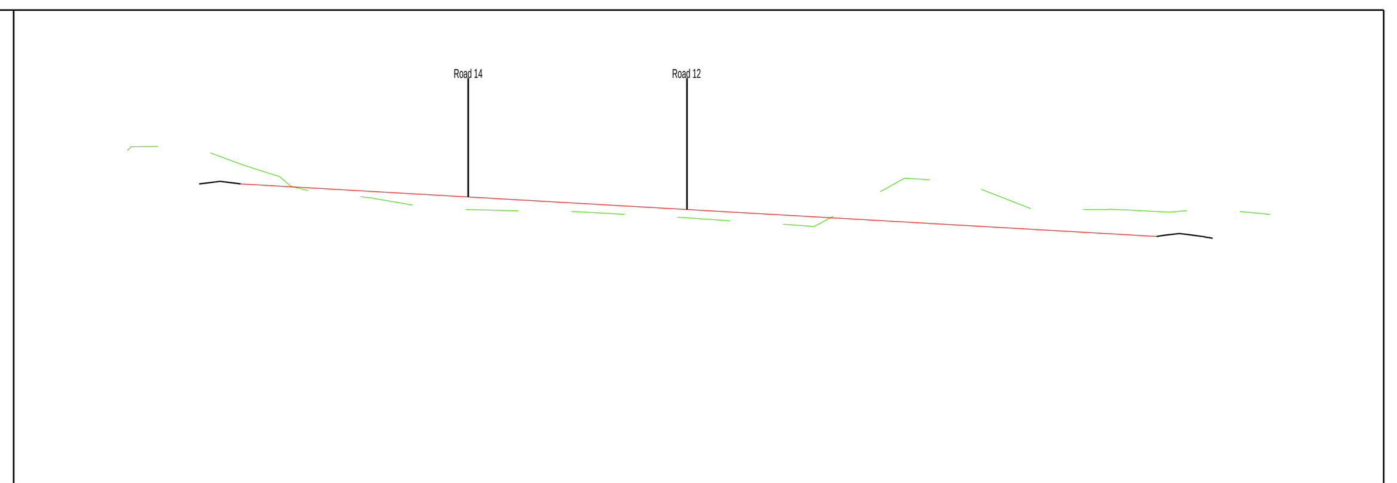
Road 14



Datum: 11.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	3.000	10.000	20.000	30.000	40.000	45.287	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	152.317
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	20.586	20.511	20.413	20.273	20.133	19.993	19.919	19.799	19.544	19.289	19.035	18.780	18.525	18.270	18.015	17.760	17.506	17.251	17.192
LEVELS ON LEFT HAND CHANNEL (m)			20.345	20.078	20.065	19.799	19.725	19.730	19.475	19.221	18.966	18.711	18.456	18.201	17.821	17.566	17.311	17.056	17.123
LEVELS ON RIGHT HAND CHANNEL (m)			20.345	20.205	19.940	19.799	19.850	19.730	19.475	19.221	18.966	18.711	18.456	18.076	17.821	17.567	17.437	17.182	17.123
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT -1.401% (-1 in 71.395) LENGTH = 42.287m	GRADIENT -2.548% (-1 in 39.241) LENGTH = 107.030m																	
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	L = 1.29m	CURVE R = 25.188 L = 15.961	STRAIGHT LENGTH = 132.063m																
EXISTING LEVELS (m)	20.286	20.311	20.339	20.368	20.398	20.430	20.462	20.496	20.541	20.423	20.456	20.371	20.156	19.994	19.847	19.432	19.337	18.824	18.722	18.371	18.165	17.998	17.795	17.525	17.439	17.319	17.247

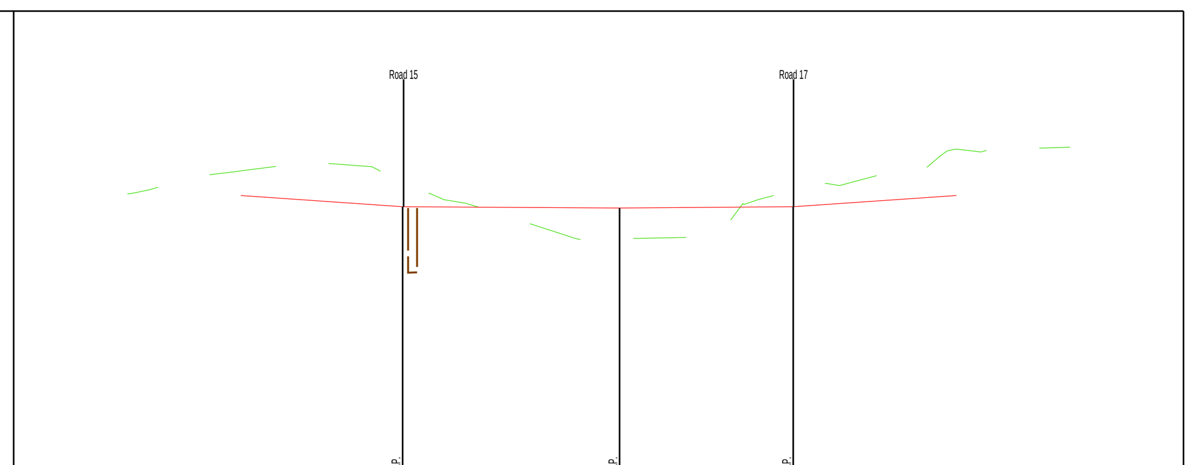
Road 15



Datum: 13.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	2.750	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	123.785	126.785
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	21.000	20.931	20.848	20.733	20.619	20.504	20.389	20.275	20.160	20.045	19.931	19.816	19.701	19.587	19.543	19.618
LEVELS ON LEFT HAND CHANNEL (m)			20.773	20.658	20.544	20.429	20.314	20.200	20.085	19.970	19.856	19.741	19.626	19.520
LEVELS ON RIGHT HAND CHANNEL (m)			20.773	20.658	20.544	20.429	20.314	20.200	20.085	19.970	19.856	19.741	19.626	19.515
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT -1.147% (-1 in 87.202) LENGTH = 121.035m															
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 103.766m	CURVE R = 25.000 L = 13.087	L = 4.18m													
EXISTING LEVELS (m)	21.457	21.123	20.741	20.562	20.369	20.293	20.266	20.200	20.202	20.040	19.852	19.806	20.780	21.078	20.981	20.540	20.239	20.242	20.244	20.248	20.252	20.257	20.204

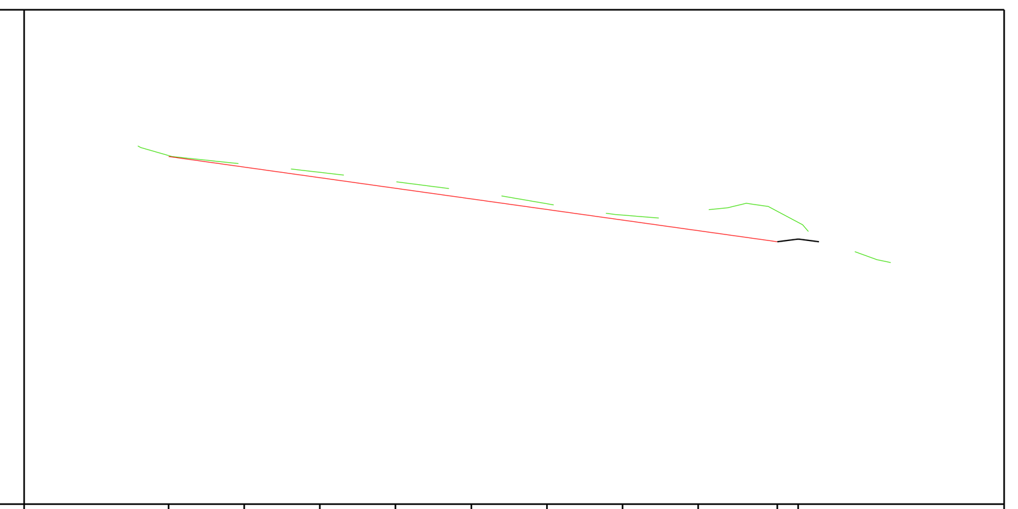
Road 16



Datum: 14.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	10.000	21.380	30.000	40.000	50.036	60.000	70.000	72.997	80.000	90.000	94.541
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	21.300	21.160	21.000	20.990	20.978	20.966	20.981	20.996	21.000	21.098	21.237	21.300
LEVELS ON LEFT HAND CHANNEL (m)	21.231	21.091	20.931	20.921	20.909	20.897	20.912	20.927	20.931	21.029	21.093	21.231
LEVELS ON RIGHT HAND CHANNEL (m)	21.231	21.091	20.931	20.846	20.834	20.822	20.837	20.927	20.931	20.953	21.093	21.231
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT -1.403% (-1 in 71.266) LENGTH = 21.380m	GRADIENT -0.118% (-1 in 847.709) LENGTH = 28.656m	GRADIENT 0.147% (1 in 679.246) LENGTH = 22.961m	GRADIENT 1.393% (1 in 71.812) LENGTH = 21.543m								
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 94.541m											
EXISTING LEVELS (m)	21.945	22.116	22.162	20.060	21.862	21.182	21.096	20.292	20.136	20.202	21.086	21.197	21.606	21.558	21.887	21.882	22.337	22.527

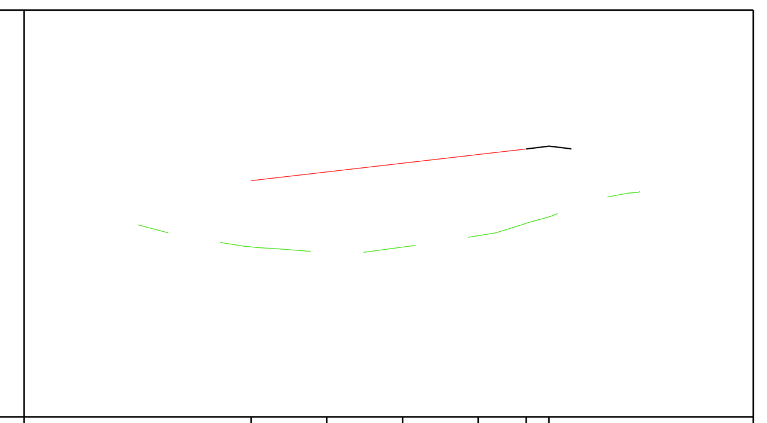
Road 17



Datum: 14.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.419	83.169
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	23.184	22.904	22.624	22.344	22.064	21.784	21.504	21.223	20.932	21.000
LEVELS ON LEFT HAND CHANNEL (m)	23.115	22.835	22.555	22.275	21.995	21.715	21.435	21.155
LEVELS ON RIGHT HAND CHANNEL (m)	23.115	22.835	22.555	22.275	21.995	21.715	21.435	21.155
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT -2.801% (-1 in 35.707) LENGTH = 80.419m									
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 80.419m									
EXISTING LEVELS (m)	23.203	23.009	22.941	22.673	22.557	22.492	22.277	22.169	21.775	21.653	21.556	21.487	21.741	21.824	21.948	21.856

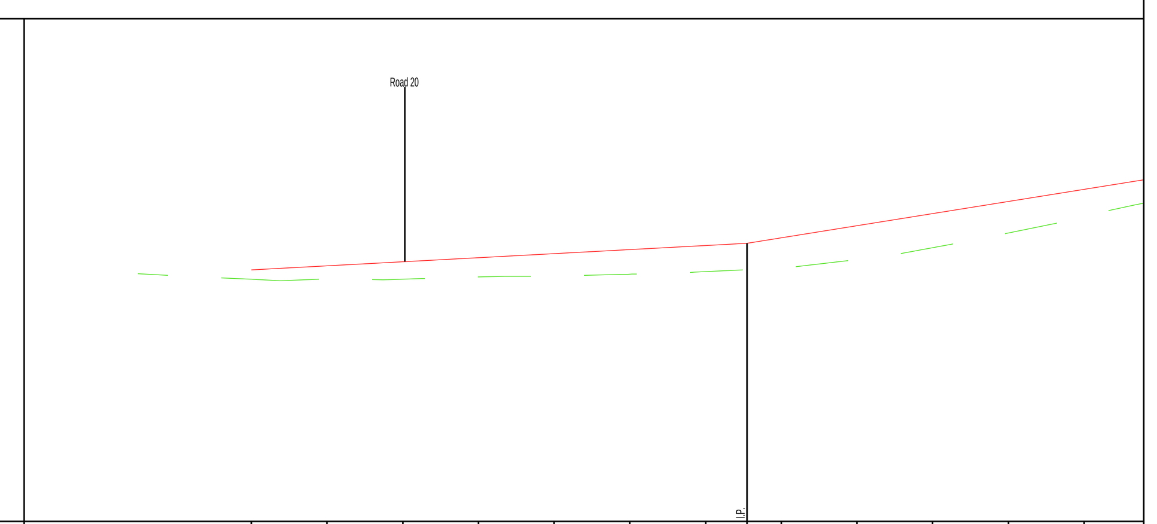
Road 18



Datum: 12.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	10.000	20.000	30.000	38.342	39.342
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	18.250	18.481	18.712	18.943	19.089	19.164
LEVELS ON LEFT HAND CHANNEL (m)	18.181	18.412	18.643			
LEVELS ON RIGHT HAND CHANNEL (m)	18.181	18.412	18.643	18.874		
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 2.309% (1 in 43.300) LENGTH = 36.342m					
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 36.342m					
EXISTING LEVELS (m)	16.503	16.451	16.298	16.617	16.874	17.126

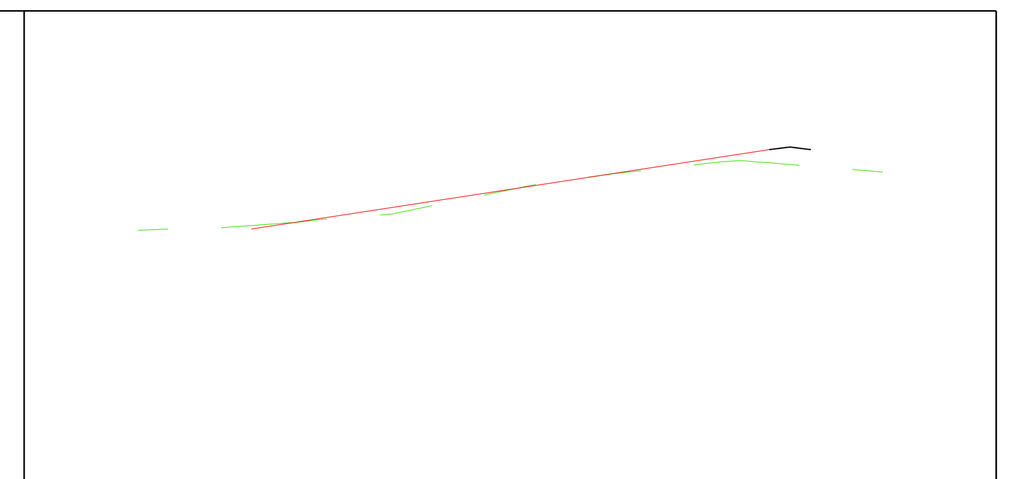
Road 19



Datum: 9.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	10.000	20.000	30.000	40.000	50.000	60.000	65.484	70.000	80.000	90.000	100.000	110.000
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	15.650	15.757	15.864	15.971	16.077	16.184	16.291	16.350	16.494	16.815	17.135	17.455	17.775
LEVELS ON LEFT HAND CHANNEL (m)	15.581	15.688	15.795	15.902	16.009	16.115	16.222	16.281	16.426	16.746	17.066	17.386	17.707
LEVELS ON RIGHT HAND CHANNEL (m)	15.581	15.688	15.795	15.902	16.009	16.115	16.222	16.281	16.426	16.746	17.066	17.386	17.707
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 1.068% (1 in 93.592) LENGTH = 65.484m	GRADIENT 3.203% (1 in 31.225) LENGTH = 56.505m											
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 49.051m	CURVE R = 100.000 L = 14.974	STRAIGHT LENGTH = 57.964m										
EXISTING LEVELS (m)	15.403	15.366	15.416	15.388	15.422	15.480	15.481	15.531	15.537	15.539	15.559	15.578	15.597	15.614	15.631	15.654	15.692	15.947	16.078	16.482	16.935	17.193	17.372

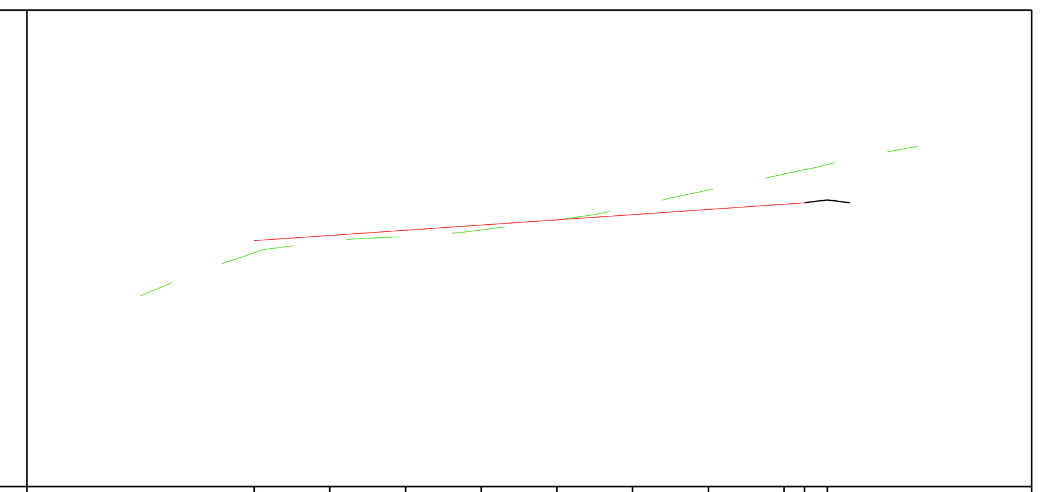
Road 20



Datum: 7.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	10.000	20.000	30.000	40.000	50.000	60.000	68.382	71.132
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	13.697	14.004	14.311	14.619	14.926	15.233	15.540	15.798	15.866
LEVELS ON LEFT HAND CHANNEL (m)	13.634	13.942	14.249	14.556	14.863	15.170	15.478
LEVELS ON RIGHT HAND CHANNEL (m)	13.634	13.942	14.249	14.556	14.738	15.045	15.353
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 3.072% (1 in 32.552) LENGTH = 68.382m								
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 68.382m								
EXISTING LEVELS (m)	13.795	13.888	13.959	14.000	14.097	14.845	14.955	15.163	15.476	15.515	15.452

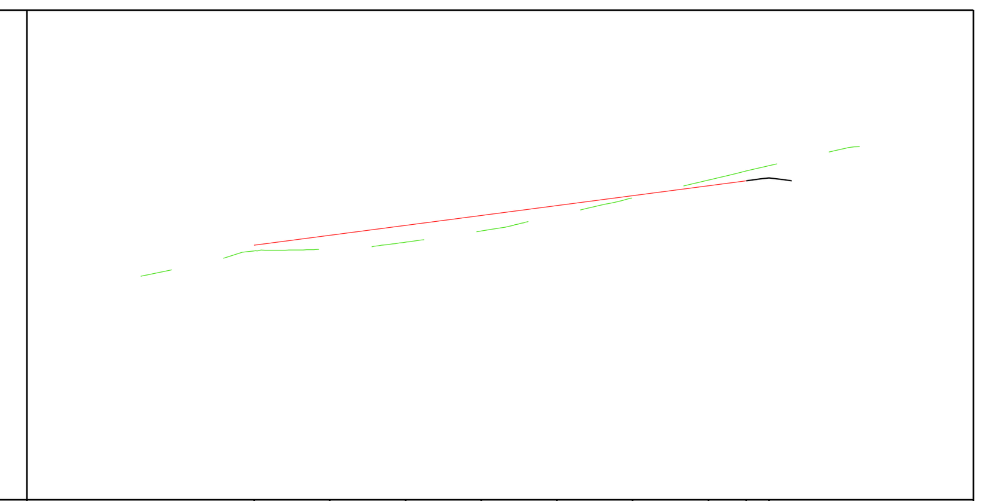
Road 21



Datum: 9.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	72.729	75.729
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	15.500	15.638	15.776	15.915	16.053	16.191	16.329	16.467	16.505	16.580
LEVELS ON LEFT HAND CHANNEL (m)	15.438	15.444	15.583	15.852	15.859	16.128	16.267	16.399
LEVELS ON RIGHT HAND CHANNEL (m)	15.438	15.357	15.583	15.721	15.859	16.003	16.142	16.405
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 1.382% (1 in 72.371) LENGTH = 72.729m									
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 72.729m									
EXISTING LEVELS (m)	15.182	15.283	15.546	15.636	15.744	16.029	16.199	16.282	16.634	16.952	17.069	17.381

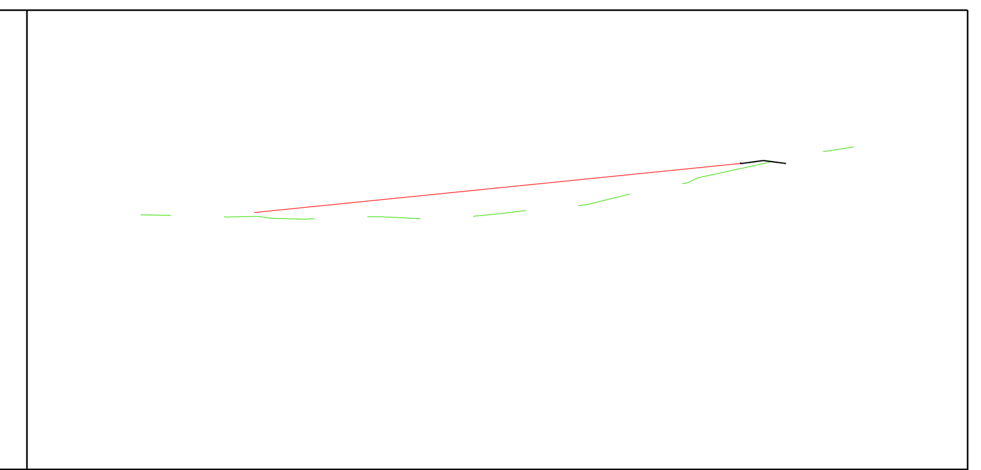
Road 22



Datum: 6.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	10.000	20.000	30.000	40.000	50.000	60.000	65.019	68.019
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	12.734	12.996	13.258	13.519	13.781	14.043	14.304	14.436	14.511
LEVELS ON LEFT HAND CHANNEL (m)	12.672	12.934	13.195	13.457	13.718	13.980	14.242
LEVELS ON RIGHT HAND CHANNEL (m)	12.672	WATERMAIN REFER TO DRAWING 18-007		13.457	13.718	13.980	14.242
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 2.617% (1 in 38.218) LENGTH = 65.019m								
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	L = 3.14m	CURVE R = 41.899 L = 17.958	CURVE R = 93.498 L = 7.660	L = 5.46m	R= 17.73	CURVE R = 121.970 L = 18.363	STRAIGHT L = 10.329m		
EXISTING LEVELS (m)	12.581	12.599	12.603	12.616	12.629	12.646	12.666	12.690	12.740	12.788	12.840	12.913	12.987	13.064	13.177	13.259	13.349	13.463	13.564	13.664	13.763	13.860	13.964	14.061	14.157	14.593	14.695

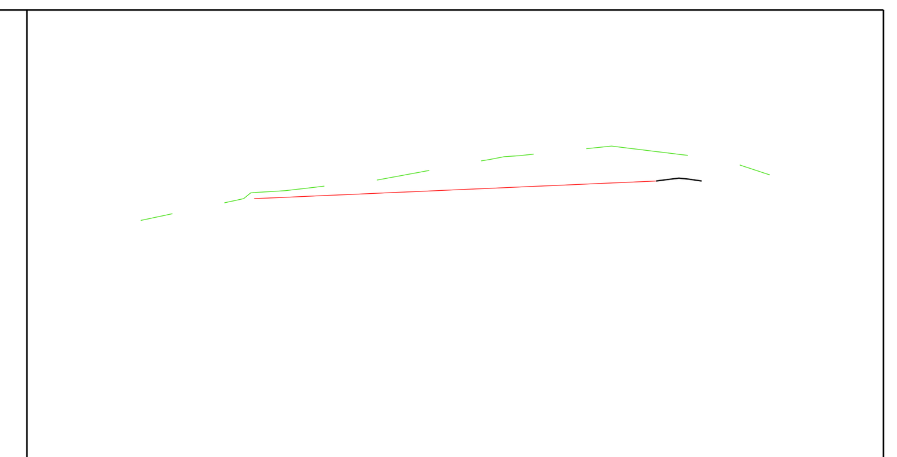
Road 23



Datum: 4.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	10.000	20.000	30.000	40.000	50.000	60.000	64.246	67.246
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	10.786	10.988	11.189	11.390	11.591	11.792	11.993	12.079	12.154
LEVELS ON LEFT HAND CHANNEL (m)	10.724	10.925	11.126	11.327	11.529	11.730	11.931
LEVELS ON RIGHT HAND CHANNEL (m)	10.724	10.925	11.126	11.327	11.529	11.730	11.931
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 2.012% (1 in 49.706) LENGTH = 64.246m								
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 16.612m	R = 23.734 L = 5.446	L = 2.39m	STRAIGHT L = 6.951m	CURVE R = 15.278 L = 9.701	STRAIGHT LENGTH = 22.130m			
EXISTING LEVELS (m)	10.682	10.633	10.604	10.690	10.671	10.649	10.626	10.598	10.688	10.751	10.795	10.871	10.900	10.933	10.998	11.386	11.490	11.576	11.949

Road 24



Datum: 3.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000	10.000	20.000	30.000	40.000	50.000	53.097	56.097
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	9.931	10.019	10.106	10.194	10.282	10.370	10.397	10.472
LEVELS ON LEFT HAND CHANNEL (m)	9.862	9.950	10.038	10.125	10.213	10.301		
LEVELS ON RIGHT HAND CHANNEL (m)	9.862	9.950	10.038	10.125	10.213	10.301		
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 0.878% (1 in 113.940) LENGTH = 53.097m							
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 53.097m							
EXISTING LEVELS (m)	10.088	10.142	10.396	10.963	11.040	11.065	11.317	11.171

R3000

R3000

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

finn DESIGN PARTNERSHIP — CREATIVE ● INNOVATIVE

Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 107 REV. NO: A

eng

TITLE: Roadways Longitudinal Sections (Sheet 3 of 4)

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd, 1st Floor Quayside Business Park, Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: A. Armstrong

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

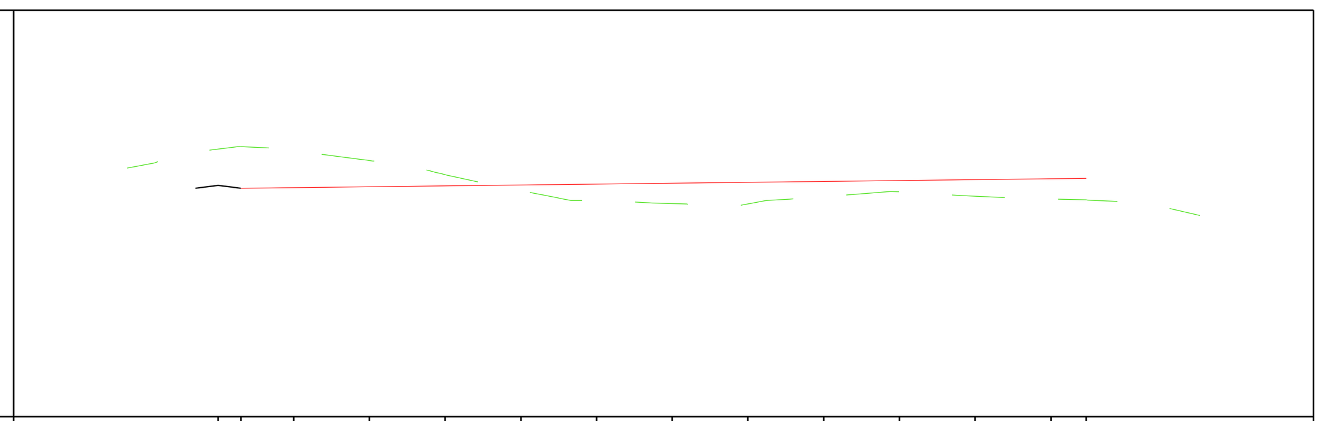
JOB NO: 1703

NOTES

2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

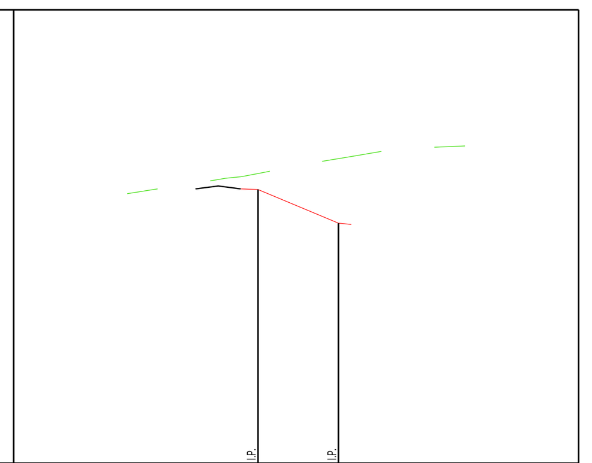
Road 25



Datum: 4.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000, 3.000, 10.000, 20.000, 30.000, 40.000, 50.000, 60.000, 70.000, 80.000, 90.000, 100.000, 110.000, 114.681
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	10.119, 10.044, 10.060, 10.083, 10.106, 10.129, 10.152, 10.175, 10.198, 10.221, 10.244, 10.267, 10.290, 10.301
LEVELS ON LEFT HAND CHANNEL (m)	9.985, 10.008, 10.031, 10.054, 10.077, 10.100, 10.123, 10.021, 10.044, 10.192, 10.215, 10.226
LEVELS ON RIGHT HAND CHANNEL (m)	9.967, 10.008, 10.031, 10.054, 10.077, 10.100, 10.123, 10.146, 10.169, 10.192, 10.215, 10.226
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 0.230% (1 in 434.544) LENGTH = 111.681m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 15.909m; CURVE R = 80.815 L = 19.124; CURVE R = 382.100 L = 6.689; CURVE R = 159.032 L = 18.118; STRAIGHT L = 7.497m; R = 221.518 L = 6.153; R= 12.71; STRAIGHT LENGTH = 35.630m
EXISTING LEVELS (m)	11.144, 11.103, 10.801, 10.744, 10.657, 10.540, 10.426, 10.318, 10.214, 10.115, 9.967, 9.883, 9.792, 9.719, 9.722, 9.693, 9.666, 9.642, 9.621, 9.578, 9.715, 9.755, 9.781, 9.956, 9.845, 9.780, 9.731

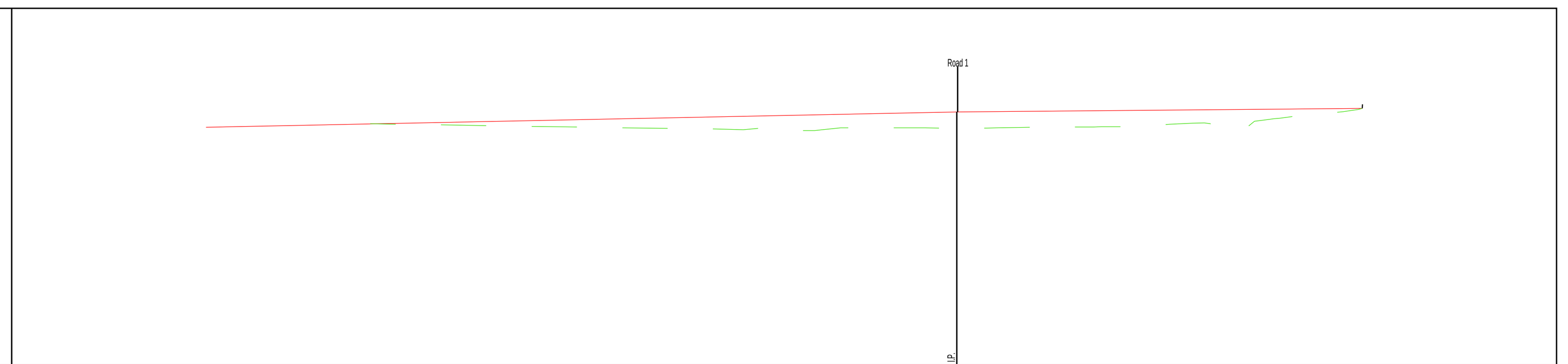
Road 26



Datum: 2.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000, 3.000, 5.253, 10.000, 15.878, 17.596
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	9.318, 9.244, 9.225, 8.830, 8.340, 8.306
LEVELS ON LEFT HAND CHANNEL (m)	9.150, 8.755, 8.265, 8.231
LEVELS ON RIGHT HAND CHANNEL (m)	9.295, 8.755, 8.265, 8.231
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	G = -0.82%; GRADIENT -8.333% L = 10.625m; G = -2.00%
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT LENGTH = 14.586m
EXISTING LEVELS (m)	9.564, 9.876, 10.101

Public Roadway R172



Datum: -4.000M AOD

CHAINAGE ON CENTRELINE (m)	0.000, 10.000, 20.000, 30.000, 40.000, 50.000, 60.000, 70.000, 80.000, 90.000, 100.000, 110.000, 115.965, 120.000, 130.000, 140.000, 150.000, 160.000, 170.000, 178.568
LEVELS ON CENTRELINE OF CARRIAGEWAY (m)	3.360, 3.401, 3.441, 3.482, 3.522, 3.563, 3.603, 3.644, 3.684, 3.725, 3.765, 3.806, 3.830, 3.837, 3.855, 3.872, 3.890, 3.907, 3.925, 3.940
LEVELS ON LEFT HAND CHANNEL (m)	3.273, 3.313, 3.354, 3.394, 3.435, 3.475, 3.516, 3.556, 3.597, 3.637, 3.678, 3.718, 3.742, 3.750, 3.767, 3.785, 3.802, 3.820, 3.837, 3.852
LEVELS ON RIGHT HAND CHANNEL (m)	3.273, 3.313, 3.354, 3.394, 3.435, 3.475, 3.516, 3.556, 3.597, 3.637, 3.678, 3.718, 3.743, 3.750, 3.767, 3.785, 3.802, 3.820, 3.837, 3.852
VERTICAL DESIGN ON CARRIAGEWAY CENTRELINE	GRADIENT 0.405% (1 in 246.733) LENGTH = 115.965m; GRADIENT 0.175% (1 in 571.532) LENGTH = 62.603m
HORIZONTAL DESIGN ON CARRIAGEWAY CENTRELINE	STRAIGHT L = 5.784m; CURVE R = 52.162 L = 8.005; STRAIGHT L = 7.869m; CURVE R = 121.134 L = 37.001; CURVE R = 213.264 L = 15.536; STRAIGHT LENGTH = 11.730m; CURVE R = 1732.833 L = 25.154; L = 4.23m; CURVE R = 1102.607 L = 13.562; STRAIGHT L = 6.512m; CURVE R = 141.186 L = 10.695; CURVE R = 232.756 L = 15.964; CURVE R = 113.337 L = 9.767; STRAIGHT L = 5.852m
EXISTING LEVELS (m)	3.159, 3.198, 3.185, 3.160, 3.157, 3.147, 3.163, 3.170, 3.173, 3.175, 3.213, 3.226, 3.194, 3.204, 3.292, 3.313, 3.322, 3.326, 3.359, 3.370, 3.379, 3.362, 3.375, -1.891, -1.605, 2.248, 3.330, 3.328, -2.083, -1.662, 1.995, 2.591, 2.752, 2.753, 2.842, -0.381, 2.709, 2.123, 1.213, 0.224, -0.846, 2.949, 2.985, 2.986, 2.940, 2.847, 2.495, 0.567, 3.547, 3.609, 3.672, 3.678, 3.728, 3.861, 3.937

LEGEND:

- Existing Ground Level
- Proposed Road Alignment

A	Issued for Planning	May 2019	T.Finn
REV. NO.	DESCRIPTION	DATE	INITIALS

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Blakestown, Ardee, Co. Louth, Ireland
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DRAWING. NO: 108 REV. NO: A

eng

TITLE: Roadways Longitudinal Sections (Sheet 4 of 4)

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd, 1st Floor Quayside Business Park, Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: A. Armstrong

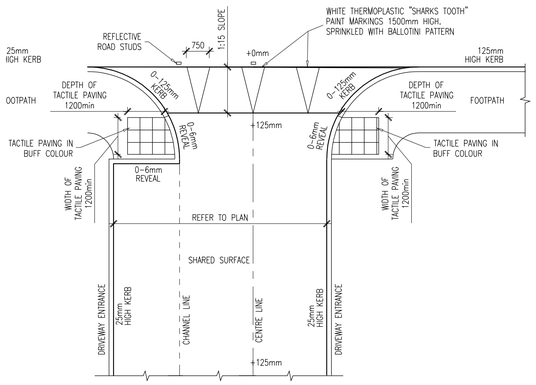
DATE: November 2018 CHECKED: -

STATUS: Planning Permission

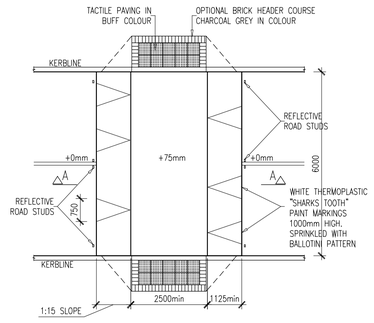
JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

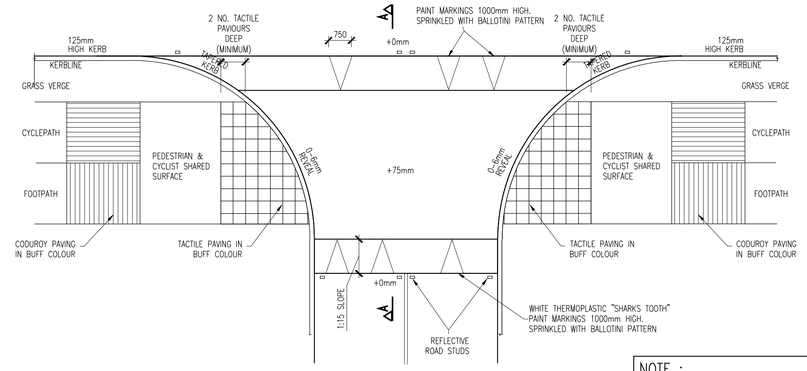
● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT



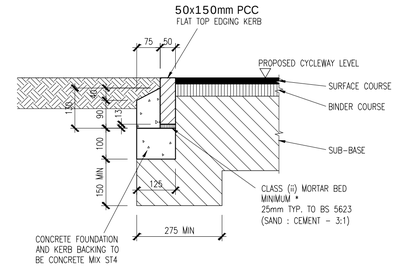
01 108 PLAN OF ENTRANCE TO SHARED SURFACE
SCALE 1:100



02 108 PLAN OF SPEED RAMP
SCALE 1:100



03 108 PLAN OF RAISED TABLE
SCALE 1:100



04 108 PIN KERB EDGING
SCALE 1:10

NOTE :

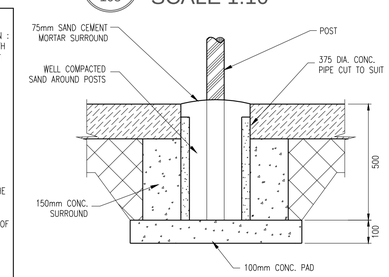
1. FOR AREAS WHERE CBR VALUES ARE BELOW 2%, CARRY OUT THE FOLLOWIN :
   - THE SOFT AREA IS TO BE EXCAVATED OUT FULLY AND REPLACED WITH A GENERAL FILL MATERIAL (CLASS 1A/1B) TO N.R.A. SPECIFICATION T THE UNDERSIDE OF AN 'ENKAGRID' LAYER (ENKAGRID TRC 40 OR SIMILAR 40kN/m . SEPARATI N GE TEXTILE T BE LACE BETWEEN THE UB RADE AND CAPPING.

   R
   - OIL T BE STABILI ED IN- ITU WITH LIME/ EMENT T SPE IALI T CONTRACTOR PECIFICATI N T F RMATI N LEVEL, MINIMUM BR %.

   AN ENGINEER SH ULD INS ECT THE FT AREA WHEN IT HAS BEEN FULLY EXCAVATED UT PRI R T THE FILL/ TABLISED MATERIAL BEEN PLACED/WORKED.

2. F R AREAS WHERE CBR VALUES ARE BETWEEN 2% AN 5%, CARRY UT THE F LL WIN :
   - THE IL I T BE EXCAVATED UT FULLY AND REPLACED WITH A CAP IN MATERIAL TYPE 6F1/6F2 TO N.R.A. SPE IFI ATION. DEPTH OF AP IN MATERIAL A PER TABLE 1 BEL W. E ARATI N EOTEXTILE T BE PLACED ETWEEN THE UBGRADE AND CAPPING.

   R
   - SOIL T BE STABILISED IN-SITU WITH LIME/CEMENT T SPECIALIST ONTRA TOR PECIFICATI N T F RMATI N LEVEL, MINIMUM BR 5%, DEPTHS OF MATERIAL TO BE STABILISED AS PER TABLE 1 BEL W.

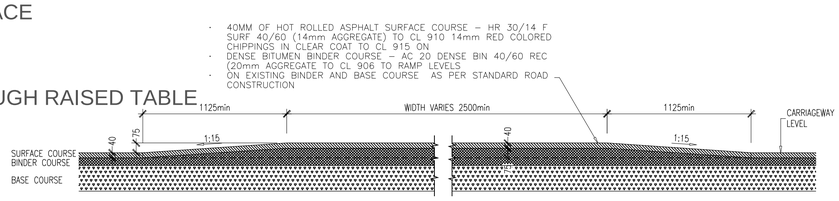


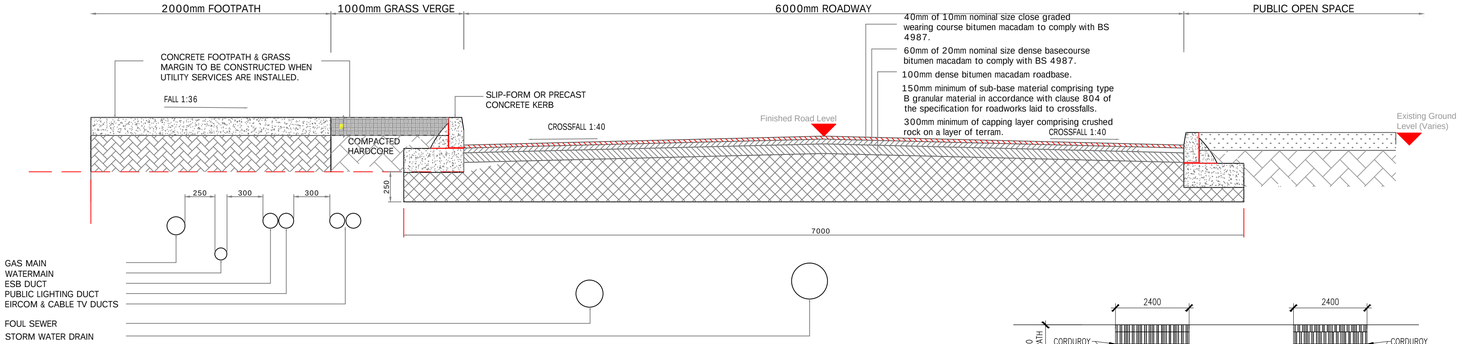
05 108 POST POCKET DETAIL
SCALE 1:50

TABLE 1		
CAPPING/STABILISATION DEPTHS		
CBR	ROADS	CARPARK
2%	400	300
3%	300	200
4%	250	150

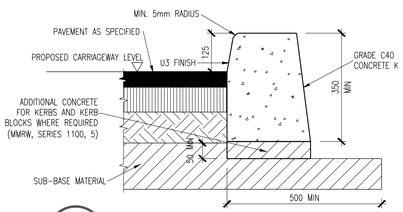
11 108 SECTION THROUGH RAISED TABLE
SCALE 1:25

- 40MM OF HOT ROLLED ASPHALT SURFACE COURSE – HR 30/14 F SURF 40/60 (14mm AGGREGATE) TO CL 910 14mm RED COLORED CHIPPINGS IN CLEAR COAT TO CL 915 ON
- DENSE BITUMEN BINDER COURSE – AC 20 DENSE BIN 40/60 REC (20mm AGGREGATE TO CL 906 TO RAMP LEVELS
- ON EXISTING BINDER AND BASE COURSE AS PER STANDARD ROAD CONSTRUCTION





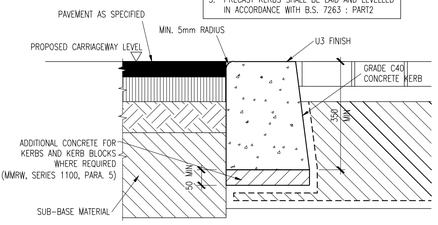
08 108 TYPICAL ROAD CONSTRUCTION SECTION
SCALE 1:25



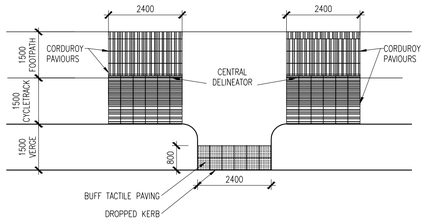
07 108 INSITU KERB DETAIL
SCALE 1:10

NOTES

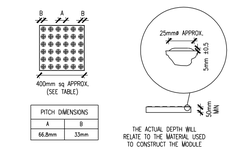
1. IN SITU CONCRETE KERBS SHALL COMPLY WITH THE RECOMMENDATIONS OF BS 5931
2. KERBS SHALL BE PROTECTED FROM THE EFFECTS OF ADVERSE WEATHER UNTIL CURED.
3. PRECAST KERBS SHALL BE LAID AND LEVELLED IN ACCORDANCE WITH B.S. 7263 : PART2



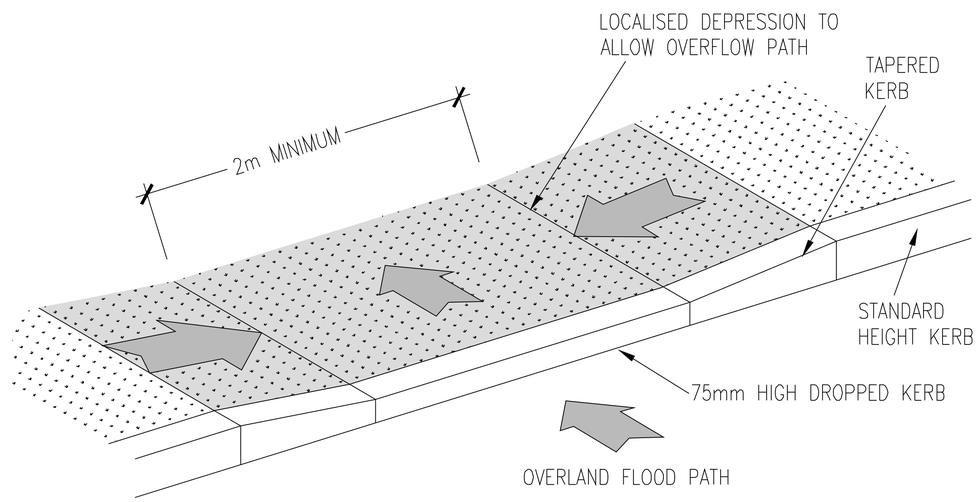
06 108 FLUSH KERB DETAIL
SCALE 1:10



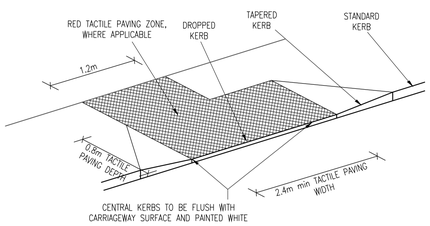
CORDUROY AND TACTILE PAVING DETAIL AT UNCONTROLLED CROSSINGS
SCALE 1:100



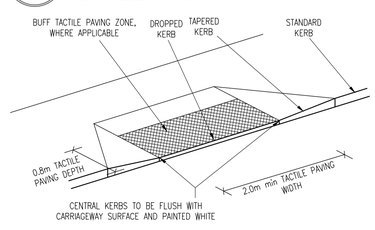
PROFILE & PLAN OF BLISTER SURFACE
N.T.S.



09 108 DROPPED KERB DETAIL
SCALE NTS

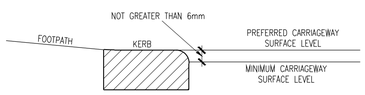


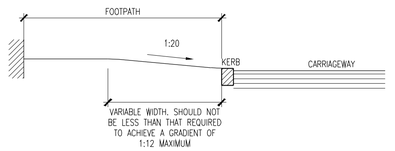
CONTROLLED DISHED CROSSING WITH TACTILE PAVING
SCALE 1:50



10 108 TACTILE PAVING DETAILS
SCALE NTS

UNCONTROLLED DISHED CROSSING WITH TACTILE PAVING
SCALE 1:50





REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T. Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 109 REV. NO: A

eng

TITLE: Pavement, Raised Table & Road Details

PROJECT: Residential Development @ Haggardstown Blackrock, Dundalk Co Louth.

CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Dundalk Co Louth

SCALE: As Shown DRAWN: T.Finn

DATE: November 2018 CHECKED: -

STATUS: Planning Permsission

JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Use of proprietary items shall be to Engineers approval.
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Key Plan

NOTES:

THE GREENFIELD RUNOFF RATE OF (QBAR) 105.90LTS/SEC IS CALCULATED ON A SITE AREA OF 175500M2 0R 17.55HA. THE QBAR RATE USED FOR THE CALCULATION OF THE REQUIRED ON SITE STORAGE IS REDUCED TO 80.6LTS/SEC TO COMPENSATE FOR THE 25.3LTS/SEC OF RUNOFF THAT IS NOT ATTENUATED AND WHICH IS DERIVED FROM THE NORTHEAST CORNER OF THE DEVELOPMENT. THE ATTENUATION SYSTEM CONSISTS OF A SILT TRAPs, CLASS 1 BYPASS PETROL/OIL INTERCEPTOR ON ALL NETWORKS AND AN ATTENUATION BASIN/POND HAVING A STORAGE VOLUME OF CIRCA 3784M3. THE CRITICAL STORM DURATION FOR A 1 in 30 YR STORM EVENT IS 360mins (WINTER) WHERE THE REQUIRED VOLUME IS 2243.70M3. THE CRITICAL STORM DURATION FOR A 1 in 100 YR STORM EVENT IS ALSO 360mins (WINTER) WHERE THE REQUIRED STORAGE VOLUME IS 2978.70M3 RESULTING IN AN OVERFLOW VOLUME OF 115.3M3.

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ALL PIPES SHOULD HAVE FLEXIBLE JOINTS FORMED BY A METHOD RECOMMENDED BY THE PIPE MANUFACTURER. ELASTOMERIC SEALING RINGS, COMPLYING WITH THE REQUIREMENTS OF BS 2494, TYPE D, SHOULD BE USED.

MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	*LOCATION*
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (AJ'S) TO BE 100mmØ uPVC PIPES AT A GRADIENT OF 1 in 60.

GULLIES SHALL BE PRECAST CONCRETE COMPLYING WITH THE REQUIREMENTS OF BS 5911: PART 230, OR MAY CONSIST OF A CHAMBER CONSTRUCTED OF 100mm SOLID BLOCKWORK AND HAVING A 150mm IN SITU CONCRETE FLOOR, WITH INTERNAL DIMENSIONS OF 450mm x 300mm x 750mm. THE OUTLET FROM THE GULLY SHOULD BE 150mm DIAMETER, SET A MINIMUM OF 375mm ABOVE THE FLOOR OF THE CHAMBER.

GULLY GRATINGS IN ROADS SHOULD BE SET WITH THE DIRECTION OF THE OPENINGS AT RIGHT ANGLES TO THE DIRECTION OF TRAFFIC.

LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTFALL POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

THE TYPE OF PIPE AND FITTINGS TO BE USED TO BE uPVC FOR PIPES UP TO 300mm IN DIAMETER (IN ACCORDANCE WITH THE REQUIREMENTS OF IS 424) .

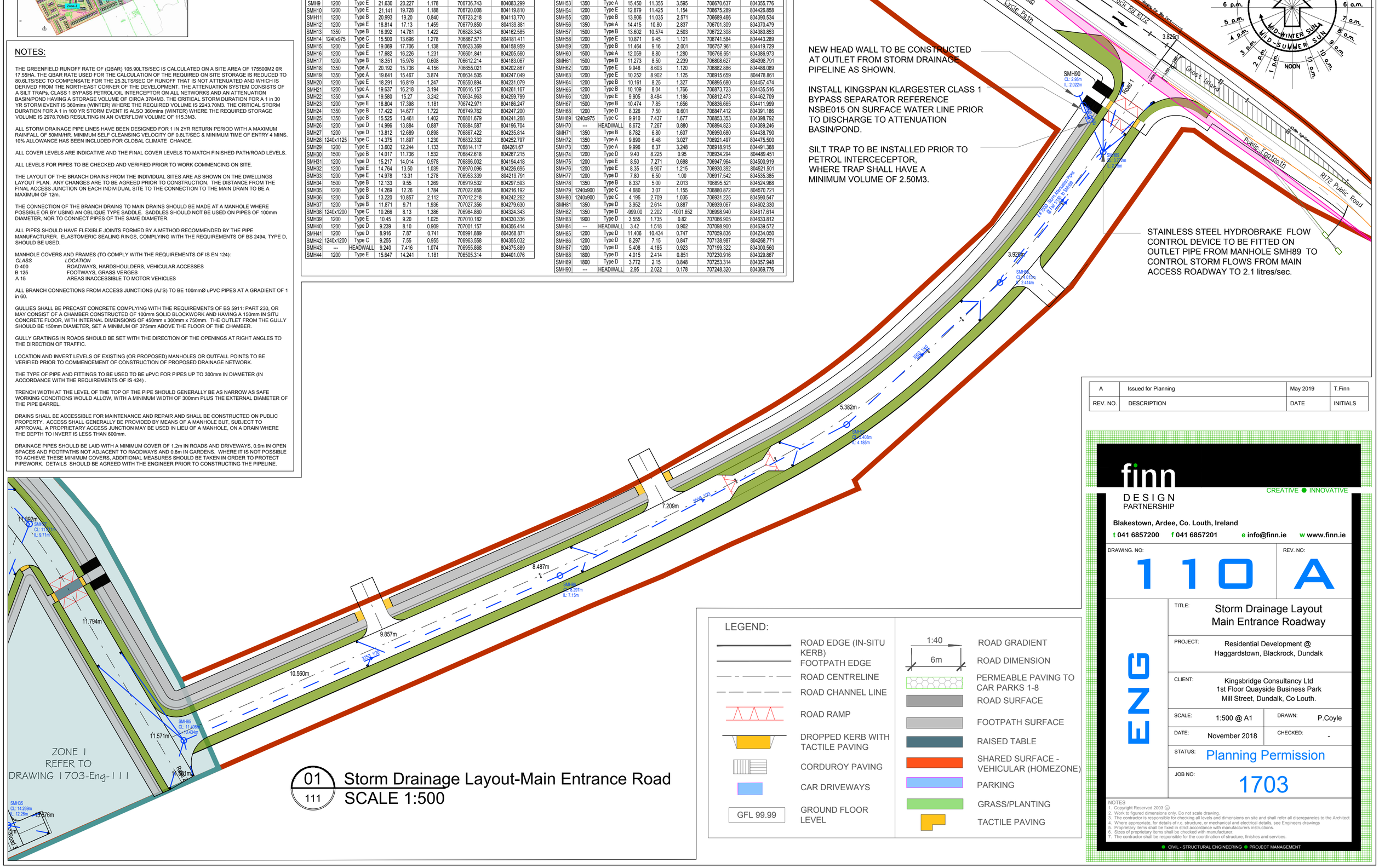
TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

DRAINAGE PIPES SHOULD BE LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO RAODWAYS AND 0.6m IN GARDENS. WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS, ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH1	1200	Type E	23.029	21.645	1.159	706666.070	804050.880
SMH2	1200	Type D	21.234	20.25	0.759	706616.681	804115.875
SMH3	1200	Type E	20.997	19.615	0.777	706632.781	804123.054
SMH4	1200	Type E	21.272	19.916	1.131	706698.842	804152.954
SMH5	1350	Type E	21.015	19.276	0.993	706682.249	804146.200
SMH6	1350	Type E	20.591	19.098	1.193	706670.972	804170.431
SMH7	1350	Type E	20.327	18.803	1.224	706679.910	804178.413
SMH8	1350	Type E	18.962	17.373	1.309	706745.791	804171.407
SMH9	1200	Type E	21.630	20.227	1.178	706736.743	804083.299
SMH10	1200	Type E	21.141	19.728	1.188	706720.008	804119.810
SMH11	1200	Type B	20.993	19.20	0.840	706723.218	804113.770
SMH12	1200	Type E	18.814	17.13	1.459	706779.850	804139.881
SMH13	1350	Type B	16.992	14.781	1.422	706828.343	804162.585
SMH14	1240x975	Type C	15.500	13.696	1.278	706867.571	804181.411
SMH15	1200	Type E	19.069	17.706	1.138	706623.369	804158.959
SMH16	1200	Type E	17.682	16.226	1.231	706601.841	804205.560
SMH17	1200	Type B	18.351	15.976	0.608	706612.214	804183.067
SMH18	1350	Type A	20.192	15.736	4.156	706655.021	804202.867
SMH19	1350	Type A	19.641	15.467	3.874	706634.505	804247.049
SMH20	1200	Type E	18.291	16.819	1.247	706550.894	804231.079
SMH21	1200	Type A	19.637	16.218	3.194	706616.157	804261.167
SMH22	1350	Type A	19.580	15.27	3.242	706634.963	804259.799
SMH23	1200	Type E	18.804	17.398	1.181	706742.971	804186.247
SMH24	1350	Type B	17.422	14.677	1.722	706749.762	804247.200
SMH25	1350	Type B	15.525	13.461	1.402	706801.679	804241.268
SMH26	1200	Type D	14.996	13.884	0.887	706884.587	804196.704
SMH27	1200	Type D	13.812	12.689	0.898	706867.422	804235.814
SMH28	1240x1125	Type C	14.375	11.897	1.230	706832.332	804252.797
SMH29	1200	Type E	13.602	12.244	1.133	706814.117	804261.67
SMH30	1500	Type B	14.017	11.736	1.532	706842.618	804267.215
SMH31	1200	Type D	15.217	14.014	0.978	706896.002	804194.418
SMH32	1200	Type E	14.764	13.50	1.039	706970.096	804226.695
SMH33	1200	Type E	14.978	13.31	1.278	706953.339	804219.791
SMH34	1500	Type B	12.133	9.55	1.269	706919.532	804297.593
SMH35	1200	Type B	14.269	12.26	1.784	707022.858	804216.192
SMH36	1200	Type B	13.220	10.857	2.112	707012.218	804242.262
SMH37	1200	Type B	11.871	9.71	1.936	707027.356	804279.630
SMH38	1240x1200	Type C	10.266	8.13	1.386	706984.860	804324.343
SMH39	1200	Type E	10.45	9.20	1.025	707010.182	804330.336
SMH40	1200	Type D	9.239	8.10	0.909	707001.157	804356.414
SMH41	1200	Type D	8.916	7.87	0.741	706991.889	804368.871
SMH42	1240x1200	Type C	9.255	7.55	0.955	706963.558	804355.032
SMH43	---	HEADWALL	9.240	7.416	1.074	706955.868	804375.889
SMH44	1200	Type E	15.647	14.241	1.181	706505.314	804401.076

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH45	1200	Type E	15.825	14.133	1.392	706514.445	804387.425
SMH46	1200	Type E	13.731	12.291	1.140	706578.121	804417.444
SMH47	1200	Type A	15.613	12.091	3.222	706610.210	804398.175
SMH48	1200	Type E	16.185	14.617	1.268	706532.931	804359.074
SMH49	1200	Type E	17.278	16.00	1.053	706551.287	804320.565
SMH50	1200	Type A	18.318	13.85	4.168	706559.932	804290.404
SMH51	1200	Type A	17.397	13.52	3.577	706608.121	804314.037
SMH52	1350	Type A	16.567	11.65	3.006	706638.008	804338.883
SMH53	1350	Type A	15.450	11.355	3.595	706670.637	804355.776
SMH54	1200	Type E	12.879	11.425	1.154	706675.289	804426.858
SMH55	1200	Type B	13.906	11.035	2.571	706669.466	804390.534
SMH56	1350	Type A	14.415	10.80	2.637	706701.309	804370.479
SMH57	1500	Type B	13.602	10.574	2.503	706722.308	804380.853
SMH58	1200	Type E	10.871	9.45	1.121	706741.584	804443.289
SMH59	1200	Type B	11.464	9.16	2.001	706757.961	804419.729
SMH60	1500	Type A	12.059	8.80	1.280	706766.651	804386.973
SMH61	1500	Type B	11.273	8.50	2.239	706808.627	804398.791
SMH62	1200	Type E	9.948	8.603	1.120	706882.886	804486.089
SMH63	1200	Type E	10.252	8.902	1.125	706915.659	804478.861
SMH64	1200	Type B	10.161	8.25	1.327	706895.680	804457.474
SMH65	1200	Type B	10.109	8.04	1.766	706873.723	804435.516
SMH66	1200	Type E	9.905	8.494	1.186	706812.473	804462.709
SMH67	1500	Type B	10.474	7.85	1.656	706836.665	804411.999
SMH68	1200	Type D	8.326	7.50	0.601	706847.412	804391.186
SMH69	1240x975	Type C	9.910	7.437	1.677	706853.353	804398.792
SMH70	---	HEADWALL	8.672	7.267	0.880	706894.823	804389.246
SMH71	1350	Type B	8.782	6.80	1.607	706950.680	804438.790
SMH72	1350	Type A	9.890	6.48	3.027	706921.497	804475.500
SMH73	1350	Type A	9.996	6.37	3.248	706918.915	804491.368
SMH74	1200	Type D	9.40	8.225	0.95	706934.294	804489.451
SMH75	1200	Type E	8.50	7.271	0.698	706947.964	804500.919
SMH76	1200	Type E	8.35	6.907	1.215	706930.392	804521.501
SMH77	1200	Type D	7.80	6.50	1.00	706917.542	804535.385
SMH78	1350	Type B	8.337	5.00	2.013	706895.521	804524.968
SMH79	1240x900	Type C	4.680	3.07	1.155	706880.872	804570.721
SMH80	1240x900	Type C	4.195	2.709	1.035	706931.225	804590.547
SMH81	1350	Type D	3.952	2.614	0.887	706939.067	804602.330
SMH82	1350	Type D	-999.00	2.202	-1001.652	706998.940	804617.614
SMH83	1900	Type D	3.555	1.735	0.82	707066.905	804633.812
SMH84	---	HEADWALL	3.42	1.518	0.902	707098.900	804639.572
SMH85	1200	Type D	11.406	10.434	0.747	707059.836	804234.050
SMH86	1200	Type D	8.297	7.15	0.847	707138.987	804268.771
SMH87	1200	Type D	5.408	4.185	0.923	707199.322	804300.560
SMH88	1800	Type D	4.015	2.414	0.851	707230.916	804329.867
SMH89	1800	Type D	3.772	2.15	0.848	707253.314	804357.948
SMH90	---	HEADWALL	2.95	2.022	0.178	707248.320	804369.776



01 / 111 Storm Drainage Layout-Main Entrance Road
SCALE 1:500

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 / 6m — ROAD GRADIENT / ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 110 REV. NO: A

ENG

TITLE: Storm Drainage Layout Main Entrance Roadway

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd 1st Floor Quayside Business Park Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: P.Coyle

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
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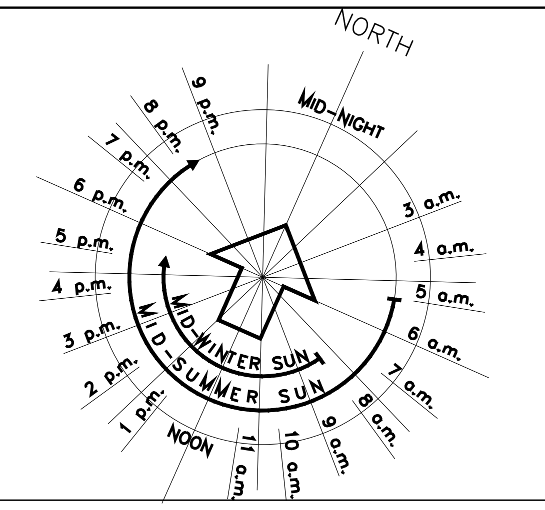

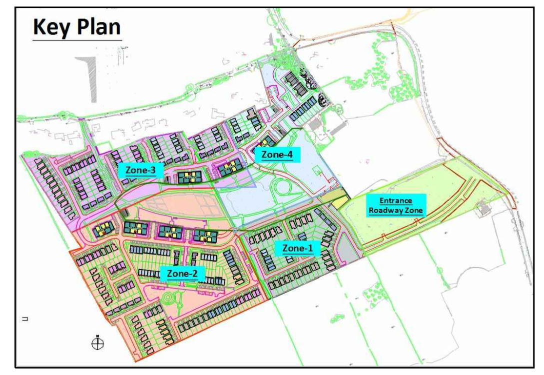

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TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

DRAINAGE PIPES SHOULD BE LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO RAODWAYS AND 0.6m IN GARDENS. WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS, ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH1	1200	Type E	23.029	21.645	1.159	706666.070	804050.880
SMH2	1200	Type D	21.234	20.25	0.759	706616.681	804115.875
SMH3	1200	Type E	20.997	19.615	0.777	706632.781	804123.054
SMH4	1200	Type E	21.272	19.916	1.131	706698.842	804152.954
SMH5	1350	Type E	21.015	19.276	0.993	706682.249	804146.200
SMH6	1350	Type E	20.591	19.098	1.193	706670.972	804170.431
SMH7	1350	Type E	20.327	18.803	1.224	706679.910	804178.413
SMH8	1350	Type E	18.982	17.373	1.309	706745.791	804171.407
SMH9	1200	Type E	21.630	20.227	1.178	706736.743	804083.299
SMH10	1200	Type E	21.141	19.728	1.188	706720.008	804119.810
SMH11	1200	Type B	20.993	19.20	0.840	706723.218	804113.770
SMH12	1200	Type E	18.814	17.13	1.459	706779.850	804139.881
SMH13	1350	Type B	16.992	14.781	1.422	706828.343	804162.585
SMH14	1240x975	Type C	15.500	13.696	1.278	706867.571	804181.411
SMH15	1200	Type E	19.069	17.706	1.138	706623.369	804158.959
SMH16	1200	Type E	17.682	16.226	1.231	706601.841	804205.560
SMH17	1200	Type B	18.351	15.976	0.608	706612.214	804183.067
SMH18	1350	Type A	20.192	15.736	4.156	706655.021	804202.867
SMH19	1350	Type A	19.641	15.467	3.874	706634.505	804247.049
SMH20	1200	Type E	18.291	16.819	1.247	706550.894	804231.079
SMH21	1200	Type A	19.637	16.218	3.194	706616.157	804261.167
SMH22	1350	Type A	19.580	15.27	3.242	706634.963	804259.799
SMH23	1200	Type E	18.804	17.398	1.181	706742.971	804186.247
SMH24	1350	Type B	17.422	14.677	1.722	706749.762	804247.200
SMH25	1350	Type B	15.525	13.461	1.402	706801.679	804241.268
SMH26	1200	Type D	14.996	13.884	0.887	706884.587	804196.704
SMH27	1200	Type D	13.812	12.689	0.898	706867.422	804235.814
SMH28	1240x1125	Type C	14.375	11.897	1.230	706832.332	804252.797
SMH29	1200	Type E	13.602	12.244	1.133	706814.117	804261.67
SMH30	1500	Type B	14.017	11.736	1.532	706842.618	804267.215
SMH31	1200	Type D	15.217	14.014	0.978	706896.002	804194.418
SMH32	1200	Type E	14.764	13.50	1.039	706970.096	804226.695
SMH33	1200	Type E	14.978	13.31	1.278	706953.339	804219.791
SMH34	1500	Type B	12.133	9.55	1.269	706919.532	804297.593
SMH35	1200	Type B	14.269	12.26	1.784	707022.858	804216.192
SMH36	1200	Type B	13.220	10.857	2.112	707012.218	804242.262
SMH37	1200	Type B	11.871	9.71	1.936	707027.356	804279.630
SMH38	1240x1200	Type C	10.266	8.13	1.386	706984.860	804324.343
SMH39	1200	Type E	10.45	9.20	1.025	707010.182	804330.336
SMH40	1200	Type D	9.239	8.10	0.909	707001.157	804356.414
SMH41	1200	Type D	8.916	7.87	0.741	706991.889	804368.871
SMH42	1240x1200	Type C	9.255	7.55	0.955	706963.558	804355.032
SMH43	---	HEADWALL	9.240	7.416	1.074	706955.868	804375.889
SMH44	1200	Type E	15.647	14.241	1.181	706505.314	804401.076

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH45	1200	Type E	15.825	14.133	1.392	706514.445	804387.425
SMH46	1200	Type E	13.731	12.291	1.140	706578.121	804417.444
SMH47	1200	Type A	15.613	12.091	3.222	706610.210	804398.175
SMH48	1200	Type E	16.185	14.617	1.268	706532.931	804359.074
SMH49	1200	Type E	17.278	16.00	1.053	706551.287	804320.565
SMH50	1200	Type A	18.318	13.85	4.168	706559.932	804290.404
SMH51	1200	Type A	17.397	13.52	3.577	706608.121	804314.037
SMH52	1350	Type A	16.567	11.65	3.006	706638.008	804338.883
SMH53	1350	Type A	15.450	11.355	3.595	706670.637	804355.776
SMH54	1200	Type E	12.879	11.425	1.154	706675.289	804426.858
SMH55	1200	Type B	13.906	11.035	2.571	706689.466	804390.534
SMH56	1350	Type A	14.415	10.80	2.837	706701.309	804370.479
SMH57	1500	Type B	13.602	10.574	2.503	706722.308	804380.853
SMH58	1200	Type E	10.871	9.45	1.121	706741.584	804443.289
SMH59	1200	Type B	11.464	9.16	2.001	706757.961	804419.729
SMH60	1500	Type A	12.059	8.80	1.280	706766.651	804386.973
SMH61	1500	Type B	11.273	8.50	2.239	706808.627	804398.791
SMH62	1200	Type E	9.948	8.603	1.120	706882.886	804486.089
SMH63	1200	Type E	10.252	8.902	1.125	706915.659	804478.861
SMH64	1200	Type B	10.161	8.25	1.327	706895.680	804457.474
SMH65	1200	Type B	10.109	8.04	1.766	706873.723	804435.516
SMH66	1200	Type E	9.905	8.494	1.186	706812.473	804462.709
SMH67	1500	Type B	10.474	7.85	1.656	706836.665	804411.999
SMH68	1200	Type D	8.326	7.50	0.601	706847.412	804391.186
SMH69	1240x975	Type C	9.910	7.437	1.677	706853.353	804398.792
SMH70	---	HEADWALL	8.672	7.267	0.880	706894.823	804389.246
SMH71	1350	Type B	8.782	6.80	1.607	706950.680	804438.790
SMH72	1350	Type A	9.890	6.48	3.027	706921.497	804475.500
SMH73	1350	Type A	9.996	6.37	3.248	706918.915	804491.368
SMH74	1200	Type D	9.40	8.225	0.95	706934.294	804489.451
SMH75	1200	Type E	8.50	7.271	0.698	706947.964	804500.919
SMH76	1200	Type E	8.35	6.907	1.215	706930.392	804521.501
SMH77	1200	Type D	7.80	6.50	1.00	706917.542	804535.385
SMH78	1350	Type B	8.337	5.00	2.013	706895.521	804524.968
SMH79	1240x900	Type C	4.680	3.07	1.155	706880.872	804570.721
SMH80	1240x900	Type C	4.195	2.709	1.035	706931.225	804590.547
SMH81	1350	Type D	3.952	2.614	0.887	706939.067	804602.330
SMH82	1350	Type D	-999.00	2.202	-1001.652	706998.940	804617.614
SMH83	1900	Type D	3.555	1.735	0.82	707066.905	804633.812
SMH84	---	HEADWALL	3.42	1.518	0.902	707098.900	804639.572
SMH85	1200	Type D	11.406	10.434	0.747	707059.836	804234.050
SMH86	1200	Type D	8.297	7.15	0.847	707138.987	804268.771
SMH87	1200	Type D	5.408	4.185	0.923	707199.322	804300.560
SMH88	1800	Type D	4.015	2.414	0.851	707230.916	804329.867
SMH89	1800	Type D	3.772	2.15	0.848	707253.314	804357.948
SMH90	---	HEADWALL	2.95	2.022	0.178	707248.320	804369.776

01 / 112

Storm Drainage Layout-Zone 1
SCALE 1:500

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 — ROAD GRADIENT
- 6m — ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T. Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
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DRAWING. NO: 111
REV. NO: A

ENG

TITLE: Storm Drainage Layout Zone 1

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd
1st Floor Quayside Business Park
Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: P.Coyle
DATE: November 2018 CHECKED: -
STATUS: Planning Permission
JOB NO: 1703

NOTES

2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

DRY SWALE

ZONE 3 REFER TO DRAWING 1703-Eng-113

DRY SWALE

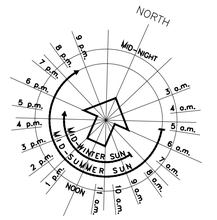
PERMEABLE DRAINAGE SYSTEM UNDER ALL CAR PARKS CONNECTED TO SWALE AS SHOWN

ZONE 4 REFER TO DRAWING 1703-Eng-114

ZONE 1 REFER TO DRAWING 1703-Eng-111

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH1	1200	Type E	22.029	21.645	1.159	706666.070	804050.880
SMH2	1200	Type D	21.234	20.25	0.759	706616.661	804115.875
SMH3	1200	Type E	20.997	19.615	0.777	706632.781	804123.054
SMH4	1200	Type E	21.272	19.916	1.131	706598.842	804152.954
SMH5	1350	Type E	21.015	19.276	0.993	706582.249	804146.200
SMH6	1350	Type E	20.591	19.098	1.193	706570.972	804170.431
SMH7	1350	Type E	20.327	18.803	1.224	706579.910	804178.413
SMH8	1350	Type E	18.962	17.373	1.309	706746.791	804171.407
SMH9	1350	Type E	21.850	20.227	1.178	706736.745	804083.299
SMH10	1200	Type E	21.141	19.728	1.188	706720.008	804119.810
SMH11	1200	Type B	20.993	19.20	0.840	706723.218	804113.770
SMH12	1200	Type E	18.814	17.13	1.459	706779.850	804139.881
SMH13	1350	Type B	16.992	14.781	1.422	706828.343	804162.585
SMH14	1240x975	Type C	15.509	13.696	1.278	706887.571	804181.411
SMH15	1200	Type E	19.065	17.706	1.138	706823.392	804158.959
SMH16	1200	Type E	17.682	16.226	1.231	706901.841	804205.560
SMH17	1200	Type B	18.351	15.976	0.608	706612.214	804163.067
SMH18	1350	Type A	20.192	15.736	4.156	706600.021	804202.867
SMH19	1350	Type A	19.641	15.467	3.874	706634.505	804247.049
SMH20	1200	Type E	18.291	16.819	1.247	706550.894	804231.079
SMH21	1200	Type A	19.637	16.218	3.194	706616.157	804261.167
SMH22	1350	Type A	19.960	15.27	3.242	706634.963	804259.798
SMH23	1200	Type E	18.804	17.398	1.181	706742.971	804186.247
SMH24	1350	Type B	17.422	14.677	1.722	706749.762	804247.200
SMH25	1350	Type B	15.520	13.461	1.462	706901.675	804241.258
SMH26	1200	Type D	14.996	13.884	0.887	706894.587	804190.704
SMH27	1200	Type D	13.812	12.689	0.898	706867.422	804235.814
SMH28	1240x1125	Type C	14.375	11.897	1.230	706832.332	804252.797
SMH29	1200	Type E	13.952	12.344	1.133	706814.117	804261.67
SMH30	1500	Type B	14.017	11.736	1.532	706842.618	804267.215
SMH31	1200	Type E	13.012	14.014	0.878	706896.002	804194.418
SMH32	1200	Type E	14.764	13.50	1.039	706970.096	804226.695
SMH33	1200	Type E	14.978	13.31	1.278	706953.339	804219.791
SMH34	1350	Type B	12.133	9.55	1.299	706919.532	804267.593
SMH35	1200	Type B	14.269	12.26	1.784	707022.858	804216.192
SMH36	1200	Type B	13.220	10.857	2.112	707012.218	804242.262
SMH37	1200	Type B	11.871	9.71	1.936	707027.356	804279.630
SMH38	1240x1200	Type C	10.286	8.13	1.386	706984.893	804324.343
SMH39	1200	Type E	10.45	9.20	1.025	707010.182	804330.336
SMH40	1200	Type D	9.239	8.10	0.809	707001.157	804354.414
SMH41	1200	Type D	8.916	7.97	0.741	706991.897	804368.871
SMH42	1240x1200	Type C	9.255	7.55	0.955	706963.558	804355.032
SMH43	---	HEADWALL	9.243	7.416	1.074	706955.868	804375.889
SMH44	1200	Type E	15.647	14.241	1.181	706505.314	804401.576

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH45	1200	Type E	15.825	14.133	1.392	706514.445	804087.425
SMH46	1200	Type E	13.731	12.291	1.140	706578.121	804417.444
SMH47	1200	Type E	15.613	12.991	3.223	706610.210	804368.175
SMH48	1200	Type E	16.185	14.617	1.268	706532.931	804359.074
SMH49	1200	Type E	17.378	16.00	1.053	706551.287	804320.565
SMH50	1200	Type E	18.318	13.85	4.168	706559.932	804290.404
SMH51	1200	Type A	17.397	13.52	3.577	706608.121	804314.037
SMH52	1350	Type A	16.567	11.85	3.006	706638.008	804334.883
SMH53	1350	Type A	15.450	11.355	3.595	706673.637	804355.776
SMH54	1200	Type E	12.879	11.425	1.154	706675.289	804420.858
SMH55	1200	Type B	13.006	11.035	2.071	706688.466	804390.534
SMH56	1350	Type A	14.415	10.80	2.837	706701.309	804370.479
SMH57	1500	Type B	13.602	10.574	2.503	706722.308	804380.853
SMH58	1200	Type E	10.871	9.45	1.121	706741.584	804443.289
SMH59	1200	Type E	11.464	9.16	2.001	706757.961	804419.729
SMH60	1600	Type A	12.059	8.80	1.280	706766.651	804386.973
SMH61	1500	Type B	11.273	8.50	2.229	706808.627	804396.791
SMH62	1200	Type E	9.948	8.603	1.120	706882.886	804486.089
SMH63	1200	Type E	10.252	8.902	1.125	706915.659	804479.861
SMH64	1200	Type B	10.161	8.35	1.327	706895.680	804457.474
SMH65	1200	Type B	10.109	8.04	1.766	706873.723	804435.516
SMH66	1200	Type E	9.905	8.494	1.195	706912.473	804462.709
SMH67	1500	Type B	10.474	7.85	1.656	706836.665	804411.999
SMH68	1200	Type D	8.326	7.50	0.801	706947.412	804391.186
SMH69	1240x975	Type C	9.910	7.437	1.677	706953.353	804368.792
SMH70	---	HEADWALL	8.672	7.267	0.880	706894.823	804380.246
SMH71	1350	Type B	8.782	6.80	1.607	706950.680	804438.790
SMH72	1350	Type A	9.890	6.48	3.027	706921.487	804475.500
SMH73	1350	Type A	9.996	6.35	3.348	706918.515	804491.398
SMH74	1200	Type D	9.40	8.225	0.95	706934.264	804489.451
SMH75	1200	Type E	8.50	7.271	0.898	706947.964	804503.919
SMH76	1200	Type E	8.35	6.907	1.215	706930.392	804521.501
SMH77	1200	Type D	7.80	6.50	1.00	706917.542	804535.385
SMH78	1350	Type B	8.337	6.00	2.013	706955.521	804534.998
SMH79	1240x900	Type C	4.680	3.07	1.155	706880.672	804570.721
SMH80	1240x900	Type C	4.195	2.709	1.030	706931.225	804580.547
SMH81	1350	Type D	3.952	2.614	0.887	706939.067	804602.330
SMH82	1350	Type C	499.00	2.202	1001.652	706958.940	804617.614
SMH83	1900	Type D	3.555	1.735	0.82	707066.905	804633.812
SMH84	---	HEADWALL	3.42	1.515	0.903	707098.900	804634.572
SMH85	1200	Type D	11.406	10.434	0.741	707059.836	804254.050
SMH86	1200	Type D	8.297	7.15	0.847	707138.987	804268.771
SMH87	1200	Type D	5.408	4.185	0.923	707199.302	804300.560
SMH88	1800	Type D	4.015	2.414	0.851	707230.916	804329.887
SMH89	1800	Type D	3.772	2.15	0.648	707253.314	804357.948
SMH90	---	HEADWALL	2.95	2.022	0.178	707248.320	804369.776



NOTES:

THE GREENFIELD RUNOFF RATE OF (QBAR) 105.90LTS/SEC IS CALCULATED ON A SITE AREA OF 175500M2 OR 17.55HA. THE QBAR RATE USED FOR THE CALCULATION OF THE REQUIRED ON SITE STORAGE IS REDUCED TO 80.6LTS/SEC TO COMPENSATE FOR THE 25.3LTS/SEC OF RUNOFF THAT IS NOT ATTENUATED AND WHICH IS DERIVED FROM THE NORTHEAST CORNER OF THE DEVELOPMENT. THE ATTENUATION SYSTEM CONSISTS OF A SILT TRAPs, CLASS 1 BYPASS PETROL/OIL INTERCEPTOR ON ALL NETWORKS AND AN ATTENUATION BASIN/POND HAVING A STORAGE VOLUME OF CIRCA 3784M3. THE CRITICAL STORM DURATION FOR A 1 in 30 YR STORM EVENT IS 360mins (WINTER) WHERE THE REQUIRED VOLUME IS 2243.70M3. THE CRITICAL STORM DURATION FOR A 1 in 100 YR STORM EVENT IS ALSO 360mins (WINTER) WHERE THE REQUIRED STORAGE VOLUME IS 2978.70M3 RESULTING IN AN OVERFLOW VOLUME OF 115.3M3.

ALL STORM DRAINAGE PIPE LINES HAVE BEEN DESIGNED FOR 1 IN 2YR RETURN PERIOD WITH A MAXIMUM RAINFALL OF 50MM/HR. MINIMUM SELF CLEANSING VELOCITY OF 0.8LTS/SEC & MINIMUM TIME OF ENTRY 4 MINS. 10% ALLOWANCE HAS BEEN INCLUDED FOR GLOBAL CLIMATE CHANGE.

ALL COVER LEVELS ARE INDICATIVE AND THE FINAL COVER LEVELS TO MATCH FINISHED PATHROAD LEVELS.

ALL LEVELS FOR PIPES TO BE CHECKED AND VERIFIED PRIOR TO WORK COMMENCING ON SITE.

THE LAYOUT OF THE BRANCH DRAINS FROM THE INDIVIDUAL SITES ARE AS SHOWN ON THE DWELLINGS LAYOUT PLAN. ANY CHANGES ARE TO BE AGREED PRIOR TO CONSTRUCTION. THE DISTANCE FROM THE FINAL ACCESS JUNCTION ON EACH INDIVIDUAL SITE TO THE CONNECTION TO THE MAIN DRAIN TO BE A MAXIMUM OF 12m.

THE CONNECTION OF THE BRANCH DRAINS TO MAIN DRAINS SHOULD BE MADE AT A MANHOLE WHERE POSSIBLE OR BY USING AN OBLIQUE TYPE SADDLE. SADDLES SHOULD NOT BE USED ON PIPES OF 100mm DIAMETER, NOR TO CONNECT PIPES OF THE SAME DIAMETER.

ALL PIPES SHOULD HAVE FLEXIBLE JOINTS FORMED BY A METHOD RECOMMENDED BY THE PIPE MANUFACTURER. ELASTOMERIC SEALING RINGS, COMPLYING WITH THE REQUIREMENTS OF BS 2494, TYPE D, SHOULD BE USED.

MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	*LOCATION*
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (A/S) TO BE 100mmØ uPVC PIPES AT A GRADIENT OF 1 in 60.

GULLIES SHALL BE PRECAST CONCRETE COMPLYING WITH THE REQUIREMENTS OF BS 5911: PART 230, OR MAY CONSIST OF A CHAMBER CONSTRUCTED OF 100mm SOLID BLOCKWORK AND HAVING A 150mm IN SITU CONCRETE FLOOR, WITH INTERNAL DIMENSIONS OF 450mm x 300mm x 750mm. THE OUTLET FROM THE GULLY SHOULD BE 150mm DIAMETER, SET A MINIMUM OF 375mm ABOVE THE FLOOR OF THE CHAMBER.

GULLY GRATINGS IN ROADS SHOULD BE SET WITH THE DIRECTION OF THE OPENINGS AT RIGHT ANGLES TO THE DIRECTION OF TRAFFIC.

LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTFALL POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

THE TYPE OF PIPE AND FITTINGS TO BE USED TO BE uPVC FOR PIPES UP TO 300mm IN DIAMETER (IN ACCORDANCE WITH THE REQUIREMENTS OF IS 424) .

TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

DRAINAGE PIPES SHOULD BE LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO RAODWAYS AND 0.6m IN GARDENS. WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS, ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GROUND FLOOR LEVEL (GFL 99.99)
- 1:40 / 6m — ROAD GRADIENT
- ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
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DRAWING. NO: 112 REV. NO: A

ENG

TITLE: Storm Drainage Layout Zone 2

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd 1st Floor Quayside Business Park Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: P.Coyle

DATE: August 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

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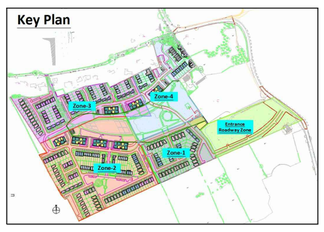
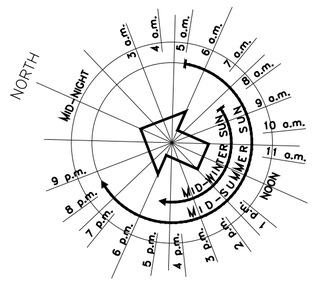
01 / 113 Storm Drainage Layout-Zone 2
SCALE 1:500

Key Plan





LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 / 6m — ROAD GRADIENT
- ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH1	1200	Type E	23.029	21.645	1.159	706666.070	804050.880
SMH2	1200	Type D	21.234	20.25	0.759	706616.681	804115.875
SMH3	1200	Type E	20.997	19.615	0.777	706632.781	804123.054
SMH4	1200	Type E	21.272	19.916	1.131	706698.842	804152.954
SMH5	1350	Type E	21.015	19.276	0.993	706682.249	804146.200
SMH6	1350	Type E	20.591	19.098	1.193	706670.972	804170.431
SMH7	1350	Type E	20.327	18.803	1.224	706679.910	804178.413
SMH8	1350	Type E	18.982	17.373	1.309	706745.791	804171.407
SMH9	1200	Type E	21.630	20.227	1.178	706736.743	804083.299
SMH10	1200	Type E	21.141	19.728	1.188	706720.008	804119.810
SMH11	1200	Type B	20.993	19.20	0.840	706723.218	804113.770
SMH12	1200	Type E	18.814	17.13	1.459	706779.850	804139.881
SMH13	1350	Type B	16.992	14.781	1.422	706828.343	804162.585
SMH14	1240x975	Type C	15.500	13.696	1.278	706867.571	804181.411
SMH15	1200	Type E	19.069	17.706	1.138	706623.369	804158.959
SMH16	1200	Type E	17.682	16.226	1.231	706601.841	804205.560
SMH17	1200	Type B	18.351	15.976	0.608	706612.214	804183.067
SMH18	1350	Type A	20.192	15.736	4.156	706655.021	804202.867
SMH19	1350	Type A	19.641	15.467	3.874	706634.505	804247.049
SMH20	1200	Type E	18.291	16.819	1.247	706550.894	804231.079
SMH21	1200	Type A	19.637	16.218	3.194	706616.157	804261.167
SMH22	1350	Type A	19.580	15.27	3.242	706634.963	804259.799
SMH23	1200	Type E	18.804	17.398	1.181	706742.971	804186.247
SMH24	1350	Type B	17.422	14.677	1.722	706749.762	804247.200
SMH25	1350	Type B	15.525	13.461	1.402	706801.679	804241.268
SMH26	1200	Type D	14.996	13.884	0.887	706684.587	804196.704
SMH27	1200	Type D	13.812	12.689	0.898	706867.422	804235.814
SMH28	1240x1125	Type C	14.375	11.897	1.230	706832.332	804252.797
SMH29	1200	Type E	13.602	12.244	1.133	706814.117	804261.67
SMH30	1500	Type B	14.017	11.736	1.532	706842.618	804267.215
SMH31	1200	Type D	15.217	14.014	0.978	706896.002	804194.418
SMH32	1200	Type E	14.764	13.50	1.039	706970.096	804226.695
SMH33	1200	Type E	14.978	13.31	1.278	706953.339	804219.791
SMH34	1500	Type B	12.133	9.55	1.269	706919.532	804297.593
SMH35	1200	Type B	14.269	12.26	1.784	707022.858	804216.192
SMH36	1200	Type B	13.220	10.857	2.112	707012.218	804242.262
SMH37	1200	Type B	11.871	9.71	1.936	707027.356	804279.630
SMH38	1240x1200	Type C	10.266	8.13	1.386	706984.960	804324.343
SMH39	1200	Type E	10.45	9.20	1.025	707010.182	804330.336
SMH40	1200	Type D	9.239	8.10	0.909	707001.157	804356.414
SMH41	1200	Type D	8.916	7.87	0.741	706991.889	804368.871
SMH42	1240x1200	Type C	9.255	7.55	0.955	706963.558	804355.032
SMH43	---	HEADWALL	9.240	7.416	1.074	706955.868	804375.889
SMH44	1200	Type E	15.647	14.241	1.181	706505.314	804401.076

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH45	1200	Type E	15.825	14.133	1.392	706514.445	804387.425
SMH46	1200	Type E	13.731	12.291	1.140	706578.121	804417.444
SMH47	1200	Type A	15.613	12.091	3.222	706610.210	804398.175
SMH48	1200	Type E	16.185	14.617	1.268	706532.931	804359.074
SMH49	1200	Type E	17.278	16.00	1.053	706551.287	804320.565
SMH50	1200	Type A	18.318	13.85	4.168	706559.932	804290.404
SMH51	1200	Type A	17.397	13.52	3.577	706608.121	804314.037
SMH52	1350	Type E	16.567	11.65	3.006	706638.008	804338.883
SMH53	1350	Type A	15.450	11.355	3.595	706670.637	804355.776
SMH54	1200	Type E	12.879	11.425	1.154	706675.289	804426.858
SMH55	1200	Type B	13.906	11.035	2.571	706689.466	804390.534
SMH56	1350	Type A	14.415	10.80	2.837	706701.309	804370.479
SMH57	1500	Type B	13.602	10.574	2.503	706722.308	804380.853
SMH58	1200	Type E	10.871	9.45	1.121	706741.584	804443.289
SMH59	1200	Type B	11.464	9.16	2.001	706757.961	804419.729
SMH60	1500	Type A	12.059	8.80	1.280	706766.651	804386.973
SMH61	1500	Type B	11.273	8.50	2.239	706808.627	804398.791
SMH62	1200	Type E	9.948	8.603	1.120	706882.886	804486.089
SMH63	1200	Type E	10.252	8.902	1.125	706915.659	804478.861
SMH64	1200	Type B	10.161	8.25	1.327	706895.680	804457.474
SMH65	1200	Type B	10.109	8.04	1.766	706873.723	804435.516
SMH66	1200	Type E	9.905	8.494	1.186	706812.473	804462.709
SMH67	1500	Type B	10.474	7.85	1.656	706836.665	804411.999
SMH68	1200	Type D	8.326	7.50	0.601	706847.412	804391.186
SMH69	1240x975	Type C	9.910	7.437	1.677	706853.353	804398.792
SMH70	---	HEADWALL	8.672	7.267	0.880	706894.823	804389.246
SMH71	1350	Type B	8.782	6.80	1.607	706950.680	804438.790
SMH72	1350	Type A	9.890	6.48	3.027	706921.497	804475.500
SMH73	1350	Type A	9.996	6.37	3.248	706918.915	804491.368
SMH74	1200	Type D	9.40	8.225	0.95	706934.294	804489.451
SMH75	1200	Type E	8.50	7.271	0.698	706947.964	804500.919
SMH76	1200	Type E	8.35	6.907	1.215	706930.392	804521.501
SMH77	1200	Type D	7.80	6.50	1.00	706917.542	804535.385
SMH78	1350	Type B	8.337	5.00	2.013	706895.521	804524.968
SMH79	1240x900	Type C	4.680	3.07	1.155	706880.872	804570.721
SMH80	1240x900	Type C	4.195	2.709	1.035	706931.225	804590.547
SMH81	1350	Type D	3.952	2.614	0.887	706939.067	804602.330
SMH82	1350	Type D	-999.00	2.202	-1001.652	706998.940	804617.614
SMH83	1900	Type D	3.555	1.735	0.82	707066.935	804633.812
SMH84	---	HEADWALL	3.42	1.518	0.902	707098.900	804639.572
SMH85	1200	Type D	11.406	10.434	0.747	707059.836	804234.050
SMH86	1200	Type D	8.297	7.15	0.847	707138.987	804268.771
SMH87	1200	Type D	5.408	4.185	0.923	707199.322	804300.560
SMH88	1800	Type D	4.015	2.414	0.851	707230.916	804329.867
SMH89	1800	Type D	3.772	2.15	0.848	707253.314	804357.948
SMH90	---	HEADWALL	2.95	2.022	0.178	707248.320	804369.776

NOTES:

THE GREENFIELD RUNOFF RATE OF (QBAR) 105.90LTS/SEC IS CALCULATED ON A SITE AREA OF 175500M2 0R 17.55HA. THE QBAR RATE USED FOR THE CALCULATION OF THE REQUIRED ON SITE STORAGE IS REDUCED TO 80.6LTS/SEC TO COMPENSATE FOR THE 25.3LTS/SEC OF RUNOFF THAT IS NOT ATTENUATED AND WHICH IS DERIVED FROM THE NORTHEAST CORNER OF THE DEVELOPMENT. THE ATTENUATION SYSTEM CONSISTS OF A SILT TRAPs, CLASS 1 BYPASS PETROL/OIL INTERCEPTOR ON ALL NETWORKS AND AN ATTENUATION BASIN/POND HAVING A STORAGE VOLUME OF CIRCA 3784M3. THE CRITICAL STORM DURATION FOR A 1 in 30 YR STORM EVENT IS 360mins (WINTER) WHERE THE REQUIRED VOLUME IS 2243.70M3. THE CRITICAL STORM DURATION FOR A 1 in 100 YR STORM EVENT IS ALSO 360mins (WINTER) WHERE THE REQUIRED STORAGE VOLUME IS 2978.70M3 RESULTING IN AN OVERFLOW VOLUME OF 115.3M3.

ALL STORM DRAINAGE PIPE LINES HAVE BEEN DESIGNED FOR 1 IN 2YR RETURN PERIOD WITH A MAXIMUM RAINFALL OF 50MM/HR. MINIMUM SELF CLEANSING VELOCITY OF 0.8LT/SEC & MINIMUM TIME OF ENTRY 4 MINS. 10% ALLOWANCE HAS BEEN INCLUDED FOR GLOBAL CLIMATE CHANGE.

ALL COVER LEVELS ARE INDICATIVE AND THE FINAL COVER LEVELS TO MATCH FINISHED PATH/ROAD LEVELS.

ALL LEVELS FOR PIPES TO BE CHECKED AND VERIFIED PRIOR TO WORK COMMENCING ON SITE.

THE LAYOUT OF THE BRANCH DRAINS FROM THE INDIVIDUAL SITES ARE AS SHOWN ON THE DWELLINGS LAYOUT PLAN. ANY CHANGES ARE TO BE AGREED PRIOR TO CONSTRUCTION. THE DISTANCE FROM THE FINAL ACCESS JUNCTION ON EACH INDIVIDUAL SITE TO THE CONNECTION TO THE MAIN DRAIN TO BE A MAXIMUM OF 12m.

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MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	LOCATION
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (AJ'S) TO BE 100mmØ uPVC PIPES AT A GRADIENT OF 1 in 60.

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GULLY GRATINGS IN ROADS SHOULD BE SET WITH THE DIRECTION OF THE OPENINGS AT RIGHT ANGLES TO THE DIRECTION OF TRAFFIC.

LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTFALL POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

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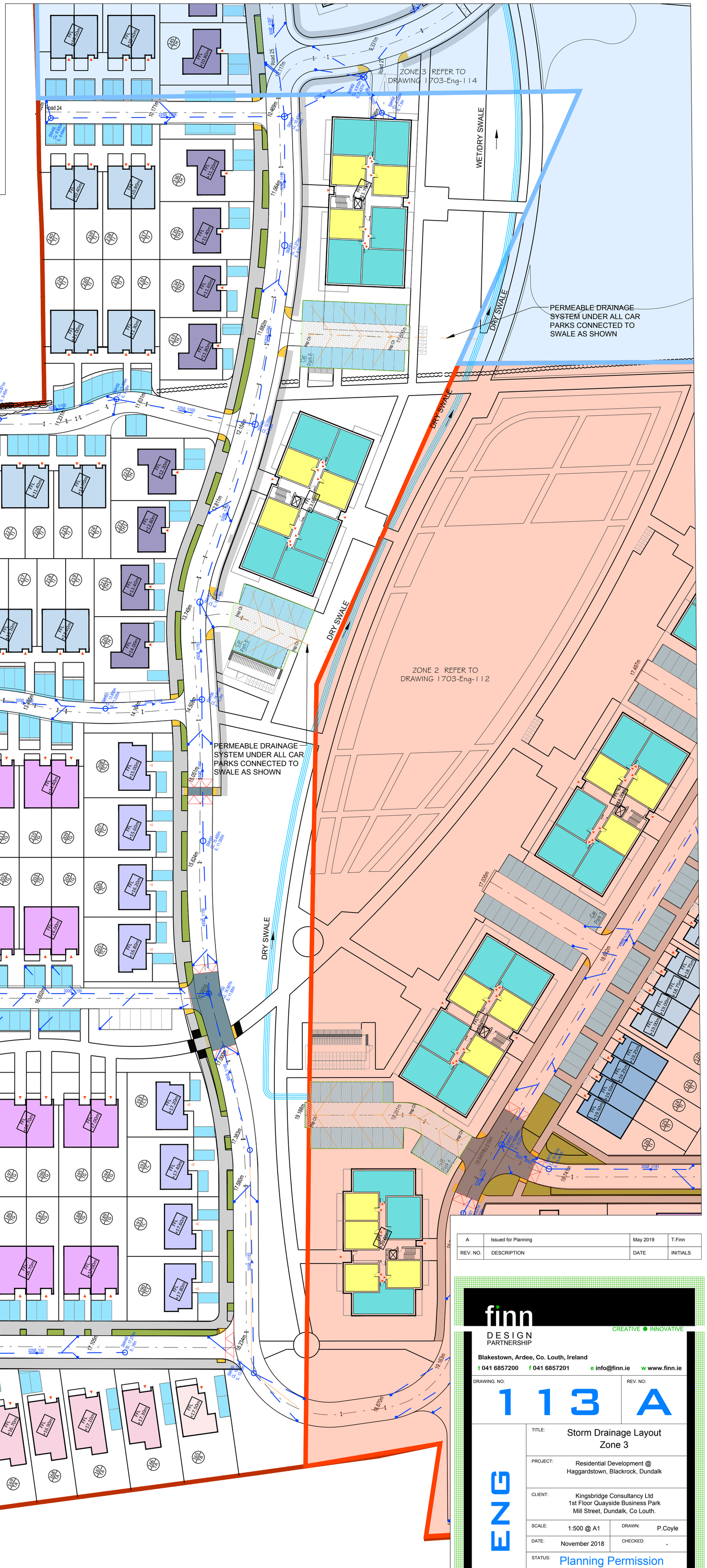
DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

DRAINAGE PIPES SHOULD BE LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO RAODWAYS AND 0.6m IN GARDENS. WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS, ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.



REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE

Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 113 REV. NO: A

ENG

TITLE: Storm Drainage Layout Zone 3

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd, 1st Floor Quayside Business Park, Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: P.Coyle

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
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2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

01 / 113 Storm Drainage Layout-Zone 3
SCALE 1:500

INSTALL KINGSPAN KLARGESTER CLASS 1 BYPASS SEPARATOR REFERENCE NSBE015 ON SURFACE WATER LINE PRIOR TO DISCHARGE TO ATTENUATION BASIN/POND.

SILT TRAP TO BE INSTALLED PRIOR TO PETROL INTERCEPTOR, WHERE TRAP SHALL HAVE A MINIMUM VOLUME OF 2.50M3.

PERMEABLE DRAINAGE SYSTEM UNDER ALL CAR PARKS CONNECTED TO SWALE AS SHOWN

450MMØ PIPELINE FROM FROM INFILTRATION BASIN/POND TO DISCHARGE INTO 1000MM WIDE X 750MM HIGH BOX CULVERT WHERE CULVERT SHALL EXTEND TO END OF EXISTING OPEN CHANNEL.
BOX CULVERT SHALL BE LAID AT LEVEL GRADIENT WHERE THERE SHALL BE 150MM MINIMUM DEPTH OF WATER IN BOTTOM OF CULVERT AT ALL TIMES.
VELOCITY OF WATER EXITING 450MM DIA PIPELINE = 1.66L/S
VELOCITY OF WATER EXITING CULVERT = .465L/S

NEW HEAD WALL TO BE CONSTRUCTED AT OUTLET FROM BOX CULVERT AS SHOWN. FORM RIPRAP APRON AT OUTLET FROM CULVERT BY LAYING 100MM BROKEN STONE, WHERE APRON SHALL BE 2.00M LONG AND 250MM DEEP

CULVERT OUTLET @ DISCHARGE POINT

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH1	1200	Type E	23.029	21.645	1.159	706998.070	804050.880
SMH2	1200	Type D	21.234	20.25	0.759	706916.681	804115.875
SMH3	1200	Type E	20.997	19.615	0.777	706932.781	804123.054
SMH4	1200	Type E	21.272	19.916	1.131	706898.842	804152.954
SMH5	1350	Type E	21.015	19.276	0.993	706882.249	804146.200
SMH6	1350	Type E	20.591	19.098	1.193	706870.972	804170.431
SMH7	1350	Type E	20.327	18.803	1.224	706879.810	804178.413
SMH8	1350	Type E	18.982	17.573	1.309	706745.791	804171.407
SMH9	1200	Type E	21.630	20.227	1.178	706736.743	804083.299
SMH10	1200	Type E	21.141	19.728	1.188	706720.008	804119.810
SMH11	1200	Type B	20.893	19.20	0.840	706723.218	804113.770
SMH12	1200	Type E	18.814	17.13	1.459	706779.850	804139.881
SMH13	1350	Type B	16.992	14.781	1.422	706828.343	804162.585
SMH14	1240x975	Type C	15.500	13.696	1.278	706987.571	804181.411
SMH15	1200	Type E	19.069	17.706	1.138	706623.369	804158.959
SMH16	1200	Type E	17.682	16.226	1.231	706601.841	804205.560
SMH17	1200	Type B	18.351	15.976	0.608	706612.214	804163.067
SMH18	1350	Type A	20.192	15.736	4.156	706655.021	804202.867
SMH19	1350	Type A	19.641	15.467	3.874	706634.505	804247.049
SMH20	1200	Type E	18.291	16.819	1.247	706550.894	804231.079
SMH21	1200	Type A	19.637	16.218	3.154	706616.157	804261.167
SMH22	1350	Type A	19.580	15.27	3.242	706634.963	804259.799
SMH23	1200	Type E	18.804	17.398	1.181	706742.971	804186.247
SMH24	1350	Type B	17.422	14.677	1.722	706749.762	804247.200
SMH25	1350	Type B	15.525	13.461	1.402	706801.679	804241.268
SMH26	1200	Type D	14.996	13.954	0.897	706884.587	804196.704
SMH27	1200	Type D	13.812	12.689	0.898	706867.422	804235.814
SMH28	1240x1125	Type C	14.375	11.897	1.230	706832.332	804252.797
SMH29	1200	Type E	13.602	12.244	1.133	706814.117	804261.67
SMH30	1500	Type B	14.017	11.736	1.532	706842.618	804267.215
SMH31	1200	Type D	15.217	14.014	0.978	706886.002	804194.418
SMH32	1200	Type E	14.764	13.50	1.039	706970.096	804226.695
SMH33	1200	Type E	14.978	13.31	1.278	706953.339	804219.791
SMH34	1500	Type B	12.133	9.55	1.269	706919.532	804207.593
SMH35	1200	Type B	14.269	12.26	1.784	707022.858	804216.192
SMH36	1200	Type B	13.220	10.857	2.112	707012.218	804242.262
SMH37	1200	Type B	11.871	9.71	1.936	707027.356	804279.630
SMH38	1240x1200	Type C	10.266	8.13	1.386	706984.860	804324.343
SMH39	1200	Type E	10.45	9.20	1.025	707010.182	804330.336
SMH40	1200	Type D	9.239	8.10	0.909	707001.157	804356.414
SMH41	1200	Type D	8.916	7.87	0.741	706991.889	804368.871
SMH42	1240x1200	Type C	9.255	7.55	0.955	706963.558	804355.032
SMH43	---	HEADWALL	9.240	7.416	1.074	706955.868	804375.889
SMH44	1200	Type E	15.647	14.241	1.181	706505.314	804401.076

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH45	1200	Type E	15.825	14.133	1.392	706514.445	804387.425
SMH46	1200	Type E	13.731	12.291	1.140	706578.121	804417.444
SMH47	1200	Type A	15.613	12.091	3.222	706610.210	804338.175
SMH48	1200	Type E	16.185	14.617	1.268	706532.931	804359.074
SMH49	1200	Type E	17.278	16.00	1.053	706551.287	804320.565
SMH50	1200	Type A	18.318	13.85	4.168	706559.932	804290.404
SMH51	1200	Type A	17.397	13.52	3.577	706608.121	804314.037
SMH52	1350	Type A	16.567	11.65	3.006	706638.008	804358.883
SMH53	1350	Type A	15.450	11.355	3.595	706670.637	804355.776
SMH54	1200	Type E	12.879	11.425	1.154	706675.289	804426.858
SMH55	1200	Type B	13.906	11.035	2.571	706589.466	804390.534
SMH56	1350	Type A	14.415	10.80	2.837	706701.309	804370.479
SMH57	1500	Type B	13.602	10.574	2.503	706722.308	804360.853
SMH58	1200	Type E	10.871	9.45	1.121	706741.564	804443.289
SMH59	1200	Type B	11.464	9.16	2.001	706757.961	804419.729
SMH60	1500	Type A	12.059	8.80	1.080	706766.651	804398.973
SMH61	1500	Type B	11.273	8.50	2.239	706808.627	804398.791
SMH62	1200	Type E	9.948	8.603	1.120	706682.886	804486.089
SMH63	1200	Type E	10.252	8.902	1.125	706915.659	804478.861
SMH64	1200	Type B	10.161	8.25	1.327	706895.680	804457.474
SMH65	1200	Type B	10.109	8.04	1.766	706873.723	804439.516
SMH66	1200	Type E	9.905	8.494	1.186	706812.473	804462.709
SMH67	1500	Type B	10.474	7.85	1.656	706836.665	804411.999
SMH68	1200	Type D	8.326	7.50	0.601	706847.412	804391.186
SMH69	1240x975	Type C	9.910	7.437	1.677	706853.353	804398.792
SMH70	---	HEADWALL	8.672	7.267	0.880	706894.823	804438.246
SMH71	1350	Type B	8.782	6.80	1.607	706950.680	804438.790
SMH72	1350	Type A	9.890	6.48	3.027	706921.497	804475.500
SMH73	1350	Type A	9.996	6.37	3.248	706918.915	804491.368
SMH74	1200	Type D	9.40	8.225	0.95	706934.294	804469.451
SMH75	1200	Type E	8.50	7.271	0.898	706947.964	804500.919
SMH76	1200	Type E	8.35	6.907	1.215	706930.350	804521.501
SMH77	1200	Type D	7.80	6.50	1.00	706917.542	804536.385
SMH78	1350	Type D	8.337	5.00	2.013	706895.521	804524.968
SMH79	1240x900	Type C	4.680	3.07	1.155	706880.872	804570.721
SMH80	1240x900	Type C	4.195	2.709	1.035	706931.225	804590.547
SMH81	1350	Type D	3.952	2.614	0.887	706939.067	804602.330
SMH82	1350	Type D	-999.00	2.202	-1001.652	706998.940	804617.614
SMH83	1900	Type D	3.555	1.735	0.82	707066.905	804633.812
SMH84	---	HEADWALL	3.42	1.518	0.902	707098.900	804639.572
SMH85	1200	Type D	11.406	10.434	0.747	707059.836	804234.050
SMH86	1200	Type D	8.297	7.15	0.847	707138.987	804268.771
SMH87	1200	Type D	5.408	4.185	0.923	707199.322	804300.560
SMH88	1800	Type D	4.015	2.414	0.851	707230.916	804329.867
SMH89	1800	Type D	3.772	2.15	0.848	707253.314	804357.948
SMH90	---	HEADWALL	2.95	2.022	0.178	707248.320	804369.776

STAINLESS STEEL HYDROBRAKE FLOW CONTROL DEVICE TO BE FITTED WITHIN MANHOLE SMH71 ON INLET PIPE FROM ATTENUATION BASIN/POND TO CONTROL FLOWS TO 80.6 litres/sec.

IN ADDITION A SECONDARY PNEUMATICALLY CONTROLLED SLAM-SHUT/PENSTOCK VALVE SHALL BE FITTED INSIDE THE MANHOLE THAT CAN BE CLOSED WHERE THE SURFACE WATER RUNOFF FROM THE SITE BECOMES CONTAMINATED AND WHERE THE RUNOFF NEEDS TO BE RETAINED ON SITE TO ALLOW SUFFICIENT TIME FOR TESTING AND IMPLEMENTATION OF PLAN TO REMOVE RUNOFF FROM SITE, IF REQUIRED.

750MM WIDE X 750MM HIGH BOX CULVERT INSTALLED UNDER ROADWAY AS CHANNEL FOR SURFACE RUNOFF TO INFILTRATION BASIN/POND.

WET/DRY SWALE

WET/DRY SWALE

Storm Water Infiltration Basin/Pond
IL 7.00 M AOD
TWL 8.466 for 1 in 100 yr Event.
Reqd Storage Volume =2978.7m3
Minimum Storage Available = 3690m3

SILT TRAP TO BE INSTALLED PRIOR TO PETROL INTERCEPTOR, WHERE TRAP SHALL HAVE A MINIMUM VOLUME OF 4.50M3.

INSTALL KINGSPAN KLARGESTER CLASS 1 BYPASS SEPARATOR REFERENCE NSBE030 ON SURFACE WATER LINE PRIOR TO DISCHARGE TO ATTENUATION BASIN/POND.

INSTALL KINGSPAN KLARGESTER CLASS 1 BYPASS SEPARATOR REFERENCE NSBE075 ON SURFACE WATER LINE PRIOR TO DISCHARGE TO ATTENUATION BASIN/POND.

SILT TRAP TO BE INSTALLED PRIOR TO PETROL INTERCEPTOR, WHERE TRAP SHALL HAVE A MINIMUM VOLUME OF 4.50M3.

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 GROUND FLOOR LEVEL
- 1:40 ROAD GRADIENT
- 6m ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

Key Plan

NOTES:

THE GREENFIELD RUNOFF RATE OF (QBAR) 105.90LTS/SEC IS CALCULATED ON A SITE AREA OF 175500M2 OR 17.55HA. THE QBAR RATE USED FOR THE CALCULATION OF THE REQUIRED ON SITE STORAGE IS REDUCED TO 80.6LTS/SEC TO COMPENSATE FOR THE 25.3LTS/SEC OF RUNOFF THAT IS NOT ATTENUATED AND WHICH IS DERIVED FROM THE NORTHEAST CORNER OF THE DEVELOPMENT. THE ATTENUATION SYSTEM CONSISTS OF A SILT TRAPs, CLASS 1 BYPASS PETROL/OIL INTERCEPTOR ON ALL NETWORKS AND AN ATTENUATION BASIN/POND HAVING A STORAGE VOLUME OF CIRCA 3784M3. THE CRITICAL STORM DURATION FOR A 1 in 30 YR STORM EVENT IS 360mins (WINTER) WHERE THE REQUIRED VOLUME IS 2243.70M3. THE CRITICAL STORM DURATION FOR A 1 in 100 YR STORM EVENT IS ALSO 360mins (WINTER) WHERE THE REQUIRED STORAGE VOLUME IS 2978.70M3 RESULTING IN AN OVERFLOW VOLUME OF 115.3M3.

ALL STORM DRAINAGE PIPE LINES HAVE BEEN DESIGNED FOR 1 IN 2YR RETURN PERIOD WITH A MAXIMUM RAINFALL OF 50MM/HR MINIMUM SELF CLEANSING VELOCITY OF 0.8LT/SEC & MINIMUM TIME OF ENTRY 4 MINS. 10% ALLOWANCE HAS BEEN INCLUDED FOR GLOBAL CLIMATE CHANGE.

ALL COVER LEVELS ARE INDICATIVE AND THE FINAL COVER LEVELS TO MATCH FINISHED PATH/ROAD LEVELS.

ALL LEVELS FOR PIPES TO BE CHECKED AND VERIFIED PRIOR TO WORK COMMENCING ON SITE.

THE LAYOUT OF THE BRANCH DRAINS FROM THE INDIVIDUAL SITES ARE AS SHOWN ON THE DWELLINGS LAYOUT PLAN . ANY CHANGES ARE TO BE AGREED PRIOR TO CONSTRUCTION. THE DISTANCE FROM THE FINAL ACCESS JUNCTION ON EACH INDIVIDUAL SITE TO THE CONNECTION TO THE MAIN DRAIN TO BE A MAXIMUM OF 12m.

THE CONNECTION OF THE BRANCH DRAINS TO MAIN DRAINS SHOULD BE MADE AT A MANHOLE WHERE POSSIBLE OR BY USING AN OBLIQUE TYPE SADDLE. SADDLES SHOULD NOT BE USED ON PIPES OF 100mm DIAMETER, NOR TO CONNECT PIPES OF THE SAME DIAMETER.

ALL PIPES SHOULD HAVE FLEXIBLE JOINTS FORMED BY A METHOD RECOMMENDED BY THE PIPE MANUFACTURER. ELASTOMERIC SEALING RINGS, COMPLYING WITH THE REQUIREMENTS OF BS 2494, TYPE O, SHOULD BE USED.

MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	LOCATION
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (AJ'S) TO BE 100mmØ uPVC PIPES AT A GRADIENT OF 1 in 60.

GULLIES SHALL BE PRECAST CONCRETE COMPLYING WITH THE REQUIREMENTS OF BS 5911: PART 230, OR MAY CONSIST OF A CHAMBER CONSTRUCTED OF 100mm SOLID BLOCKWORK AND HAVING A 150mm IN SITU CONCRETE FLOOR, WITH INTERNAL DIMENSIONS OF 450mm x 300mm x 750mm. THE OUTLET FROM THE GULLY SHOULD BE 150mm DIAMETER, SET A MINIMUM OF 375mm ABOVE THE FLOOR OF THE CHAMBER.

GULLY GRATINGS IN ROADS SHOULD BE SET WITH THE DIRECTION OF THE OPENINGS AT RIGHT ANGLES TO THE DIRECTION OF TRAFFIC.

LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTFALL POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

THE TYPE OF PIPE AND FITTINGS TO BE USED TO BE uPVC FOR PIPES UP TO 300mm IN DIAMETER (IN ACCORDANCE WITH THE REQUIREMENTS OF IS 424) .

TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

DRAINAGE PIPES SHOULD BE LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO RAODWAYS AND 0.6m IN GARDENS. WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS, ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T.Finn
A	Box Culvert added as discharge of attenuated storm flows	Sept 2108	T.Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 114 REV. NO: B

ENG

TITLE: Storm Drainage Layout Zone 4

PROJECT: Haggardstown, Blackrock, Dundalk Residential Development @

CLIENT: Kingsbridge Consultancy Ltd 1st Floor Quayside Business Park Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: P.Coyle

DATE: November 2018 CHECKED: -

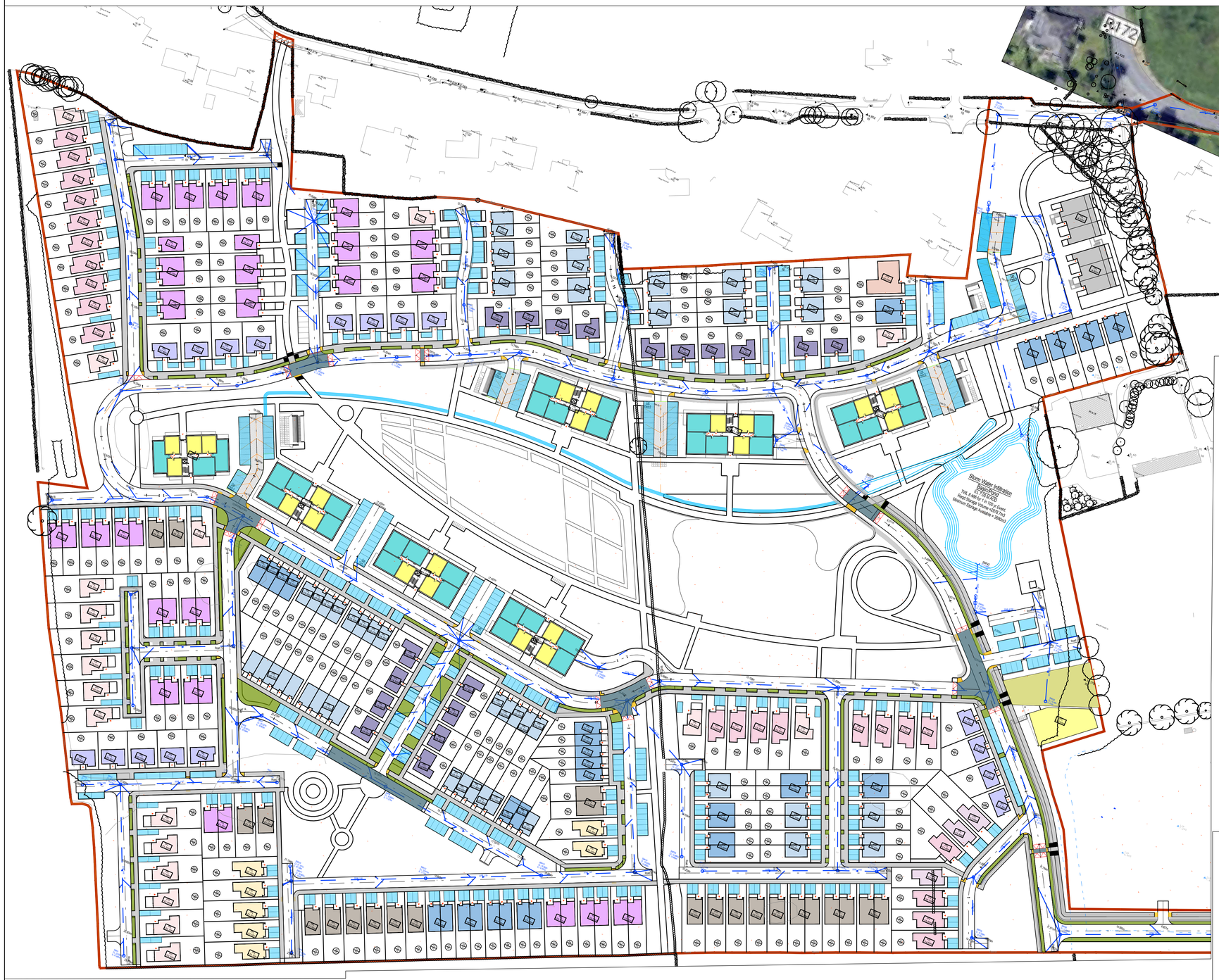
STATUS: Planning Permission

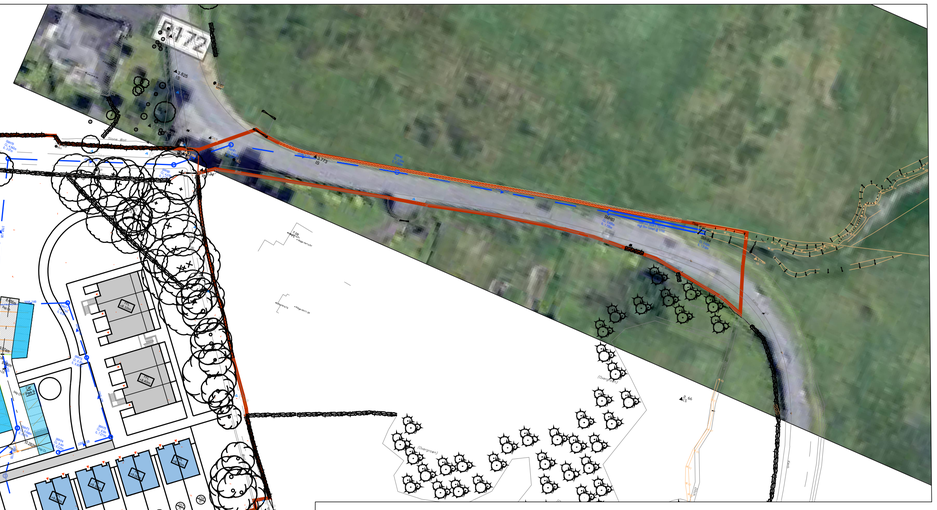
JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL , STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

01 / 114 Storm Drainage Layout-Zone 4
SCALE 1:500





MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH1	1200	Type E	23.029	21.645	1.159	706666.070	804050.880
SMH2	1200	Type D	21.234	20.25	0.759	706616.681	804115.875
SMH3	1200	Type E	20.997	19.615	0.777	706632.781	804123.054
SMH4	1200	Type E	21.272	19.916	1.131	706698.842	804152.954
SMH5	1350	Type E	21.015	19.276	0.993	706682.249	804146.200
SMH6	1350	Type E	20.591	19.098	1.193	706670.972	804170.431
SMH7	1350	Type E	20.327	18.803	1.224	706679.910	804178.413
SMH8	1350	Type E	18.982	17.373	1.309	706746.791	804171.407
SMH9	1200	Type E	21.630	20.227	1.178	706736.743	804083.299
SMH10	1200	Type E	21.141	19.728	1.188	706720.008	804119.810
SMH11	1200	Type B	20.993	19.20	0.840	706723.218	804113.770
SMH12	1200	Type E	18.814	17.13	1.459	706779.850	804139.881
SMH13	1350	Type B	16.992	14.781	1.422	706828.343	804162.585
SMH14	1240x975	Type C	15.500	13.696	1.278	706867.571	804181.411
SMH15	1200	Type E	19.069	17.706	1.138	706623.369	804158.959
SMH16	1200	Type E	17.682	16.226	1.231	706601.841	804205.560
SMH17	1200	Type B	18.351	15.976	0.608	706612.214	804183.067
SMH18	1350	Type A	20.192	15.736	4.156	706655.021	804202.867
SMH19	1350	Type A	19.641	15.467	3.874	706634.505	804247.049
SMH20	1200	Type E	18.291	16.819	1.247	706550.894	804231.079
SMH21	1200	Type A	19.637	16.218	3.194	706616.157	804261.167
SMH22	1350	Type A	19.580	15.27	3.242	706634.963	804259.799
SMH23	1200	Type E	18.804	17.398	1.181	706742.971	804186.247
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SMH26	1200	Type D	14.996	13.884	0.887	706884.587	804196.704
SMH27	1200	Type D	13.812	12.689	0.898	706867.422	804235.814
SMH28	1240x1125	Type C	14.375	11.897	1.230	706832.332	804252.797
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SMH32	1200	Type E	14.764	13.50	1.039	706970.096	804226.695
SMH33	1200	Type E	14.978	13.31	1.278	706953.339	804219.791
SMH34	1500	Type B	12.133	9.65	1.269	706919.532	804297.593
SMH35	1200	Type B	14.289	12.26	1.784	707022.858	804216.192
SMH36	1200	Type B	13.220	10.857	2.112	707012.218	804242.262
SMH37	1200	Type B	11.871	9.71	1.936	707027.356	804279.630
SMH38	1240x1200	Type C	10.266	8.13	1.386	706984.860	804324.343
SMH39	1200	Type E	10.45	9.20	1.025	707010.182	804330.336
SMH40	1200	Type D	9.239	8.10	0.909	707001.157	804356.414
SMH41	1200	Type D	8.916	7.87	0.741	706991.889	804368.871
SMH42	1240x1200	Type C	9.255	7.55	0.955	706963.558	804355.032
SMH43	---	HEADWALL	9.240	7.416	1.074	706955.868	804375.889
SMH44	1200	Type E	15.647	14.241	1.181	706505.314	804401.076

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SMH46	1200	Type E	13.731	12.291	1.140	706578.121	804417.444
SMH47	1200	Type A	15.613	12.091	3.222	706610.210	804398.175
SMH48	1200	Type E	16.185	14.617	1.268	706532.931	804359.074
SMH49	1200	Type E	17.278	16.00	1.053	706551.287	804320.565
SMH50	1200	Type A	18.318	13.85	4.168	706559.932	804290.404
SMH51	1200	Type A	17.397	13.52	3.577	706608.121	804314.037
SMH52	1350	Type A	16.567	11.65	3.006	706638.008	804338.883
SMH53	1350	Type A	15.450	11.355	3.595	706670.637	804355.776
SMH54	1200	Type E	12.879	11.425	1.154	706675.289	804426.858
SMH55	1200	Type B	13.906	11.035	2.571	706689.466	804390.534
SMH56	1350	Type A	14.415	10.80	2.837	706701.309	804370.479
SMH57	1500	Type B	13.602	10.574	2.503	706722.308	804380.853
SMH58	1200	Type E	10.871	9.45	1.121	706741.584	804443.289
SMH59	1200	Type B	11.464	9.16	2.001	706757.961	804419.729
SMH60	1500	Type A	12.059	8.80	1.280	706766.651	804386.973
SMH61	1500	Type B	11.273	8.50	2.239	706808.627	804398.791
SMH62	1200	Type E	9.948	8.603	1.120	706892.886	804446.089
SMH63	1200	Type E	10.282	8.902	1.125	706915.659	804478.861
SMH64	1200	Type B	10.181	8.25	1.327	706895.680	804457.474
SMH65	1200	Type B	10.109	8.04	1.766	706873.723	804435.516
SMH66	1200	Type E	9.905	8.494	1.186	706812.473	804462.709
SMH67	1500	Type B	10.474	7.65	1.656	706836.665	804411.999
SMH68	1200	Type D	8.326	7.50	0.601	706847.412	804391.186
SMH69	1240x975	Type C	9.910	7.437	1.677	706853.353	804398.792
SMH70	---	HEADWALL	8.672	7.267	0.880	706894.823	804389.246
SMH71	1350	Type B	8.782	6.80	1.607	706950.680	804438.790
SMH72	1350	Type A	9.880	6.48	3.027	706921.497	804475.500
SMH73	1350	Type A	9.996	6.37	3.248	706918.915	804491.368
SMH74	1200	Type D	9.40	8.225	0.95	706934.294	804489.451
SMH75	1200	Type E	8.50	7.271	0.698	706947.964	804500.919
SMH76	1200	Type E	8.35	6.907	1.215	706930.392	804521.501
SMH77	1200	Type D	7.80	6.50	1.00	706917.542	804535.385
SMH78	1350	Type B	8.337	5.00	2.013	706895.521	804424.968
SMH79	1240x900	Type C	4.680	3.07	1.155	706880.872	804570.721
SMH80	1240x900	Type C	4.195	2.709	1.035	706931.225	804590.547
SMH81	1350	Type D	3.952	2.614	0.887	706939.067	804602.330
SMH82	1350	Type D	-999.00	2.202	-1001.652	706998.940	804617.614
SMH83	1900	Type D	3.555	1.735	0.82	707066.905	804633.812
SMH84	---	HEADWALL	3.42	1.518	0.902	707098.900	804639.572
SMH85	1200	Type D	11.406	10.434	0.747	707059.836	804234.050
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SMH89	1800	Type D	3.772	2.15	0.848	707253.314	804357.948
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REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

NOTES:

THE GREENFIELD RUNOFF RATE OF (QBAR) 105.90LTS/SEC IS CALCULATED ON A SITE AREA OF 175500M2 OR 17.55HA. THE QBAR RATE USED FOR THE CALCULATION OF THE REQUIRED ON SITE STORAGE IS REDUCED TO 80.6LTS/SEC TO COMPENSATE FOR THE 25.3LTS/SEC OF RUNOFF THAT IS NOT ATTENUATED AND WHICH IS DERIVED FROM THE NORTHEAST CORNER OF THE DEVELOPMENT. THE ATTENUATION SYSTEM CONSISTS OF A SILT TRAPs, CLASS 1 BYPASS PETROLOIL INTERCEPTOR ON ALL NETWORKS AND AN ATTENUATION BASIN/POND HAVING A STORAGE VOLUME OF CIRCA 3784M3. THE CRITICAL STORM DURATION FOR A 1 in 30 YR STORM EVENT IS 360mins (WINTER) WHERE THE REQUIRED VOLUME IS 2243.70M3. THE CRITICAL STORM DURATION FOR A 1 in 100 YR STORM EVENT IS ALSO 360mins (WINTER) WHERE THE REQUIRED STORAGE VOLUME IS 2978.70M3 RESULTING IN AN OVERFLOW VOLUME OF 115.3M3.

ALL STORM DRAINAGE PIPE LINES HAVE BEEN DESIGNED FOR 1 IN 2YR RETURN PERIOD WITH A MAXIMUM RAINFALL OF 50MM/HR. MINIMUM SELF CLEANSING VELOCITY OF 0.8LT/SEC & MINIMUM TIME OF ENTRY 4 MINS. 10% ALLOWANCE HAS BEEN INCLUDED FOR GLOBAL CLIMATE CHANGE.

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THE CONNECTION OF THE BRANCH DRAINS TO MAIN DRAINS SHOULD BE MADE AT A MANHOLE WHERE POSSIBLE OR BY USING AN OBLIQUE TYPE SADDLE. SADDLES SHOULD NOT BE USED ON PIPES OF 100mm DIAMETER, NOR TO CONNECT PIPES OF THE SAME DIAMETER.

ALL PIPES SHOULD HAVE FLEXIBLE JOINTS FORMED BY A METHOD RECOMMENDED BY THE PIPE MANUFACTURER. ELASTOMERIC SEALING RINGS, COMPLYING WITH THE REQUIREMENTS OF BS 2494, TYPE D, SHOULD BE USED.

MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	LOCATION
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (AJ'S) TO BE 100mmØ uPVC PIPES AT A GRADIENT OF 1 in 60.

GULLIES SHALL BE PRECAST CONCRETE COMPLYING WITH THE REQUIREMENTS OF BS 5911: PART 230, OR MAY CONSIST OF A CHAMBER CONSTRUCTED OF 100mm SOLID BLOCKWORK AND HAVING A 150mm IN SITU CONCRETE FLOOR, WITH INTERNAL DIMENSIONS OF 450mm x 300mm x 750mm. THE OUTLET FROM THE GULLY SHOULD BE 150mm DIAMETER, SET A MINIMUM OF 375mm ABOVE THE FLOOR OF THE CHAMBER.

GULLY GRATINGS IN ROADS SHOULD BE SET WITH THE DIRECTION OF THE OPENINGS AT RIGHT ANGLES TO THE DIRECTION OF TRAFFIC.

LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTFALL POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

THE TYPE OF PIPE AND FITTINGS TO BE USED TO BE uPVC FOR PIPES UP TO 300mm IN DIAMETER (IN ACCORDANCE WITH THE REQUIREMENTS OF IS 424) .

TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

DRAINAGE PIPES SHOULD BE LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO RAODWAYS AND 0.6m IN GARDENS. WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS, ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.

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t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 115
REV. NO: A

ENG

TITLE: Overall Storm Drainage Layout

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd
1st Floor Quayside Business Park
Mill Street, Dundalk, Co Louth.

SCALE: 1:1000 @ A1 DRAWN: P.Coyle

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

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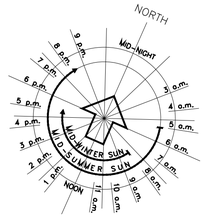
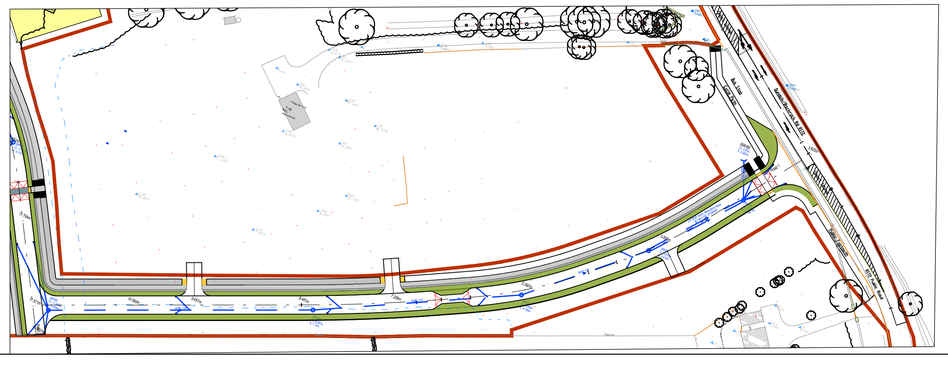
01 / 115 Overall Site Layout Plan - Storm Drainage
SCALE 1:1000

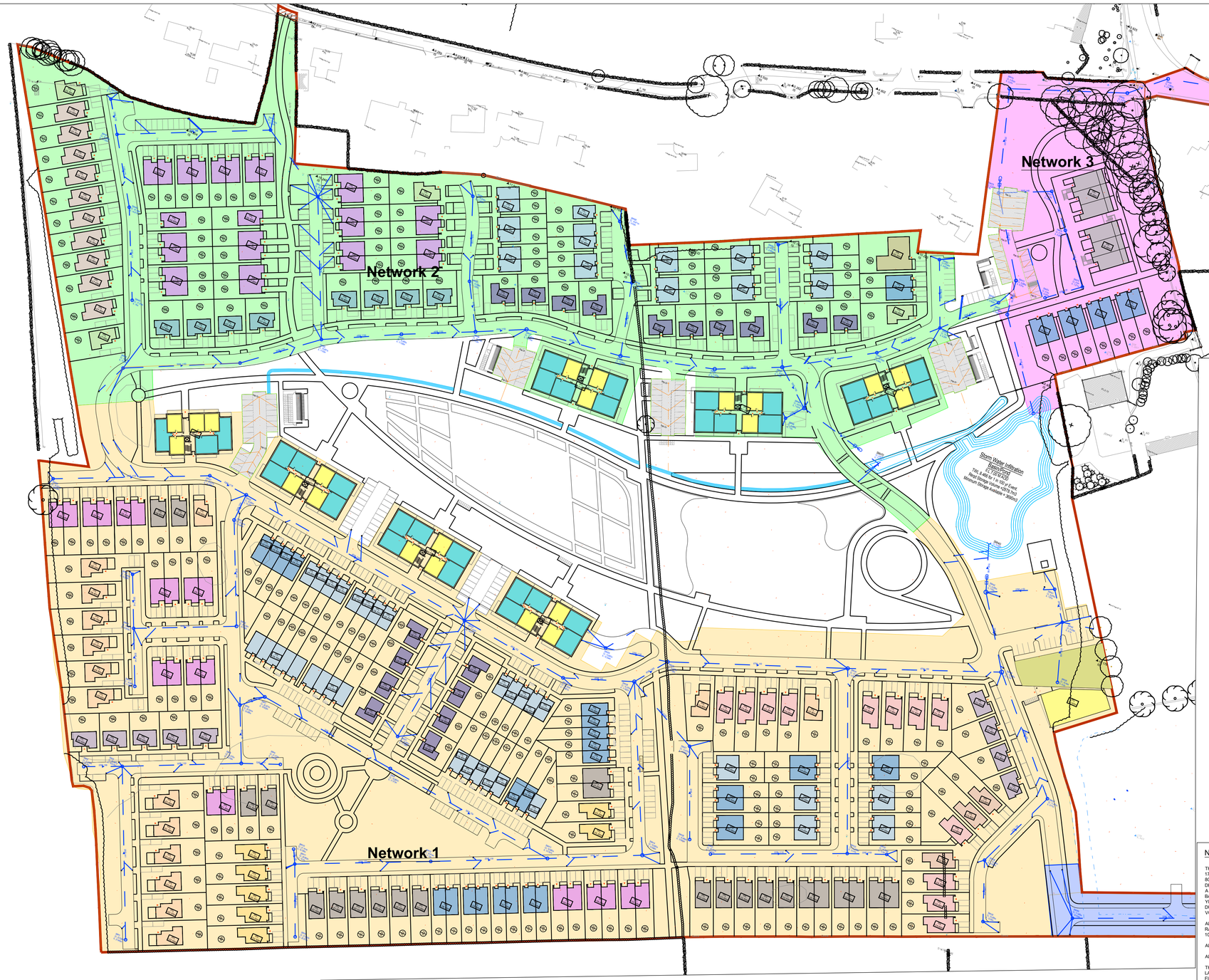


LEGEND:

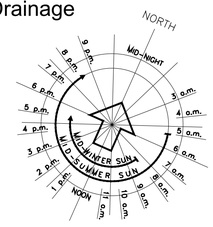
ROAD EDGE (IN-SITU KERB)	1:40 / 6m ROAD GRADIENT
FOOTPATH EDGE	ROAD DIMENSION
ROAD CENTRELINE	PERMEABLE PAVING TO CAR PARKS 1-8
ROAD CHANNEL LINE	ROAD SURFACE
ROAD RAMP	FOOTPATH SURFACE
DROPPED KERB WITH TACTILE PAVING	RAISED TABLE
CORDUROY PAVING	SHARED SURFACE - VEHICULAR (HOMEZONE)
CAR DRIVEWAYS	PARKING
GFL 99.99 GROUND FLOOR LEVEL	GRASS/PLANTING
	TACTILE PAVING



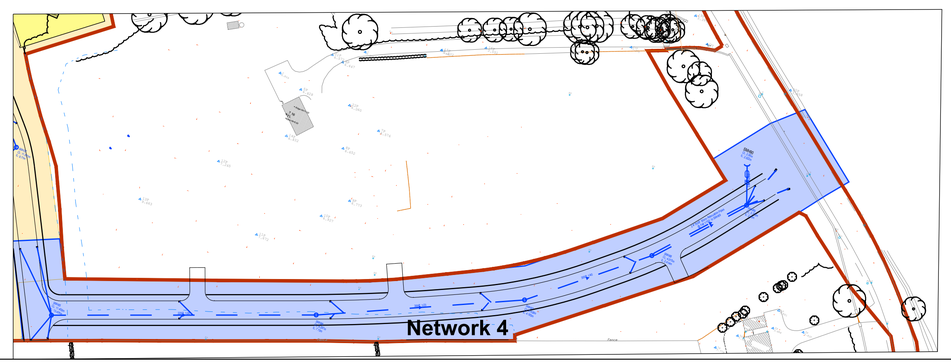
02 / 115 Site Service Roadway - Storm Drainage
SCALE 1:1000



01 / 116 Overall Site Layout Plan - Storm Drainage
SCALE 1:1000



02 / 116 Site Service Roadway - Storm Drainage
SCALE 1:1000



MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH1	1200	Type E	23.029	21.645	1.159	706666.070	804050.880
SMH2	1200	Type D	21.234	20.25	0.759	706616.681	804115.875
SMH3	1200	Type E	20.997	19.615	0.777	706632.781	804123.054
SMH4	1200	Type E	21.272	19.916	1.131	706698.842	804152.954
SMH5	1350	Type E	21.015	19.276	0.993	706662.249	804146.200
SMH6	1350	Type E	20.591	19.098	1.193	706670.972	804170.431
SMH7	1350	Type E	20.327	18.803	1.224	706679.910	804178.413
SMH8	1350	Type E	18.982	17.373	1.309	706745.791	804171.407
SMH9	1200	Type E	21.630	20.227	1.178	706736.743	804083.299
SMH10	1200	Type E	21.141	19.728	1.188	706720.008	804119.810
SMH11	1200	Type B	20.993	19.20	0.840	706723.218	804113.770
SMH12	1200	Type E	18.814	17.13	1.459	706779.850	804139.881
SMH13	1350	Type B	16.992	14.781	1.422	706828.343	804162.585
SMH14	1240x975	Type C	15.500	13.696	1.278	706867.571	804181.411
SMH15	1200	Type E	19.069	17.706	1.138	706823.369	804158.959
SMH16	1200	Type E	17.682	16.226	1.231	706601.841	804205.560
SMH17	1200	Type B	18.351	15.976	0.608	706612.214	804183.067
SMH18	1350	Type A	20.192	15.736	4.156	706655.021	804202.867
SMH19	1350	Type A	19.641	15.467	3.874	706634.505	804247.049
SMH20	1200	Type E	18.291	16.819	1.247	706550.894	804231.079
SMH21	1200	Type A	19.637	16.218	3.194	706616.157	804261.167
SMH22	1350	Type A	19.580	15.27	3.242	706634.963	804259.799
SMH23	1200	Type E	18.804	17.398	1.181	706742.971	804186.247
SMH24	1350	Type B	17.422	14.677	1.722	706749.782	804247.200
SMH25	1350	Type B	15.525	13.461	1.402	706801.679	804241.268
SMH26	1200	Type D	14.996	13.884	0.887	706884.587	804196.704
SMH27	1200	Type D	13.812	12.689	0.898	706867.422	804235.814
SMH28	1240x1125	Type C	14.375	11.997	1.230	706832.332	804252.797
SMH29	1200	Type E	13.802	12.244	1.133	706814.117	804261.67
SMH30	1500	Type B	14.017	11.736	1.532	706842.618	804267.215
SMH31	1200	Type D	15.217	14.014	0.978	706896.002	804194.418
SMH32	1200	Type E	14.764	13.59	1.039	706970.096	804226.695
SMH33	1200	Type E	14.978	13.31	1.278	706953.339	804219.791
SMH34	1500	Type B	12.133	9.55	1.269	706919.532	804297.593
SMH35	1200	Type B	14.269	12.26	1.784	707022.858	804216.192
SMH36	1200	Type B	13.220	10.857	2.112	707012.218	804242.262
SMH37	1200	Type B	11.871	9.71	1.936	707027.356	804279.630
SMH38	1240x1200	Type C	10.266	8.13	1.386	706984.860	804324.343
SMH39	1200	Type E	10.45	9.20	1.025	707010.182	804330.336
SMH40	1200	Type D	9.239	8.10	0.909	707001.157	804356.414
SMH41	1200	Type D	8.916	7.87	0.741	706991.889	804368.871
SMH42	1240x1200	Type C	9.255	7.55	0.955	706963.558	804355.032
SMH43	---	HEADWALL	9.240	7.416	1.074	706965.868	804375.889
SMH44	1200	Type E	15.647	14.241	1.181	706505.314	804401.076

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
SMH45	1200	Type E	15.825	14.133	1.392	706514.445	804387.425
SMH46	1200	Type E	13.731	12.291	1.140	706578.121	804417.444
SMH47	1200	Type E	15.613	12.091	3.222	706610.210	804398.175
SMH48	1200	Type E	16.185	14.617	1.268	706532.931	804359.074
SMH49	1200	Type E	17.278	16.00	1.053	706551.287	804320.565
SMH50	1200	Type A	18.318	13.85	4.168	706559.932	804290.404
SMH51	1200	Type A	17.397	13.52	3.577	706608.121	804314.037
SMH52	1350	Type A	16.567	11.65	3.006	706638.008	804338.883
SMH53	1350	Type A	15.490	11.355	3.595	706670.637	804353.776
SMH54	1200	Type E	12.879	11.425	1.154	706675.289	804426.858
SMH55	1200	Type B	13.906	11.035	2.571	706689.466	804390.534
SMH56	1350	Type A	14.415	10.80	2.637	706701.309	804370.479
SMH57	1500	Type B	13.602	10.574	2.503	706722.308	804380.853
SMH58	1200	Type E	10.871	9.45	1.121	706741.584	804443.289
SMH59	1200	Type B	11.464	9.16	2.001	706757.961	804419.729
SMH60	1500	Type A	12.059	8.80	1.280	706766.651	804386.973
SMH61	1500	Type B	11.273	8.50	2.239	706808.627	804398.791
SMH62	1200	Type E	9.948	8.603	1.120	706882.886	804466.089
SMH63	1200	Type E	10.252	8.902	1.125	706915.659	804478.861
SMH64	1200	Type B	10.161	8.25	1.327	706895.680	804457.474
SMH65	1200	Type B	10.109	8.04	1.766	706873.723	804435.516
SMH66	1200	Type E	9.805	8.494	1.186	706812.473	804462.709
SMH67	1500	Type B	10.474	7.85	1.656	706836.665	804411.999
SMH68	1200	Type D	8.326	7.50	0.601	706847.412	804391.186
SMH69	1240x975	Type C	9.910	7.437	1.677	706853.353	804398.792
SMH70	HEADWALL		8.672	7.267	0.880	706894.823	804389.246
SMH71	1350	Type B	8.782	6.80	1.607	706950.680	804438.790
SMH72	1350	Type A	9.890	6.48	3.027	706921.497	804475.500
SMH73	1350	Type A	9.996	6.37	3.248	706918.915	804491.368
SMH74	1200	Type D	9.40	8.225	0.95	706934.294	804489.451
SMH75	1200	Type E	8.50	7.271	0.898	706947.964	804500.919
SMH76	1200	Type E	8.35	6.907	1.215	706930.392	804521.501
SMH77	1200	Type D	7.80	6.50	1.00	706917.542	804535.385
SMH78	1350	Type B	8.337	5.00	2.013	706895.521	804524.968
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REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T. Finn

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B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

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DRAWING. NO: 116
REV. NO: A

ENG

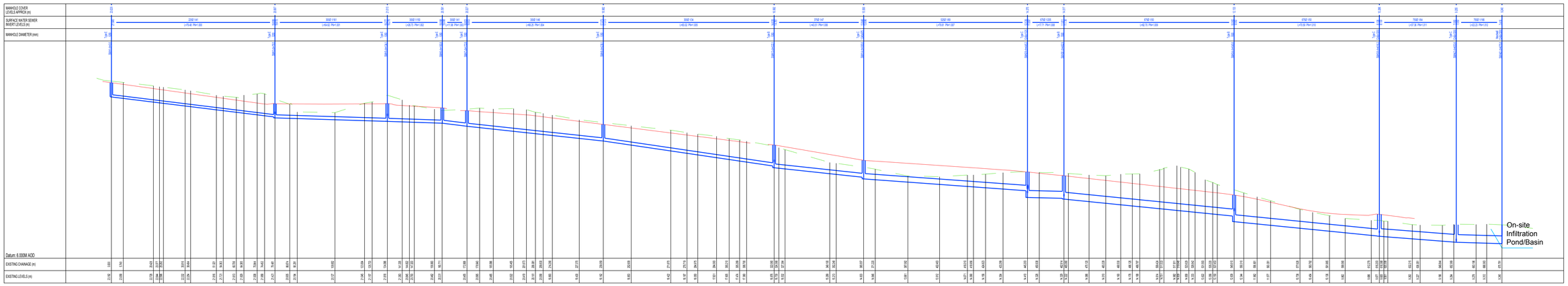
TITLE: Storm Drainage Networks Map

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd
1st Floor Quayside Business Park
Mill Street, Dundalk, Co Louth.

SCALE: 1:1000 @ A1 | DRAWN: P.Coyle
DATE: November 2018 | CHECKED: -
STATUS: Planning Permission
JOB NO: 1703

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT



01 117 Storm Drainage Sect 1
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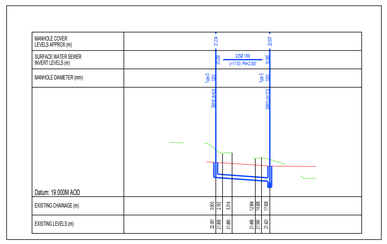

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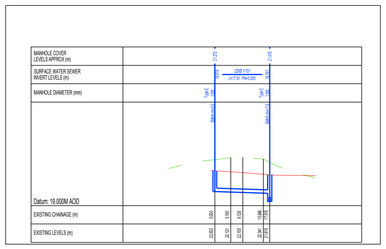

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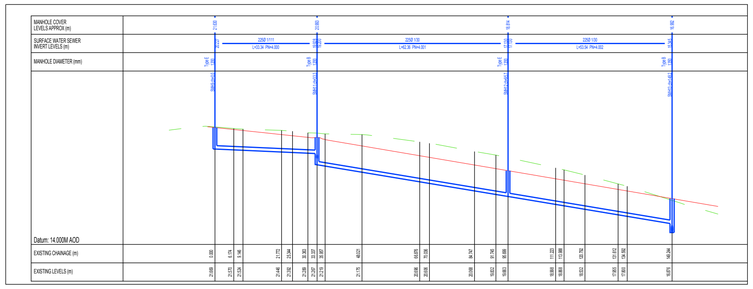

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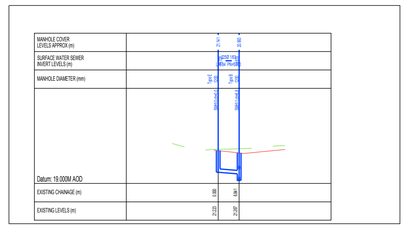

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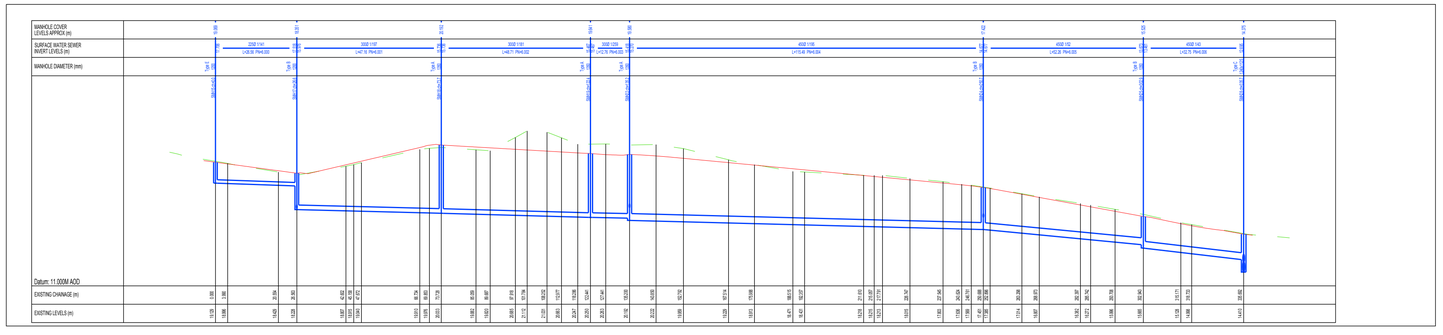

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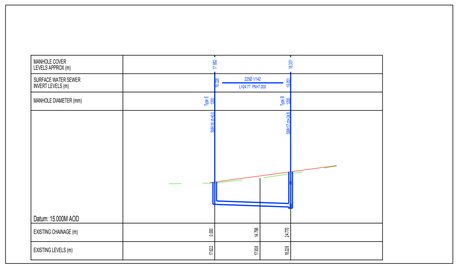

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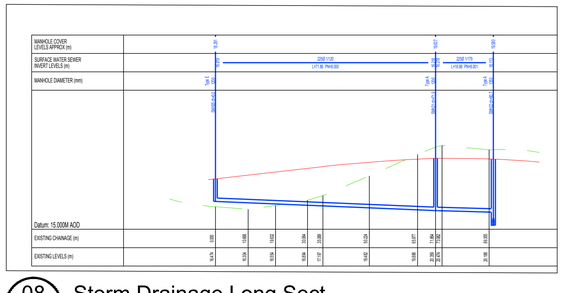

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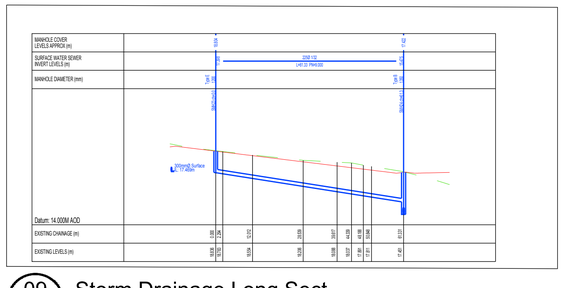

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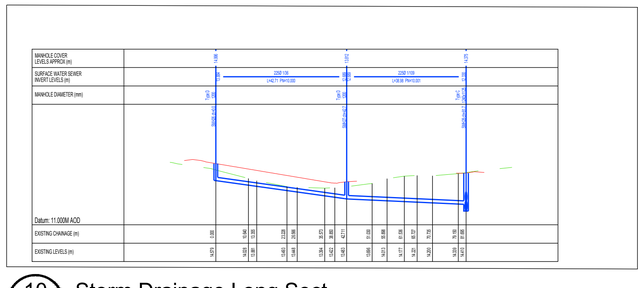

10 117 Storm Drainage Long Sect
SCALE 1:1000

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T. Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
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DRAWING. NO: 117
REV. NO: A

ENG

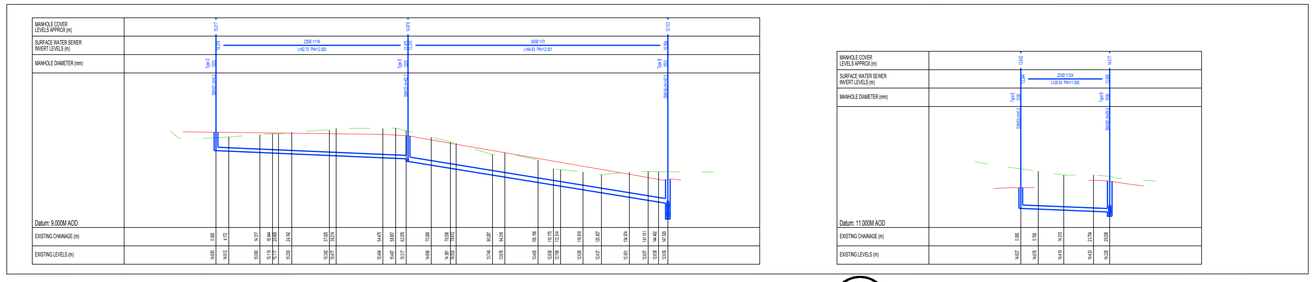
TITLE: Storm Drainage Longitudinal Sections (Sheet 1 of 3)

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd 1st Floor Quayside Business Park Mill Street, Dundalk, Co Louth.

SCALE: 1:1000 @ A1
DRAWN: A. Armstrong
DATE: November 2018
CHECKED: -
STATUS: Planning Permission
JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ⓒ
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.



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02 118 Storm Drainage Long Sect
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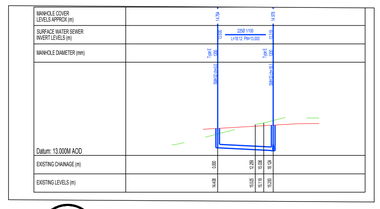

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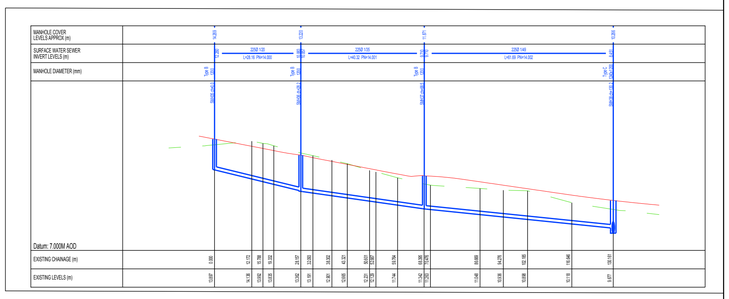

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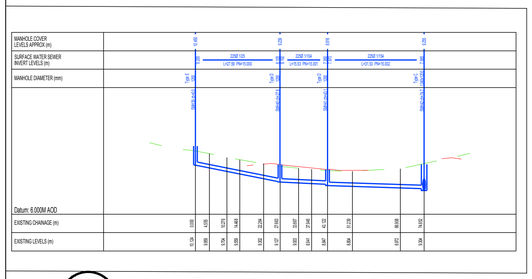

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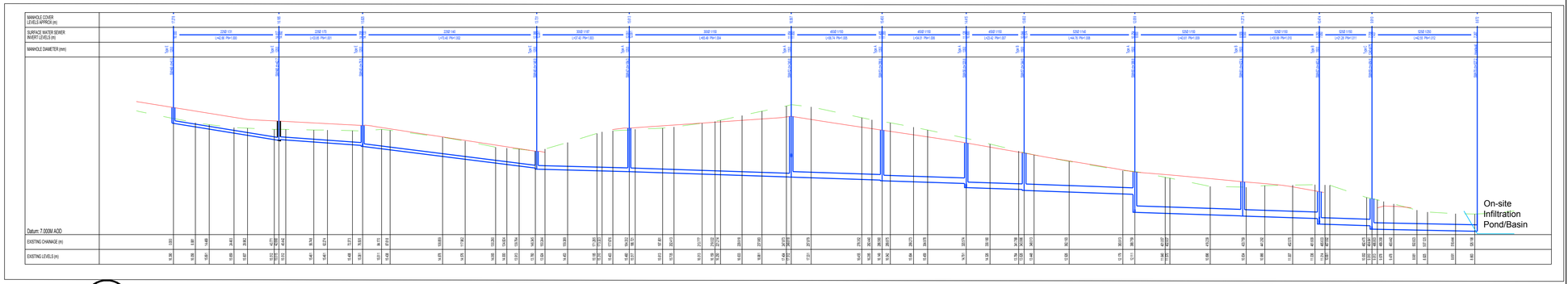

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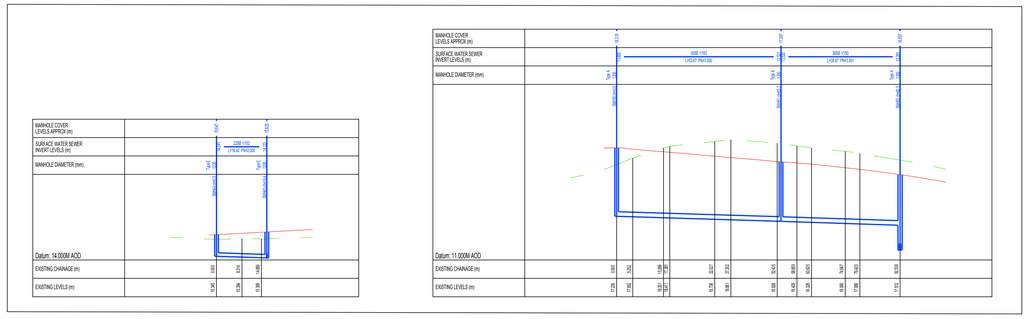

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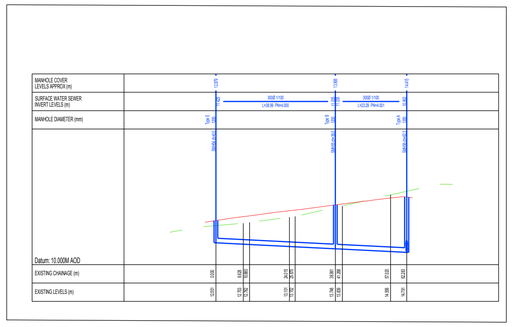

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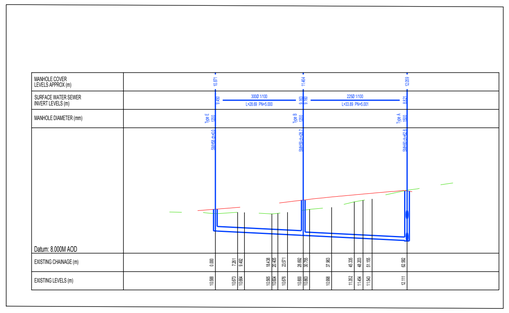

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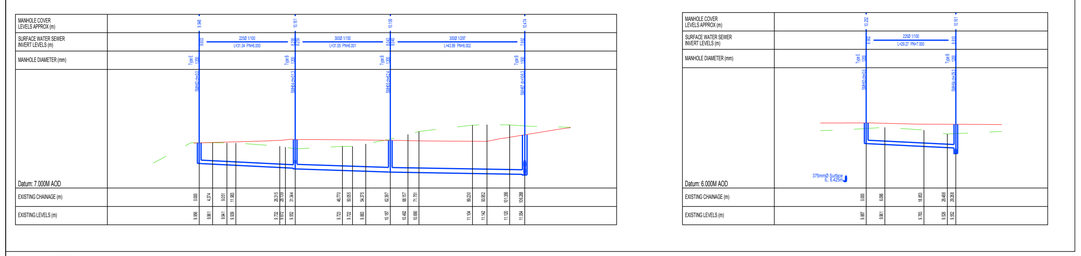

11 118 Storm Drainage Long Sect
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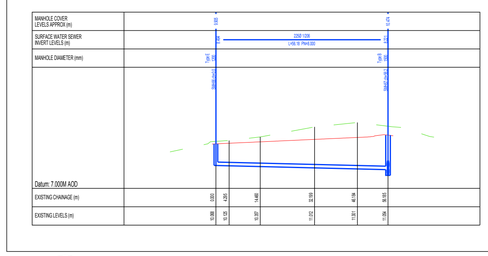

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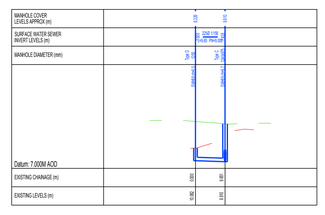

14 118 Storm Drainage Long Sect
SCALE 1:1000

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T. Finn

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DRAWING. NO: 118 REV. NO: A

ENG

TITLE: Storm Drainage Longitudinal Sections (Sheet 2 of 3)

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd 1st Floor Quayside Business Park Mill Street, Dundalk, Co Louth.

SCALE: 1:1000 @ A1 DRAWN: A. Armstrong

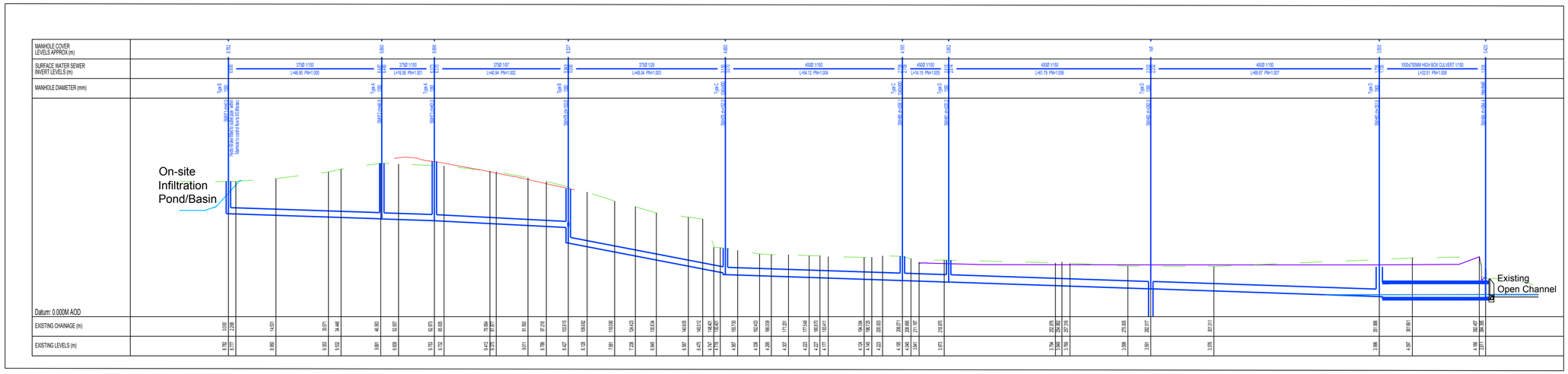
DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect.
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Copy of proprietary item to be submitted to Engineer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT



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119
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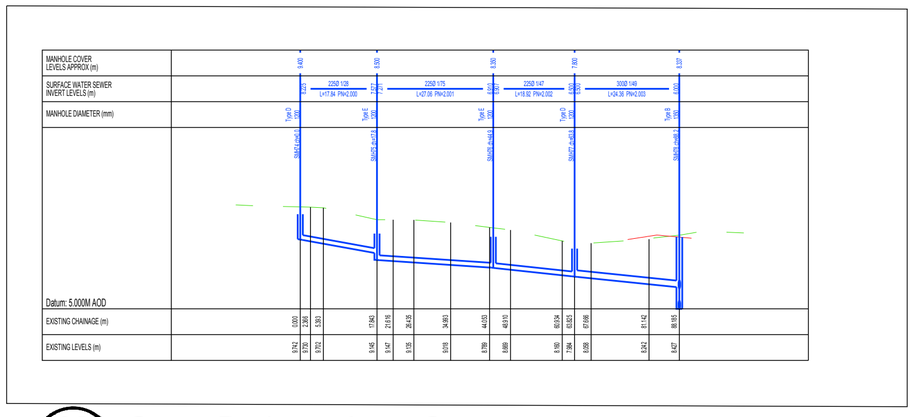

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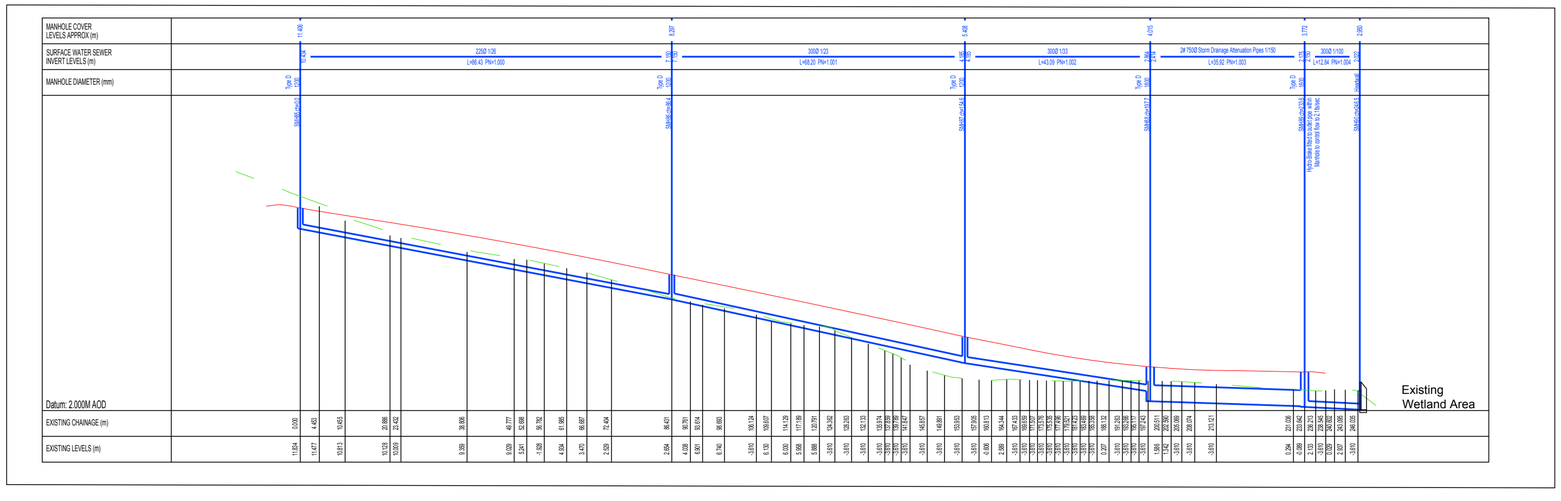

03 Storm Drainage Long Sect
119
SCALE 1:1000

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T. Finn

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DRAWING. NO: 119
REV. NO: A

ENG

TITLE: Storm Drainage Longitudinal Sections (Sheet 3 of 3)

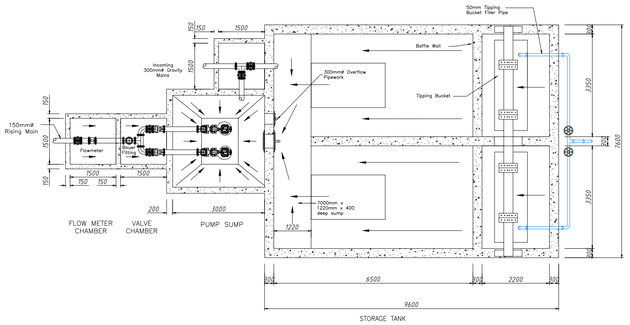
PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

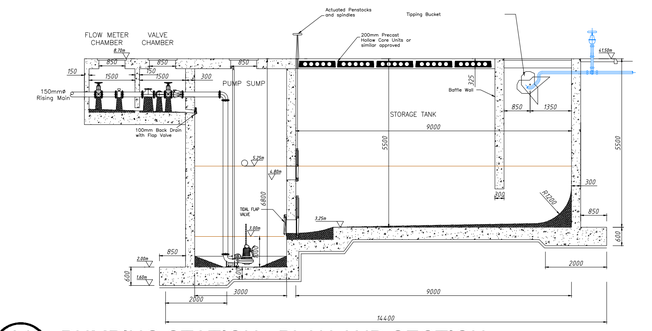
CLIENT: Kingsbridge Consultancy Ltd
1st Floor Quayside Business Park
Mill Street, Dundalk, Co Louth.

SCALE: 1:1000 @ A1
DRAWN: A.Armstrong
DATE: November 2018
CHECKED: -

STATUS: Planning Permission

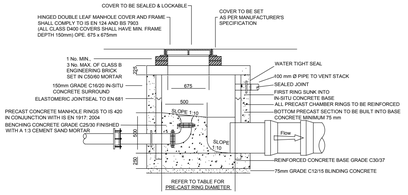
JOB NO: 1703

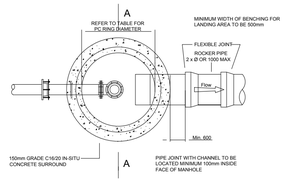




01 120 PUMPING STATION - PLAN AND SECTION
SCALE 1:100

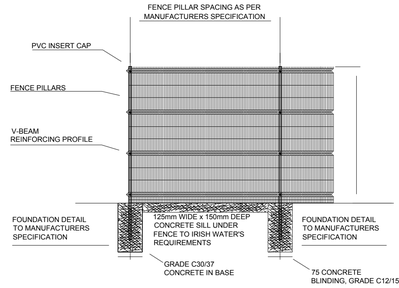
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND BS 5911-PART 3.
3. THICKER MANHOLE BASES REQUIRED FOR SEWERS IN EXCESS OF 1200mm DIA. AND FOR MANHOLES WITH DEPTH TO INVERT IN EXCESS OF 4m.
4. APPROVED PRE-CAST CONCRETE BASES MAY BE USED INCORPORATING CHANNELS, BENCHING ETC. SUBJECT TO IRISH WATER APPROVAL AND COMPLYING WITH BS 5911-PART 4 2002.
5. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY A CHARTERED STRUCTURAL ENGINEER FOR ALL MANHOLES.
6. MANHOLE ROOFS SHOULD CONSIST OF REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, C30/37, WITH A MINIMUM THICKNESS OF 225mm DESIGNED TO CARRY ALL LIVE AND DEAD LOADS, ALTERNATIVELY, APPROVED PRE-CAST CONCRETE ROOF SLABS MAY BE USED SUBJECT TO IRISH WATER APPROVAL AND COMPLYING WITH BS 5911-PART 4: 2002.
7. COVERS AND FRAMES SHALL BE CLASS D400 AND MULTI-TRAFFIC
8. CONCRETE MIX SUBJECT TO APPROVAL FROM IRISH WATER.
9. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND AROUND COVERS IN GREEN AREAS.
10. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI-FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM IRISH WATER.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.





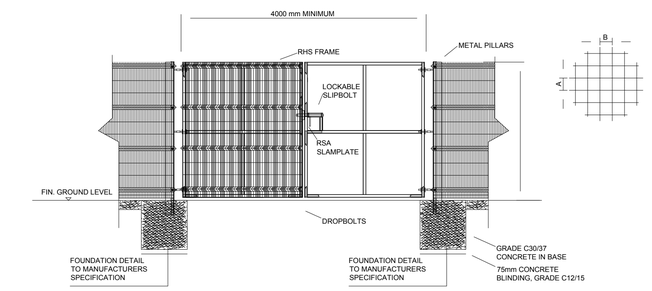
MINIMUM MANHOLE DIAMETERS	
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	**INTERNAL DIAMETER OF MANHOLE (mm)**
LESS THAN 375	1200
375 TO 450	1350
500 TO 700	1500

02 120 STAND OFF MANHOLE
SCALE 1:50



1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SECURITY FENCING SHALL COMPRISE 2.4m HIGH, CORROSION RESISTANT MILD STEEL FENCING, GALVANISED AND PLASTIC COATED FINISHED, WITH SIMILAR TYPE ACCESS GATES.
3. THE ACCESS GATES SHALL BE OF SUFFICIENT WIDTH TO ACCOMMODATE MAINTENANCE VEHICLES, TANKERS, ETC. THE SECURITY GATES SHALL BE PROVIDED WITH SLIDE BOLTS, SHOOTING BOLTS AND PADLOCKS. IF OPENING OUTWARDS, THE ACCESS GATES SHALL BE SET BACK FROM PARKING AND ACCESS AREAS BY THE WIDTH OF THE LEAF OF THE GATE.
4. THE SECURITY RATING TO BE EITHER MEDIUM / HIGH OR HIGH. THE SECURITY RATING OF THE FENCE IS TO BE AGREED WITH IRISH WATER.
5. CORNER BRACING AND POST DETAIL TO MANUFACTURER'S SPECIFICATION.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
7. ALL FENCE MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH IS EN 1722-14 : 2006.
8. DIMENSIONS OF GATE PILLARS, GATE FRAME, FENCE PILLARS, FENCE RUNNERS, DIAGONALS, ETC. TO BE TO MANUFACTURER'S SPECIFICATION.
9. FENCE/GATE DESIGN AND DETAILS TO BE PROVIDED TO IRISH WATER FOR REVIEW/VETTING BEFORE MANUFACTURE.
10. PEDESTRIAN GATE SHALL BE PROVIDED IF DEEMED NECESSARY BY IRISH WATER.
11. COLOUR TO BE HOLLY GREEN 14 C39 IN ACCORDANCE WITH BS 4800.
12. A 125mm WIDE x 150mm DEEP CONCRETE SILL GRADE C20/25 CONCRETE SHALL BE PROVIDED TO IRISH WATER'S REQUIREMENTS.

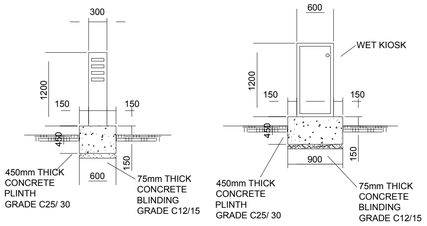
SECURITY RATING	MESH SPACING A x B	BAR THICKNESS
MEDIUM/HIGH	200 x 50	5mm
HIGH	12.5 x 50	4mm

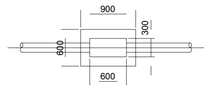


03 120 PERIMETER FENCING
SCALE 1:50

AND EXTERNALLY. WET KIOSK TO BE CONSTRUCTED FROM THERMOSETTING U.V. & WEATHER RESISTANT PLASTIC POWDER COATED & HOT DIPPED GALVANISED MILD STEEL PLATE (MINIMUM 4mm THICK) TO BS EN 1461. ALTERNATIVE MATERIAL, STAINLESS STEEL IN HARSH ENVIRONMENTS, NON-METALLIC (GRP, POLYESTER, ETC.) MAY BE ALLOWED FOR WET KIOSK SUBJECT TO AGREEMENT WITH IRISH WATER. COLOUR TO BE HOLLY GREEN BS 4800 14 C39. INTERIOR FINISH TO BE WHITE UNLESS APPROVED BY IRISH WATER.

3. THE QUALITY OF KIOSK CONSTRUCTION SHALL ENSURE THAT THE FOLLOWING IS ACHIEVED:
   a. A FIRE RESISTANCE (RETENTION OF STABILITY, INTEGRITY AND INSULATION, EQUIVALENT TO CLASS 2 OF BS 476, WHEN TESTED IN ACCORDANCE WITH BS 476 FOR A PERIOD EXCEEDING 30 MINUTES.
   b. AN IP RATING OF IP65 OR EQUIVALENT.
4. THE INTERNAL LAYOUT OF THE KIOSK SHALL BE SUBJECT TO IRISH WATER APPROVAL.
5. CABLE DUCTING TO BE IN ACCORDANCE WITH BS 4660 AND BS EN 1401.
6. ELECTRICAL REQUIREMENTS TO BE IN ACCORDANCE WITH ESB SPECIFICATION.
7. ALL EXPOSED PIPEWORK TO BE ADEQUATELY INSULATED WITH PIPE LAGGING.
8. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
9. WATER TIGHT SEALS ARE TO BE PROVIDED WHERE DUCTING ENTERS DUCT CHAMBERS AND KIOSKS. ALL DUCTING TO BE INSTALLED WITH DRAW CORDS.
10. THE KIOSKS SHALL NOT BE LOCATED IN AREAS THAT ARE SUSCEPTIBLE TO FLOODING AT A FREQUENCY OF MORE THAN 1:30 YEARS RECURRENCE.
    - THE KIOSK FACILITY SHOULD BE DESIGNED FOR INUNDATION.
    - THE FINISHED SLAB LEVEL SHOULD BE POSITIONED ABOVE THE 1:100 YEAR FLOOD LEVEL.
    - ALL ELECTRICAL CONTROL EQUIPMENT SHALL BE WATER RESISTANT AND POSITIONED ABOVE THE 1:200 YEAR FLOOD LEVEL.
11. ALL DIMENSIONS ARE MINIMUM DIMENSIONS AND MAY VARY TO SUIT THE KIOSK REQUIREMENT.
12. PUMPING STATION IS TO COMPLY WITH SECTION 5.4 OF THE WASTEWATER CODE OF PRACTICE BY MEANS OF A 1.8M ACCESS GATE ACCESSED VIA PROPOSED ROADWAY AND PARKING AREA ADJACENT PUMPING STATION.
13. THE PUMPING STATION IS LOCATED IN ORDER TO BE APPROX. 50M FROM THE NEAREST HABITABLE DWELLING, THIS COMPLIES SECTION 5.5 OF THE WASTEWATER CODE.
14. ALL WORKS WILL BE CARRIED OUT IN CONJUNCTION WITH IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE AND IRISH WATER STANDARD DETAILS FOR WASTEWATER.
15. FOUL DRAINAGE DETAILS TO COMPLY WITH IRISH WATER STANDARD DETAILS IW-CDS-5030-01





04 120 WET KIOSK
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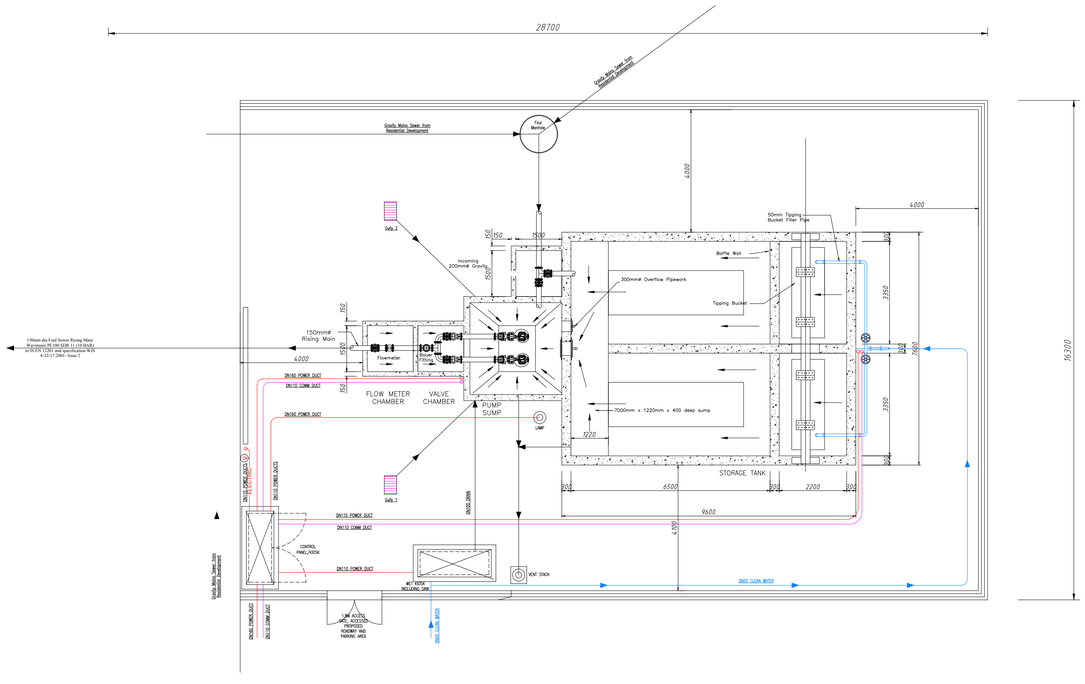
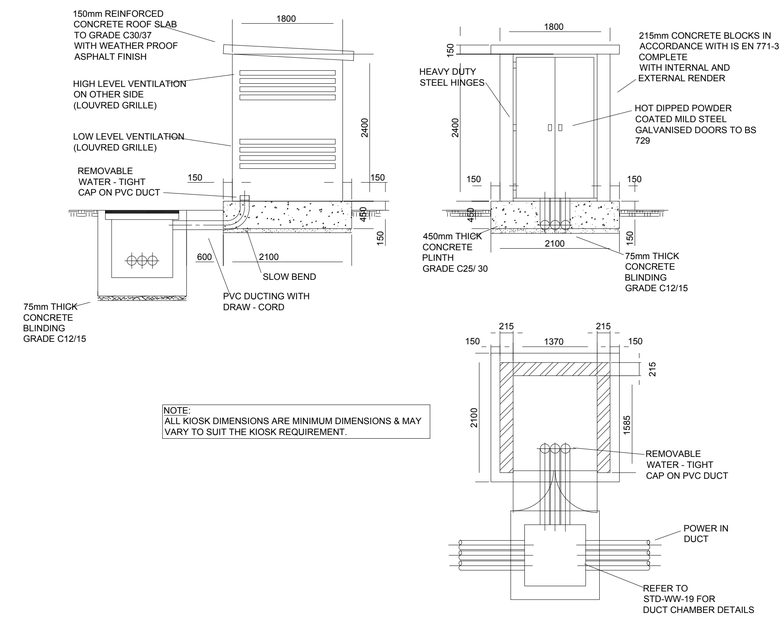


05 120 PUMPING STATION - SITE PLAN
SCALE 1:100



NOTE:
ALL KIOSK DIMENSIONS ARE MINIMUM DIMENSIONS & MAY VARY TO SUIT THE KIOSK REQUIREMENT.

06 120 CONTROL PANEL KIOSK
SCALE 1:50

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

finn DESIGN PARTNERSHIP
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DRAWING. NO: 120 REV. NO: B

ENG

TITLE: Wastewater Pumping Station Layout & Details

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk Co Louth.

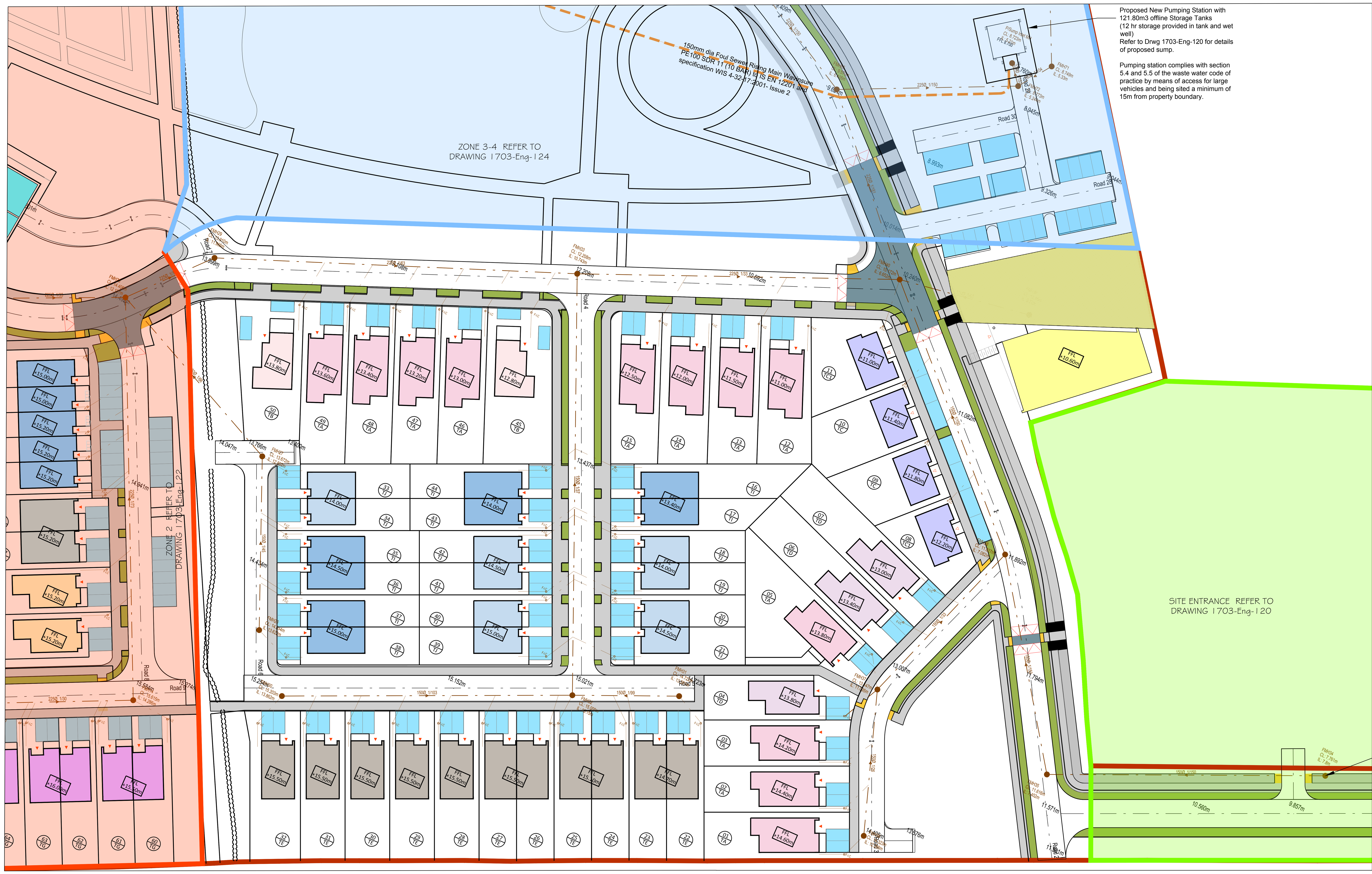
CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Dundalk Co Louth

SCALE: As Shown DRAWN: T.Finn

DATE: November 2018 CHECKED: -

STATUS: Planning Permsission

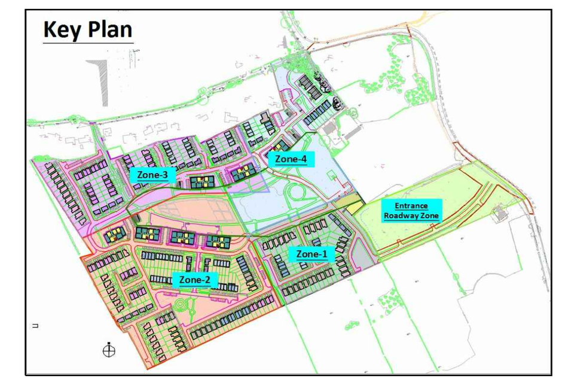
JOB NO: 1703



01 Foul Drainage Layout-Zone 1

121

SCALE 1:500



NOTES:

EXACT INVERT LEVELS OF EXISTING SEWERS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION OF NEW FOUL SEWERS.

THE PROPOSED FOUL SEWERS ARE A MAXIMUM DIAMETER OF 150mm LAID AT THE GRADIENTS SHOWN WHICH ARE IN ACCORDANCE WITH IRISH WATER GUIDELINES. THE DESIGN OF THE FOUL SEWERS IS BASED ON A ROUGHNESS COEFFICIENT OF 1.5mm.

THE PROPOSED FOUL DRAINAGE SYSTEM FOR THE NEW DEVELOPMENT WILL DISCHARGE INTO THE PROPOSED FOUL SEWER PUMPING LOCATION AS SHOWN ON THE LAYOUT FROM WHERE IT WILL BE PUMPED TO THE PUBLIC MAINS. THE INVERT LEVEL OF THE CONNECTION POINTS TO BE CONFIRMED.

ALL COVER LEVELS ARE INDICATIVE AND THE FINAL COVER LEVELS TO MATCH FINISHED PATH/ROAD LEVELS.

ALL LEVELS OF PIPES TO BE CHECKED AND VERIFIED PRIOR TO WORK COMMENCING ON SITE.

THE LAYOUT OF THE BRANCH DRAINS FROM THE INDIVIDUAL SITES ARE AS SHOWN ON THE DWELLINGS LAYOUT PLAN. ANY CHANGES ARE TO BE AGREED PRIOR TO CONSTRUCTION. THE DISTANCE FROM THE FINAL ACCESS JUNCTION ON EACH INDIVIDUAL SITE TO THE CONNECTION TO THE MAIN DRAIN TO BE A MAXIMUM OF 12m.

THE CONNECTION OF THE BRANCH DRAINS TO MAIN DRAINS SHOULD BE MADE AT A MANHOLE WHERE POSSIBLE OR BY USING AN OBLIQUE TYPE SADDLE. SADDLES SHOULD NOT BE USED ON PIPES OF 100mm DIAMETER, NOR TO CONNECT PIPES OF THE SAME DIAMETER.

ALL PIPES SHOULD HAVE FLEXIBLE JOINTS FORMED BY A METHOD RECOMMENDED BY THE PIPE MANUFACTURER. ELASTOMERIC SEALING RINGS, COMPLYING WITH THE REQUIREMENTS OF BS 2494, TYPE D, SHOULD BE USED.

MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	*LOCATION*
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (AJ'S) TO BE 100mmØ uPVC PIPES AT A GRADIENT OF 1 in 60.

LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTFALL POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

THE TYPE OF PIPE AND FITTINGS TO BE USED TO BE uPVC (IN ACCORDANCE WITH THE REQUIREMENTS OF IS 424) UNLESS OTHERWISE STATED BY ENGINEER.

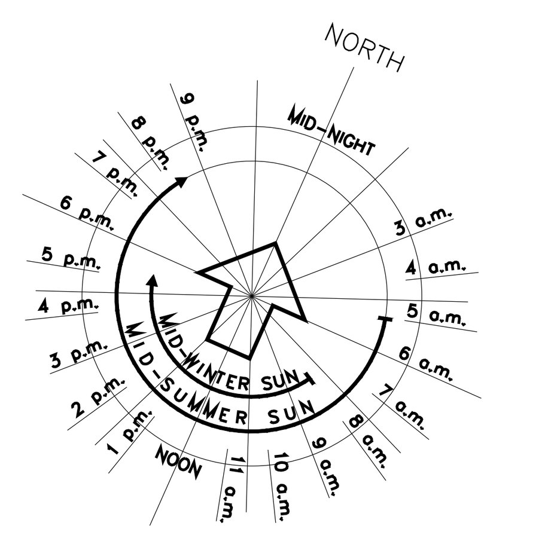
TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

FLEXIBLE PIPES SHOULD BE LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO RAODWAYS AND 0.6m IN GARDENS. WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS, ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.

ALL WORKS WILL BE CARRIED OUT IN CONJUNCTION WITH IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE AND IRISH WATER STANDARD DETAILS FOR WASTEWATER.

FOUL DRAINAGE DETAILS TO COMPLY WITH IRISH WATERS STANDARD DETAILS: IW-CDS-5030-01



MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
FMH1	1200	Type E	22.975	21.753	1.072	706667.614	804053.836
FMH2	1200	Type E	21.233	20.00	1.083	706617.124	804113.561
FMH3	1200	Type E	20.973	19.65	1.123	706635.287	804122.428
FMH4	1200	Type E	21.223	19.878	1.195	706697.949	804151.315
FMH5	1200	Type B	20.969	19.256	1.139	706679.907	804143.180
FMH6	1200	Type E	20.524	19.03	1.342	706664.229	804175.622
FMH7	1200	Type E	20.274	18.85	1.199	706682.578	804181.249
FMH8	1200	Type E	18.922	17.381	1.316	706748.594	804173.372
FMH9	1200	Type E	21.626	20.295	1.181	706734.947	804082.071
FMH10	1200	Type E	21.152	19.803	1.199	706717.832	804119.029
FMH11	1200	Type E	21.008	19.40	1.158	706722.251	804109.765
FMH12	1200	Type E	18.669	17.101	1.418	706784.655	804139.167
FMH13	1200	Type E	16.721	15.371	1.125	706836.50	804163.783
FMH14	1200	Type E	15.615	14.286	1.104	706865.863	804177.386
FMH15	1200	Type E	19.127	17.80	1.177	706626.001	804158.243
FMH16	1200	Type D	17.688	16.55	0.988	706603.176	804206.432
FMH17	1200	Type B	18.389	16.28	1.177	706614.933	804182.744
FMH18	1200	Type A	20.228	15.99	4.076	706653.260	804199.190
FMH19	1200	Type A	19.628	15.60	3.837	706631.631	804246.829
FMH20	1200	Type E	18.295	17.00	1.145	706551.146	804233.399
FMH21	1200	Type A	19.602	16.20	3.167	706615.992	804263.432
FMH22	1200	Type A	19.593	15.50	3.395	706631.235	804262.979
FMH23	1200	Type E	18.710	17.469	1.091	706741.005	804190.482
FMH24	1200	Type B	17.464	14.706	1.676	706747.770	804249.564
FMH25	1200	Type E	15.514	14.00	1.193	706801.926	804243.139
FMH26	1200	Type E	14.854	13.622	1.082	706884.525	804201.914
FMH27	1200	Type D	13.672	12.802	0.720	706870.241	804236.183
FMH28	1200	Type B	14.406	12.127	1.053	706829.815	804255.563
FMH29	1200	Type B	13.910	11.966	1.719	706843.874	804270.939
FMH30	1200	Type E	15.203	13.862	1.191	706894.623	804190.951
FMH31	1200	Type E	14.722	13.381	1.191	706972.449	804225.000
FMH32	1200	Type B	15.009	13.15	1.602	706951.456	804216.025
FMH33	1200	Type E	12.208	10.743	1.240	706916.279	804298.930
FMH34	1200	Type D	7.761	7.80	-0.189	707105.845	804264.839
FMH35	1200	Type A	11.616	7.402	4.063	707051.193	804241.225

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
FMH36	1200	Type B	14.323	12.286	1.887	707020.583	804213.496
FMH37	1200	Type B	13.147	11.095	1.902	707010.712	804243.307
FMH38	1200	Type A	11.827	7.082	1.803	707024.166	804280.693
FMH39	1200	Type E	10.45	9.25	1.05	707008.330	804329.654
FMH40	1200	Type A	10.172	6.652	1.210	706979.944	804325.473
FMH41	1200	Type E	17.382	16.00	1.232	706554.567	804318.796
FMH42	1200	Type E	16.273	15.00	1.123	706538.568	804353.220
FMH43	1200	Type E	15.642	14.26	1.232	706507.524	804402.299
FMH44	1200	Type B	15.841	14.109	1.507	706517.092	804387.221
FMH45	1200	Type E	13.734	12.427	1.082	706578.934	804415.882
FMH46	1200	Type A	15.601	12.19	3.177	706607.810	804397.514
FMH47	1200	Type E	18.009	16.70	1.159	706574.654	804301.408
FMH48	1200	Type E	17.380	15.95	1.273	706608.432	804316.851
FMH49	1200	Type A	16.595	11.75	1.187	706635.295	804338.672
FMH50	1200	Type E	12.932	11.57	1.212	706674.509	804424.671
FMH51	1200	Type B	13.846	11.335	2.361	706686.537	804391.535
FMH52	1200	Type A	14.541	11.17	3.029	706697.171	804370.377
FMH53	1200	Type B	13.486	10.604	2.596	706724.533	804384.436
FMH54	1200	Type E	10.840	9.644	1.046	706738.782	804443.904
FMH55	1200	Type B	11.499	9.30	2.031	706757.145	804416.973
FMH56	1200	Type A	12.181	9.00	1.631	706763.141	804388.518
FMH57	1200	Type B	11.263	8.67	2.352	706808.582	804401.242
FMH58	1200	Type E	9.936	8.71	1.076	706880.445	804485.163
FMH59	1200	Type B	10.153	8.40	1.591	706893.365	804458.345
FMH60	1200	Type B	10.084	8.00	1.839	706872.319	804436.265
FMH61	1200	Type E	9.934	8.586	1.198	706814.781	804462.736
FMH62	1200	Type B	10.383	7.682	1.704	706837.532	804415.652
FMH63	1200	Type B	9.190	7.36	1.605	706875.547	804386.481
FMH64	1200	Type B	9.270	7.031	2.014	706923.079	804373.223
FMH65	1200	Type B	9.570	6.416	2.529	706951.324	804357.275
FMH66	1200	Type D	7.696	6.80	0.746	706917.986	804539.693
FMH67	1200	Type B	9.050	6.454	2.446	706951.634	804500.236
FMH68	1200	Type A	9.823	6.20	3.442	706925.664	804479.254
FMH69	1200	Type A	9.175	6.01	3.012	706943.735	804457.844
FMH70	1200	Type B	8.589	5.772	2.611	706963.816	804439.390
FMH71	1200	Type A	8.749	5.33	3.262	706991.442	804380.217
FMH72	1200	Type A	8.773	5.244	2.391	706986.569	804373.494
P/Sump Inlet MH	1200	Type A	8.723	5.21	3.288	706983.414	804377.473

DRAINAGE LEGEND:

- FOUL DRAINAGE PIPELINE
- FOUL WATER MAN-HOLE
- FOUL WATER MAN-HOLE WITH CONCRETE SURROUND
- FOUL WATER INSPECTION CHAMBER
- 150Ø 1/100 — FOUL SEWER PIPE DIAMETER & FALL
- STORM DRAINAGE PIPELINE
- SURFACE WATER MANHOLE
- SURFACE WATER MANHOLE WITH CONCRETE SURROUND
- 225Ø 1/100 — STORM DRAIN PIPE DIAMETER & FALL
- SURFACE WATER ROAD GULLY

NOTES:

1. FOUL DRAINAGE PIPEWORK SHALL BE UPVC BY WAVIN OR SIMILAR APPROVED, MANUFACTURED TO IS EN 1401 2009/2012, APPLICATION CODE 'UD' WITH STIFFNESS CLASS OF 8KN/M². ALL FOUL DRAINAGE PIPEWORK SHALL BE THE SIZES AND LAID TO THE GRADIENTS SHOWN ON LAYOUT PLAN AND LONGITUDINAL SECTIONS.

2. WHERE MH ARE LOCATED IN GRASS AREAS THEY WILL BE SURROUNDED BY A 200mm CONCRETE PLINTH.

3.ALL SEWERS & OR ATTENUATION TANKS WILL HAVE A MINIMUM CLEARANCE OF 3M FROM ANY PROPOSED DEVELOPMENT STRUCTURE, THIS LAYOUT IS ALSO INTENDED TO COMPLY WITH IRISH WATERS TYPICAL SERVICE LAYOUT SEPARATION DISTANCES AS PER DETAIL STD-WW-05.

4.THE EXTERNAL FACE OF ALL PROPOSED MANHOLES WILL BE A MIN. 0.5m FROM ANY KERB LINE AND THE EXTERNAL FACE OF ANY SEWER WILL A MIN. OF 1.0m FROM ANY KERB LINE

5. EACH DWELLING WILL HAVE THEIR OWN INSPECTION CHAMBER AND CONNECTION TO THE MAIN SEWER LINE AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH IRISH WATERS STANDARD DETAILS STD-WW-02 & STD-WW-03

6. FOUL SEWER PIPE SIZE (DIAMETER) AND GRADIENT IS INDICATED AND IN ALL CASES IS INTENDED TO COMPLY WITH SECTION 2.4.3 & 2.4.4 OF THE WASTEWATER CODE OF PRACTICE

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 — ROAD GRADIENT
- 6m — ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	26th April 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 121 REV. NO: B

ENG

TITLE: Foul Drainage Layout Zone 1

PROJECT: Residential Development @ Haggardstown, Blackrock, Co Louth

CLIENT: Kingsbridge Consultancy Ltd, 1st Floor, Block 1, Quayside Business Park, Mill Street, Dundalk, Co. Louth;

SCALE: 1:500 @ A1 DRAWN: PC

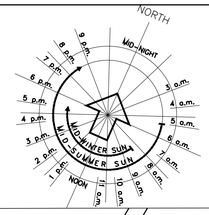
DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

Key Plan



DRAINAGE LEGEND:

- FOUL DRAINAGE PIPELINE
- FOUL WATER MAN-HOLE
- FOUL WATER MAN-HOLE WITH CONCRETE SURROUND
- FOUL WATER INSPECTION CHAMBER
- 150Ø 1/100 — FOUL SEWER PIPE DIAMETER & FALL
- STORM DRAINAGE PIPELINE
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- SURFACE WATER MANHOLE WITH CONCRETE SURROUND
- 225Ø 1/100 — STORM DRAIN PIPE DIAMETER & FALL
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NOTES:

1. FOUL DRAINAGE PIPEWORK SHALL BE UPVC BY WAVIN OR SIMILAR APPROVED, MANUFACTURED TO IS EN 1401 2009/2012, APPLICATION CODE 'UD' WITH STIFFNESS CLASS OF 8KN/M². ALL FOUL DRAINAGE PIPEWORK SHALL BE THE SIZES AND LAID TO THE GRADIENTS SHOWN ON LAYOUT PLAN AND LONGITUDINAL SECTIONS.

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3.ALL SEWERS & OR ATTENUATION TANKS WILL HAVE A MINIMUM CLEARANCE OF 3M FROM ANY PROPOSED DEVELOPMENT STRUCTURE, THIS LAYOUT IS ALSO INTENDED TO COMPLY WITH IRISH WATERS TYPICAL SERVICE LAYOUT SEPARATION DISTANCES AS PER DETAIL STD-WW-05.

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5. EACH DWELLING WILL HAVE THEIR OWN INSPECTION CHAMBER AND CONNECTION TO THE MAIN SEWER LINE AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH IRISH WATERS STANDARD DETAILS STD-WW-02 & STD-WW-03

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NOTES:

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THE PROPOSED FOUL SEWERS ARE A MAXIMUM DIAMETER OF 150mm LAID AT THE GRADIENTS SHOWN WHICH ARE IN ACCORDANCE WITH IRISH WATER GUIDELINES. THE DESIGN OF THE FOUL SEWERS IS BASED ON A ROUGHNESS COEFFICIENT OF 1.5mm.

THE PROPOSED FOUL DRAINAGE SYSTEM FOR THE NEW DEVELOPMENT WILL DISCHARGE INTO THE PROPOSED FOUL SEWER PUMPING LOCATION AS SHOWN ON THE LAYOUT FROM WHERE IT WILL BE PUMPED TO THE PUBLIC MAINS. THE INVERT LEVEL OF THE CONNECTION POINTS TO BE CONFIRMED.

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THE LAYOUT OF THE BRANCH DRAINS FROM THE INDIVIDUAL SITES ARE AS SHOWN ON THE DWELLINGS LAYOUT PLAN. ANY CHANGES ARE TO BE AGREED PRIOR TO CONSTRUCTION. THE DISTANCE FROM THE FINAL ACCESS JUNCTION ON EACH INDIVIDUAL SITE TO THE CONNECTION TO THE MAIN DRAIN TO BE A MAXIMUM OF 12m.

THE CONNECTION OF THE BRANCH DRAINS TO MAIN DRAINS SHOULD BE MADE AT A MANHOLE WHERE POSSIBLE OR BY USING AN OBLIQUE TYPE SADDLE. SADDLES SHOULD NOT BE USED ON PIPES OF 100mm DIAMETER, NOR TO CONNECT PIPES OF THE SAME DIAMETER.

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MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	LOCATION
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

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LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTFALL POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

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TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

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FOUL DRAINAGE DETAILS TO COMPLY WITH IRISH WATERS STANDARD DETAILS: IW-CDS-5030-01

Mh No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
FMH1	1200	Type E	22.975	21.753	1.072	706667.614	804053.836
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FMH21	1200	Type A	19.602	16.20	3.167	706615.992	804253.432
FMH22	1200	Type A	19.993	15.50	3.395	706631.235	804282.979
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FMH34	1200	Type D	7.761	7.30	0.189	707105.945	804264.839
FMH35	1200	Type A	11.616	7.402	4.063	707051.193	804241.225

Mh No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
FMH36	1200	Type B	14.323	12.286	1.887	707020.583	804213.496
FMH37	1200	Type B	13.147	11.095	1.902	707013.712	804243.307
FMH38	1200	Type A	11.827	7.082	1.803	707024.166	804280.693
FMH39	1200	Type A	11.45	9.25	1.05	707058.330	804329.654
FMH40	1200	Type A	10.172	8.652	1.210	706979.944	804325.473
FMH41	1200	Type E	17.382	16.02	1.202	706954.567	804318.796
FMH42	1200	Type E	16.273	15.00	1.123	706538.568	804353.220
FMH43	1200	Type E	15.642	14.26	1.232	706507.524	804402.299
FMH44	1200	Type B	15.641	14.109	1.507	706717.092	804302.071
FMH45	1200	Type E	13.734	12.427	1.082	706578.934	804415.882
FMH46	1200	Type A	15.607	12.19	3.177	706607.810	804307.514
FMH47	1200	Type E	18.009	16.70	1.159	706574.654	804301.408
FMH48	1200	Type E	17.390	15.95	1.273	706608.432	804318.851
FMH49	1200	Type A	16.595	11.75	1.187	706635.295	804338.872
FMH50	1200	Type E	12.932	11.57	1.212	706674.509	804424.671
FMH51	1200	Type B	13.846	11.355	2.361	706668.537	804391.535
FMH52	1200	Type A	14.541	11.17	3.029	706697.171	804370.377
FMH53	1200	Type A	13.486	10.604	2.596	706734.533	804384.436
FMH54	1200	Type E	10.840	9.644	1.046	706738.782	804443.904
FMH55	1200	Type B	11.499	9.30	2.031	706757.145	804416.973
FMH56	1200	Type A	12.181	9.00	1.631	706760.141	804388.518
FMH57	1200	Type B	11.263	8.67	2.352	706808.582	804401.242
FMH58	1200	Type E	9.936	8.71	1.076	706844.445	804385.163
FMH59	1200	Type B	10.153	8.40	1.591	706893.365	804458.345
FMH60	1200	Type B	10.084	8.00	1.839	706872.319	804439.295
FMH61	1200	Type E	9.934	8.586	1.198	706814.781	804462.736
FMH62	1200	Type B	10.383	7.682	1.704	706837.532	804415.652
FMH63	1200	Type B	9.190	7.36	1.605	706875.547	804398.481
FMH64	1200	Type B	9.270	7.031	2.014	706903.070	804373.223
FMH65	1200	Type B	9.270	6.416	2.529	706951.324	804357.275
FMH66	1200	Type D	7.896	6.80	0.746	706917.866	804539.693
FMH67	1200	Type B	9.050	6.454	2.446	706951.634	804500.236
FMH68	1200	Type A	9.823	6.20	3.442	706925.664	804479.254
FMH69	1200	Type A	9.170	5.91	3.012	706943.735	804464.839
FMH70	1200	Type B	8.589	5.772	2.611	706963.816	804439.390
FMH71	1200	Type A	8.745	5.33	3.262	706991.442	804385.217
FMH72	1200	Type A	8.773	5.244	2.391	706986.569	804373.494
Pump Inlet MH	200	Type A	8.723	5.21	3.288	706983.414	804377.473

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 / 6m — ROAD GRADIENT
- ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

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DRAWING. NO: 122 REV. NO: B

ENG

TITLE: Foul Drainage Layout Zone 2

PROJECT: Residential Development @ Haggardstown, Blackrock, Co Louth

CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Mill Street, Dundalk, Co. Louth;

SCALE: 1:500 @ A1 DRAWN: PC

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

01 / 122 Foul Drainage Layout-Zone 2
SCALE 1:500

DRAINAGE LEGEND:

- FOUL DRAINAGE PIPELINE
- FOUL WATER MAN-HOLE
- FOUL WATER MAN-HOLE WITH CONCRETE SURROUND
- FOUL WATER INSPECTION CHAMBER
- 150Ø 1/100 — FOUL SEWER PIPE DIAMETER & FALL
- STORM DRAINAGE PIPELINE
- SURFACE WATER MANHOLE
- SURFACE WATER MANHOLE WITH CONCRETE SURROUND
- 225Ø 1/100 — STORM DRAIN PIPE DIAMETER & FALL
- SURFACE WATER ROAD GULLY

NOTES:

1. FOUL DRAINAGE PIPEWORK SHALL BE UPVC BY WAVIN OR SIMILAR APPROVED, MANUFACTURED TO IS EN 1401 2009/2012, APPLICATION CODE 'UD' WITH STIFFNESS CLASS OF 8KN/m^2. ALL FOUL DRAINAGE PIPEWORK SHALL BE THE SIZES AND LAID TO THE GRADIENTS SHOWN ON LAYOUT PLAN AND LONGITUDINAL SECTIONS.

2. WHERE MH ARE LOCATED IN GRASS AREAS THEY WILL BE SURROUNDED BY A 200mm CONCRETE PLINTH.

3.ALL SEWERS & OR ATTENUATION TANKS WILL HAVE A MINIMUM CLEARANCE OF 3M FROM ANY PROPOSED DEVELOPMENT STRUCTURE, THIS LAYOUT IS ALSO INTENDED TO COMPLY WITH IRISH WATERS TYPICAL SERVICE LAYOUT SEPARATION DISTANCES AS PER DETAIL STD-WW-05.

4.THE EXTERNAL FACE OF ALL PROPOSED MANHOLES WILL BE A MIN. 0.5m FROM ANY KERB LINE AND THE EXTERNAL FACE OF ANY SEWER WILL A MIN. OF 1.0m FROM ANY KERB LINE

5. EACH DWELLING WILL HAVE THEIR OWN INSPECTION CHAMBER AND CONNECTION TO THE MAIN SEWER LINE AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH IRISH WATERS STANDARD DETAILS STD-WW-02 & STD-WW-03

6. FOUL SEWER PIPE SIZE (DIAMETER) AND GRADIENT IS INDICATED AND IN ALL CASES IS INTENDED TO COMPLY WITH SECTION 2.4.3 & 2.4.4 OF THE WASTEWATER CODE OF PRACTICE

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
FMH1	1200	Type E	22.975	21.753	1.072	706667.614	804053.836
FMH2	1200	Type E	21.233	20.00	1.083	706617.124	804113.561
FMH3	1200	Type E	20.973	19.65	1.123	706635.287	804122.428
FMH4	1200	Type E	21.223	19.878	1.195	706697.949	804151.315
FMH5	1200	Type B	20.969	19.256	1.139	706679.907	804143.180
FMH6	1200	Type E	20.524	19.03	1.342	706664.229	804175.622
FMH7	1200	Type E	20.274	18.85	1.199	706682.578	804181.249
FMH8	1200	Type E	18.922	17.381	1.316	706748.594	804173.372
FMH9	1200	Type E	21.626	20.295	1.181	706734.947	804082.071
FMH10	1200	Type E	21.152	19.803	1.199	706717.832	804119.029
FMH11	1200	Type E	21.008	19.40	1.158	706722.251	804109.765
FMH12	1200	Type E	19.869	17.101	1.418	706784.655	804139.167
FMH13	1200	Type E	16.721	15.371	1.125	706836.50	804163.783
FMH14	1200	Type E	15.615	14.286	1.104	706865.863	804177.386
FMH15	1200	Type E	19.127	17.80	1.177	706626.001	804158.243
FMH16	1200	Type D	17.688	16.55	0.988	706603.176	804206.432
FMH17	1200	Type B	18.389	16.28	1.177	706614.933	804182.744
FMH18	1200	Type A	20.228	15.99	4.076	706653.260	804199.190
FMH19	1200	Type A	19.628	15.60	3.837	706631.631	804246.829
FMH20	1200	Type E	18.295	17.00	1.145	706551.146	804233.399
FMH21	1200	Type A	19.602	16.20	3.167	706615.992	804263.432
FMH22	1200	Type A	19.593	15.50	3.395	706631.235	804262.979
FMH23	1200	Type E	18.710	17.469	1.091	706741.005	804190.482
FMH24	1200	Type B	17.464	14.706	1.676	706747.770	804249.564
FMH25	1200	Type E	15.514	14.100	1.163	706801.926	804243.139
FMH26	1200	Type E	14.854	13.622	1.082	706884.525	804201.914
FMH27	1200	Type D	13.672	12.802	0.720	706870.241	804236.183
FMH28	1200	Type B	14.406	12.127	1.053	706829.815	804255.563
FMH29	1200	Type B	13.910	11.966	1.719	706843.874	804270.939
FMH30	1200	Type E	15.203	13.862	1.191	706894.623	804190.951
FMH31	1200	Type E	14.722	13.381	1.191	706972.449	804225.000
FMH32	1200	Type B	15.009	13.15	1.602	706951.456	804216.025
FMH33	1200	Type E	12.208	10.743	1.240	706916.279	804298.930
FMH34	1200	Type D	7.761	7.80	-0.189	707105.845	804294.839
FMH35	1200	Type A	11.616	7.402	4.063	707051.193	804241.225
FMH36	1200	Type B	14.323	12.286	1.887	707020.583	804213.496
FMH37	1200	Type B	13.147	11.095	1.902	707010.712	804243.307
FMH38	1200	Type A	11.827	7.082	1.803	707024.166	804280.693
FMH39	1200	Type E	10.45	9.25	1.05	707008.330	804329.654
FMH40	1200	Type A	10.172	6.652	1.210	706979.944	804325.473
FMH41	1200	Type E	17.382	16.00	1.232	706554.567	804318.796
FMH42	1200	Type E	16.273	15.00	1.123	706538.568	804353.220
FMH43	1200	Type E	15.642	14.26	1.232	706507.524	804402.299
FMH44	1200	Type B	15.841	14.109	1.507	706517.092	804387.221
FMH45	1200	Type E	13.734	12.427	1.082	706578.934	804415.882
FMH46	1200	Type A	15.601	12.19	3.177	706607.810	804397.514
FMH47	1200	Type E	18.009	16.70	1.159	706574.654	804301.408
FMH48	1200	Type E	17.380	15.95	1.273	706608.432	804316.851
FMH49	1200	Type A	16.595	11.75	1.187	706635.295	804338.672
FMH50	1200	Type E	12.932	11.57	1.212	706674.509	804424.671
FMH51	1200	Type B	13.846	11.335	2.361	706686.537	804391.535
FMH52	1200	Type A	14.541	11.17	3.029	706697.171	804370.377
FMH53	1200	Type B	13.486	10.604	2.596	706724.533	804384.436
FMH54	1200	Type E	10.840	9.644	1.046	706738.782	804443.904
FMH55	1200	Type B	11.499	9.30	2.031	706757.145	804416.973
FMH56	1200	Type A	12.181	9.00	1.631	706763.141	804388.518
FMH57	1200	Type B	11.263	8.67	2.352	706808.582	804401.242
FMH58	1200	Type E	9.936	8.71	1.076	706880.445	804485.163
FMH59	1200	Type B	10.153	8.40	1.591	706893.365	804458.345
FMH60	1200	Type B	10.084	8.00	1.839	706872.319	804436.265
FMH61	1200	Type E	9.934	8.586	1.198	706814.781	804462.736
FMH62	1200	Type B	10.383	7.682	1.704	706837.532	804415.652
FMH63	1200	Type B	9.190	7.36	1.605	706875.547	804386.481
FMH64	1200	Type B	9.270	7.031	2.014	706923.079	804373.223
FMH65	1200	Type B	9.570	6.416	2.529	706951.324	804357.275
FMH66	1200	Type D	7.696	6.80	0.746	706917.986	804539.693
FMH67	1200	Type B	9.050	6.454	2.446	706951.634	804500.236
FMH68	1200	Type A	9.823	6.20	3.442	706925.664	804479.254
FMH69	1200	Type A	9.175	6.01	3.012	706943.735	804457.844
FMH70	1200	Type B	8.589	5.772	2.611	706963.816	804439.390
FMH71	1200	Type A	8.749	5.33	3.262	706991.442	804380.217
FMH72	1200	Type A	8.773	5.244	2.391	706986.569	804373.494
PS Pump Inlet MH	2200	Type A	8.723	5.21	3.288	706983.414	804377.473

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 / 6m — ROAD GRADIENT
- ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

NOTES:

EXACT INVERT LEVELS OF EXISTING SEWERS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION OF NEW FOUL SEWERS.

THE PROPOSED FOUL SEWERS ARE A MAXIMUM DIAMETER OF 150mm LAID AT THE GRADIENTS SHOWN WHICH ARE IN ACCORDANCE WITH IRISH WATER GUIDELINES. THE DESIGN OF THE FOUL SEWERS IS BASED ON A ROUGHNESS COEFFICIENT OF 1.5mm.

THE PROPOSED FOUL DRAINAGE SYSTEM FOR THE NEW DEVELOPMENT WILL DISCHARGE INTO THE PROPOSED FOUL SEWER PUMPING LOCATION AS SHOWN ON THE LAYOUT FROM WHERE IT WILL BE PUMPED TO THE PUBLIC MAINS. THE INVERT LEVEL OF THE CONNECTION POINTS TO BE CONFIRMED.

ALL COVER LEVELS ARE INDICATIVE AND THE FINAL COVER LEVELS TO MATCH FINISHED PATH/ROAD LEVELS.

ALL LEVELS OF PIPES TO BE CHECKED AND VERIFIED PRIOR TO WORK COMMENCING ON SITE.

THE LAYOUT OF THE BRANCH DRAINS FROM THE INDIVIDUAL SITES ARE AS SHOWN ON THE DWELLINGS LAYOUT PLAN. ANY CHANGES ARE TO BE AGREED PRIOR TO CONSTRUCTION. THE DISTANCE FROM THE FINAL ACCESS JUNCTION ON EACH INDIVIDUAL SITE TO THE CONNECTION TO THE MAIN DRAIN TO BE A MAXIMUM OF 12m.

THE CONNECTION OF THE BRANCH DRAINS TO MAIN DRAINS SHOULD BE MADE AT A MANHOLE WHERE POSSIBLE OR BY USING AN OBLIQUE TYPE SADDLE. SADDLES SHOULD NOT BE USED ON PIPES OF 100mm DIAMETER, NOR TO CONNECT PIPES OF THE SAME DIAMETER.

ALL PIPES SHOULD HAVE FLEXIBLE JOINTS FORMED BY A METHOD RECOMMENDED BY THE PIPE MANUFACTURER. ELASTOMERIC SEALING RINGS, COMPLYING WITH THE REQUIREMENTS OF BS 2494, TYPE D, SHOULD BE USED.

MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	*LOCATION*
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (AJ'S) TO BE 100mmØ uPVC PIPES AT A GRADIENT OF 1 in 60.

LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTFALL POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

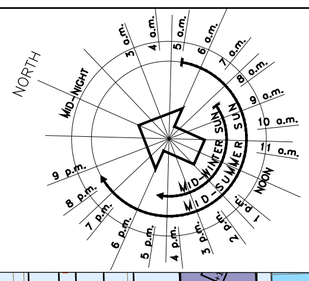
THE TYPE OF PIPE AND FITTINGS TO BE USED TO BE uPVC (IN ACCORDANCE WITH THE REQUIREMENTS OF IS 424) UNLESS OTHERWISE STATED BY ENGINEER.

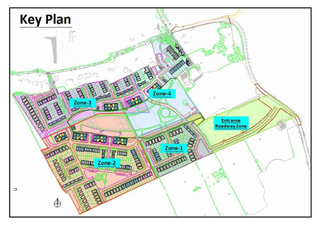
TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

FLEXIBLE PIPES SHOULD BE LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO RAODWAYS AND 0.6m IN GARDENS. WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS, ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.

ALL WORKS WILL BE CARRIED OUT IN CONJUNCTION WITH IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE AND IRISH WATER STANDARD DETAILS FOR WASTEWATER.
FOUL DRAINAGE DETAILS TO COMPLY WITH IRISH WATERS STANDARD DETAILS: IW-CDS-5030-01





REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

01 / 123 Foul Drainage Layout-Zone 3
SCALE 1:500

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 123 REV. NO: B

ENG

TITLE: Foul Drainage Layout Zone 3

PROJECT: Residential Development @ Haggardstown, Blackrock, Co Louth

CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Mill Street, Dundalk, Co. Louth;

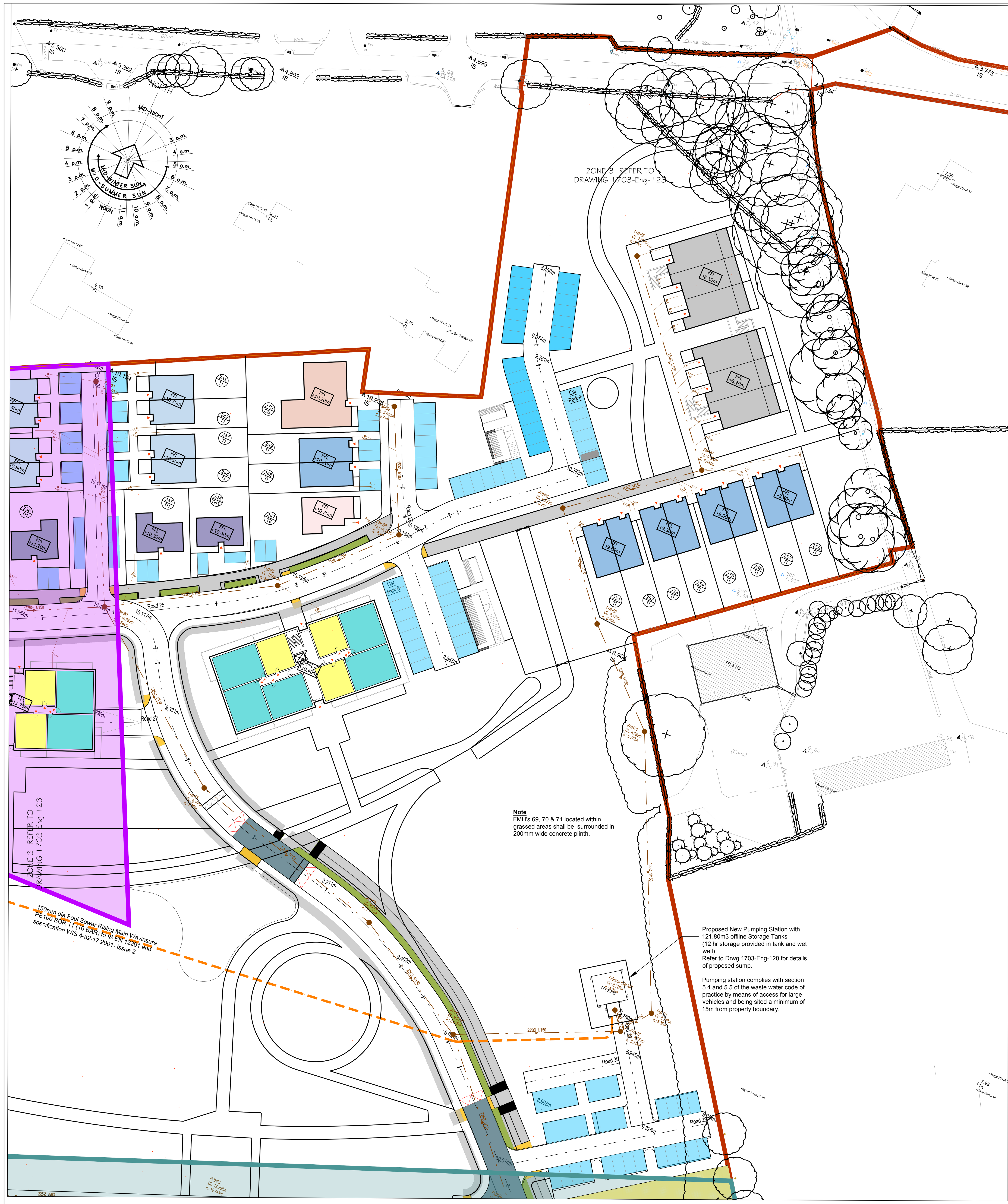
SCALE: 1:500 @ A1 DRAWN: PC

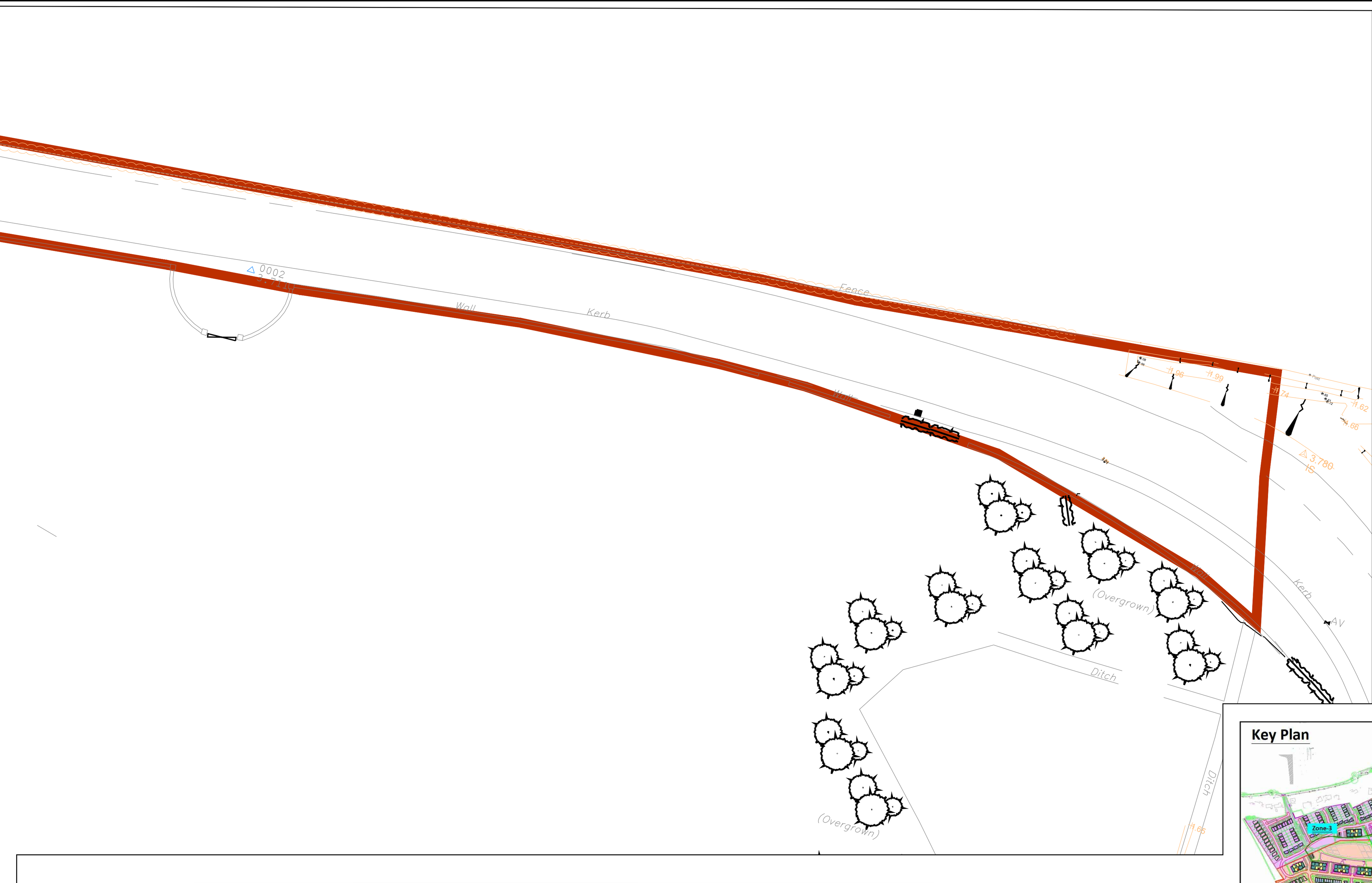
DATE: November 2018 CHECKED: -

STATUS: Planning Permission

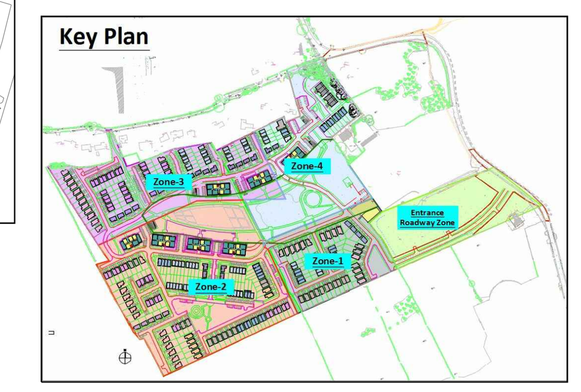
JOB NO: 1703

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT





01 Foul Drainage Layout-Zone 4
124 SCALE 1:500



MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
FMH1	1200	Type E	22.975	21.753	1.072	706667.614	804053.836
FMH2	1200	Type E	21.233	20.00	1.083	706617.124	804113.561
FMH3	1200	Type E	20.973	19.65	1.123	706635.287	804122.428
FMH4	1200	Type E	21.223	19.878	1.195	706697.949	804151.315
FMH5	1200	Type B	20.969	19.256	1.139	706679.907	804143.180
FMH6	1200	Type E	20.524	19.03	1.342	706664.229	804175.622
FMH7	1200	Type E	20.274	18.85	1.199	706682.578	804181.249
FMH8	1200	Type E	18.922	17.381	1.316	706748.594	804173.372
FMH9	1200	Type E	21.626	20.295	1.181	706734.947	804082.071
FMH10	1200	Type E	21.152	19.803	1.199	706717.832	804119.029
FMH11	1200	Type E	21.008	19.40	1.158	706722.251	804109.765
FMH12	1200	Type E	18.669	17.101	1.418	706784.655	804139.167
FMH13	1200	Type E	16.721	15.371	1.125	706836.50	804163.783
FMH14	1200	Type E	15.615	14.286	1.104	706865.863	804177.386
FMH15	1200	Type E	19.127	17.80	1.177	706626.001	804158.243
FMH16	1200	Type D	17.688	16.55	0.988	706603.176	804206.432
FMH17	1200	Type B	18.389	16.28	1.177	706614.933	804182.744
FMH18	1200	Type A	20.228	15.99	4.076	706653.260	804199.190
FMH19	1200	Type A	19.628	15.60	3.837	706631.631	804246.829
FMH20	1200	Type E	18.295	17.00	1.145	706551.146	804233.399
FMH21	1200	Type A	19.602	16.20	3.167	706615.992	804263.432
FMH22	1200	Type A	19.593	15.50	3.395	706631.235	804262.979
FMH23	1200	Type E	18.710	17.469	1.091	706741.005	804190.482
FMH24	1200	Type B	17.464	14.706	1.676	706747.770	804249.564
FMH25	1200	Type E	15.514	14.00	1.193	706801.926	804243.139
FMH26	1200	Type E	14.854	13.622	1.082	706884.525	804201.914
FMH27	1200	Type D	13.672	12.802	0.720	706870.241	804236.183
FMH28	1200	Type B	14.406	12.127	1.053	706829.815	804255.563
FMH29	1200	Type B	13.910	11.966	1.719	706843.874	804270.939
FMH30	1200	Type E	15.203	13.862	1.191	706894.623	804190.951
FMH31	1200	Type E	14.722	13.381	1.191	706972.449	804225.000
FMH32	1200	Type B	15.009	13.15	1.602	706951.456	804216.025
FMH33	1200	Type E	12.208	10.743	1.240	706916.279	804298.930
FMH34	1200	Type D	7.761	7.80	-0.189	707105.845	804264.839
FMH35	1200	Type A	11.616	7.402	4.063	707051.193	804241.225

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
FMH36	1200	Type B	14.323	12.286	1.887	707020.583	804213.496
FMH37	1200	Type B	13.147	11.095	1.902	707010.712	804243.307
FMH38	1200	Type A	11.827	7.082	1.803	707024.166	804280.693
FMH39	1200	Type E	10.45	9.25	1.05	707008.330	804329.654
FMH40	1200	Type A	10.172	6.652	1.210	706979.944	804325.473
FMH41	1200	Type E	17.382	16.00	1.232	706554.567	804318.796
FMH42	1200	Type E	16.273	15.00	1.123	706538.568	804353.220
FMH43	1200	Type E	15.642	14.26	1.232	706507.524	804402.299
FMH44	1200	Type B	15.841	14.109	1.507	706517.092	804387.221
FMH45	1200	Type E	13.734	12.427	1.082	706578.934	804415.882
FMH46	1200	Type A	15.601	12.19	3.177	706607.810	804397.514
FMH47	1200	Type E	18.009	16.70	1.159	706574.654	804301.408
FMH48	1200	Type E	17.380	15.95	1.273	706608.432	804316.851
FMH49	1200	Type A	16.595	11.75	1.187	706635.295	804338.672
FMH50	1200	Type E	12.932	11.57	1.212	706674.509	804424.671
FMH51	1200	Type B	13.846	11.335	2.361	706686.537	804391.535
FMH52	1200	Type A	14.541	11.17	3.029	706697.171	804370.377
FMH53	1200	Type B	13.486	10.604	2.596	706724.533	804384.436
FMH54	1200	Type B	10.840	9.644	1.046	706738.782	804443.904
FMH55	1200	Type B	11.499	9.30	2.031	706757.145	804416.973
FMH56	1200	Type A	12.181	9.00	1.631	706763.141	804388.518
FMH57	1200	Type B	11.263	8.67	2.352	706808.582	804401.242
FMH58	1200	Type E	9.936	8.71	1.076	706880.445	804485.163
FMH59	1200	Type B	10.153	8.40	1.591	706893.365	804458.345
FMH60	1200	Type B	10.084	8.00	1.839	706872.319	804436.265
FMH61	1200	Type E	9.934	8.586	1.198	706814.781	804462.736
FMH62	1200	Type B	10.383	7.682	1.704	706837.532	804415.652
FMH63	1200	Type B	9.190	7.36	1.605	706875.547	804386.481
FMH64	1200	Type B	9.270	7.031	2.014	706923.079	804373.223
FMH65	1200	Type B	9.570	6.416	2.529	706951.324	804357.275
FMH66	1200	Type D	7.696	6.80	0.746	706917.986	804539.693
FMH67	1200	Type B	9.050	6.454	2.446	706951.634	804500.236
FMH68	1200	Type A	9.823	6.20	3.442	706925.664	804479.254
FMH69	1200	Type A	9.175	6.01	3.012	706943.735	804457.844
FMH70	1200	Type B	8.589	5.772	2.611	706963.816	804439.390
FMH71	1200	Type A	8.749	5.33	3.262	706991.442	804380.217
FMH72	1200	Type A	8.773	5.244	2.391	706986.569	804373.494
P/Sump Inlet MH	1200	Type A	8.723	5.21	3.288	706983.414	804377.473

DRAINAGE LEGEND:

- FOUL DRAINAGE PIPELINE
- FOUL WATER MAN-HOLE
- FOUL WATER MAN-HOLE WITH CONCRETE SURROUND
- FOUL WATER INSPECTION CHAMBER
- 150Ø 1/100 — FOUL SEWER PIPE DIAMETER & FALL
- STORM DRAINAGE PIPELINE
- SURFACE WATER MANHOLE
- SURFACE WATER MANHOLE WITH CONCRETE SURROUND
- 225Ø 1/100 — STORM DRAIN PIPE DIAMETER & FALL
- SURFACE WATER ROAD GULLY

NOTES:

1. FOUL DRAINAGE PIPEWORK SHALL BE UPVC BY WAVIN OR SIMILAR APPROVED, MANUFACTURED TO IS EN 1401 2009/2012, APPLICATION CODE 'UD' WITH STIFFNESS CLASS OF 8KN/M^2. ALL FOUL DRAINAGE PIPEWORK SHALL BE THE SIZES AND LAID TO THE GRADIENTS SHOWN ON LAYOUT PLAN AND LONGITUDINAL SECTIONS.

2. WHERE MH ARE LOCATED IN GRASS AREAS THEY WILL BE SURROUNDED BY A 200mm CONCRETE PLINTH.

3.ALL SEWERS & OR ATTENUATION TANKS WILL HAVE A MINIMUM CLEARANCE OF 3M FROM ANY PROPOSED DEVELOPMENT STRUCTURE, THIS LAYOUT IS ALSO INTENDED TO COMPLY WITH IRISH WATERS TYPICAL SERVICE LAYOUT SEPARATION DISTANCES AS PER DETAIL STD-WW-05.

4.THE EXTERNAL FACE OF ALL PROPOSED MANHOLES WILL BE A MIN. 0.5m FROM ANY KERB LINE AND THE EXTERNAL FACE OF ANY SEWER WILL A MIN. OF 1.0m FROM ANY KERB LINE

5. EACH DWELLING WILL HAVE THEIR OWN INSPECTION CHAMBER AND CONNECTION TO THE MAIN SEWER LINE AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH IRISH WATERS STANDARD DETAILS STD-WW-02 & STD-WW-03

6. FOUL SEWER PIPE SIZE (DIAMETER) AND GRADIENT IS INDICATED AND IN ALL CASES IS INTENDED TO COMPLY WITH SECTION 2.4.3 & 2.4.4 OF THE WASTEWATER CODE OF PRACTICE

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 — ROAD GRADIENT
- 6m — ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

NOTES:

EXACT INVERT LEVELS OF EXISTING SEWERS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION OF NEW FOUL SEWERS.

THE PROPOSED FOUL SEWERS ARE A MAXIMUM DIAMETER OF 150mm LAID AT THE GRADIENTS SHOWN WHICH ARE IN ACCORDANCE WITH IRISH WATER GUIDELINES. THE DESIGN OF THE FOUL SEWERS IS BASED ON A ROUGHNESS COEFFICIENT OF 1.5mm.

THE PROPOSED FOUL DRAINAGE SYSTEM FOR THE NEW DEVELOPMENT WILL DISCHARGE INTO THE PROPOSED FOUL SEWER PUMPING LOCATION AS SHOWN ON THE LAYOUT FROM WHERE IT WILL BE PUMPED TO THE PUBLIC MAINS. THE INVERT LEVEL OF THE CONNECTION POINTS TO BE CONFIRMED.

ALL COVER LEVELS ARE INDICATIVE AND THE FINAL COVER LEVELS TO MATCH FINISHED PATH/ROAD LEVELS.

ALL LEVELS OF PIPES TO BE CHECKED AND VERIFIED PRIOR TO WORK COMMENCING ON SITE.

THE LAYOUT OF THE BRANCH DRAINS FROM THE INDIVIDUAL SITES ARE AS SHOWN ON THE DWELLINGS LAYOUT PLAN. ANY CHANGES ARE TO BE AGREED PRIOR TO CONSTRUCTION. THE DISTANCE FROM THE FINAL ACCESS JUNCTION ON EACH INDIVIDUAL SITE TO THE CONNECTION TO THE MAIN DRAIN TO BE A MAXIMUM OF 12m.

THE CONNECTION OF THE BRANCH DRAINS TO MAIN DRAINS SHOULD BE MADE AT A MANHOLE WHERE POSSIBLE OR BY USING AN OBLIQUE TYPE SADDLE. SADDLES SHOULD NOT BE USED ON PIPES OF 100mm DIAMETER, NOR TO CONNECT PIPES OF THE SAME DIAMETER.

ALL PIPES SHOULD HAVE FLEXIBLE JOINTS FORMED BY A METHOD RECOMMENDED BY THE PIPE MANUFACTURER. ELASTOMERIC SEALING RINGS, COMPLYING WITH THE REQUIREMENTS OF BS 2494, TYPE D, SHOULD BE USED.

MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	*LOCATION*
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (AJ'S) TO BE 100mmØ uPVC PIPES AT A GRADIENT OF 1 in 60.

LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTFALL POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

THE TYPE OF PIPE AND FITTINGS TO BE USED TO BE uPVC (IN ACCORDANCE WITH THE REQUIREMENTS OF IS 424) UNLESS OTHERWISE STATED BY ENGINEER.

TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

FLEXIBLE PIPES SHOULD BE LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO RAODWAYS AND 0.6m IN GARDENS. WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS, ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.

ALL WORKS WILL BE CARRIED OUT IN CONJUNCTION WITH IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE AND IRISH WATER STANDARD DETAILS FOR WASTEWATER.
FOUL DRAINAGE DETAILS TO COMPLY WITH IRISH WATERS STANDARD DETAILS IW-CDS-5030-01

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 124
REV. NO: B

ENG

TITLE: Foul Drainage Layout Zone 4
PROJECT: Residential Development @ Haggardstown, Blackrock, Co Louth
CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Mill Street, Dundalk, Co. Louth;
SCALE: 1:500 @ A1
DRAWN: PC
DATE: November 2018
CHECKED: -
STATUS: Planning Permission
JOB NO: 1703

NOTES

2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

01 Overall Foul Drainage Layout
125 SCALE 1:1000

NOTES:

EXACT INVERT LEVELS OF EXISTING SEWERS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION OF NEW FOUL SEWERS.

THE PROPOSED FOUL SEWERS ARE A MAXIMUM DIAMETER OF 150mm LAID AT THE GRADIENTS SHOWN WHICH ARE IN ACCORDANCE WITH LOUTH COUNTY COUNCIL GUIDELINES. THE DESIGN OF THE FOUL SEWERS IS BASED ON A ROUGHNESS COEFFICIENT OF 1.5mm.

THE PROPOSED FOUL DRAINAGE SYSTEM FOR THE NEW DEVELOPMENT WILL DISCHARGE INTO THE EXISTING SYSTEM AT LOCATION AS INDICATED ON THE LAYOUT. THE INVERT LEVEL OF THE CONNECTION POINTS TO BE CONFIRMED.

ALL COVER LEVELS ARE INDICATIVE AND THE FINAL COVER LEVELS TO MATCH FINISHED PATH/ROAD LEVELS.

ALL LEVELS OF PIPES TO BE CHECKED AND VERIFIED PRIOR TO WORK COMMENCING ON SITE.

THE LAYOUT OF THE BRANCH DRAINS FROM THE INDIVIDUAL SITES ARE AS SHOWN ON THE DWELLINGS LAYOUT PLAN. ANY CHANGES ARE TO BE AGREED PRIOR TO CONSTRUCTION. THE DISTANCE FROM THE FINAL ACCESS JUNCTION ON EACH INDIVIDUAL SITE TO THE CONNECTION TO THE MAIN DRAIN TO BE A MAXIMUM OF 12m.

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ALL PIPES SHOULD HAVE FLEXIBLE JOINTS FORMED BY A METHOD RECOMMENDED BY THE PIPE MANUFACTURER. ELASTOMERIC SEALING RINGS, COMPLYING WITH THE REQUIREMENTS OF BS 2494, TYPE D, SHOULD BE USED.

MANHOLE COVERS AND FRAMES (TO COMPLY WITH THE REQUIREMENTS OF IS EN 124):

CLASS	LOCATION
D 400	ROADWAYS, HARDSHOULDERS, VEHICULAR ACCESSES
B 125	FOOTWAYS, GRASS VERGES
A 15	AREAS INACCESSIBLE TO MOTOR VEHICLES

ALL BRANCH CONNECTIONS FROM ACCESS JUNCTIONS (AJ'S) TO BE 100mmØ uPVC PIPES AT A GRADIENT OF 1 in 60.

LOCATION AND INVERT LEVELS OF EXISTING (OR PROPOSED) MANHOLES OR OUTFALL POINTS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PROPOSED DRAINAGE NETWORK.

THE TYPE OF PIPE AND FITTINGS TO BE USED TO BE uPVC (IN ACCORDANCE WITH THE REQUIREMENTS OF IS 424) UNLESS OTHERWISE STATED BY ENGINEER.

TRENCH WIDTH AT THE LEVEL OF THE TOP OF THE PIPE SHOULD GENERALLY BE AS NARROW AS SAFE WORKING CONDITIONS WOULD ALLOW, WITH A MINIMUM WIDTH OF 300mm PLUS THE EXTERNAL DIAMETER OF THE PIPE BARREL.

DRAINS SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR AND SHALL BE CONSTRUCTED ON PUBLIC PROPERTY. ACCESS SHALL GENERALLY BE PROVIDED BY MEANS OF A MANHOLE BUT, SUBJECT TO APPROVAL, A PROPRIETARY ACCESS JUNCTION MAY BE USED IN LIEU OF A MANHOLE, ON A DRAIN WHERE THE DEPTH TO INVERT IS LESS THAN 600mm.

FLEXIBLE PIPES SHOULD BE LAID WITH A MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS, 0.9m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO RAODWAYS AND 0.6m IN GARDENS. WHERE IT IS NOT POSSIBLE TO ACHIEVE THESE MINIMUM COVERS, ADDITIONAL MEASURES SHOULD BE TAKEN IN ORDER TO PROTECT PIPEWORK. DETAILS SHOULD BE AGREED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE PIPELINE.

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 — ROAD GRADIENT
- 6m — ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

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CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 125 REV. NO: B

ENG

TITLE: Overall Site Foul Drainage Layout

PROJECT: Residential Development @ Haggardstown, Blackrock, Co Louth

CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Mill Street, Dundalk, Co. Louth;

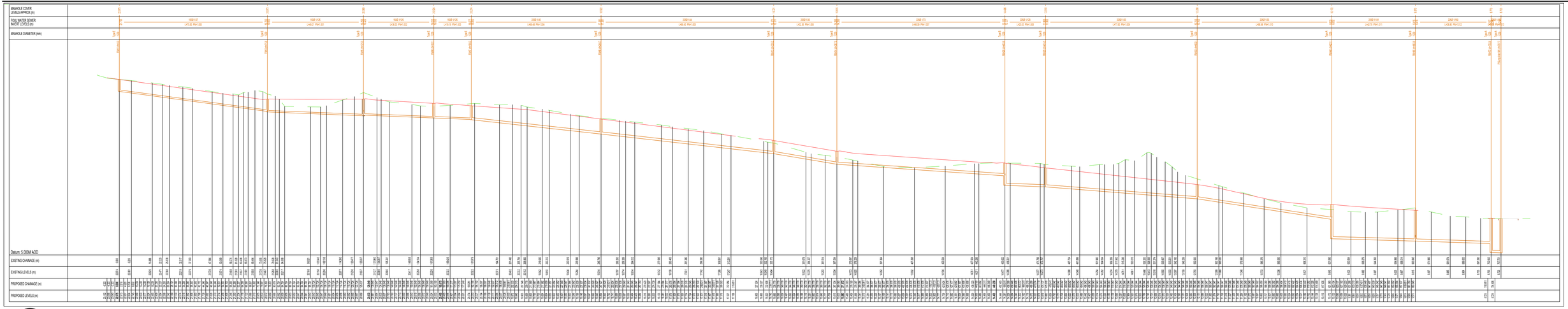
SCALE: 1:1000 @ A1 DRAWN: PC

DATE: November 2018 CHECKED: -

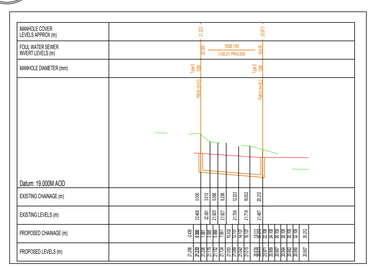
STATUS: Planning Permission

JOB NO: 1703

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT



01 Foul Drainage Long Sect
127 SCALE 1:1000



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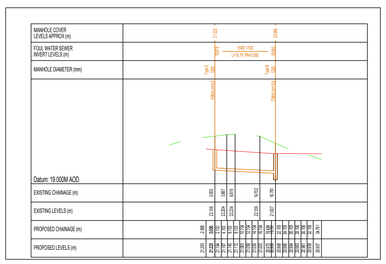
127 SCALE 1:1000



03 Foul Drainage Long Sect
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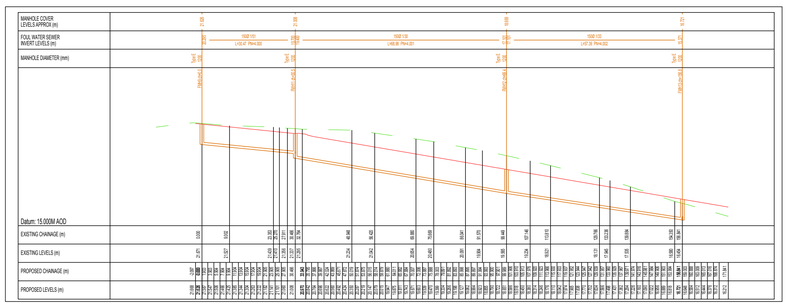

04 Foul Drainage Long Sect
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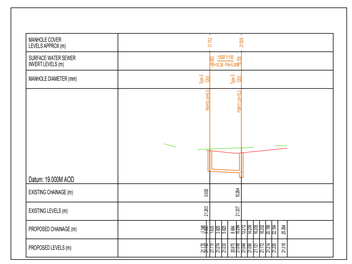

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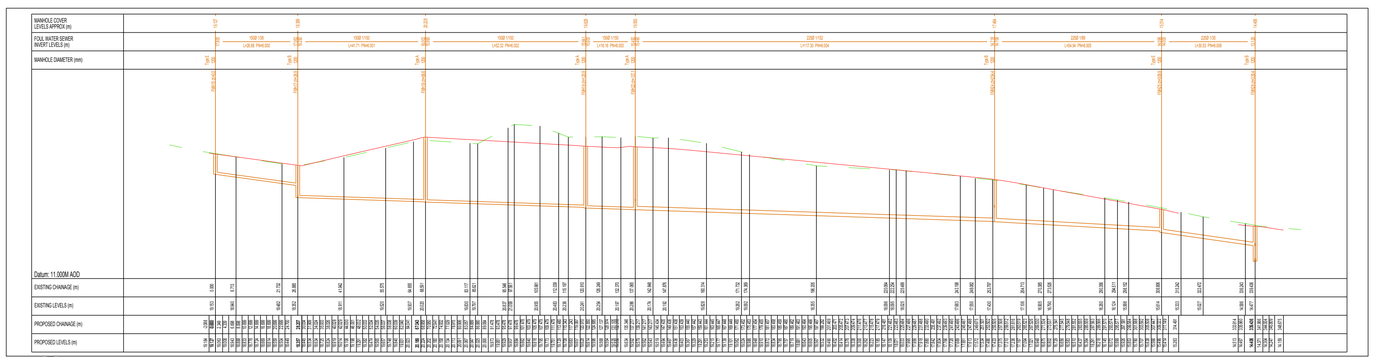

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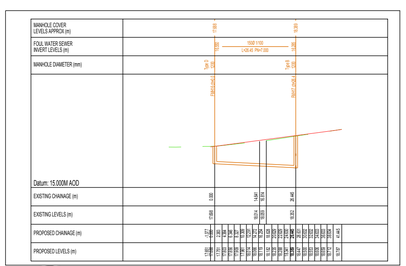

07 Foul Drainage Long Sect
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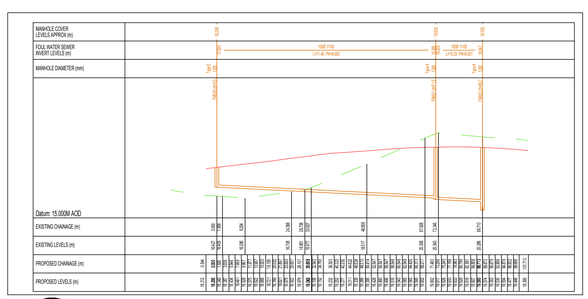

08 Foul Drainage Long Sect
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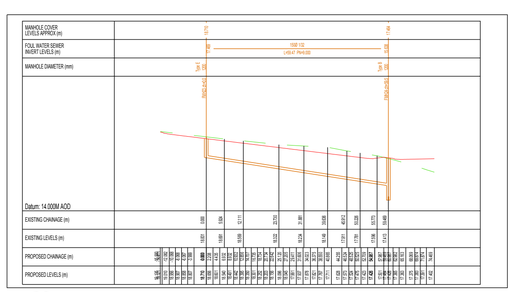

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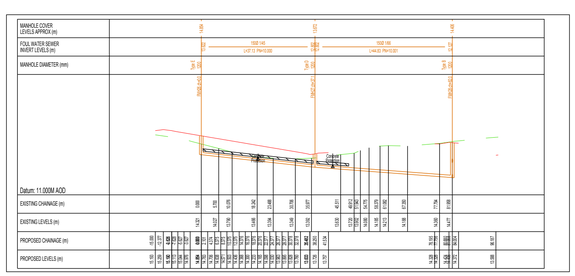

10 Foul Drainage Long Sect
127 SCALE 1:1000

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

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DRAWING. NO: 127
REV. NO: B

ENG

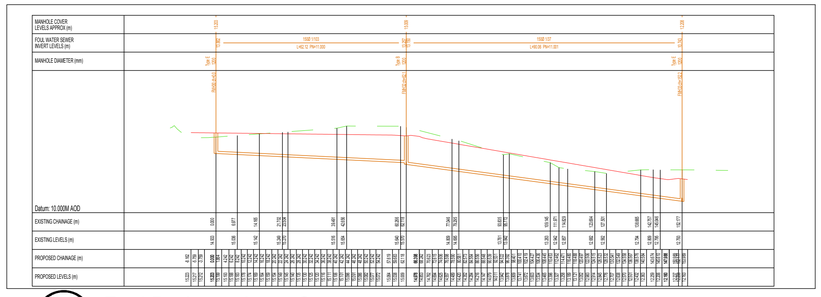
TITLE: Foul Drainage Longitudinal Sections (Sheet 2 of 3)

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

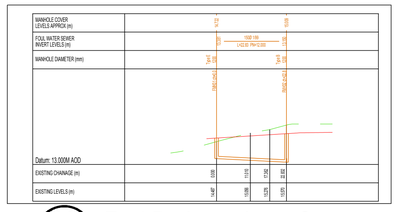
CLIENT: Kingsbridge Consultancy Ltd
1st Floor Quayside Business Park
Mill Street, Dundalk, Co Louth.

SCALE: 1:1000 @ A1
DRAWN: A. Armstrong
DATE: November 2018
CHECKED: -
STATUS: Planning Permission
JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of c.o. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in accordance with manufacturers instructions.
6. All dims. are in mm unless otherwise stated/indicated.
7. The contractor shall be responsible for the coordination of structure, finishes and services.



01 128 Foul Drainage Long Sect
SCALE 1:1000



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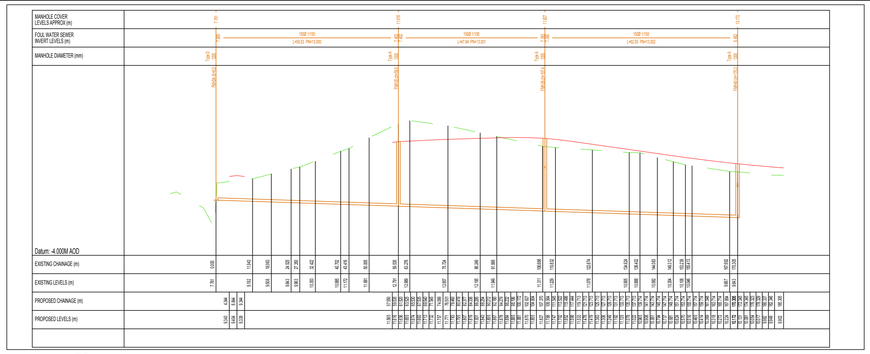

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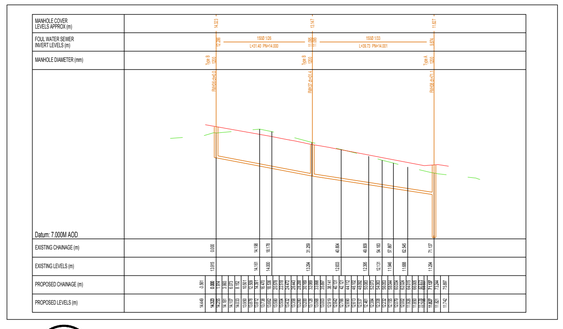
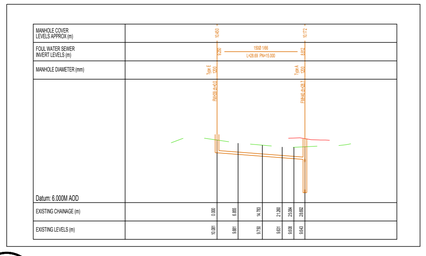
SCALE 1:1000



04 128 Foul Drainage Long Sect
SCALE 1:1000



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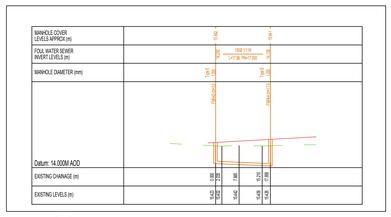
SCALE 1:1000



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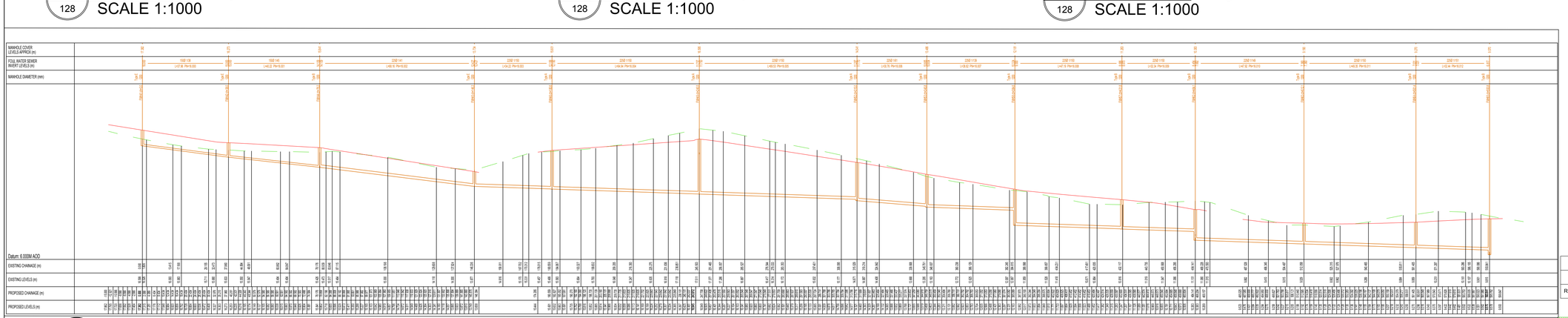

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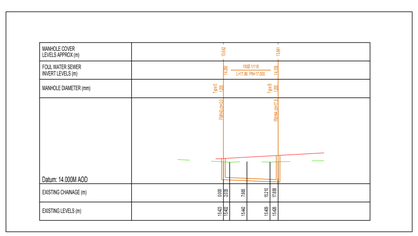
SCALE 1:1000



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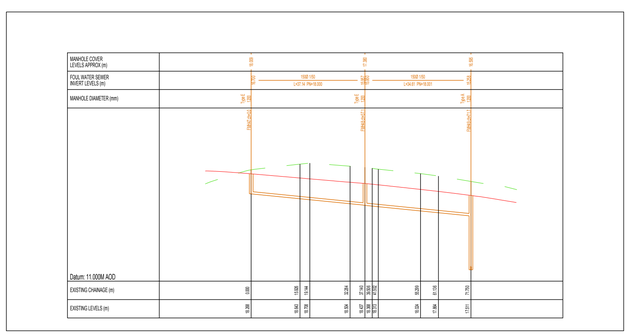
SCALE 1:1000



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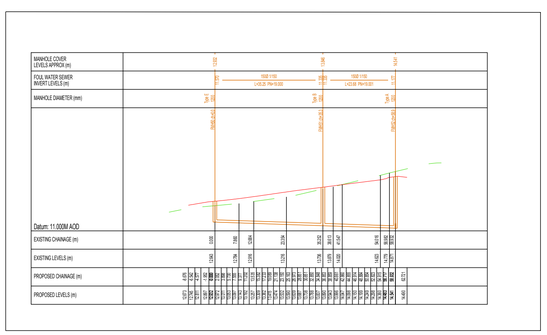
SCALE 1:1000



10 128 Foul Drainage Long Sect
SCALE 1:1000

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

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DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE

Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 128
REV. NO: B

ENG

TITLE: Foul Drainage Longitudinal Sections (Sheet 1 of 3)

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

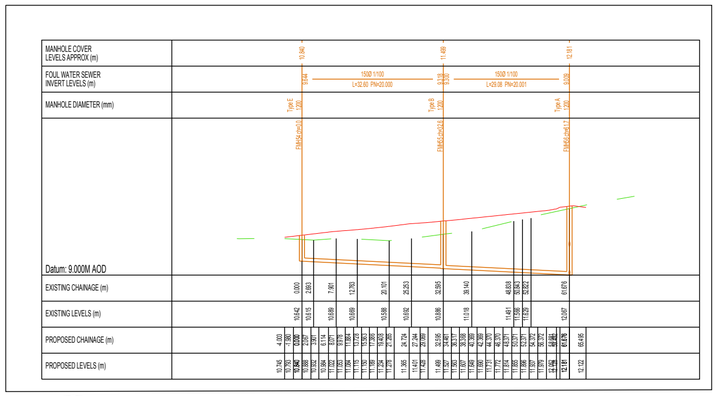
CLIENT: Kingsbridge Consultancy Ltd
1st Floor Quayside Business Park
Mill Street, Dundalk, Co Louth.

SCALE: 1:1000 @ A1
DRAWN: A. Armstrong
DATE: November 2018
CHECKED: -
STATUS: Planning Permission
JOB NO: 1703

NOTES

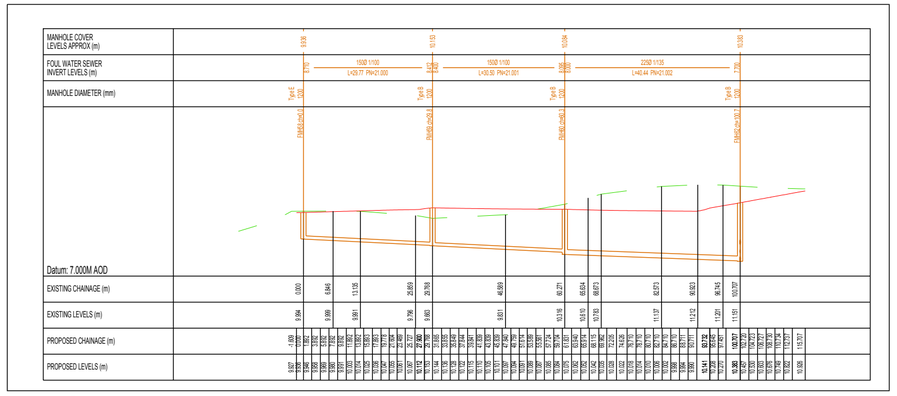
2. Refer to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT



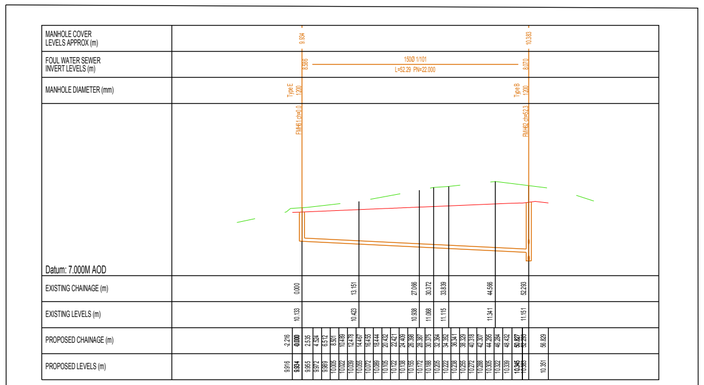
01
129

Foul Drainage Long Sect
SCALE 1:1000



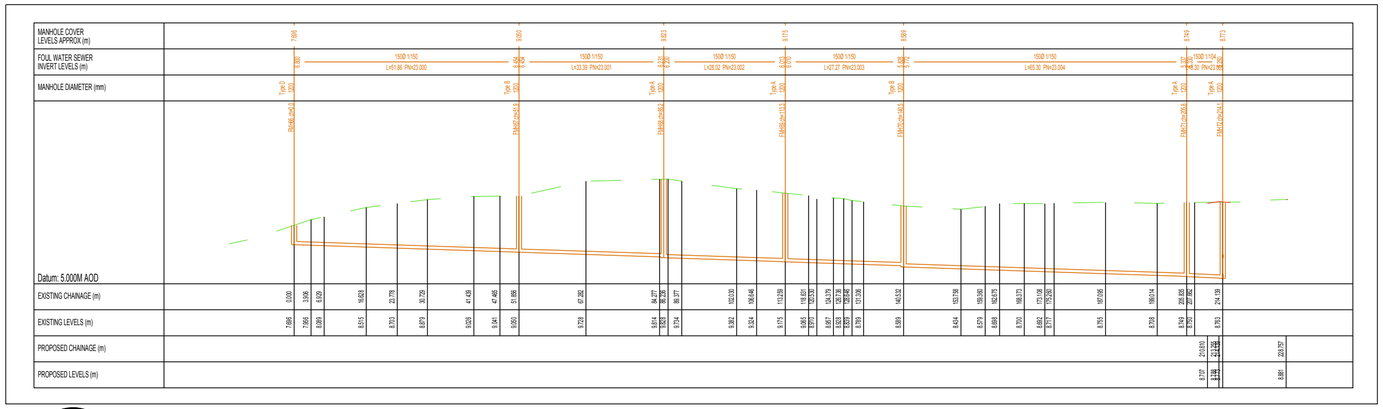
02
129

Foul Drainage Long Sect
SCALE 1:1000



03
129

Foul Drainage Long Sect
SCALE 1:1000



03
129

Foul Drainage Long Sect
SCALE 1:1000

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

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CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 129

REV. NO: B

ENG

TITLE: Foul Drainage Longitudinal Sections (Sheet 3 of 3)

PROJECT: Haggardstown, Blackrock, Dundalk Residential Development @

CLIENT: Kingsbridge Consultancy Ltd
1st Floor Quayside Business Park
Mill Street, Dundalk, Co Louth.

SCALE: 1:1000 @ A1

DRAWN: A.Armstrong

DATE: November 2018

CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES:

EACH UNIT TO BE PROVIDED WITH A WATER SERVICES CONTROL UNIT (WSCU). EACH WSCU TO HAVE AN ACCESS LID AND STOPCOCK. TYPE OF WSCU TO BE APPROVED BY LOUTH COUNTY COUNCIL.

ALL WSCU'S TO BE LOCATED IN PUBLIC FOOTPATHS (OUTSIDE OF INDIVIDUAL SITES).

ALL WATERMAINS FOR THE DEVELOPMENT TO BE 100mmØ CLASS C uPVC PIPES EXCEPT WHERE UNDER ROADWAYS WHERE EQUIVALENT DUCTILE IRON PIPES TO BE USED.

WATER SERVICE CONNECTION TO UNITS TO BE 12mmØ POLYETHYLENE TYPE 32/HEAVY GAUGE TO ISO 134.

WATERMAIN PIPES TO HAVE MINIMUM COVER OF 900mm. SERVICE PIPES SHOULD HAVE A MINIMUM COVER OF 600mm.

SERVICE PIPES TO HAVE 100mm SURROUND CONSISTING OF 10mm PEA GRAVEL.

AIR VALVES TO BE LOCATED AT HIGH POINTS AND SCOUR VALVES TO BE LOCATED AT LOW POINTS ON THE PIPE NETWORK. LOCATION OF ALL VALVES TO BE AGREED WITH LOUTH COUNTY COUNCIL.

WATERMAINS SHOULD BE LOOPED AS SHOWN ON THIS DRAWING. WHERE DEAD-ENDS ARE USED, A DUCK FOOT HYDRANT SHOULD BE PROVIDED AT THE DEAD-END.

MARKER POSTS TO BE INSTALLED AT ALL SLUICE VALVES, FIRE HYDRANTS, AIR VALVES & SCOUR VALVES.

ALL TEE'S, SPECIAL BENDS TO BE FLANGED ONLY.

JOINTS SHALL BE FORMED BY AN APPROVED METHOD, RECOMMENDED BY THE MANUFACTURER. ELASTOMERIC SEALING RINGS, WHERE USED, SHOULD COMPLY WITH THE REQUIREMENTS OF BS 2494.

CONCRETE ANCHOR BLOCKS SHOULD BE PROVIDED ON WATERMAINS AT DEAD ENDS, TEES, BENDS OF CURVATURE GREATER THAN 22.5° AND AT BOTH SIDES OF A SLUICE VALVE CHAMBER. ANCHOR BLOCKS SHOULD ENCASE THE PIPE IN CONCRETE (CLASS E, CLAUSE 1502, SPECIFICATION FOR ROADWORKS), TO A MINIMUM THICKNESS OF 150mm ALL ROUND AND SHOULD BE A MINIMUM LENGTH OF 750mm.

DUCTILE IRON PIPES TO BE USED UNDER ROADWAYS AND PARKING BAYS.

ALL WATERMAINS TO BE OVERLAID WITH MARKER TAPE COMPLETE WITH 2 STRANDS OF CONTINUOUS TRACER WIRE. TRACER WIRE TO BE CONNECTED TO FITTINGS. CONTINUITY OF TRACER WIRE TO BE ENSURED AT ENDS OF ROLLS, FITTINGS AND CHANGES IN DIRECTION.

HYDRANT, SLUICE VALVE, AIR VALVE AND STOPCOCK CHAMBERS SHOULD BE PROVIDED WITH CAST IRON SURFACE BOXES IN COMPLIANCE WITH THE REQUIREMENTS OF IS 261. SURFACE BOXES FOR ROADWAYS AND AREAS ACCESSIBLE TO WHEELED TRAFFIC SHOULD BE SUBJECT TO APPROVAL.

THE LOCATION OF HYDRANTS, AIR VALVES AND SLUICE VALVES SHOULD BE SHOWN BY INDICATOR PLATES POSITIONED TO THE APPROVAL OF LOUTH COUNTY COUNCIL.

ALL WATERMAINS SHOULD BE HYDRAULICALLY TESTED AFTER LAYING. TO BE TESTED IN SECTIONS AT 1.5 TIMES ITS OPERATING PRESSURE AND BE WITNESSED AND CERTIFIED BY A REPRESENTATIVE OF DBC/LCC. METHOD OF TESTING AS APPROVED BY LOUTH COUNTY COUNCIL. THE PIPELINE SHOULD BE ADEQUATELY ANCHORED OR RESTRAINED, DURING TESTING.

ALL WATERMAINS TO BE FULLY CLEANED AND STERILISED BEFORE THE COMPLETION AND HANDOVER OF THE DEVELOPMENT OR PARTS THEREOF.

CONNECTIONS TO PUBLIC MAINS AND THE INDIVIDUAL RESIDENTIAL CONNECTIONS TO THE NEW SITE MAIN HAVE TO BE CARRIED OUT BY A LOUTH COUNTY COUNCIL APPROVED PLUMBER AND CERTIFIED ACCORDINGLY.

ALL WORKS WILL BE CARRIED OUT IN CONJUNCTION WITH IRISH WATER CODE OF PRACTICE FOR POTABLE WATER INFRASTRUCTURE AND IRISH WATER STANDARD DETAILS FOR POTABLE WATER.

ALL DETAILS FOR POTABLE WATER MUST COMPLY WITH IRISH WATERS STANDARD DETAILS: IW-CDS-5020-01

WATER MAIN LEGEND:

	NEW WATERMAIN WAVINSURE PE100 SDR17 (10-BAR)
	NEW DMA PUBLIC WATER MAIN
	EXISTING PUBLIC WATERMAIN
S.V.	SLUICE VALVE
FH	FIRE HYDRANT
WSCU	WATER SERVICE CONTROL UNIT
A.V.	AIR VALVE, TO BE POSITIONED AT LOCALISED HIGH POINT IN ACORDANCE WITH SECTION 3.16.6 OF THE WATER CODE OF PRACTICE
S.V. Nr.V Sc.MH to SMH76	SCOUR VALVE AND SCOUR MANHOLE TO BE PROVIDED WITH A NON-RETURN VALVE THIS IS TO BE CONSTRUCTED IN ACCORDANCE WITH IRISH WATER STANDARD DETAIL STD-W-30A

200MMØ HDPE PE80 SDR17 BLUE SERVICE WATERMAIN (10-BAR) TO IS EN 12201 Pt 1 & 2; & IS EN 12201-3 site service metered connection from new 200MMØ DMA mains.
Metered connection shall consist of a sluice valve, a straight length of pipework at least 10 times the diameter of the meter in length upstream of the meter, Irish Water supplied water meter, a straight length of pipework at least 5 times the meter diameter in length downstream of the meter and a sluice valve. Provide off-line hydrant on the pipework downstream of the meter chamber along with a sluice valve for occasional recalibration and checking of the meter, as shown.

200MMØ HDPE PE80 SDR17 DMA BLUE SERVICE WATERMAIN (10-BAR) TO IS EN 12201 Pt 1 & 2; & IS EN 12201-3 to connect to existing 100MM Ø mains located along R172. Provide SV's on either are of new connection as shown.

200MMØ HDPE PE80 SDR17 BLUE SERVICE WATERMAIN (10-BAR) TO IS EN 12201 Pt 1 & 2; & IS EN 12201-3 TRUNK WATERMAIN LINKED THROUGH SITE AS NEW DMA

ZONE 1
REFER TO
DRAWING 1703-Eng-131

01 / 130 Watermain Layout-Main Entrance Road
SCALE 1:500

Key Plan

LEGEND:

	ROAD EDGE (IN-SITU KERB)
	FOOTPATH EDGE
	ROAD CENTRELINE
	ROAD CHANNEL LINE
	ROAD RAMP
	DROPPED KERB WITH TACTILE PAVING
	CORDUROY PAVING
	CAR DRIVEWAYS
GFL 99.99	GROUND FLOOR LEVEL
1:40 / 6m	ROAD GRADIENT / ROAD DIMENSION
	PERMEABLE PAVING TO CAR PARKS 1-8
	ROAD SURFACE
	FOOTPATH SURFACE
	RAISED TABLE
	SHARED SURFACE - VEHICULAR (HOMEZONE)
	PARKING
	GRASS/PLANTING
	TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

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Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 130
REV. NO: B

ENG

TITLE: Watermain Layout Main Entrance Roadway

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd 1st Floor Quayside Business Park Mill Street, Dundalk, Co Louth.

SCALE:	1:500 @ A1	DRAWN:	P.Coyle
DATE:	November 2018	CHECKED:	-

STATUS: Planning Permission

JOB NO: 1703

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT

200MMØ HDPE PE80 SDR17 BLUE SERVICE WATERMAIN (10-BAR) TO IS EN 12201 Pt 1 & 2; & IS EN 12201-3 site service metered connection from new 200MMØ DMA mains.
Metered connection shall consist of a sluice valve, a straight length of pipework at least 10 times the diameter of the meter in length upstream of the meter, Irish Water supplied water meter, a straight length of pipework at least 5 times the meter diameter in length downstream of the meter and a sluice valve. Provide off-line hydrant on the pipework downstream of the meter chamber along with a sluice valve for occasional recalibration and checking of the meter, as shown.

NOTES:

EACH UNIT TO BE PROVIDED WITH A WATER SERVICES CONTROL UNIT (WSCU). EACH WSCU TO HAVE AN ACCESS LID AND STOPCOCK. TYPE OF WSCU TO BE APPROVED BY LOUTH COUNTY COUNCIL.

ALL WSCU'S TO BE LOCATED IN PUBLIC FOOTPATHS (OUTSIDE OF INDIVIDUAL SITES).

ALL WATERMAINS FOR THE DEVELOPMENT TO BE 100mmØ CLASS C uPVC PIPES EXCEPT WHERE UNDER ROADWAYS WHERE EQUIVALENT DUCTILE IRON PIPES TO BE USED.

WATER SERVICE CONNECTION TO UNITS TO BE 12mmØ POLYETHYLENE TYPE 32/HEAVY GAUGE TO ISO 134.

WATERMAIN PIPES TO HAVE MINIMUM COVER OF 900mm. SERVICE PIPES SHOULD HAVE A MINIMUM COVER OF 600mm.

SERVICE PIPES TO HAVE 100mm SURROUND CONSISTING OF 10mm PEA GRAVEL.

AIR VALVES TO BE LOCATED AT HIGH POINTS AND SCOUR VALVES TO BE LOCATED AT LOW POINTS ON THE PIPE NETWORK. LOCATION OF ALL VALVES TO BE AGREED WITH LOUTH COUNTY COUNCIL.

WATERMAINS SHOULD BE LOOPED AS SHOWN ON THIS DRAWING. WHERE DEAD-ENDS ARE USED, A DUCK FOOT HYDRANT SHOULD BE PROVIDED AT THE DEAD-END.

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DUCTILE IRON PIPES TO BE USED UNDER ROADWAYS AND PARKING BAYS.

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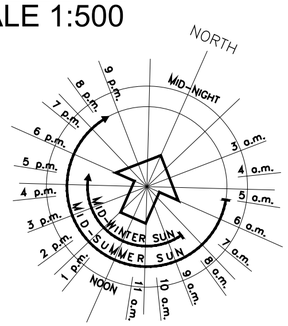
ALL DETAILS FOR POTABLE WATER MUST COMPLY WITH IRISH WATERS STANDARD DETAILS: IW-CDS-5020-01.

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

Key Plan

01 Watermain Layout-Zone 1
131
SCALE 1:500



WATER MAIN LEGEND:

	NEW WATERMAIN WAVINSURE PE100 SDR17 (10-BAR)
	NEW DMA PUBLIC WATER MAIN
	EXISTING PUBLIC WATERMAIN
S.V.	SLUICE VALVE
FH	FIRE HYDRANT
WSCU	WATER SERVICE CONTROL UNIT
A.V.	AIR VALVE, TO BE POSITIONED AT LOCALISED HIGH POINT IN ACCORDANCE WITH SECTION 3.16.6 OF THE WATER CODE OF PRACTICE
S.V. Nr.V Sc.MH to SMH76	SCOUR VALVE AND SCOUR MANHOLE TO BE PROVIDED WITH A NON-RETURN VALVE THIS IS TO BE CONSTRUCTED IN ACCORDANCE WITH IRISH WATER STANDARD DETAIL STD-W-30A

LEGEND:

	ROAD EDGE (IN-SITU KERB)
	FOOTPATH EDGE
	ROAD CENTRELINE
	ROAD CHANNEL LINE
	ROAD RAMP
	DROPPED KERB WITH TACTILE PAVING
	CORDUROY PAVING
	CAR DRIVEWAYS
GFL 99.99	GROUND FLOOR LEVEL
1:40 / 6m	ROAD GRADIENT / ROAD DIMENSION
	PERMEABLE PAVING TO CAR PARKS 1-8
	ROAD SURFACE
	FOOTPATH SURFACE
	RAISED TABLE
	SHARED SURFACE - VEHICULAR (HOMEZONE)
	PARKING
	GRASS/PLANTING
	TACTILE PAVING

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t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 131 REV. NO: B

ENG

TITLE: Watermain Layout Zone 1

PROJECT: Haggardstown, Blackrock, Dundalk Residential Development @

CLIENT: Kingsbridge Consultancy Ltd, 1st Floor Quayside Business Park, Mill Street, Dundalk, Co Louth.

SCALE:	1:500 @ A1	DRAWN:	P.Coyle
DATE:	November 2018	CHECKED:	-

STATUS: Planning Permission

JOB NO: 1703

01 / 132 Watermain Layout-Zone 2
SCALE 1:500

WATER MAIN LEGEND:

Symbol	Description
	NEW WATERMAIN WAVINSURE PE100 SDR17 (10-BAR)
	NEW DMA PUBLIC WATER MAIN
	EXISTING PUBLIC WATERMAIN
S.V.	SLUICE VALVE
FH	FIRE HYDRANT
WSCU	WATER SERVICE CONTROL UNIT
A.V.	AIR VALVE, TO BE POSITIONED AT LOCALISED HIGH POINT IN ACORDANCE WITH SECTION 3.16.6 OF THE WATER CODE OF PRACTICE
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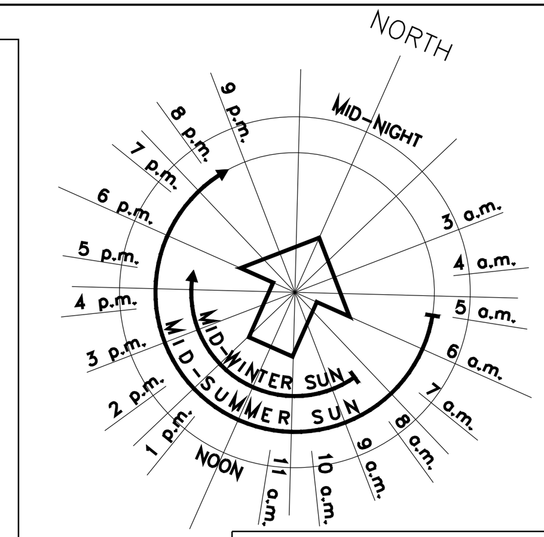

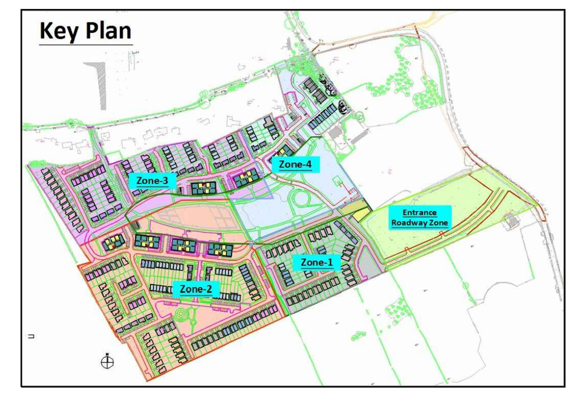

NOTES:

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DUCTILE IRON PIPES TO BE USED UNDER ROADWAYS AND PARKING BAYS.

ALL WATERMAINS TO BE OVERLAID WITH MARKER TAPE COMPLETE WITH 2 STRANDS OF CONTINUOUS TRACER WIRE. TRACER WIRE TO BE CONNECTED TO FITTINGS. CONTINUITY OF TRACER WIRE TO BE ENSURED AT ENDS OF ROLLS, FITTINGS AND CHANGES IN DIRECTION.

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ALL DETAILS FOR POTABLE WATER MUST COMPLY WITH IRISH WATERS STANDARD DETAILS: IW-CDS-5020-01.

LEGEND:

ROAD EDGE (IN-SITU KERB)	1:40 ROAD GRADIENT
FOOTPATH EDGE	6m ROAD DIMENSION
ROAD CENTRELINE	PERMEABLE PAVING TO CAR PARKS 1-8
ROAD CHANNEL LINE	ROAD SURFACE
ROAD RAMP	FOOTPATH SURFACE
DROPPED KERB WITH TACTILE PAVING	RAISED TABLE
CORDUROY PAVING	SHARED SURFACE - VEHICULAR (HOMEZONE)
CAR DRIVEWAYS	PARKING
GFL 99.99 GROUND FLOOR LEVEL	GRASS/PLANTING
	TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

finn DESIGN PARTNERSHIP — CREATIVE ● INNOVATIVE

Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

ENG

DRAWING. NO: 132
REV. NO: B

TITLE: Watermain Layout Zone 2

PROJECT: Haggardstown, Blackrock, Dundalk Residential Development @

CLIENT: Kingsbridge Consultancy Ltd, 1st Floor Quayside Business Park, Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: P.Coyle

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
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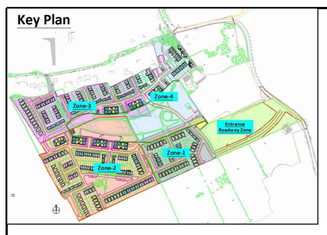
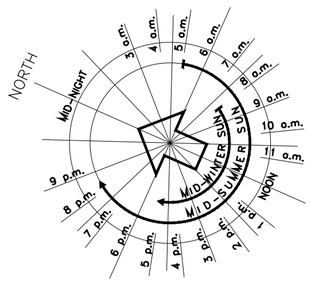
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT





Key Plan

NOTES:

EACH UNIT TO BE PROVIDED WITH A WATER SERVICES CONTROL UNIT (WSCU). EACH WSCU TO HAVE AN ACCESS LID AND STOPCOCK. TYPE OF WSCU TO BE APPROVED BY LOUTH COUNTY COUNCIL.

ALL WSCU'S TO BE LOCATED IN PUBLIC FOOTPATHS (OUTSIDE OF INDIVIDUAL SITES).

ALL WATERMAINS FOR THE DEVELOPMENT TO BE 100mmØ CLASS C uPVC PIPES EXCEPT WHERE UNDER ROADWAYS WHERE EQUIVALENT DUCTILE IRON PIPES TO BE USED.

WATER SERVICE CONNECTION TO UNITS TO BE 12mmØ POLYETHYLENE TYPE 32/HEAVY GAUGE TO ISO 134.

WATERMAIN PIPES TO HAVE MINIMUM COVER OF 900mm. SERVICE PIPES SHOULD HAVE A MINIMUM COVER OF 600mm.

SERVICE PIPES TO HAVE 100mm SURROUND CONSISTING OF 10mm PEA GRAVEL.

AIR VALVES TO BE LOCATED AT HIGH POINTS AND SCOUR VALVES TO BE LOCATED AT LOW POINTS ON THE PIPE NETWORK. LOCATION OF ALL VALVES TO BE AGREED WITH LOUTH COUNTY COUNCIL.

WATERMAINS SHOULD BE LOOPED AS SHOWN ON THIS DRAWING. WHERE DEAD-ENDS ARE USED, A DUCK FOOT HYDRANT SHOULD BE PROVIDED AT THE DEAD-END.

MARKER POSTS TO BE INSTALLED AT ALL SLUICE VALVES, FIRE HYDRANTS, AIR VALVES & SCOUR VALVES.

ALL TEE'S, SPECIAL BENDS TO BE FLANGED ONLY.

JOINTS SHALL BE FORMED BY AN APPROVED METHOD, RECOMMENDED BY THE MANUFACTURER. ELASTOMERIC SEALING RINGS, WHERE USED, SHOULD COMPLY WITH THE REQUIREMENTS OF BS 2494.

CONCRETE ANCHOR BLOCKS SHOULD BE PROVIDED ON WATERMAINS AT DEAD ENDS, TEES, BENDS OF CURVATURE GREATER THAN 22.5° AND AT BOTH SIDES OF A SLUICE VALVE CHAMBER. ANCHOR BLOCKS SHOULD ENCASE THE PIPE IN CONCRETE (CLASS E, CLAUSE 1502, SPECIFICATION FOR ROADWORKS), TO A MINIMUM THICKNESS OF 150mm ALL ROUND AND SHOULD BE A MINIMUM LENGTH OF 750mm.

DUCTILE IRON PIPES TO BE USED UNDER ROADWAYS AND PARKING BAYS.

ALL WATERMAINS TO BE OVERLAID WITH MARKER TAPE COMPLETE WITH 2 STRANDS OF CONTINUOUS TRACER WIRE. TRACER WIRE TO BE CONNECTED TO FITTINGS. CONTINUITY OF TRACER WIRE TO BE ENSURED AT ENDS OF ROLLS, FITTINGS AND CHANGES IN DIRECTION.

HYDRANT, SLUICE VALVE, AIR VALVE AND STOPCOCK CHAMBERS SHOULD BE PROVIDED WITH CAST IRON SURFACE BOXES IN COMPLIANCE WITH THE REQUIREMENTS OF IS 261. SURFACE BOXES FOR ROADWAYS AND AREAS ACCESSIBLE TO WHEELED TRAFFIC SHOULD BE SUBJECT TO APPROVAL.

THE LOCATION OF HYDRANTS, AIR VALVES AND SLUICE VALVES SHOULD BE SHOWN BY INDICATOR PLATES POSITIONED TO THE APPROVAL OF LOUTH COUNTY COUNCIL.

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ALL WORKS WILL BE CARRIED OUT IN CONJUNCTION WITH IRISH WATER CODE OF PRACTICE FOR POTABLE WATER INFRASTRUCTURE AND IRISH WATER STANDARD DETAILS FOR POTABLE WATER.

ALL DETAILS FOR POTABLE WATER MUST COMPLY WITH IRISH WATERS STANDARD DETAILS: IW-CDS-5020-01.

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 GROUND FLOOR LEVEL
- 1:40 ROAD GRADIENT
- 6m ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

WATER MAIN LEGEND:

- NEW WATERMAIN WAVINSURE PE100 SDR17 (10-BAR)
- NEW DMA PUBLIC WATER MAIN
- EXISTING PUBLIC WATERMAIN
- S.V. — SLUICE VALVE
- FH — FIRE HYDRANT
- WSCU — WATER SERVICE CONTROL UNIT
- A.V. — AIR VALVE, TO BE POSITIONED AT LOCALISED HIGH POINT IN ACORDANCE WITH SECTION 3.16.6 OF THE WATER CODE OF PRACTICE
- S.V. Nr.V Sc.MH to SMH76 — SCOUR VALVE AND SCOUR MANHOLE TO BE PROVIDED WITH A NON-RETURN VALVE THIS IS TO BE CONSTRUCTED IN ACCORDANCE WITH IRISH WATER STANDARD DETAIL STD-W-30A

01
132
Watermain Layout-Zone 3
SCALE 1:500

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

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Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO:	133
REV. NO:	B
TITLE:	Watermains Layout Zone 3
PROJECT:	Residential Development @ Haggardstown, Blackrock, Co Louth
CLIENT:	Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Mill Street, Dundalk, Co. Louth;
SCALE:	1:500 @ A1
DRAWN:	PC
DATE:	November 2018
CHECKED:	-
STATUS:	Planning Permission
JOB NO:	1703

ENG

NOTES
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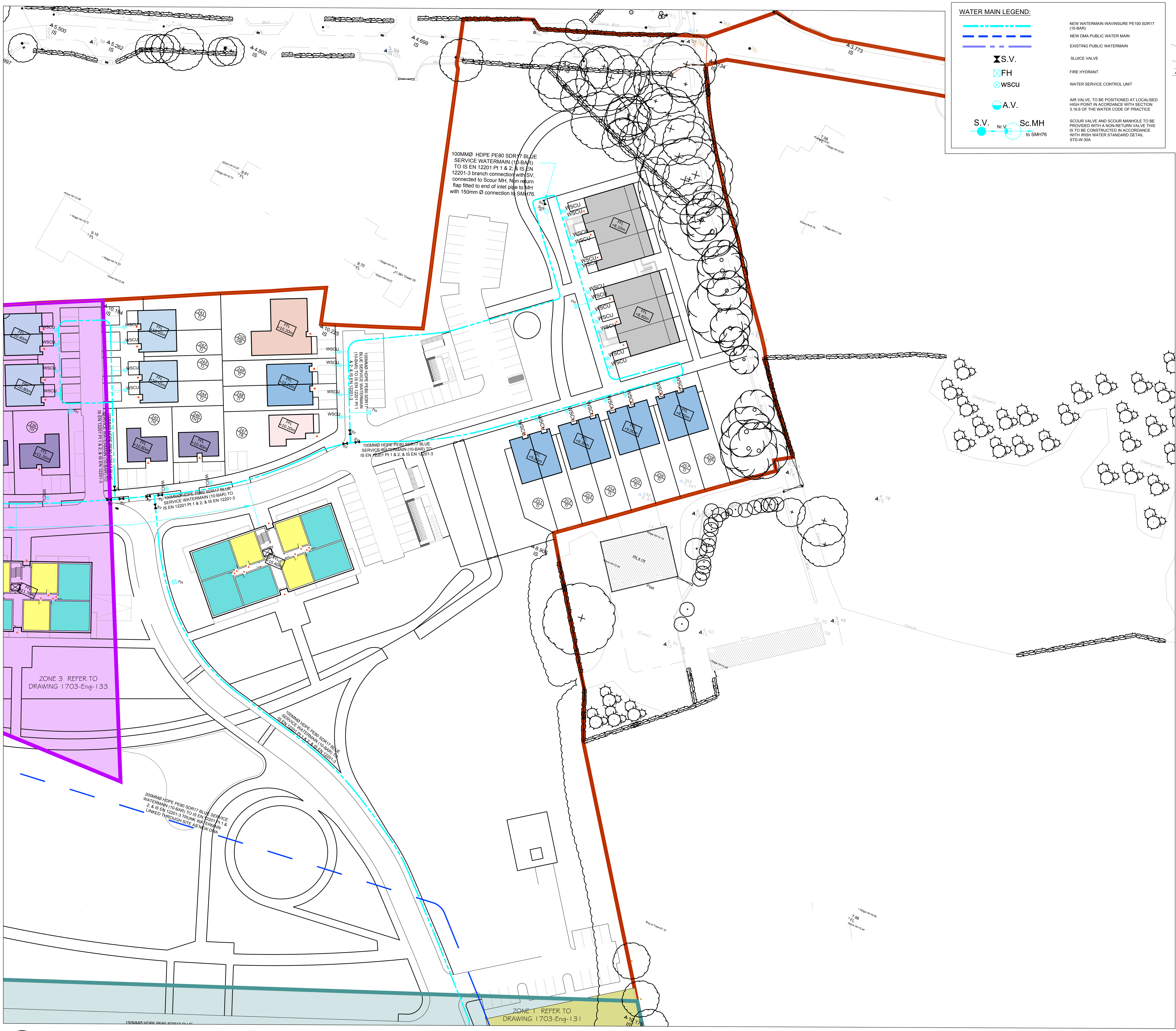
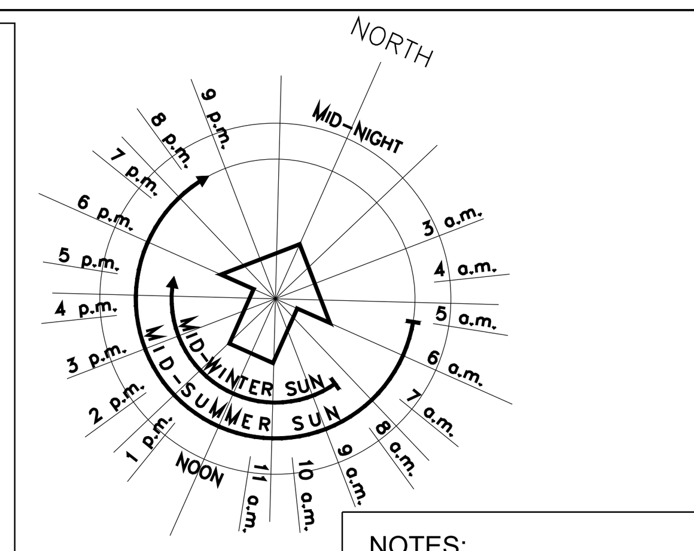
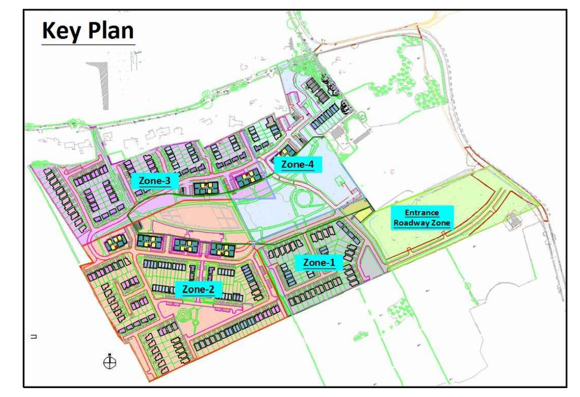


WATER MAIN LEGEND:

Symbol	Description
	NEW WATERMAIN WAVINSURE PE100 SDR17 (10-BAR)
	NEW DMA PUBLIC WATER MAIN
	EXISTING PUBLIC WATERMAIN
S.V.	SLUICE VALVE
FH	FIRE HYDRANT
WSCU	WATER SERVICE CONTROL UNIT
A.V.	AIR VALVE, TO BE POSITIONED AT LOCALISED HIGH POINT IN ACORDANCE WITH SECTION 3.16.6 OF THE WATER CODE OF PRACTICE
S.V. Nr.V Sc.MH to SMH76	SCOUR VALVE AND SCOUR MANHOLE TO BE PROVIDED WITH A NON-RETURN VALVE THIS IS TO BE CONSTRUCTED IN ACCORDANCE WITH IRISH WATER STANDARD DETAIL STD-W-30A





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LEGEND:

ROAD EDGE (IN-SITU KERB)	ROAD GRADIENT (1:40)
FOOTPATH EDGE	ROAD DIMENSION (6m)
ROAD CENTRELINE	PERMEABLE PAVING TO CAR PARKS 1-8
ROAD CHANNEL LINE	ROAD SURFACE
ROAD RAMP	FOOTPATH SURFACE
DROPPED KERB WITH TACTILE PAVING	RAISED TABLE
CORDUROY PAVING	SHARED SURFACE - VEHICULAR (HOMEZONE)
CAR DRIVEWAYS	PARKING
GFL 99.99 GROUND FLOOR LEVEL	GRASS/PLANTING
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REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

01 / 134 **Watermain Layout-Zone 4**
SCALE 1:500

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CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: **134** REV. NO: **B**

ENG

TITLE:	Watermain Layout Zone 4
PROJECT:	Residential Development @ Haggardstown, Blackrock, Co Louth
CLIENT:	Kingsbridge Consultancy Ltd, 1st Floor, Block 1, Quayside Business Park, Mill Street, Dundalk, Co. Louth;
SCALE:	1:500 @ A1
DRAWN:	PC
DATE:	November 2018
CHECKED:	-
STATUS:	Planning Permission
JOB NO:	1703

NOTES

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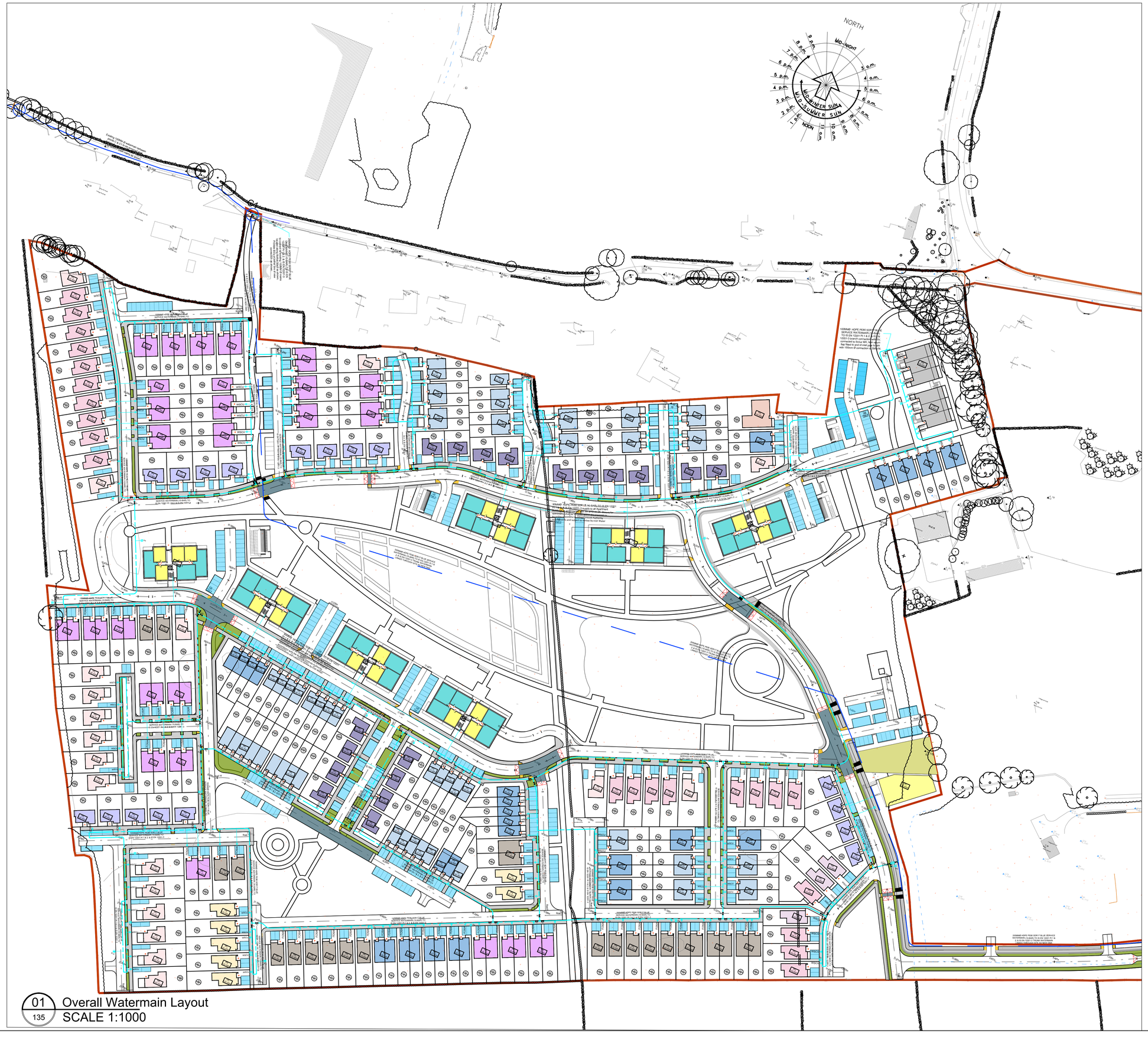
● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT



01 Overall Watermain Layout
135 SCALE 1:1000

NOTES:

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WATER MAIN LEGEND:

- NEW WATERMAIN WAVINSURE PE100 SDR17 (10-BAR)
- NEW DMA PUBLIC WATER MAIN
- EXISTING PUBLIC WATERMAIN
- S.V. — SLUICE VALVE
- FH — FIRE HYDRANT
- WSCU — WATER SERVICE CONTROL UNIT
- 90MMØ HDPE PE80 SDR17 (10-BAR) TO IS EN 12201 Pt 1 & 2, & IS EN 12201-3 supply to Apt Bldg in accordance with IW STD-W-26
- A.V. — AIR VALVE, TO BE POSITIONED AT LOCALISED HIGH POINT IN ACCORDANCE WITH SECTION 3.16.6 OF THE WATER CODE OF PRACTICE
- S.V. Nr.V Sc.MH to SMH76 — SCOUR VALVE AND SCOUR MANHOLE TO BE PROVIDED WITH A NON-RETURN VALVE THIS IS TO BE CONSTRUCTED IN ACCORDANCE WITH IRISH WATER STANDARD DETAIL STD-W-30A

LEGEND:

- ROAD EDGE (IN-SITU KERB)
- FOOTPATH EDGE
- ROAD CENTRELINE
- ROAD CHANNEL LINE
- ROAD RAMP
- DROPPED KERB WITH TACTILE PAVING
- CORDUROY PAVING
- CAR DRIVEWAYS
- GFL 99.99 — GROUND FLOOR LEVEL
- 1:40 — ROAD GRADIENT
- 6m — ROAD DIMENSION
- PERMEABLE PAVING TO CAR PARKS 1-8
- ROAD SURFACE
- FOOTPATH SURFACE
- RAISED TABLE
- SHARED SURFACE - VEHICULAR (HOMEZONE)
- PARKING
- GRASS/PLANTING
- TACTILE PAVING

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 135 REV. NO: B

ENG

TITLE: Overall Site Watermain Layout

PROJECT: Residential Development @ Haggardstown, Blackrock, Co Louth

CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Mill Street, Dundalk, Co. Louth;

SCALE: 1:1000 @ A1 DRAWN: PC

DATE: November 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
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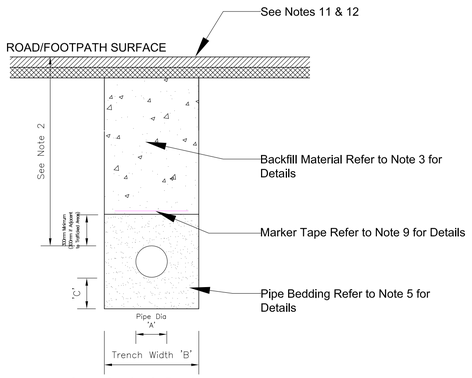
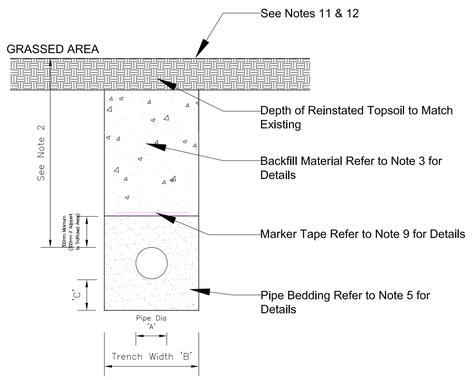


Cross Section in Roadway

PIPE DIAMETER 'A' (mm)	TRENCH WIDTH 'B' (mm)
≤80	SEE NOTE 10
100	500
150	600
200	600
250	750
300	750
350	750
400	900
450	900

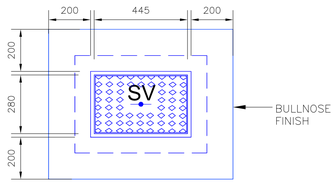
PIPE DIAMETER 'A' (mm)	DEPTH OF BEDDING 'C' (mm)
≤200	SEE NOTE 10
≥250	500

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. THE MINIMUM DEPTH OF COVER FROM THE FINISHED GROUND LEVEL TO THE EXTERNAL CROWN OF THE PIPE SHALL BE 900mm WHERE THE PIPE IS TO BE LOCATED IN HOUSING ESTATE ROADS. GREATER DEPTHS OF COVER AND/OR PIPE STRENGTH AND/OR A HIGHER CLASS OF BEDDING MATERIAL MAY BE REQUIRED WHERE HIGH TRAFFIC LOADING IS ANTICIPATED. THE DESIRABLE COVER FOR A WATERMAIN SHOULD BE 1200mm, WHERE PRACTICABLE & SHOULD NOT EXCEED 3.0m.
3. CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS IS TO BE USED AS BACKFILL MATERIAL WHERE THE WATER 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 NATIONAL ROADS AUTHORITY 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 IRISH WATER WHERE THE ROADS AUTHORITY IN WHOSE FUNCTIONAL AREA THE DEVELOPMENT IS LOCATED, PROVIDES WRITTEN APPROVAL TO THE DEVELOPER TO THE USE SUCH ALTERNATIVE MATERIAL.
4. SELECTED EXCAVATED MATERIAL MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO REVIEW BY IRISH WATER.
5. PIPE BEDDING SHALL COMPLY WITH WIS 4-08-02 AND IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm GRADED AGGREGATE OR 10mm SINGLE SIZED AGGREGATE TO IS EN 13242.
6. IN SOFT GROUND CONDITIONS (CBR < 5) THE MATERIAL SHOULD BE EXCAVATED OUT AND DISPOSED OF IN ACCORDANCE WITH THE WASTE MANAGEMENT ACT AND CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY 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 IRISH WATER BEFORE ADVANCING WITH THE WORK.
7. PIPES SHALL NOT BE SUPPORTED ON STONES OR ROCKS, OR ANY HARD OBJECT 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 NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
8. SHOULD MINIMUM COVER NOT BE ACHIEVABLE, CONCRETE GRADE C8/10 SHALL BE USED AS BACKFILL MATERIAL.
9. MARKER TAPE TO BE 400mm WIDE BLUE POLYETHYLENE MATERIAL IN ACCORDANCE WITH EN 12163, PLASTIC PIPES SHALL HAVE WARNING TAPE INCORPORATED A REINFORCED BAND BRACING WIRE. SERVICE PIPES SHALL HAVE 200mm WIDE MESH TAPE. MARKER TAPE TO BE LAID AT TOP OF PIPE BEDDING LAYER.
10. TRENCH WIDTHS FOR PIPE SIZES ≤80mm MAY BE <500mm, SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.
11. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
12. 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.



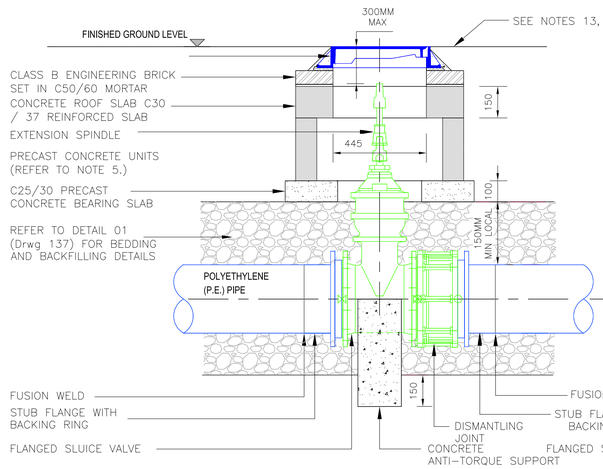
Cross Section In Grassed Areas

01 / 137 Pipe Bedding Details
Scale 1:15



PLINTH DETAIL
IN GRASS AREA

1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SLUICE VALVE CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 OR BS 5834. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. SLUICE VALVES SHALL BE RESILIENT SEATED AND SHALL COMPLY WITH BS 5163-1, BS 5163-2, IS EN 1074-1, IS EN 1074-2, OR EQUIVALENT E.U. SPECIFICATIONS.
4. ALL SLUICE VALVES SHALL BE ANTI-CLOCKWISE CLOSING.
5. VALVE CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVELY PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH BS 5911, Part 4.
6. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER 01 (Drwg 137).
7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
8. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER IRISH WATER STANDARD DETAIL STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
10. ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
12. 450 x 450mm INTERNAL DIMENSION CHAMBERS MAY BE PROVIDED SUBJECT TO REVIEW BY IW. SUCH CHAMBERS SHALL BE PROVIDED WITH GRADE "A" HEAVY DUTY COVER & FRAME & STAMPED "SV".
13. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
14. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
15. 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.



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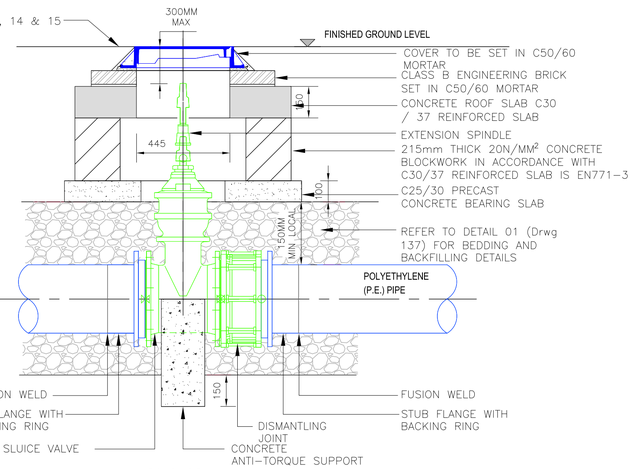

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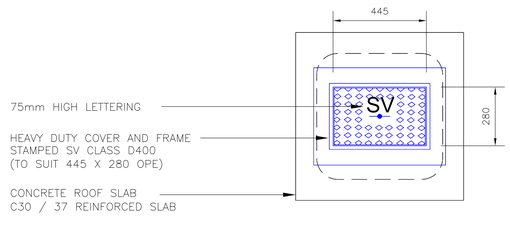
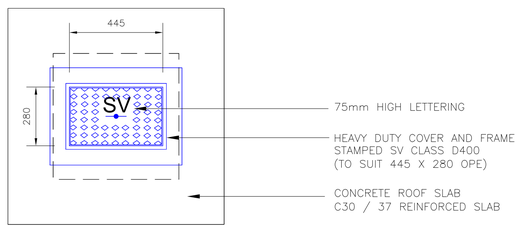
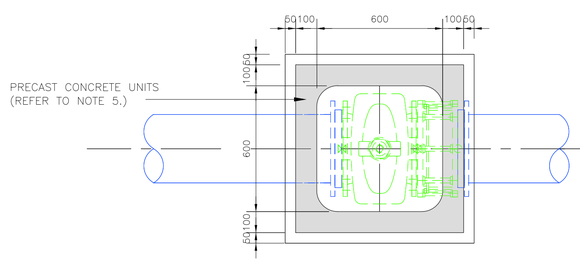


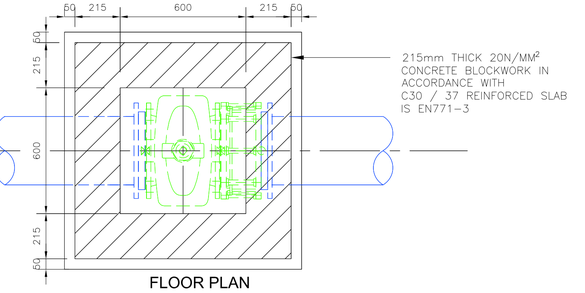
ROOF PLAN



ROOF PLAN



FLOOR PLAN
SLUICE VALVE CHAMBER
(PRECAST CONCRETE CONSTRUCTION)



FLOOR PLAN
SLUICE VALVE CHAMBER
(BLOCKWORK CONSTRUCTION)

02 / 137 Sluice Chamber Details
SCALE 1:15

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 137
REV. NO: B

ENG

TITLE: Watermain Details (Sheet 1 of 3)

PROJECT: Residential Development @ Haggardstown Blackrock, Dundalk Co Louth.

CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Dundalk Co Louth

SCALE: As Shown | DRAWN: T.Finn

DATE: November 2018 | CHECKED: -

STATUS: Planning Permsission

JOB NO: 1703

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 138 REV. NO: B

ENG

TITLE: Watermain Details (Sheet 2 of 3)

PROJECT: Residential Development @ Haggardstown Blackrock, Dundalk Co Louth.

CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quaysde Business Park, Dundalk Co Louth

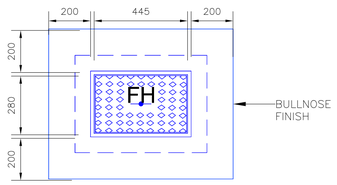
SCALE:	As Shown	DRAWN:	T.Flnn
DATE:	November 2018	CHECKED:	-

STATUS: Planning Permsission

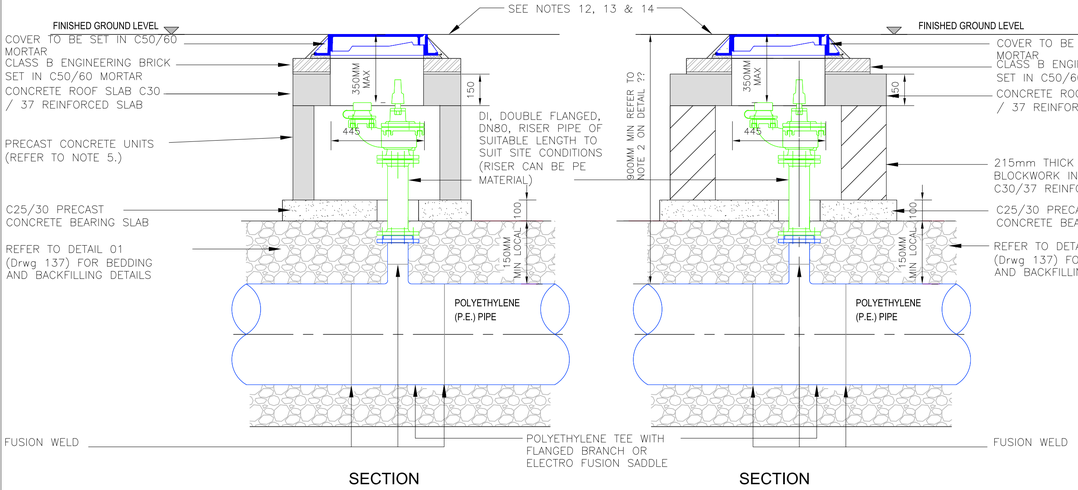
JOB NO: 1703

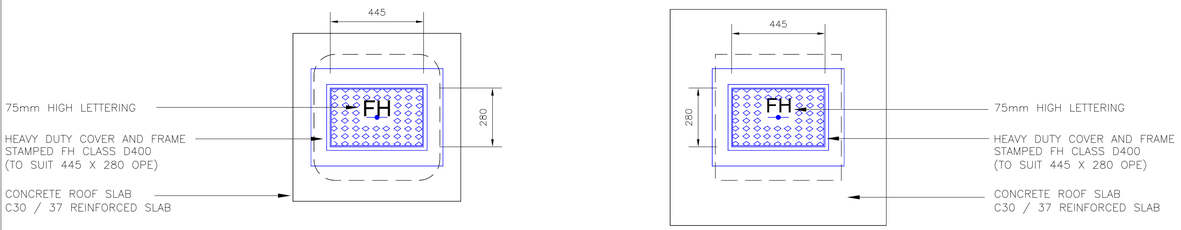
NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of c.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturers.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

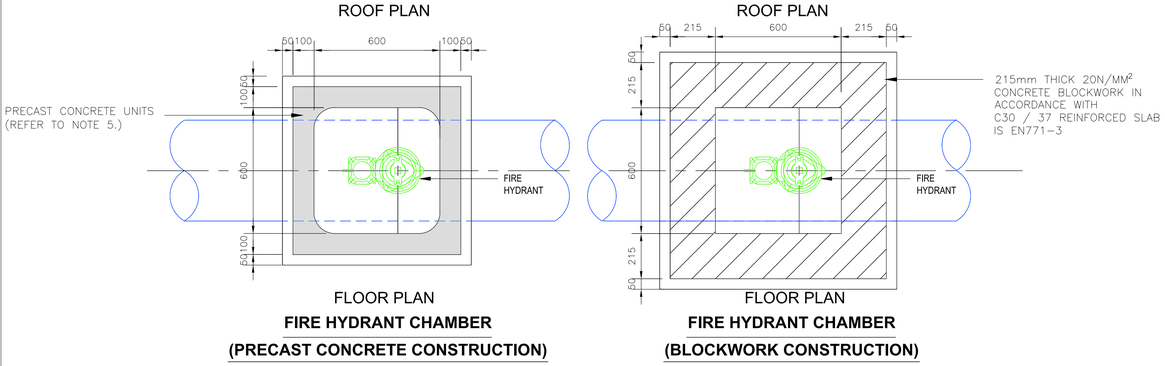
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. HYDRANT CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 OR BS 5834 COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. ALL HYDRANTS, SURFACE BOX FRAMES & COVERS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF IS EN 14339, IS EN 1074-6 & BS 750. FIRE HYDRANTS SHALL BE TYPE 2. THE HYDRANT INLET SHALL BE 80mm DIAMETER WITH PN16.
4. ALL HYDRANTS SHALL BE CLOCKWISE CLOSING.
5. HYDRANT CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVELY PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH BS 5911, Part 4.
6. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER 01 (Drwg 137).
7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
8. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER IRISH WATER STANDARD DETAIL STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
10. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
12. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
13. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
14. 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.



PLINTH DETAIL
IN GRASS AREA





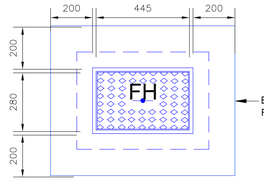


FIRE HYDRANT CHAMBER
(PRECAST CONCRETE CONSTRUCTION)

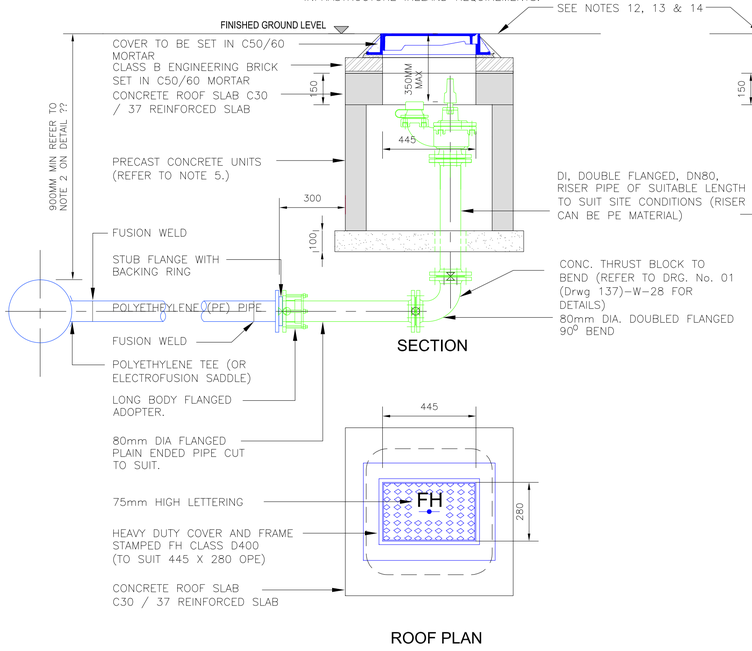
FIRE HYDRANT CHAMBER
(BLOCKWORK CONSTRUCTION)

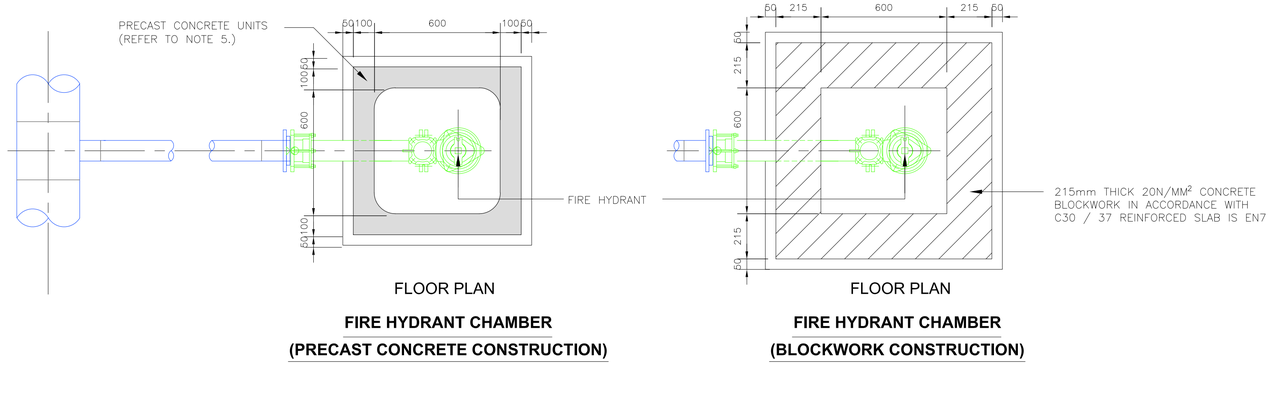
01 / 138 Fire Hydrant (Online) Details
Scale 1:15

1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. HYDRANT CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 OR BS 5834 COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. ALL HYDRANTS, SURFACE BOX FRAMES & COVERS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF IS EN 14339, IS EN 1074-6 & BS 750. FIRE HYDRANTS SHALL BE TYPE 2. THE HYDRANT INLET SHALL BE 80mm DIAMETER WITH PN16.
4. ALL HYDRANTS SHALL BE CLOCKWISE CLOSING.
5. HYDRANT CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVELY PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH BS 5011, Part 4.
6. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER 01 (Drwg 137)-W-13.
7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
8. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER IRISH WATER STANDARD DETAIL STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
10. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
12. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
13. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
14. 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.



PLINTH DETAIL
IN GRASS AREA



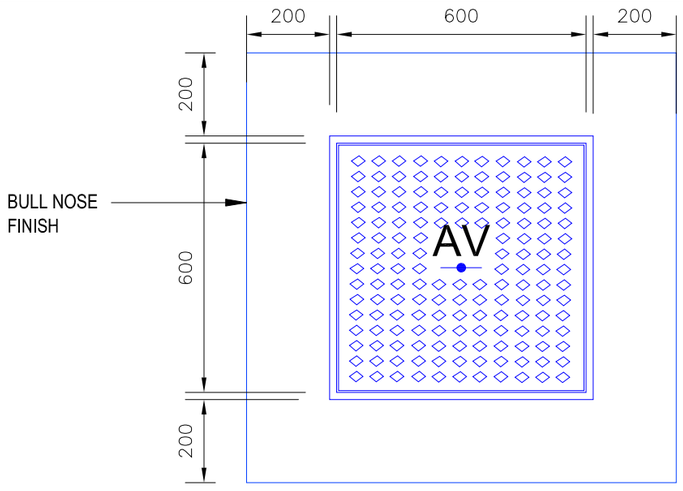


FIRE HYDRANT CHAMBER
(PRECAST CONCRETE CONSTRUCTION)

FIRE HYDRANT CHAMBER
(BLOCKWORK CONSTRUCTION)

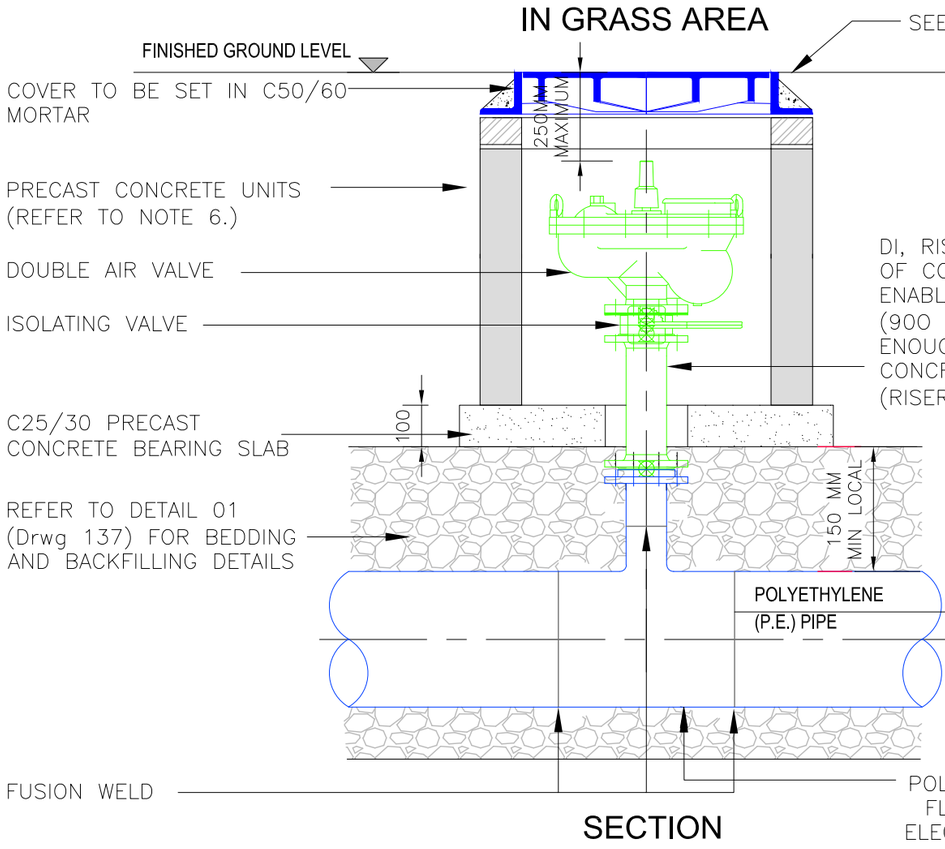
02 / 138 Fire Hydrant (Off-Line) Details
SCALE 1:15

DIAMETER OF MAIN	UP TO 250 (mm)	250 TO 350 (mm)
DIAMETER OF BRANCH	80mm	100mm
BORE OF VALVE INLET	80mm	100mm



PLINTH DETAIL
IN GRASS AREA

1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AIR VALVE CHAMBERS SHALL BE COVERED WITH APPROVED VENTILATED HEAVY DUTY DUCTILE IRON COVERS TO IS EN 124 RATING D400. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. AIR VALVES SHALL COMPLY WITH THE REQUIREMENTS OF IS EN 1074–4. AIR VALVES SHALL BE DOUBLE ORIFICE TYPE AND SHALL INCLUDE AN ISOLATING VALVE. THE ISOLATING VALVE SHALL BE EITHER A GATE VALVE CONFORMING TO IS EN 1074–2 & SHALL BE OF A BOLTLESS BONNET DESIGN, OR A BUTTERFLY VALVE TO IS EN 1074–2.
4. SERVICE CONNECTIONS SHALL NOT BE PROVIDED WITHIN 2m OF THE AIR VALVE LOCATION.
5. AIR VALVE CHAMBERS TO BE OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVE PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER.
6. PRECAST CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER 01 (Drwg 137).
7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545.
8. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER IRISH WATER STANDARD DETAIL STD–W–28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
10. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
11. THE LOCATION OF THE AIR VALVE SHALL BE THE SUBJECT OF PARTICULAR AGREEMENT WITH IRISH WATER TO ENSURE THAT THE RISK OF CONTAMINATION THROUGH THE VALVE IS ELIMINATED.
12. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
13. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
14. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
15. 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.



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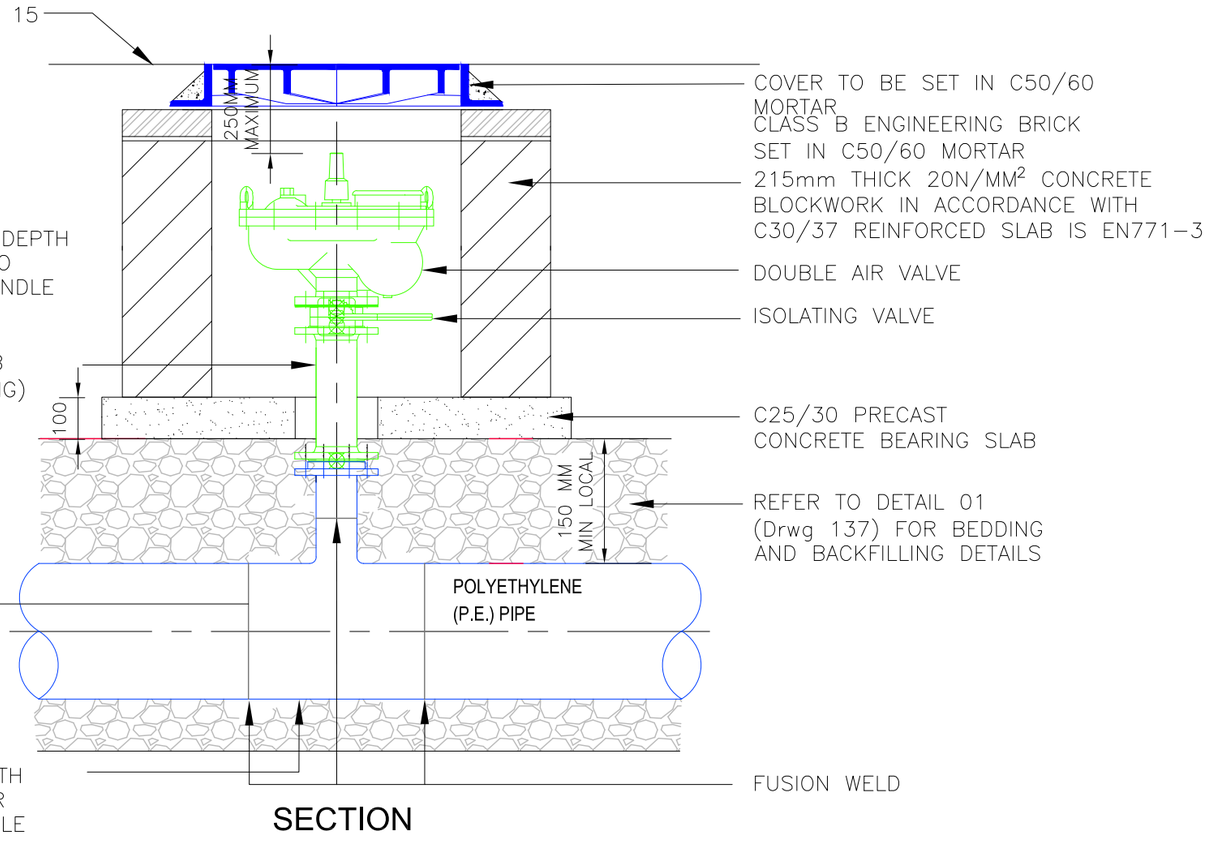

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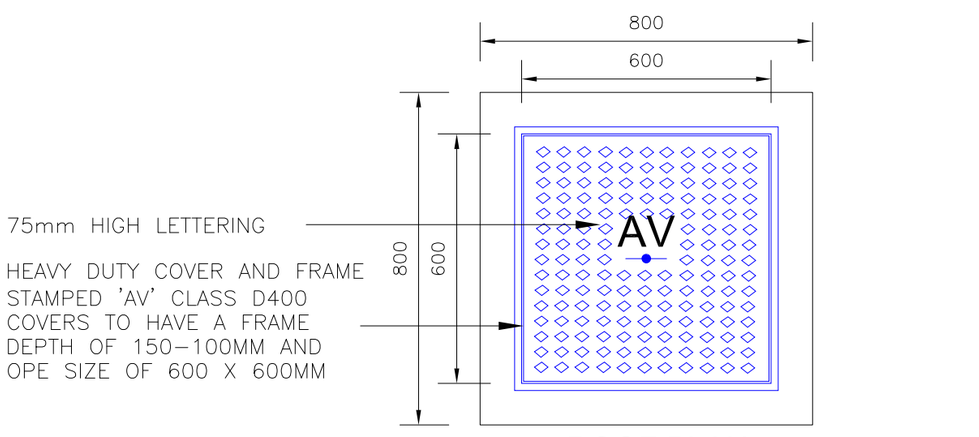
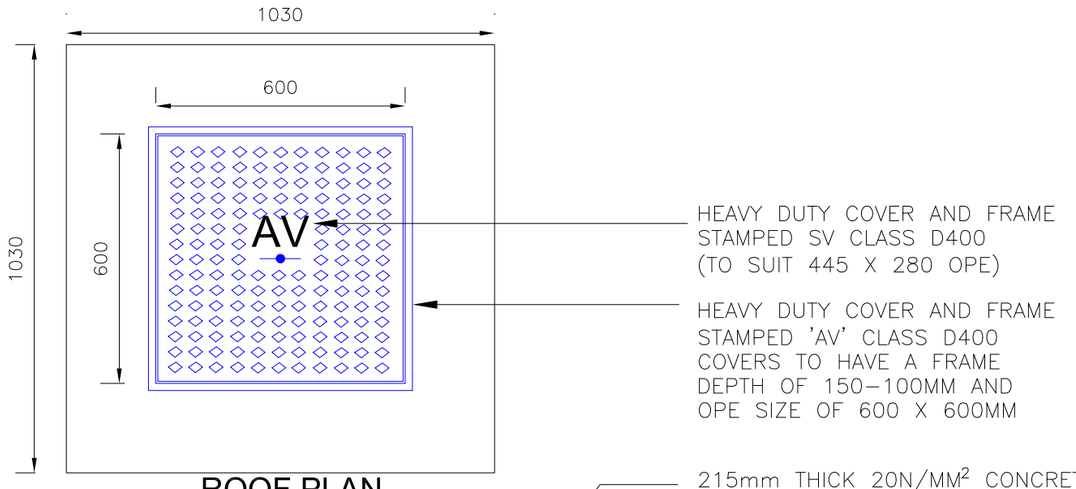
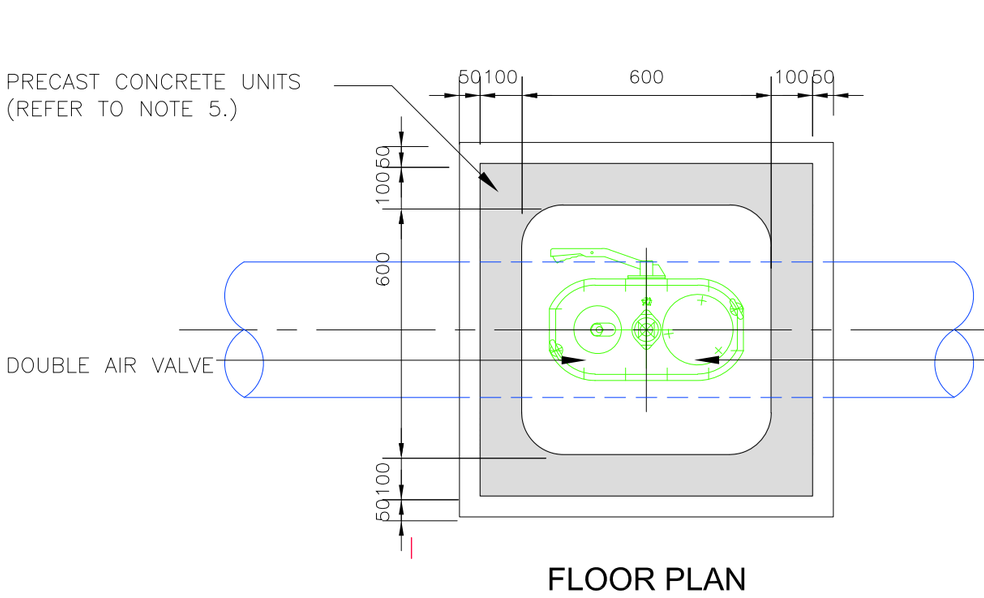


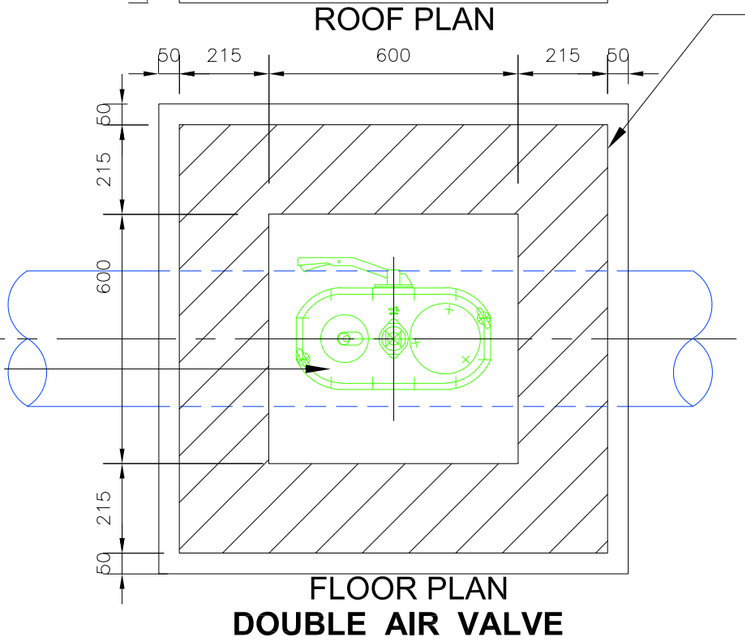
ROOF PLAN



ROOF PLAN



FLOOR PLAN
DOUBLE AIR VALVE
(PRECAST CONCRETE CONSTRUCTION)



FLOOR PLAN
DOUBLE AIR VALVE
(BLOCKWORK CONSTRUCTION)

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

01 / 139 Air Valve Details
SCALE 1:15

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
Blakestown, Ardee, Co. Louth, Ireland
t 041 6857200 f 041 6857201 e info@finn.ie w www.finn.ie

DRAWING. NO: 139
REV. NO: B

ENG

TITLE: Watermain Details (Sheet 3 or 3)

PROJECT: Proposed Residential Development @ Haggardstown Blackrock, Dundalk, Co Louth

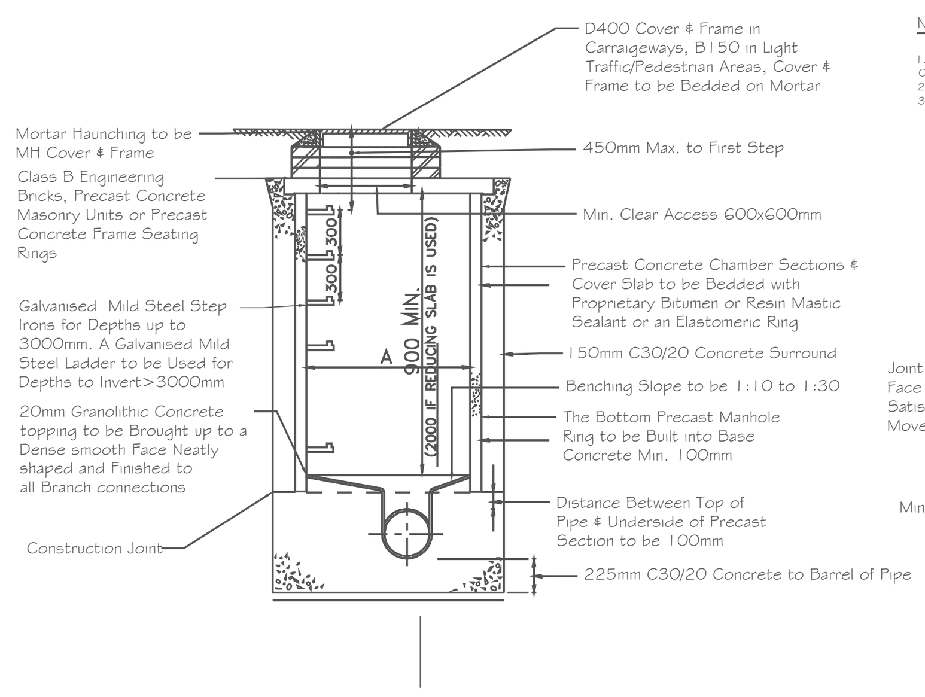
CLIENT: Kingsbridge Consultancy Ltd
1st Floor, Block 1, Quayside Business Park, Dundalk, Co Louth

SCALE: As Shown | DRAWN: T.Finn

DATE: November 2018 | CHECKED: -

STATUS: Planning Permission

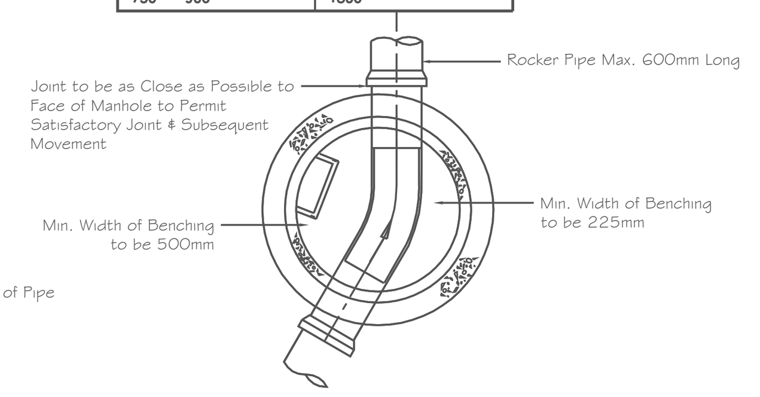
JOB NO: 1703

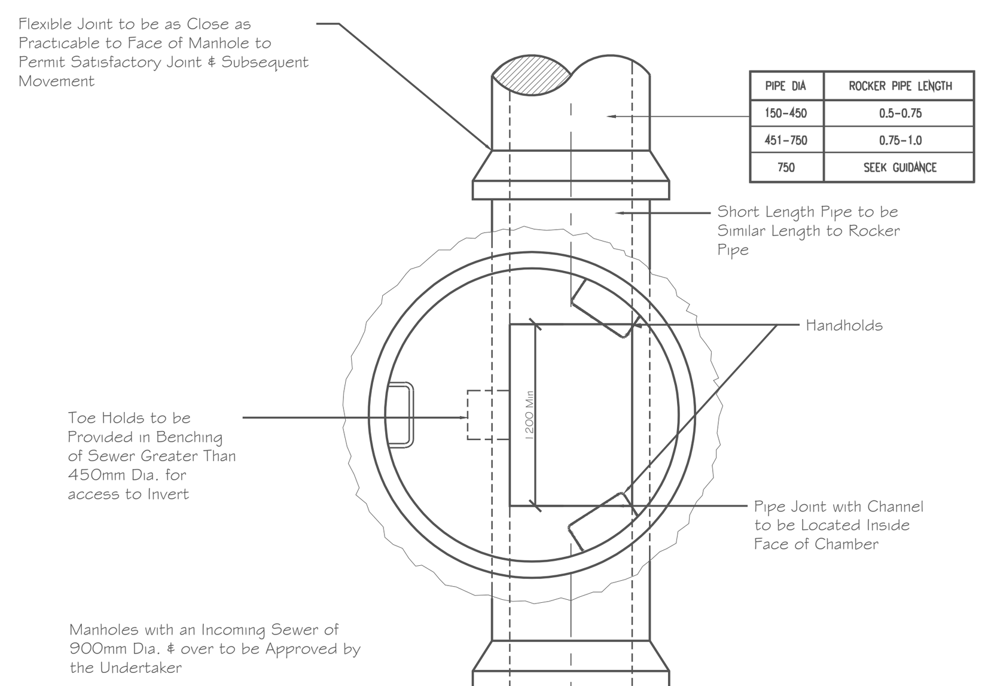


Notes:

1. MANHOLES WITH OUTGOING PIPES GREATER THAN 600MM DIA. SHOULD BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER SAFETY DEVICES.
2. ALL PRECAST CONCRETE RINGS TO BS5911:PART 200.
3. FOR DEPTH TO INVERTS>2.700M . AN ACCESS SHAFT OF MIN. 900, DIA. & REDUCING SLAB MAY BE USED

DIAMETER OF PIPE IN MANHOLE (LARGEST, mm)	MINIMUM INTERNAL DIAMETER OF MANHOLE (mm) "A"
LESS THAN 375	1200 (1050 WHERE DEPTH TO SOFFIT IS 1.35-1.50m)
375 - 450	1350
450 - 750	1500
750 - 900	1800

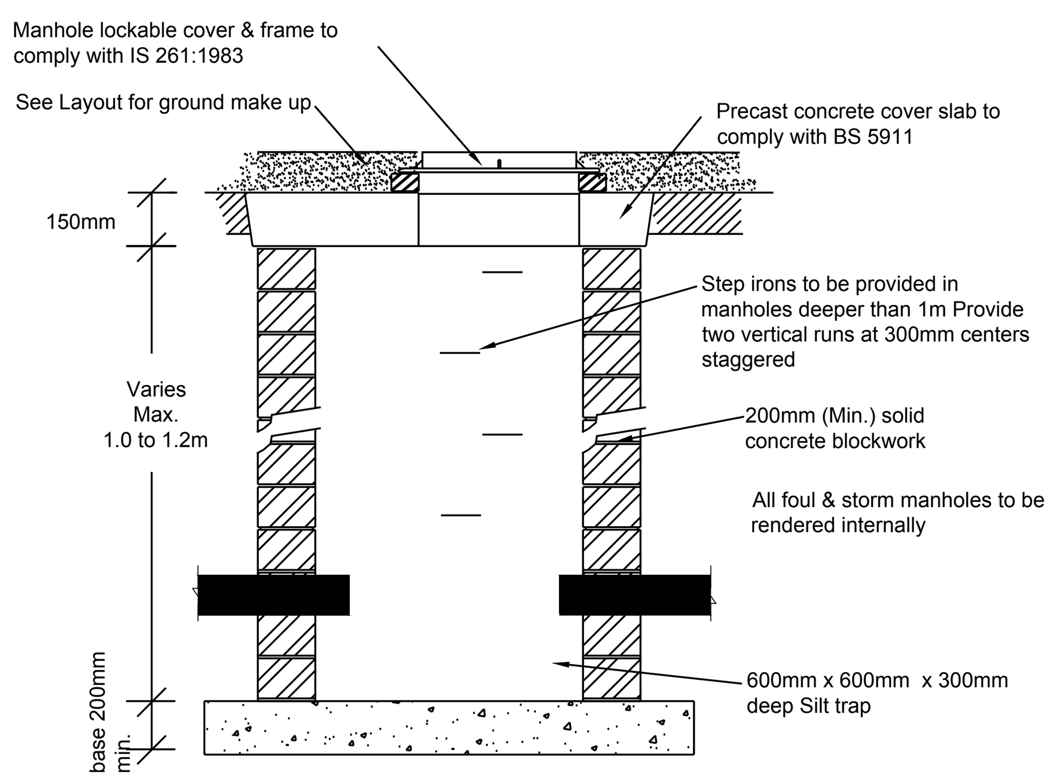


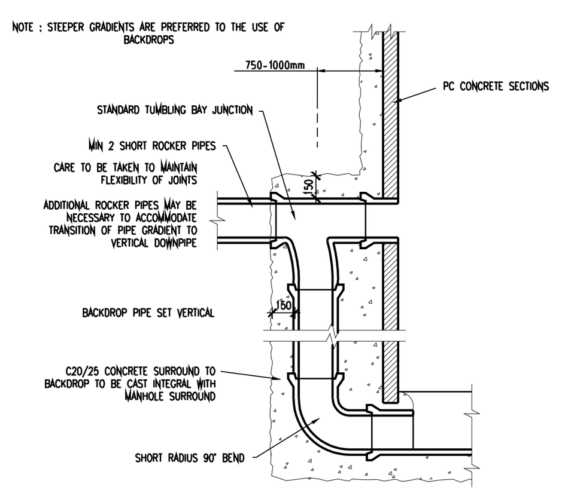


Manholes with an Incoming Sewer of 900mm Dia. & over to be Approved by the Undertaker

The Safety Policy of Individual Sewerage Undertakers May Require Min. Clear Opening into Manholes & the Fitting of Guard Bars, Safety Chains or other Safety Devices in Manholes with Outgoing Pipes of Less than 600mm Dia.

01 / 140 Typical Manhole Detail
SCALE NTS

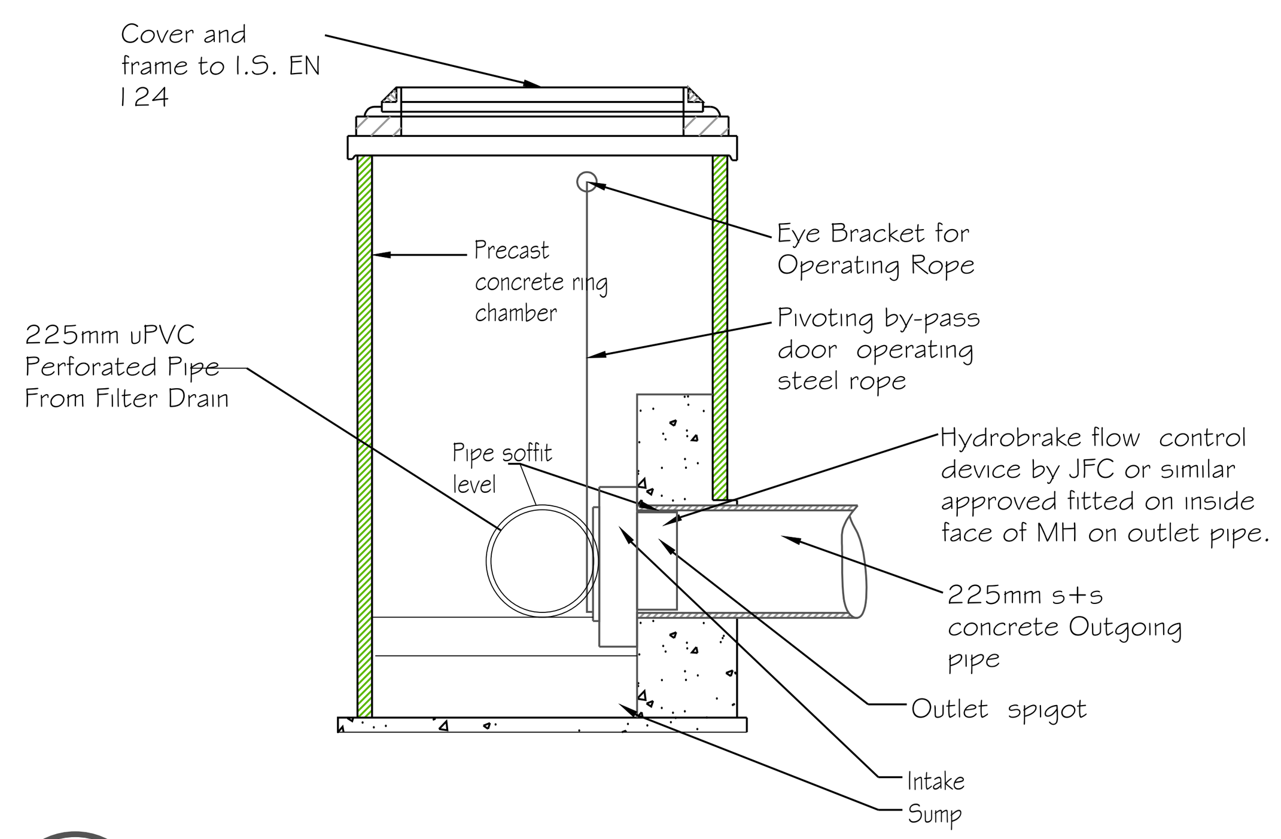




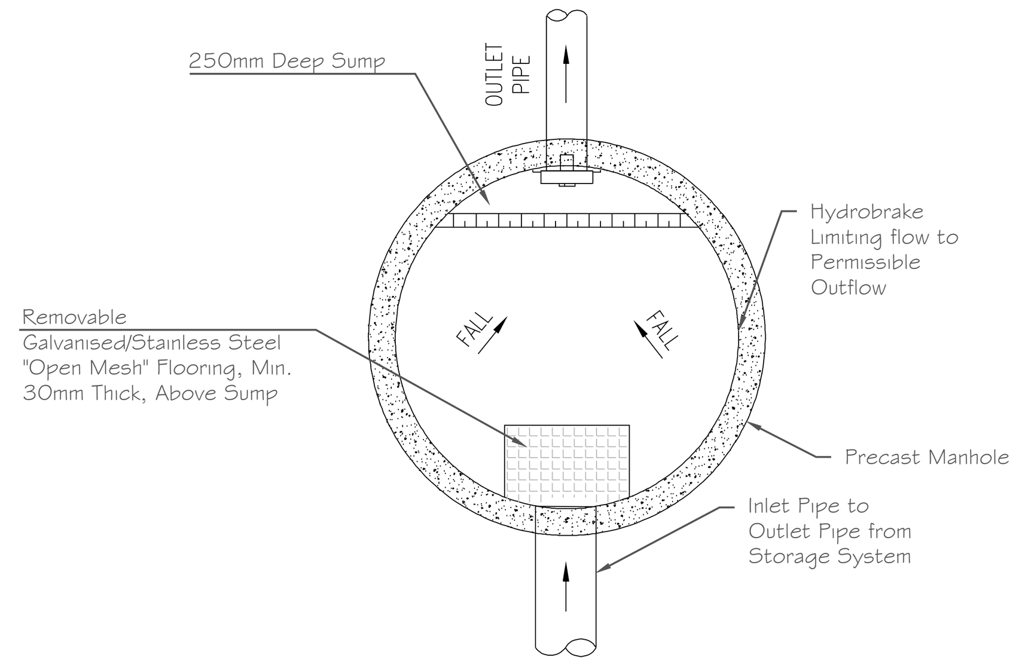
02 / 140 TYPICAL VERTICAL BACKDROP MANHOLE
SCALE: NTS

MIN. INTERNAL DIMENSION OF MANHOLES

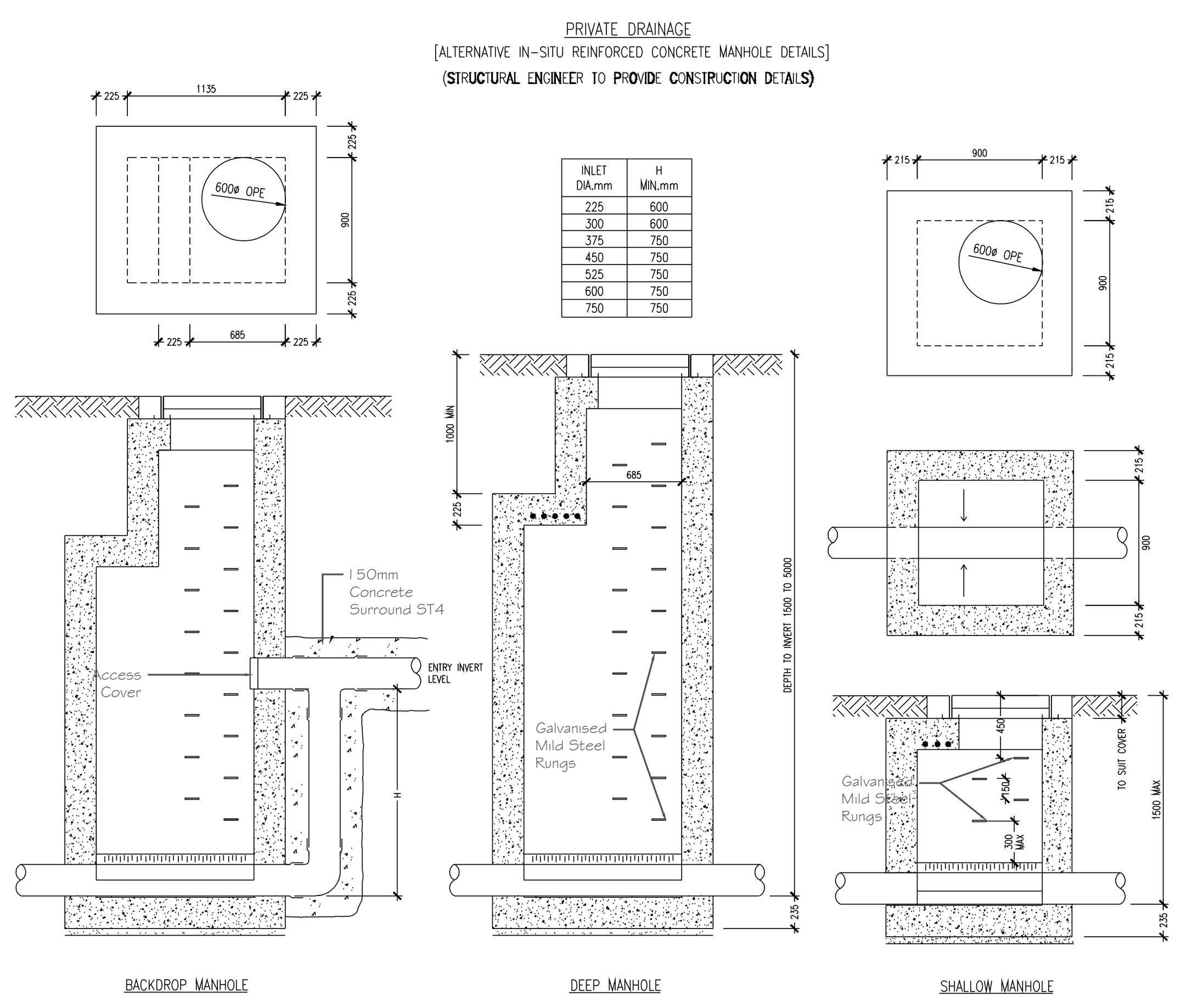
Depth to Invert (m)	Pipe size Dia. (mm)	Internal Dia. (m)
Less than 1m	100	1000 x 1000
	150	1000 x 1000
	225	1000 x 1000
	300	1000 x 1000
	375	1000 x 1000
	450	1000 x 1000
	525	1000 x 1000
	600	1000 x 1000
1m to 2m	100	1200 x 1200
	150	1200 x 1200
	225	1200 x 1200
	300	1200 x 1200



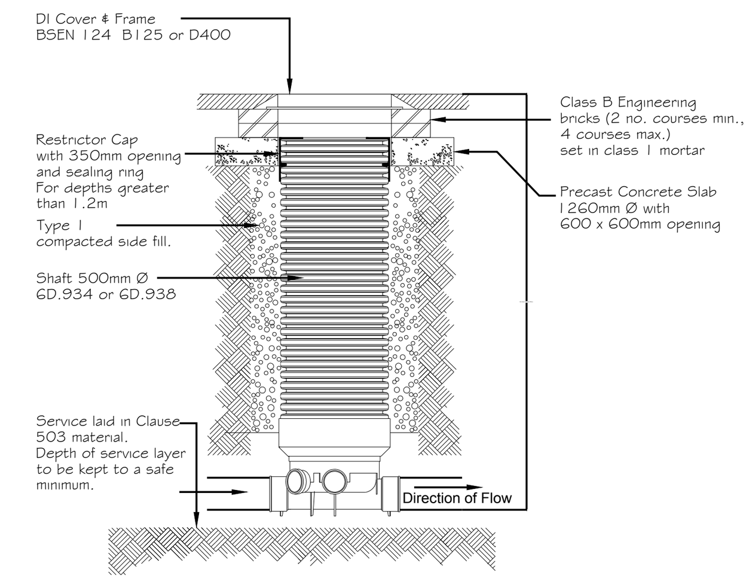
03 / 140 Section Through Storm Flow Control (Hydro-Brake) Manhole
SCALE 1:50



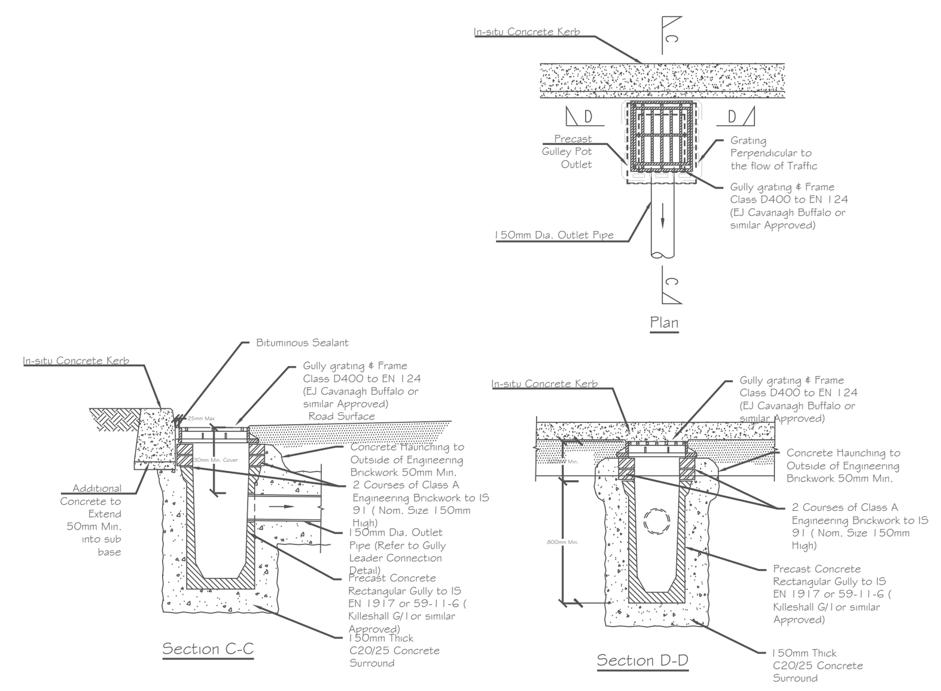
04 / 140 Typical Plan of Hydro-Brake Manhole
SCALE 1:50



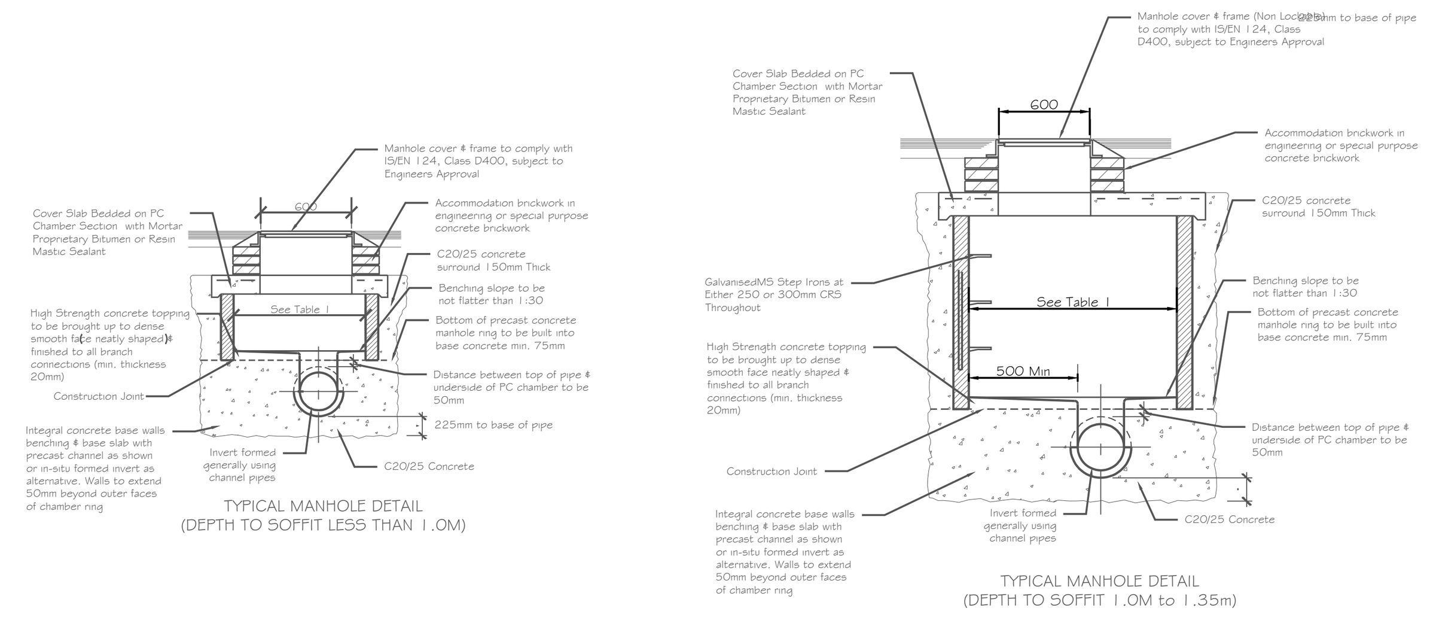
05 / 140 TYPICAL MANHOLE DETAILS
SCALE NTS



08 / 140 FOUL SEWER INSPECTION CHAMBER (F.I.C)
SCALE NTS



06 / 140 RECTANGULAR PRECAST ROAD GULLY DETAIL
SCALE NTS



07 / 140 TYPICAL MANHOLE DETAILS
SCALE NTS

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

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DRAWING. NO: 140
REV. NO: B
ENG

TITLE: Surface Water Drainage Details (Sheet 1 of 2)

PROJECT: Residential Development @ Haggardstown Blackrock, Dundalk Co Louth.

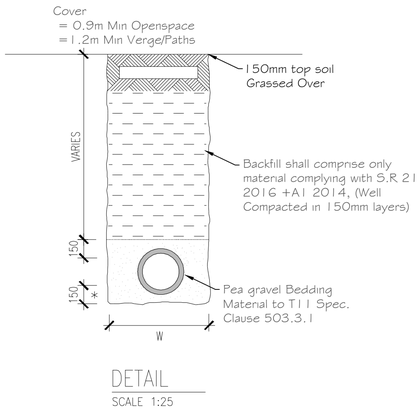
CLIENT: Kingsbridge Consultancy Ltd
1st Floor, Block 1, Quayside Business Park,
Dundalk Co Louth

SCALE: As Shown
DRAWN: T.Finn
DATE: November 2018
CHECKED: Sheet 1 of 3
STATUS: Planning Permission
JOB NO: 1703

NOTES

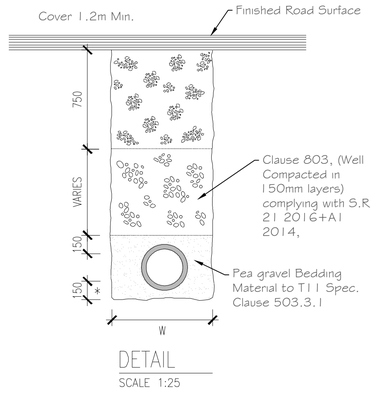
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT



DETAIL
SCALE 1:25

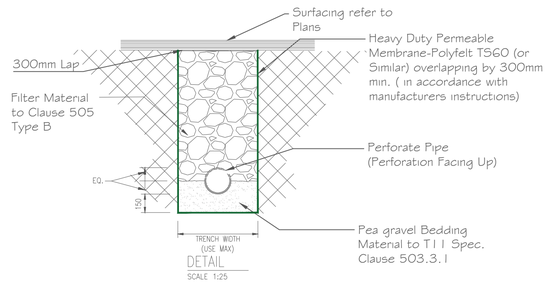
BEDDING DETAIL ACROSS OPEN SPACE/VERGES/PATHS (SIMILAR) - CLASS S



DETAIL
SCALE 1:25

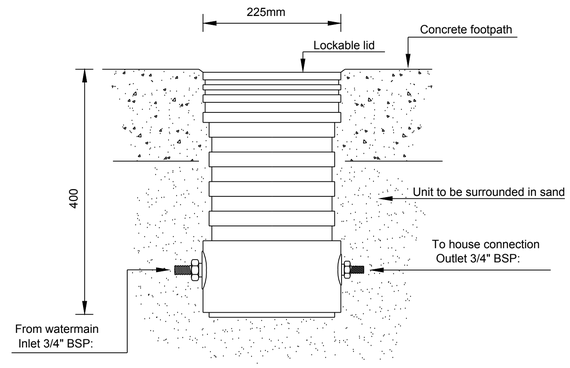
BEDDING DETAIL ACROSS ROADWAYS - CLASS S

01 141 Bedding Details for Flexible Pipes
Scale 1:25



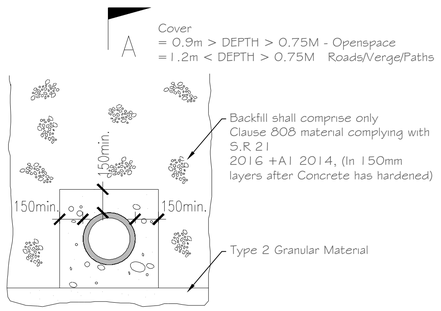
DETAIL
SCALE 1:25

02 141 Typical Filter Drain Detail
As Shown
Scale 1:25



03 141 Water Service Control Unit
Scale 1:25

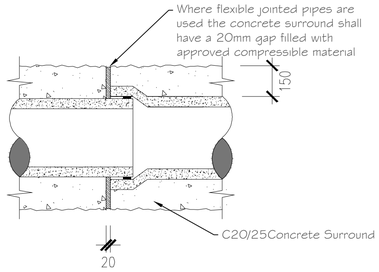
TABLE 1: TRENCH WIDTH LIMITS (W)		
NOMINAL INTERNAL ø (mm)	MINIMUM TRENCH WIDTH mm	MAXIMUM TRENCH WIDTH mm
100	450	650
150	500	700
225	600	800
300	700	900
375	950	1150
450	1050	1250
525	1150	1350
600	1250	1450
675	1350	1550
750	1400	1600
825	1500	1700
900	1950	2150
1050	2100	2300
1200	2300	2500
ABOVE 1200	OUTSIDE ø OF PIPE PLUS 800mm	OUTSIDE ø OF PIPE PLUS 1000mm



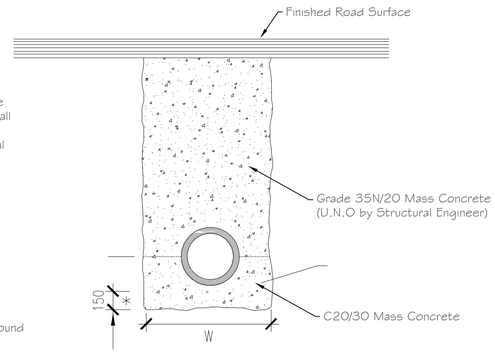
A

DETAIL
SCALE 1:25

TRENCH DETAIL WITH LESS THAN 900mm COVER



SECTION A-A



DETAIL
SCALE 1:25

TRENCH DETAIL WITH LESS THAN 750mm COVER

TEMPORARY & PERMANENT REINSTATEMENT

NOTES: [FOR PERMANENT REINSTATEMENT]

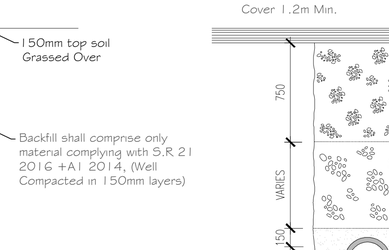
A. FORM A SAW CUT 100mm DEEP AT A MIN. OF 100mm FROM SIDES OF EXCAVATION PRIOR TO PERMANENT REINSTATEMENT. WHERE ANY TRIM LINES ARE WITHIN 400mm OF ROAD EDGE, JOINT, OTHER REINSTATEMENT, OR IRONWORK, THE TRIM LINE SHOULD BE EXTENDED TO THE INTERFACE OF SUCH SITUATIONS.

B. DIG OUT SURFACING & TOP 220mm OF CL808 MATERIAL & REPLACE WITH NEW WIDER SURFACING ON 220 LAYER OF LEAN-MIX CONCRETE

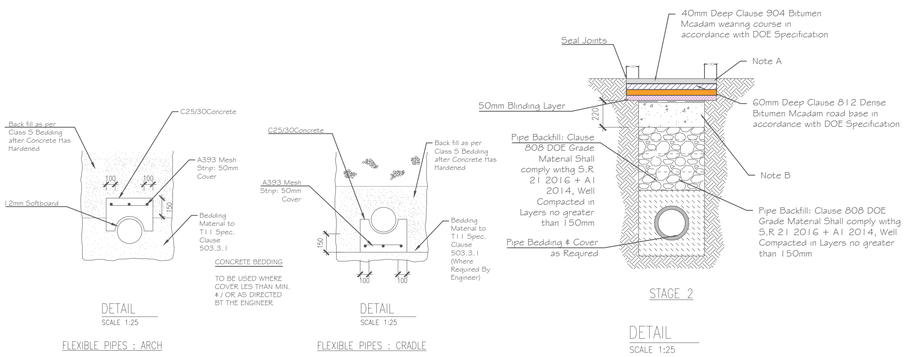
C. LEAN-MIX SURFACE TO BE SPRAYED PER CLAUSE 920 (TII SPEC.) PRIOR TO APPLICATION OF BINDER COURSE MACADAM.

D. 100°C HOT BITUMEN BINDER 50 PEN OR COLD THIXOTROPIC BITUMEN 50 - 70 PEN TO BE APPLIED TO ALL VERTICAL CUTS IN ACCORDANCE WITH B.S.594 PRIOR TO APPLICATION OF BITUMINOUS MATERIAL.

E. JOINTS SEALED WITH HOT BITUMEN AND TOPPED WITH FINE SAND / GRIT TO GET A MINIMUM 55 SKID RESISTANCE VALUE AS DETERMINED BY THE PORTABLE SKID RESISTANCE PENDULUM USED IN ACCORDANCE WITH ROAD NOTE 27 AND SHALL NOT EXCEED 3mm THICKNESS AND 25mm WIDTH.



STAGE 1
(LEAVE FOR 6 MONTHS TO CONSOLIDATE)



DETAIL
SCALE 1:25

FLEXIBLE PIPES : ARCH

DETAIL
SCALE 1:25

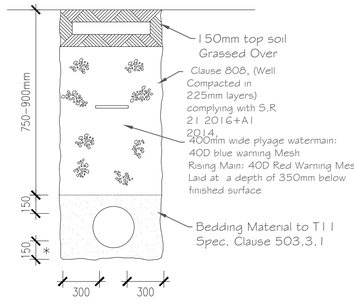
FLEXIBLE PIPES : CRADLE

ALTERNATIVE BEDDING

DETAIL
SCALE 1:25

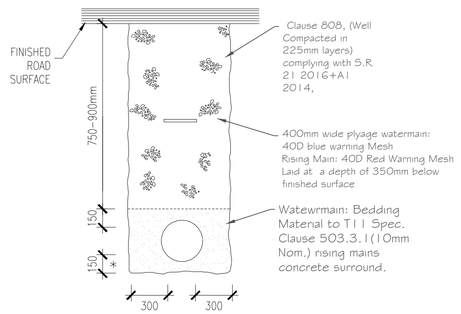
REINSTATEMENT OF PIPE TRENCH IN EXISTING ROAD

05 141 Bedding Details for Reinstatement
Scale 1:25



DETAIL
SCALE 1:25

(A) BEDDING DETAIL ACROSS OPENSPACE/VERGE/PATHS (SIMILAR)



DETAIL
SCALE 1:25

(B) BEDDING DETAIL ACROSS ROADS

06 141 Watermain/Rising Main Bedding Details
Scale 1:25

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T. Finn
A	Issued to Irish Water for Statement of Acceptance	26th April 2019	T. Finn

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DRAWING. NO: 141 REV. NO: B

ENG

TITLE: Surface Water Drainage Details (Sheet 2 of 2)

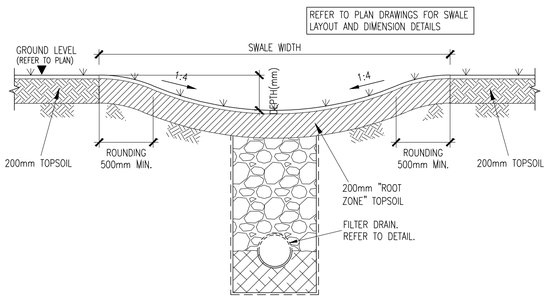
PROJECT: Residential Development @ Haggardstown Blackrock, Dundalk Co Louth.

CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Dundalk Co Louth

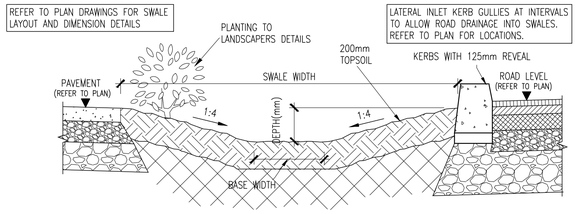
SCALE:	As Shown	DRAWN:	T.Finn
DATE:	November 2018	CHECKED:	Sheet 1 of 2

STATUS: Planning Permsission

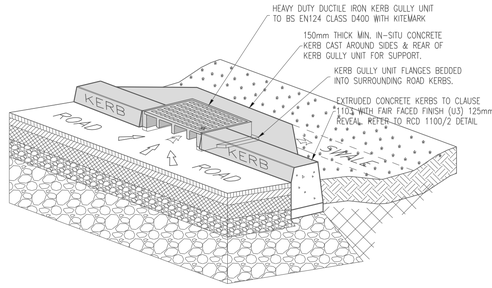
JOB NO: 1703



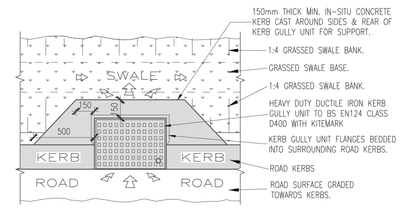
DRY SWALE DETAIL
SCALE: NTS



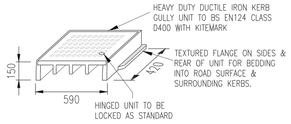
'WET' SWALE CROSS-SECTION
[FOR ROAD DRAINAGE]
SCALE: NTS



LATERAL INLET KERB GULLY SCHEMATIC
[FOR ROAD DRAINAGE]
SCALE: NTS

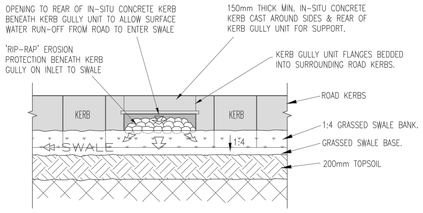


LATERAL INLET KERB GULLY PLAN
[FOR ROAD DRAINAGE]
SCALE: NTS

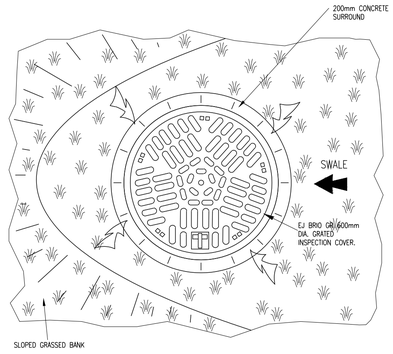


[DENOTED BY 'KG' ON PLAN]

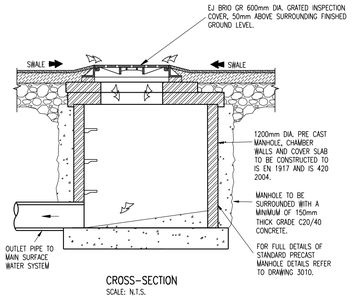
LATERAL INLET KERB GULLY DETAIL
[LOCATED ALONG KERBLINES TO ALLOW ROAD SURFACE WATER RUN-OFF INTO SWALES]
SCALE: NTS



LATERAL INLET KERB GULLY - REAR ELEVATION
[FOR ROAD DRAINAGE]
SCALE: NTS



PLAN
SCALE 1:10

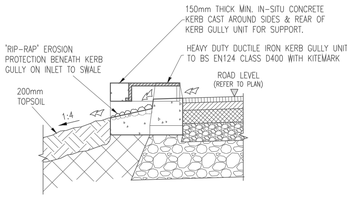


CROSS-SECTION
SCALE: N.T.S.

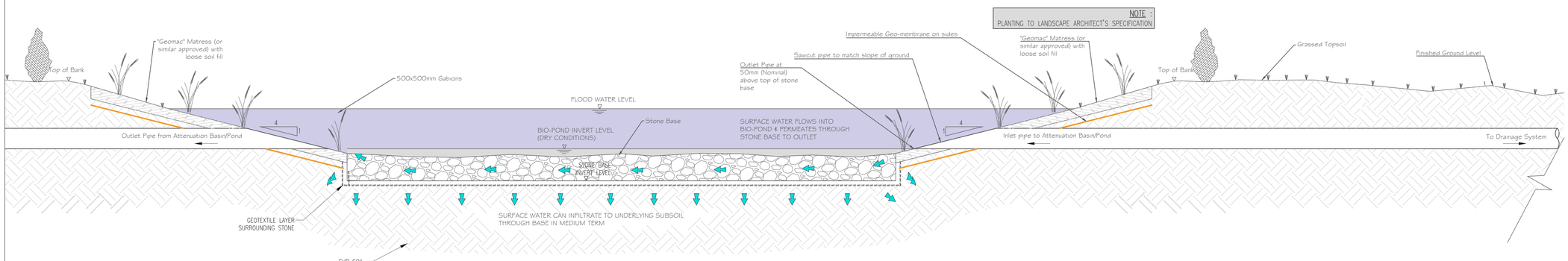
GRATED MANHOLE INLET CHAMBER
[FOR ROAD DRAINAGE]

01 / 142 TYPICAL SWALE DETAILS
SCALE NTS

01 / 142 TYPICAL INLET KERB DETAILS
SCALE NTS



LATERAL INLET KERB GULLY TO SWALE CROSS-SECTION
[FOR ROAD DRAINAGE]
SCALE: NTS



03 / 142 SECTION THROUGH ATTENUATION BASIN/POND
SCALE 1:25

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T. Finn

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DRAWING. NO: 142
REV. NO: A

ENG

TITLE: Typical Swale, Inlet Kerb & Attenuation Pond/Basin Details

PROJECT: Residential Development @ Haggardstown Blackrock, Dundalk Co Louth.

CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Dundalk Co Louth

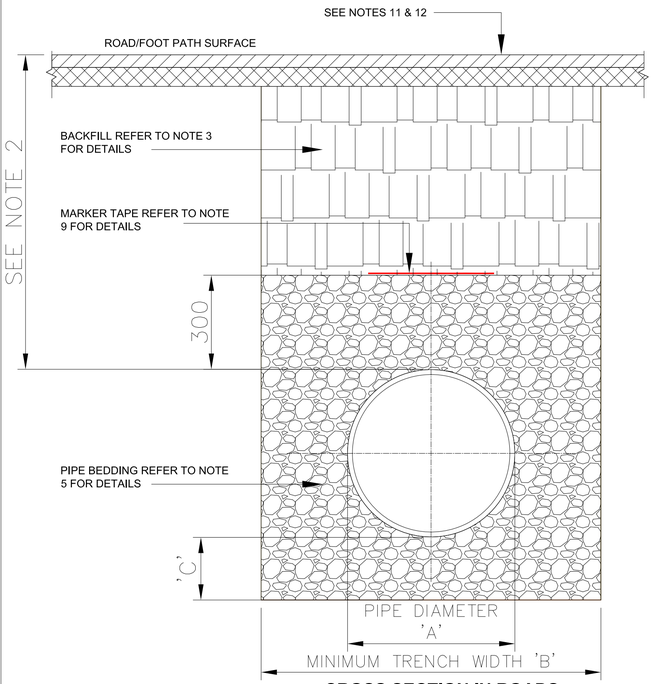
SCALE:	As Shown	DRAWN:	T.Finn
DATE:	November 2018	CHECKED:	-

STATUS: Planning Permsission

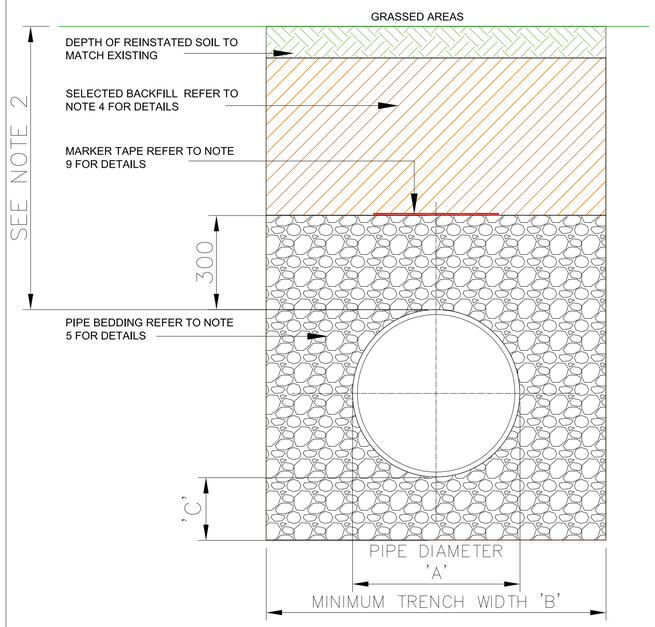
JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

● CIVIL, STRUCTURAL ENGINEERING & PROJECT MANAGEMENT



CROSS SECTION IN ROADS



CROSS SECTION IN GRASSED AREAS

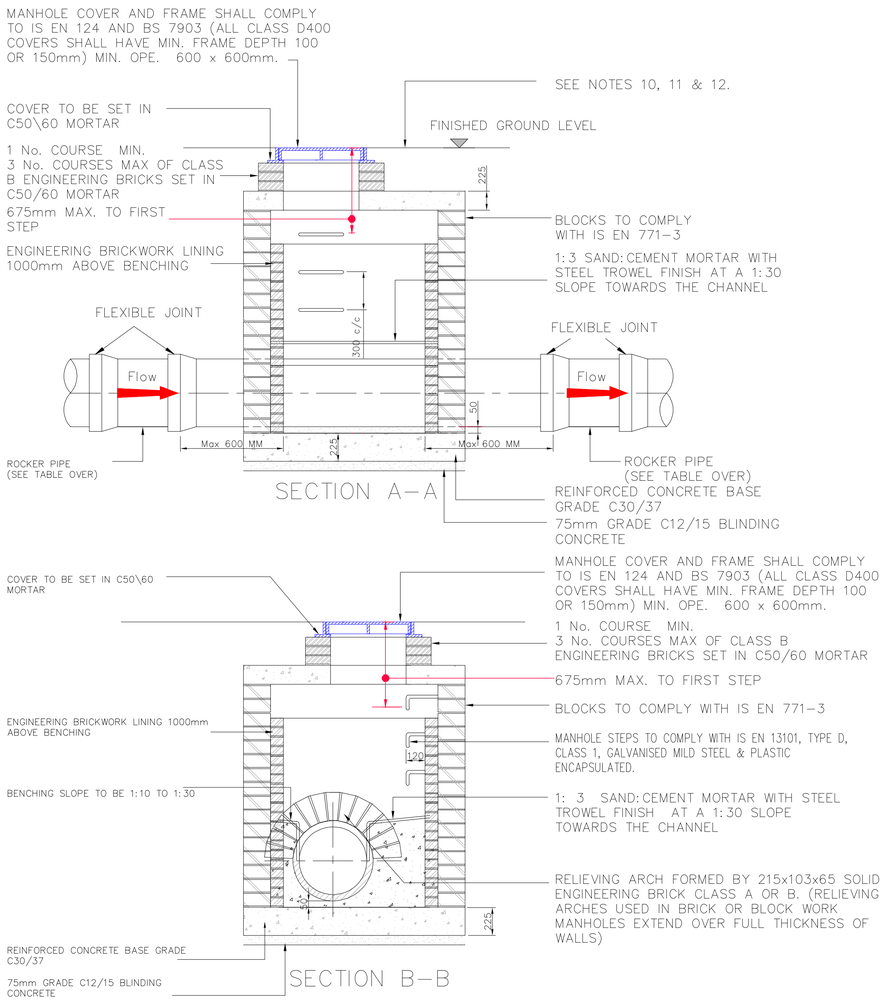
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. THE MINIMUM DEPTH OF COVER FROM THE FINISHED SURFACE TO THE CROWN OF GRAVITY PIPES WITHOUT PROTECTION SHOULD BE AS FOLLOWS:
   a. GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS – DEPTH NOT LESS THAN 0.5 M. (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).
   b. DRIVEWAYS, 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.C)
   c. DRIVEWAYS, 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.
   d. DEPTHS OF SEWERS IN GATED ESTATES SHALL BE SIMILAR TO THAT OUTLINED ABOVE.
   e. AGRICULTURAL LAND AND PUBLIC OPEN SPACE – DEPTH NOT LESS THAN 0.9 M.
   f. OTHER 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.
3. CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY 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 NATIONAL ROADS AUTHORITY 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 IRISH WATER WHERE THE ROADS AUTHORITY IN WHOSE FUNCTIONAL AREA THE DEVELOPMENT IS LOCATED, PROVIDES WRITTEN APPROVAL TO THE DEVELOPER TO THE USE SUCH ALTERNATIVE MATERIAL.
4. SELECTED EXCAVATED MATERIAL MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO REVIEW BY IRISH WATER.
5. PIPE BEDDING SHALL COMPLY WITH WIS 4-08-02 AND IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm GRADED AGGREGATE OR 10mm SINGLE SIZED AGGREGATE IS EN 13242. CONCRETE BED, HAUNCH & SURROUND, WHERE REQUIRED, SHALL BE TO STD-WW-08.
6. 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 NATIONAL ROADS AUTHORITY 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 IRISH WATER BEFORE ADVANCING WITH THE WORK.
7. IN GREEN FIELD AREAS, TYPE B BACKFILL (SELECTED EXCAVATED MATERIAL) 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.
8. 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 NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
9. NON DEGRADABLE MARKER TAPE SHOULD BE INSTALLED AT TOP OF PIPE BEDDING LAYER. 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 AND THE DISCHARGE MANHOLE.
10. TRENCH WIDTHS FOR PIPE SIZES ≤80mm MAY BE <500mm, SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.
11. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
12. 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.

PIPE DIAMETER 'A' (mm)	TRENCH WIDTH 'B' (mm)
≤ 80 RISING MAIN	SEE NOTE 10.
100	500
150	600
200	600
250	750
300	750
350	750
400	900
450	900

PIPE DIAMETER 'A' (mm)	DEPTH OF BEDDING 'C' (mm)
≤100	100
150 - 450	200

01 / 143 Pipe Bedding Details
SCALE 1:10



02 / 143 Blockwork Manhole Detail (< 450mm Dia)
SCALE 1:20

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SOLID BLOCKWORK TO BE OF HIGH STRENGTH (20N/mm²) TO IS EN 771.
3. MAXIMUM DEPTH OF BLOCK WORK MANHOLE IS 1.20m (THE USE OF BLOCK WORK IN DEEPER MANHOLES WILL BE CONSIDERED BUT SUCH USE WILL REQUIRE DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW).
4. WALLS TO BE FLUSH POINTED AND NOT PLASTERED INTERNALLY, INTERNAL LINING OF ENGINEERING BRICK TO IS EN 771-1 TO A HEIGHT OF 1m ABOVE BENCHING. ENGINEERING BRICK TO BE BONDED TO BLOCKWORK USING ENGLISH GARDEN WALL BOND.
5. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS FOR ROOF AND BASE SLABS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. MANHOLE ROOFS SHALL CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, C30/37, WITH A MINIMUM THICKNESS OF 225mm DESIGNED TO CARRY ALL LIVE AND DEAD LOADS. ALTERNATIVELY, APPROVED PRE-CAST CONCRETE ROOF SLABS MAY BE USED SUBJECT TO IRISH WATER REVIEW AND COMPLIANCE WITH BS 5911 PART 4: 2002.
6. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW FROM IRISH WATER.
7. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
8. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
9. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
10. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
11. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
12. 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.

ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750	1000
GREATER THAN 750	1250

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued For Planning	May 2019	T.Finn

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DRAWING. NO: 143
REV. NO: A

ENG

TITLE: Foul Drainage Details (Sheet 1 of 3)
PROJECT: Residential Development @ Haggardstown Blackrock, Dundalk Co Louth.
CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Dundalk Co Louth
SCALE: As Shown
DRAWN: T.Finn
DATE: November 2018
CHECKED: Details
STATUS: Planning Permsission
JOB NO: 1703

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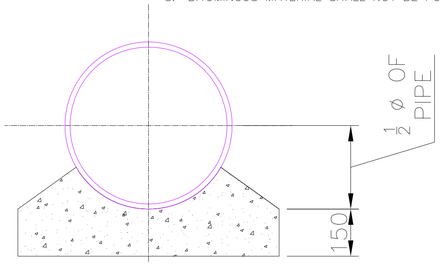
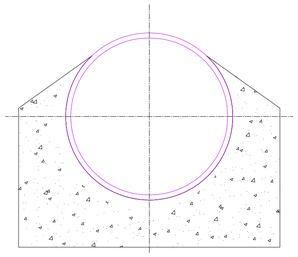
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. CONCRETE PIPE BEDS AND HAUNCHES MAY BE REQUIRED TO ADDRESS MINIMUM COVER SITUATIONS, AND SHALL BE SUBJECT TO SUBMISSION AND ASSESSMENT BY IRISH WATER BEFORE ADVANCING WITH THE WORKS.
3. CONCRETE BEDS AND HAUNCHES SHALL HAVE A MINIMUM THICKNESS OF 150MM WITH AN ABSOLUTE MINIMUM DEPTH OF COVER ABOVE THE EXTERNAL CROWN OF THE PIPE OF 750MM
4. CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013 AND TO BE CLASS C16/20.
5. THE HAUNCHES AND SURROUNDS TO BE FORMED USING FORMWORK TO PROVIDE ROUGH CAST FINISH.
6. EXPANSION JOINTS IN THE CONCRETE SHALL BE PROVIDED AT ALL PIPE JOINTS TO ALLOW FOR PIPE FLEXIBILITY, COMPRESSIBLE FILLER BOARD TO BE USED IN ACCORDANCE WITH BS EN 622-1 AND BS EN 622-4
7. POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COM POSITION IN ACCORDANCE WITH BS 6067 BEFORE BEING CAST INTO CONCRETE.
8. BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PE OR PVC PIPE.



TYPE 'A'



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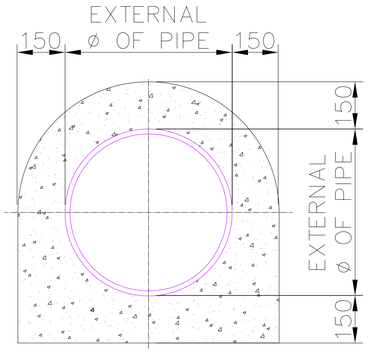

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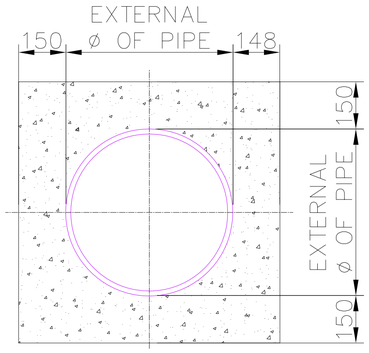

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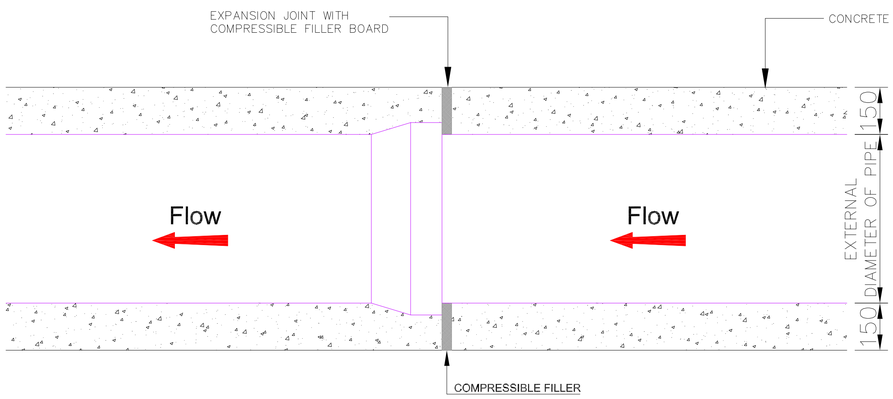
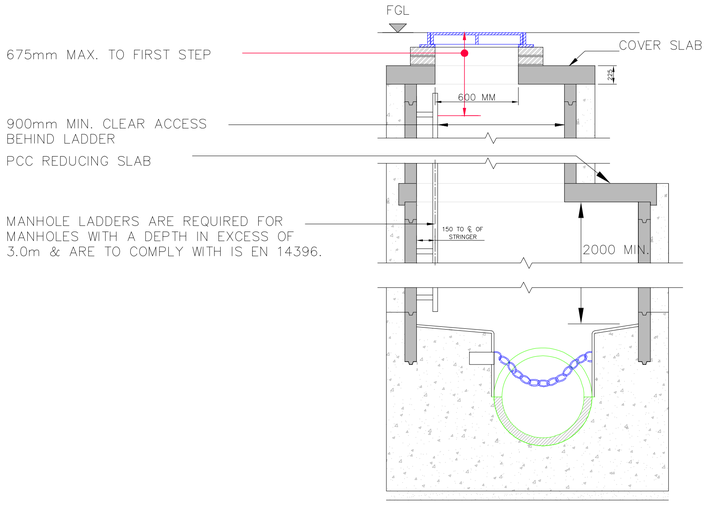


SPIGOT AND SOCKET JOINT

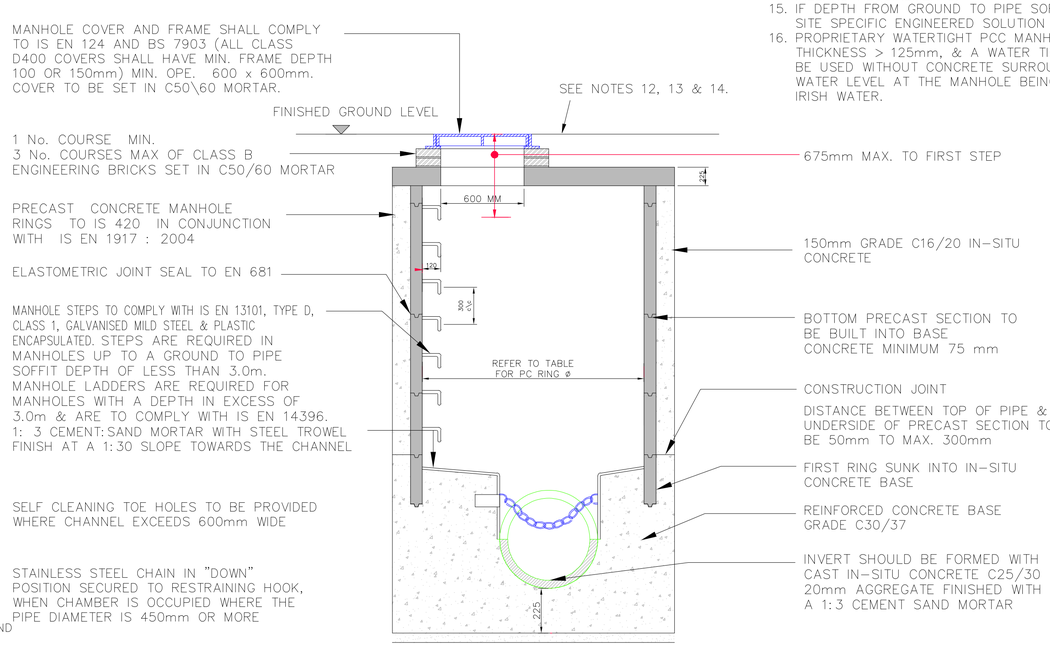
01 / 144 Conc Bed, Haunch & Surround To Pipes
SCALE 1:10



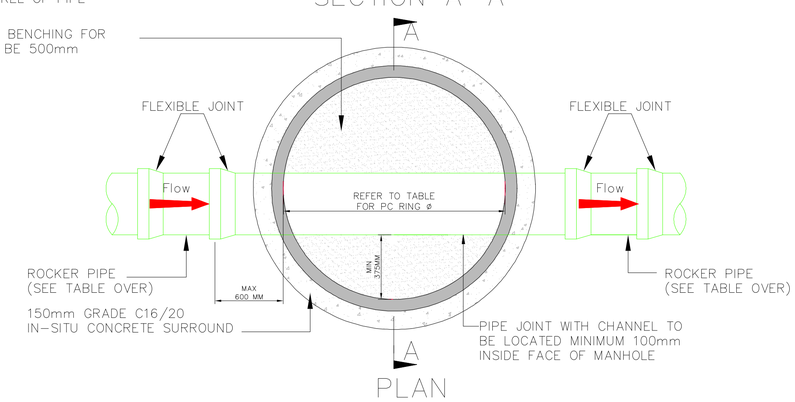
MANHOLE DETAIL > 3m & < 6m GROUND TO SOFFIT DEPTH

(NOTE: ON MANHOLES < 1.5mø REDUCING SLAB NOT TO BE USED & PCC RINGS TO CONTINUE UP TO COVER SLAB)

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND BS 5911-PART 3.
3. THICKER MANHOLE BASES REQUIRED FOR SEWERS IN EXCESS OF 3m DEEP WHERE THE SIZE IS GREATER THAN THE STANDARD MINIMUM SIZE.
4. APPROVED PRE-CAST CONCRETE BASES MAY BE USED INCORPORATING CHANNELS, BENCHING ETC. SUBJECT TO IRISH WATER REVIEW AND COMPLYING WITH BS 5911-PART 4 2002.
5. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
6. MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW.
7. MANHOLE ROOFS SHALL CONSIST OF A RE-INFORCED CONCRETE SLAB OF IN-SITU CONCRETE, C30/37, WITH A MINIMUM THICKNESS OF 225mm DESIGNED TO CARRY ALL LIVE AND DEAD LOADS. ALTERNATIVELY, APPROVED PRE-CAST CONCRETE ROOF SLABS MAY BE USED SUBJECT TO IRISH WATER REVIEW AND COMPLIANCE WITH BS 5911 PART 4: 2002.
8. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
9. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
10. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
12. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
13. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
14. 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.
15. IF DEPTH FROM GROUND TO PIPE SOFFIT IS GREATER THAN 6m DEEP, A SITE SPECIFIC ENGINEERED SOLUTION FOR ACCESS SHALL BE PROVIDED.
16. PROPRIETARY WATERTIGHT PCC MANHOLE RING SYSTEMS WITH A WALL THICKNESS > 125mm, & A WATER TIGHT JOINT SEALING SYSTEM, MAY BE USED WITHOUT CONCRETE SURROUND, SUBJECT TO THE GROUND WATER LEVEL AT THE MANHOLE BEING LOW, & SUBJECT TO REVIEW BY IRISH WATER.



SECTION A-A



PLAN

02 / 144 Precast Manhole Detail
SCALE 1:20

MINIMUM MANHOLE DIAMETERS	
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 375	1200
375 TO 450	1350
500 TO 750	1500

ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750	1000
GREATER THAN 750	1250

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued For Planning	May 2019	T.Finn

finn DESIGN PARTNERSHIP
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DRAWING. NO: 144
REV. NO: A

ENG

TITLE: Foul Drainage Details (Sheet 2 of 3)

PROJECT: Residential Development @ Haggardstown Blackrock, Dundalk Co Louth.

CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Dundalk Co Louth

SCALE: As Shown | DRAWN: T.Flnn

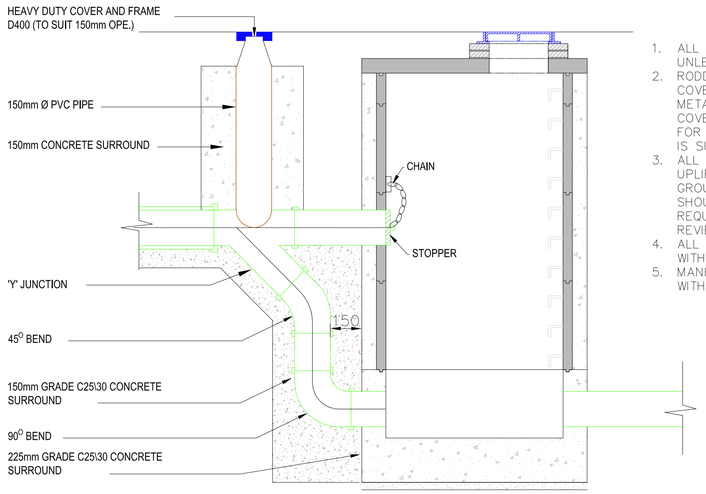
DATE: November 2018 | CHECKED: Details

STATUS: Planning Permsission

JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. All workmanship and fixing to be in accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturers.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

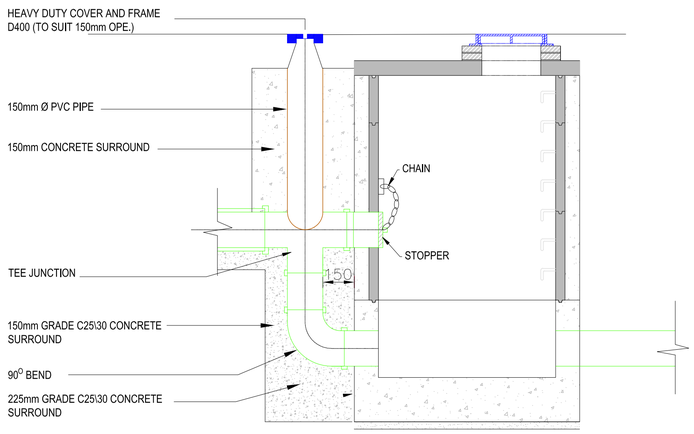
● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT



1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. RODDING EYE CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 AND BS 5834. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
4. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
5. MANHOLE DETAILS TO BE IN ACCORDANCE WITH STD-WW-09, 10 AND 11

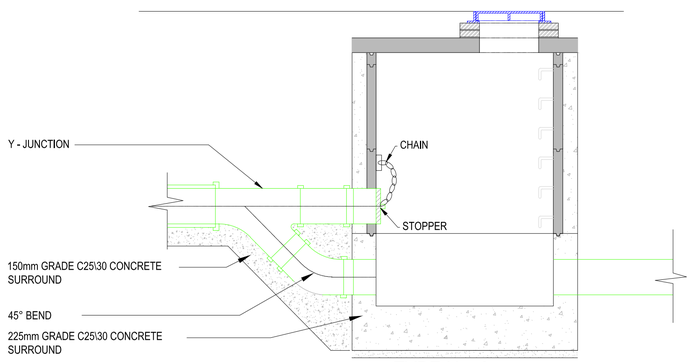
TYPE No. 1

150mm - 450mm DIA. (INCL.) DROP GREATER THAN 1700mm
500mm - 900mm DIA. (INCL.) DROP GREATER THAN 2300mm



TYPE No. 2

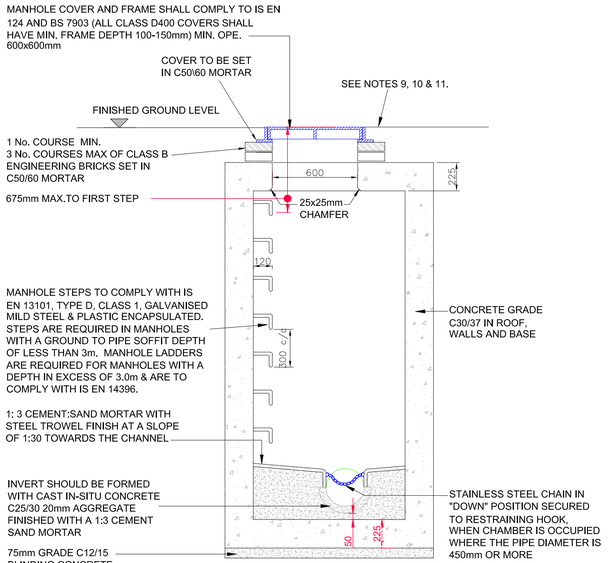
150mm - 450mm DIA. (INCL.) DROP GREATER THAN 900 AND LESS THAN 1700mm
500mm - 900mm DIA. (INCL.) DROP GREATER THAN 1300mm AND LESS THAN 2300mm



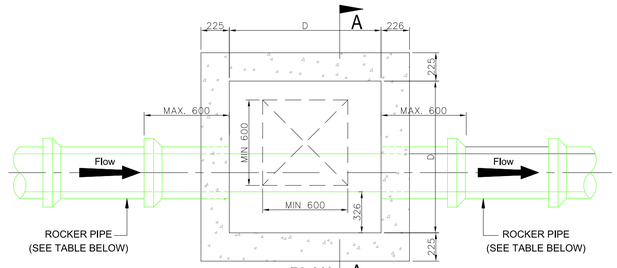
TYPE No. 3

150mm - 450mm DIA. (INCL.) DROP GREATER THAN 600mm AND LESS THAN 900m
500mm - 900mm DIA. (INCL.) DROP GREATER THAN 600mm AND LESS THAN 1300mm

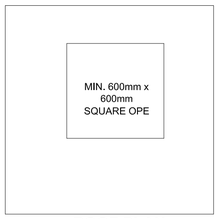
01 / 145 Backdrop Manhole Details
SCALE 1:15



SECTION A-A



PLAN A

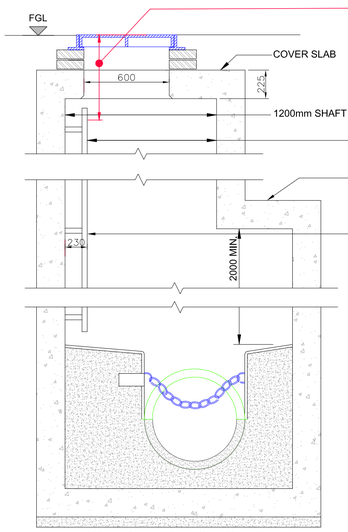


ROOF PLAN

ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750	1000
GREATER THAN 750	1250

02 / 145 Cast In-Situ Concrete Manhole Detail
SCALE 1:20

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. IN-SITU MANHOLES TO HAVE A MINIMUM WALL AND FLOOR THICKNESS OF 225mm FOR MANHOLE DEPTHS UP TO 3.0m AND 300mm OR MORE WHEN THE MANHOLE DEPTH EXCEEDS 3.0m.
3. STRUCTURAL DESIGN & REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. MANHOLE ROOFS SHALL CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, C30/37, WITH A MINIMUM THICKNESS OF 225mm DESIGNED TO CARRY ALL LIVE AND DEAD LOADS. ALTERNATIVELY, APPROVED PRE-CAST CONCRETE ROOF SLABS MAY BE USED SUBJECT TO IRISH WATER APPROVAL AND COMPLIANCE WITH BS 5911 PART 4: 2002.
4. MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW.
5. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
6. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
7. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI-FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
8. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
9. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
10. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
11. 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.
12. IF DEPTH FROM GROUND TO PIPE SOFFIT EXCEEDS 6m, A SITE SPECIFIC ENGINEERED SOLUTION FOR ACCESS SHALL BE PROVIDED.



MANHOLE DETAIL > 3m & < 6m
GROUND TO PIPE SOFFIT DEPTH

(NOTE: ON MANHOLES <1.5m SHAFT DIMENSION, REDUCING SLAB NOT TO BE USED & SHAFT TO CONTINUE UP TO COVER SLAB)

MINIMUM MANHOLE DIMENSION "D"	
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIMENSION OF MANHOLE (mm)
LESS THAN 375	1200
375 TO 450	1350
500 TO 750	1500

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued For Planning	May 2019	T.Finn

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DRAWING. NO: 145 REV. NO: A

ENG

TITLE: Foul Drainage Details (Sheet 3 of 3)

PROJECT: Residential Development @ Haggardstown Blackrock, Dundalk Co Louth,

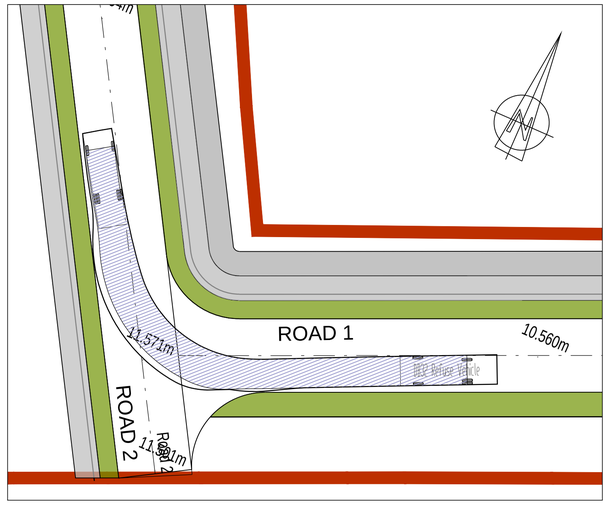
CLIENT: Kingsbridge Consultancy Ltd 1st Floor, Block 1, Quayside Business Park, Dundalk Co Louth

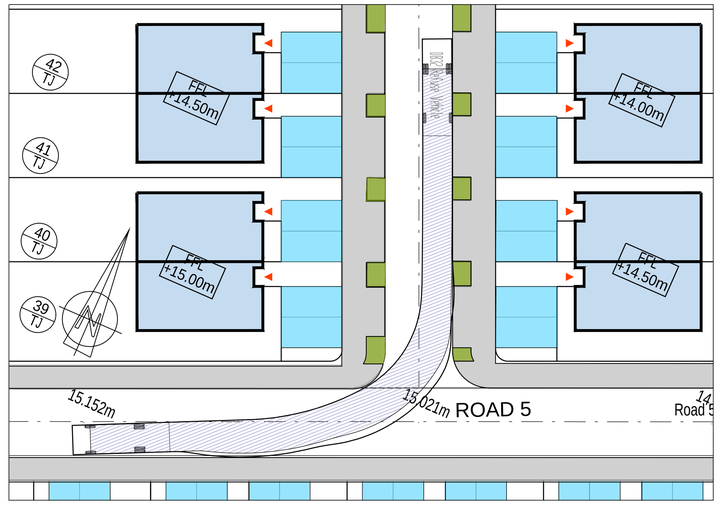
SCALE: As Shown DRAWN: T.Finn

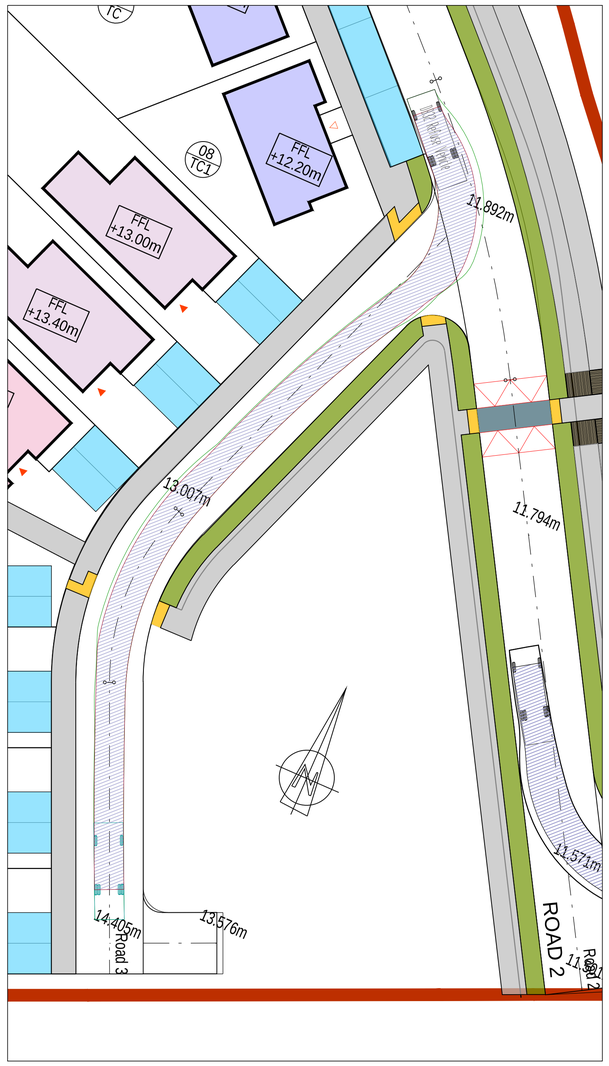
DATE: November 2018 CHECKED: Details

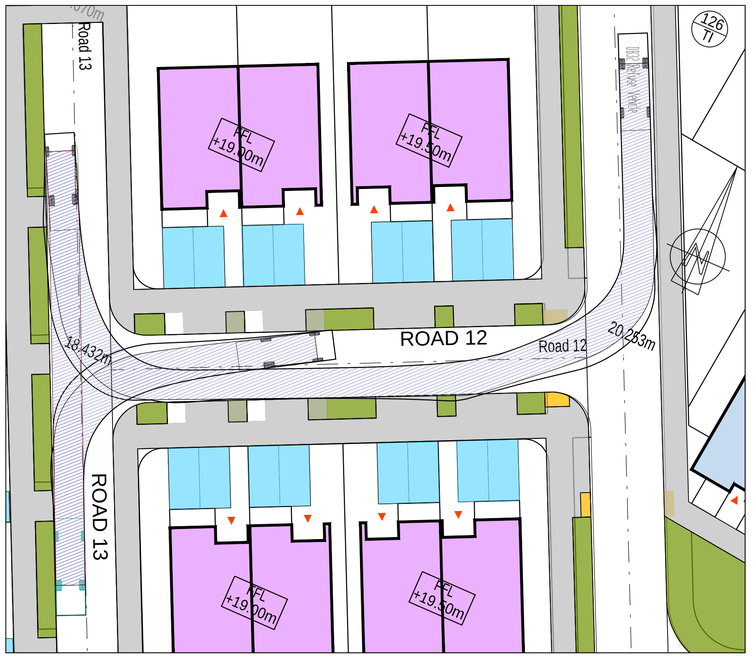
STATUS: Planning Permsission

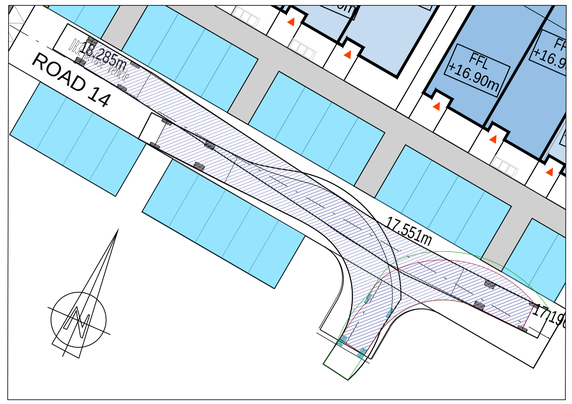
JOB NO: 1703

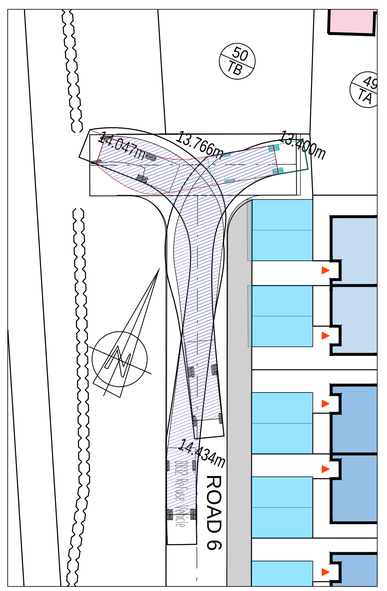












- 145 Auto Sweep Path Analysis - Refuse Truck
SCALE 1:1000

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

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DRAWING. NO: 147 REV. NO: A

eng

TITLE: Autotrack Swept Path Analysis Refuse Trucks (Sheet 1 of 2)

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd 1st Floor Quayside Business Park Mill Street, Dundalk, Co Louth.

SCALE:	1:1000 @ A1	DRAWN:	P.Coyle
DATE:	November 2018	CHECKED:	-

STATUS: Planning Permission

JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Refer to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
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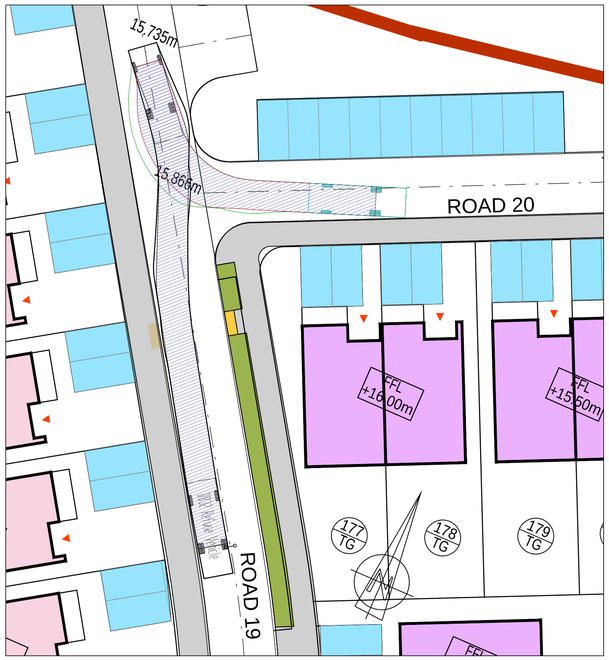
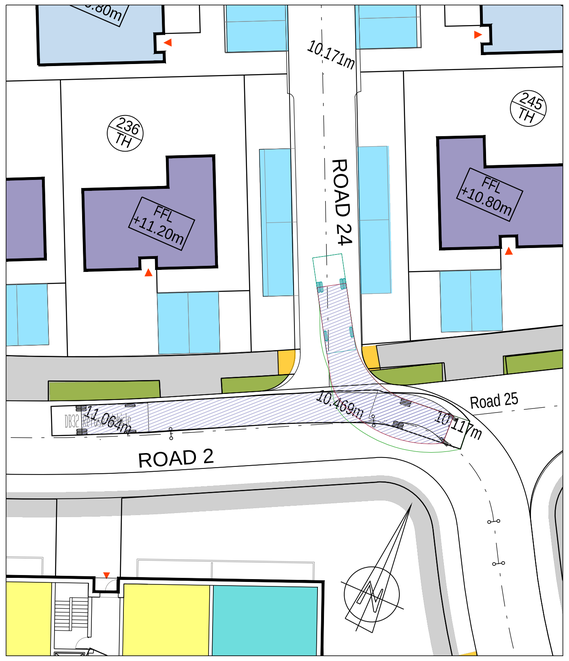
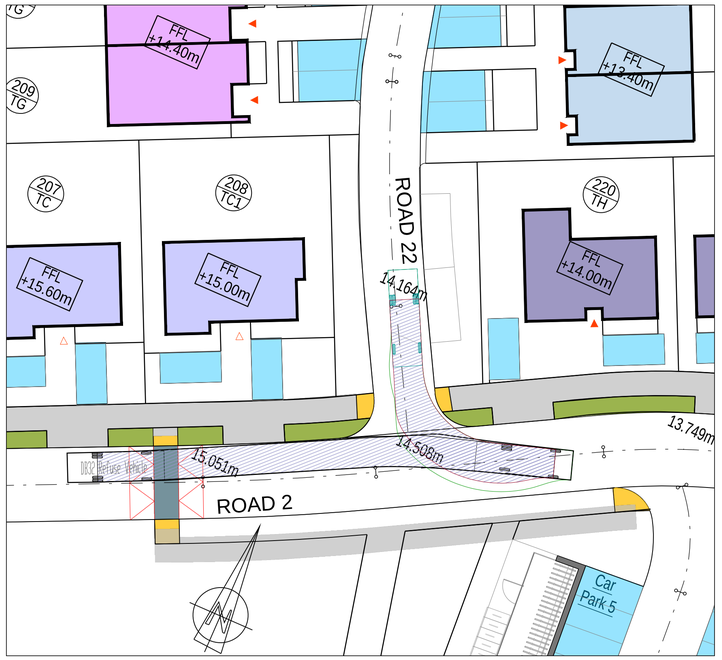
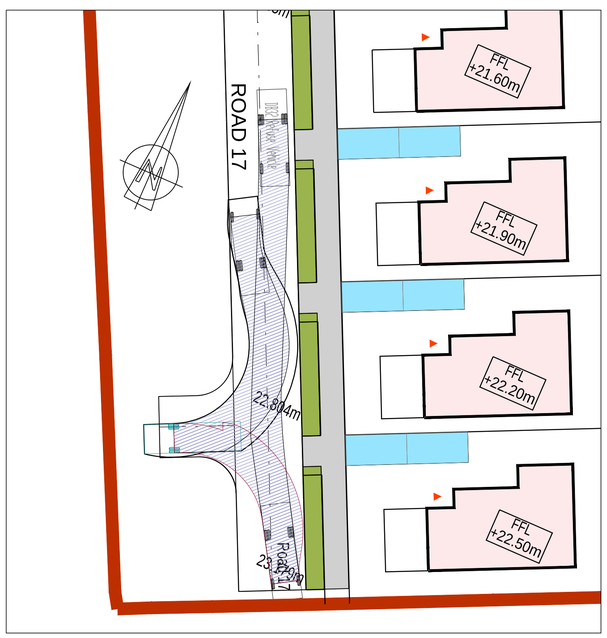
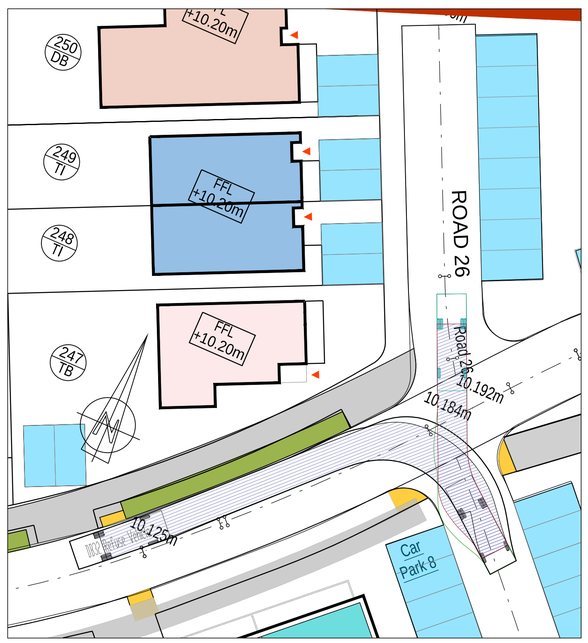
● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT











- 146 Autotrack Sweep Analysis-Refuse Truck
SCALE 1:1000

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	May 2019	T.Finn

finn DESIGN PARTNERSHIP
CREATIVE ● INNOVATIVE
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DRAWING. NO: 148 REV. NO: A

eng

TITLE: Autotrack Sweep Path Analysis Refuse Trucks (Sheet 2 of 2)

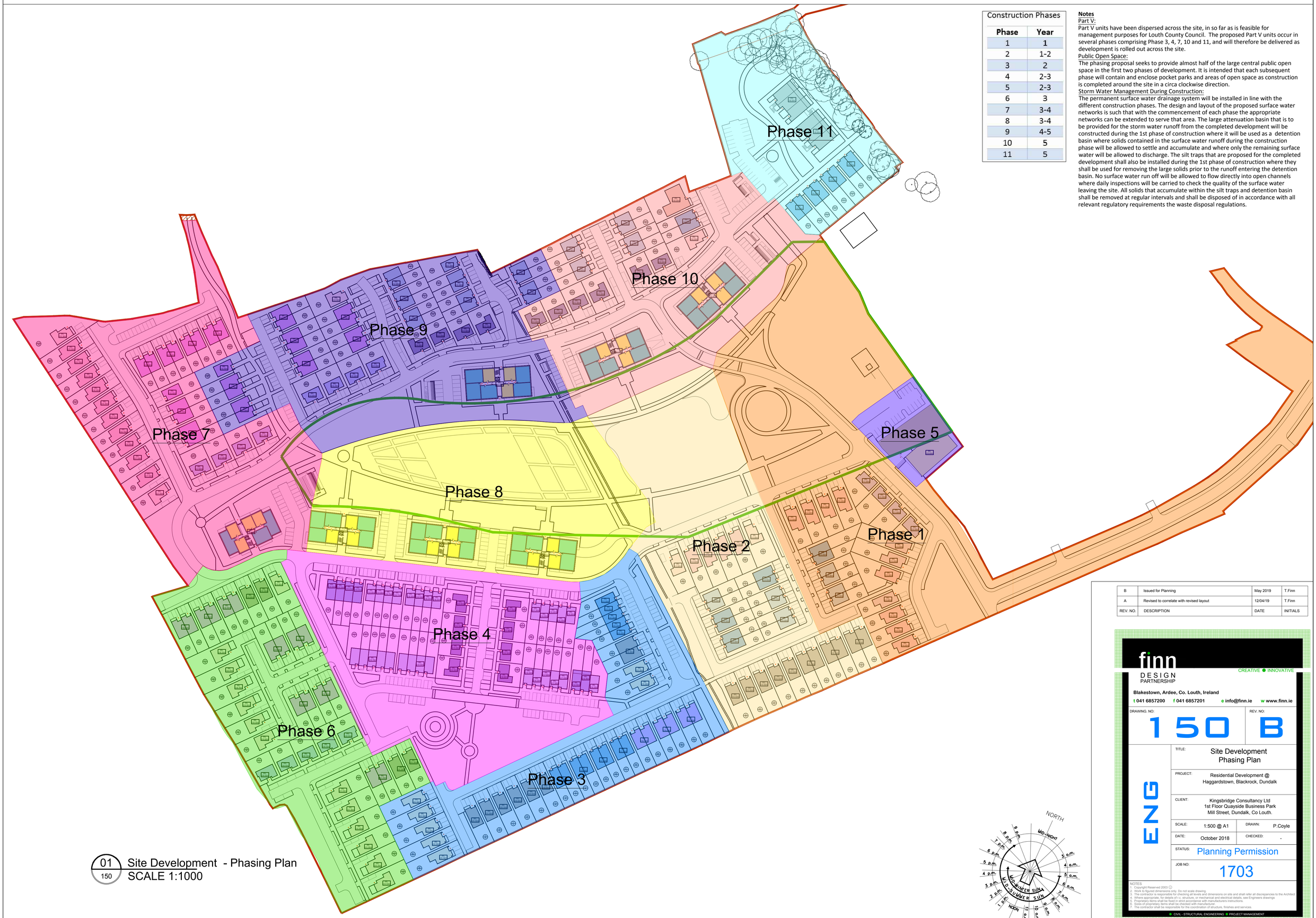
PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd 1st Floor Quayside Business Park Mill Street, Dundalk, Co Louth.

SCALE:	1:1000 @ A1	DRAWN:	P.Coyle
DATE:	November 2018	CHECKED:	-

STATUS: Planning Permission

JOB NO: 1703



Construction Phases	
Phase	**Year**
1	1
2	1-2
3	2
4	2-3
5	2-3
6	3
7	3-4
8	3-4
9	4-5
10	5
11	5

Notes

Part V:

Part V units have been dispersed across the site, in so far as is feasible for management purposes for Louth County Council. The proposed Part V units occur in several phases comprising Phase 3, 4, 7, 10 and 11, and will therefore be delivered as development is rolled out across the site.

Public Open Space:

The phasing proposal seeks to provide almost half of the large central public open space in the first two phases of development. It is intended that each subsequent phase will contain and enclose pocket parks and areas of open space as construction is completed around the site in a circa clockwise direction.

Storm Water Management During Construction:

The permanent surface water drainage system will be installed in line with the different construction phases. The design and layout of the proposed surface water networks is such that with the commencement of each phase the appropriate networks can be extended to serve that area. The large attenuation basin that is to be provided for the storm water runoff from the completed development will be constructed during the 1st phase of construction where it will be used as a detention basin where solids contained in the surface water runoff during the construction phase will be allowed to settle and accumulate and where only the remaining surface water will be allowed to discharge. The silt traps that are proposed for the completed development shall also be installed during the 1st phase of construction where they shall be used for removing the large solids prior to the runoff entering the detention basin. No surface water run off will be allowed to flow directly into open channels where daily inspections will be carried to check the quality of the surface water leaving the site. All solids that accumulate within the silt traps and detention basin shall be removed at regular intervals and shall be disposed of in accordance with all relevant regulatory requirements the waste disposal regulations.

01 / 150 Site Development - Phasing Plan
SCALE 1:1000

REV. NO.	DESCRIPTION	DATE	INITIALS
B	Issued for Planning	May 2019	T.Finn
A	Revised to correlate with revised layout	12/04/19	T.Finn

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DRAWING. NO: 150 REV. NO: B

ENG

TITLE: Site Development Phasing Plan

PROJECT: Residential Development @ Haggardstown, Blackrock, Dundalk

CLIENT: Kingsbridge Consultancy Ltd, 1st Floor Quayside Business Park, Mill Street, Dundalk, Co Louth.

SCALE: 1:500 @ A1 DRAWN: P.Coyle

DATE: October 2018 CHECKED: -

STATUS: Planning Permission

JOB NO: 1703

NOTES
1. Copyright Reserved 2003 ©
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
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Existing open channel culvert. Discharge location for attenuated flows (greenfield runoff) from proposed development

Ex Overhead Line C

Ex Overhead Line A

Ex Overhead Line B

Existing Open Channel/Dry Ditch
Within Wetland Area

NORTH

MID-NIGHT
MID-WINTER SUN
MID-SUMMER SUN
NOON

LEGEND

- Overhead ESB 10Kv/20Kv Power Lines.
- Overhead ESB 400V/230V Power Lines,
- Underground ESB Cable Ducting
- Bord Gais Medium Pressure Mains
- Bord Gais Low Pressure Service
- Overhead Eir Line
- Underground Eir Cable Ducting
- Public Watermain
- OPen Channel/Wetland Area
- Existing Dry Open Ditch
- Existing Storm Drainage Pipeline

Notes

1. Existing Overhead ESB 10Kv/20Kv Power Lines (A, B & C) shall be placed underground along new service roadways and open spaces as part of the proposed development. Layout and design of new infrastructure shall be in accordance with ESB design.
2. Refer to drawing 1703-ENG-100 Rev A for details of road construction through Wetland Area.

REV. NO.	DESCRIPTION	DATE	INITIALS
A	Issued for Planning	24th May 2019	T.Finn

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DRAWING. NO: 151
REV. NO: A

ENG

TITLE: Existing Watercourses & Utilities Layout Plan

PROJECT: Residential Development @ Haggardstown, Blackrock, Co Louth

CLIENT: Kingsbridge Consultancy Ltd
1st Floor, Block 1, Quayside Business Park, Mill Street, Dundalk, Co. Louth;

SCALE: 1:500 @ A1
DRAWN: PC
DATE: April 2019
CHECKED: -
STATUS: Planning Permission
JOB NO: 1703

● CIVIL - STRUCTURAL ENGINEERING ● PROJECT MANAGEMENT