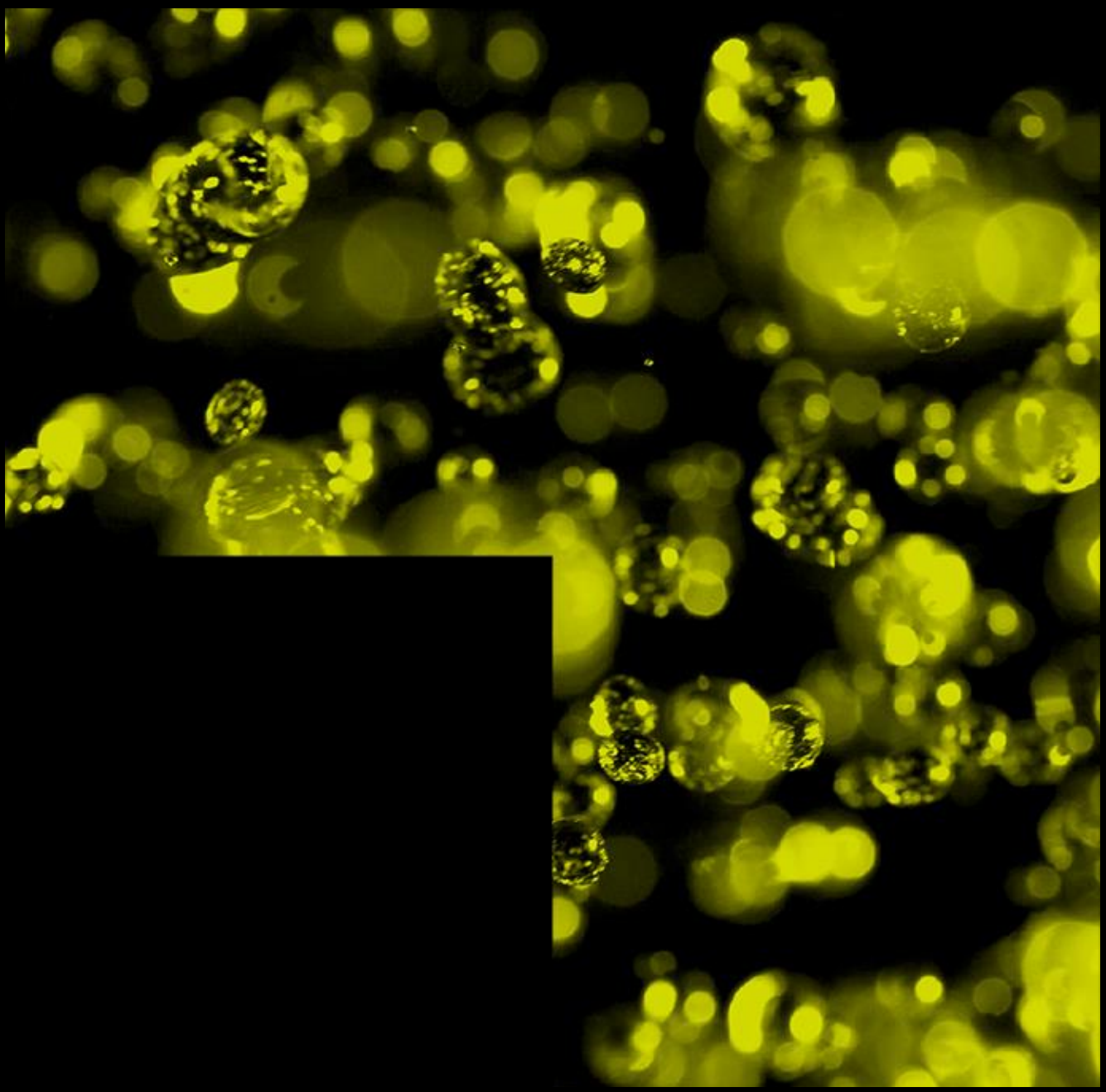
DONEGAL STUD
STAGE 11D/12

Stormwater - Minimum Floor Levels Report

Hugh Green Limited



DOCUMENT CONTROL RECORD

CLIENT	Hugh Green Limited
PROJECT	Donegal Stud Stage 11D/12
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DOCUMENT	Stormwater Report – Minimum Floor Levels

ISSUE AND REVISION RECORD

DATE OF ISSUE	11 August 2020
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ORIGINATOR	Shane Kelly – Team Leader
APPROVED FOR ISSUE	Shane Kelly – Team Leader

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CONTENTS

1.0 INTRODUCTION

This Stormwater Report has been prepared to fulfil the requirements of the Auckland Council Conditions of Consent 20 & 56 – Minimum Floor Levels (BUN60344688).

The purpose of the report is to satisfy the requirements set out under Condition 20 & 56 as follows:

a) The 1% AEP flood level for the site and the surrounding road reserves;

b) A layout plan of the overland flow paths for the site and the adjacent land along the boundary in accordance with the approved EPA before Section 223 approval;

c) The overland flow path plan shall include as built cross sections of all roads including the ponding areas with levels before overtopping;

d) As built longitudinal plan and cross sections for shall be provided for overland flow path locations;

e) The minimum floor level of all habitable buildings must be at least 150mm for flows below 2m³ per second and 100 mm deep and where flows exceed this, the minimum floor level of habitable buildings must be increased to at least 500mm. This may be enforced through a consent notice on the property unless the building consents have already been issued;

f) No buildings, structures or other obstructions are to be erected in the overland flow paths without prior written permission from the Council; and

g) Where either existing or proposed overland flow paths cross lot boundaries, the consent holder is to provide the Council with plans to accompany easement(s) to be registered in favour of the Council. Any easement documentation is to be prepared by the consent holder's lawyers to the satisfaction of the Council's solicitors. All costs are to be at the consent holder's expense. The terms of these easements must prevent buildings, structures or other obstructions being erected in the overland flow path, and must require the landowner to maintain, weed and clean the overland flow paths to ensure an unobstructed flow of stormwater.

2.0
RESPONSE TO REQUIREMENTS

2.1 IDENTIFICATION OF 1% AEP FLOOD LEVEL

1% AEP – Road Flows

The secondary flows, up to and including the 1% AEP storm event, are contained within the road (i.e. kerb to kerb), as shown in Overland Flow Path As-built plans and cross section Drawing AB455-457, AB 465-469 in Appendix 1 & 2 for Roads 1, 2, 5, 11, 13 & 14 and JOALs.

1% AEP – Flows outside the Road Reserve

There are two low deliberate low points on Road 1 and another on Road 2 where in a 1% AEP flood event, road flows may overspill the kerb on to the berm and are directed into the stormwater swales in the drainage reserves Lot 406 & 407 as shown in as-built drawing AB465-AB469 in Appendix 1. Road 2's flows will tip the kerb and flow into drainage reserve Lot 408. The flows from JOAL 2 Lot 201 will flow into Lot 6 where a shaped channel will run along the boundary and discharge into the drainage reserve Lot 403.

In a 1% AEP event of flooding over a 24-hour period, there are three locations where overland flows potentially overspill the kerb and discharge to the stream outside of the road reserve. The 1% AEP flood level at these discharge points is generated by cumulative overland flows from upstream future development catchments.

The OLFP overspill locations are shown in Appendix 4: 'Stage 11D & 12 Minimum Floor Level Asbuilt Plan'. The overland flows within the adjacent streams are contained within the stream banks. Adjacent finished floor levels (FFLs) are greater than 0.15m above the flood overtop level.

2.2 OLFP LAYOUT PLAN

A layout plan of the asbuilt OLFPs for this site and adjacent land along the boundary can be seen in As-built Drawing AB465–469 in Appendix 1.

2.3 AS-BUILT CROSS SECTIONS

The As-built cross-sections of all roads and swales in adjacent property including the ponding areas with levels before overtopping, depth, width, and velocity of flow can be seen in As-built Drawings AB455-457 in Appendix 2.

2.4 IDENTIFICATION OF PRIVATE OLFP

During the 1% AEP storm event, the overland flow along the road reserve does not overtop the kerb onto pavements or private property except for the overland flow from JOAL 2 and adjacent lots. As a result, there is an easement for private OLFP generated on lot 6 and the JOAL in favour of the 9 properties that jointly own the accessway. This is reflected in the 223 Land Transfer Survey plan submitted with this application.

2.5 MINIMUM FLOOR LEVELS

Where flows exceed 2m3/s, the minimum floor level of any habitable buildings must be 500mm above the 1% AEP flood level to comply with Chapter 4 of the Code of Practice for Land Development and Subdivision 2015. Overland flows generated from this subdivision are less than 2m3/s, so 150mm freeboard must be provided as a minimum.

In this residential subdivision there are 9 private lots (Lots 6, 7, 17, 18, 26, 32, 71, 39 & 40) that require minimum floor levels specified due to the 1% AEP flood event overtopping the kerb at Roads 1, 2 and JOAL 2 and discharging into reserve area, as shown Minimum Floor Level plans in Appendix 4.

2.6 OBSTRUCTIONS IN OLFP

In this residential subdivision the overland flow is directed through the road reserve and overtops the kerb into reserve area from Roads 1 and 2 and through Lot 6. No buildings, structures or other obstructions can be erected in these areas without written permission from Auckland Council.

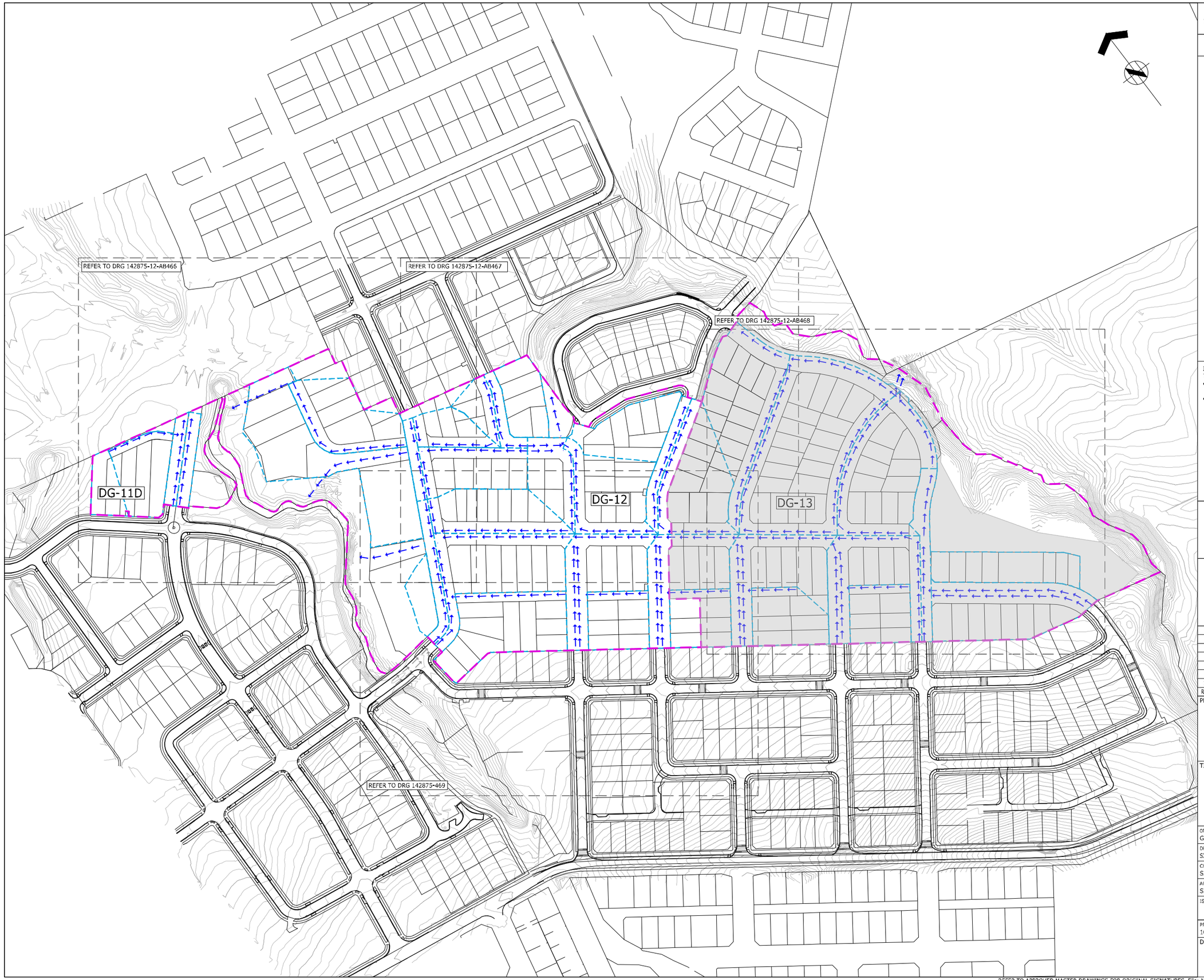
3.0 SUMMARY

This stormwater report for Minimum Floor Levels was prepared to satisfy Auckland Council Resource Consent (BUN60344688) specifically conditions 20 & 56. This report addresses how these conditions are met on the Donegal Stud Stage 11D & 12 residential subdivision.

The 1% AEP flood event is mostly contained within the road reserve, except for where it overtops the kerb and discharges to Council reserve areas at 3 locations and one more through a private lot. The overall layout plan in Appendix 1 and cross-sections in Appendix 2 show both the flow and depths of the overland flow through the road and swale sections. Appendix 3 is the calculations done for the overland flows. Appendix 4 specifies the minimum floor levels for the 9 lots potentially affected by overland flow overtopping the kerb. There is one private overland flow path that runs through lot 6 in favour of the 9 owners of the jointly owned accessway lot 201.

APPENDICES

APPENDIX 1
OVERLAND FLOW PATH & 1% AEP ASBUILT PLANS



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NOTES

1. REFER TO OVERLAND FLOW PATH ASBUILT CROSS SECTION DRAWINGS 142875-12-455 TO 457 FOR FLOWS AND VELOCITIES.

LEGEND

- CATCHMENT BOUNDARIES
- OVERLAND FLOWPATHS
- STAGE BOUNDARIES

ENGINEERING APPROVAL
EPA 60349136

I CERTIFY THAT THESE ASBUILT PLANS ARE AN ACCURATE RECORD OF THE WORKS UNDERTAKEN AND THAT:

- THE COORDINATES (X,Y) ARE IN TERMS OF NZTM ON NZGD (2000), AND ARE WITHIN ±50mm.
- THE LEVELS (Z) ARE IN TERMS OF THE AUCKLAND 1946 (MSL) LINZ DATUM (DOSLI DATUM), AND ARE WITHIN ±10mm.

Signed: .....
CHARTERED PROFESSIONAL ENGINEER

Date: ...08/09/2020.....

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Phone: 09-917-5000

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REF	REVISIONS	BY	DATE
1	ASBUILT	SXK	01.09.20

PROJECT:

HUGH GREEN LIMITED
DONEGAL STAGE 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

100 YEAR OVERLAND FLOWPATH
OVERALL ASBUILT PLAN

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
DRAWN: SXK	DATE: 01.09.20	SIGNED:	PLOT DATE: 09.09.20
CHECKED: SXK	DATE: 01.09.20	SIGNED:	SURVEY BY:
APPROVED: SXK	DATE: 01.09.20	SIGNED:	SURVEY DATE:

ISSUE STATUS: ASBUILT

PROJECT No: 1050-142875-01	SCALES: 1:1500-A1 1:3000-A3	A1
DRAWING No: 142875-12-AB465		REV 1

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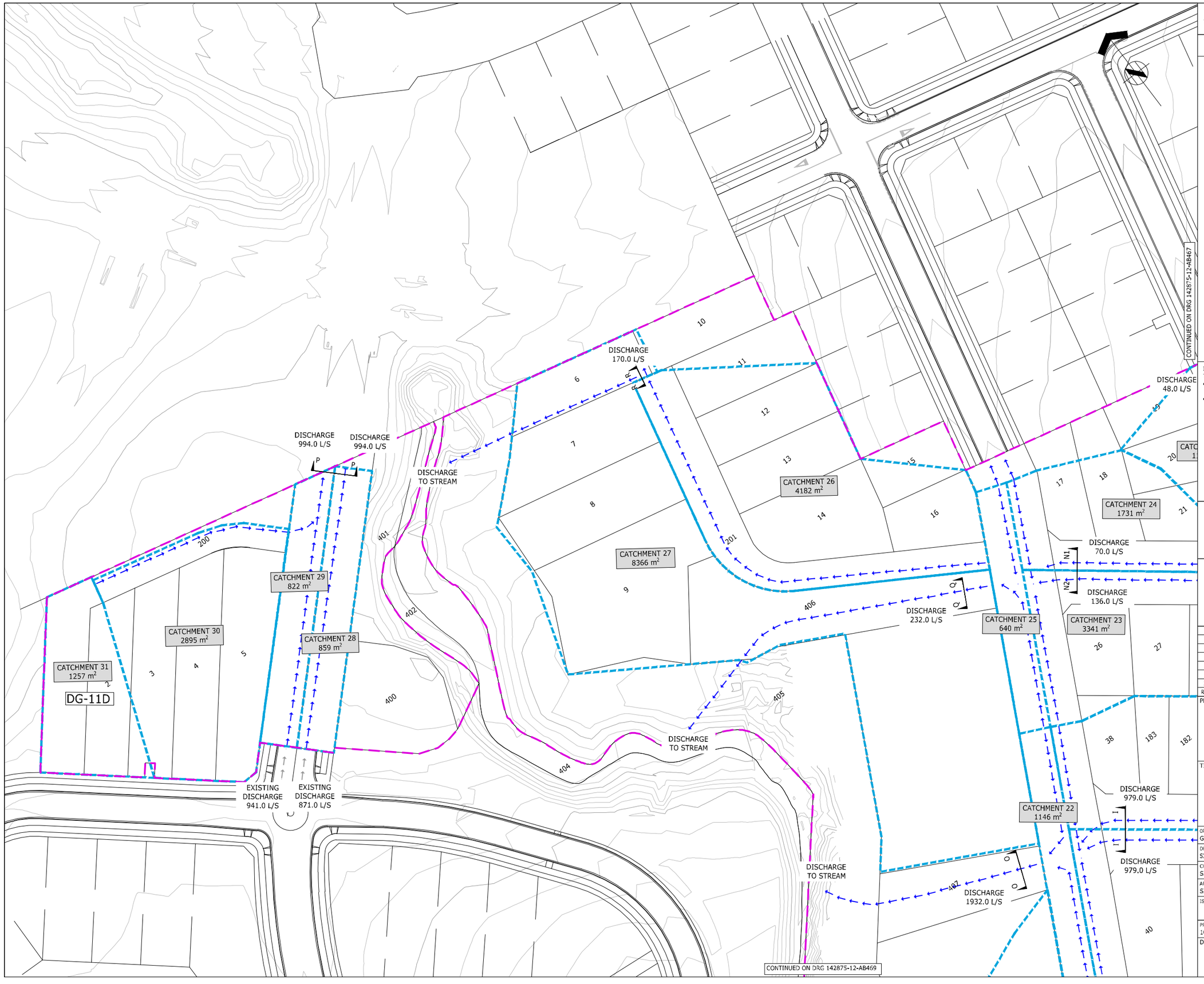

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HUGH GREEN LIMITED
DONEGAL STAGE 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

100 YEAR OVERLAND FLOWPATH
ASBUILT PLAN
SHEET 1 OF 4

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
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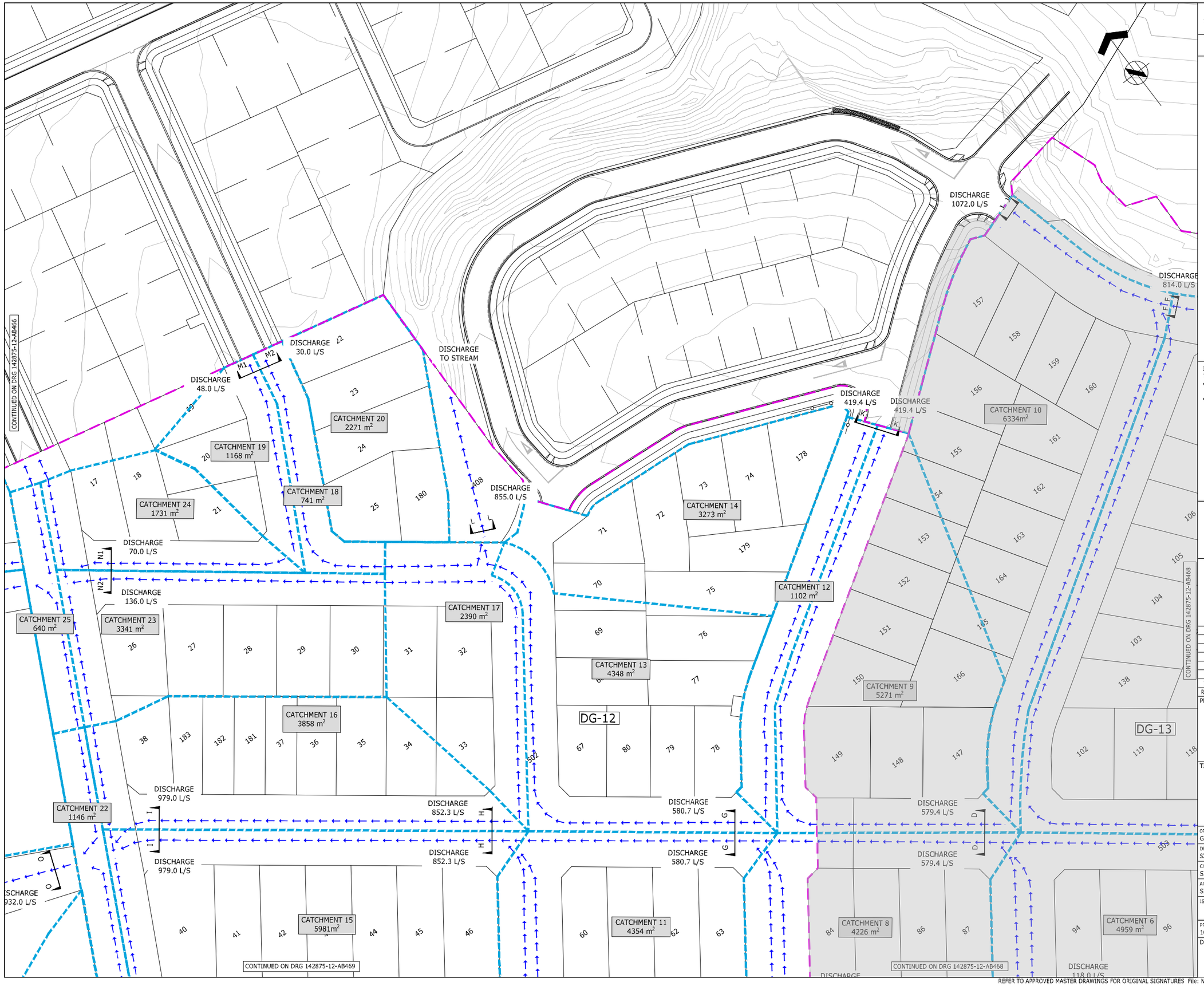

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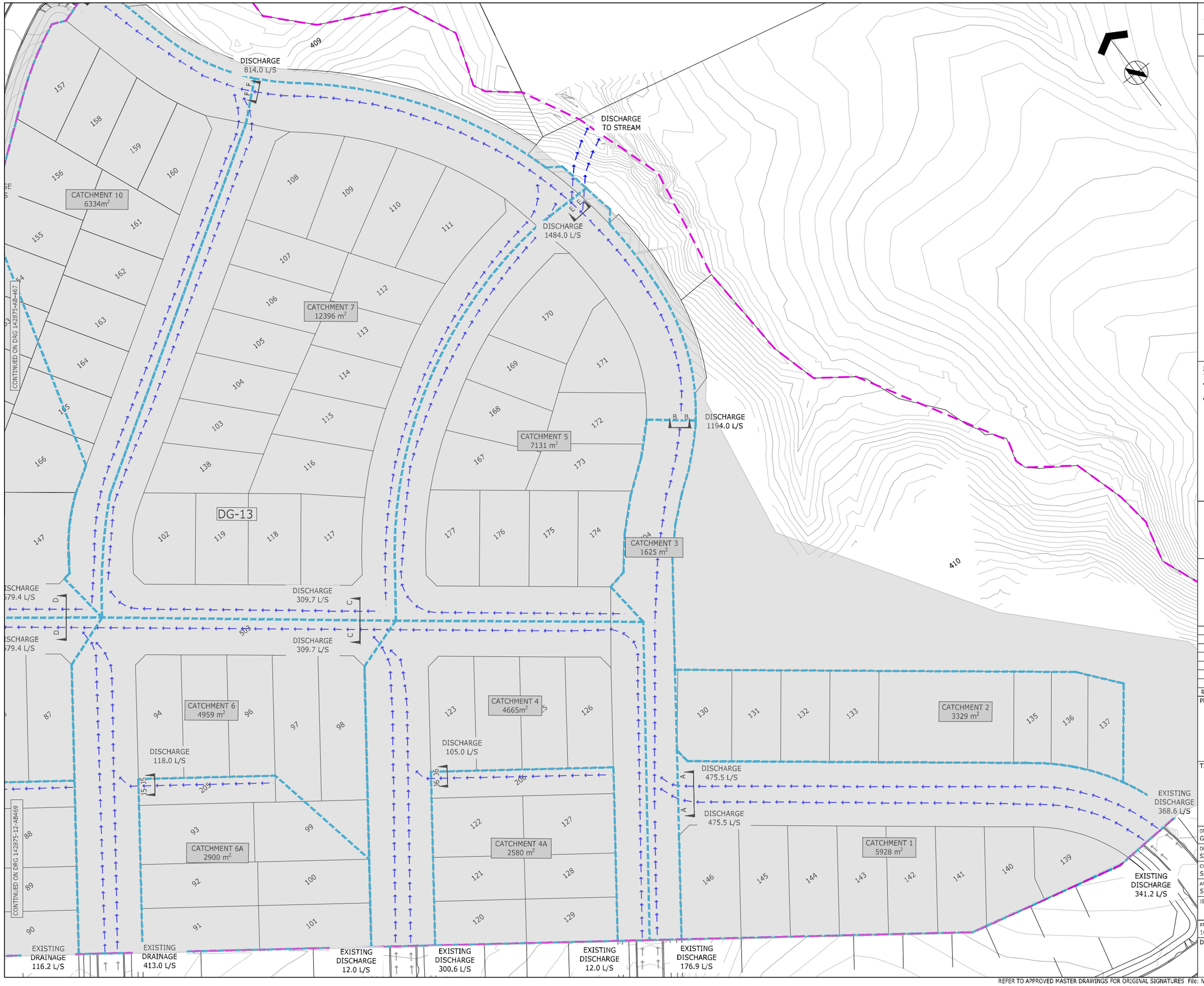

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1	ASBUILT	SXK	01.09.20

PROJECT:

HUGH GREEN LIMITED
DONEGAL STAGE 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

100 YEAR OVERLAND FLOWPATH
ASBUILT PLAN
SHEET 3 OF 4

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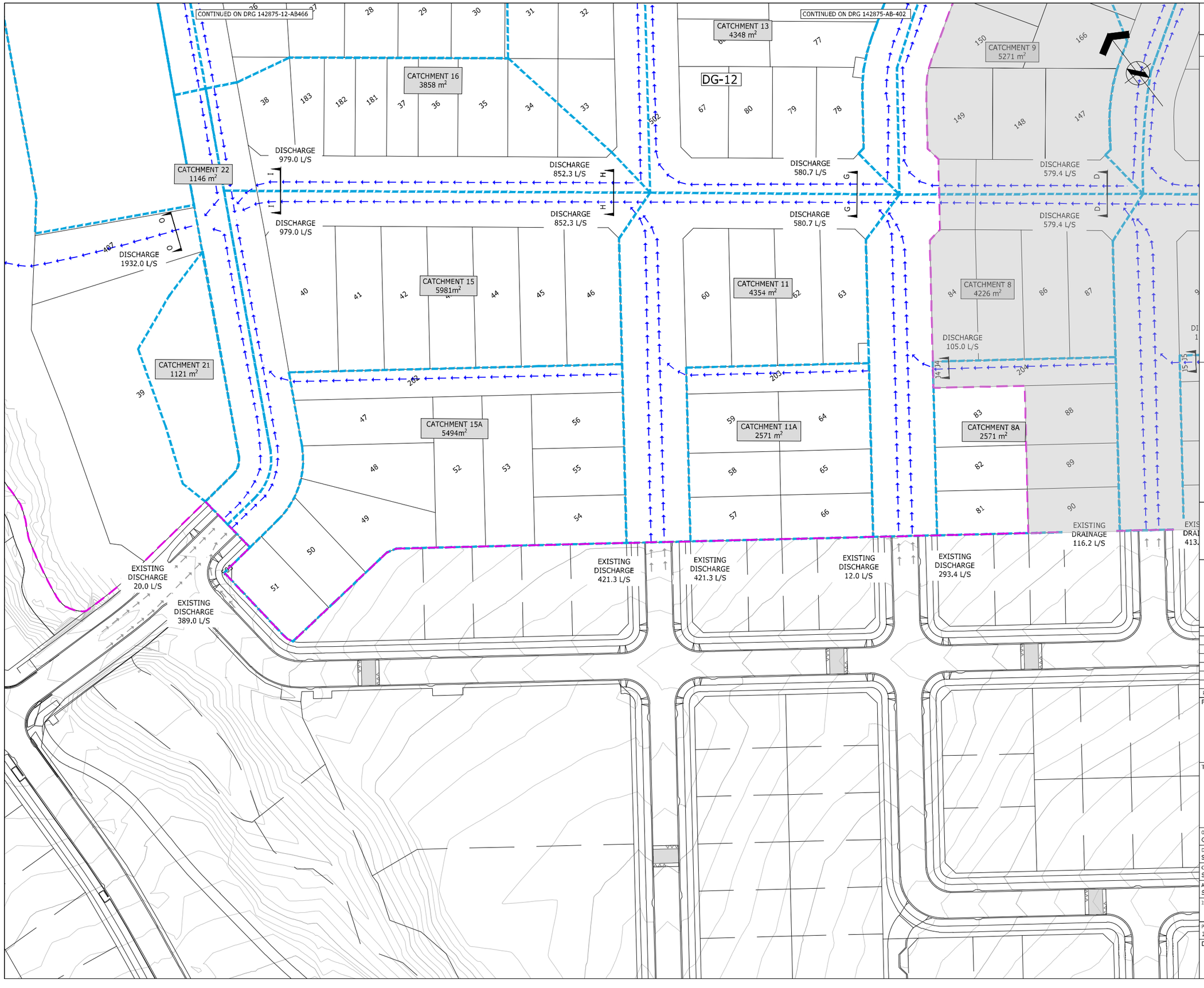

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HUGH GREEN LIMITED
DONEGAL STAGE 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

100 YEAR OVERLAND FLOWPATH
ASBUILT PLAN
SHEET 4 OF 4

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
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PROJECT No: 1050-142875-01	SCALES: 1:500-A1 1:1000-A3	A1
DRAWING No: 142875-12-AB469		REV 1

APPENDIX 2
OVERLAND FLOW ASBUILT CROSS SECTIONS

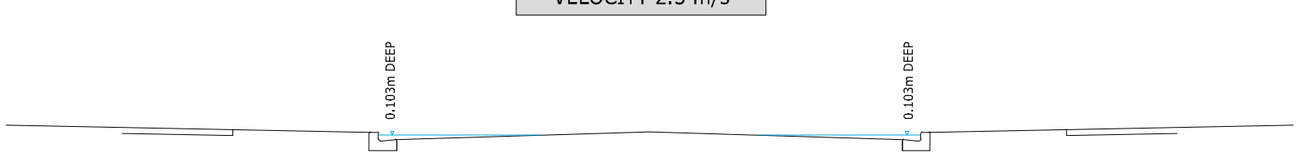
FLOW 1161 L/s
VELOCITY 2.1 m/s

G / 467 OLFP CROSS SECTION G
SCALE 1:50 -A1
1:100 -A3

FLOW 1705 L/s
VELOCITY 2.4 m/s

H / 467 OLFP CROSS SECTION H
SCALE 1:50 -A1
1:100 -A3

FLOW 1865 L/s
VELOCITY 2.5 m/s



I / 467 OLFP CROSS SECTION I
SCALE 1:50 -A1
1:100 -A3

FLOW 839 L/s
VELOCITY 1.9 m/s

K / 467 OLFP CROSS SECTION K
SCALE 1:50 -A1
1:100 -A3

ASSOCIATION OF CONSULTING ENGINEERS NEW ZEALAND

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NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946

   ORIGIN OF LEVELS
   SS 66 SO 48643
   RL 54.50

2. CATCHMENT AREAS AND DISCHARGE FLOWS INCORPORATE FUTURE OVERLAND FLOWPATH GENERATION FROM UPSTREAM DEVELOPMENT.

3. ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

LEGEND

OVERLAND FLOWPATH LEVEL IN 1% AEP STORM EVENT

ENGINEERING APPROVAL
EPA 60349136

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PROJECT:

HUGH GREEN LIMITED
DONEGAL 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

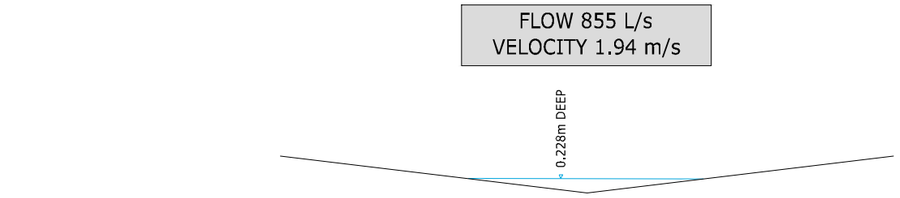
OVERLAND FLOW PATH
ASBUILT CROSS SECTIONS
1 OF 3

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
DRAWN: SXK	DATE: 08.09.20	SIGNED:	PLOT DATE: 09.09.20
CHECKED: SXK	DATE: 08.09.20	SIGNED:	SURVEY BY: DW
APPROVED: SXK	DATE: 08.09.20	SIGNED:	SURVEY DATE: 01.08.20

ISSUE STATUS: ASBUILT

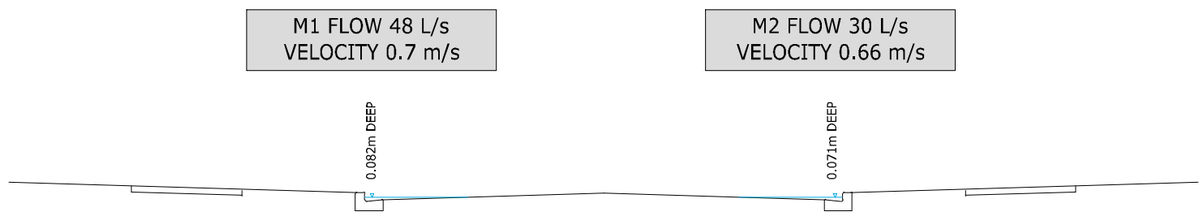
PROJECT No:	SCALES:	
1050-142875-01	AS SHOWN	A1

DRAWING No: 142875-12-AB455 REV 1



L / 467 OLFP CROSS SECTION L

SCALE 1:50 -A1
1:100 -A3



M1-M2 / 467 OLFP CROSS SECTION M1 - M2

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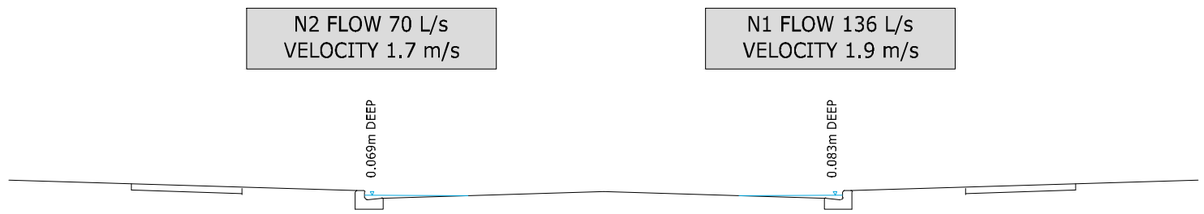

N2-N1 / 467 OLFP CROSS SECTION N2-N1

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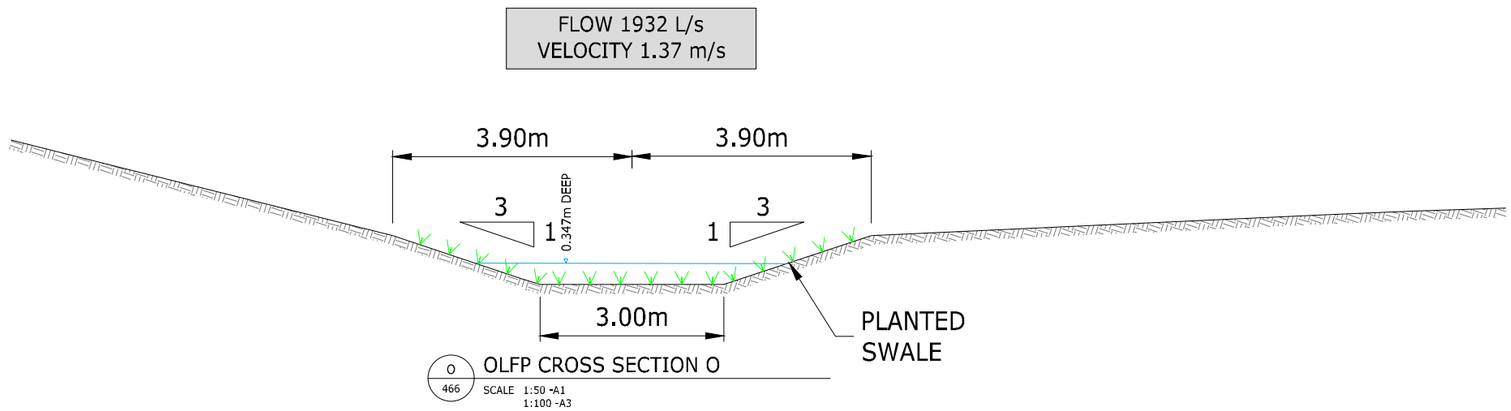

O / 466 OLFP CROSS SECTION O

SCALE 1:50 -A1
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NOTES:

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946

   ORIGIN OF LEVELS
   SS 66 SO 48643
   RL 54.50

2. CATCHMENT AREAS AND DISCHARGE FLOWS INCORPORATE FUTURE OVERLAND FLOWPATH GENERATION FROM UPSTREAM DEVELOPMENT.

3. ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

LEGEND

OVERLAND FLOWPATH LEVEL IN 1% AEP STORM EVENT

ENGINEERING APPROVAL
EPA 60349136

I CERTIFY THAT THESE ASBUILT PLANS ARE AN ACCURATE RECORD OF THE WORKS UNDERTAKEN AND THAT:

- THE COORDINATES (X,Y) ARE IN TERMS OF NZTM ON NZGD (2000), AND ARE WITHIN ±50mm.
- THE LEVELS (Z) ARE IN TERMS OF THE AUCKLAND 1946 (MSL) LINZ DATUM (DOSLI DATUM), AND ARE WITHIN ±10mm.

Signed: .....
CHARTERED PROFESSIONAL ENGINEER

Date: ...08/09/2020.....

Name: SHANE KELLY

Phone: 09-917-5000

Email: s.kelly@harrisongrierson.com

HUGH GREEN GROUP

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REF	REVISIONS	BY	DATE
1	ASBUILT	SXK	08.09.20

PROJECT:

HUGH GREEN LIMITED
DONEGAL 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

OVERLAND FLOW PATH
ASBUILT CROSS SECTIONS
2 OF 3

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
DRAWN: SXK	DATE: 08.09.20	SIGNED:	PLOT DATE: 09.09.20
CHECKED: SXK	DATE: 08.09.20	SIGNED:	SURVEY BY: DW
APPROVED: SXK	DATE: 08.09.20	SIGNED:	SURVEY DATE: 01.08.20

ISSUE STATUS: ASBUILT

PROJECT No: 1050-142875-01	SCALES: AS SHOWN	A1

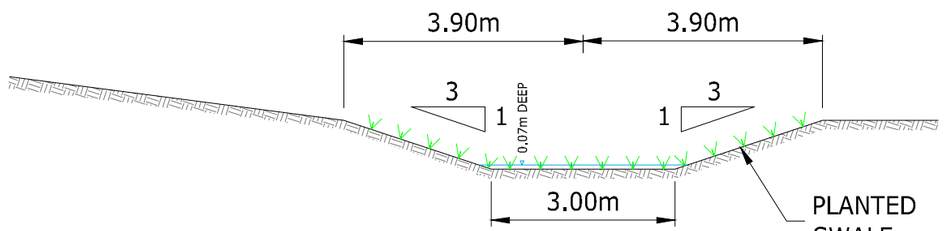
DRAWING No: 142875-12-AB456 REV 1

REFER TO APPROVED MASTER DRAWINGS FOR ORIGINAL SIGNATURES File: NEWMARKET N:\1050\142875_A\CAD\AS-BUILTS\142875-12-AB455-457.DWG

FLOW 1998 L/s
VELOCITY 1.7 m/s

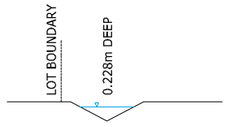
P 466 OLFP CROSS SECTION P
SCALE 1:50 -A1
1:100 -A3

FLOW 232 L/s
VELOCITY 1.03 m/s



Q 466 OLFP CROSS SECTION Q
SCALE 1:50 -A1
1:100 -A3

FLOW 170 L/s
VELOCITY 1.6 m/s



R 466 OLFP CROSS SECTION R
SCALE 1:50 -A1
1:100 -A3

ASSOCIATION OF CONSULTING ENGINEERS NEW ZEALAND

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   RL 54.50

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OVERLAND FLOWPATH LEVEL IN 1% AEP STORM EVENT

ENGINEERING APPROVAL
EPA 60349136

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REF	REVISIONS	BY	DATE
1	ASBUILT	SXK	08.09.20

PROJECT:

HUGH GREEN LIMITED
DONEGAL 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

OVERLAND FLOW PATH
ASBUILT CROSS SECTIONS
3 OF 3

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
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APPROVED: SXK	DATE: 08.09.20	SIGNED:	SURVEY DATE: 01.08.20

ISSUE STATUS: ASBUILT

PROJECT No: 1050-142875-01	SCALES: AS SHOWN	A1
DRAWING No: 142875-12-AB457		REV 1

APPENDIX 3
OVERLAND FLOW CALCULATIONS

36 Tir Conaill Ave - Donegal

HG PROJECT NUMBER: 1050-142875-01
DATE: 1/09/2020

Runoff Coefficient - **C**	0.8	
Rainfall Intensity (100year) - **I**	183	mm/hour
Catchment Area	12.69	ha

Q = CIA X 2.78/1000

CATCHMENT	AREA (ha)
1	0.5928
2	0.3329
3	0.1625
4	0.4665
4A (JOAL 6)	0.258
5	0.7131
6	0.4959
6A (JOAL 5)	0.29
7	1.2396
8	0.4226
8A (JOAL 4)	0.257
9	0.5271
10	0.6334
11	0.4354
11A (JOAL 3)	0.2571
12	0.1102
13	0.4348
14	0.2319
15	0.5981
15A (JOAL 1)	0.5494
16	0.3858
17	0.239
18	0.0741
19	0.1168
20	0.2271
21	0.1121
22	0.1146
23	0.3341
24	0.1731

CROSS SECTION	CATCHMENT	AREA (Ha)	Q (m^3/s)	EXISTING DISCHARGE	CUMALATIVE FLOW	Notes:
A	**1**	0.593	0.241	0.710	0.951	
B	1+**3**	0.163	0.066	0.177	1.194	
C	**4+4A**	0.725	0.295	0.325	0.619	
D	4+4A+**6+6A**	0.786	0.320	0.529	1.159	Includes only 1/2 of XS C-C
E	1+3+**5**	0.713	0.290		1.484	Discharge Point
F	**7**	1.240	0.505	0.310	0.814	
G	4+4A+6+6A+**8+8A**	0.680	0.277	0.305	1.161	Includes only 1/2 of XS D-D
H	4+4A+6+6A+8+8A+**11+11A**	0.693	0.282	0.842	1.705	Includes only 1/2 of XS G-G
I	4+4A+6+6A+8+8A+11+11A +**15+15A+16**	1.533	0.624	0.389	1.865	
J	7+**10**	0.633	0.258		1.072	
K	**9+12**	0.637	0.259		0.839	Includes 1/2 of XS D-D
L	**13+17**	0.674	0.274		0.855	Includes 1/2 of XS G-G
M1	**19**	0.117	0.048		0.048	
M2	**18**	0.074	0.030		0.030	
N1	**24**	0.173	0.070		0.070	
N2	**23**	0.334	0.136		0.136	
O	4+4A+6+6A+8+8A+11+11A +15+15A+16+**22**	0.115	0.047	0.020	1.932	Discharge Point
P	**28+29+30**	0.458	0.186	1.812	1.998	
Q	24+23+**25**	0.064	0.026		0.232	Discharge Point
R	**26**	0.418	0.170		0.170	

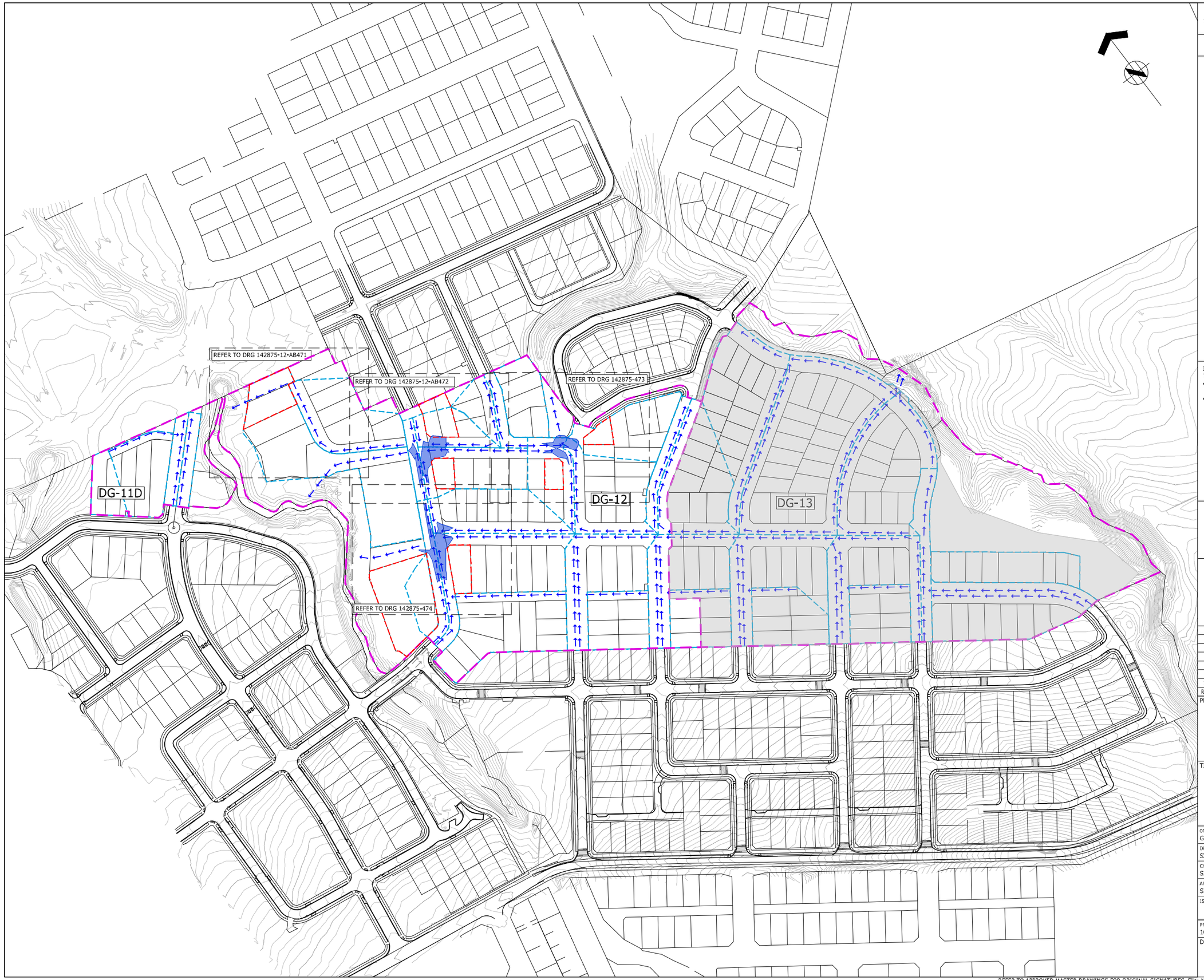
JOAL CROSS SECTIONS					
J1	**15A**	0.549	0.224		0.224
J2	**30**	0.290	0.118		0.118
J3	**11A**	0.257	0.105		0.105
J4	**8A**	0.257	0.105		0.105
J5	**6A**	0.290	0.118		0.118
J6	**4A**	0.258	0.105		0.105

25	0.064
26	0.4182
27	0.8366
28	0.0859
29	0.0822
30 (JOAL 2)	0.2895
31	0.1257

*OLF Path & Catchment plans refer to drawings:

142875-12-AB465
142875-12-AB466
142875-12-AB467
142875-12-AB468
142875-12-AB469

APPENDIX 4
MINIMUM FLOOR LEVEL ASBUILT PLANS



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   SS 66 SO 48643
   RL 54.50

2. COORDINATES ARE IN TERMS OF NZTM.

3. CATCHMENT AREAS AND DISCHARGE FLOWS INCORPORATE FUTURE OVERLAND FLOWPATH GENERATION FROM UPSTREAM DEVELOPMENT.

LEGEND

- EXTENT OF 1% AEP (24 HR) FOOD BEFORE OVERTOPPING KERB
- PRIVATE LOTS WITH MINIMUM FLOOR LEVEL REQUIREMENTS
- CATCHMENT BOUNDARIES
- OVERLAND FLOWPATHS

ENGINEERING APPROVAL
EPA 60349136

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Date: ...08/09/2020.....

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REF	REVISIONS	BY	DATE
1	ASBUILT	SXK	01.09.20

PROJECT:

HUGH GREEN LIMITED
DONEGAL STAGE 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

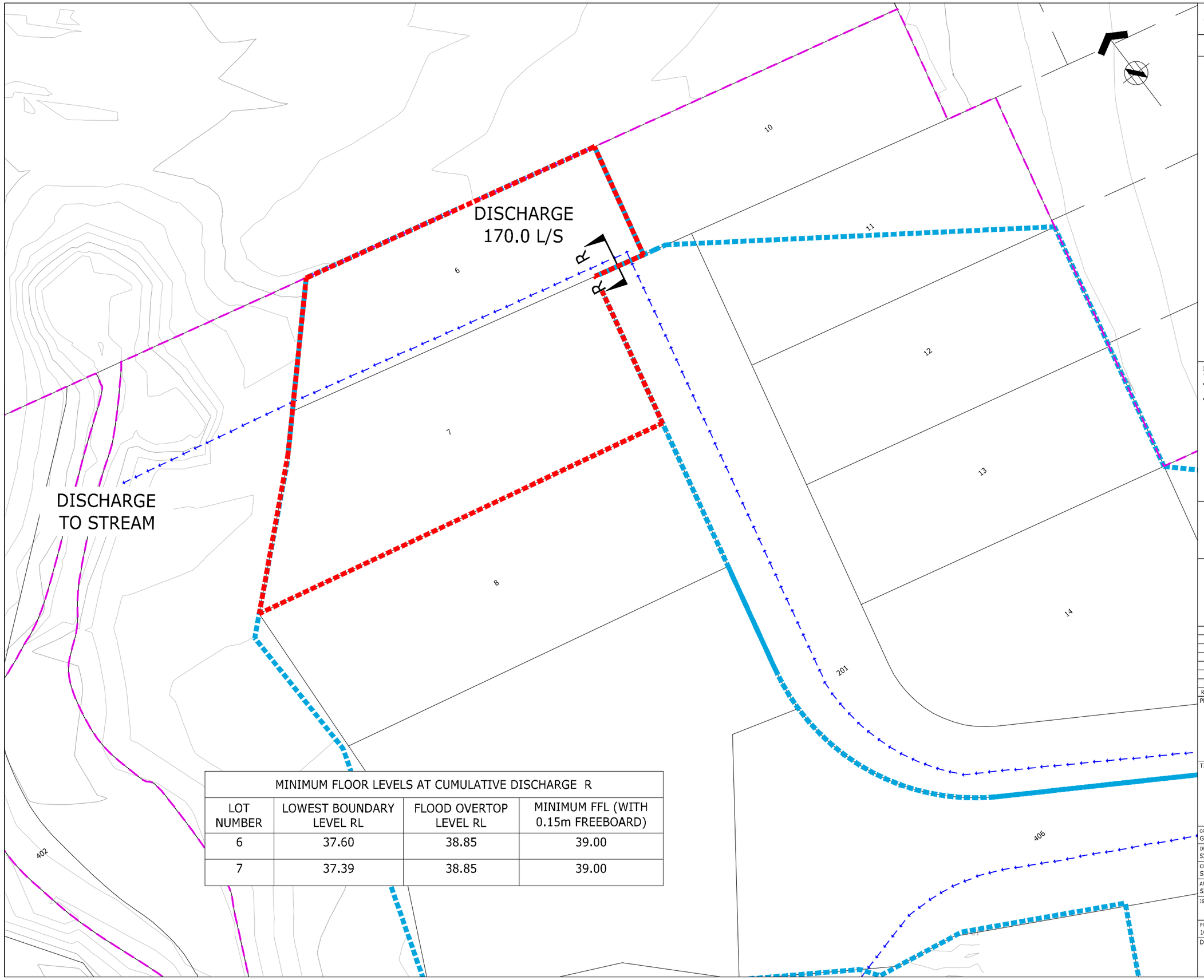
MINIMUM FLOOR LEVEL
OVERALL ASBUILT PLAN

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
DRAWN: SXK	DATE: 01.09.20	SIGNED:	PLOT DATE: 08.09.20
CHECKED: SXK	DATE: 01.09.20	SIGNED:	SURVEY BY: DW
APPROVED: SXK	DATE: 01.09.20	SIGNED:	SURVEY DATE: 01.08.20

ISSUE STATUS: ASBUILT

PROJECT No: 1050-142875-01	SCALES: 1:1500-A1 1:3000-A3	A1
DRAWING No: 142875-12-AB470		REV 1

REFER TO APPROVED MASTER DRAWINGS FOR ORIGINAL SIGNATURES File: NEWMARKET N:\1050\142875_A\CAD\AS-BUILTS\142875-12-AB470-473.DWG



MINIMUM FLOOR LEVELS AT CUMULATIVE DISCHARGE R			
LOT NUMBER	LOWEST BOUNDARY LEVEL RL	FLOOD OVERTOP LEVEL RL	MINIMUM FFL (WITH 0.15m FREEBOARD)
6	37.60	38.85	39.00
7	37.39	38.85	39.00

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   RL 54.50

2. COORDINATES ARE IN TERMS OF NZTM.

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- PRIVATE LOTS WITH MINIMUM FLOOR LEVEL REQUIREMENTS
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- OVERLAND FLOWPATHS

ENGINEERING APPROVAL
EPA 60349136

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Phone: 09-917-5000

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W www.harrisongrierson.com

REF	REVISIONS	BY	DATE
1	ASBUILT	SXK	01.09.20

PROJECT:

HUGH GREEN LIMITED
DONEGAL STAGE 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

MINIMUM FLOOR LEVEL
ASBUILT PLAN
SHEET 1 OF 4

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
DRAWN: SXK	DATE: 01.09.20	SIGNED:	PLOT DATE: 08.09.20
CHECKED: SXK	DATE: 01.09.20	SIGNED:	SURVEY BY: DW
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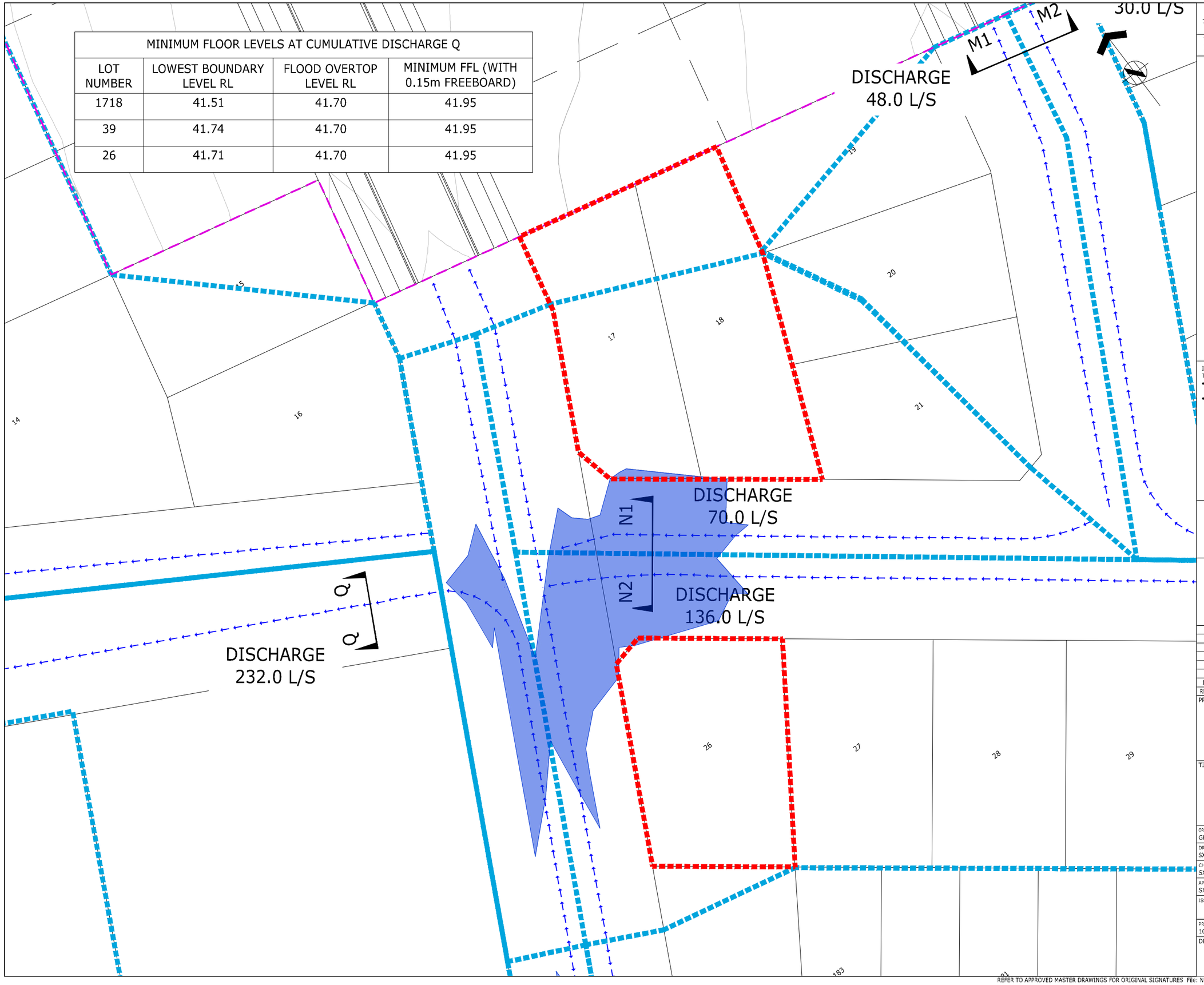
ISSUE STATUS: ASBUILT

PROJECT No: 1050-142875-01	SCALES: 1:200-A1 1:400-A3	A1
DRAWING No: 142875-12-AB471		REV 1

MINIMUM FLOOR LEVELS AT CUMULATIVE DISCHARGE Q			
LOT NUMBER	LOWEST BOUNDARY LEVEL RL	FLOOD OVERTOP LEVEL RL	MINIMUM FFL (WITH 0.15m FREEBOARD)
1718	41.51	41.70	41.95
39	41.74	41.70	41.95
26	41.71	41.70	41.95



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   SS 66 SO 48643
   RL 54.50

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LEGEND

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- OVERLAND FLOWPATHS

ENGINEERING APPROVAL
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1	ASBUILT	SXK	01.09.20

PROJECT:

HUGH GREEN LIMITED
DONEGAL STAGE 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

MINIMUM FLOOR LEVEL
ASBUILT PLAN
SHEET 2 OF 4

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
DRAWN: SXK	DATE: 01.09.20	SIGNED:	PLOT DATE: 08.09.20
CHECKED: SXK	DATE: 01.09.20	SIGNED:	SURVEY BY: DW
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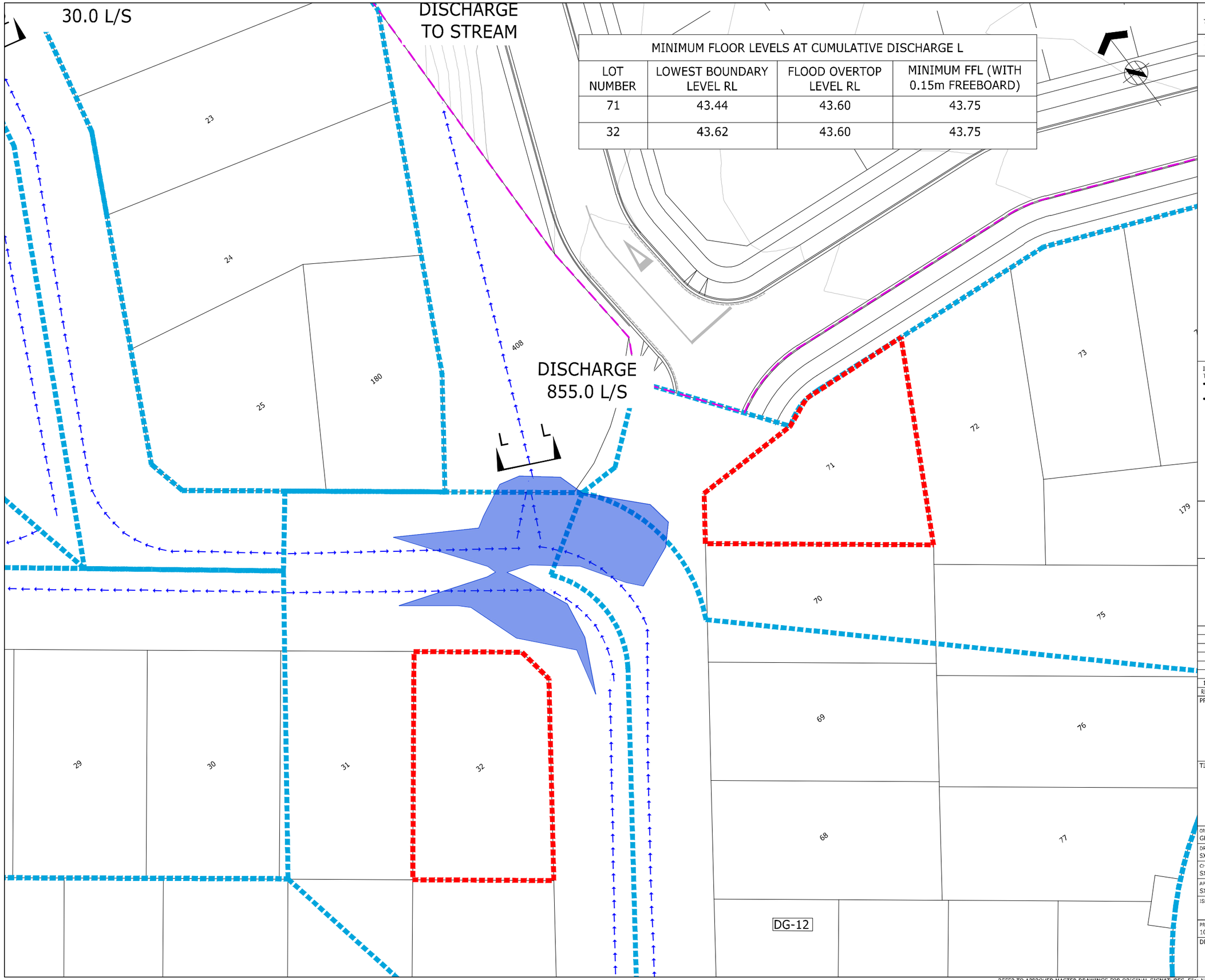
ISSUE STATUS: ASBUILT

PROJECT No: 1050-142875-01	SCALES: 1:200-A1 1:400-A3	A1
DRAWING No: 142875-12-AB472		REV 1



MINIMUM FLOOR LEVELS AT CUMULATIVE DISCHARGE L			
LOT NUMBER	LOWEST BOUNDARY LEVEL RL	FLOOD OVERTOP LEVEL RL	MINIMUM FFL (WITH 0.15m FREEBOARD)
71	43.44	43.60	43.75
32	43.62	43.60	43.75

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REF	REVISIONS	BY	DATE
1	ASBUILT	SXK	01.09.20

PROJECT:

HUGH GREEN LIMITED
DONEGAL STAGE 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

MINIMUM FLOOR LEVEL
ASBUILT PLAN
SHEET 3 OF 4

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
DRAWN: SXK	DATE: 01.09.20	SIGNED:	PLOT DATE: 08.09.20
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ISSUE STATUS: ASBUILT

PROJECT No: 1050-142875-01	SCALES: 1:200-A1 1:400-A3	A1
DRAWING No: 142875-12-AB473		REV 1

MINIMUM FLOOR LEVELS AT CUMULATIVE DISCHARGE O			
LOT NUMBER	LOWEST BOUNDARY LEVEL RL	FLOOD OVERTOP LEVEL RL	MINIMUM FFL (WITH 0.15m FREEBOARD)
40	41.4	41.55	41.70
39	41.6	41.55	41.70

DISCHARGE
979.0 L/S

DISCHARGE
979.0 L/S

DISCHARGE
1932.0 L/S

I

I

O

O

38 183 182 181 37 36

501

407

40 41 42 43

39

202

47

HARGE
TREAM

ASSOCIATION OF CONSULTING ENGINEERS NEW ZEALAND

ISO 9001 QUALITY ASSURED

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DONEGAL STAGE 11D/12
36 TIR CONAILL AVENUE, FLAT BUSH

TITLE:

MINIMUM FLOOR LEVEL
ASBUILT PLAN
SHEET 4 OF 4

ORIGINATOR: GKW	DATE: 04.2019	SIGNED:	PLOT BY: SXK
DRAWN: SXK	DATE: 01.09.20	SIGNED:	PLOT DATE: 08.09.20
CHECKED: SXK	DATE: 01.09.20	SIGNED:	SURVEY BY: DW
APPROVED: SXK	DATE: 01.09.20	SIGNED:	SURVEY DATE: 01.08.20

ISSUE STATUS: ASBUILT

PROJECT No: 1050-142875-01	SCALES: 1:200-A1 1:400-A3	A1
DRAWING No: 142875-12-AB474		REV 1