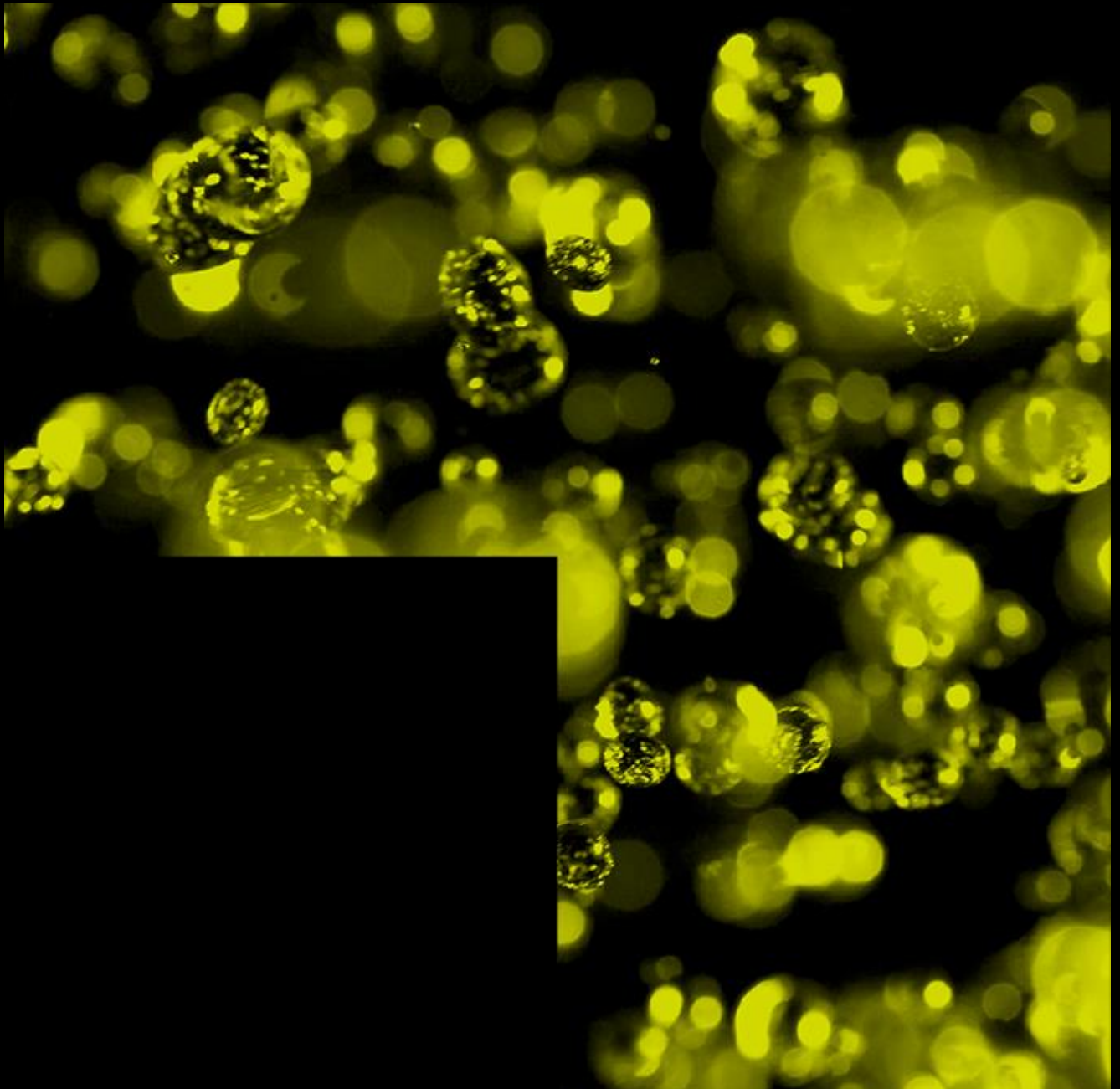


# DONEGAL GLEN STAGE 17 A&B

Stormwater

Minimum Floor Levels Report

Hugh Green Limited





# DOCUMENT CONTROL RECORD

<b>CLIENT</b>	Hugh Green Limited
<b>PROJECT</b>	Donegal Glen Stage 17 A&B
<b>HG PROJECT NO.</b>	1050-147692-01
<b>HG DOCUMENT NO.</b>	R001v1-147692-01-MFL-REV C
<b>DOCUMENT</b>	Stormwater Report – Minimum Floor Levels

# ISSUE AND REVISION RECORD

<b>DATE OF ISSUE</b>	6 April 2022
<b>STATUS</b>	Final



<b>ORIGINATOR</b>	Will Kirk – Graduate Civil Engineer
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<b>REVIEWED</b>	Daniel Scott – Technical Manager
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<b>APPROVED FOR ISSUE</b>	Daniel Scott – Technical Manager
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## 1.0 INTRODUCTION

The purpose of the report is to provide the following information:

- (i) The 1% AEP flood level for the site;
- (ii) A layout plan of the overland flow path for the site in accordance with the approved EPA for Section 223 approval;
- (iii) The overland flow path plan shall include as built cross section and long section, including the ponding areas with levels before overtopping;
- (iv) As built and cross sections are provided for overland flow path locations;
- (v) The minimum floor level of all habitable buildings must be at least 150mm for flows below 2m<sup>3</sup> per second and 100mm or more and extends from the building directly to a road or car park, other than a car park for a single dwelling, 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; and
- (vi) 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.

## **2.0 RESPONSE TO REQUIREMENTS**

### **2.1 IDENTIFICATION OF 1% AEP FLOOD LEVEL**

#### **1% AEP – Flows outside the Road Reserve**

Flows overtop the kerb at the low-point of Castlebane Drive. They then pool up over the berm and footpath until reaching a spillway which carries the water into the 6m wide easement between Lots 10 & 11. This is illustrated in as-built drawing 147692-17-AB455-Rev D

### **2.2 OLFP LAYOUT PLAN**

A layout plan of the as-built OLFP for this site can be seen in as-built drawing 147692-17-AB455-Rev C in Appendix 1.

### **2.3 AS-BUILT CROSS SECTIONS**

The as-built cross-section of the overland flowpath easement, showing levels, depth, width, and velocity of flow can be seen in as-built drawing 147692-17-AB455-Rev C in Appendix 1.

### **2.4 MINIMUM FLOOR LEVELS**

Where flows exceed 2 m<sup>3</sup>/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. Where flows are less than 2 m<sup>3</sup>/s, a minimum of 150mm freeboard must be provided.

In this subdivision, Lots 10 and 11 both require a Minimum Floor Level of 150mm freeboard, resulting in an Minimum Floor RL of 39.15m.

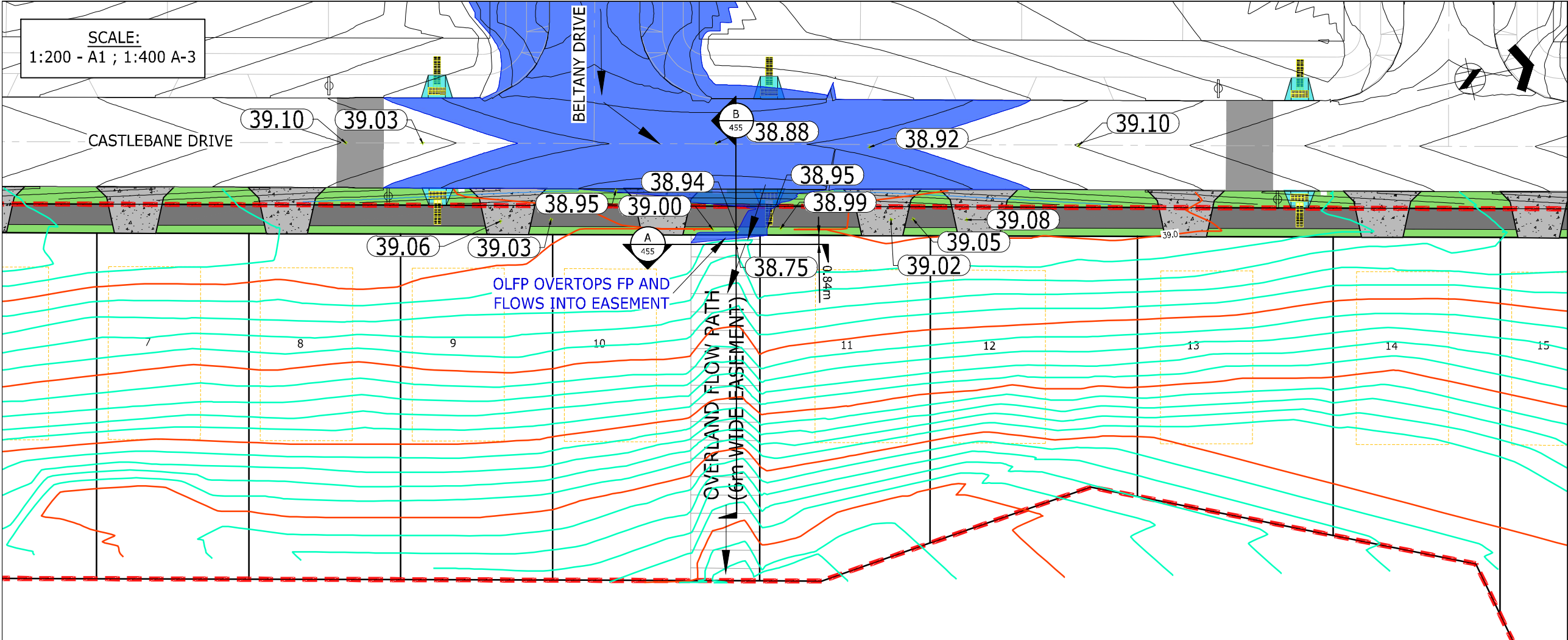


## APPENDICES



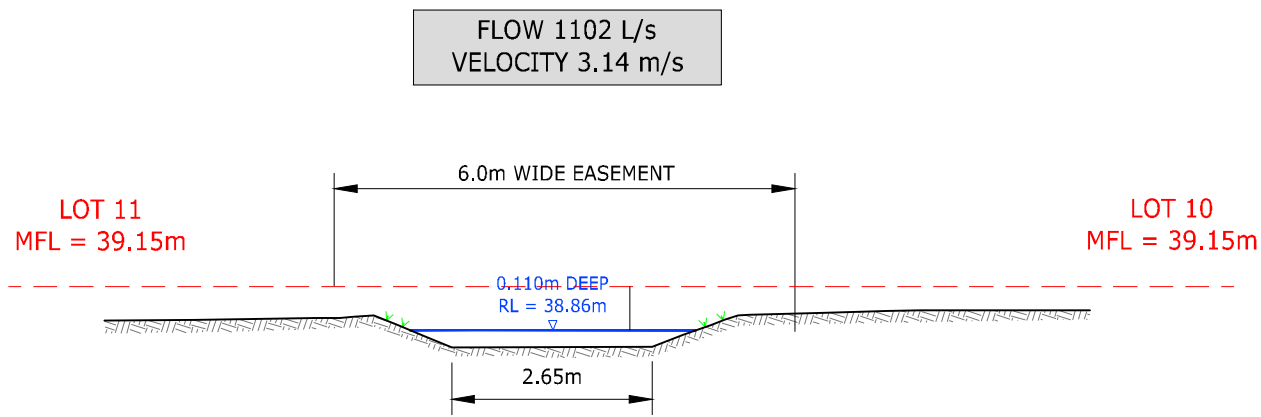
# **APPENDIX 1**

## **OVERLAND FLOWPATH AS-BUILT CROSS SECTION & PLAN**

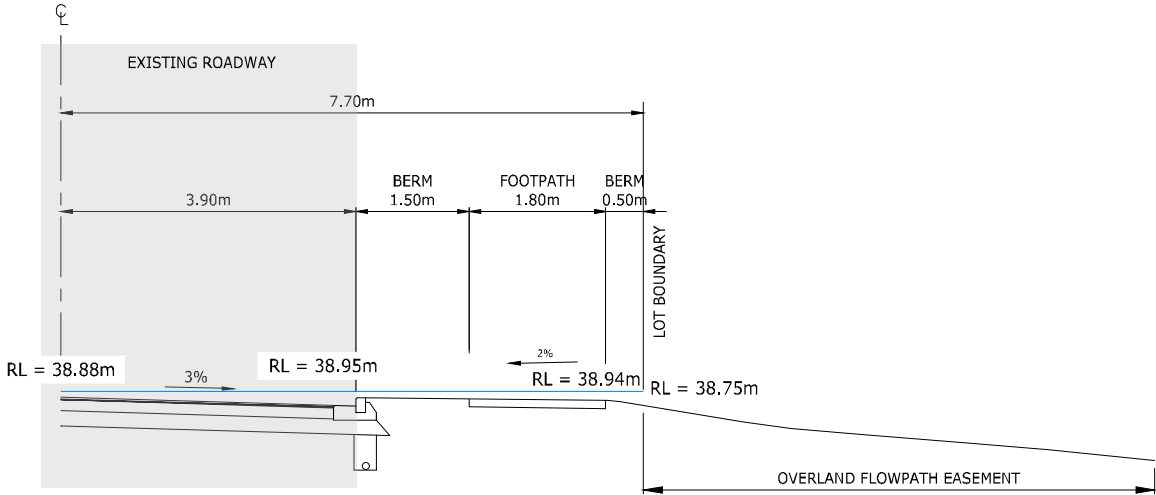


LEGEND

- OVERLAND FLOWPATH  
LEVEL IN 1% AEP  
STORM EVENT
- MINIMUM FLOOR LEVEL



**A** OLFP EASEMENT CROSS SECTION A  
455 SCALE 1:25 - A1  
1:50 - A3



**B** CASTLEBANE DRIVE + OLFP SWALE AS-BUILT LONG SECTION  
455 SCALE 1:75 - A1  
1:150 - A3

ASSOCIATION OF CONSULTING  
ENGINEERS NEW ZEALAND

ISO 9001  
QUALITY  
ASSURED

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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. MINIMUM FLOOR LEVEL IS CALCULATED AS 150mm  
ABOVE THE OLFP LEVEL, GIVEN THE FLOW IS LESS  
THAN 2 CUBIC METERS PER SECOND.  
  
4. OLFP LEVEL IS CALCULATED AS PER THE 1% AEP  
FLOOD MODELLING.

LEGEND  
  
--- STAGE BOUNDARY  
--- CONTOUR MAJOR  
--- CONTOUR MINOR AT 0.2m INTERVALS  
--- EXISTING CONTOURS  
OVERLAND FLOW

ENGINEERING APPROVAL  
ENG-60370829

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D	AS-BUILT	WKK	06.04.22
C	AS-BUILT	WKK	06.04.22
B	AS-BUILT	WKK	23.03.22
A	AS-BUILT	WKK	10.03.22
REF	REVISIONS	BY	DATE

PROJECT:  
  
HUGH GREEN LIMITED  
DONEGAL STAGE 17  
CASTLEBANE DRIVE, FLAT BUSH

TITLE:  
  
LOT 800 OVERLAND FLOW PATH  
AS-BUILT PLAN & CROSS SECTIONS

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
WKK	11.2021		WKK
DRAWN:	DATE:	SIGNED:	PLOT DATE:
WKK	10.03.22		06.04.22
CHECKED:	DATE:	SIGNED:	SURVEY BY:
DAS	10.03.22		DW
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
DAS	06.04.22		11.2021

ISSUE STATUS:  
  
AS-BUILT

PROJECT No:	SCALES:	AS SHOWN	A1
1050-147692-01			
DRAWING No:			REV
147692-17-AB455			D



## **APPENDIX 2**

# **OVERLAND FLOW CALCULATIONS**

# Channel Report

## DG17 - OLFP Easement

### Trapezoidal

Bottom Width (m)	=	2.6500
Side Slopes (z:1)	=	5.0000, 5.0000
Total Depth (m)	=	0.3400
Invert Elev (m)	=	38.4800
Slope (%)	=	15.0000
N-Value	=	0.025

### Calculations

Compute by:	Known Q
Known Q (cms)	= 1.1020

### Highlighted

Depth (m)	=	0.1097
Q (cms)	=	1.1020
Area (sqm)	=	0.3510
Velocity (m/s)	=	3.1398
Wetted Perim (m)	=	3.7690
Crit Depth, Yc (m)	=	0.2256
Top Width (m)	=	3.7473
EGL (m)	=	0.6126

