

PROJECT MANAGEMENT

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Flood Study Report

185 Fifth Avenue

Residential Development

Issued for DA

24 July 2017

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KF112668

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Attachments

KF112668-SK01 Catchment Plan

Appendices

Appendix 1 – Flood Maps

Appendix 2 – Architectural Plans

1.0 INTRODUCTION

KFW has been commissioned to undertake a flood study to support the proposed Development Application for a Multi-Unit Residential Development at 185 Fifth Avenue, Austral.

This report describes the pre-development flood behaviour at 185 Fifth Avenue, Austral. The site is shown in Figure 1.



Figure 1 – 185 Fifth Avenue, Austral

The proposed site plan by GM architects is attached in Appendix 1.

1.1 Site Characteristics

The site is located on Lot 1115, DP 2475. It is in a Medium Density Residential area and the general characteristics of the surrounding land are described as rural.

The subject site is zoned R3 in the Liverpool City Council LEP 2008.

The current site houses a single dwelling, carport, garage and sheds.

1.2 Proposed Conditions

The proposed development involves four 5 storey residential apartment blocks with 2 storeys of underground parking.

2.0 HYDROLOGICAL ANALYSIS

Hydrological analysis was undertaken using the Watershed Bounded Network Model (WBNM).

The rainfall data for the site was sourced from the Bureau of Meteorology and is presented in Table 2.1.

Table 2.1 – IFD Data

Duration	Frequency	
	2 Year	50 Year
1hr	30.25 mm/hr	59.3 mm/hr
12hr	6.40 mm/hr	12.40 mm/hr
72hr	1.90 mm/hr	4.10 mm/hr
$F_2 = 4.30$	$F_{50} = 15.80$	$G = 0.01$

The catchment has been divided into 22 sub-catchment areas. The sub-catchments are presented in plan KF112668 SK01. The details of the 22 sub-catchments are presented in Table 2.2.

The catchment plan is attached as drawing SK01.

The WBNM model was run for storm durations 30 minutes to 3 hours for the 100 Year ARI storm and 15 to 90 minutes for the PMF.

The critical storm duration was found to be 120 minutes for the 100 Year ARI.

The critical duration for the PMF was 60 minutes.

Hydrographs were calculated at 2 locations to provide inflow boundary conditions for the 2D flood model. These 2 locations are at the upstream boundary of catchments 1K and 2K.

The site boundary is shown in red on the catchment plan.

The peak discharge at each location for each ARI are summarised in Table 2.3.

Hydrographs for 100 year ARI storm and PMF are presented in Figures 2.1 and 2.2 respectively.

The time series data formed the inflow boundary condition for the hydraulic model.

Table 2.2 – Sub-Catchment Details

Subarea Name	D/S Subarea	Area	Imp Fraction
		(ha)	(%)
2A	2C	250.83	50
2B	2C	126.66	40
2D	2C	44.05	10
2C	2E	76.05	70
2E	2F	119.47	30
2F	2G	74.31	50
2G	2H	69.78	25
2H	2I	74.24	30
2I	2J	73.84	30
2J	2K	32.25	40
2K	Dummy	33.41	40
1A	1B	25.90	30
1B	1C	36.87	40
1C	1D	52.42	20
1D	1E	60.04	20
1E	1F	72.55	25
1F	1G	73.80	20
1G	1H	47.60	20
1H	1I	34.17	40
1I	1J	32.30	30
1J	1K	47.41	30
1K	Dummy	48.94	30

Table 2.3 – Peak Discharge Summary (Pre)

ARI	Flow Rate 1K (m ³ /s)	Flow Rate 2K (m ³ /s)
100 Year	50.11	92.56

PMF	160.75	307.84
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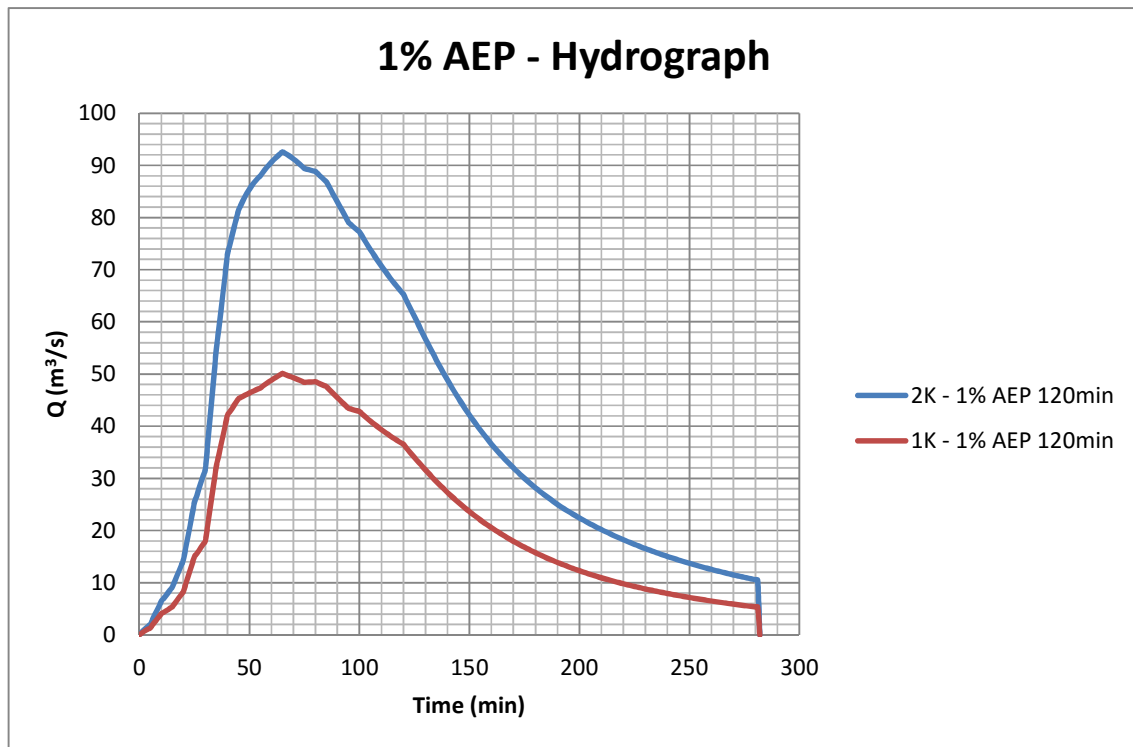


Figure 2.1 – 100 Year ARI Hydrograph

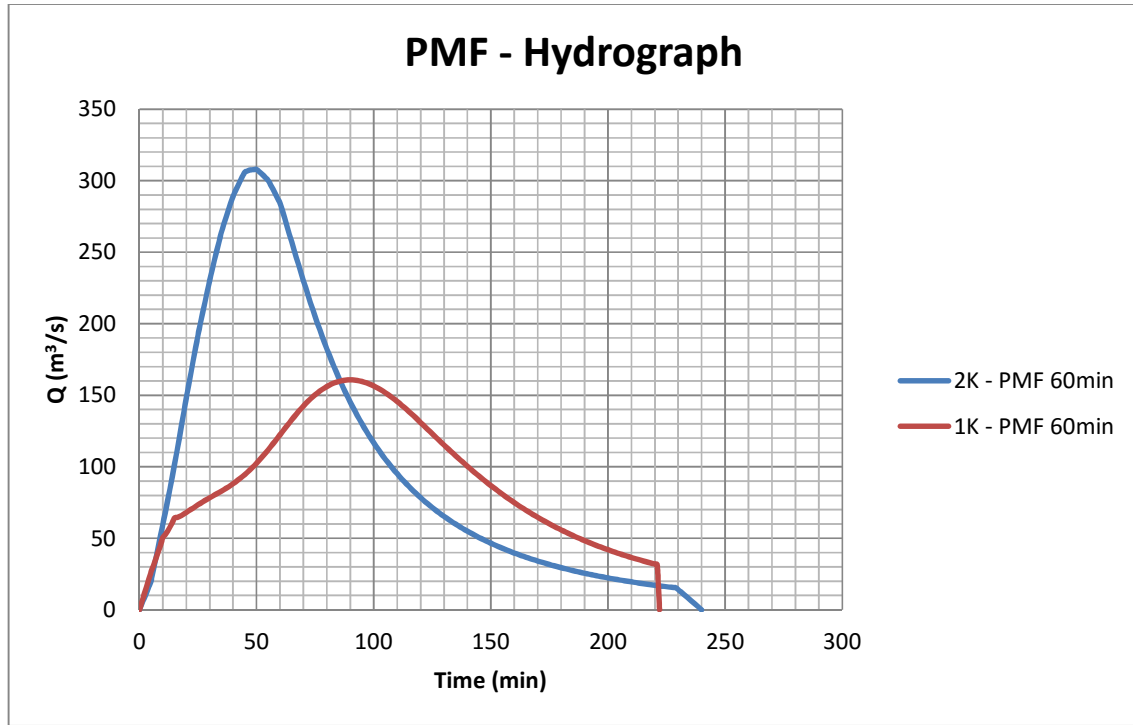


Figure 2.2 – PMF Hydrograph

3.0 HYDRAULIC ANALYSIS

Hydraulic analysis was undertaken using a 2D hydraulic model.

Modelling was undertaken using the numerical model TUFLOW.

Correct representation of topography within the flood plain and unsteady simulation of the whole rainfall burst means that flood storage and attenuation are fully accounted for.

3.1 Survey

A 3D model of the surface was generated using LiDAR information obtained from NSW Land and Property Information (LPI).

A 5m grid based on the 3D surface was adopted for this study.

3.2 Topography

The site is situated between two tributaries of Kemps Creek.

The existing site levels vary from RL 70.10m to RL 73.41m. The site is evenly graded with no pronounced gullies or ridges.

3.3 Roughness

Manning 'n' values allocated to each material type are shown in Table 3.1. Land not allocated to a material is given the default Manning 'n' value.

Table 3.1 – Roughness Values

Coverage	Manning 'n' Value
Industrial	0.025
Rural	0.040
Road	0.015
Creek	0.080

The pre developed model area has been divided into 4 material types. Pre development material allocations are presented in Figure 3.1.



Figure 3.1 – Pre Developed Materials Coverage

3.4 Simulations

Two flood simulations representing different storms have been run in TUFLOW. These are presented in Table 3.2.

Table 3.2 – TUFLOW Simulations

Factor	Component
Condition	Existing
ARI	100 Year, PMF

4.0 RESULTS

The 2D hydraulic analysis shows that the proposed development site is flood affected during the 100 Year ARI and PMF storms. The affectation is generally limited to the western boundary of the site.

4.1 Flood Maps

Flood inundation maps for the 100 year ARI and PMF showing Flood Depth, Flood Velocity, DxV and Provisional Hydraulic Hazard are attached as Appendix 1.

The majority of flooding occurs immediately adjacent to Kemps Creek tributaries.

Parts of the proposed development are within the extent of the 1% AEP and PMF as shown in Appendix 1.

The proposed multi-unit apartment blocks are each five storey, which provides more than enough height to allow for safe refuge in the event of a PMF I

4.2 Flood Levels

For each multi-unit residential block, the greatest 100 year + 500mm freeboard level and PMF level are presented in Table 4.1.

Table 4.1 Flood Levels for each Residential Apartment Block

Block	1% AEP Flood Level	1% AEP Flood Level + 500mm Freeboard	PMF Flood Level
A	71.16	71.66	71.34
B	71.16	71.66	71.34
C	70.66	71.16	70.93
D	70.66	71.16	70.93

Blocks A and D are not flood affected in a 1% AEP and PMF flood event.

4.3 Proposed Floor Levels

Finished floor levels for each of the proposed blocks shall be set at or above the greater of the PMF levels & the 100 year + 500mm freeboard levels. Nominated levels for each of the proposed blocks as shown on GM Architects Plan No. 16826 are as follows:

- Block A FFL = 72.80m AHD
- Block B FFL = 72.00m AHD
- Block C FFL = 71.55m AHD
- Block D FFL = 72.35m AHD

The proposed habitable floor levels offer greater than the required 500mm freeboard.

5.0 LIVERPOOL CITY COUNCIL DCP 2008

Liverpool City Council DCP 2008 Part 1 Section 9 nominates the objectives of Flood Planning for the Liverpool City Council Local Government Area.

The objectives from Part 1 Section 9 are listed below with comments in regards to the proposed development.

Objective	Comments
a) To minimise the potential impact of development and other activity upon the aesthetic, recreational and ecological value of the waterway corridors.	There is minimal flood affectation in both the 1% AEP and PMF event. All works are beyond 40m of the nearest watercourse.
b) To ensure essential services and land uses are planned in recognition of all potential floods.	The 1% AEP and PMF events have been modelled. The potential land use (residential) is suitable for the site as there is minimal flood affectation in the 1% AEP event and limited inundation in the PMF event.
c) To reduce the risk to human life and damage to property caused by flooding through controlling development on land affected by potential floods.	The proposed development will not create a risk to life as all floor levels are above the PMF maximum levels. Any part of the proposed structures below RL 71.21 shall be constructed from flood compatible materials.
d) To ensure that the economic and social costs which may arise from damage to property due to flooding is minimised and is not greater than that which can be reasonably managed by the property owner and general community.	All flood affected structures will be constructed from flood compatible materials.
e) To limit developments with high sensitivity to flood risk (e.g. critical public utilities) to land with minimal risk from flooding.	This development is not highly sensitive to flood risk.
f) To prevent intensification of inappropriate use of land within high flood risk areas or floodways.	The site has a low flood risk and the proposal is appropriate for the site.
g) To permit development with a lower sensitivity to the flood hazard to be located within the floodplain, subject to appropriate design and siting controls.	This development has a low sensitivity to flood risk. The development is sited such that flood hazard is minimised.
h) To ensure that development should not detrimentally increase the potential flood affectation on other development or properties either individually or in combination with the cumulative impact of development that is likely to occur in the same floodplain.	There are minor upstream and downstream flood impacts caused by this development. Any impact caused by this development will not have a detrimental impact on potential flood affectation on other development or properties.
i) To ensure that development does not prejudice the economic viability of any Voluntary Acquisition Scheme.	The site does not have any perceived impact on potential Voluntary Acquisition Scheme.

The Liverpool City Council DCP 2008 also provides development controls for Flood Prone Land.

The table below provides these development controls and comments in relation to the proposed development.

Development Control	Is Control Satisfied	Comments
Floor Level: 2) Non habitable floor levels to be as high as practical but no less than the 5% AEP flood level.	Yes	Site is not flood affected in 5% AEP event.
Floor Level: 6) Habitable floor levels to be equal to or greater than the 1% AEP flood level plus 500mm freeboard.	Yes	The maximum 1% AEP flood level is RL 70.68. The proposed minimum habitable floor level is RL 71.55, which provides, in excess, the required 500mm freeboard.
Building Components & Method: 3) All structures to have flood compatible building components below the 1% AEP flood level plus 500mm freeboard or a PMF if required to satisfy evacuation criteria.	Yes	All structures below the 1% AEP flood level plus 500mm freeboard will have flood compatible building components.
Structural Soundness: 1) Applicant to demonstrate that the structure can withstand the forces of floodwater, debris and buoyancy up to and including a 1% AEP flood plus 500mm freeboard.	Yes	The proposed buildings will be constructed of reinforced concrete. Each building will have two basement levels and five levels including the ground floor level. The buildings will have the mass and strength to resist the forces of buoyancy and floodwaters.
Car Parking and Driveway Access: 2) The minimum surface level of a car parking space, which is not enclosed (e.g. open car parking space or carport) shall be as high as practical, but no lower than the 5% AEP flood level or the level of the crest of the road at the highest point where the site can be accessed. In the case of garages, the minimum surface level shall be as high as practical, but no lower than the 5% AEP flood.	Yes	
Car Parking and Driveway Access: 3) Garages capable of accommodating more than 3 vehicles on land zoned for urban purposes, or basement car parking, must be protected from inundation by floods equal to or greater than the 1% AEP flood plus 0.1m freeboard.	Yes	
Car Parking and Driveway Access: 6) The level of the driveway providing access between the road and car parking space shall be no lower than 0.3m below the 1% AEP flood or such that depth of inundation during a 1% AEP flood is not greater than either the depth at the road or the depth at the car parking space. A lesser standard may be accepted for single detached dwelling houses where it can be demonstrated that risk to human life would not be compromised.	Yes	
Car Parking and Driveway Access: 7) Basement car parking or car parking areas accommodating more than 3 vehicles (other than on Rural zoned land) with a floor level below the 5% AEP flood or more than 0.8m below the 1% AEP flood level; shall have adequate warning systems, signage and exits.	Yes (N/A)	All entrances above PMF. Therefore no car parks will be inundated in any flood event.
Car Parking and Driveway Access: 8) Barriers to be provided to prevent floating vehicles leaving a site during a 1% AEP flood.	Yes (N/A)	
Evacuation: 2) Reliable access for pedestrians or vehicles is required from the building, commencing at a minimum level equal to the lowest habitable flood level to an area of refuge above the PMF level, or a minimum of 20% of the habitable floor area is above the PMF.	Yes	All occupants can evacuate the site in a northerly direction towards Edmondson Ave. All habitable floor levels (RL 71.55) are above OMF flood level. Therefore refuge above the PMF is also provided.
Evacuation: 6) The development is to be consistent with any relevant flood evacuation strategy or similar plan.	Yes	

6.0 CONCLUSION

This flood report describes the flood behaviour through the development site in the pre development scenario.

The site is currently minimally affected during the 100 year ARI and PMF flood events.

A comparison of the proposed finished floor levels and the allowable minimum habitable floor level for each Residential Apartment Block are presented in Table 4.2.

Table 4.2 – Minimum Floor Level Comparison

Block	Minimum Floor Level	Proposed Floor Level
A	71.66	72.80
B	71.66	72.00
C	71.16	71.55
D	71.16	72.35

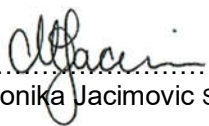
Based on the proposed finished floor levels shown on GM Architects Plan No. 16826, the proposed multi-storey residential apartment blocks will offer greater freeboard than required for both a 1% AEP flood and PMF.

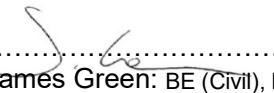
The development complies with the objectives of the DCP.

The site is suitable for the proposed building.

KF Williams Pty Ltd

Report Prepared by:


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Monika Jacimovic StudIE Aust


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James Green: BE (Civil), MIE Aust, CPEng, NER

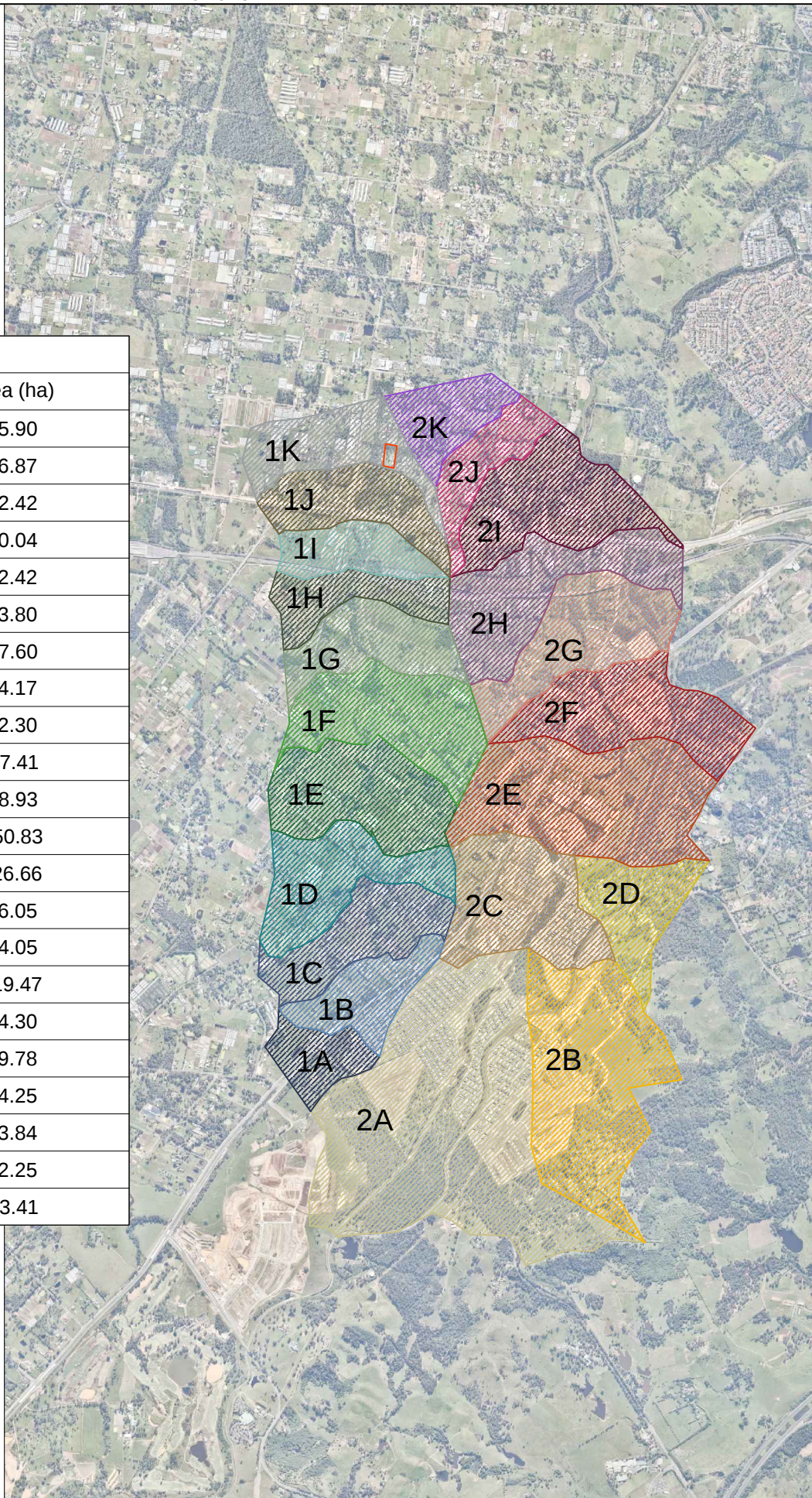
Reviewed by:


.....
W.R. Mullany BE, Grad Dip LGE, ME(Hons), MIE Aust, CPEng, NER

Catchment Plan

Catchment Areas

Catchment	Area (ha)
1A	25.90
1B	36.87
1C	52.42
1D	60.04
1E	72.42
1F	73.80
1G	47.60
1H	34.17
1I	32.30
1J	47.41
1K	48.93
2A	250.83
2B	126.66
2C	76.05
2D	44.05
2E	119.47
2F	74.30
2G	69.78
2H	74.25
2I	73.84
2J	32.25
2K	33.41



FLOOD STUDY CATCHMENT PLAN
185 Fifth Ave, Austral



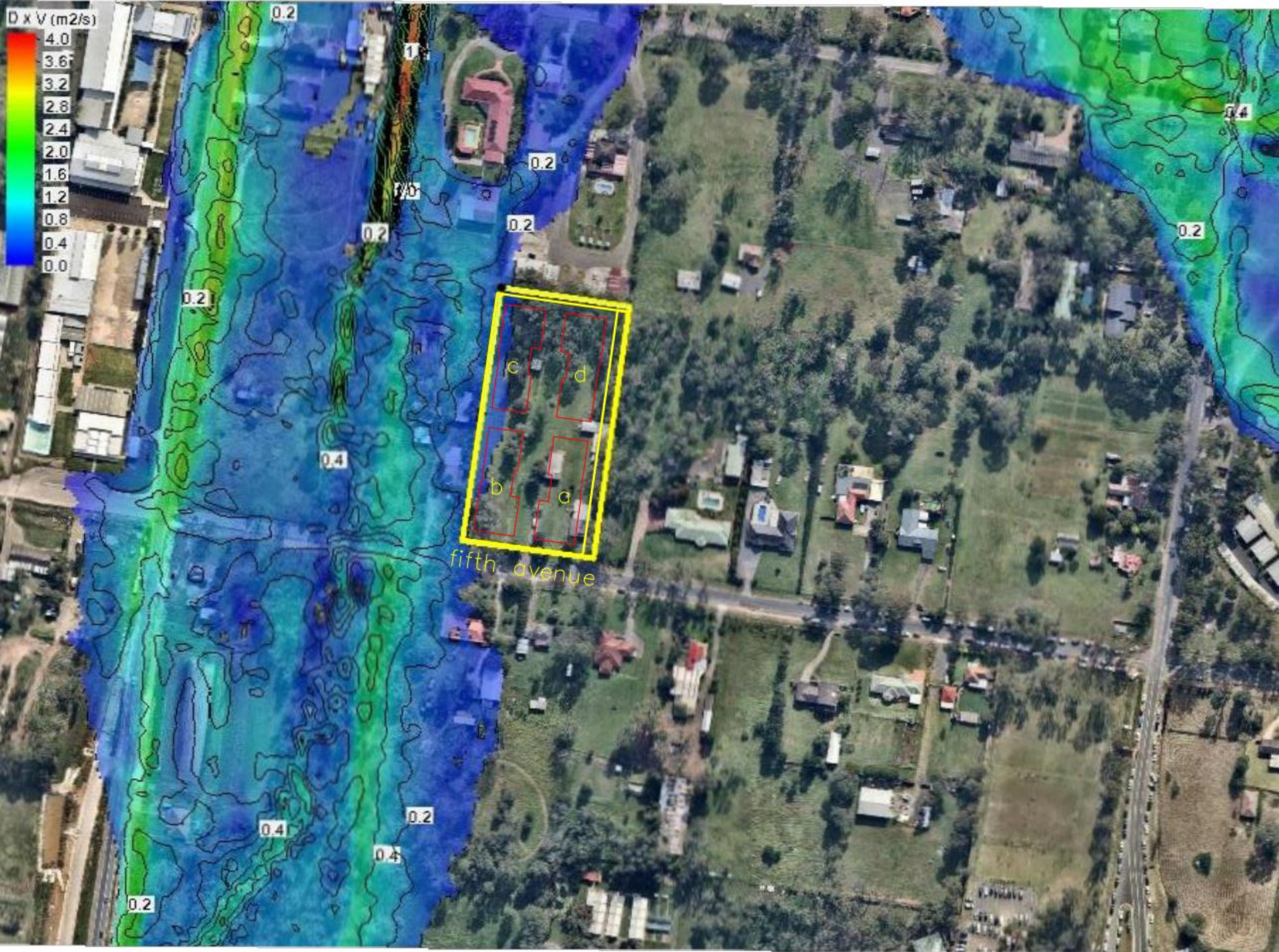
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Designed	M. Jacimovic Stud.I.E.Aust.	Drawing No. SK01	
Checked	J. Green BE (Civil), M.I.E.Aust., C.P.Eng., NER		
Approved		Sheet	Revision
Scale	NTS @A4		
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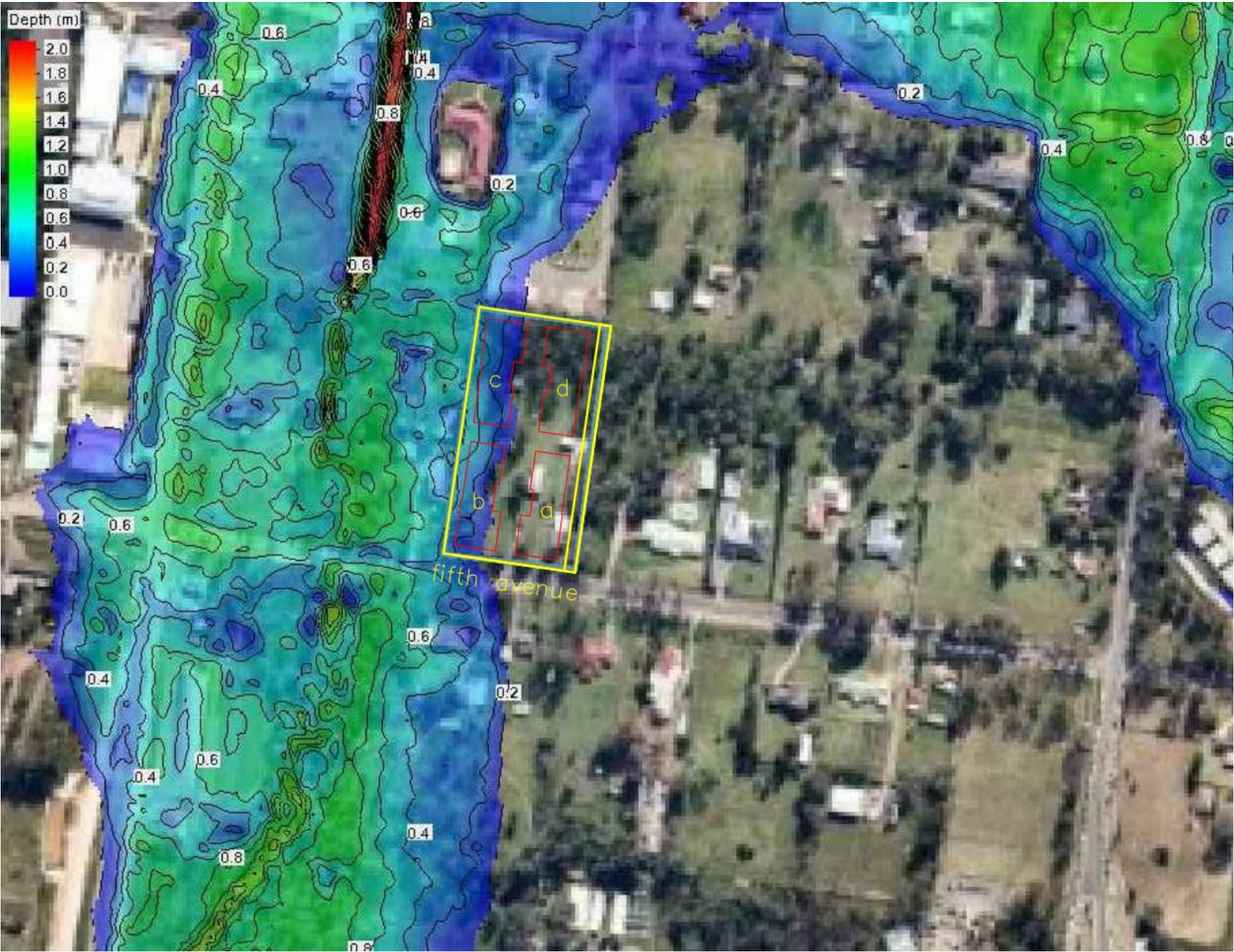
Appendix 1

Flood Maps



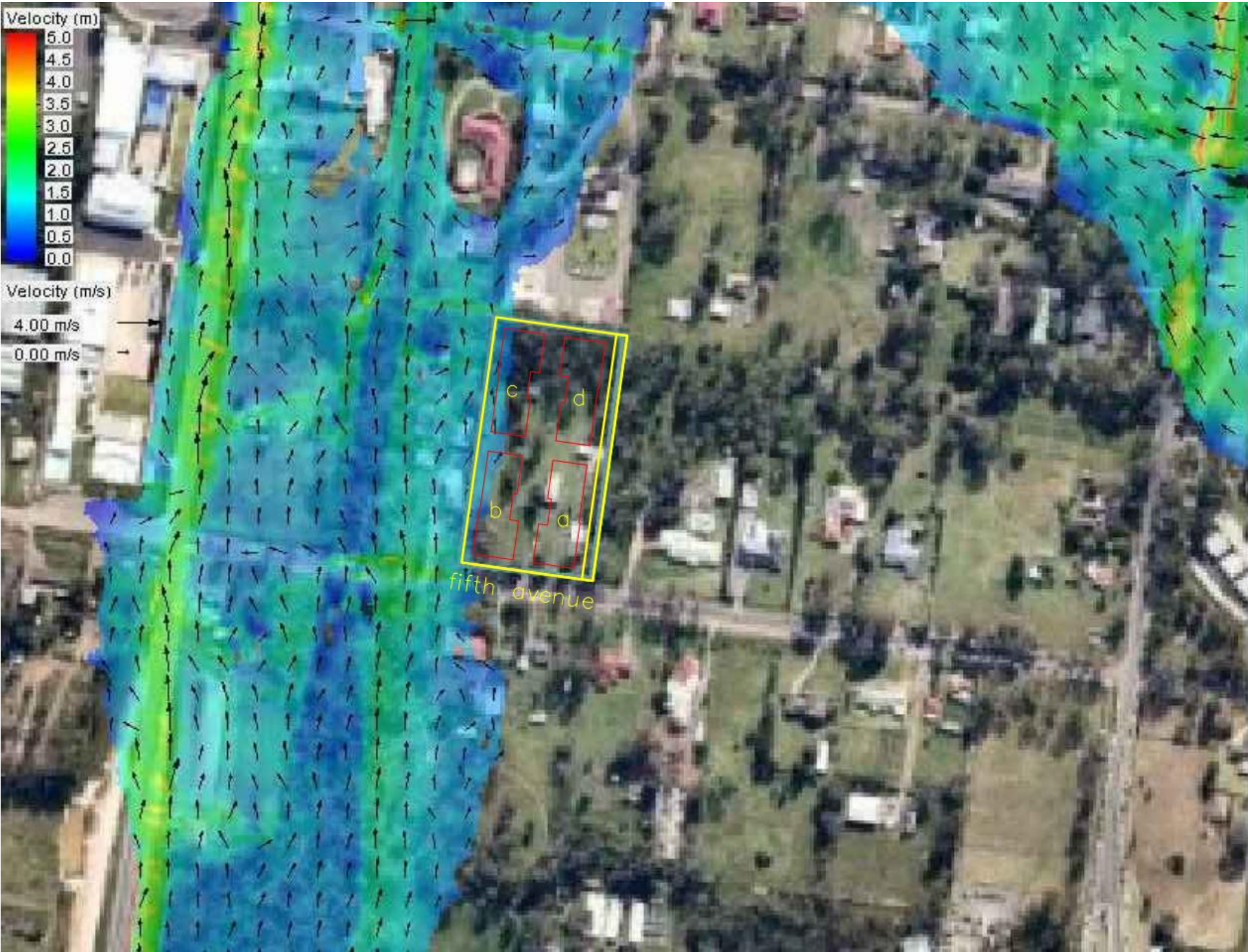
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Conditions	Flood Event	Coverage	Revision	Job
Proposed	100yr ARI	Flood Level	-	KF112668





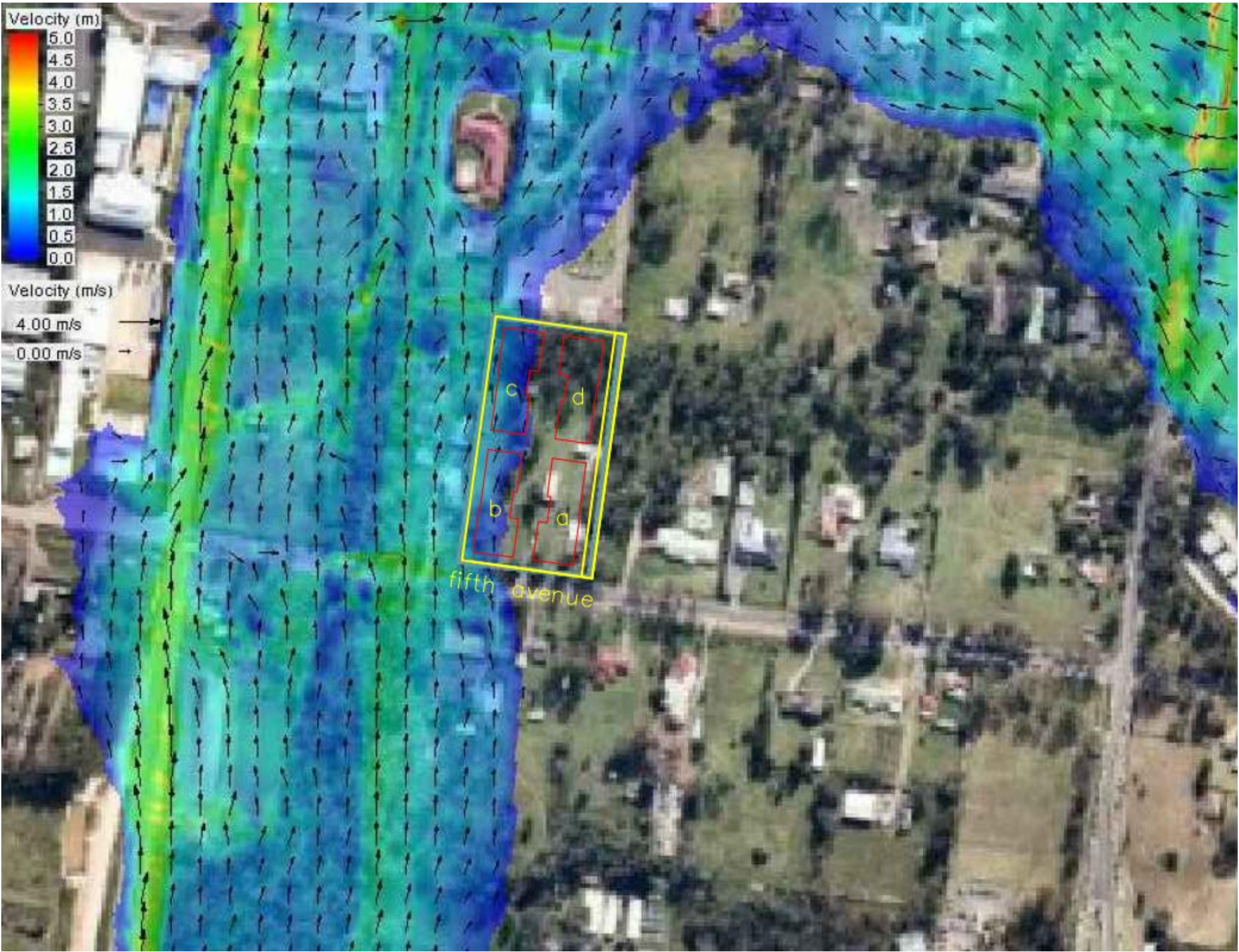
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Conditions	Flood Event	Coverage	Revision	Job
Proposed	PMF	Flood Level	-	KF112668





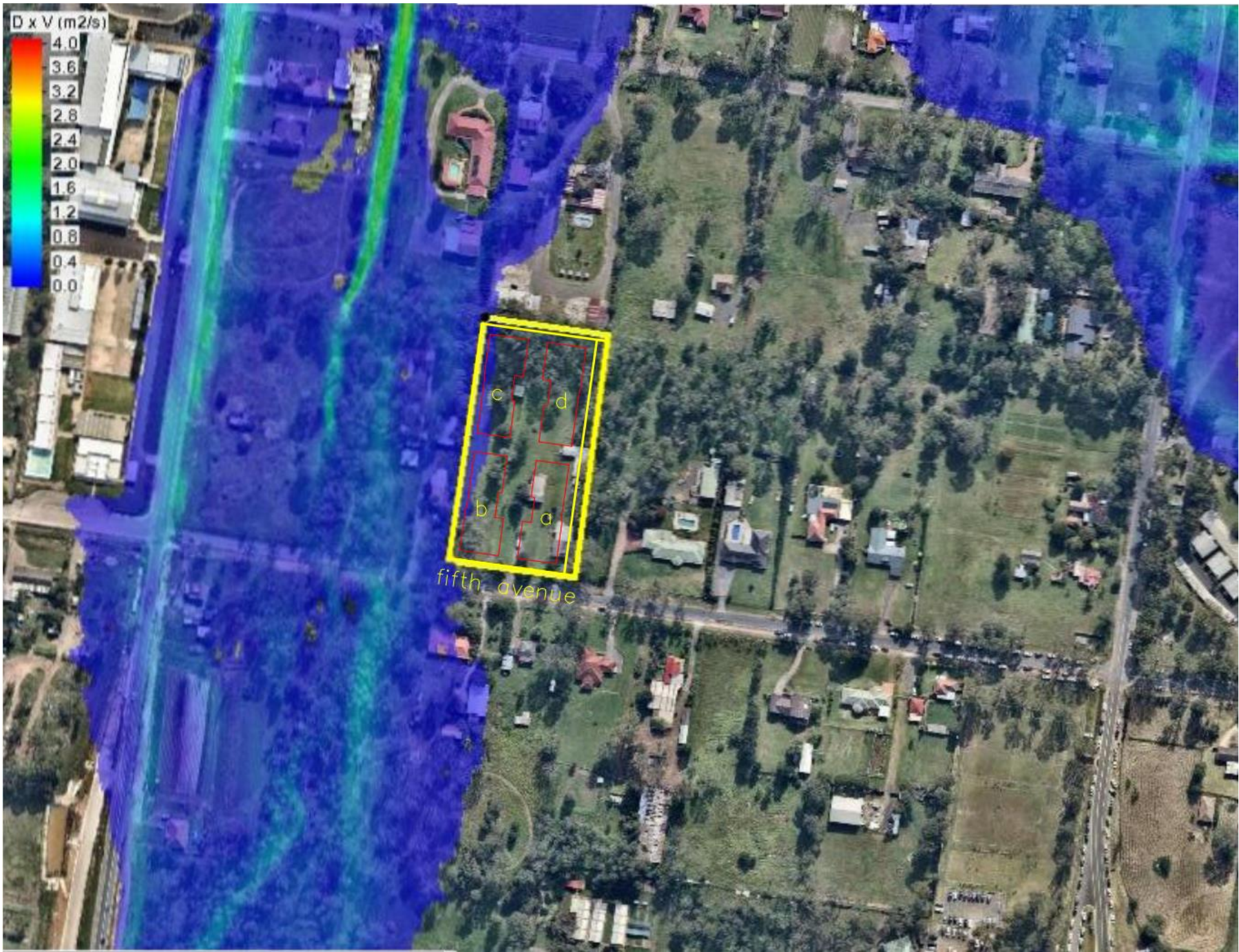
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Conditions	Flood Event	Coverage	Revision	Job
Proposed	100yr ARI	Flood Velocity	-	KF112668





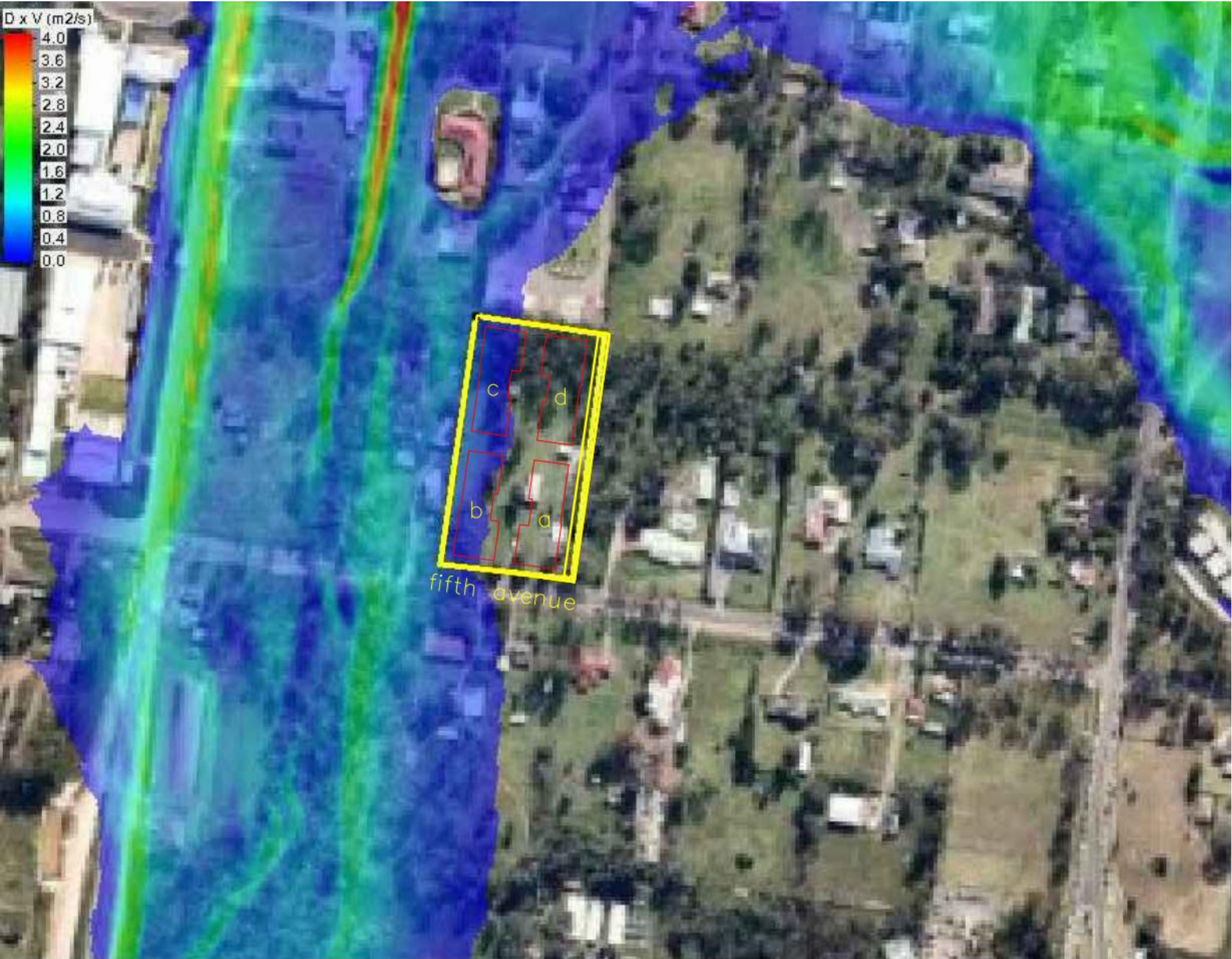
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Conditions	Flood Event	Coverage	Revision	Job
Proposed	PMF	Flood Velocity	-	KF112668





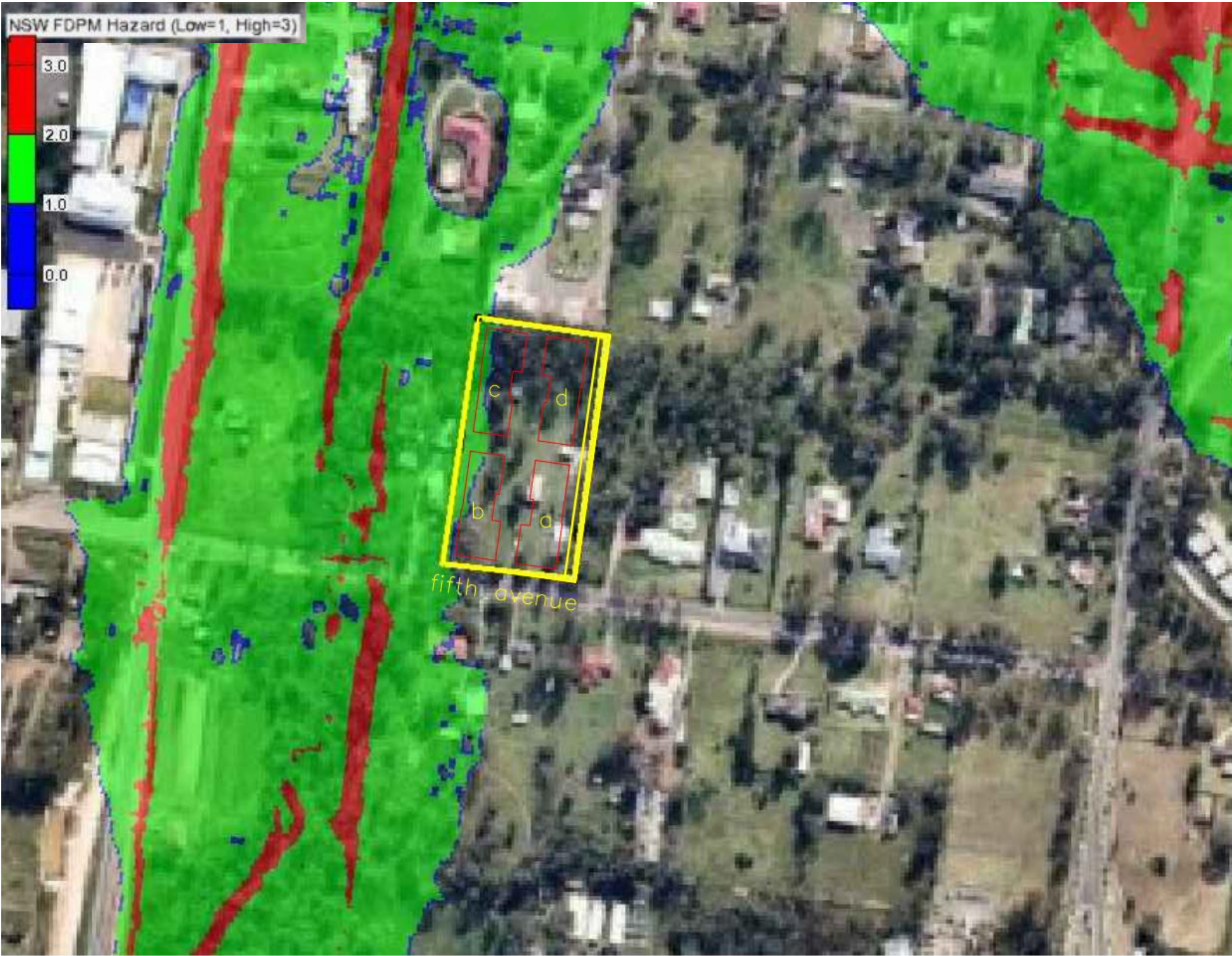
185 Fifth Avenue, Austral				
Conditions	Flood Event	Coverage	Revision	Job
Proposed	100yr ARI	D x V	-	KF112668





185 Fifth Avenue, Austral				
Conditions	Flood Event	Coverage	Revision	Job
Proposed	PMF	D x V	-	KF112668





185 Fifth Avenue, Austral				
Conditions	Flood Event	Coverage	Revision	Job
Proposed	100yr ARI	Flood Hazards	-	KF112668





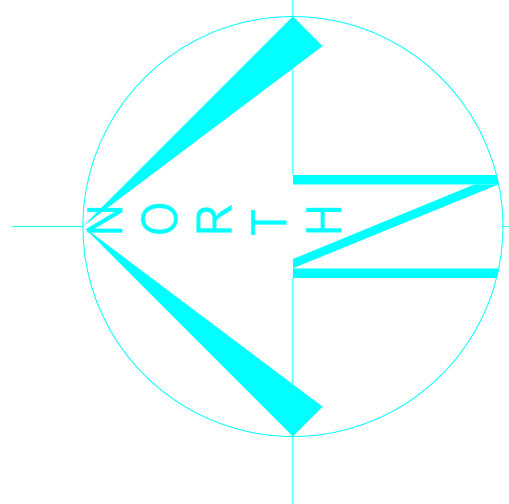
185 Fifth Avenue, Austral				
Conditions	Flood Event	Coverage	Revision	Job
Proposed	PMF	Flood Hazards	-	KF112668



Appendix 2

Architectural Plans

NORTH



DP 2475

LOT 1065

LOT 1114

LOT 1064

LOT 1063

LOT 1116

ALL TREE HEIGHTS AND SPREAD ARE APPROXIMATE ONLY AND ARE SHOWN FOR TENDER PURPOSES ONLY.
ALL TREE RELATED ISSUES TO BE REFERRED TO AN ARBORIST

NOTE: POSITION OF SEWER MAIN NOT YET AVAILABLE. REFER TO SYDNEY WATER DIAGRAM DATED 22/03/2017

HOW TO PROTECT SURVEY MARKS
BEFORE WORKS COMMENCE
The locality sketch plan (Survey Mark Sketches) should be downloaded from the LPI online Shop
Find out if there are survey marks located in the area of interest by
1. Viewing the survey mark layer in the Spatial Information Exchange 'Six Life' web page www.six.nsw.gov.au
2. Contacting Survey Services, LPI, 1300 052 637 who will advise the location and status of survey marks in the area
3. Inspecting the site, paying particular attention to survey marks
PROTECT SURVEY MARKS BEFORE ANY COMMENCEMENT OF WORKS

IF SURVEY MARKS ARE IN THE AREA
The locality sketch plan (Survey Mark Sketches) should be downloaded from the LPI online Shop
<http://shop.lands.nsw.gov.au> see Specialised Searches

IF SURVEY MARKS ARE LIKELY TO BE DISTURBED OR DESTROYED
Avoid disturbing or destroying survey marks by
1. Diverting works to avoid disturbing the marks or
2. Contacting a Registered Surveyor to place and survey a mark at a more suitable site nearby to maintain survey integrity
Any survey necessary to recover the position of survey marks proposed to be destroyed may only be undertaken by a surveyor registered under the Surveying and Spatial Information Act 2002 or by survey staff authorised by the Surveyor General.

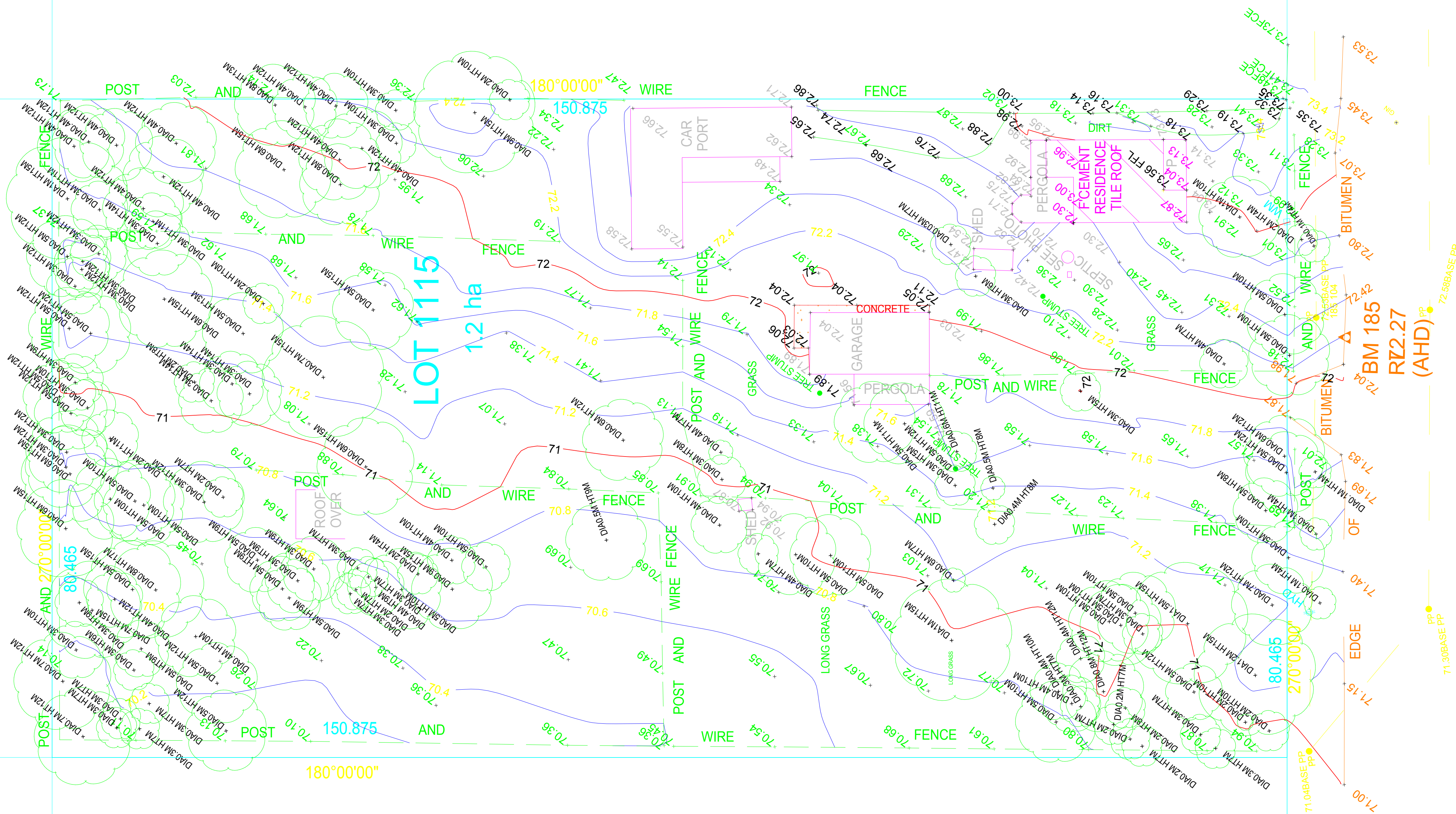
REPORT SURVEY MARKS AT RISK OF BEING DESTROYED
Look for the Survey Mark Status report at
http://scims.lpi.nsw.gov.au/status/report_frames.htm



THE BOUNDARY POSITION IS APPROXIMATE ONLY AND SHOULD BE VERIFIED PRIOR TO ANY CONSTRUCTION WORKS.

LOCALITY SKETCH

UBD AREA: SYD
MAP: 266
GPS
REVISION: 53
REF: D15



FIFTH AVENUE

COPYRIGHT

COPYRIGHT OF THIS PLAN AND IN THE ACCOMPANYING CAD FILE(S) WHERE APPLICABLE VESTS WITH ASPECT DEVELOPMENT & SURVEY PTY LTD.

THE PLAN AND CAD FILE SHALL ONLY BE USED BY THE ADDRESSED CLIENT FOR THE PURPOSE FOR WHICH THE SURVEY WAS CARRIED OUT.

GENERAL NOTES

A) THIS SURVEY IS SPECIFICALLY FOR CONTOUR PURPOSES ONLY. THE BOUNDARIES OF THE SUBJECT PROPERTY HAVE NOT BEEN INVESTIGATED AND THE POSITION SHOWN IS APPROXIMATE ONLY
B) AREAS AND DIMENSIONS ARE SUBJECT TO SURVEY
C) SERVICES SHOWN HAVE BEEN DERIVED FROM VISUAL EVIDENCE APPARENT AT THE TIME OF SURVEY. THE RELEVANT SERVICE AUTHORITY SHALL BE CONTACTED TO VERIFY THE EXISTENCE AND POSITION OF ALL SERVICES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION
D) CONTOURS ARE INDICATIVE OF SURFACE TOPOGRAPHY ONLY. SURVEYED SPOT LEVELS ARE THE ONLY VALUES TO BE RELIED ON FOR REDUCED LEVELS ON PARTICULAR FEATURES.

SYMBOLS & ABBREVIATIONS:

GP	GULLY PIT	E-1	OVERHEAD ELEC LINE
HYD	HYDRANT	S-	SEWER LINE
SIP	SURFACE INLET PIT	GM	GAS METER
SIC	SEWER INSPECTION COVER	LP	LIGHT POLE
SMH	SEWER MANHOLE	EC	ELECTRICITY CONDUIT
W/M	WATER METER	ETC	ELECTRICITY & TELE CONDUIT
EL	ELECTRICITY BOX	TC	TELECOM CONDUIT
TP	TELECOMMUNICATIONS PIT	WC	WATER CONDUIT
VC	VEHICLE CROSSING	INV	INVERT
SV	STOP VALVE	KO	KERB OUTLET
SWMH	STORMWATER MANHOLE	TK	TOP OF KERB

ASPECT DEVELOPMENT & SURVEY PTY LTD CONSULTING REGISTERED SURVEYORS

ABN 60 078 649 000

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103 VANESSA STREET
KINGSGROVE NSW 2208
PHONE (02) 9554 8388
FAX (02) 9554 8588

PO BOX 161
KINGSGROVE NSW 1480
DX 11392
HURSTVILLE

PROJECT

OUR REFERENCE 6/1038845/216964

LOT 1115 DP 2475 SECTION

DATUM AHD SOURCE SCIMS 22/03/17

ORIGIN OF LEVELS PM 44229 REDUCED LEVEL 74.951

SURVEYED AC DATE 25/03/2017

DRAWN NP DATE 29/03/2017

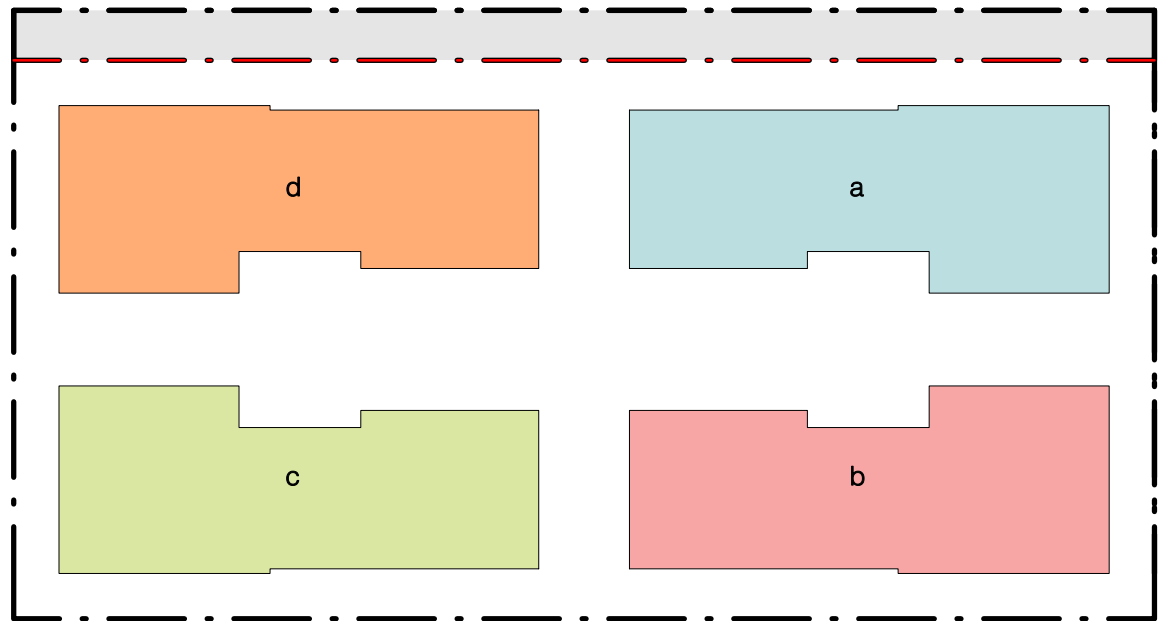
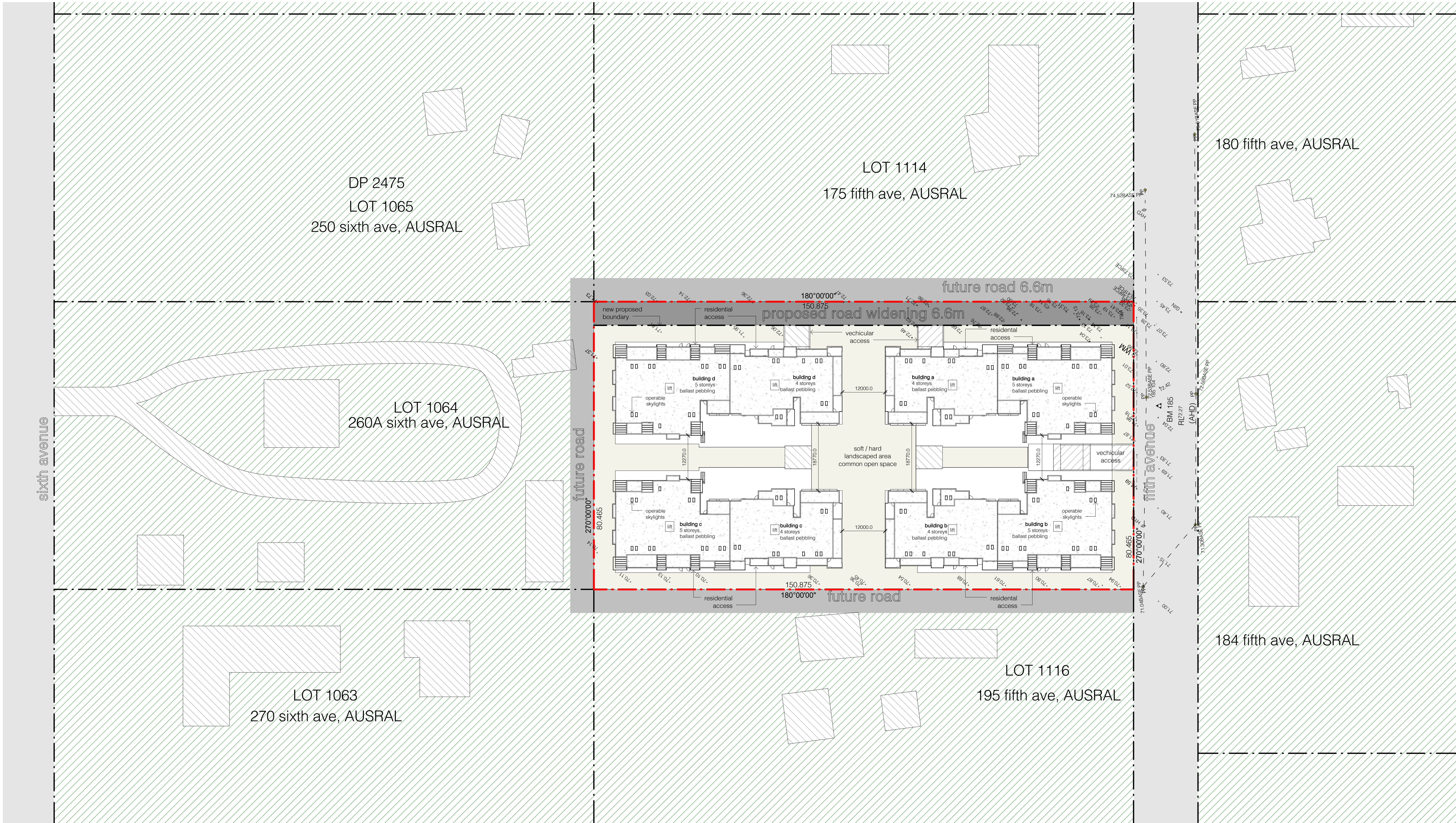
SCALE 1: 600 A3 SHEET

CLIENT: GMARCHITECTS

REF:

REF:

ADDRESS: 185 FIFTH AVENUE
SUBURB AUSTRAL

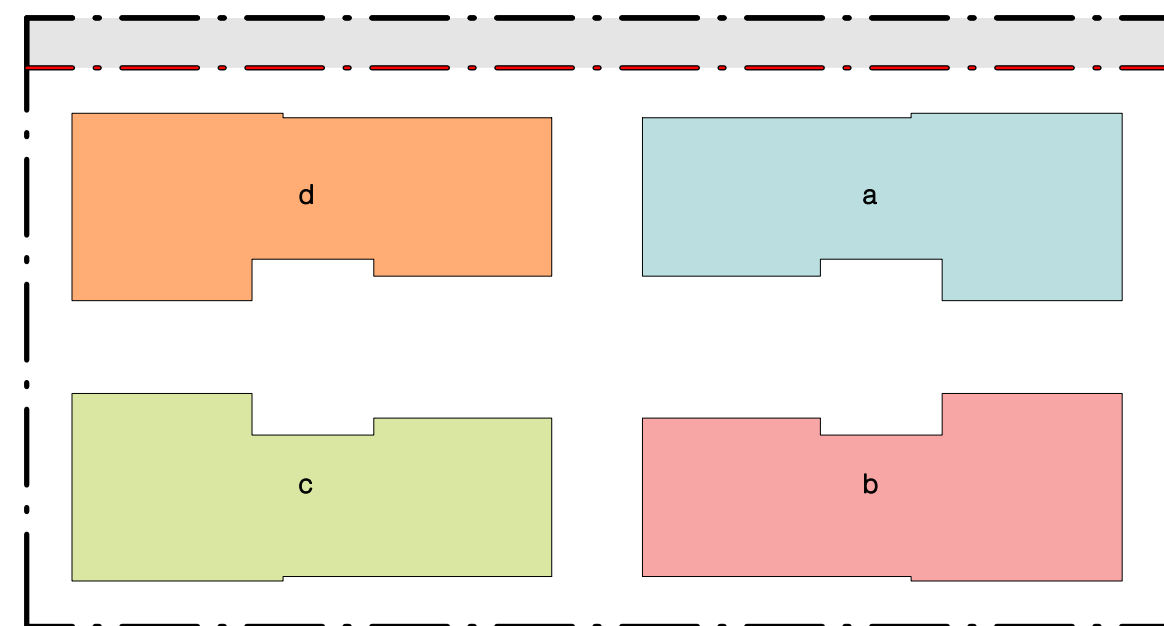


future road

future road 6.6m
proposed road widening 6.6m

fifth avenue

future road

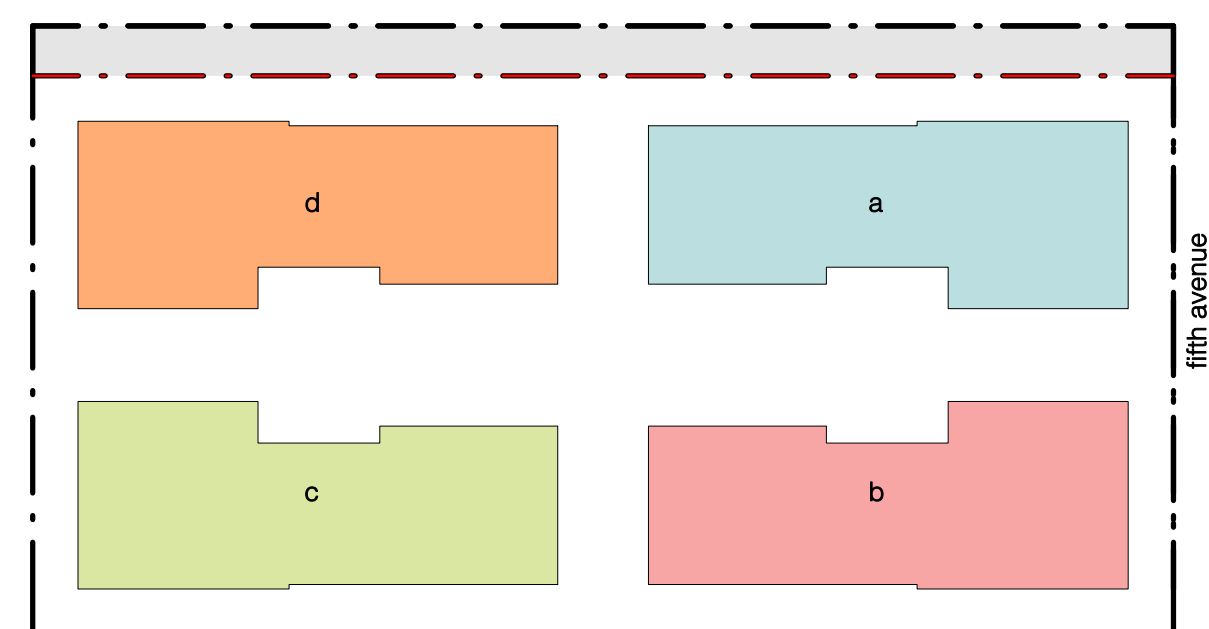
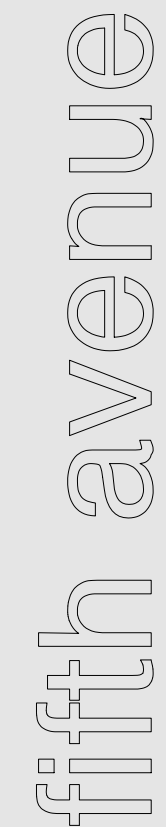


building key
1:1000

basement 1
185 fifth avenue, austral
residential apartments + basements
development application
gm architects
3/30a perambula rd, homebush west NSW 2140
info@gmachitects.com.au

α200

Rev	Date	Description
1		



DP 2475
LOT 1065

LOT 1114

future road 6.6m

proposed road widening 6.6m

future road
LOT 1064

270°00'00"

80.465

LOT 1063

ground floor plan
1:200

future road

LOT 1116

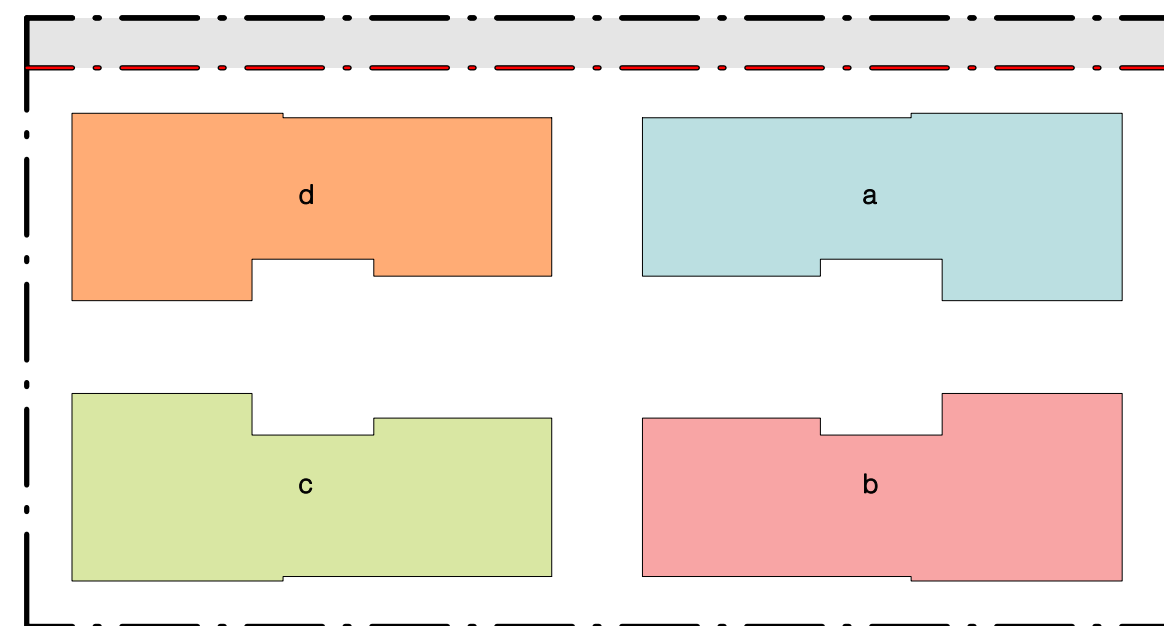
PP 72.53BASE PP
185.104

fifth avenue

270°00'00"

80.465

PP 71.04BASE PP



ground floor

building key
1:1,000

- b1 - bedroom 1
- b2 - bedroom 2
- b3 - bedroom 3
- liv - living room
- din - dining
- kit - kitchen
- bath - bath
- st - storage
- ens - ensuite
- wir - walk-in-robe
- ldy - laundry

σ202

ground floor
185 fifth avenue, austral
residential apartments + basements
development application
gm architects
330a panorama rd, homebush west NSW 2140
info@gmarchitects.com.au

gm
9797 1599
n.raiser 9457

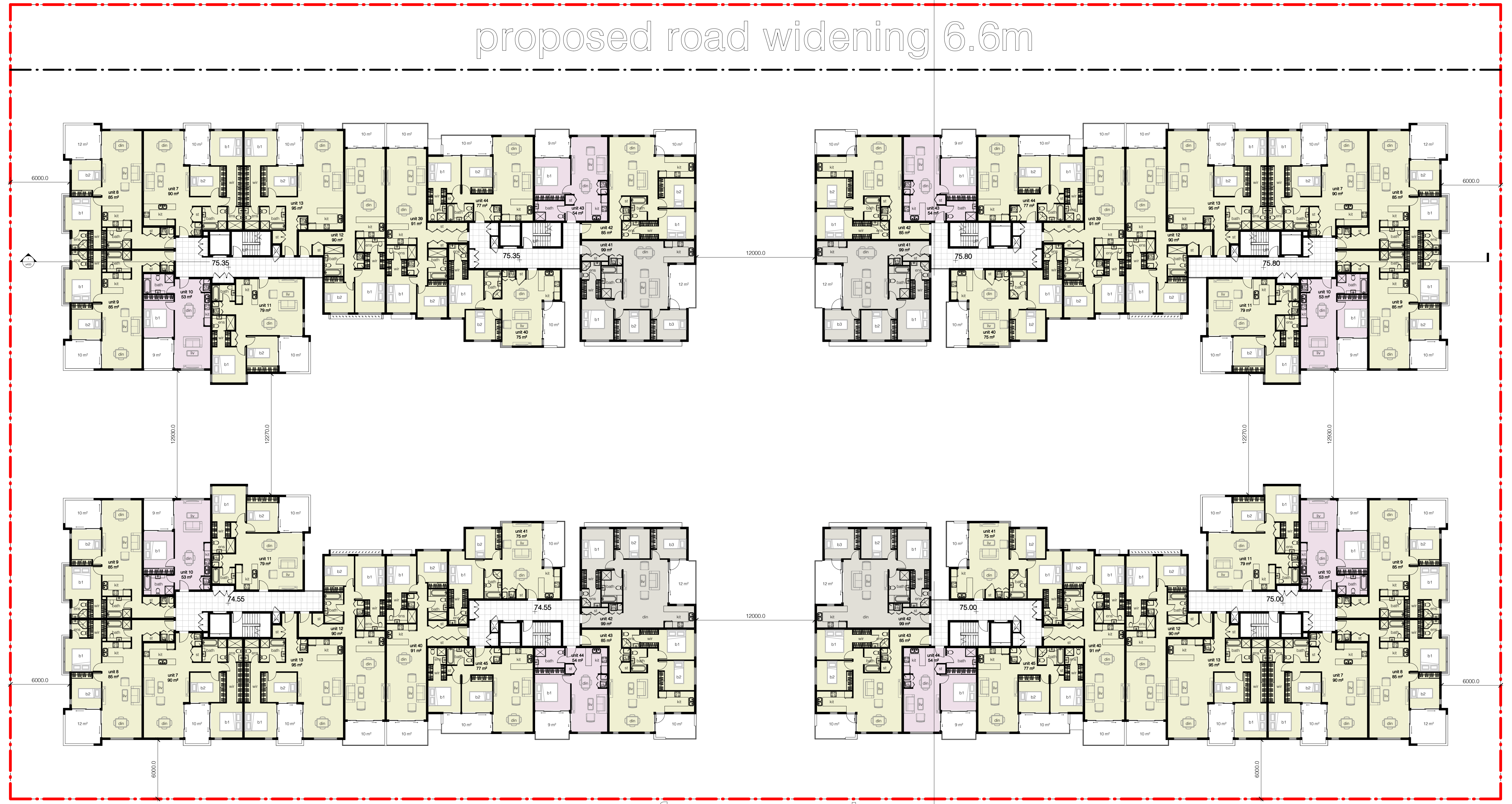
future road

future road 6.6m

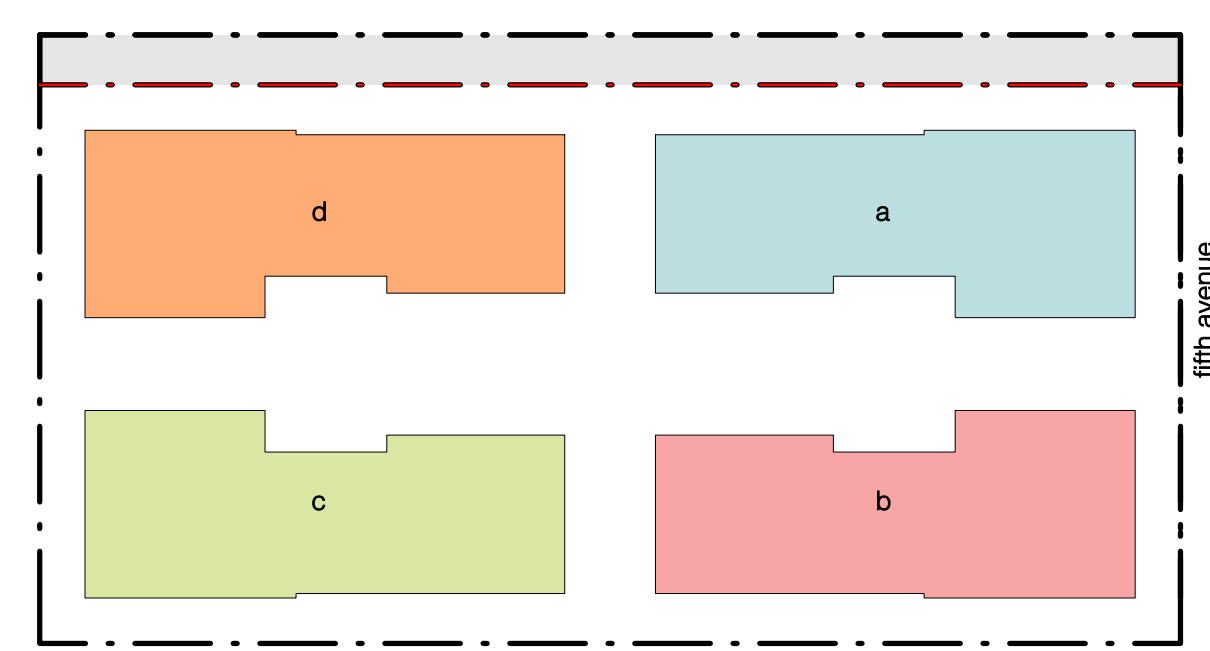
proposed road widening 6.6m

fifth avenue

future road



level 1 plan
1: 200



level 1
building key
1: 100

- b1 - bedroom 1
 - b2 - bedroom 2
 - b3 - bedroom 3
 - liv - living room
 - din - dining
 - kit - kitchen
 - bath - bath
 - st - storage
 - ens - ensuite
 - wlr - walk-in-robe
 - ldy - laundry
- σ203

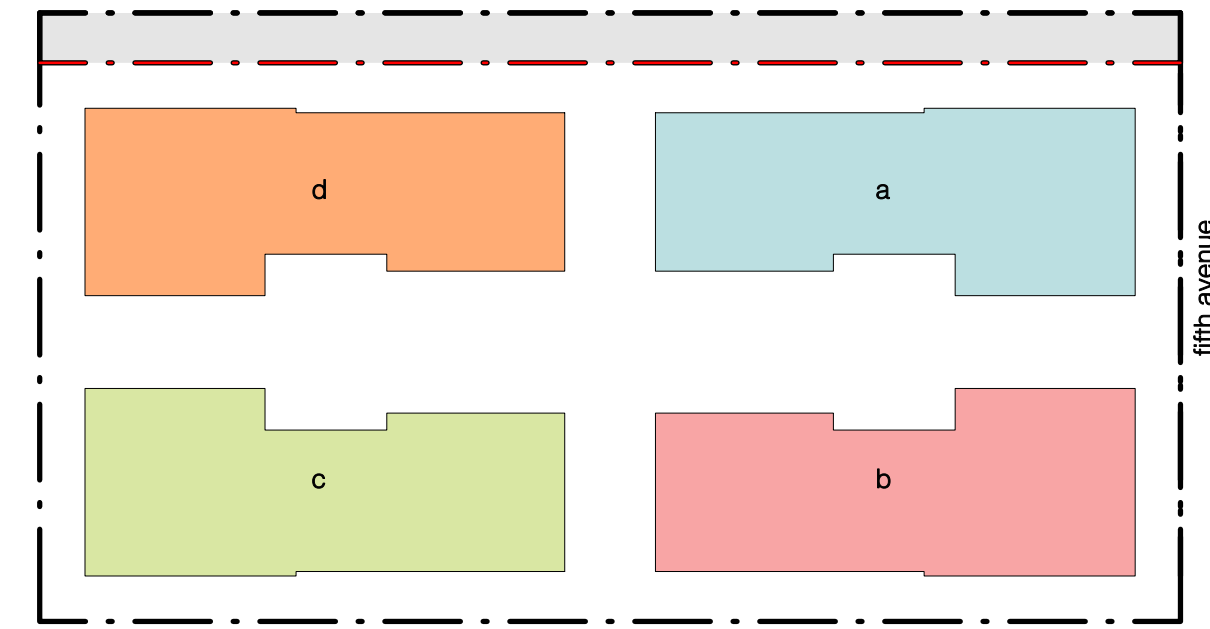
level 1
185 fifth avenue, austral
residential apartments + basements
development application
gm architects
3/30a perambula rd, homebush west NSW 2140
info@gmarchitects.com.au

gm
9797 1599
n.raiser 9457

future road

fifth avenue

future road 6.6m
proposed road widening 6.6m



- b1 - bedroom 1
- b2 - bedroom 2
- b3 - bedroom 3
- liv - living room
- din - dining
- kit - kitchen
- bath - bath
- st - storage
- ens - ensuite
- wlr - walk-in-robe
- ldy - laundry

level 2

building key
1:1000

level 2
185 fifth avenue, austral
residential apartments + basements
development application
gm architects
3/30a perambula rd, homebush west NSW 2140
info@gmarchitects.com.au

gm
architects

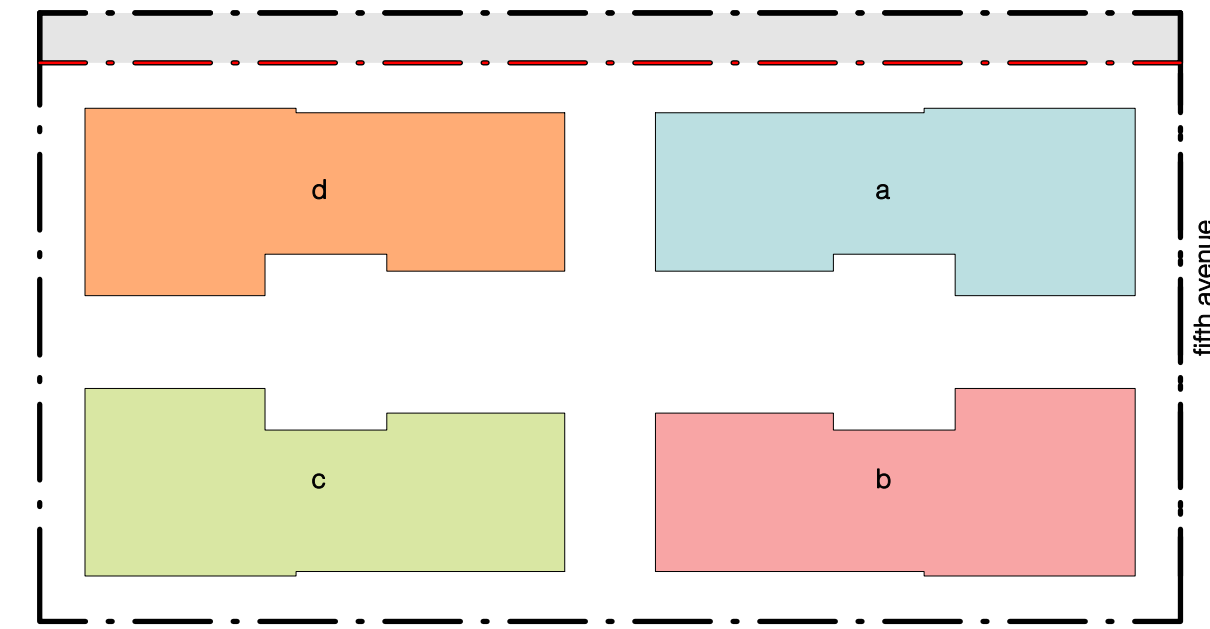
Date	Description

future road

future road 6.6m
proposed road widening 6.6m

fifth avenue

future road



level 3

building key
1:1000

- b1 - bedroom 1
 - b2 - bedroom 2
 - b3 - bedroom 3
 - liv - living room
 - din - dining
 - kit - kitchen
 - bath - bath
 - st - storage
 - ens - ensuite
 - wir - walk-in-robe
 - ldy - laundry
- σ205

level 3
185 fifth avenue, austral
residential apartments + basements
development application
gm architects
330a parramatta rd, homebush west NSW 2140
info@gmarchitects.com.au

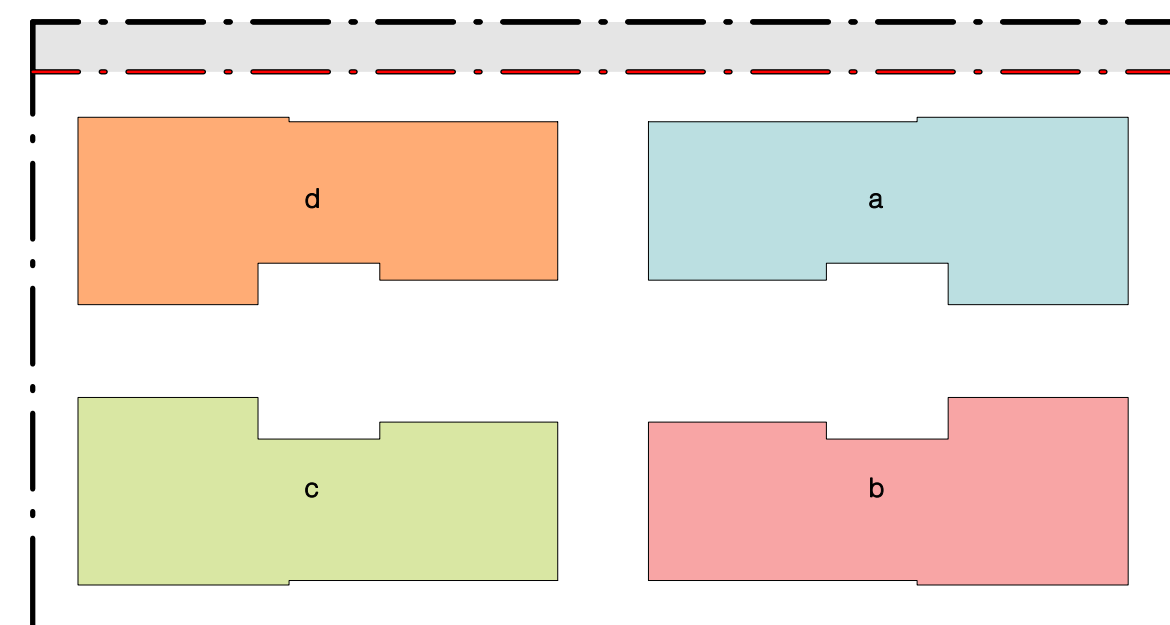
future road

proposed road widening 6.6m

future road 6.6m

fifth avenue

future road



level 4
1:1000

b1 - bedroom 1
b2 - bedroom 2
b3 - bedroom 3
liv - living room
din - dining
kit - kitchen
bath - bath
st - storage
ens - ensuite
wir - walk-in-robe
ldy - laundry
σ206

level 4
185 fifth avenue, austral

residential apartments + basements
development application
gm architects
330a perambula rd, homebush west NSW 2140
info@gmarchitects.com.au

gm
architects
9797 1599
n.raiser 9457

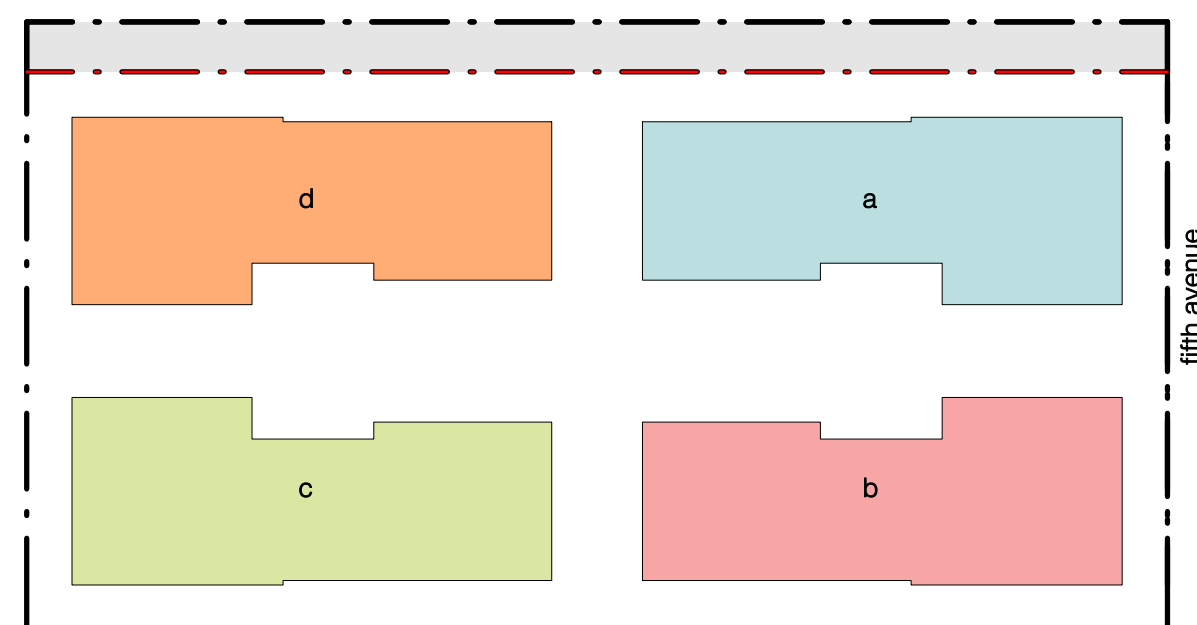
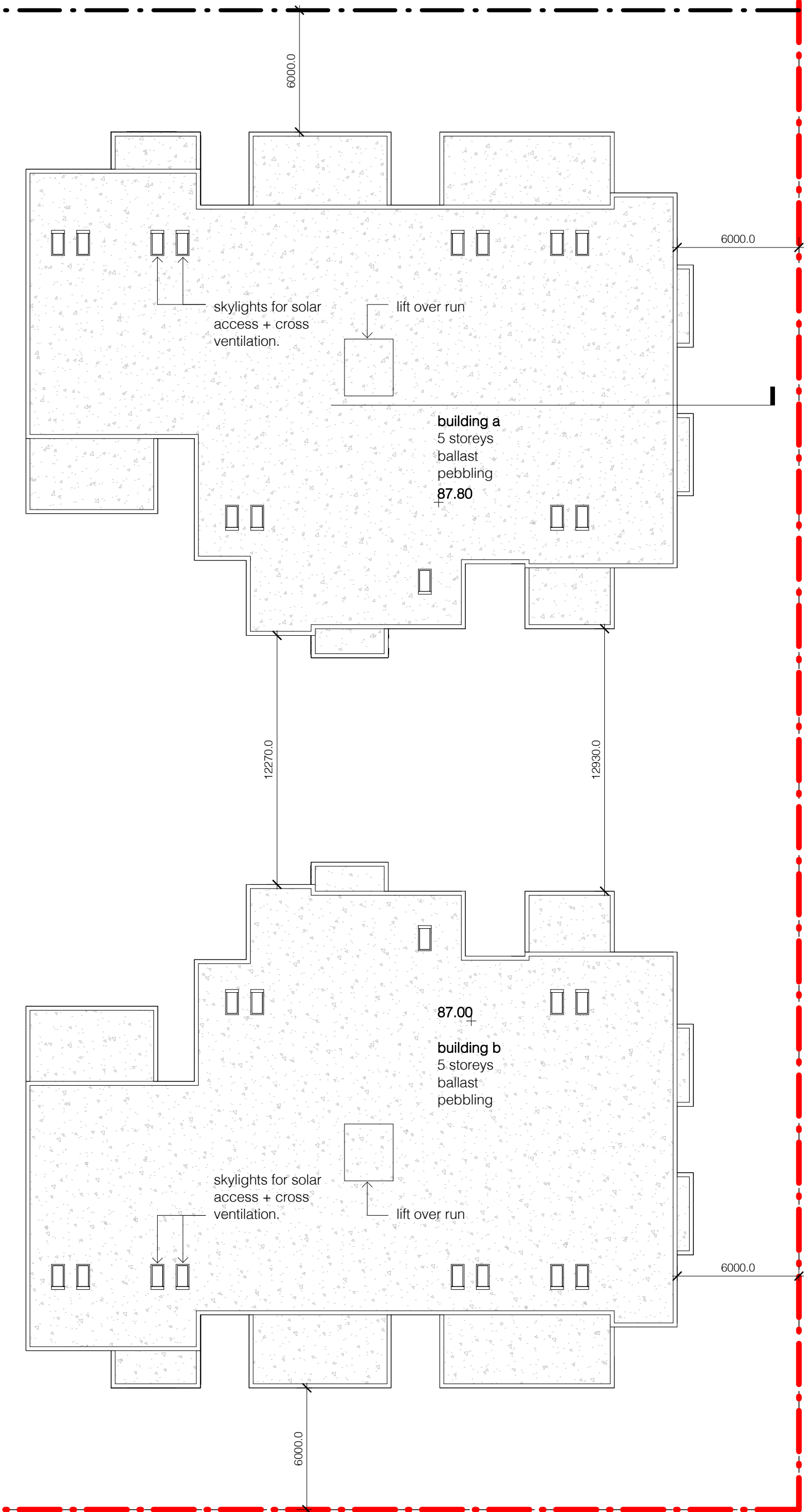
future road

proposed road widening 6.6m

future road 6.6m

fifth avenue

future road



- b1 - bedroom 1
- b2 - bedroom 2
- b3 - bedroom 3
- liv - living room
- din - dining
- kit - kitchen
- bath - bath
- st - storage
- ens - ensuite
- wir - walk-in-robe
- ldy - laundry

α207

roof level
185 fifth avenue, austral
residential apartments + basements
development application
gm architects
3/30a parsonage rd, homebush west NSW 2140
info@gmarchitects.com.au

gm
9797 1599
n.raiser 9457

Date	Description