FLOOD RISK MANAGEMENT PLAN

19 Park Street
Campsie, NSW 2194

Client:
Tomi Vidovic

Civil Engineer:
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REVISION STATUS

Revision	Description of Revision	Date	Issued By:
A	FOR APPROVAL	21 January 2023	AH
B	FOR APPROVAL	21 April 2023	AH
C	FOR APPROVAL	24 August 2023	AH

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1.0 Introduction

1.1 Background

We have assessed the architectural plans prepared by GraphioAM for proposed subdivision & semi-detached dwellings at 19 Park St, Campsie. A site survey and Council flood information has been used to determine flooding extents and impacts to assess associated risks. The property has been assessed for the 100-year ARI and Probable Maximum Flood (PMF) in accordance with the requirements of Part B, Section B5 of former Canterbury Council's Development Control Plan 2012-Catchments Affected by Stormwater Flooding and the NSW Government Floodplain Development Manual.

1.2 Existing Site

The site has an area of approximately 614m^2. The site is bounded by residences to the south & west, Evaline Street to the north & Park Street to the east. The site falls to ward Park Street with RL 15.01 (AHD) at west of the site and RL 13.62 (AHD) at the eastern entry to the site. The existing house and garage on the site discharges to the to the stormwater pit at the corner of Evaline Street & Park Street.

1.3 Proposed Works

The proposal is to demolish the existing structures, subdivide the site and construct two semi-detached dwellings with landscaped gardens, driveway & enclosed garages. The architect's site plan is included in the appendices.

2. Flood Risk Management

2.1 Flood Risk

An application has been made to City of Canterbury-Bankstown for a Stormwater System Report (SSR). The SSR provides flood mapping for the subject site and is appended to this document. The site is flood effected in the 100YR ARI Storm Event & the PMF as shown in Fig 1.0 & Fig 2.0 below. The flood maps are extracted from the Cooks River Overland Flow Study.

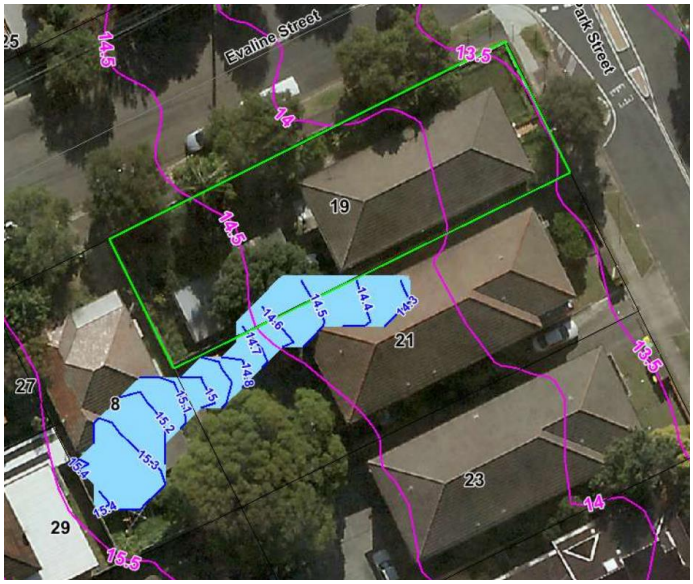


Fig 1.0 100YR ARI Contours & Extent

Fig 2.0 PMF Contours & Extent

In the 100YR ARI Storm Event, an overland flow-path is formed between the two properties at 19 and 21 Park Street. The depth of flow is approximately 150mm. The flow-path develops from the rear of number 21. The fence between 19 and 21 is a solid timber fence with no openings. Fig 3.0 shows the boundary between the two properties, looking from Park Street. The driveway access to number 19 is the main channel for the flow-path. As the flow-depth increases, some seepage through the joints in the fence panels would occur. The flow-path discharges to Park Street to the nearby roundabout and continue down Evaline Street.

Fig 3.0 View of overland flow-path from Park St

2.2 Flood Storage

Drawing 022006-Coo-Flood_Extents_Review (see appendices for full drawing) illustrates the extent of the 100 YR ARI Flood with respect to the existing and proposed site layouts. In the existing scenario, a large tree and sections of a garage and outhouse building are shown in the flow-path. These will be removed as part of the proposed works. To ensure that flood storage is not reduced, the footprint of the proposed houses have been set so that they do not encroach into the flow path. The section of the western occupancy that overlaps with the flood extents, will be suspended allowing flood water to flow through unimpeded and ensuring no loss in flood storage. Fig 5.0 shows the southern elevation of the development with the flood levels, that have been interpreted from the flood mapping.

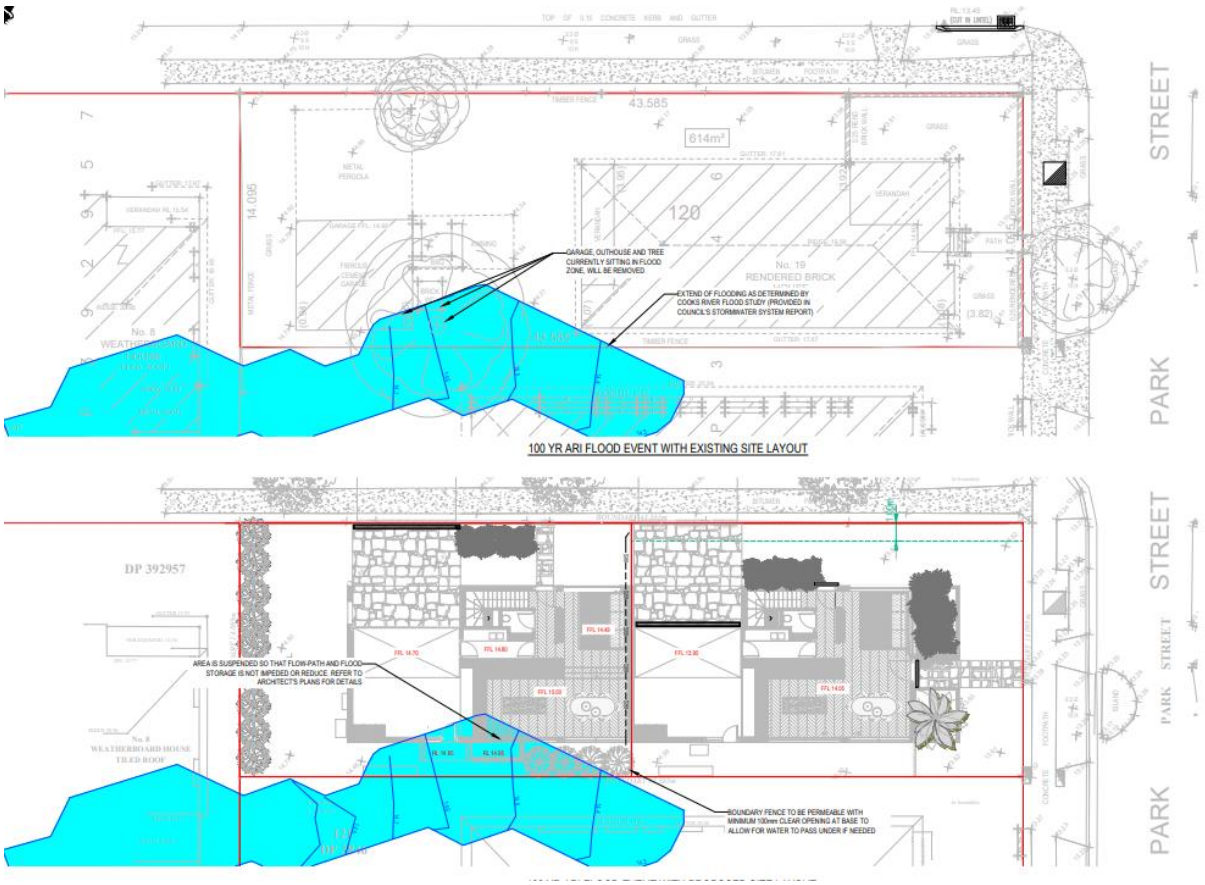


Fig 4.0 Comparison flood storage pre & post development

2.3 Flood Planning Levels and Recommendations

2.4

Fig 5.0 Southern elevation with flood levels

Fig 5.0 shows the south elevation of the development with the flood levels plotted, which have been interpreted from the flood mapping. The following is a summary of flood information in relation to Part B, Section B5 of former Canterbury Council's Development Control Plan 2012- Catchments Affected by Stormwater Flooding and the NSW Government Floodplain Development Manual.

Section B5.13 of the Council's captures the policy regarding flood planning levels:

1. Habitable floor levels of all residential and institutional buildings are to be a minimum of 500mm above the 1 – 100 year flood level.
2. All garages or parking areas are to be at least 150mm above the 1 – 100 year flood level.

The eastern occupancy is not shown to be inundated in the 100 YR ARI Flood. The levels below refer to the western occupancy:

Habitable area:

- 100-year ARI water level: RL14.50m AHD (depth of 150mm)
- Flood Planning Level (FPL): RL15.00m AHD (habitable)
- Proposed Floor Level: RL15.00m AHD (habitable)

Garage

- 100-year ARI water level: RL14.55m AHD
- Flood Planning Level (FPL): RL14.70m AHD
- Proposed Floor Level: RL14.70m AHD

Flood Impacts

- Degree of inundation: Partial for the 100 yr ARI
Full site for the PMF
- Hazard Level: Low
- Impacts of waterborne objects: Low (due to low depth of flow)
- Impacts of waterborne objects: Low (due to low depth of flow)
- Buoyancy: Low (due to low depth of flow)
- Impacts on surrounding properties: None
- Flood Storage: No net reduction
- Flood Levels: No anticipated increase

<u>Structural design</u>

To ensure development in flood liable areas is designed and constructed to withstand the stresses of the highest probable flood new structures are to be designed to cater for the flood loads, ensuring the structural integrity of the building against immersion and the impact of water velocity and debris. New structures are to be constructed of flood compatible timber, steel, and brickwork to above flood levels. All works must be designed to comply with the Standard for Construction of Buildings in Flood Hazard Areas.

<u>Waterproofing</u>
All electrical equipment is to be fitted with circuit breakers. Switchboard and main circuit unit to be fitted above FPL (habitable). Other valuable materials or possessions are to be stored above the FPL.

<u>Flood prevention</u>
Provide adequate freeboard as per the design levels.

Flood warning
No signage is recommended due to the low risk from inundation.

On-site response plan
The first floor of the western and eastern occupancies is at RL 17.90 mAHD and RL 17.10 mAHD respectively, well above the FPL. In the event of a flood the residents should assemble upstairs in the property and contact emergency services or evacuate as described below.

Flood evacuation strategy
In the event of the PMF occurring, the residents will have direct access to Evaline Street which will have only minor flooding. Residents should evacuate from the north of the property to Evaline Street.

3 Stormwater Management

The property falls within the City of Canterbury-Bankstown LGA. The stormwater requirements are detailed in the Canterbury DCP 2012 Part B Stormwater and Flood management. A stormwater plan has been prepared in accordance with this policy and is included in the appendices.

4 Conclusion

The proposed development with will not increase flood risk in the area by either reducing flood storage or increasing the flood hazard. Proposed building levels are appropriate to the flood levels and proposed approach to structural design, waterproofing and on-site response will reduce the risk of damage to the property and injury to the occupants.

Appendix A - Topographical Survey

EVALINE STREET

STREET

PARK

ROUNDABOUT

ISLAND

ISLAND

ISLAND

BM
RL:13.45
(CUT IN LINTEL)

TOP OF 0.15 CONCRETE KERB AND GUTTER

GRASS

BITUMEN

FOOTPATH

GRASS

TIMBER FENCE

43.585

614m²

0.3 Ø
6 S
10 H

0.5 Ø
5 S
15 H

0.3 Ø
4 S
20 H

METAL PERGOLA

0.25 REND. BRICK WALL

GRASS

GUTTER: 17.61

VERANDAH

BRICK WALL

14.095

120

6

4

8

(3.95)

(3.92)

No. 19
RENDERED BRICK
HOUSE
(TILED ROOF)

RIDGE: 19.58

FFL: 14.40

PATH

GRASS

(3.82)

0.25 RENDERED

FOOTPATH

CONCRETE

0.3 Ø
6 S
10 H

0.23 BRICK WALL

GUTTER: 17.97

VERANDAH RL:15.54

FFL: 15.77

RIDGE: 20.96

No. 8
WEATHERBOARD
HOUSE
(TILED ROOF)

RIDGE: 18.63

(METAL ROOF)

GUTTER: 18.48

GARAGE FFL: 14.69

FIBROUS CEMENT GARAGE

BRICK WC

AWNING

BBQ

0.4 Ø
10 S
12 H

METAL FENCE

GRASS

(0.94)

(0.96)

(1.07)

(1.08)

43.585

TIMBER FENCE

GUTTER: 17.67

GUTTER: 20.04

GROUND FFL: 14.26

B C D E F G H I J K L M N O

3

P

D

No. 21
TWO STOREY
BRICK
UNITS
(TILED ROOF)

RIDGE: 22.64

RIDGE: 22.41

BALCONY

T.N.

M.M.

Var. 12° 32'
(By Calculation)
(Nov. 1999)

WINDOW/DOOR TABLE				
No.	Sil RL:	Width	Height	Type
A	16.45	1.45	1.36	WIN
B	N/A	2.18	1.74	BAL
C	N/A	2.18	1.74	BAL
D	N/A	1.70	2.12	DOOR
E	18.16	0.83	1.39	WIN
F	16.12	0.97	1.03	WIN
G	18.81	0.97	1.03	WIN
H	15.95	1.21	1.20	WIN
I	18.61	1.21	1.20	WIN
J	15.70	2.16	1.45	WIN
K	18.38	2.16	1.45	WIN
L	15.70	1.46	1.45	WIN
M	18.39	1.46	1.45	WIN
N	16.10	0.96	1.05	WIN
O	18.81	0.96	1.05	WIN

LEGEND

- TELSTRA PIT
- HYDRANT
- STOP VALVE
- SEWER MAN-HOLE
- GULLY PIT & LINTEL
- SIGNPOST

NOTES

- TREE SPREADS SHOWN 'APPROXIMATELY' ONLY
- VISIBLE SERVICES (AT TIME OF SURVEY) SHOWN ONLY
- NO SERVICE PITS ACCESSED/OPENED SHOWN AS LABELED
- BOUNDARIES BY THE TITLE DIAGRAM ONLY, OFFSETS SHOWN BRACKETED IN RED
- ALL PITS SHOULD BE ACCESSED, CONFIRMED AND HAVE SUBSURFACE EXTENTS MEASURED BY THE RELEVANT AUTHORITIES, PRIOR TO ADOPTION.
- ALL PIPES, CABLES & DUCTS IN THE EXCAVATION AREA SHOULD BE ACCURATELY LOCATED BY A "PIPE LOCATOR" OR BY THE RELEVANT AUTHORITY, PRIOR TO ANY EXCAVATION IS UNDERTAKEN.
- THE SUBJECT TITLE IS BURDENED BY COVENANT (VIDE A102813).

SHEET 1/1

daw & walton PTY LTD
CONSULTING SURVEYORS
ABN 65 120 413 372

PO BOX 3222
REDFERN, NSW, 2016
Ph: (02) 8065 1156
Fax: (02) 8065 1297
Email: survey@daw-walton.com.au

DETAIL SURVEY @
19 PARK STREET,
CAMPSIE NSW 2194

CLIENT: ATSIKI

JOB No: 4048-17

SURVEYED ON: 10 JAN 2018
BY: BD & GE

DRAWN ON: 17 JAN 2018
BY: J YANG

SCALE: 1:100 (@A1)/ 1:200 (@A3)

NORTH: Magnetic (by DP1007715)

DATUM: SSM50119 RL:9.787 (AHD)

CONTOUR INT: N/A

Appendix B – Architect's Site Plan

EVALINE STREET

BENCHMARK
NAIL IN KERB
RL 13.45

6,000 to boundary | 270 | 6,000 | 270 | 9,655 | 270 | 6,000 | 270 | 9,655 | 6,000 to boundary

270 | 6,000 | 270 | 3,520 | 5,595 | 270 | 6,000 | 270 | 3,020 | 6,100 | 270

270 | 6,000 | 270 | 1,890 | 130 | 1,720 | 130 | 1,115 | 450 | 3,680 | 270 | 6,000 | 270 | 1,890 | 130 | 1,720 | 130 | 1,115 | 450 | 3,680 | 270

270 | 6,000 | 130 | 3,880 | 130 | 1,440 | 130 | 3,675 | 270 | 6,000 | 130 | 3,880 | 130 | 1,440 | 130 | 3,675 | 270

BOUNDARY 43.585m

3,500 | 5,765 | 270 | 845 | 960 | 130 | 1,280 | 1,565 | 130 | 130 | 4,260 | 130 | 1,000 | 350 | 130 | 605 | 605 | 6,555 | 6,015 | 3,275 | 3,275 | 270 | 270 | 1,000 | 270 | 1,910 | 910

Extend exising driveway and layback to council design and approval

POS

W5 -

Entry

WC

Living
RL14.490

L'dry
RL14.800

Kitchen
RL15.000

Dining

Double Garage
RL14.700

RWT

A 8.00

Hot / water System

A/C Unit

Green 240l *Yellow 240l* *Red 140l*

W1 -

RL14.650

RL14.950

D1 -

W26 -

Clothes Line 16lm

Extend existing driveway and layback to council design and approval

POS

D4 -

W4 -

WC

TV

Living

W3 -

L'dry

Entry
RL14.050

Kitchen

Dining

Double Garage
RL13.950

Green 240l *Yellow 240l* *Red 140l*

RWT

A/C Unit

W2 -

Hot / water System

D2 -

D3 -

Clothes Line 16lm

3,500 | 5,765 | 270 | 960 | 130 | 1,565 | 130 | 1,000 | 350 | 130 | 605 | 8,140 | 8,685 | 6,015 | 3,275 | 270 | 270 | 270 | 1,910

BOUNDARY 43.585m

270 | 6,000 | 130 | 3,885 | 130 | 1,435 | 130 | 3,680 | 270 | 6,000 | 130 | 3,885 | 130 | 1,435 | 130 | 3,680 | 270

270 | 6,000 | 730 | 130 | 600 | 7,930 | 270 | 6,000 | 730 | 130 | 600 | 7,930 | 270 | 2,435 | 3,565

6,000 to boundary | 31,585 | 6,000 to boundary

to boundary | 6,045 | 6,000

GROUND FFL 14.26

GUTTER 20.04

BALCONY

121
DP 3846

0 1 2 3 4 5

SCALE IN METRES

THESE DRAWINGS ARE DESIGN INTENT DRAWINGS ONLY. NOT USED DURING CONSTRUCTION. IT IS NOT A DETAILED CONSTRUCTION DRAWING AND SHOULD NOT BE USED AS SUCH. IF THIS DRAWING DESCRIBES A COMPONENT TO BE MAUFACTURED, THE BUILDER SHOULD SEEK AND CHECK SHOP DRAWINGS FOR THAT COMPONENT, PREPARE BY THE MANUFACTURER.

USE FIGURED DIMENSIONS ONLY. DO NOT SCALE FROM THIS DRAWING. BUILDER TO BE RESPONSIBLE FOR IDENTIFYING DRAWING DISCREPANCIES PRIOR TO THE WORK DESCRIBED IN THE DRAWING BEING CARRIED OUT.

KEY

AC	Air conditioning	PL	Planter
BG	Box gutter	R	Refrigerator
CM	Cement render	RC	Reinforced concrete
CP	Carpet		
CPD	Cupboard	RL	Relative level
CR	Copper roofing	RP	Recessed panel
CT	Cooktop	S	Sink
DP	Downpipe	SD	Slot drain
ED	Eastern door	SK	Skylight
EW	Eastern window	SW	Shower waste
FW	Floor waste	TB	Timber battens
HWS	Hot water system	TF	Timber flooring
J	Construction joint	WD	Western door
OF	Overflow	WW	Western window
PB	Plasterboard	CB	Concrete block

REVISION	ISSUE	DATE
A	DEVELOPMENT APPLICATION	18/05/2023
B	DEVELOPMENT APPLICATION	07/07/2023
C	S82A APPLICATION	22/08/2023

FOR S82A / SK / ~~TENDER~~ ISSUE ONLY

0008170260 18 May 2023
Assessor Thomas Ruck
Accreditation No. DMN/20/1999
Address
19 Park Street , Campsie , NSW , 2194
hstar.com.au

FOR S82A APPLICATION ISSUE ONLY

GRAPHIO AM
SUITE 3.04, 56 BOWMAN STREET, PYRMONT NSW 2009
TELEPHONE +61 2 9660 0628 EMAIL contact@graphioam.com.au

19 PARK STREET, CAMPSIE
FOR MR TOMI VIDOVIC
GROUND FLOOR PLAN
SCALE 1:100 @ A3

S82A_5.00 C
AUGUST 2023

Appendix C - City of Canterbury-Bankstown Stormwater System Report

Level 1, 66 - 72 Rickard Road, Bankstown NSW
PO Box 8, Bankstown NSW 1885
Tel: (02) 9707 9010 - Fax: (02) 9707 9408
DX 11220 BANKSTOWN
council@cbcity.nsw.gov.au

CITY OF CANTERBURY BANKSTOWN

To: Aidan Hogan
22/15 Begonia St
PAGEWOOD NSW 2035

STORMWATER SYSTEM REPORT
19 Park Street, CAMPSIE NSW 2194

Date: 19-Dec-2022
Ref: WP-SIAONL-2900/2022
Development type: Dual Occupancy

NO FLOOD/OVERLAND FLOW STUDY REQUIRED

The site is not affected by Council stormwater systems.

The site will be subject to stormwater inundation from this overland flowpath during large storm events. Refer to the attached "100 Year ARI Flood & **PMF Extent Maps from Cooks River Overland Catchment Study"..** Provision should be made on site, and at boundary fences, for this stormwater runoff to pass unobstructed over the site. Stormwater flowing naturally onto the site must not be impeded or diverted.

The proposed development including floor levels, shall comply with the development controls specified in Part B, Section B5 of former Canterbury Council's Development Control Plan 2012- Catchments Affected by Stormwater Flooding.

The Development Application submission shall be based on an AHD datum for levels where sites are affected by overland flow / flooding. Refer Part B, Section B5 of former Canterbury Council's Development Control Plan 2012

Runoff on the site, and naturally draining to it is to be collected and disposed of to Council's requirements detailed in **Part B, Section B5 of former Canterbury Council's Development Control Plan 2012.**

This report relates to the exposure of the subject site to Council's stormwater system, both underground and overland. It does not assess the suitability or otherwise of this site for the proposed development.

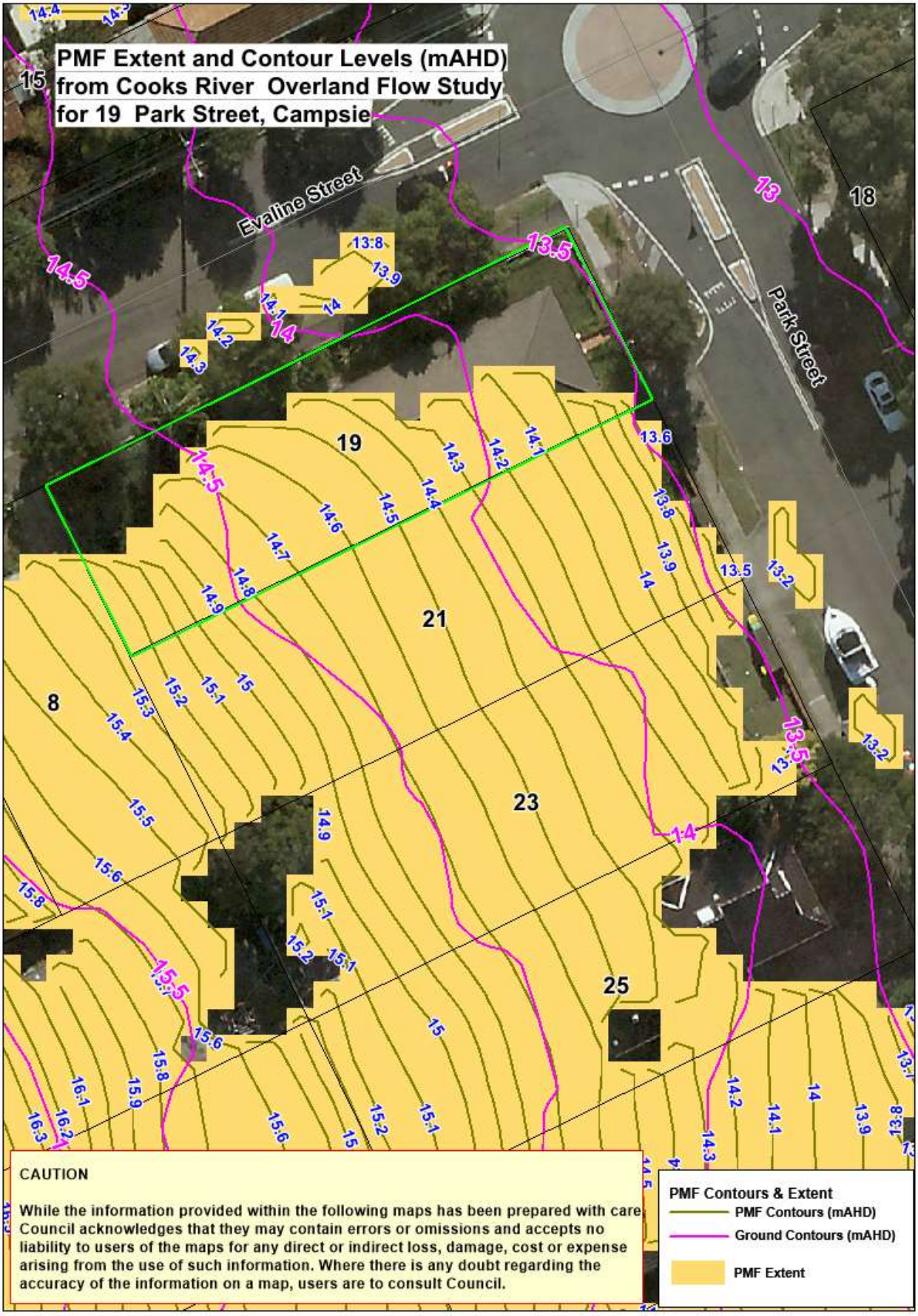
* Average Recurrence Interval

** Australian Height Datum

PMF Probable Maximum Flood

Pushpa Goonetilleke
ENGINEER


100 year ARI (1% AEP) Extent and Contour Levels (mAHD)
from Cooks River Overland Flow Study
for 19 Park Street, Campsie
Park Street
Park Street
Evaline Street
15
17
25
19
21
23
27
29
31
8
13
13.5
14
14.5
15
15.5
16
14.3
14.4
14.5
14.6
14.7
14.8
15
15.1
15.2
15.3
15.4
15.4
CAUTION
While the information provided within the following maps has been prepared with care Council acknowledges that they may contain errors or omissions and accepts no liability to users of the maps for any direct or indirect loss, damage, cost or expense arising from the use of such information. Where there is any doubt regarding the accuracy of the information on a map, users are to consult Council.
100 yr ARI (1% AEP) Contours & Extent
Flood Contours (mAHD)
Ground Contours (mAHD)
Flood Extent


PMF Extent and Contour Levels (mAHD)
from Cooks River Overland Flow Study
for 19 Park Street, Campsie
Evaline Street
Park Street
15
18
19
21
8
23
25
CAUTION
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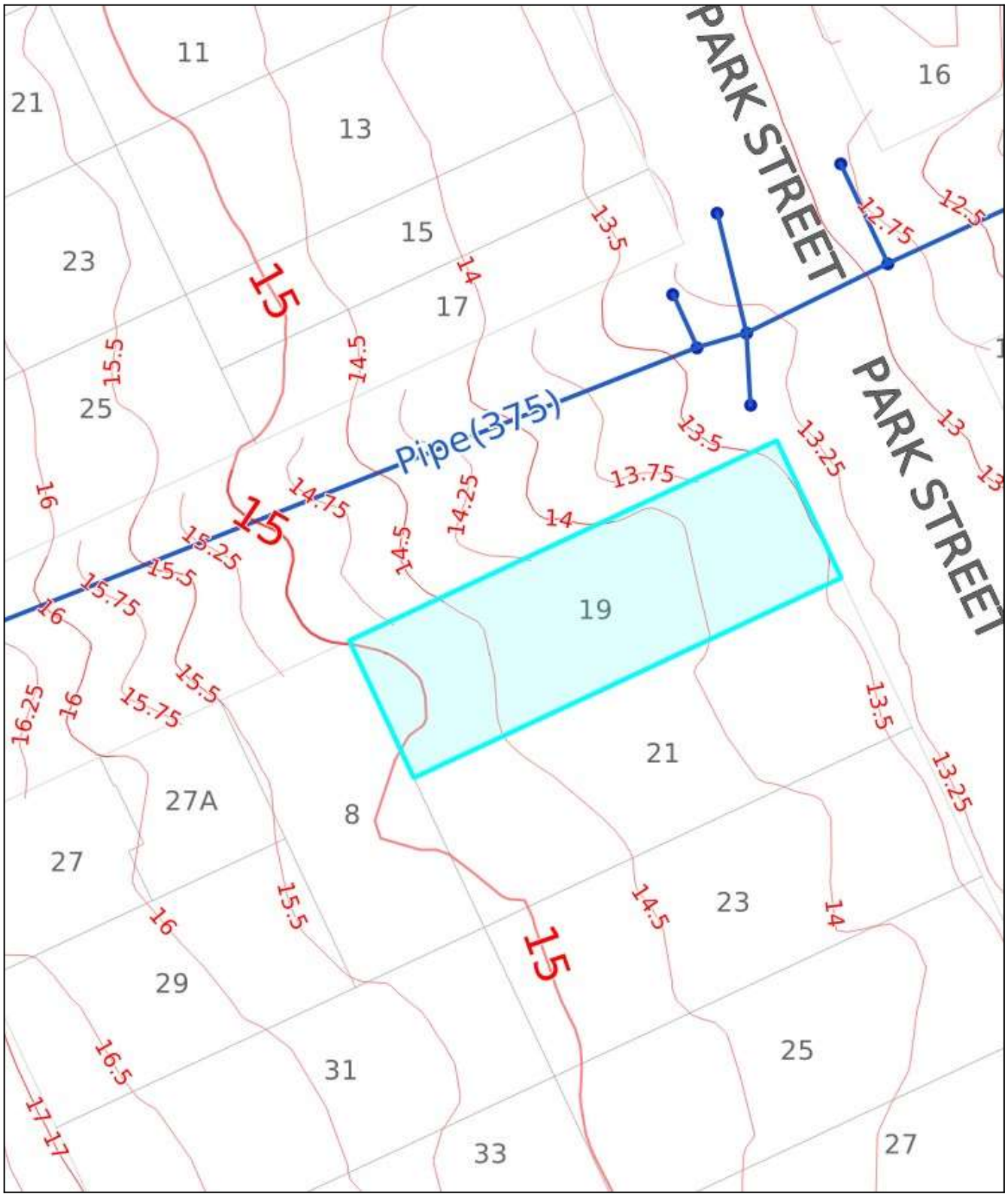
PMF Contours & Extent
PMF Contours (mAHD)
Ground Contours (mAHD)
PMF Extent

GIS Map for 19 Park Street, Campsie



DATE: Dec 16, 2022, 6:12 PM

1:564

Metres 10 20 30

PREPARED BY: Pushpa G

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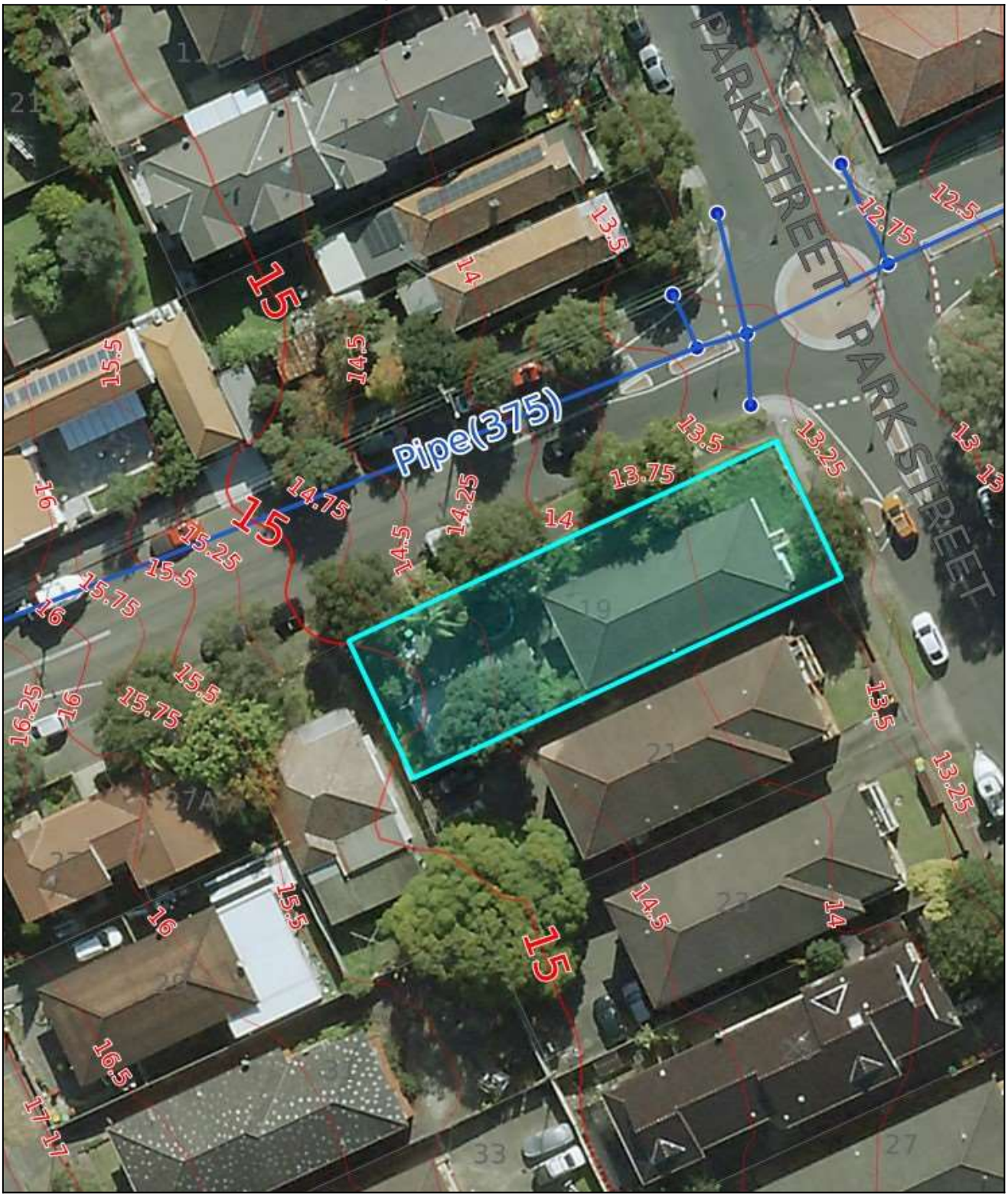
Aerial Map for 19 Park Street, Campsie



DATE: Dec 16, 2022, 6:15 PM

1:564

Metres 10 20 30

PREPARED BY: Pushpa G

Whilst all care has been taken in the preparation of this base map, Council accepts no responsibility for the accuracy of any information shown. Users should rely on their own enquiries in order to validate information shown on this map. This information is for graphical presentation only.

LEGEND

Parcel Frontage

Parcel Boundary

Parcel Easements (Line)

Parcel Easements (Polygon)

Contours (Major 10m)

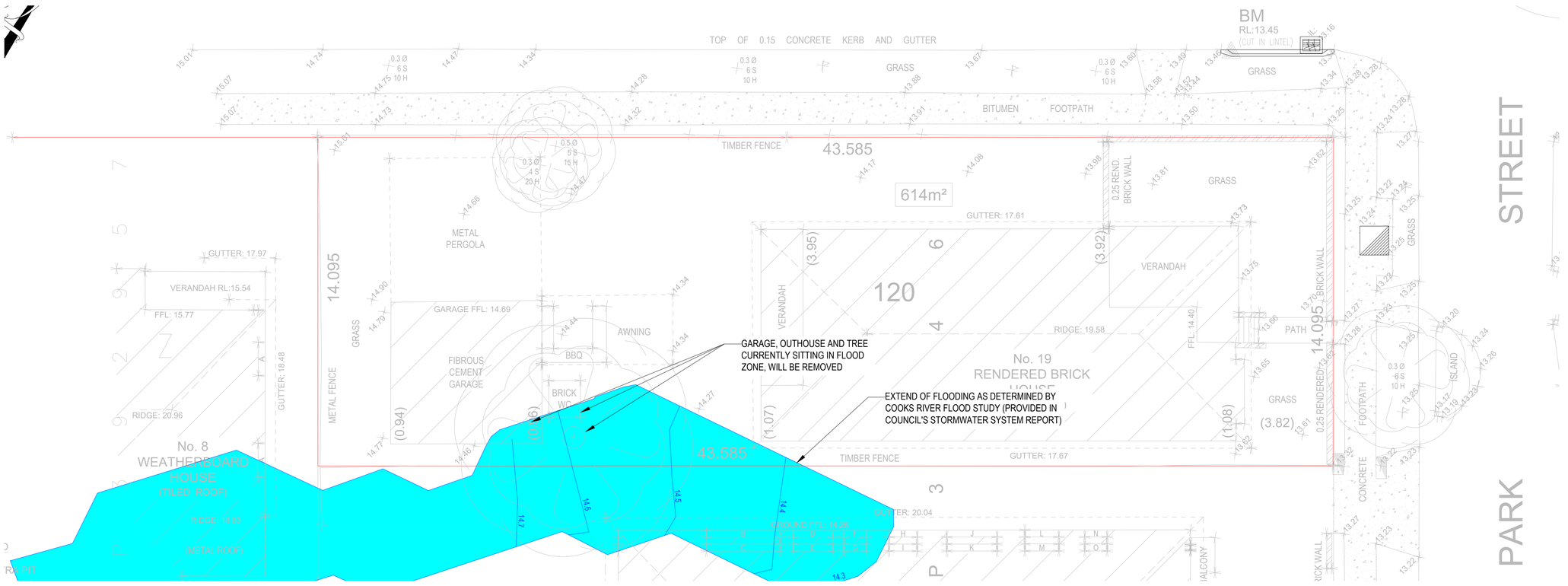
Contours (Intermediate 5m)

Contours (Minor <5m)

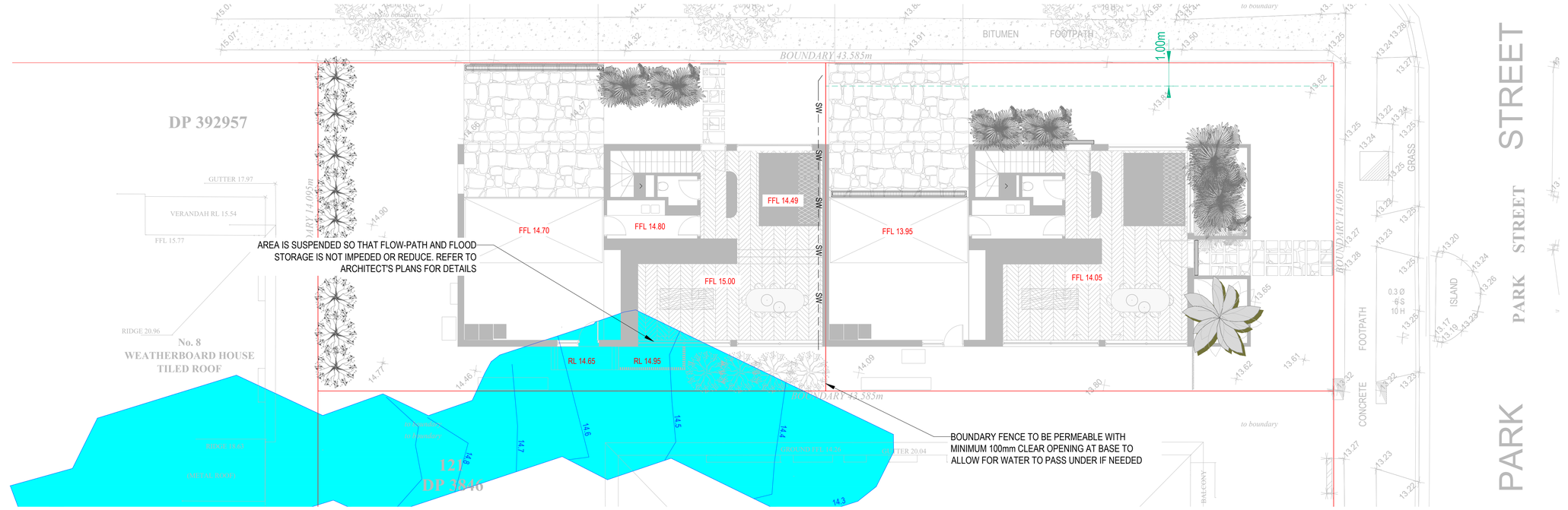
Drains

Pits

Appendix D - Flood Comparison and Stormwater Drainage Plans



100 YR ARI FLOOD EVENT WITH EXISTING SITE LAYOUT



100 YR ARI FLOOD EVENT WITH PROPOSED SITE LAYOUT

No.	REVISION DESCRIPTION	DRAWN	DATE
C	AMENDED LAYOUT	AH	24.08.23
B	AMENDED LAYOUT	AH	21.04.23
A	FOR APPROVAL	AH	20.01.23

REVISIONS:

SCALE BAR

0 1 2 3 4 5m 10m

SCALE 1:100

CIVIL ENGINEER
AIDAN HOGAN B.Eng. CPEng, MIEAustralia
e: hoganaodan@gmail.com

ARCHITECT
GRAPHIO AM
SUITE 3.04, 56 BOWMAN STREET, PYRMONT, NSW 2009

PROJECT TITLE
DUAL OCCUPANCY
19 PARK ST, CAMPSIE

DRAWING TITLE
FLOOD EXTENTS REVIEW

DRAWING STATUS
APPROVAL ISSUE
NOT TO BE USED FOR CONSTRUCTION

DESIGNER	SHEET SIZE
AH	A1
SCALE	PROJECT START DATE
	SEP 2022
JOB No.	DRAWING No. / REVISION
022006	C00 / C

DESIGN SUMMARY

COUNCIL REQUIREMENTS
THIS PROPERTY FALLS WITHIN THE CITY OF CANTERBURY-BANKSTOWN LGA. THE STORMWATER REQUIREMENTS ARE DETAILED IN THE CANTERBURY DCP 2012 PART B STORMWATER AND FLOOD MANAGEMENT. THIS STORMWATER PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THIS POLICY.

FLOOD RISK
REFER TO THE FLOOD RISK MANAGEMENT PLAN.

RAINWATER REUSE
BASIX REQUIRES A MINIMUM 2000L OF RAINWATER REUSE STORAGE. THE RAINWATER TANK IS TO COLLECT AT LEAST 60m^2 OF ROOF AREA AND HAVE A CONNECTION FOR IRRIGATION AND LAUNDRY. A SUITABLE RAINWATER TANK HAS BEEN SPECIFIED TO MEET THESE REQUIREMENTS.

ON-SITE DETENTION (OSD)

AS PER SECTION B5.5.1 OF THE DCP, FOR DUAL OCCUPANCIES OSD IS REQUIRED WHERE THE PROPOSED IMPERVIOUS AREA IS GREATER THAN OR EQUAL TO 70% OF THE TOTAL SITE AREA.

WESTERN OCCUPANCY
SITE AREA = 307m2
LANDSCAPED AREA = 136m^2 (44%)
IMPERVIOUS AREA = 171m^2 (56%)

EASTERN OCCUPANCY
SITE AREA = 307m2
LANDSCAPED AREA = 129m^2 (42%)
IMPERVIOUS AREA = 178m^2 (58%)

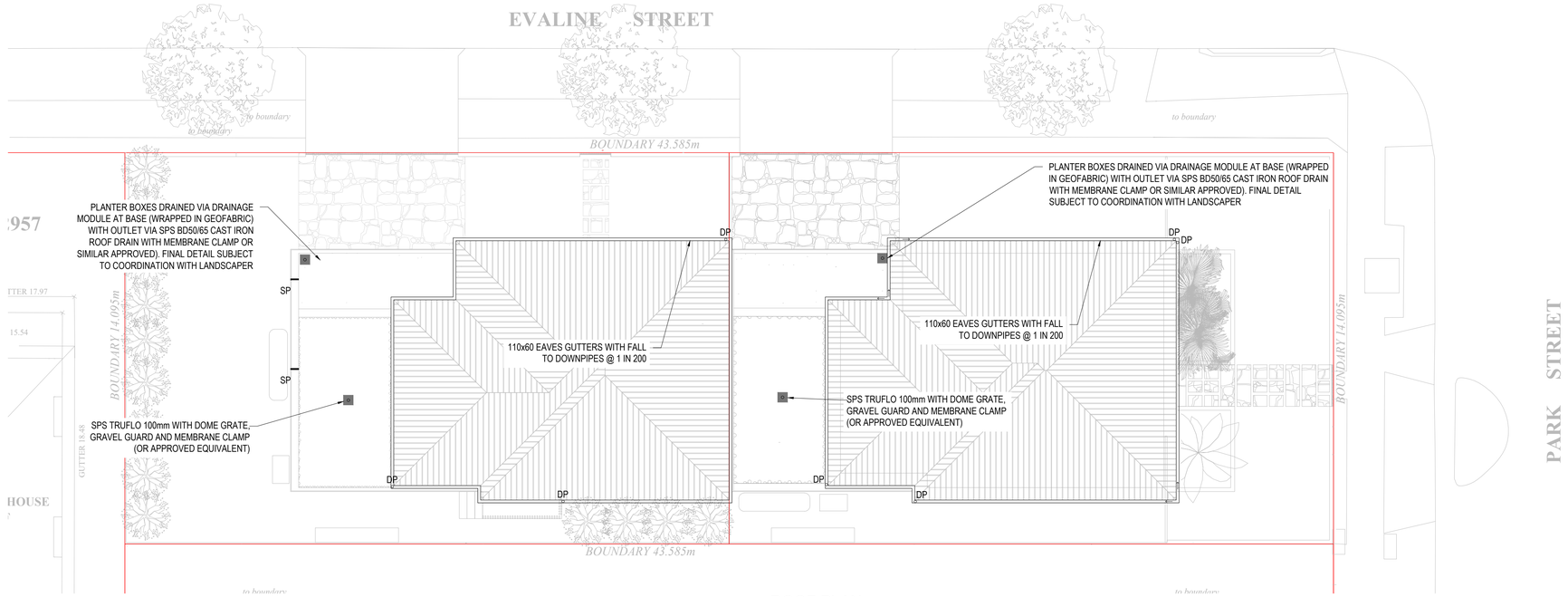
AS PER COUNCIL POLICY OSD HAS NOT BEEN PROVIDED. DRAINAGE SYSTEM TO BE PROVIDED WITH GRAVITY FED PIPES AND SILT ARRESTOR PIT.

OVERLAND FLOW
OVERLAND FLOW PATHS TO EVALINE STREET ARE PROVIDED AS SHOWN..

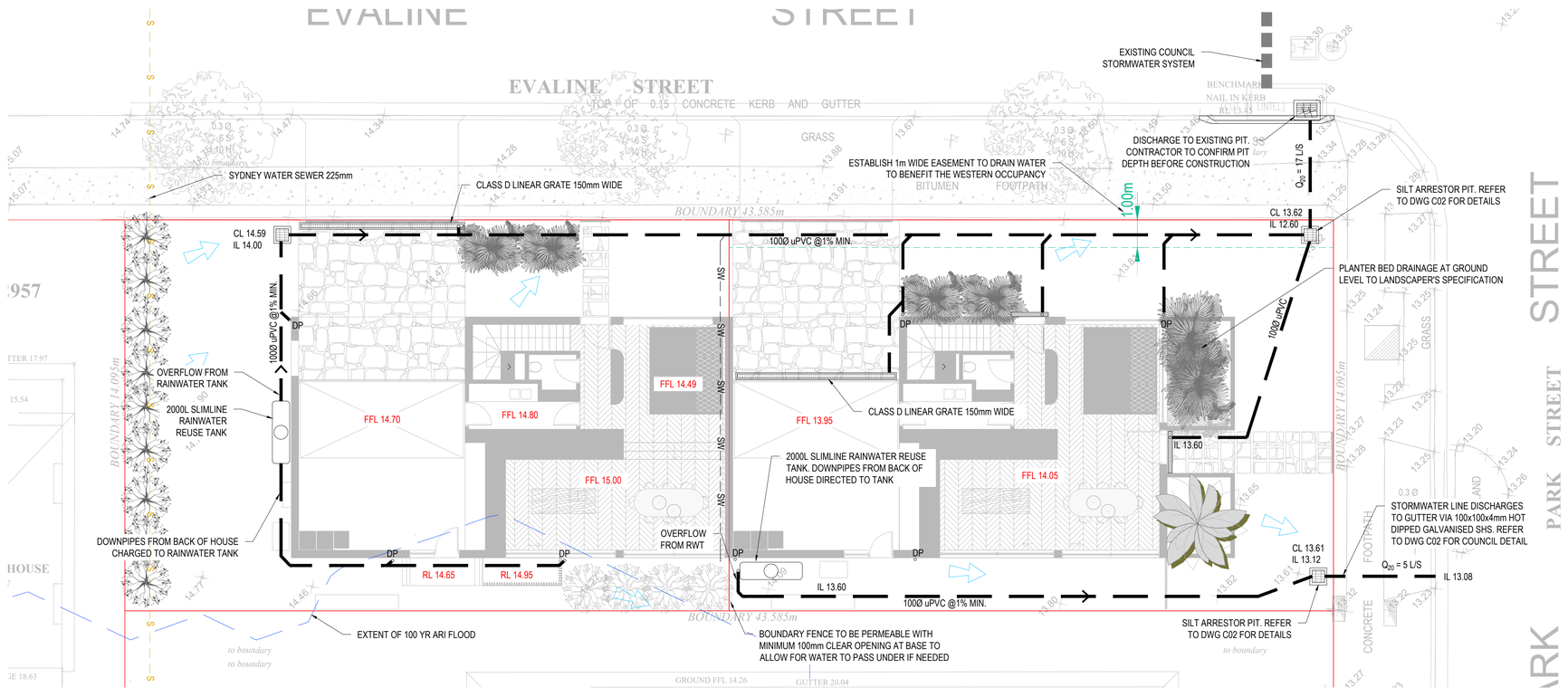
STORMWATER DISCHARGE
PROPOSED DISCHARGE IS TO THE EXISTING PIT ON EVALINE STREET (17 L/S IN THE 20 YR ARI EVENT) AND THE KERB AND GUTTER ON PARK STREET (5 L/S IN THE 20 YR ARI EVENT).

A 1m WIDE EASEMENT WILL BE ESTABLISHED OVER THE EASTERN OCCUPANCY TO ALLOW THE WESTERN OCCUPANCY TO DRAIN WATER THROUGH IT. THE PROPOSED EASEMENT IS DRAWN ON THE PLAN.

FLAT ROOF RWO SIZING
FLAT ROOF MAXIMUM CATCHMENT = 26m^2
I = 265
Q = 2.0 L/S
SPS TRUFLO 100mm HAS CAPACITY OF 7 L/S



ROOF PLAN
SCALE 1:100



GROUND FLOOR PLAN
SCALE 1:100

LEGEND

- GRAVITY STORMWATER PIPE 100Ø U.N.O. REFER DWG C02 FOR DETAILS
- DP — DOWNPIPE CONNECTION
- SP — CAST IN PVC OVERFLOW SPITTER/SPIGOT
- GRATED INLET PIT 600x600 CLASS C U.N.O. REFER DWG C02 FOR DETAILS
- SW — SUBSOIL DRAIN REFER DWG C02 FOR DETAILS
- OVERLAND FLOWPATH

COUNCIL STORMWATER DRAINAGE MAP
NTS

REVISIONS:			
D	AMENDED LAYOUT	AH	24.08.23
C	AMENDED LAYOUT	AH	21.04.23
B	LEVELS RAISED SO SUIT FLOOD MAPPING	AH	20.01.23
A	FOR APPROVAL	AH	31.10.22
No.	REVISION DESCRIPTION	DRAWN	DATE

SCALE BAR
0 1 2 3 4 5m
SCALE 1:50

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

CIVIL ENGINEER
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e: hoganaodan@gmail.com

ARCHITECT
GRAPHIO AM
SUITE 3.04, 56 BOWMAN STREET, PYRMONT, NSW 2009

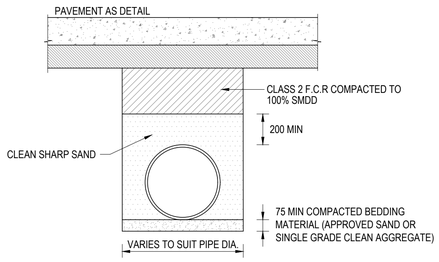
PROJECT TITLE
DUAL OCCUPANCY
19 PARK ST, CAMPSIE

DRAWING TITLE
STORMWATER DRAINAGE CONCEPT PLAN

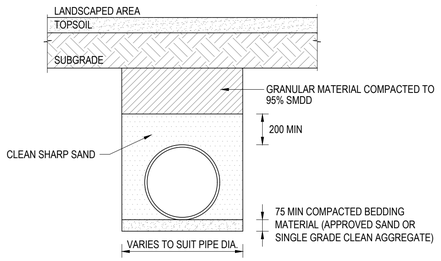
DRAWING STATUS
APPROVAL ISSUE
NOT TO BE USED FOR CONSTRUCTION

DESIGNER	SHEET SIZE
AH	A1
SCALE	PROJECT START DATE
	SEP 2022

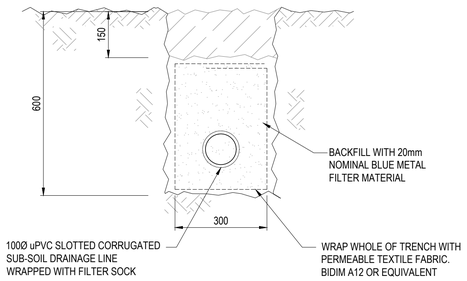
JOB No.	DRAWING No.	REVISION
022006	C01	D



UNDER PAVEMENT PIPE BEDDING
NTS



UNDER LANDSCAPING PIPE BEDDING
NTS



SUB-SOIL DRAIN DETAIL
SCALE 1:10

DRAINAGE NOTES

D1. PIT LEVELS SHOWN ON STORMWATER DRAINAGE PLANS ARE FOR INFORMATION. EXACT PIT LEVELS TO BE ADJUSTED TO SUIT FALLS IN PAVEMENT/LANDSCAPED AREA.

D2. PITS GREATER THAN 1.2m DEEP TO BE FITTED WITH STEP IRONS.

D3. DRAINAGE PIPES SHALL BE BACKFILLED WITH COMPACTED CLEAN SHARP SAND TO 200 ABOVE PIPE OBVERT. ADDITIONAL BACKFILL UNDER ROADS SHALL CONSIST OF CLASS 2 F.C.R. MATERIAL COMPACTED IN 200mm LAYERS TO 98% SMDD. UNDER LANDSCAPED AREAS ADDITIONAL BACKFILL SHALL CONSIST OF GRANULAR MATERIAL COMPACTED IN 200mm LAYERS TO 95% SMDD.

D4. A 3m LENGTH OF 100 Ø SLOTTED AGRICULTURAL LINE SURROUNDED BY GEOTECH STOCKING SHALL BE PROVIDED ON THE UPSTREAM SIDE OF ALL PITS.

D5. CONCRETE STORMWATER PIPES TO BE CLASS '3' UNDER ROADS AND CLASS '2' IN NON-TRAFFICED AREAS. ALL PIPES GREATER THAN 300Ø ARE TO BE RUBBER RING JOINTS U.N.O.

D6. CONCRETE PITS GREATER THAN 1.0m DEEP TO BE REINFORCED WITH N12-200 EACH WAY CENTRED, MIN. 300 LAP, CONCRETE - F'c 25MPa

D7. 150Ø, 225Ø & 300Ø uPVC PIPES TO BE SEWER GRADE PIPE UNDER TRAFFICABLE PAVEMENT. MIN. 400 COVER UNDER NON-TRAFFICABLE PAVEMENT.

D8. PIT COVERS & GRATED DRAINS IN TRAFFICABLE PAVEMENT TO BE AS 3996 CLASS D "HEAVY DUTY" & IN NON-TRAFFICABLE AREAS TO BE AS 3996 CLASS C "LIGHT DUTY".

ROOF DRAINAGE NOTES

RD1. CONTRACTOR SHALL ALLOW FOR ALL FLASHING AND WATERPROOFING IN ACCORDANCE WITH THE AUSTRALIAN STANDARD HB 39:2015 AND AS REQUIRED TO PROVIDE A "WATERTIGHT" JOINT.

RD2. FOR BOX GUTTERS CONTRACTOR SHALL ALLOW TO INSTALL 100% EMERGENCY OVERFLOW MEASURES TO ATMOSPHERE IN ACCORDANCE WITH AS3500.

RD3. CONTRACTOR SHALL ALLOW FOR FALL IN GUTTERS AT A MINIMUM OF 1: 200 TO ALLOW FOR ADEQUATE FALL TO THE SUMP/DOWNPIPE.

RD4. WHERE RAINHEADS ARE USED, OVERFLOW WEIR OF RAINHEAD TO BE MINIMUM 25mm BELOW SOLE OF THE GUTTER. TOP OF RAINHEAD TO BE NO HIGHER THAN HALF THE DEPTH OF THE GUTTER.

RD5. DOMESTIC BOX GUTTERS TO BE MINIMUM 200mm WIDE & MINIMUM 75mm DEEP AT HIGH END.

RD6. COMMERCIAL AND INDUSTRIAL BOX GUTTERS TO BE MINIMUM 300mm WIDE & MINIMUM 75mm DEEP AT HIGH END.

RD7. BOX GUTTER SUMPS TO BE MINIMUM 150mm DEEP AND 400mm LONG.

RD8. EAVES GUTTERS TO BE OFFSET FROM FASCIA MINIMUM OF 4mm.

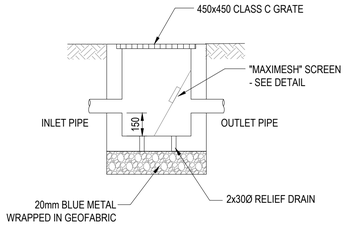
RD9. BACK OF EAVES GUTTERS TO BE MINIMUM 10mm BELOW TOP OF FASCIA.

RD10. CONTRACTOR SHALL ALLOW FOR ALL REQUIRED EXPANSION JOINTS AND ADJUSTMENTS FOR THERMAL VARIATION. ALL EXPANSION SPACE SHALL BE A MINIMUM OF 50mm.

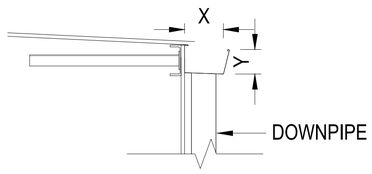
RD11. CONTRACTOR SHALL ALLOW TO INSTALL GUTTER GUARDS AND MESH SCREENS ON ALL GUTTERS, DOWNPIPES AND SUMPS.

RD12. CONTRACTOR TO PROVIDE A MAINTENANCE SCHEDULE FOR REGULAR CLEANING AND HOSE FLUSHING OF ALL DOWN PIPES AND GUTTERS.

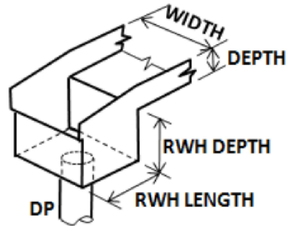
RD13. CONTRACTOR TO PROVIDE A WATER TEST FOR ALL INTERNAL DOWNPIPES FOR 10 MINUTES AT 100mm OF HEAD WATER/OR AIR TEST PRESSURE OF NOT LESS THAN 30 kPa FOR A MINIMUM OF 3 MINUTES IN ACCORDANCE WITH AS3500.

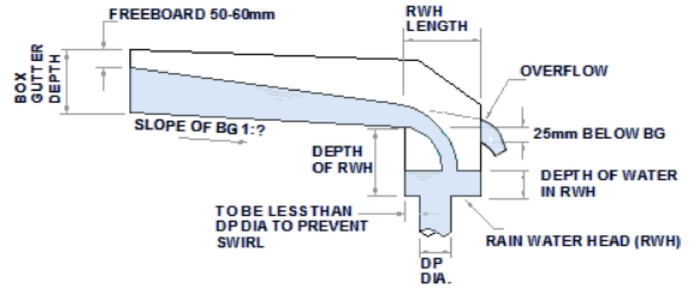


SILT ARRESTOR PIT
SCALE 1:20

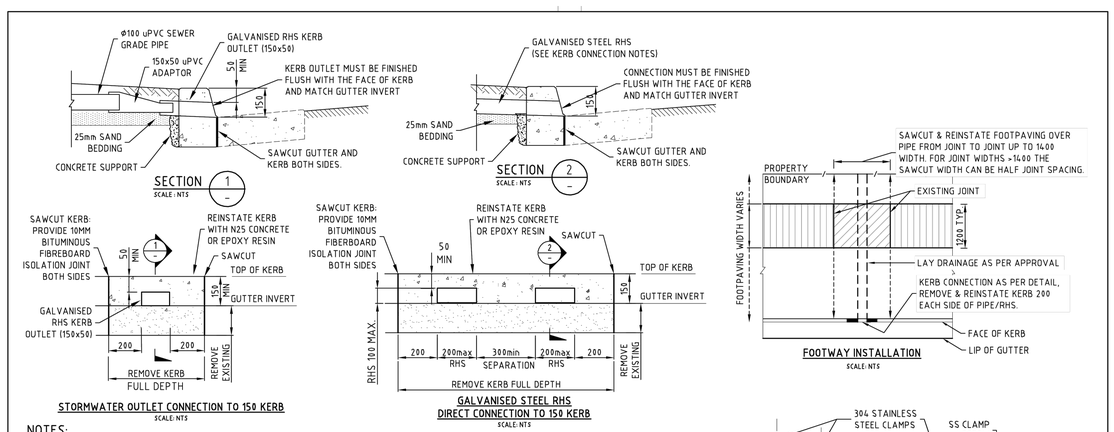


EAVES GUTTER
NTS





RAINWATER HEAD SCHEMATICS
NTS



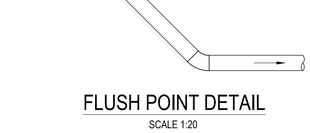
NOTES:

1. FOR PIPE TYPE, SIZE, AND LOCATION ACROSS FOOTWAY REFER TO THE APPROVED WORK PERMIT PLAN.
2. FOR PIPE LOCATION AND CLEARANCE REQUIREMENTS REFER TO CBC STD DWG S-004.
3. DEVELOPMENTS OTHER THAN SINGLE DWELLINGS AND DUAL OCCUPANCIES ARE TO USE HOT DIP GALVANISED STEEL RHS BOX SECTIONS 5MM THICK, 100 MAX HIGH AND 200 MAX WIDE, ACROSS THE FOOTWAY.
4. SINGLE DWELLINGS AND DUAL OCCUPANCIES MAY USE 100 DIA. uPVC PIPE FOR ROOF WATER OUTLET (RWO). PIPES TO BE EXTRA HEAVY DUTY SEWER GRADE - SN825N10.
5. SAWCUT AND REMOVE FOOTPAVING OVER PIPE FROM EXISTING JOINT TO EXISTING JOINT UP TO JOINT WIDTH OF 1400. FOR JOINT WIDTHS >1400 THE SAWCUT WIDTH CAN BE HALF JOINT SPACING.
6. PIPE ACROSS FOOTWAY TO BE LAID WITH MINIMUM FALL OF 1 IN 80 TO MAXIMISE COVER.
7. uPVC PIPES TO BE CONNECTED TO VC PIPES WITH APPROVED PROPRIETARY FLEXIBLE THERMOPLASTIC CONNECTOR AS DETAILED.
8. KERB CONNECTION TO BE SAWCUT AS DETAILED. REMOVE KERB SECTION FULL DEPTH.
9. KERB OUTLET/RHS IS TO MATCH GUTTER INVERT.
10. INVERT OF KERB OUTLET/RHS FOR PUMP OR CHARGED SYSTEMS TO BE 20MM HIGHER THAN INVERT OF GUTTER.
11. REINSTATE KERB BOTH SIDES USING N25 CONCRETE, EPOXY RESIN, OR 4:2:1.5 HAND MIX CONCRETE FULLY AROUND PIPE, PROVIDE 10MM BITUMEN FIBREBOARD ISOLATION JOINT BOTH SIDES.
12. REINSTATE FOOTPAVING TO MATCH EXISTING WITH ISOLATION JOINTS BOTH SIDES. REINSTATE ALL DISTURBED FOOTWAY AREAS TO MATCH EXISTING.

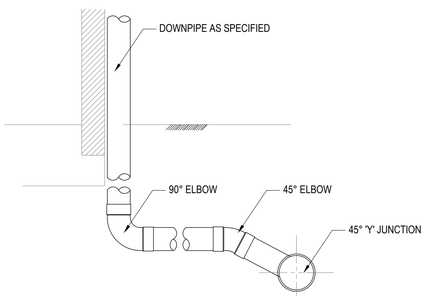
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

CANTERBURY BANKSTOWN

CITY OF CANTERBURY BANKSTOWN	STD DWG N°
STANDARD PROPERTY DRAINAGE CONNECTION TO KERB & GUTTER	S-107
	Sheet N°: 1 of 1 — Revision: 22/02/19
SECTIONS AND NOTES	File Name: S-107.dwg



FLUSH POINT DETAIL
SCALE 1:20



uPVC DOWNPIPE CONNECTION
SCALE 1:20

REVISIONS:			
B	FOR APPROVAL	AH	21.04.23
A	FOR APPROVAL	AH	31.10.22
No.	REVISION DESCRIPTION	DRAWN	DATE

SCALE BAR
0 1 2 3 4 5 1m 1.5 2m
SCALE 1:20

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ARCHITECT
GRAPHIO AM
SUITE 3.04, 56 BOWMAN STREET, PYRMONT, NSW 2009

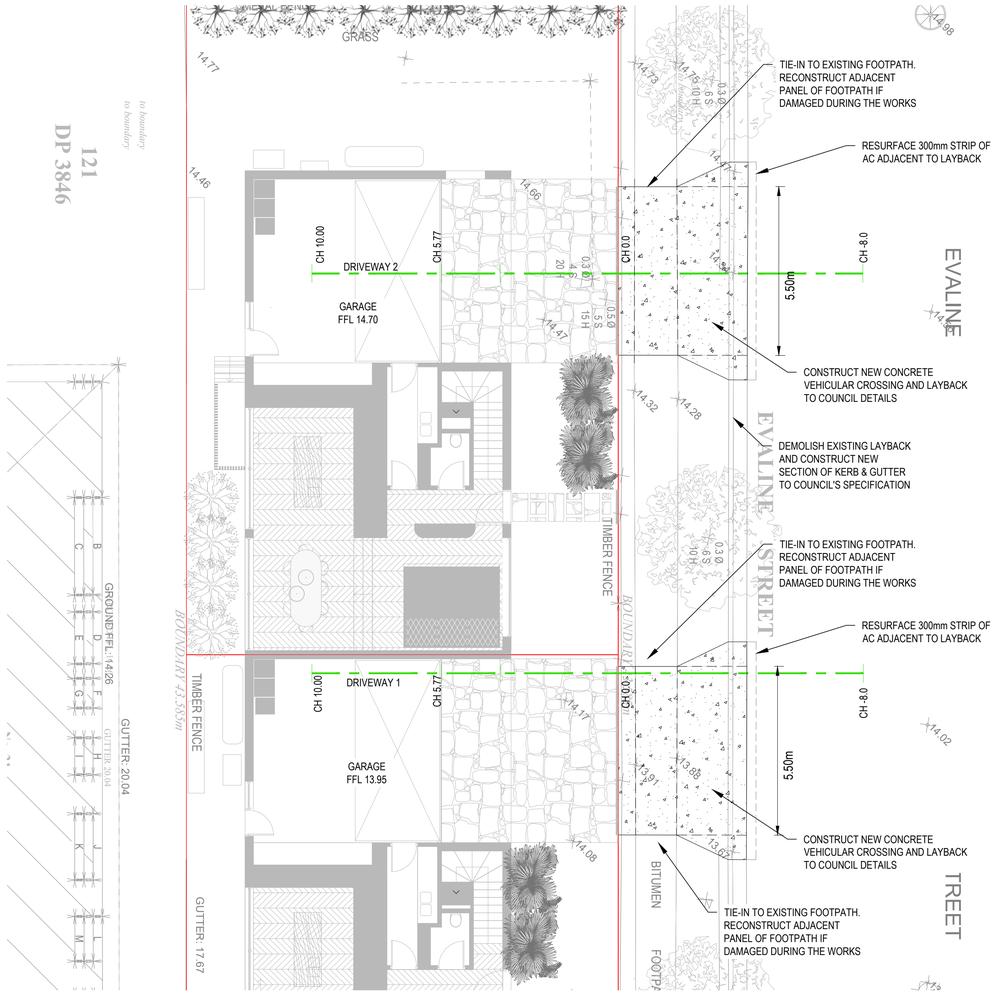
PROJECT TITLE
DUAL OCCUPANCY
19 PARK ST, CAMPSIE

DRAWING TITLE
DRAINAGE DETAILS

DRAWING STATUS
APPROVAL ISSUE
NOT TO BE USED FOR CONSTRUCTION

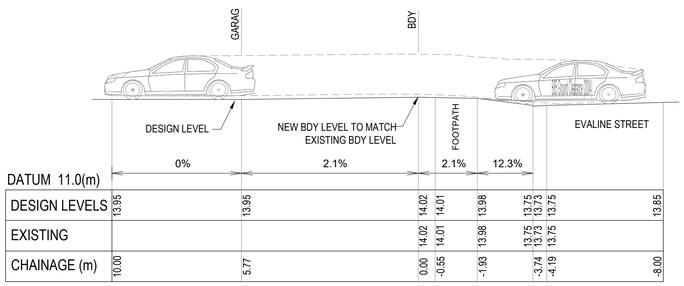
DESIGNER	SHEET SIZE
AH	A1
SCALE	PROJECT START DATE
	SEP 2022

JOB No.	DRAWING No.	REVISION
022006	C02	B



DRIVEWAY PLAN

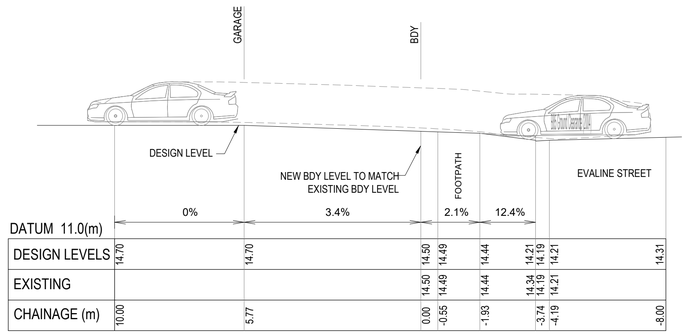
SCALE 1:100



DATUM 11.0(m)										
DESIGN LEVELS	13.95	13.95	14.02	14.01	13.98	13.75	13.73	13.75		13.85
EXISTING			14.02	14.01	13.98	13.75	13.73	13.75		
CHAINAGE (m)	10.00	5.77	0.00	-0.55	-1.93	-3.74	-4.19			-8.00

DRIVEWAY 1 LONG. SECTION

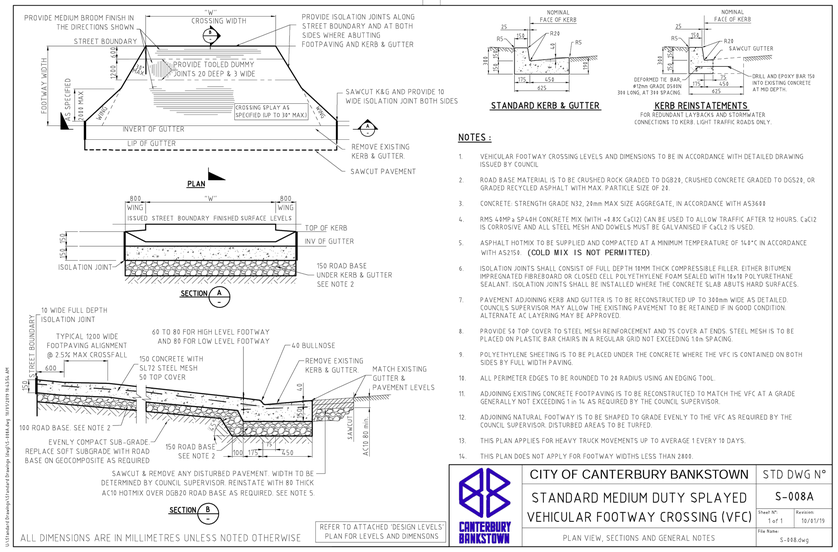
SCALE 1:100



DATUM 11.0(m)										
DESIGN LEVELS	14.70	14.70	14.50	14.49	14.44	14.21	14.19	14.21		14.31
EXISTING			14.50	14.49	14.44	14.34	14.19	14.21		
CHAINAGE (m)	10.00	5.77	0.00	-0.55	-1.93	-3.74	-4.19			-8.00

DRIVEWAY 2 LONG. SECTION

SCALE 1:100



STANDARD KERB & GUTTER

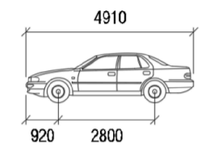
KERB REINSTATEMENTS

FOR REDUNDANT LAYBACKS AND STORMWATER CONNECTIONS TO KERB. LIGHT TRAFFIC ROADS ONLY.

NOTES :

1. VEHICULAR FOOTWAY CROSSING LEVELS AND DIMENSIONS TO BE IN ACCORDANCE WITH DETAILED DRAWING ISSUED BY COUNCIL
2. ROAD BASE MATERIAL IS TO BE CRUSHED ROCK GRADED TO DGB20, CRUSHED CONCRETE GRADED TO DGS20, OR GRADED RECYCLED ASPHALT WITH MAX. PARTICLE SIZE OF 28.
3. CONCRETE: STRENGTH GRADE N32, 20mm MAX SIZE AGGREGATE, IN ACCORDANCE WITH AS3600
4. RMS 49MPa SPARN CONCRETE MIX (WITH >0.83C Ca(12) CAN BE USED TO ALLOW TRAFFIC AFTER 12 HOURS. CaCl2 IS CORROSIVE AND ALL STEEL MESH AND DOWELS MUST BE GALVANISED IF CaCL2 IS USED.
5. ASPHALT HOTMIX TO BE SUPPLIED AND COMPACTED AT A MINIMUM TEMPERATURE OF 148°C IN ACCORDANCE WITH AS2150. **(COLD MIX IS NOT PERMITTED)**
6. ISOLATION JOINTS SHALL CONSIST OF FULL DEPTH 10MM THICK COMPRESSIBLE FILLER. EITHER BITUMEN IMPREGNATED FIBREBOARD OR CLOSED CELL POLYETHYLENE FOAM SEALED WITH 16x18 POLYURETHANE SEALANT. ISOLATION JOINTS SHALL BE INSTALLED WHERE THE CONCRETE SLAB ABUTS HARD SURFACES.
7. PAVEMENT ADJOINING KERB AND GUTTER IS TO BE RECONSTRUCTED UP TO 300mm WIDE AS DETAILED. COUNCILS SUPERVISOR MAY ALLOW THE EXISTING PAVEMENT TO BE RETAINED IF IN GOOD CONDITION. ALTERNATE AC LAYERING MAY BE APPROVED.
8. PROVIDE 50 TOP COVER TO STEEL MESH REINFORCEMENT AND 75 COVER AT ENDS. STEEL MESH IS TO BE PLACED ON PLASTIC BAR CHAIRS IN A REGULAR GRID NOT EXCEEDING 1.0m SPACING.
9. POLYETHYLENE SHEETING IS TO BE PLACED UNDER THE CONCRETE WHERE THE VFC IS CONTAINED ON BOTH SIDES BY FULL WIDTH PAVING.
10. ALL PERIMETER EDGES TO BE ROUNDED TO 20 RADIUS USING AN EDGING TOOL.
11. ADJOINING EXISTING CONCRETE FOOTPAVING IS TO BE RECONSTRUCTED TO MATCH THE VFC AT A GRADE GENERALLY NOT EXCEEDING 1 in 14 AS REQUIRED BY THE COUNCIL SUPERVISOR.
12. ADJOINING NATURAL FOOTWAY IS TO BE SHAPED TO GRADE EVENLY TO THE VFC AS REQUIRED BY THE COUNCIL SUPERVISOR. DISTURBED AREAS TO BE TURFED.
13. THIS PLAN APPLIES FOR HEAVY TRUCK MOVEMENTS UP TO AVERAGE 1 EVERY 10 DAYS.
14. THIS PLAN DOES NOT APPLY FOR FOOTWAY WIDTHS LESS THAN 2800.

CITY OF CANTERBURY BANKSTOWN	STD DWG N°
STANDARD MEDIUM DUTY SPLAYED VEHICULAR FOOTWAY CROSSING (VFC)	S-008A
PLAN VIEW, SECTIONS AND GENERAL NOTES	Sheet N°: 1 of 1 · Revision: 10/01/19 · File Name: S-008.dwg



B85

		mm
Width	:	1870
Track	:	1770
Lock to Lock Time	:	6.0
Steering Angle	:	34.1

REVISIONS:			
C	AMENDED LAYOUT	AH	24.08.23
B	AMENDED LAYOUT	AH	21.04.23
A	FOR APPROVAL	AH	31.10.22
No.	REVISION DESCRIPTION	DRAWN	DATE

SCALE BAR: 0 1 2 3 4 5m — SCALE 1:50

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ARCHITECT
GRAPHIO AM
SUITE 3.04, 56 BOWMAN STREET, PYRMONT, NSW 2009

PROJECT TITLE: DUAL OCCUPANCY
19 PARK ST, CAMPSIE

DRAWING TITLE: DRIVEWAY DETAILS

DRAWING STATUS: **APPROVAL ISSUE**
NOT TO BE USED FOR CONSTRUCTION

DESIGNER	SHEET SIZE
AH	A1
SCALE	PROJECT START DATE
	SEP 2022

JOB No.	DRAWING No.	REVISION
022006	C03	C