XAVIER
KNIGHT

CIVIL ENGINEERING DESIGN REPORT FOR DEVELOPMENT APPLICATION

FOR

Mixed Use Development
469-483 Balmain Road, Lilyfield, NSW, 2040

Project Number 221004
Date 30/11/2023

Prepared for: Roche Group

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CONTENTS

QUALITY CONTROL REGISTER

This report has been prepared and checked as per below.

	Name	Signature	Date
Report Author:	Terry Fong		30/11/23
Checked by:	Scott Sharma		24/05/23
Authorised by:	Scott Sharma		24/05/23

DOCUMENT SUMMARY

Project Number:	221004
Project Name:	469-483 Balmain Road, Lilyfield, NSW, 2040
Prepared For:	Roche Group
Date Prepared:	30/11/23
XK Project Director:	Scott Sharma

Status	Issue	Date	Prepared By	Approved By
Development Application	A	31.03.2023	Terry Fong	Scott Sharma
Development Application	B	05.04.2023	Terry Fong	Scott Sharma
Development Application	C	01.05.2023	Terry Fong	Scott Sharma
Development Application	D	23.05.2023	Terry Fong	Scott Sharma
Development Application	E	24.05.2023	Terry Fong	Scott Sharma
Development Application	F	30.11.2023	Ngoc Vo	Scott Sharma

1 INTRODUCTION

This report has been prepared to accompany a Concept Proposal and Detailed Development Application (DA) for a development comprising residential flat buildings, light industries and creative purposes at 469-483 Balmain Road, Lilyfield (the Site). The proposed development aims to incorporate character buildings on the Site and construct buildings that are complementary to the surrounding residential neighbourhood and light industrial zone.

The proposed development includes the demolition of the existing building and construction of a mixed-use development consisting of residential apartments, tenancies, and open courtyards and pedestrian laneways within the site.

The Site is legally described as Lot 2 DP1015843 and has an area of 6,824m2.

This report has been prepared in support of a DA application for the proposed development at 469-483 Balmain Road, Lilyfield. This report details the procedures and design criteria used in developing the stormwater management plan for this DA documentation. The report discusses the existing site condition, water quality and quantity management, as well as sediment and erosion controls. It is noted the site is unaffected by 100 Year ARI storm events.

1.1 PROJECT DESCRIPTION

The DA comprises the following elements:

- Concept Proposal (pursuant to Section 4.23 of the *Environmental Planning and Assessment Act 1979* and in satisfaction of Clause 6.25(4) of the *Inner West Local Environmental Plan 2022* [IWLEP 2022]) including:
  - Land uses consistent with those permitted under the IWLEP 2022, including for 'residential flat buildings', 'light industries' and 'creative purposes'.
  - Maximum building envelope.
  - Design principles and controls that address each of the requirements set out under Clause 6.25(4) or the IWLEP 2022.
- Detailed Development Application comprising:
  - Partial demolition of existing buildings and structures within the site.
  - Site preparation works, including termination or relocation of site services and infrastructure, remediation, tree removal and the erection of site protection fencing.
  - Construction and use of a new development comprising residential flat buildings and light industries, including adaptive reuse of existing buildings and erection of new buildings, for:
    - 6,000m^2 of light industrial uses, at least 1,200m^2 of which would be used for light industries associated with creative purposes
    - Residential apartments, of which a number would be used for the purpose of affordable housing
  - Basement car parking for staff and residents, and a new loading dock for employment uses.

- Public domain, communal open space, landscaping, and tree planting.
- Publicly accessible through-site links, and footpath widening to Balmain Road and Alberto Street.

Fit out and use of the employment tenancies and business identification signage would be the subject of separate future DAs where required.

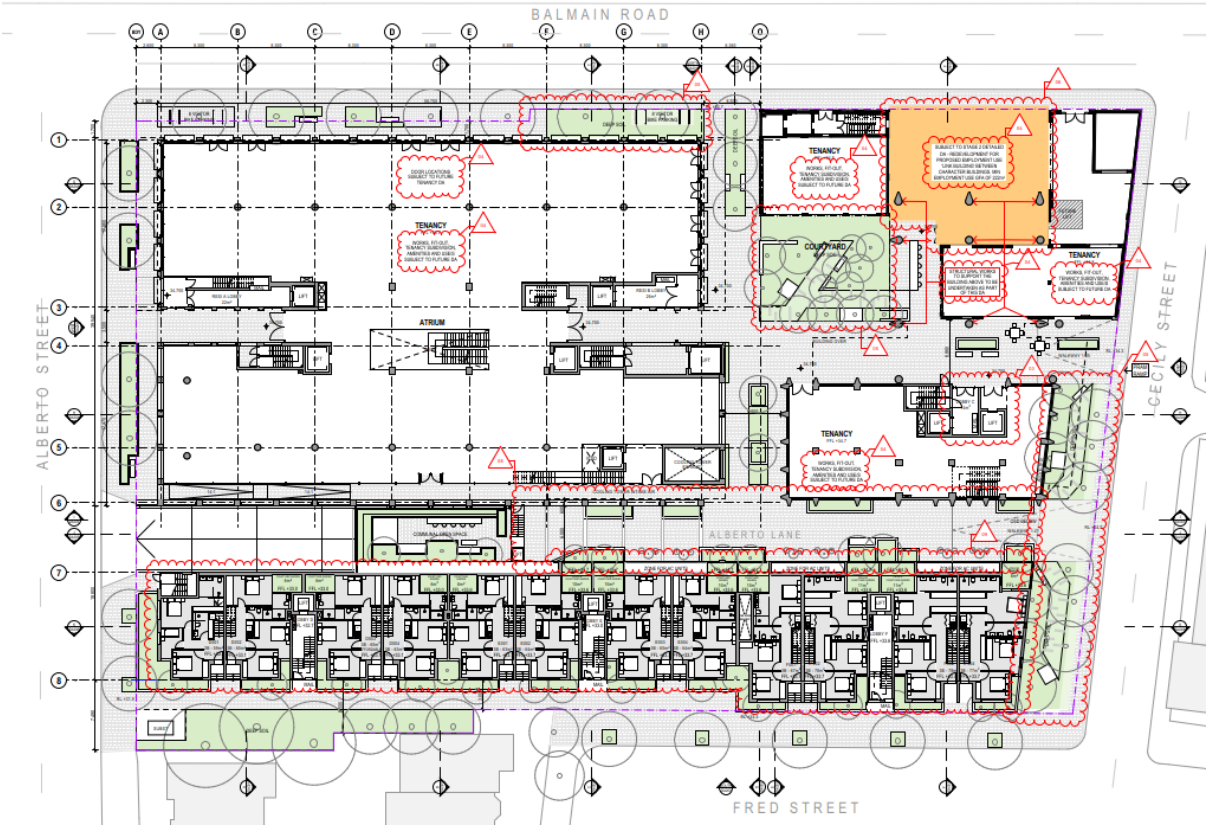


Figure 1 - Site Plan

1.2 EXISTING CONDITIONS

A detailed survey was conducted by Geometra Consulting in October 2022 (See **Appendix B**). The site contours generally fall in a southern direction from the corner of Balmain Road and Cecily Street to the Alberto Street.

The existing improvements on the site consist of multiple single and double-storey light industrial buildings.

The survey indicates all existing stormwater drainage discharges to the kerb and gutter. There is an existing kerb inlet pit on the southern corner of Fred Street. Council Before-You-Dig-Australia documents indicate the kerb inlet pit has a 375mm diameter outlet pipe.

2 STORMWATER DRAINAGE

2.1 STORMWATER DESIGN

The existing buildings (except the 'Character Buildings' on the north-eastern corner of the site) and paving within the site will be demolished and replaced with a new stormwater network system servicing the new development.

The pit and pipe drainage system is proposed to be designed as a minor/major storm system. The design minor storm will be the 20 Year ARI storm event, and the design major storm will be the 100 Year ARI storm event.

The Stormwater Management drawings in **Appendix A** shows the design intent of draining the site by gravity towards a single On-Site Detention (OSD) tank at the Cecily Street frontage of the site, except for the basement drainage which will discharge to the OSD via a proposed pump-out pit, and for the pedestrian paving along the south-east frontage of the site which will bypass the OSD. This bypass has been accounted for in the OSD design, as detailed in **Section 2.2** below. The OSD discharges to a proposed minor extension of Council's stormwater drainage system located at the corner of Fred Street, which will serve as the proposed site discharge. The design of the OSD is discussed in more detail in the next chapter of this report.

All trafficable surfaces are proposed to discharge to the OSD except for nominated bypass areas, while non-trafficable roof surfaces will first discharge to the rainwater tank prior to discharge to the OSD. All bypass areas have been accounted for in the water quality and quantity management of the site.

As the site is located on a crest in the local topography, there is no external overland flow to manage. Council Flood Certificates indicate the site is unaffected by the 100 Year ARI flood event. However, the site is affected by the Probable Maximum Flood event. This is discussed in the Xavier Knight Flood Risk Management Plan attached in **Appendix C**.

2.2 STORMWATER ON-SITE DETENTION

In accordance with Leichardt DCP 2013 - Part E, as required by Inner West Council specifications, post-development flows for the 100 Year ARI storm must be restricted to the pre-development flows for the 5 Year ARI storm event.
The pre-development catchment was assumed as 0% impervious for the purposes of the OSD analysis, and post-development catchment conservatively assumed as 95% impervious. The site has been modelled in DRAINS using ILSAX hydrology and Australian Rainfall and Runoff 2019 (ARR 2019) methods. The pre and post development non-attenuated flows are shown in **Table 1** below.

Table 1 - On-Site Detention Tank Calculation Details

Storm Event (ARI)	Pre-Dev Flow (L/s)	Post-Dev Uncontrolled Flow (L/s)	Post-Dev Controlled (OSD) Flow (L/s)	Stored Volume (m^3)
5	**169**	8	109	72.4
100	343	13	**155**	144.1

In case of emergencies or when storms larger than the 100-Year event occur, the OSD has been provided with an open grate to allow stormwater to escape and flow overland towards Cecily Street. An internal overflow weir within the OSD has also been provided.

3 STORMWATER QUALITY

In accordance with Leichardt DCP 2013 - Part E, as required by Inner West Council specifications, the following performance criteria have been adopted:

- 85% reduction in total suspended solids (TSS)
- 65% reduction in total phosphorus (TP)
- 45% reduction in total nitrogen (TN)
- 90% reduction in gross pollutants (size >5mm)

3.1 WATER QUALITY TREATMENT MEASURES

The following Water Sensitive Urban Design (WSUD) measures have been adopted for the site:

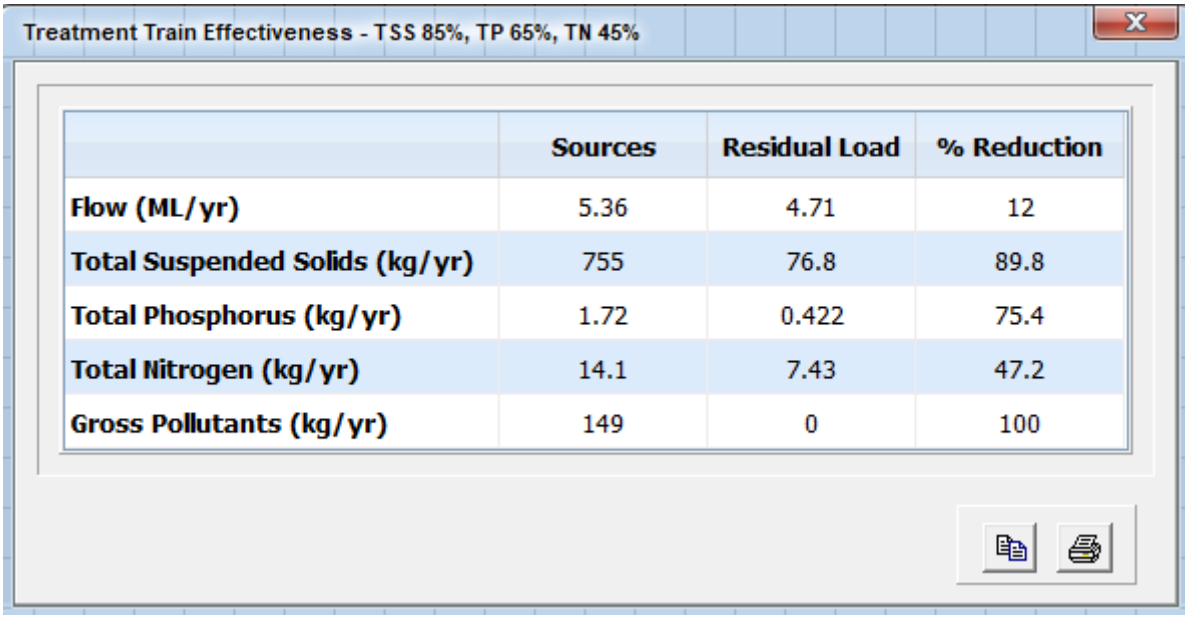
- Rainwater Tanks
  A single underground rainwater tank measuring 40m^3 was provided on site. All non-trafficable roof rainwater shall be routed to this tank and be made available for re use in site. The final volume of the rainwater tank shall be confirmed at CC stage in accordance with BASIX section J requirements and coordination with the hydraulic engineer.

- Gross Pollutant Trap
  A Atlan Vortceptor gross pollutant trap and Atlan Stormsack pit insert has been proposed prior to the OSD/WSUD Chamber to treat runoff captured from trafficable surfaces.
  Refer to **Appendix F**.

- Tertiary treatment filter cartridges
  AtlanFilter cartridges have been proposed within a WSUD chamber integrated within the OSD tank.

3.2 WATER QUALITY MODELLING

Conceptual modelling of water quality was undertaken using the MUSIC 6 software.
The overall MUSIC analysis results are shown below:



	Sources	Residual Load	% Reduction
Flow (ML/yr)	5.36	4.71	12
Total Suspended Solids (kg/yr)	755	76.8	89.8
Total Phosphorus (kg/yr)	1.72	0.422	75.4
Total Nitrogen (kg/yr)	14.1	7.43	47.2
Gross Pollutants (kg/yr)	149	0	100

Figure 2 - MUSIC Analysis Results

Some of the site area has been designed to bypass the OSD water quality treatment train devices but will be captured and treated by an additional WSUD chamber downstream of the OSD prior to its discharge to Council drainage infrastructure. Refer to the catchment area drawing in **Appendix A** for more detail. Refer to **Appendix C** for the MUSIC Treatment Train details.

4 SOIL AND WATER MANAGEMENT

A Soil and Water Management Plan has been prepared for the site and is shown in **Appendix A**. The plan has been prepared in accordance with Managing Urban Stormwater – Soils & Construction Volume 1 (Landcom 2004).

5 DISCLAIMER

Xavier Knight Consulting Engineers gives notice that the particulars set out in this report are for the exclusive use of Client and that no responsibility or liability is accepted as a result of the use of this report by any other party. This report shall not be construed as a certificate or warranty.

For and on behalf of the Xavier Knight team.
Kind regards,

Scott Sharma
PROJECT DIRECTOR

6 APPENDICES

6.1 APPENDIX A – CIVIL ENGINEERING DESIGN FOR DA

PROPOSED MIXED USED DEVELOPMENT
469-483 BALMAIN RD, LILYFIELD NSW 2040

LOCALITY PLAN
IMAGE FROM SIXMAPS
16.02.2022

DRAWING SCHEDULE	
DRAWING NO.	DRAWING TITLE
C000	COVER SHEET
C100	STORMWATER MANAGEMENT PLAN - BASEMENT 02
C101	STORMWATER MANAGEMENT PLAN - BASEMENT 01
C102	STORMWATER MANAGEMENT PLAN - GROUNDFLOOR PLAN
C150	CATCHMENT PLAN
C200	STORMWATER MANAGEMENT DETAILS
C260	ON SITE DETENTION DETAILS
C320	SEDIMENT & EROSION CONTROL PLAN
C350	SEDIMENT & EROSION CONTROL DETAILS

PRINTING NOTE:
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BEFORE YOU DIG www.byda.com.au

DEVELOPMENT APPLICATION

Rev	Description	Eng	Draft	Date
A	ISSUE FOR DA	TF	TF	31.03.2023

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3/1 THE CORSO MANLY NSW 2095

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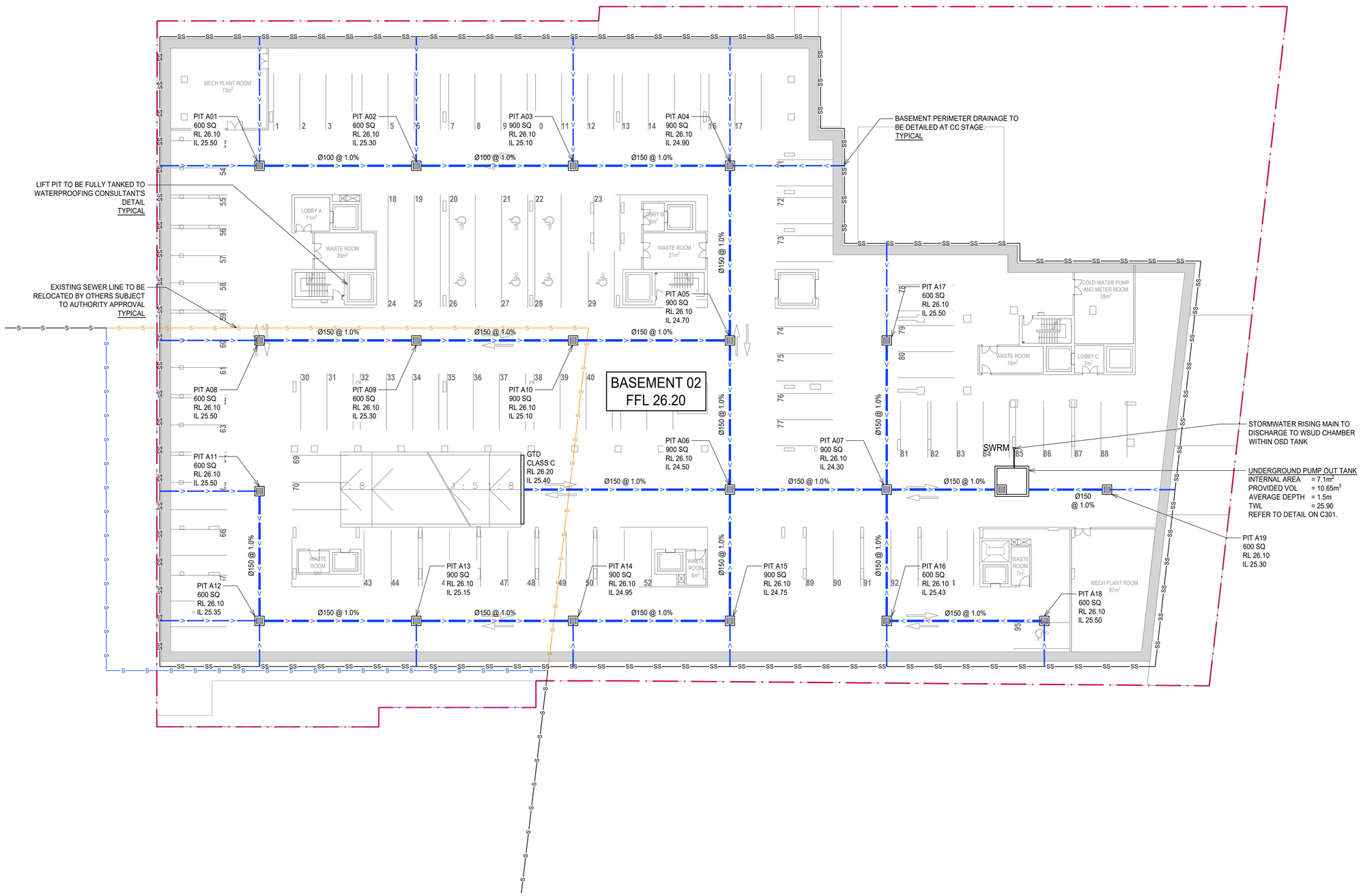
Sheet Subject
COVER SHEET

Scale at A1	Drawn	Approved
NTS	TF	SS
Job No	**Drawing No**	**Revision**
221004	C000	A



LEGEND

- SITE BOUNDARY
- EXISTING CONTOUR (0.5m)
- PROPOSED STORMWATER LINE
- PROPOSED SUBSOIL LINE
- GTD — PROPOSED GRATED DRAIN
- RM — STORMWATER RISING MAIN
- SWRM — STORMWATER RISING MAIN
- EXISTING SEWER LINE TO REMAIN
- PROPOSED SEWER LINE DIVERSION
- EXISTING SEWER LINE TO BE DIVERTED
- GRATED SURFACE INLET PIT
- SEALED JUNCTION PIT

PUMP-OUT PIT CALCS

100yr 2hr ARI STORM = 45.0 mm/hr
d = INTENSITY x 2 HOURS = 90.0 mm

ASSUME SEEPAGE RAGE < 3.0 ML/YR
SEEPAGE INFLOW RATE = 3 ML/YR
SEEPAGE RATE = 3000 / 365 = 8.22 m^3/Ha (24 HR STORAGE)
$V_{SEEPAGE\ 4HOUR\ DURATION}$ = 8.22/6 x 0.63 = 0.86 m^3

AREA OF DRIVEWAY RAMP UNCOVERED DRAINING INTO PUMP OUT PIT = 47m^2
WALL SURFACE AREA DRAINING INTO PUMP OUT PIT = 102.15 m^2

TOTAL CATCHMENT AREA = 47 + 0.5*102.15
= 98.10 m^2

VOLUME REQUIRED = A x d
= 98.10 x (90/1000)
= 8.83 m^3
TOTAL V = 9.69 m^3

2 MECHANICAL PUMPS WITH CAPACITY OF 7 L/s EACH, HEAD = 9.80 m ARE PROVIDED FOR PUMP-OUT TANK.

GENERAL

1. SURVEY INFORMATION HAS BEEN OBTAINED FROM GEOMETRA CONSULTING'S SURVEY TITLED 'PLAN SHOWING SITE DETAILS AND BOUNDARY INFORMATION AT 469-483 BALMAIN ROAD LILYFIELD' - JOB NO. 9179-2, ISSUED 04/10/2022.
2. ALL DIMENSIONS SHOWN ON THE DRAWINGS ARE IN MILLIMETERS AND ALL LEVELS ARE IN METRES (U.N.O.).
3. ALL PIPES ARE TO BE AT 1% MINIMUM GRADE (U.N.O.).

STORMWATER DRAINAGE PLAN - BASEMENT 02
SCALE 1:200

PRINTING NOTE:
THIS DRAWING TO BE PRINTED IN COLOUR.

DEVELOPMENT APPLICATION

A1 1:200

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C	ISSUE FOR DA	NV	NV	29.11.2023
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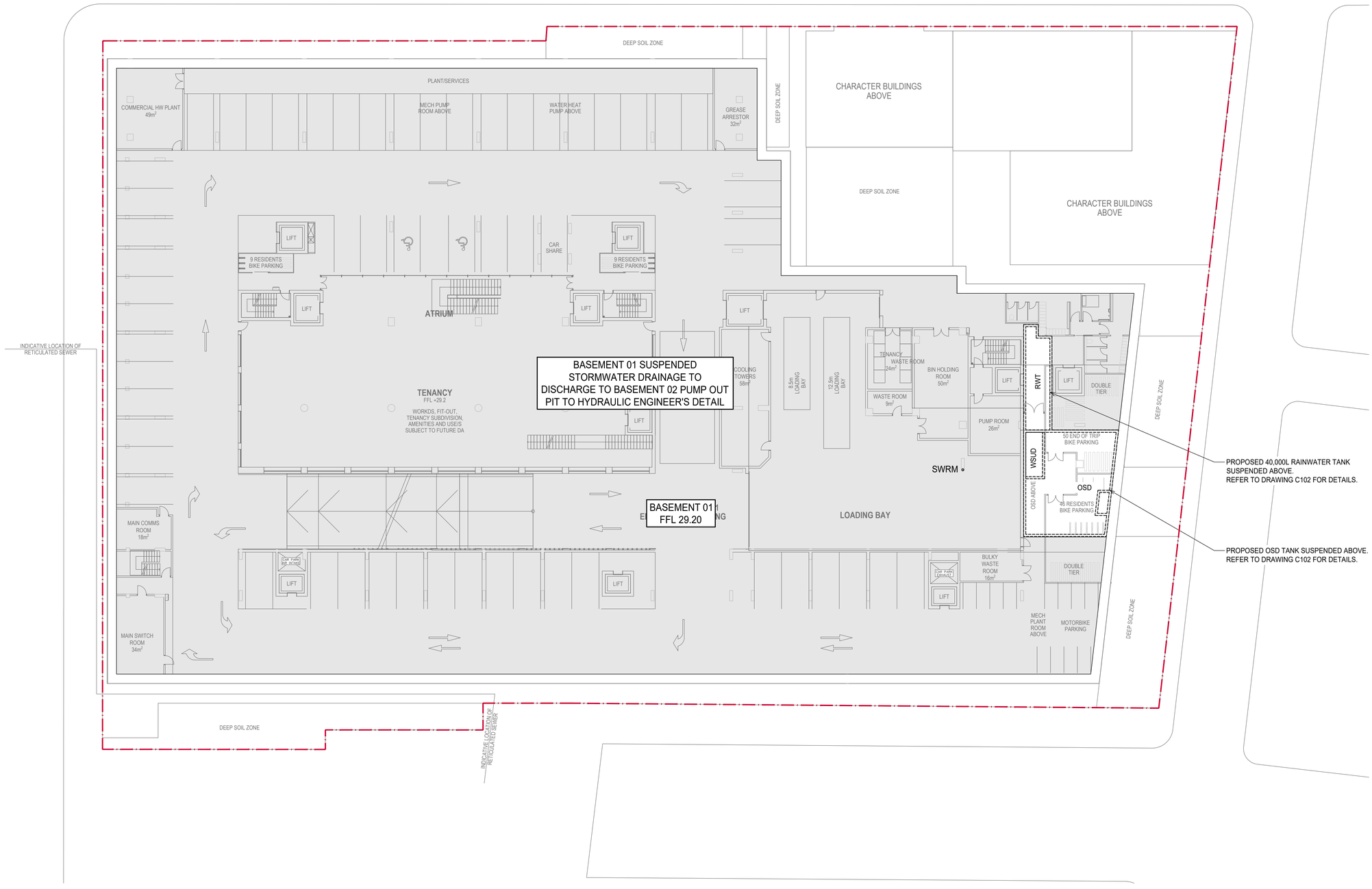
Sheet Subject
STORMWATER MANAGEMENT PLAN - BASEMENT 02

Scale at A1	Drawn	Approved
1:200	TF	SS
Job No	**Drawing No**	**Revision**
221004	C100	C

LEGEND

- SITE BOUNDARY
- STORMWATER DRAINAGE TO HYDRAULIC ENGINEER'S DETAIL



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STORMWATER DRAINAGE PLAN - BASEMENT 01
SCALE 1:200

DEVELOPMENT APPLICATION

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STORMWATER MANAGEMENT PLAN - BASEMENT 01

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Job No	**Drawing No**	**Revision**
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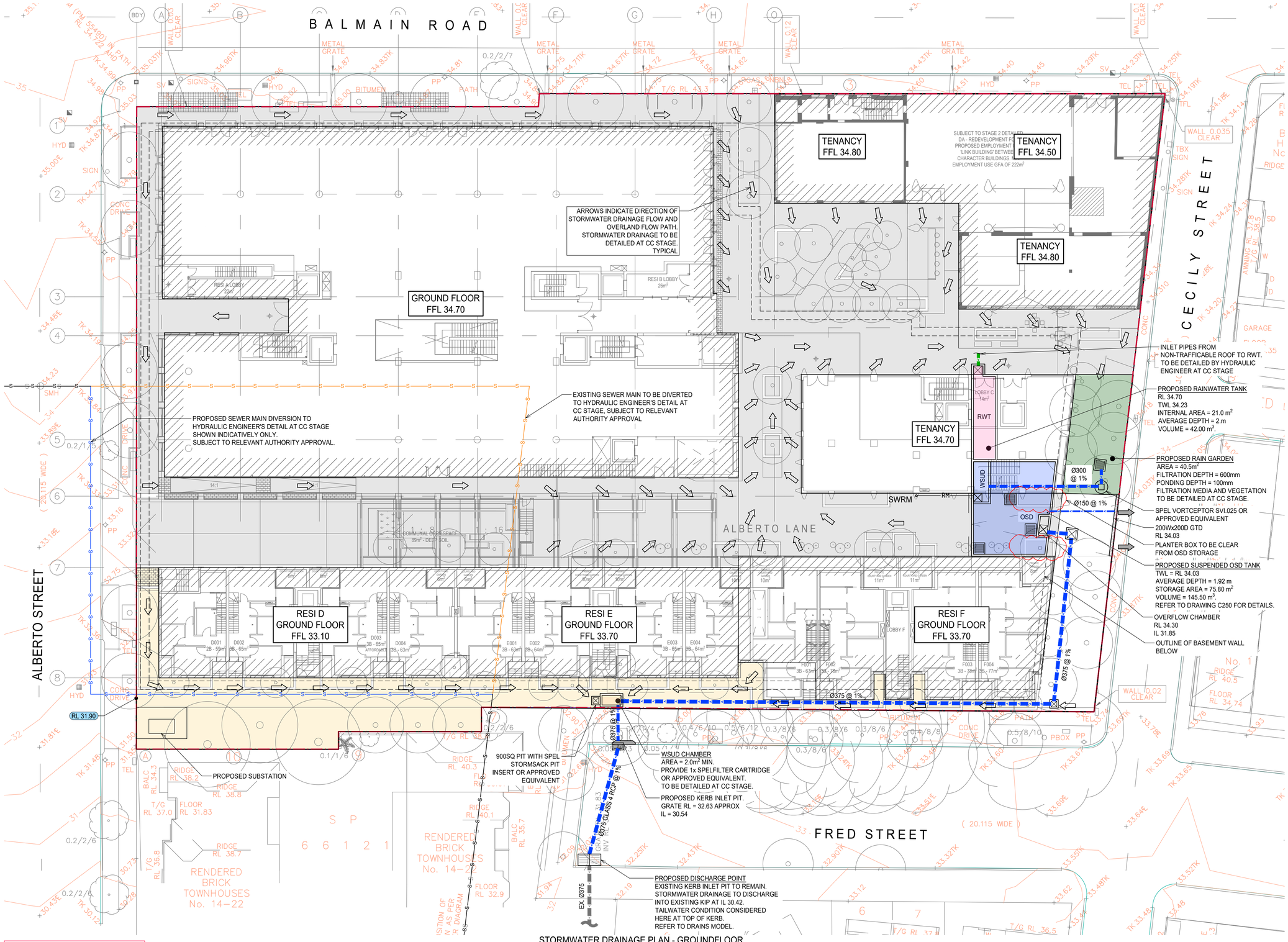

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- EXISTING STORMWATER LINE
- EXISTING SEWER LINE TO REMAIN
- PROPOSED SEWER LINE DIVERSION
- EXISTING SEWER LINE TO BE DIVERTED
- OUTLINE OF LEVEL BELOW
- AREA TO DRAIN TO RAINGARDEN / OSD
- AREA TO DRAIN TO WSUD CHAMBER
- PROPOSED RAINGARDEN
- GRATED SURFACE INLET PIT
- SEALED JUNCTION PIT
- RL 9.90 — FINISHED RL
- STORMWATER FLOW DIRECTION (DETAILED BY HYDRAULIC ENGINEER AT CC STAGE)

STORMWATER DRAINAGE PLAN - GROUNDFLOOR

SCALE 1:200

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Sheet Subject
STORMWATER MANAGEMENT PLAN - GROUND FLOOR PLAN

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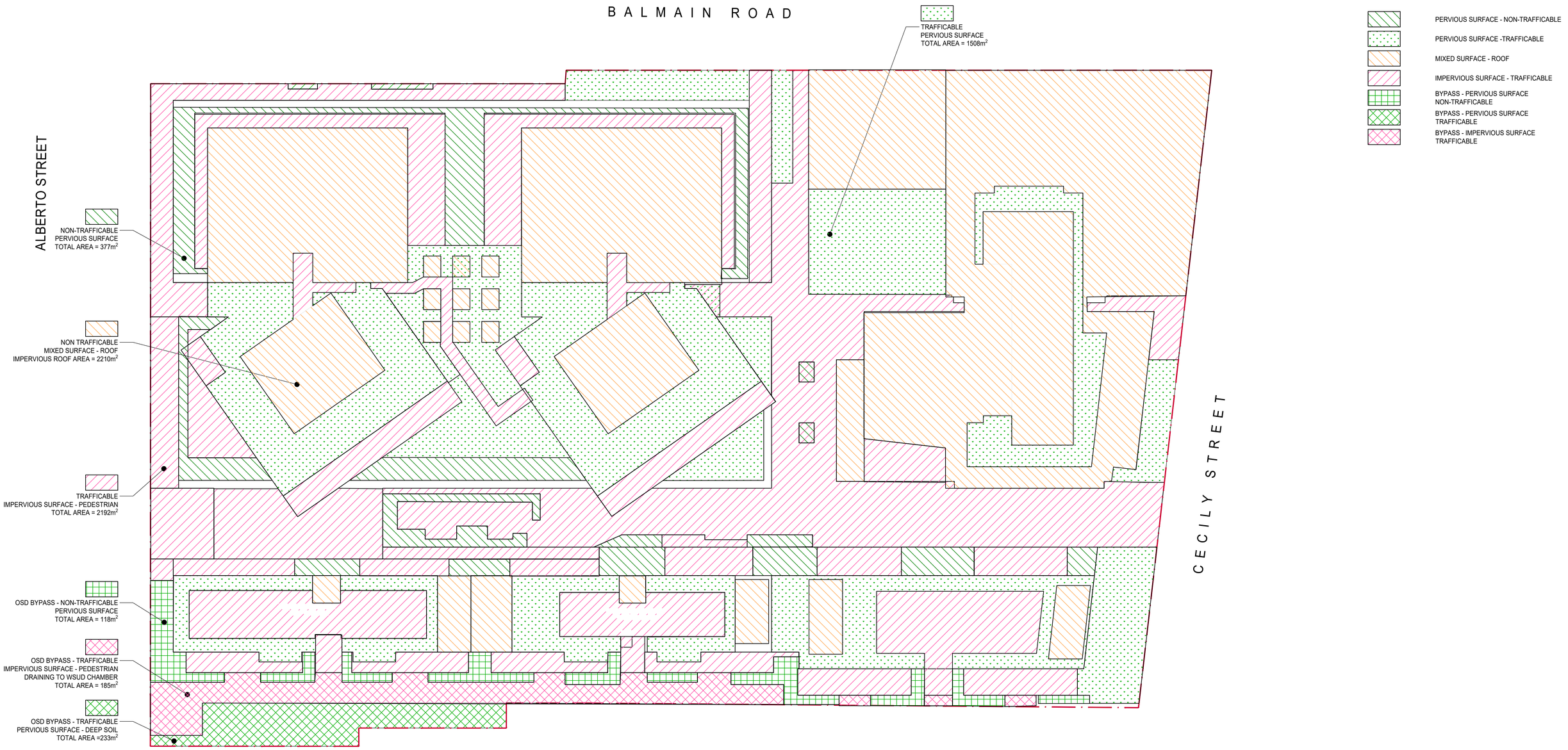
Job No	Drawing No	Revision
221004	C102	D



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CATCHMENT PLAN
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Sheet Subject
CATCHMENT PLAN

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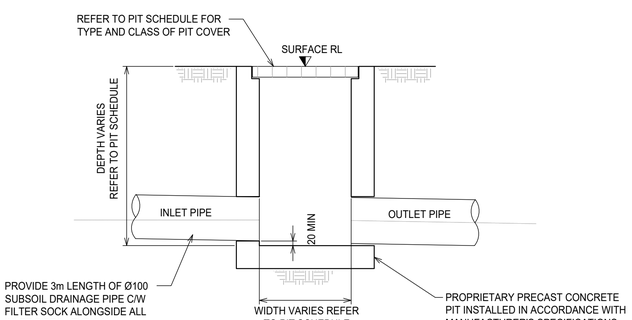
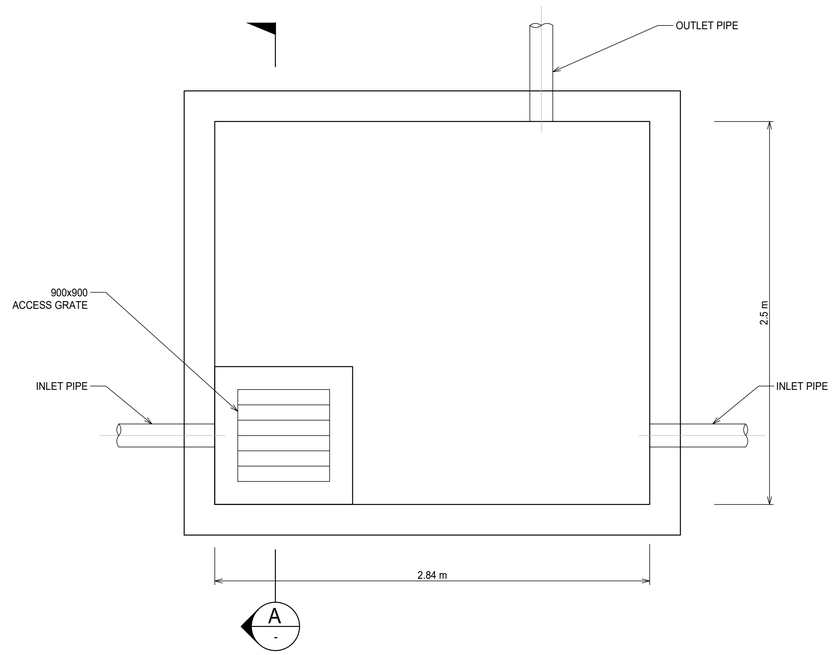


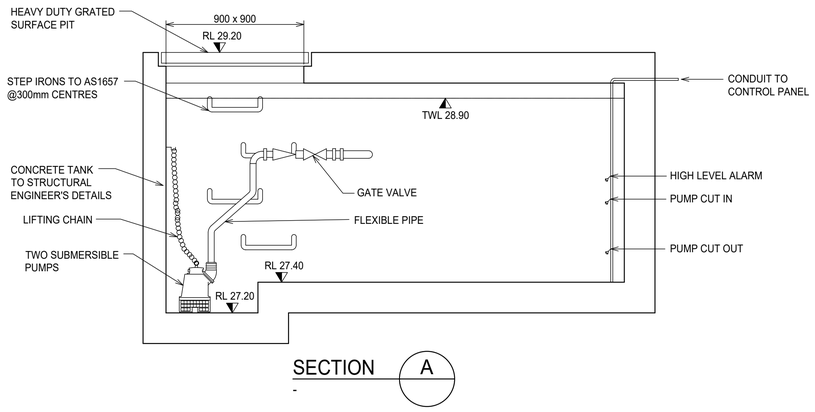
STORMWATER DRAINAGE PIT
- PRECAST PIT

SCALE 1:20



PUMP-OUT PIT PLAN

SCALE 1:20



SECTION A

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DEVELOPMENT APPLICATION

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STORMWATER MANAGEMENT DETAILS

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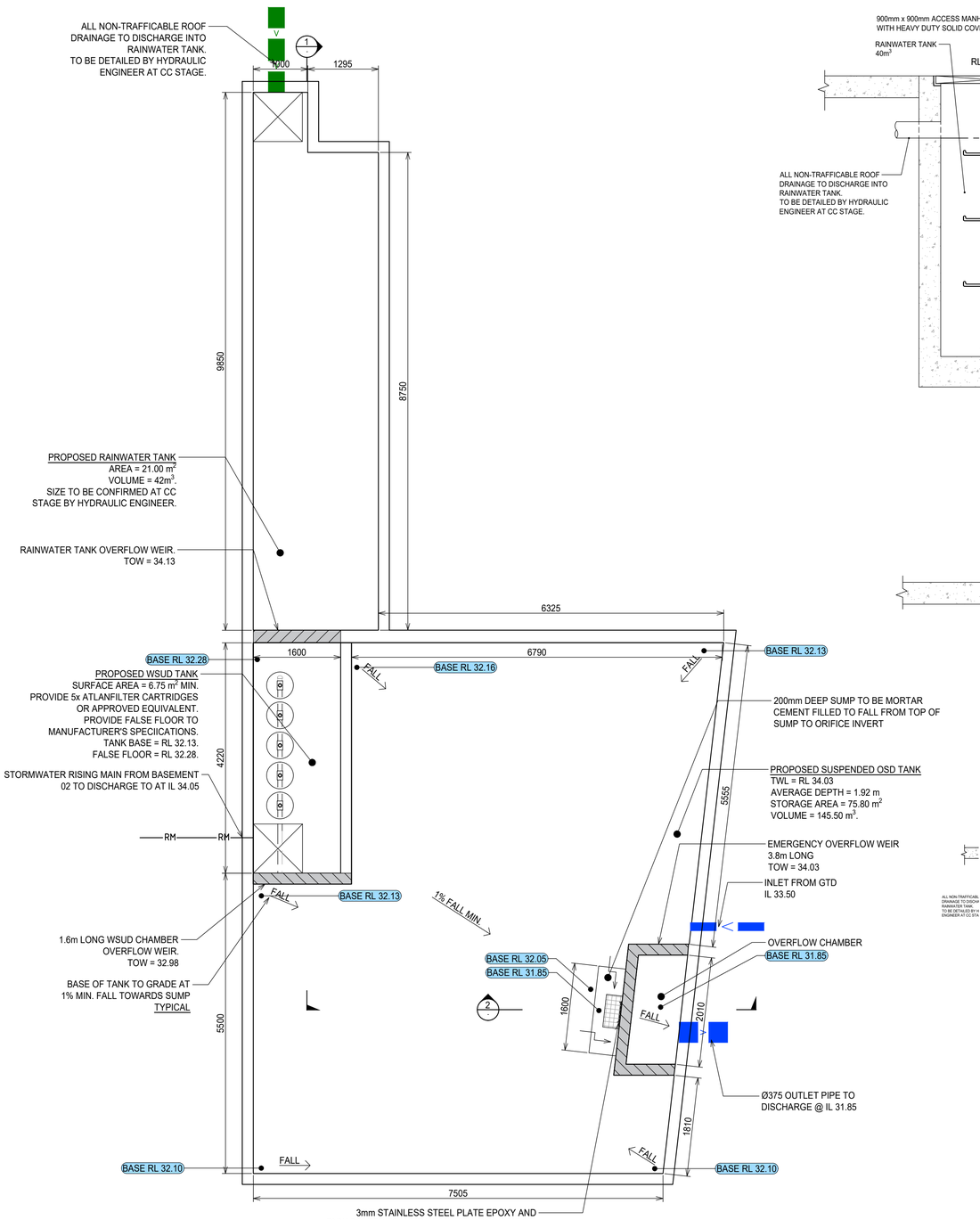
Job No	Drawing No	Revision
221004	C200	B

GENERAL

1. ALL DIMENSIONS SHOWN ON THE DRAWINGS ARE IN MILLIMETERS AND ALL LEVELS ARE IN METRES (U.N.O.).
2. OSD TANK BASE TO GRADE TOWARDS OUTLET AT 1% FALL MIN.
3. ALL TANK STRUCTURAL ELEMENTS ARE SHOWN INDICATIVELY ONLY. REFER TO STRUCTURAL ENGINEER FOR DETAIL.



OSD TANK PLAN
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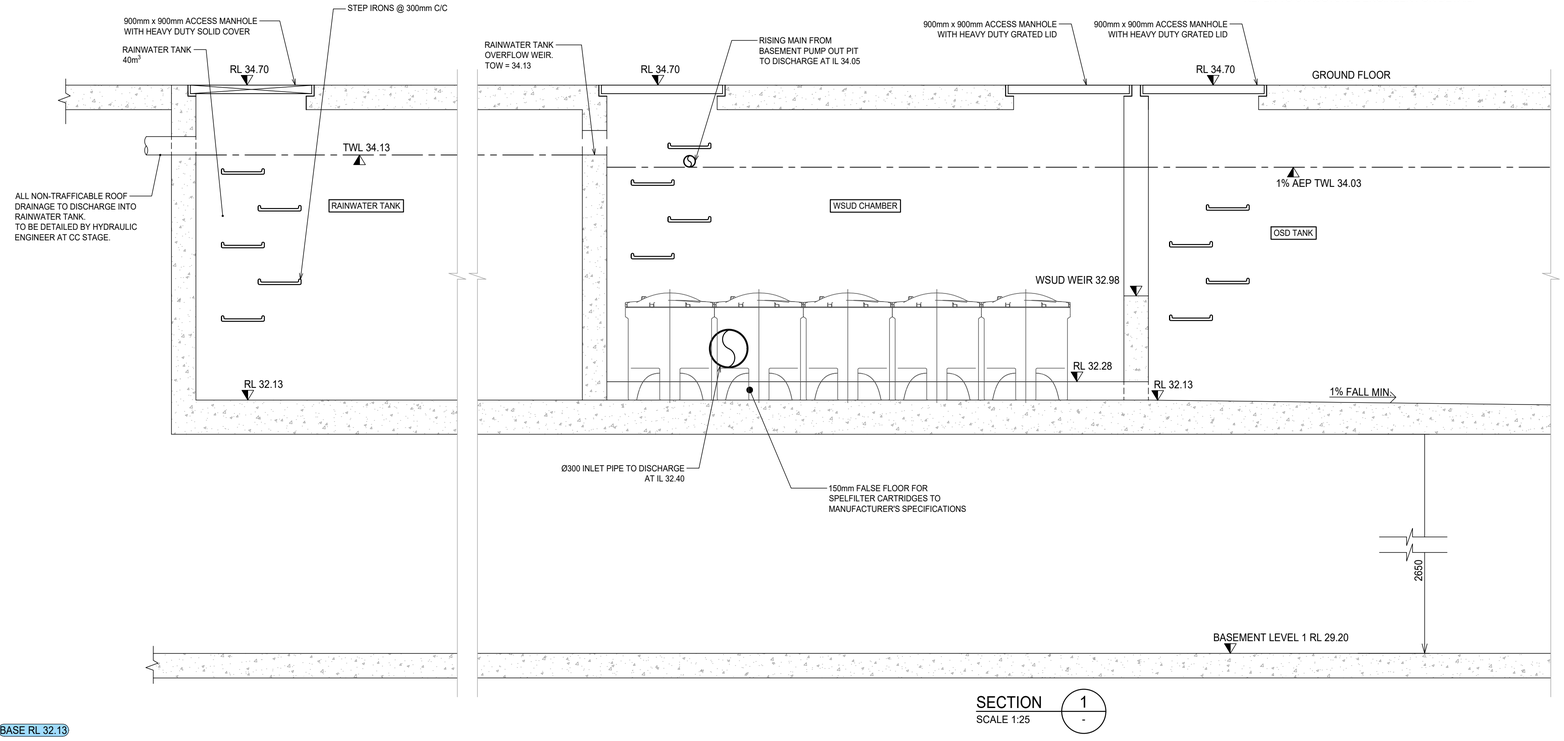

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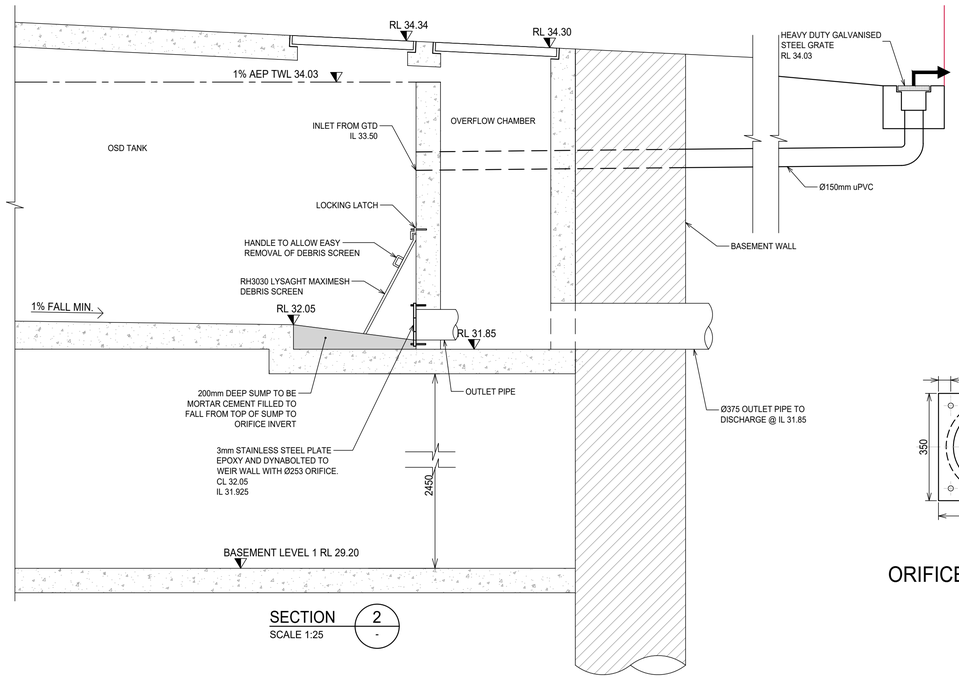

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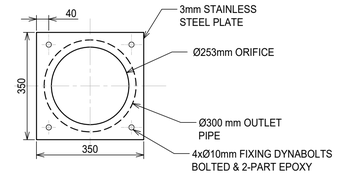

ORIFICE PLATE DETAIL
SCALE 1:10

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Sheet Subject
ON SITE DETENTION DETAILS

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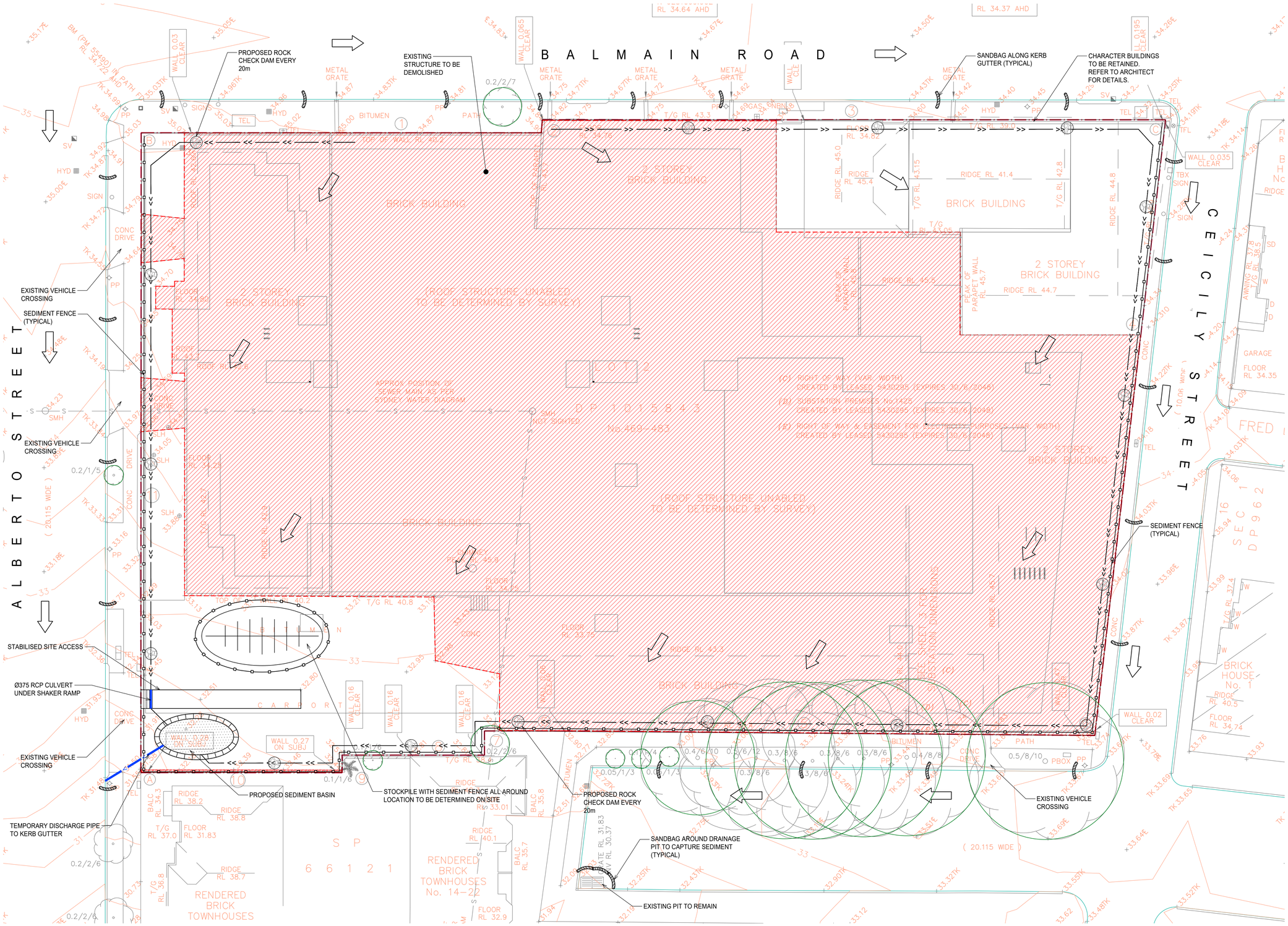
AS SHOWN	TF	SS
Job No	**Drawing No**	**Revision**
221004	C250	C



LEGEND

- SITE BOUNDARY
- EXISTING STRUCTURES TO BE DEMOLISHED
- SEDIMENT FENCE
- TEMPORARY CATCH DRAIN
- TEMPORARY DRAINAGE PIPE
- FLOW DIRECTION
- SAND BAG
- PROPOSED STOCKPILE LOCATION WITH SEDIMENT FENCE
- SEDIMENT BASIN
- 34.5 EXISTING CONTOUR (0.5m)
- PROPOSED STABILISED SITE ACCESS
- PROPOSED CHECK DAM
- EXISTING TREE TO BE REMAIN
- EXISTING PIT TO REMAIN

SOIL AND WATER MANAGEMENT PLAN
SCALE 1:200

GENERAL

1. SURVEY INFORMATION HAS BEEN OBTAINED FROM GEOMETRA CONSULTING'S SURVEY TITLED 'PLAN SHOWING SITE DETAILS AND BOUNDARY INFORMATION AT 469-483 BALMAIN ROAD LILYFIELD' - JOB NO. 9179-2, ISSUED 04/10/2022.
2. REFER TO DRAWING C350 FOR SEDIMENT AND EROSION CONTROL NOTES.

DEVELOPMENT APPLICATION

A1 0 2 4 6 8 10 12 14 16 18 20 1:200

Rev	Description	Eng	Draft	Date
C	ISSUE FOR DEVELOPMENT APPLICATION	TF	TF	23.05.2023
B	ISSUE FOR DEVELOPMENT APPLICATION	TF	TF	01.05.2023
A	ISSUE FOR DEVELOPMENT APPLICATION	TF	NV	31.03.2023

Architect
CHROFI
3/1 THE CORSO MANLY NSW 2095

Client
ROCHE GROUP
365 NEW SOUTH HEAD ROAD, DOUBLE BAY NSW 2028

XAVIER KNIGHT

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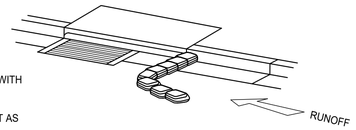
North

Project
PROPOSED MIXED USE DEVELOPMENT
469-483 BALMAIN ROAD, LILYFIELD NSW 2040

Sheet Subject
SOIL AND WATER MANAGEMENT PLAN

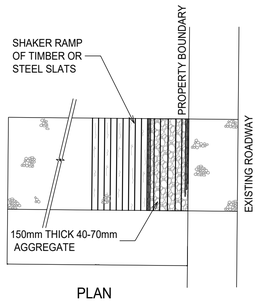
Scale at A1	Drawn	Approved
1:200	TF	SS
Job No	**Drawing No**	**Revision**
221004	C320	B



NOTES:
1. PROVIDE THREE LAYERS OF SANDBAGS WITH THEIR ENDS OVERLAPPED AND ALSO OVERLAPPING ONTO THE KERB.
2. CREATE A GAP IN THE SANDBAGS TO ACT AS A SPILLWAY.
3. SANDBAG BARRIER TO BE MIN. 2m FROM THE INLET AND EXTEND MIN. 0.9m OUT FROM THE KERB.

GULLY INLET SANDBAG PROTECTION DETAIL

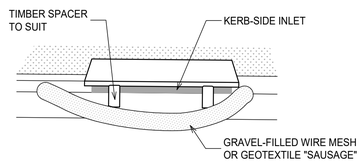
SCALE N.T.S.

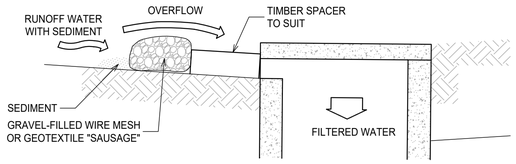


PLAN

STABILISED SITE ACCESS WITH SHAKER RAMP

SCALE N.T.S.

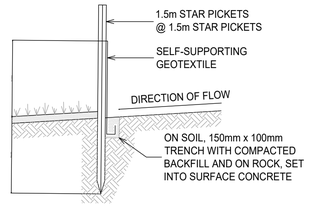




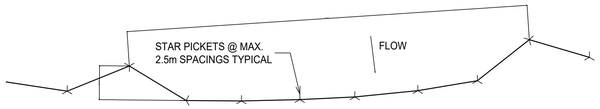
MESH & GRAVEL INLET FILTER CONSTRUCTION NOTES:
1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
2. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
3. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
4. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
5. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY CAN FIRMLY ABUT EACH OTHER AND SEDIMENT / LADEN WATERS CANNOT PASS BETWEEN.

MESH & GRAVEL INLET FILTER

SCALE N.T.S.



SECTION DETAIL

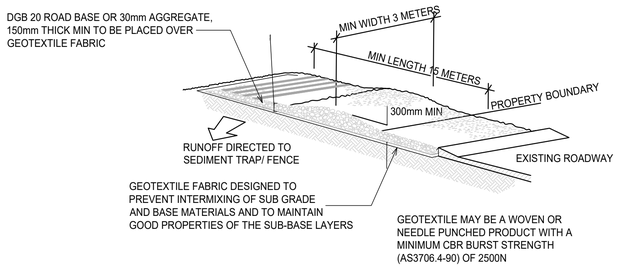


PLAN

SEDIMENT FENCE CONSTRUCTION NOTES:

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150 mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5 m LONG STAR PICKETS INTO GROUND @ 2.5 m INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150 mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

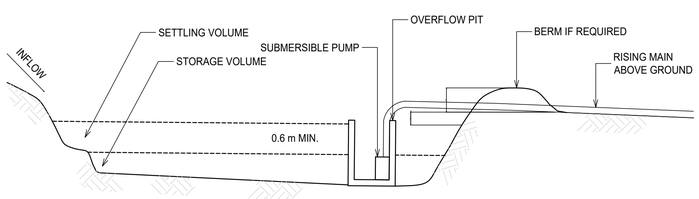
CONSTRUCTION SITE



STABILISED SITE ACCESS WITH SHAKER RAMP

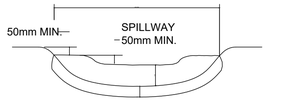
SCALE N.T.S.

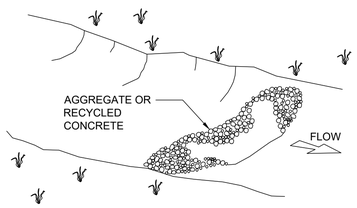
NOTES:
1. THIS DEVICE IS TO BE LOCATED AT ALL EXITS FROM CONSTRUCTION SITE.
2. THIS DEVICE IS TO BE REGULARLY CLEANED OF DEPOSITED MATERIAL SO AS TO MAINTAIN A 50mm DEEP SPACE BETWEEN PLANKS.
3. ANY UNSEALED ROAD BETWEEN THIS DEVICE AND NEAREST ROADWAY IS TO BE TOPPED WITH 100mm THICK 40-70mm SIZE AGGREGATE.
4. ALTERNATIVELY, THREE(3) PRECAST CONCRETE CATTLE GRIDS (AS MANUFACTURED BY "HUMES CONCRETE MAY BE USED. 1, 2 & 3 ABOVE ALSO APPLY.



TYPICAL SEDIMENT BASIN

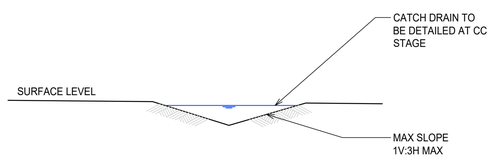
SCALE N.T.S.



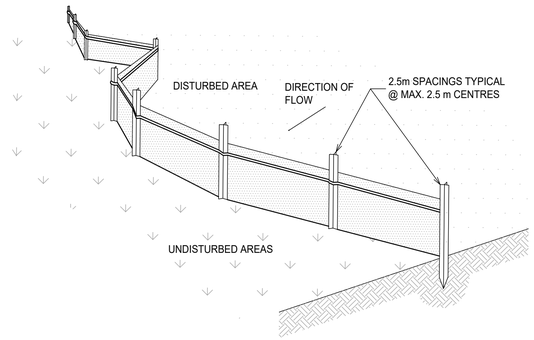


CHECK DAM DETAIL

SCALE N.T.S.

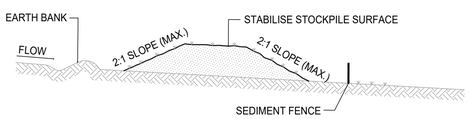


TYPICAL SECTION THROUGH CATCH DRAIN



SEDIMENT FENCE

SCALE N.T.S.



STOCKPILE CONSTRUCTION NOTES:
1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE PLACED FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED E.S.C.P. OR S.W.M.P. TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

STOCKPILES

SCALE N.T.S.

GENERAL INSTRUCTIONS:

1. THIS SEDIMENT AND EROSION CONTROL WORKS FOR THE SITE SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION, 4TH EDITION (2004)" BY LANDCOM.
2. AS REQUIRED BY COUNCIL, SEDIMENT CONTROL MEASURES WILL BE REQUIRED DURING THE CONSTRUCTION OF ALL DEVELOPMENTS/BUILDING WORKS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY THAT THE WORKS ARE CARRIED OUT IN ACCORDANCE WITH THE SEDIMENT AND EROSION CONTROL PLAN AND COUNCIL'S REQUIREMENTS.
3. THE CONTRACTOR SHALL ENSURE THAT ALL SUBCONTRACTORS ARE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.
4. THE NON-DISTURBED PORTION OF THE CATCHMENT OUTSIDE OF OPERATING AREA IS TO BYPASS THE BASINS BY MEANS OF LINED CATCH DRAINS.
5. WHERE PRACTICABLE, THE SOIL EROSION HAZARD SHALL BE KEPT AS LOW AS POSSIBLE. LIMITATIONS TO ACCESS ARE TO BE VIA STANLEY LANE UNLESS OTHERWISE APPROVED BY COUNCIL.
6. ENSURE THAT ALL DRAINS ARE OPERATING EFFECTIVELY AND SHALL MAKE ANY NECESSARY REPAIRS. REMOVE TRAPPED SEDIMENT WHERE THE CAPACITY OF THE TRAPPING DEVICE FALLS BELOW 60%.
7. CONSTRUCT ADDITIONAL EROSION OR SEDIMENT CONTROL WORKS AS MAY BE APPROPRIATE TO ENSURE THE PROTECTION OF DOWNSLOPE LANDS AND WATERWAYS.
8. MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN A FULLY FUNCTIONING CONDITION AT ALL TIMES UNTIL THE SITE IS REHABILITATED.
9. REMOVE TEMPORARY SOIL CONSERVATION STRUCTURES AS THE LAST ACTIVITY IN THE REHABILITATION PROGRAM.

CONSTRUCTION SEQUENCE:

WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:

1. INSTALL SEDIMENT FENCING AND CUT DRAINS TO MEET THE REQUIREMENTS OF THE SEDIMENT AND EROSION CONTROL PLAN. WASTE COLLECTION BINS SHALL BE INSTALLED ADJACENT TO SITE OFFICE.
2. CONSTRUCT STABILISED SITE ACCESS IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS.
3. REDIRECT CLEAN WATER AROUND THE CONSTRUCTION SITE.
4. INSTALL SEDIMENT CONTROL PROTECTION MEASURES AT ALL NATURAL AND MAN-MADE DRAINAGE STRUCTURES. MAINTAIN UNTIL ALL THE DISTURBED AREAS ARE STABILISED.
5. CLEAR AND STRIP THE WORK AREAS. MINIMISE THE DAMAGE TO THE GRASS AND LOW GROUND COVER OF NON-DISTURBED AREAS.
6. ANY DISTURBED AREAS, OTHER THAN BUILDING PAD AREAS, SHALL IMMEDIATELY BE COVERED WITH SITE TOPSOIL WITHIN 7 DAYS OF CLEARING. BUILDING PAD AREAS SHALL BE COVERED WITH BITUMEN EMULSION AS SPECIFIED.
7. APPLY PERMANENT STABILISATION TO SITE (LANDSCAPING).

DEVELOPMENT APPLICATION

Rev	Description	Eng	Draft	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	TF	NV	31.03.2023

Architect
CHROFI
3/1 THE CORSO MANLY NSW 2095

Client
ROCHE GROUP
365 NEW SOUTH HEAD ROAD, DOUBLE BAY NSW 2028

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North

Project
PROPOSED MIXED USE DEVELOPMENT
469-483 BALMAIN ROAD, LILYFIELD NSW 2040

Sheet Subject
SOIL AND WATER MANAGEMENT DETAILS

Scale at A1	Drawn	Approved
NTS	TF	SS
Job No	**Drawing No**	**Revision**
221004	C350	A

6.2 APPENDIX B – DETAIL SURVEY AND DEPOSITED PLAN

THE UNIVERSITY OF SYDNEY

SYDNEY COLLEGE OF THE ARTS

BALMAIN ROAD

PARK DR

STREET

ALBERTO STREET

MAIDA STREET

FRED LANE

CECILY STREET

BRICK BUILDING

2 STOREY BRICK BUILDING

(ROOF STRUCTURE UNABLED TO BE DETERMINED BY SURVEY)

RENDERED BRICK BUILDING No. 467

WB HOUSE No. 1

BRICK HOUSE No. 2

RENDERED BRICK TOWNHOUSES No. 14-22

WB HOUSE No. 8

BRICK SEMI No. 10

BRICK HOUSE No. 12

REND. BRICK HOUSE No. 2

BRICK HOUSE No. 485

BRICK HOUSE No. 1

GARAGE

CARPORT

No.469-483

LOT 2 DP 1015843

NAIL IN CONC
E 330238.744
N 6251010.374
RL 35.22 AHD

BOLT IN CONC
E 330289.922
N 6251069.902
RL 34.64 AHD

NAIL IN CONC
E 330311.073
N 6251093.336
RL 34.37 AHD

BOLT IN CONC
E 330329.518
N 6251115.194
RL 34.18 AHD

BM (PM SS4901) IN PATH FD
RL 34.72

APPROX POSITION OF SEWER MAIN AS PER SYDNEY WATER DIAGRAM

(C) RIGHT OF WAY (VAR. WIDTH) CREATED BY LEASED 5430295 (EXPIRES 30/6/2048)

(D) SUBSTATION PREMISES No.1425 CREATED BY LEASED 5430295 (EXPIRES 30/6/2048)

(E) RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES (VAR. WIDTH) CREATED BY LEASED 5430295 (EXPIRES 30/6/2048)

NOTE: SEE ELEVATIONS FOR WINDOW INFORMATION

SEE SHEET 3 FOR SUBSTATION DIMENSIONS

SUBJECT LOT BOUNDARY DIMENSIONS

BOUNDARY DIMENSIONS		
No.	BEARING	DISTANCE
1	41° 15' 38"	42.235
2	315° 37' 03"	1.375
3	41° 15' 38"	65.78
4	137° 48' 53"	65.405
5	221° 44' 43"	55.95
6	221° 17' 13"	8.46
7	131° 17' 13"	2.555
8	221° 17' 13"	15.03
9	131° 17' 13"	1.86
10	221° 17' 13"	21.24
11	311° 17' 13"	67.53

MGA COORDINATES ORIGIN

MARK	MGA COORDINATES		ZONE	CLASS	ORDER	METHOD	ORIGIN
	EASTING	NORTHING					
SSM 20540	330324.597	6251087.802	56	B			SCIMS
SSM 55490	330261.289	6251014.793	56	D			SCIMS
COMBINED SCALE FACTOR (CSF) = 0.999946							
SOURCE: MGA COORDINATES ADOPTED FROM SCIMS ON: 04/10/2022							

MGA COORDINATES BOUNDARY CORNERS

MGA COORDINATES BOUNDARY CORNERS		
Pt.	EASTING	NORTHING
A	330314.846	6250968.641
B	330264.103	6251013.199
C	330334.375	6251095.379
D	330378.297	6251046.915

NOTE: SEE ELEVATIONS FOR WINDOW INFORMATION

NOTE: SEE ELEVATIONS FOR WINDOW INFORMATION

NOTE: SEE ELEVATIONS FOR WINDOW INFORMATION

TN MGA

APPROX THIS PLAN MGA BEARINGS

GEOMETRA Consulting

20/1-5 Jacobs Street
Bankstown NSW 2200
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Fax: 9708 4362
admin@geometra.com.au
www.geometra.com.au
ABN 69 074 616 087

LAND SURVEYORS - DEVELOPMENT CONSULTANTS

PLAN SHOWING SITE DETAILS AND BOUNDARY INFORMATION AT

469-483 BALMAIN ROAD
LILYFIELD

LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m²

A1+
1:200
units=metres

DATUM OF LEVELS: (AHD)
AUSTRALIAN HEIGHT DATUM
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722

SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 1 OF 7 SHEETS

LEGEND

		TRUNK DIAMETER	SPREAD / RADIUS	APPROX HEIGHT
1,2,3	LEVEL			
D	DOOR			
W	WINDOW			
T/G	TOP OF GUTTER			
SV	STOP VALVE			
HYD	HYDRANT			
SMH	SEWER MANHOLE			

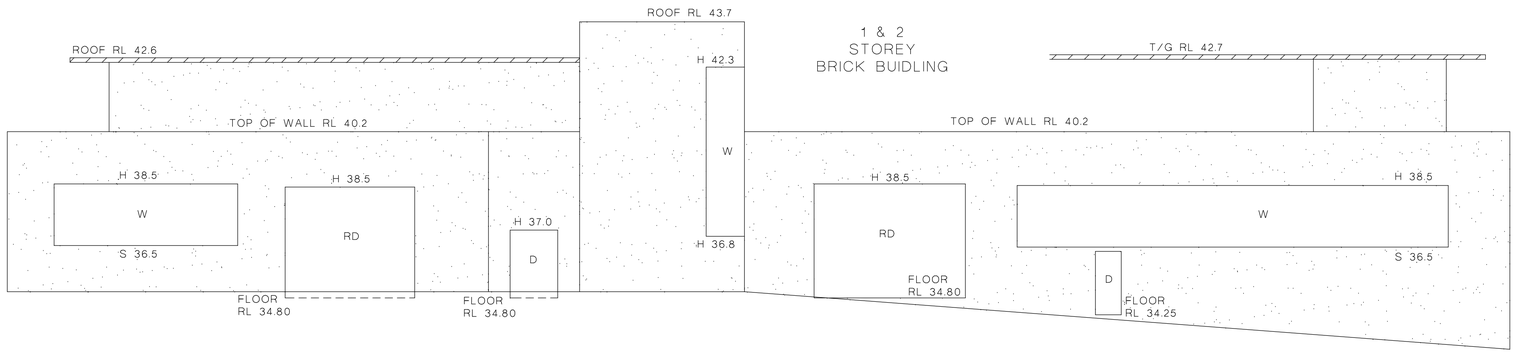
SS SEWER LINE
CENTRELINE
TK TOP OF KERB
WM WATER METER
PP POWER POLE
TFL TRAFFIC LIGHTS

SURVEYED: TH/BJ | DRAWN: TH/BJ | CHECKED: JB

NOTES:
- Underground Services have not been searched at the relevant authorities
- Boundary dimensions shown are taken from the subject DP1015843 and survey field measurements made in the field
- Site area shown is calculated using the boundary dimensions shown
- The orientation of north shown on this plan has been derived from established MGA Co-ordinated Survey Marks found on site. The true north is then orientated from the field survey observed MGA bearings which are derived from the MGA Co-ordinated survey marks found in the field.

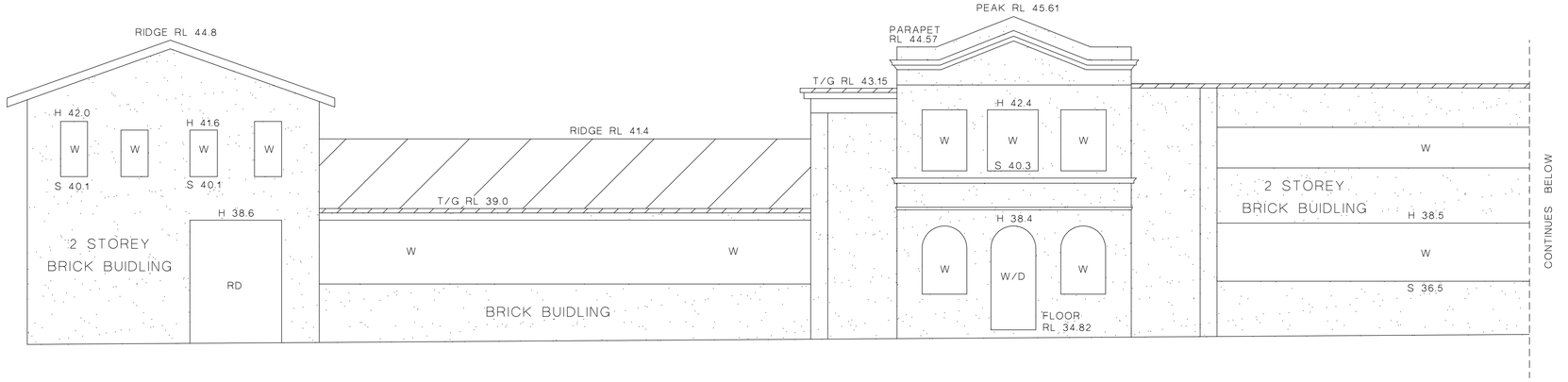
JOHN BOTTARO
REGISTERED SURVEYOR
GEOMETRA CONSULTING P/L
BOSSI ID : SU000564

WESTERN ELEVATION - SUBJECT PROPERTY

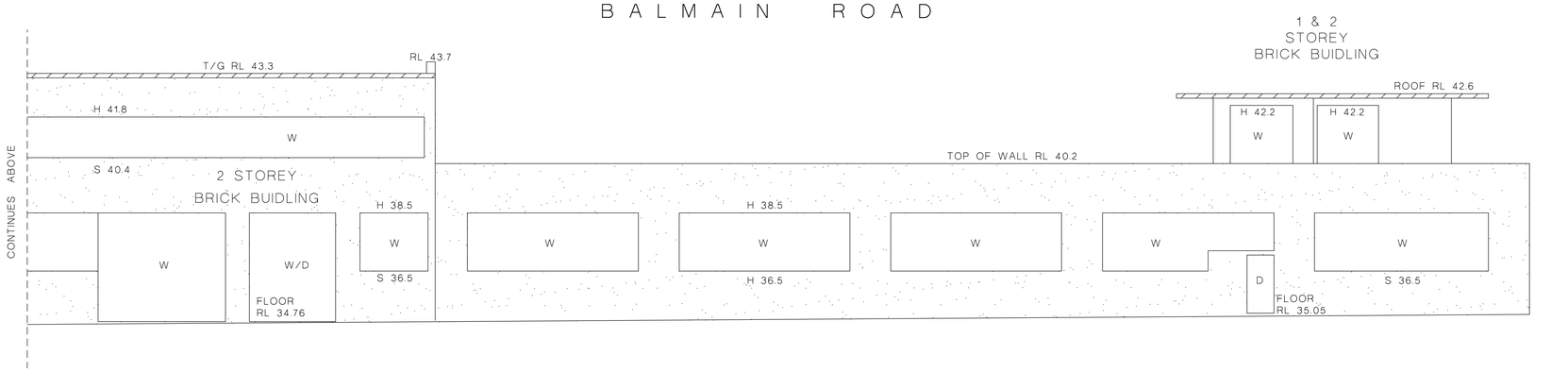


ALBERTO STREET

NORTHERN ELEVATION - SUBJECT PROPERTY



BALMAIN ROAD



BALMAIN ROAD

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ABN 69 074 616 087
LAND SURVEYORS - DEVELOPMENT CONSULTANTS

PLAN SHOWING ELEVATIONS OF THE SUBJECT PROPERTY AT

469-483 BALMAIN ROAD
LILYFIELD

LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m^2

A1
1:100
units=metres

DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

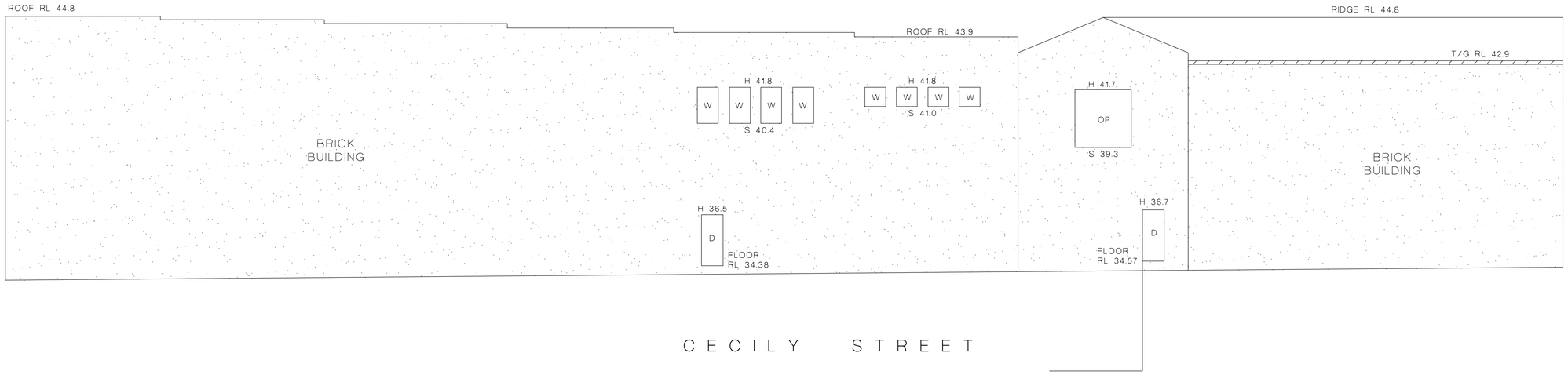
SHEET: 2 OF 7 SHEETS

LEGEND

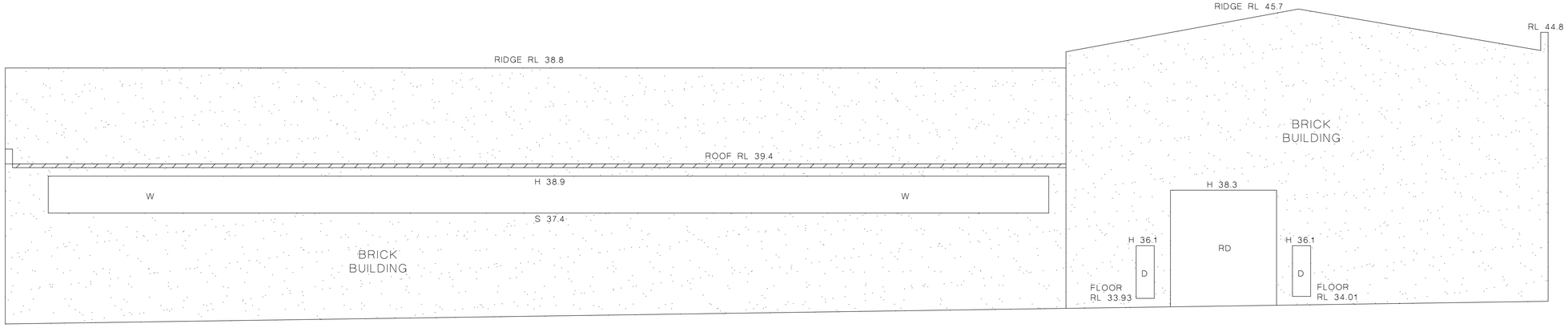
1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: TH/BJ | DRAWN: TH/BJ | CHECKED: JB

EASTERN ELEVATION - SUBJECT PROPERTY



SOUTHERN ELEVATION - SUBJECT PROPERTY



FRED STREET

(C) RIGHT OF WAY (VAR. WIDTH)
CREATED BY LEASE 5430295 (EXPIRES 30/6/2048)

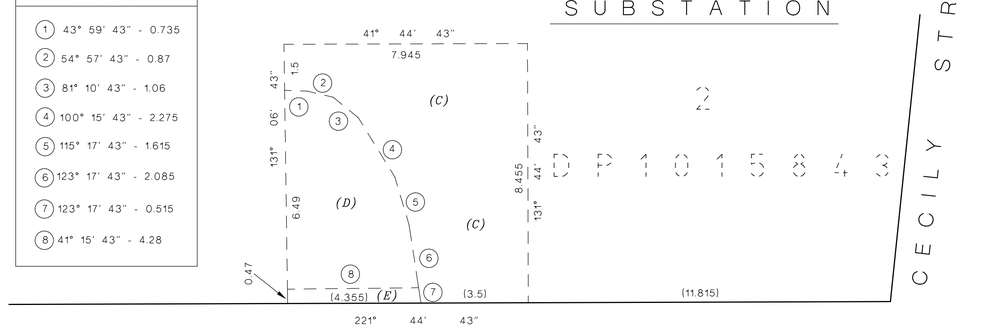
(D) SUBSTATION PREMISES No.1425
CREATED BY LEASE 5430295 (EXPIRES 30/6/2048)

(E) RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES (VAR. WIDTH)
CREATED BY LEASE 5430295

SHORT EASEMENT LINES

1	43° 59' 43" - 0.735
2	54° 57' 43" - 0.87
3	81° 10' 43" - 1.06
4	100° 15' 43" - 2.275
5	115° 17' 43" - 1.615
6	123° 17' 43" - 2.085
7	123° 17' 43" - 0.515
8	41° 15' 43" - 4.28

PLAN VIEW
SUBSTATION



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ABN 69 074 616 087
LAND SURVEYORS - DEVELOPMENT CONSULTANTS

PLAN SHOWING ELEVATIONS OF THE SUBJECT PROPERTY AT
469-483 BALMAIN ROAD
LILYFIELD
LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m²

A1
1:100
units=metres

DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 3 OF 7 SHEETS

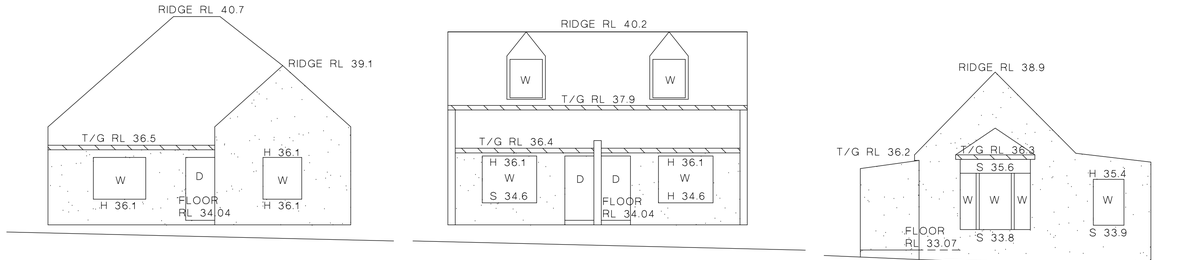
LEGEND

1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: TH/BJ | DRAWN: TH/BJ | CHECKED: JB

NORTHERN ELEVATION- FRED STREET

(CECILY STREET)



BRICK HOUSE
No. 12

RENDERED BRICK
SEMI'S
No. 10 & 10A

WEATHERBOARD
HOUSE
No. 8

FRED STREET

NORTHERN ELEVATION-ADJOINING PROPERTIES

(FRED STREET)

(ALBERTO STREET)

GEOMETRA Consulting
LAND SURVEYORS - DEVELOPMENT CONSULTANTS
20/1-5 Jacobs Street
Bankstown NSW 2200
Ph: 9708 5719
Fax: 9708 4362
admin@geometra.com.au
www.geometra.com.au
ABN 69 074 616 087

PLAN SHOWING ELEVATIONS OF ADJOINING PROPERTIES TO
469-483 BALMAIN ROAD
LILYFIELD
LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m^2

A1
1:100
units:metres

DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 4 OF 7 SHEETS

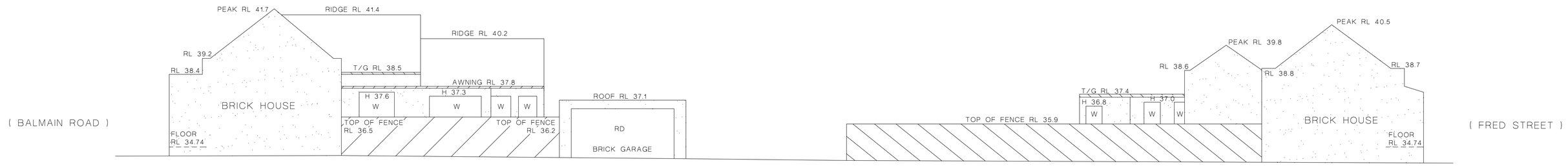
LEGEND

1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: TH/BJ | DRAWN: TH/BJ | CHECKED: JB

WESTERN ELEVATION- ALBERTO STREET

EASTERN ELEVATION - CECILY STREET



CECILY STREET

GEOMETRA Consulting
LAND SURVEYORS - DEVELOPMENT CONSULTANTS
20/1-5 Jacobs Street
Bankstown NSW 2200
Ph: 9708 5719
Fax: 9708 4362
admin@geometra.com.au
www.geometra.com.au
ABN 69 074 616 087

PLAN SHOWING ELEVATIONS OF ADJOINING PROPERTIES TO

469-483 BALMAIN ROAD
LILYFIELD

LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m^2

A1
1:100
units=metres

DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 5 OF 7 SHEETS

LEGEND

1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: TH/BJ | DRAWN: TH/BJ | CHECKED: JB

GROUND FLOOR

GEOMETRA Consulting
20/1-5 Jacobs Street
Bankstown NSW 2200
Ph: 9708 5719
Fax: 9708 4362
admin@geometra.com.au
www.geometra.com.au
ABN 69 074 616 087
LAND SURVEYORS - DEVELOPMENT CONSULTANTS

PLAN SHOWING INTERNAL LAYOUT OF SUBJECT PROPERTY AT

469-483 BALMAIN ROAD
LILYFIELD

LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m²

A1
1:100
units=metres

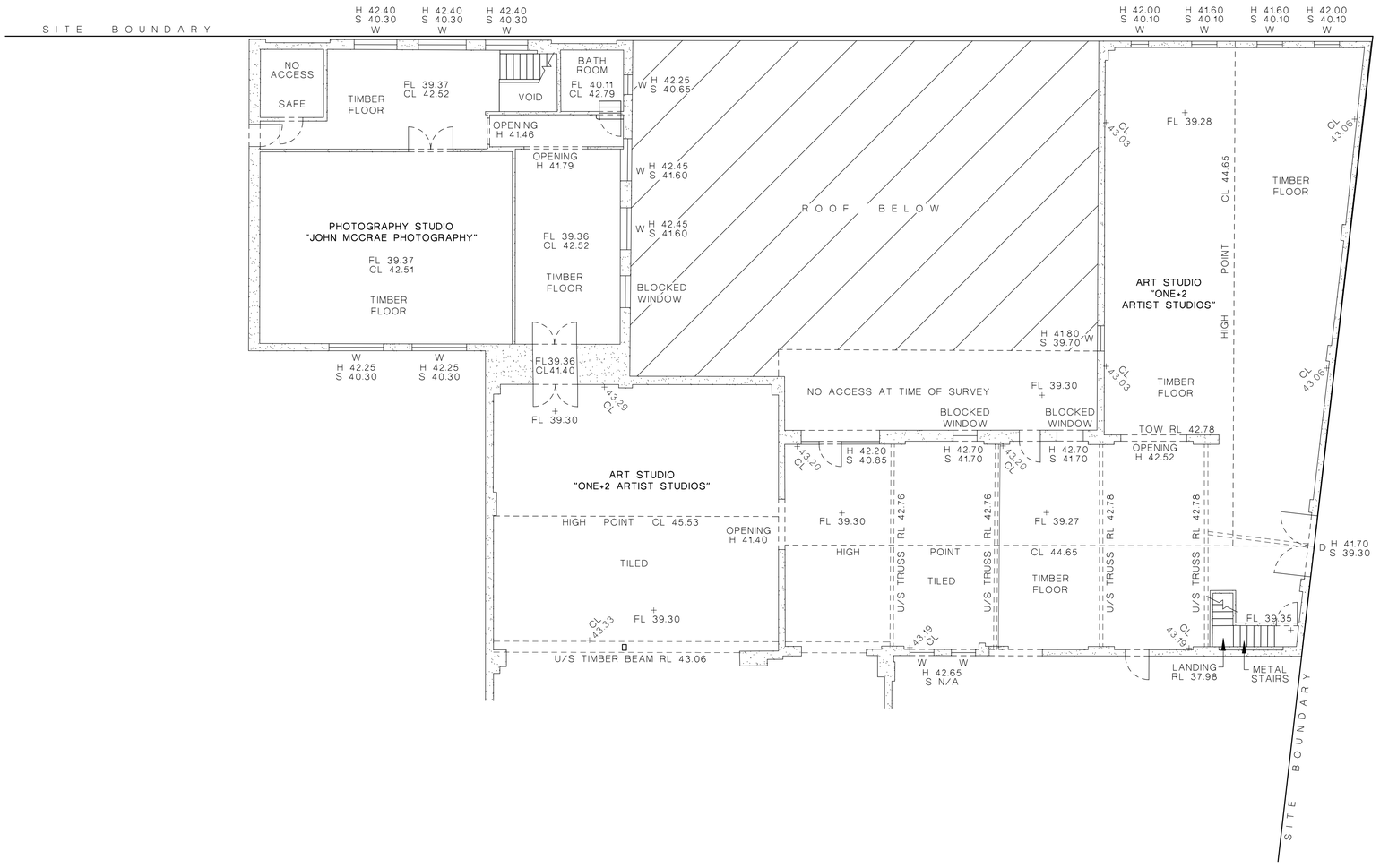
DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 6 OF 7 SHEETS

LEGEND

1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: BJ | DRAWN: BJ | CHECKED: JB



FIRST FLOOR

GEOMETRA Consulting
LAND SURVEYORS - DEVELOPMENT CONSULTANTS
20/1-5 Jacobs Street
Bankstown NSW 2200
Ph: 9708 5719
Fax: 9708 4362
admin@geometra.com.au
www.geometra.com.au
ABN 69 074 616 087

PLAN SHOWING INTERNAL LAYOUT OF SUBJECT PROPERTY AT

469-483 BALMAIN ROAD
LILYFIELD

LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m²

A1
1:100
units=metres

DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 7 OF 7 SHEETS

LEGEND

1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: BJ | DRAWN: BJ | CHECKED: JB

6.3 APPENDIX C – FLOOD RISK MANAGEMENT REPORT

XAVIER
KNIGHT

30th November 2023

Roche Group Pty Ltd
365 New South Head Road,
Double Bay NSW 2028

Attn: Andreas Brohl

FLOOD RISK MANAGEMENT REPORT

469-483 Balmain Road, Lilyfield NSW 2040
Project Number 221004

1 INTRODUCTION

This report has been prepared to accompany a Concept Proposal and Detailed Development Application (DA) for a development comprising residential flat buildings, light industries and creative purposes at 469-483 Balmain Road, Lilyfield (the Site). The proposed development aims to incorporate character buildings on the Site and construct buildings that are complementary to the surrounding residential neighbourhood and light industrial zone.

The proposed development includes the demolition of the existing building and construction of a mixed-use development consisting of residential apartments, tenancies, and open courtyards and pedestrian laneways within the site.

The Site is legally described as Lot 2 DP1015843 and has an area of 6,824m2.

This report has been prepared in support of a DA application for the proposed development at 469-483 Balmain Road, Lilyfield by providing measures to safely manage risk posed during PMF events. It is noted the site is unaffected by 100 Year ARI storm events.

1.1 PROJECT DESCRIPTION

The DA comprises the following elements:

- Concept Proposal (pursuant to Section 4.23 of the *Environmental Planning and Assessment Act 1979* and in satisfaction of Clause 6.25(4) of the *Inner West Local Environmental Plan 2022* [IWLEP 2022]) including:
  - Land uses consistent with those permitted under the IWLEP 2022, including for 'residential flat buildings', 'light industries' and 'creative purposes'.
  - Maximum building envelope.
  - Design principles and controls that address each of the requirements set out under Clause 6.25(4) or the IWLEP 2022.
- Detailed Development Application comprising:
  - Partial demolition of existing buildings and structures within the site.

- Site preparation works, including termination or relocation of site services and infrastructure, remediation, tree removal and the erection of site protection fencing.
- Construction and use of a new development comprising residential flat buildings and light industries, including adaptive reuse of existing buildings and erection of new buildings, for:
  - 6,000m^2 of light industrial uses, at least 1,200m^2 of which would be used for light industries associated with creative purposes
  - Residential apartments, of which a number would be used for the purpose of affordable housing
- Basement car parking for staff and residents, and a new loading dock for employment uses.
- Public domain, communal open space, landscaping, and tree planting.
- Publicly accessible through-site links, and footpath widening to Balmain Road and Alberto Street.

Fit out and use of the employment tenancies and business identification signage would be the subject of separate future DAs where required.

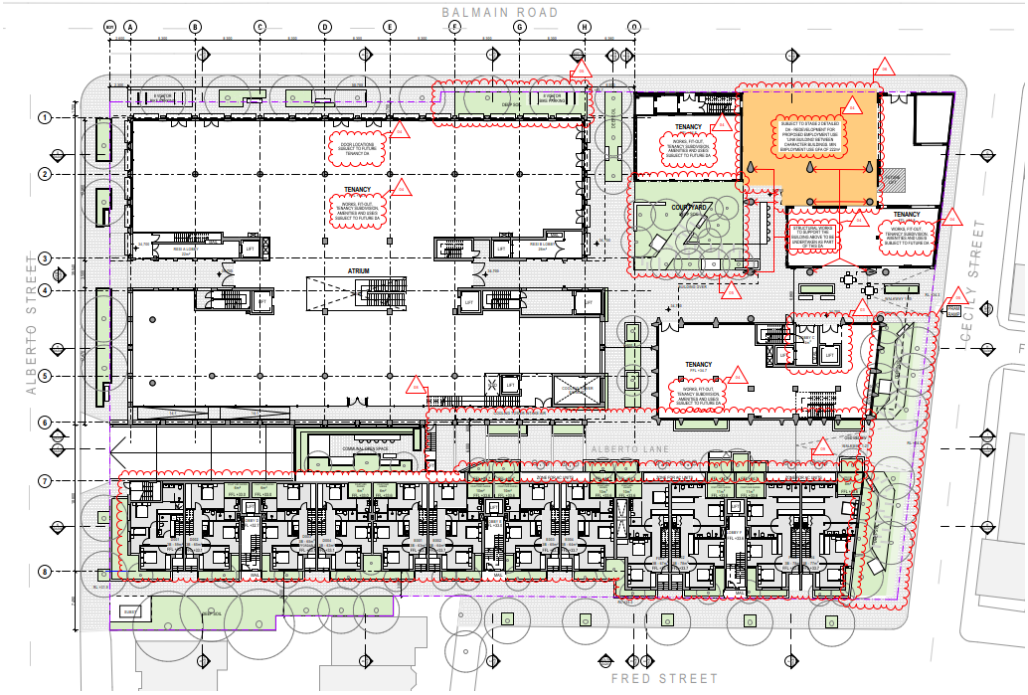


Figure 1. Site Plan

1.2 EXISTING CONDITIONS

The site is bordered by Balmain Road to the northwest, Cecily Street to the northeast, Alberto Street to the southwest and Fred St to the southeast. The existing structures on the site consist of multiple single and double storey light industrial buildings.

Inner West Council provided a Flood Certificate for the development on 15th February 2023, which identified the site being unaffected by the 100 Year ARI flood event. However, the site is affected by the PMF flood event. Refer to **Appendix A** for the Flood Certificate.

The highest elevation of the site is located on the west corner of the site (corner of Balmain Road and Alberto Street) at RL 35.07. The lowest elevation of the site is located on the south corner of the site along the Alberto Street site frontage at RL 31.58. Refer to **Appendix B** for site survey.

The Flood Planning Level can be determined by adding 500mm freeboard to the 100 Year ARI flood level. By overlaying Council's Flood Certificate onto the site survey, the maximum 100 Year ARI flood level can be conservatively determined as RL 31.50 at the gutter approximately 3.8m from the site boundary. Therefore, the Flood Planning Level of the site is determined as RL 32.00. Refer to **Figure 2** below. The road level in front of the proposed basement driveway on Alberto Street is approximately RL 33.00 and therefore above the Flood Planning Level.

Figure 2. Inner West Council Flood Certificate Extract

Council's Flood Certificate identified the PMF level of the site as RL 35.20 along the Balmain Road site frontage. Refer to **Section 4** below for flood risk management procedures.

2 REFERENCE INFORMATION

The following has been reviewed and considered in the preparation of this plan:

- Leichhardt DCP 2013 Part E: Water, Section E1.3.1
- Flood Certificate ENCF/2023/0008 by Inner West Council dated 15/02/2023

3 Flooding Emergency Response Strategy (FERS)

The FERS sets out the potential consequences of flooding, the time at which action should be taken to evacuate and the procedures to be followed in a possible flood event. The FERS should be provided as part of the contract for all development lots and should be conditioned to be mounted in prominent locations throughout the future development where it can be seen by the occupants/patrons (for example: in hallways, the garage, where medical provisions are kept, electrical switchboard box, etc…)
The FERS outlines that the occupants move outdoor equipment, garbage, chemicals and poisons to higher locations and also plan which indoor items they will raise or empty if water threatens the home (e.g. freezers and refrigerators), check their emergency kit and safeguard their pets. They need to communicate with friends, family and neighbours about their plans etc…
The FERS also describes what should be done after a flood event.
A copy of the FERS for the development should be used as a guideline for the occupants/patrons as they may wish to adjust some of the items included in the document.

It is noted that the site resides at the PMF flood level, but above the 1% AEP flood level. It is therefore advised that during any potential flood event, any occupants on the site at this time should take shelter in place at the first-floor level of the closest building (min FFL 36.80 mAHD, approximately 1.2m above the PMF level of RL 35.20 mAHD. At this time, further advice should be sought from the relevant authorities outlined below.

3.1 PROCEDURE IN CASE OF FLOODING

- The procedure outlined below is in accordance with the NSW Government – NSW State Emergency Services (SES) 'Flood Safe' guidelines.
- In lieu of any flood event, a 'Business Flood Safe Toolkit' should be undertaken and regularly updated.
- The primary goal of the 'Business Flood Safe Toolkit' may assist you in reducing the impact flooding may have on your business. The 'Toolkit' can be completed online at: *(http://floodsafe.ses.org.au/floodsafe/businesstoolkit/)*

3.2 STEPS TO BE FOLLOWED IN THE EVENT OF POSSIBLE FLOODING

1. Flood information including 'Flood Watches' and 'Flood Warnings' issued by the Bureau of Meteorology (BOM), road closures and advice on evacuations and property protection will be updated on the BOM website (http://www.bom.gov.au/nsw/warnings/), broadcast

over ABC, other national, state and local radio stations. The ABC is the Emergency Services Broadcaster.

2. The NSW SES issue Flood Bulletins to radio stations which inform people about what is expected to happen during flooding. SES Flood Bulletins provide information on likely flood consequences and what actions are required to protect yourself and your property. Radio stations are asked to read the Flood Bulletin 'word for word' over a period of time.
3. Other ways you may be informed of possible flooding is through doorknocking by emergency services, through word of mouth or the SES may issue an Emergency Alert. An Emergency Alert is a message that is sent to your landline or mobile phone as a voice or text message. The SES advises people to always follow instructions given by the emergency services and make sure neighbours, family friends are aware of possible flooding.

In the event that the State Emergency Services have not provided an emergency alert message or are unable to be contacted, the following instructions should be followed. However, any message and instructions received by state emergency services should govern the trigger levels outlined below.

1. During floods many local and major streets and roads may be cut off by floodwaters that may make the escape by vehicle extremely difficult. Travelling through floodwaters on foot or in a vehicle can be very dangerous as obstructions can be hidden under the floodwaters, or you could be swept away, even if in a car, or the water may be polluted. It is recommended staying within the building as much as practical as this is the safest option. If you urgently need to leave the building, do so early in the flood event.
2. In the unlikely event that flood waters have risen up to the building, do not evacuate the building at this time unless instructed to do so by the SES or the Police. Floodwaters are much deeper, run much faster and are more dangerous outside. Any disabled person/s should be assisted and moved to the nominated level in the building as outlined above.
3. In the case of a medical or life-threatening emergency ring '000' as normal but explain about the flooding.
4. Stay tuned on a battery powered radio for official advice and warnings.
5. Don't return home until authorities have said it is safe to do so.
6. Stay away from drains, culverts and water over knee-deep in depth.
7. Do not turn on gas and electricity until it has been checked by a professional/licensed repairer.
8. Avoid using gas or electrical appliances which have been in flood water until checked by for safety by a suitably qualified person.
9. Take photos for insurance purposes.

3.3 AFTER THE FLOOD

Stay tuned to ABC 702 on a battery powered radio for official advice and warnings

- Don't return home until authorities have said it is safe to do so.
- Don't allow children to play in or near flood waters.

- Avoid entering flood waters, as it is dangerous. If you must, wear solid shoes and check depth and current with a stick.
- Stay away from drains, culverts and water over knee-deep in depth.
- Don't turn on your gas and electricity until it has been checked by a professional/licensed repairer.
- Avoid using gas or electrical appliances which have been in flood water until checked for safety.
- Boil tap water until supplies have been declared safe.
- Watch for trapped animals.
- Beware of fallen power lines.
- Take many photos for all damage for insurance purposes.
- Notify family and friends of your whereabouts.

Important Phone Numbers	
State Emergency Service	Emergency: 132 500 General Enquires: 4251 6111
Police, Fire, Ambulance	Emergency: 000
Bureau of Meteorology (Website)	http://www.bom.gov.au/weather
Land, Weather and Flood Warnings	Phone: 1300 659 215
Inner West Council	Phone: 02 9392 5000
Manager	
Strata Manager	
Other	

3.4 FLOOD EVACUATION PLAN

The emergency evacuation procedure should include the following:

- Emergency Wardens or authorised individuals to warn occupants about the flood hazard once flood warning is received.

- In the event that flash flooding occurs without prior warning, it is recommended that staff and patrons shelter in place within Level 01 or above of the building they are within or closest to.
- Should a flood evacuation order occur, all staff and patrons are to evacuate from the facility through the Balmain Road, Cecily Street, or Fred Street frontages in accordance with emergency services and SES directions.
- In the event of flooding, any valuable goods or hazardous materials to be stored on the above the 100 Year ARI Flood level + 500mm = RL 32.00 (i.e. the Ground Floor of any building), and away from any sheltering occupants.

Disclaimer
Xavier Knight Consulting Engineers gives notice that the particulars set out in this report are for the exclusive use of Client and that no responsibility or liability is accepted as a result of the use of this report by any other party. This report shall not be construed as a certificate or warranty.

For and on behalf of the Xavier Knight team.

Kind regards,

Scott Sharma

Principal Civil Engineer

APPENDIX A

Inner West Council Flood Certificate

INNER WEST

Roche Group Pty Ltd
365 New South Head Road
DOUBLE BAY NSW 2028
ABROHL@ROCHEGROUP.COM.AU

15 February 2023

FLOOD CERTIFICATE
469-483 Balmain Road LILYFIELD NSW 2040
ENCF/2023/0008

I am pleased to advise that the Flood Certificate for the above address has been prepared and is attached.

The information contained in the certificate is derived from the Leichhardt Flood Study (Cardno, 2017).

The information is provided in good faith and in accordance with the provisions of s.733 of the Local Government Act.

Yours faithfully

James Ogg
COORDINATOR – STORMWATER & ASSET PLANNING

INNER WEST

Applicant Name: Roche Group Pty Ltd
Property Address: 469-483 Balmain Road
LILYFIELD NSW 2040

Certificate No: ENCF/2023/0008
Date: 15-Feb-2023

About this Certificate

This certificate provides flooding information for the area in the vicinity of the above property. This information can be used to assist in understanding the extent of flooding affecting this property and can be used to assist in preparation of a Flood Risk Management Report to support a development application. It is recommended that the information in this report be interpreted by a suitably qualified professional.

This report includes two pages; this cover page with an explanation of the information provided, and the second page is a figure providing information on the flooding behaviour in the area. The figure includes peak water levels, depths and flow rates for the 100 year ARI and peak water levels for the Probable Maximum Flood event.

The flood levels provided are based on available information including numerical modelling results from flood studies prepared for Council. All flood levels and depths are provided to the nearest 0.05 metres.

Definitions

The following provides a brief definition of some of the key terms utilised in this report:

Average Recurrence Interval (**ARI**)	The long-term average number of years between the occurrences of a flood as big as or larger than the selected event. The 100 year ARI flood event can be expressed as having a 1% chance of occurrence in any given year or as the flood that could occur once every 100 years.
Probable Maximum Flood (**PMF**)	The PMF is the largest flood that could conceivably occur at a particular location. This event is used to determine what might occur in events larger than a 100 year ARI.
100 year ARI Flow Path/Extent	The area of land expected to be inundated by either a flow path or mainstream flooding during a 100 year ARI flood event. The extents are limited to the areas where depths of flow are greater than 150mm.
100 year ARI High Hazard	Areas within the 100 year ARI flood extents where the depth and/or velocity of flow is likely to represent a possible danger to personal safety; evacuation by trucks is difficult; able-bodied adults would have difficulty wading to safety; and/or potential for structural damage to buildings.
Flood Planning Level (**FPL**)	The Flood Planning Level is calculated by adding freeboard onto the 100 year ARI flood level in accordance with Council's DCP.
Freeboard	The freeboard is incorporated into the Flood Planning Level to provide a factor of safety to the flood levels. It accounts for a number of factors, including wave action, localised obstructions to flows, and model uncertainty.
Australian Height Datum (**AHD**)	A common national surface level datum approximately corresponding to mean sea level.

Notes

The ground levels shown on the attached figure are based on aerial survey data. The ground levels should be verified by a suitably qualified surveyor.

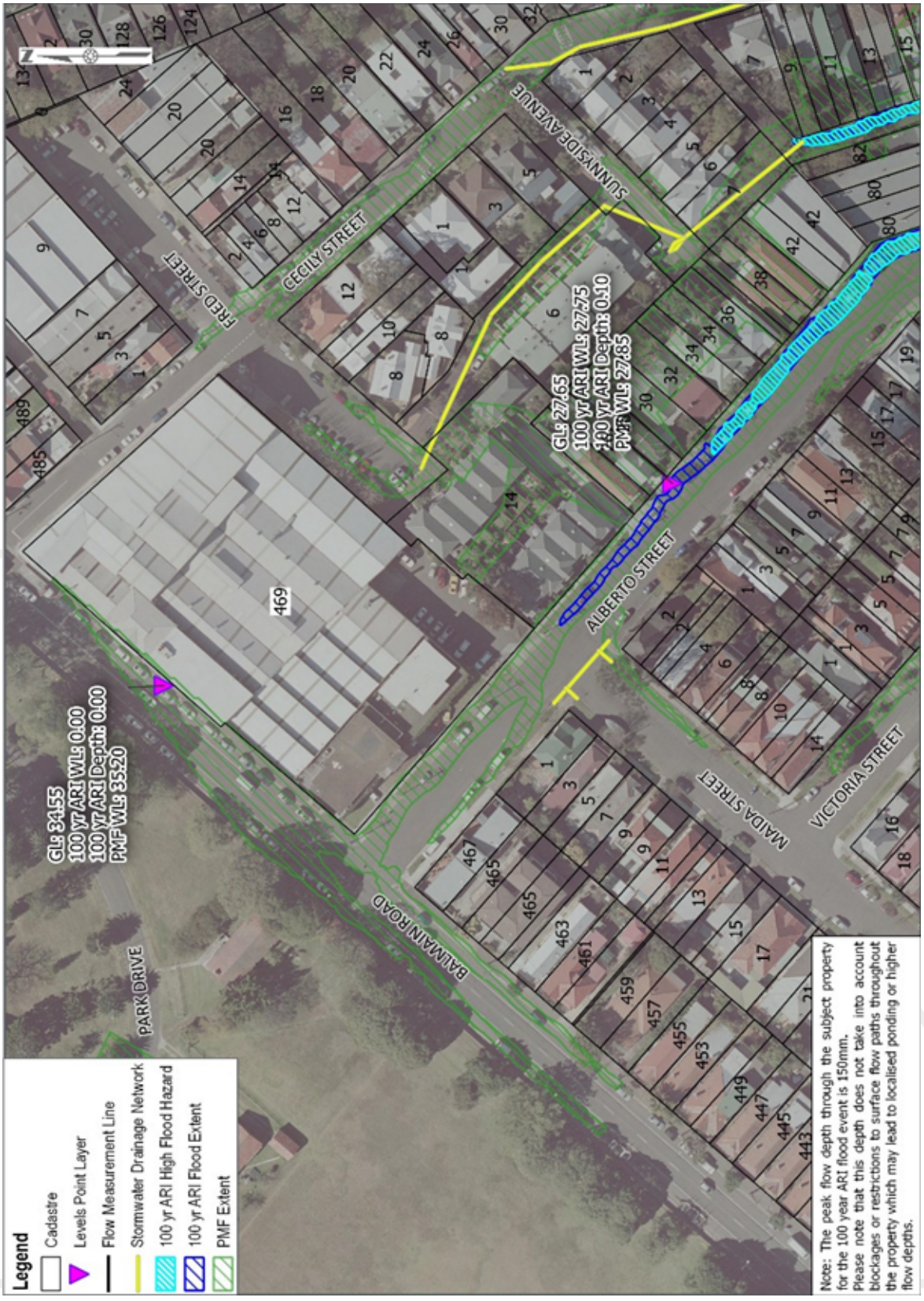
The location of stormwater pits and pipes on the attached figure are indicative only. The location and dimensions of pipelines should be verified by a suitably qualified surveyor.

The water depths shown are provided at the location shown and are indicative only. They do not necessarily represent the maximum depth in the area. For example, where a point is located on the centreline of a road, the depths will be higher within the road gutter.

The information is provided in good faith and in accordance with the provisions of s.733 of the *Local Government Act*.

Flood Certificate

Applicant Name: Roche Group Pty Ltd	Certificate No: ENCF/2023/0008
Property Address: 469-483 Balmain Road LILYFIELD NSW 2040	Date: 15-Feb-2023



The information provided is in good faith and in accordance with the provisions of s.733 of the *Local Government Act*.
The aerial photo is historical and may not reflect the current structures and features of this area.

APPENDIX B

Site Survey

THE UNIVERSITY OF SYDNEY

SYDNEY COLLEGE OF THE ARTS

BALMAIN ROAD

PARK DR

STREET

ALBERTO STREET

MAIDA STREET

FRED LANE

CECILY STREET

BRICK BUILDING

2 STOREY BRICK BUILDING

(ROOF STRUCTURE UNABLED TO BE DETERMINED BY SURVEY)

RENDERED BRICK BUILDING No. 467

WB HOUSE No. 1

BRICK HOUSE No. 2

RENDERED BRICK TOWNHOUSES No. 14-22

WB HOUSE No. 8

BRICK SEMI No. 10

BRICK HOUSE No. 12

REND. BRICK HOUSE No. 2

BRICK HOUSE No. 485

BRICK HOUSE No. 1

GARAGE

CARPORT

No.469-483

LOT 2 DP 1015843

NAIL IN CONC
E 330238.744
N 6251010.374
RL 35.22 AHD

BOLT IN CONC
E 330289.922
N 6251069.902
RL 34.64 AHD

NAIL IN CONC
E 330311.073
N 6251093.336
RL 34.37 AHD

BOLT IN CONC
E 330329.518
N 6251115.194
RL 34.18 AHD

BM (PM SS4901) IN PATH FD
RL 34.72

APPROX POSITION OF SEWER MAIN AS PER SYDNEY WATER DIAGRAM

(C) RIGHT OF WAY (VAR. WIDTH) CREATED BY LEASED 5430295 (EXPIRES 30/6/2048)

(D) SUBSTATION PREMISES No.1425 CREATED BY LEASED 5430295 (EXPIRES 30/6/2048)

(E) RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES (VAR. WIDTH) CREATED BY LEASED 5430295 (EXPIRES 30/6/2048)

NOTE: SEE ELEVATIONS FOR WINDOW INFORMATION

SEE SHEET 3 FOR SUBSTATION DIMENSIONS

SUBJECT LOT BOUNDARY DIMENSIONS

BOUNDARY DIMENSIONS		
No.	BEARING	DISTANCE
1	41° 15' 38"	42.235
2	315° 37' 03"	1.375
3	41° 15' 38"	65.78
4	137° 48' 53"	65.405
5	221° 44' 43"	55.95
6	221° 17' 13"	8.46
7	131° 17' 13"	2.555
8	221° 17' 13"	15.03
9	131° 17' 13"	1.86
10	221° 17' 13"	21.24
11	311° 17' 13"	67.53

MGA COORDINATES ORIGIN

MARK	MGA COORDINATES		ZONE	CLASS	ORDER	METHOD	ORIGIN
	EASTING	NORTHING					
SSM 20540	330324.597	6251087.802	56	B			SCIMS
SSM 55490	330261.289	6251014.793	56	D			SCIMS
COMBINED SCALE FACTOR (CSF) = 0.999946							
SOURCE: MGA COORDINATES ADOPTED FROM SCIMS ON: 04/10/2022							

MGA COORDINATES BOUNDARY CORNERS

MGA COORDINATES BOUNDARY CORNERS		
Pt.	EASTING	NORTHING
A	330314.846	6250968.641
B	330264.103	6251013.199
C	330334.375	6251095.379
D	330378.297	6251046.915

NOTE: SEE ELEVATIONS FOR WINDOW INFORMATION

NOTE: SEE ELEVATIONS FOR WINDOW INFORMATION

NOTE: SEE ELEVATIONS FOR WINDOW INFORMATION

TN MGA

APPROX THIS PLAN MGA BEARINGS

GEOMETRA Consulting

20/1-5 Jacobs Street
Bankstown NSW 2200
Ph: 9708 5719
Fax: 9708 4362
admin@geometra.com.au
www.geometra.com.au
ABN 69 074 616 087

LAND SURVEYORS - DEVELOPMENT CONSULTANTS

PLAN SHOWING SITE DETAILS AND BOUNDARY INFORMATION AT

469-483 BALMAIN ROAD
LILYFIELD

LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m²

A1+
1:200
units=metres

DATUM OF LEVELS: (AHD)
AUSTRALIAN HEIGHT DATUM
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722

SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 1 OF 7 SHEETS

LEGEND

		TRUNK DIAMETER	SPREAD / RADIUS	APPROX HEIGHT
1,2,3	LEVEL			
D	DOOR			
W	WINDOW			
T/G	TOP OF GUTTER			
SV	STOP VALVE			
HYD	HYDRANT			
SMH	SEWER MANHOLE			

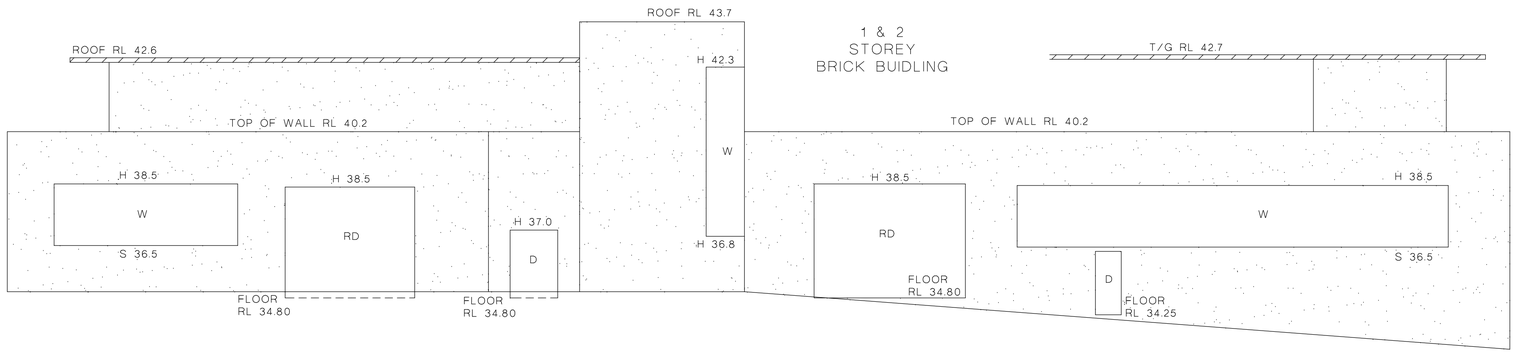
SS SEWER LINE
CENTRELINE
TK TOP OF KERB
WM WATER METER
PP POWER POLE
TFL TRAFFIC LIGHTS

SURVEYED: TH/BJ | DRAWN: TH/BJ | CHECKED: JB

NOTES:
- Underground Services have not been searched at the relevant authorities
- Boundary dimensions shown are taken from the subject DP1015843 and survey field measurements made in the field
- Site area shown is calculated using the boundary dimensions shown
- The orientation of north shown on this plan has been derived from established MGA Co-ordinated Survey Marks found on site. The true north is then orientated from the field survey observed MGA bearings which are derived from the MGA Co-ordinated survey marks found in the field.

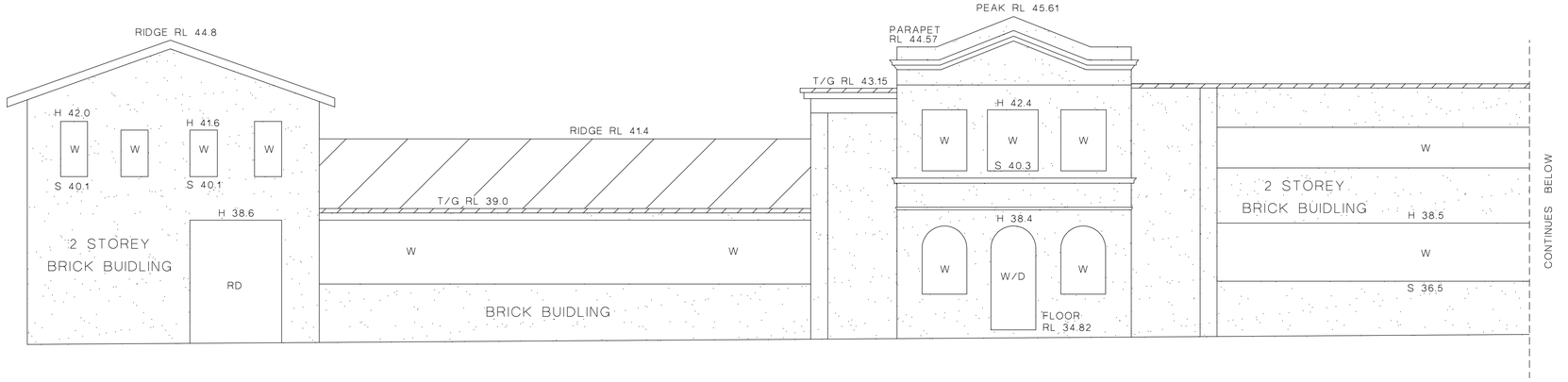
JOHN BOTTARO
REGISTERED SURVEYOR
GEOMETRA CONSULTING P/L
BOSSI ID : SU000564

WESTERN ELEVATION - SUBJECT PROPERTY

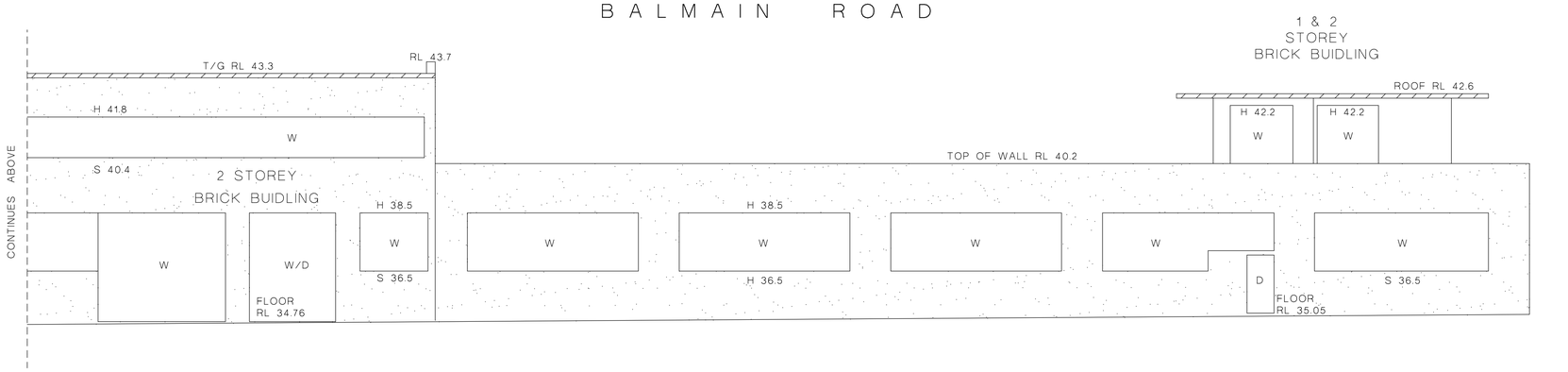


ALBERTO STREET

NORTHERN ELEVATION - SUBJECT PROPERTY



BALMAIN ROAD



BALMAIN ROAD

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Ph: 9708 5719
Fax: 9708 4362
admin@geometra.com.au
www.geometra.com.au
ABN 69 074 616 087
LAND SURVEYORS - DEVELOPMENT CONSULTANTS

PLAN SHOWING ELEVATIONS OF THE SUBJECT PROPERTY AT

469-483 BALMAIN ROAD
LILYFIELD

LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m^2

A1
1:100
units=metres

DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

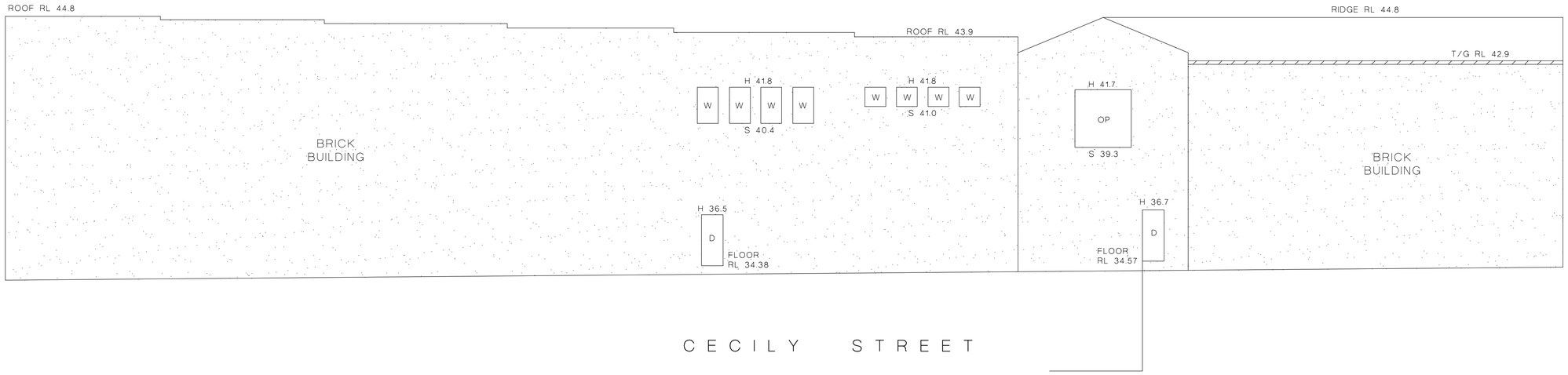
SHEET: 2 OF 7 SHEETS

LEGEND

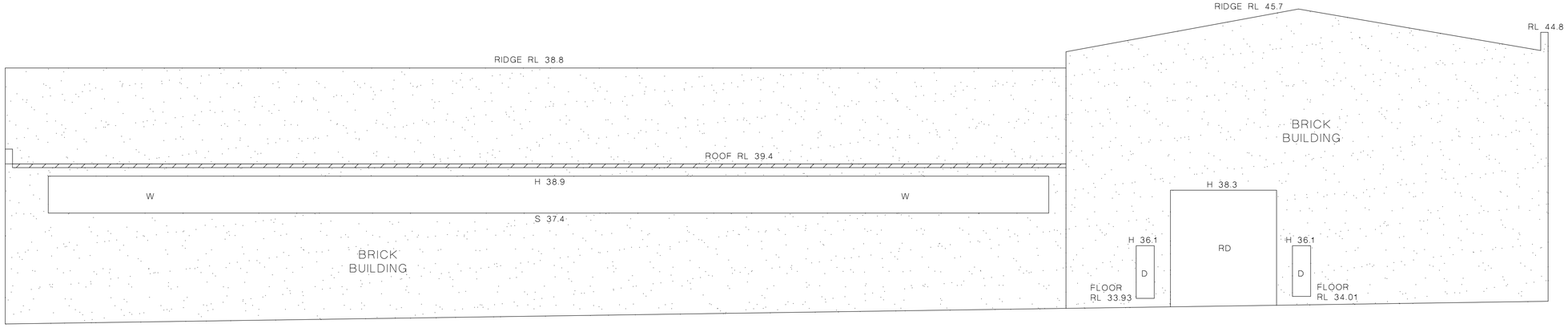
1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: TH/BJ | DRAWN: TH/BJ | CHECKED: JB

EASTERN ELEVATION - SUBJECT PROPERTY



SOUTHERN ELEVATION - SUBJECT PROPERTY



FRED STREET

(C) RIGHT OF WAY (VAR. WIDTH)
CREATED BY LEASE 5430295 (EXPIRES 30/6/2048)

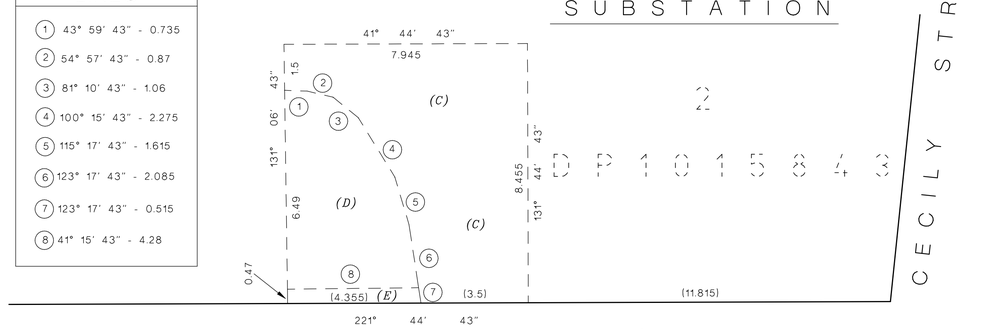
(D) SUBSTATION PREMISES No.1425
CREATED BY LEASE 5430295 (EXPIRES 30/6/2048)

(E) RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES (VAR. WIDTH)
CREATED BY LEASE 5430295

SHORT EASEMENT LINES

1	43° 59' 43" - 0.735
2	54° 57' 43" - 0.87
3	81° 10' 43" - 1.06
4	100° 15' 43" - 2.275
5	115° 17' 43" - 1.615
6	123° 17' 43" - 2.085
7	123° 17' 43" - 0.515
8	41° 15' 43" - 4.28

PLAN VIEW
SUBSTATION



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PLAN SHOWING ELEVATIONS OF THE SUBJECT PROPERTY AT
469-483 BALMAIN ROAD
LILYFIELD
LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m²

A1
1:100
units=metres

DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 3 OF 7 SHEETS

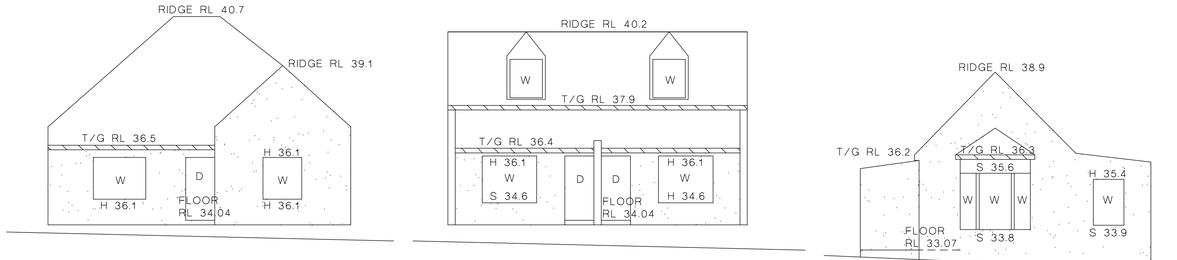
LEGEND

1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: TH/BJ | DRAWN: TH/BJ | CHECKED: JB

NORTHERN ELEVATION- FRED STREET

(CECILY STREET)



BRICK HOUSE
No. 12

RENDERED BRICK
SEMI'S
No. 10 & 10A

WEATHERBOARD
HOUSE
No. 8

FRED STREET

NORTHERN ELEVATION-ADJOINING PROPERTIES

(FRED STREET)

(ALBERTO STREET)

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PLAN SHOWING ELEVATIONS OF ADJOINING PROPERTIES TO
469-483 BALMAIN ROAD
LILYFIELD
LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m^2

A1
1:100
units:metres

DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 4 OF 7 SHEETS

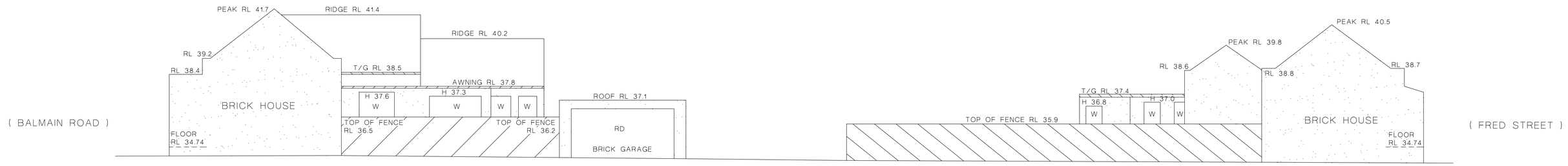
LEGEND

1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: TH/BJ | DRAWN: TH/BJ | CHECKED: JB

WESTERN ELEVATION- ALBERTO STREET

EASTERN ELEVATION - CECILY STREET



CECILY STREET

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ABN 69 074 616 087

PLAN SHOWING ELEVATIONS OF ADJOINING PROPERTIES TO

469-483 BALMAIN ROAD
LILYFIELD

LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m^2

A1
1:100
units=metres

DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 5 OF 7 SHEETS

LEGEND

1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: TH/BJ | DRAWN: TH/BJ | CHECKED: JB

GROUND FLOOR

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www.geometra.com.au
ABN 69 074 616 087
LAND SURVEYORS - DEVELOPMENT CONSULTANTS

PLAN SHOWING INTERNAL LAYOUT OF SUBJECT PROPERTY AT

469-483 BALMAIN ROAD
LILYFIELD

LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m²

A1
1:100
units=metres

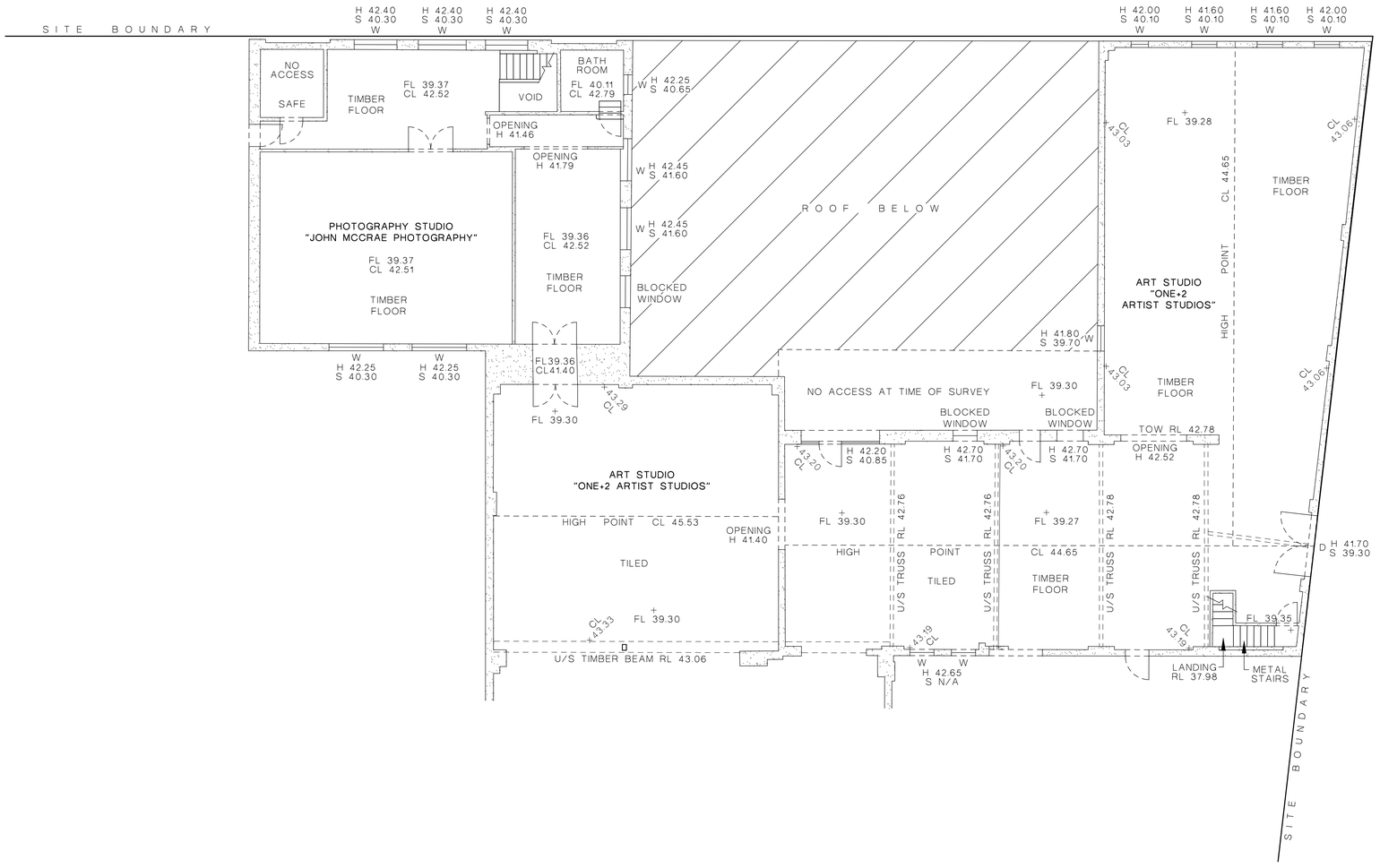
DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

SHEET: 6 OF 7 SHEETS

LEGEND

1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: BJ | DRAWN: BJ | CHECKED: JB



FIRST FLOOR

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www.geometra.com.au
ABN 69 074 616 087

PLAN SHOWING INTERNAL LAYOUT OF SUBJECT PROPERTY AT

469-483 BALMAIN ROAD
LILYFIELD

LOT 2 IN DP 1015843
TOTAL SITE AREA: 6823m²

A1
1:100
units=metres

DATUM OF LEVELS: AHD
ORIGIN OF LEVELS: PM 55490
ADOPTED VALUE: 34.722
SURVEY DATE: 04/10/2022
OUR REFERENCE: 9179-2

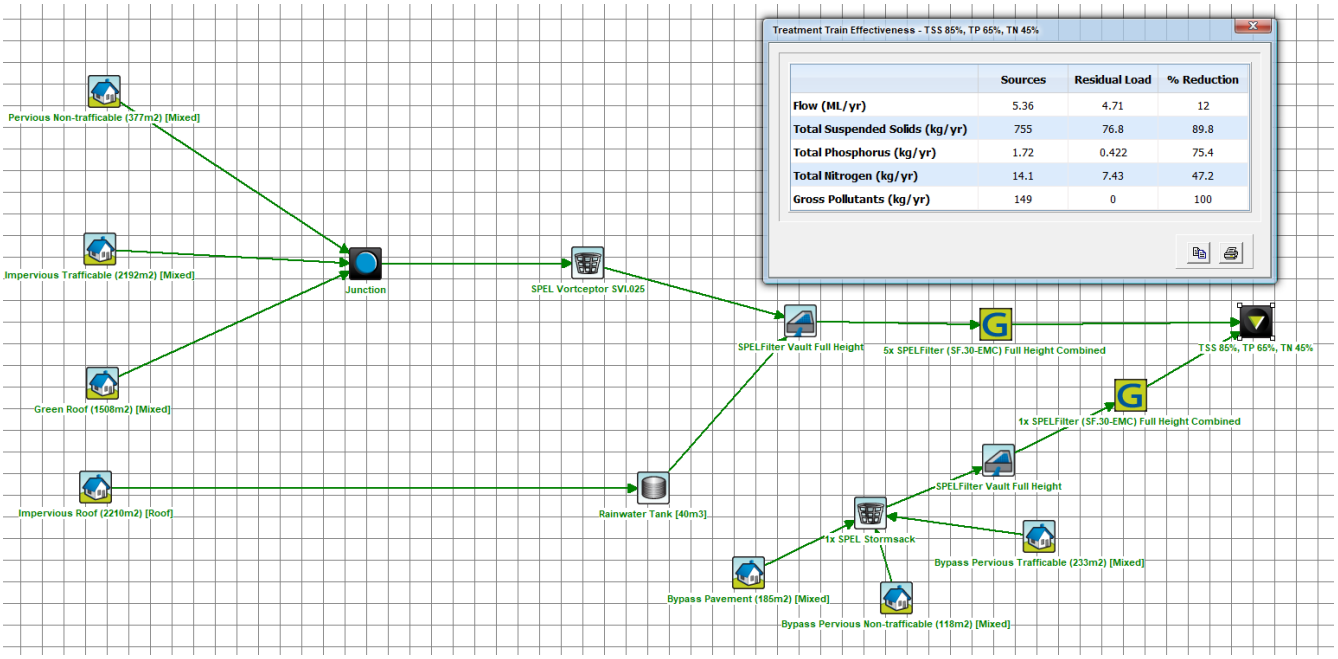
SHEET: 7 OF 7 SHEETS

LEGEND

1,2,3	LEVEL	OW	OBSCURE GLASS WINDOW
D	DOOR	RD	ROLLER DOOR
W	WINDOW	T/G	TOP OF GUTTER
SD	SLIDING DOOR	H	HEAD (RL)
OP	OPENING	S	SILL (RL)

SURVEYED: BJ | DRAWN: BJ | CHECKED: JB

6.4 APPENDIX D – MUSIC Treatment Train



6.5 APPENDIX E – DRAINS MODEL AND RESULTS

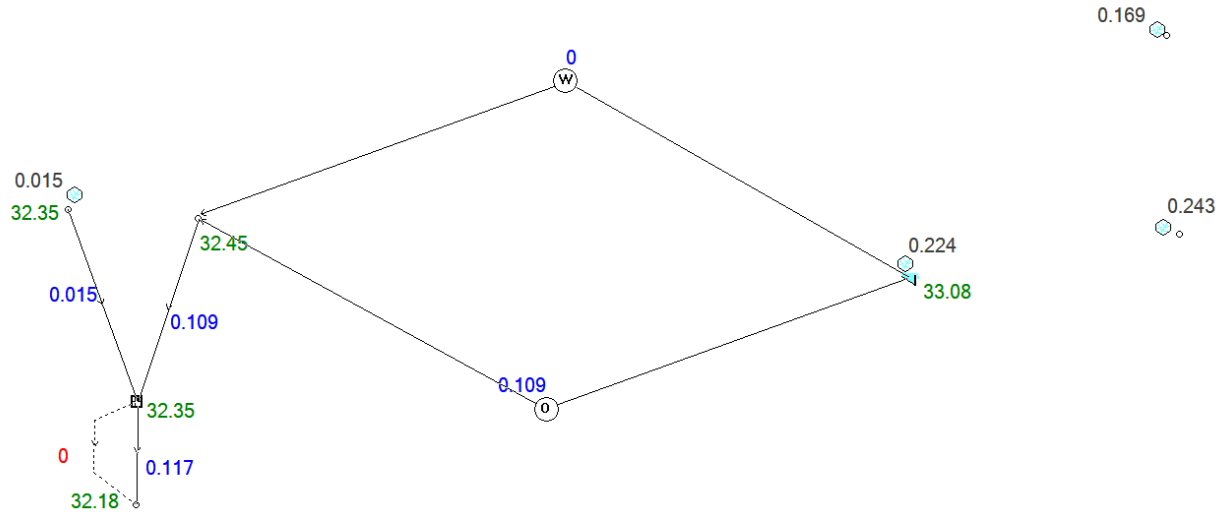


Figure E1 - 5 Year ARI Storm Event

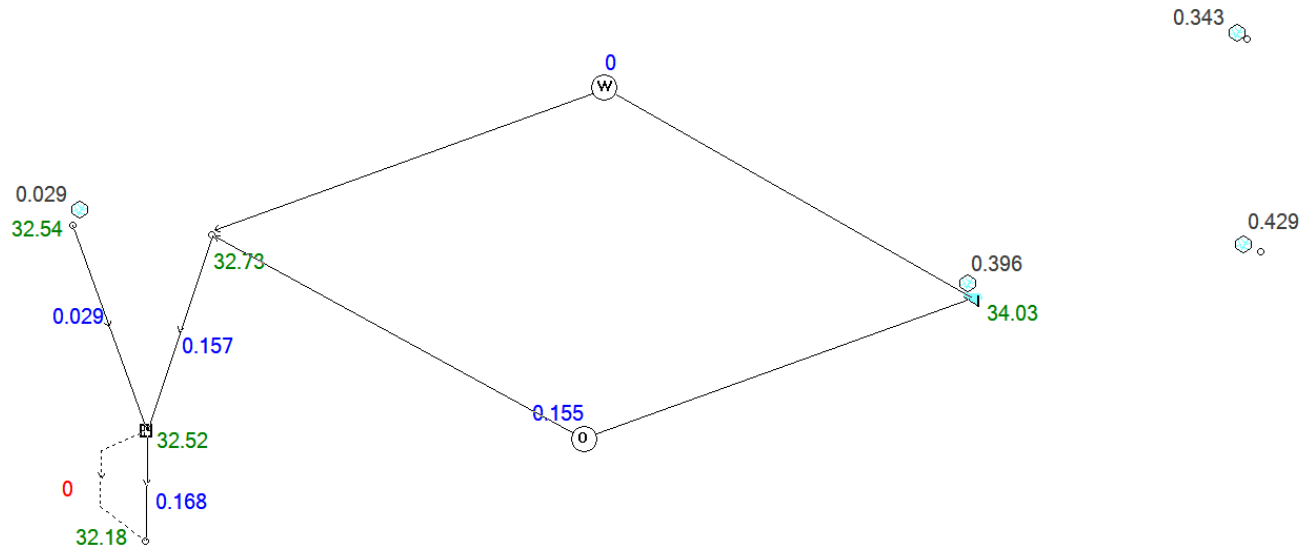


Figure E2 - 100 Year ARI Storm Event

6.6 APPENDIX F – Atlan Vortceptor Standard Drawings

Vortceptor

Hydrodynamic GPT

atlan.com.au

Atlan
STORMWATER

Overview

The Vortceptor Gross Pollutant Trap (GPT) is a non-blocking vortex style separator that has a unique screen and treatment action producing low vortex conditions resulting in excellent pollution removal performance and resulting high water quality outcomes.

It separates and captures gross pollutants, sediments, silt, total suspended solids, some nutrients and oil and grease.

The one piece Vortceptor GPT is delivered to site fully assembled saving on installation time and crane costs. The fibreglass design can be installed in all types of trafficable zones, including vehicular truck (Class D).^

TESTED TREATMENT EFFICIENCIES*

POLLUTANT	EFFICIENCY
Gross Pollutants (GP)	99%
Total Suspended Solids (TSS)	70%
Total Phosphorus (TP)	30%
Total Nitrogen (TN)*	0%
Petroleum Hydrocarbon*	94%

*Contact Atlan to confirm approved performance for the project LGA
Organic/particulate component of the nutrient only.

^ Subject to the installation of an engineered cast in situ concrete slab.

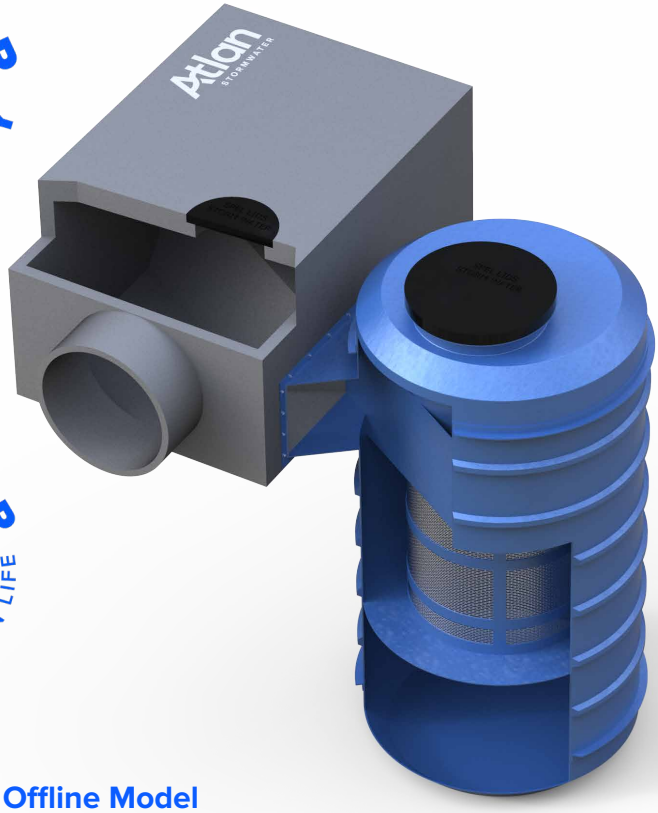
The Vortceptor is designed to meet requirements for a diverse range of applications. Designed with versatility in mind, these fibreglass reinforced polymer (FRP) GPTs are available in inline and offline configurations to meet your project specifications.

An offline configuration places the separation chamber adjacent to the diversion chamber. This allows bypass to occur and is beneficial in high flow rate applications.

In an inline treatment configuration, the diversion chamber and separation chamber are integrated – with the device situated ‘inline’ with incoming and outgoing flows. This is often beneficial for retrofit applications in existing drainage systems.

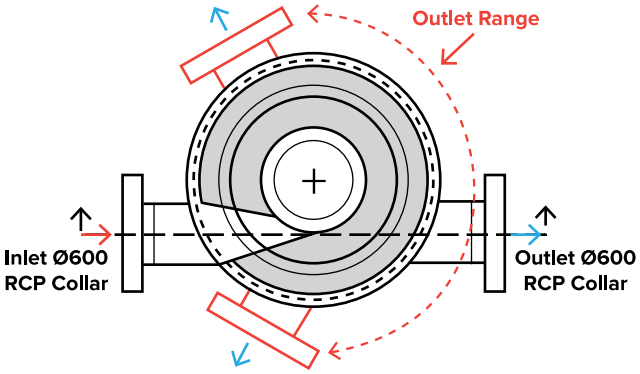
Applications

- Shopping Precinct
- Commercial Zones
- Recreational Grounds
- Industrial Areas
- Beaches & Park
- Residential Development



Inline Model

The Vortceptor Inline series is useful for constrained sites with a treatment flow rate that is relative to the bypass flow rates. The Inline Vortceptor has a flexible pipe configuration with the outlet pipe being able to rotate in excess of 180° around the system. The Inline Vortceptor is available with or without internal bypass to suit installation on low flow diversions.

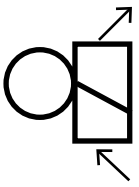


Offline Model

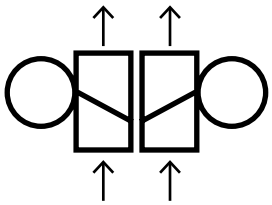
The Vortceptor Offline series is used when the bypass flows are high, or greater than the flows required to pass through the Inline range. There are various advantages of the Offline series including the ability to divert treated flow water to a tertiary asset independently to the bypassed stormwater and the ability to adjust the system to cater for trailwater and external catchments.

You can also include:

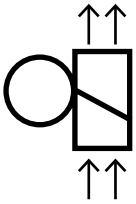
1. Angled inlet/outlet connections
2. Multiple pipes or culverts
3. Back to back twin units - for greater treatment flow requirements
4. Bifurcation or splitting of flows



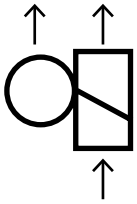
1 / Angled up to 45°



3 / Back to back units



2 / Multiple pipes or culverts



4 / Split treated / bypass flow

Vortex Style GPT Inline Series

The Inline series is manufactured from the standard single tank dia below. Custom systems are also available.

Models	Dimensions (mm)					Capacities			
	Internal Diameter	Overall Width	Depth Below Invert	Manhole Size (mm)	Max Pipe Size (mm)	Sump Capacity (m^3)	Floatables Volume (m^3)	Treatable Flow Rate (L/s)	Max Flow Rate (L/s)
INLINE SERIES									
SVI.025 (L/R)	1200	1370	1400	600x 600	450	1.2	0.06	26	280
SVI.055 (L/R)	1800	1970	1650	900x 900	525	2.7	0.22	55	380
SVI.055.M (L/R)	2200	2370	1585		525	3.2	0.22	55	750
SVI.100/15 (L/R)	1500	1670	1900	1000 DIA Internal 600x 600	600	3.1	0.20	100	700
SVI.160/22 (L/R)	2200	2370	2400		750	3.4	0.39	160	940
SVI.200/22 (L/R)	2200	2370	2900		750	3.1	0.39	200	990
SVI.300/22 (L/R)	2200	2370	3100		750	4.5	0.83	300	1050
SVI.400/22 (L/R)	2200	2370	3000		750	3.4	0.83	400	1180
SVI.400/25 (L/R)	2500	2670	2900		900	5.5	0.83	400	1650
SVI.400/30 (L/R)	3000	3170	3500		900	10	1.5	400	2500
SVI.500/30 (L/R)	3000	3170	3500		1050	10	1.5	500	1650
SVI.500/35 (L/R)	3500	3670	4000		1050	10	1.5	500	1900

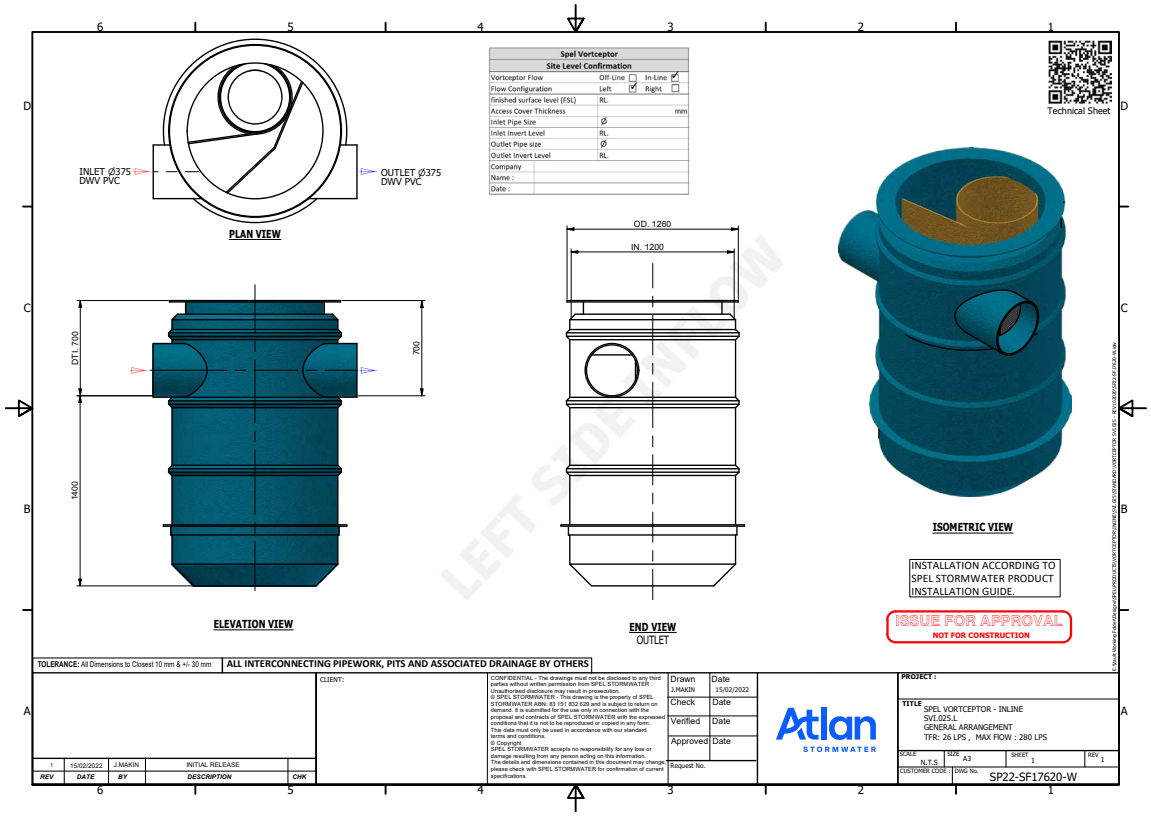
Vortex Style GPT Offline Series

The Offline series is manufactured from the standard single tank dia below. Custom systems are also available.

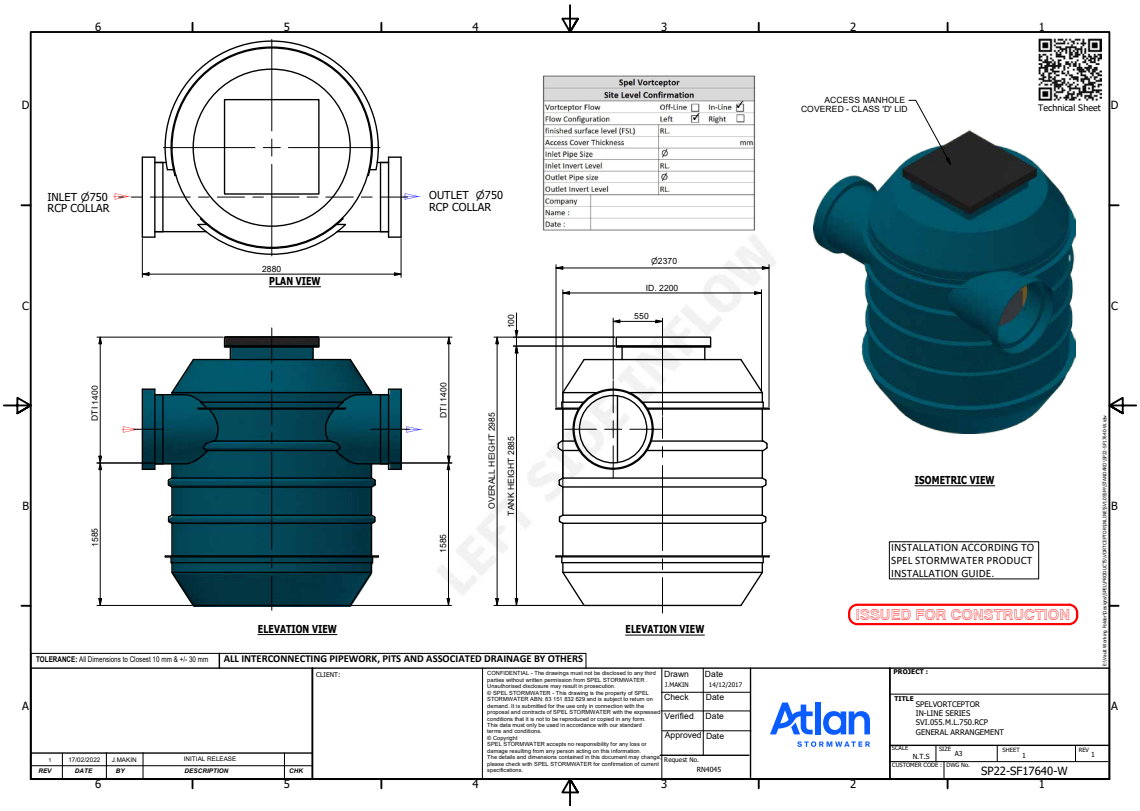
Models	Dimensions (mm)				Capacities			
	Internal Diameter	Overall Width	Depth below invert	Manhole Size (mm)	Sump Capacity (m^3)	Floatables Volume (m^3)	Treatable Flow Rate (L/s)	Bypass Flow Rate (L/s)
OFFLINE SERIES								
SVO.096 (L/R)	1500	1670	1725	1000 DIA Internal 600x600	2.0	0.35	96	PROJECT SPECIFIC DESIGN
SVO.140 (L/R)	1500	1670	2025		2.3	0.35	140	
SVO.180 (L/R)	1500	1670	2325		3.0	0.35	180	
SVO.220 (L/R)	2200	2350	2800		4.5	1.1	220	
SVO.360 (L/R)	2200	2350	3080		6.0	1.1	360	
SVO.530 (L/R)	3000	3150	3200		8.5	2.8	530	
SVO.800 (L/R)	3000	3150	4200		8.5	2.8	800	
SVO.810 (L/R)	4000	4150	3400		19.3	5.65	800	
SVO.1200 (L/R)	4000	4150	4000		19.3	5.65	1200	
SVO.1600 (L/R)	4000	4150	4600		19.3	5.65	1600	

INLINE DRAWINGS

Inline Model SVI.025

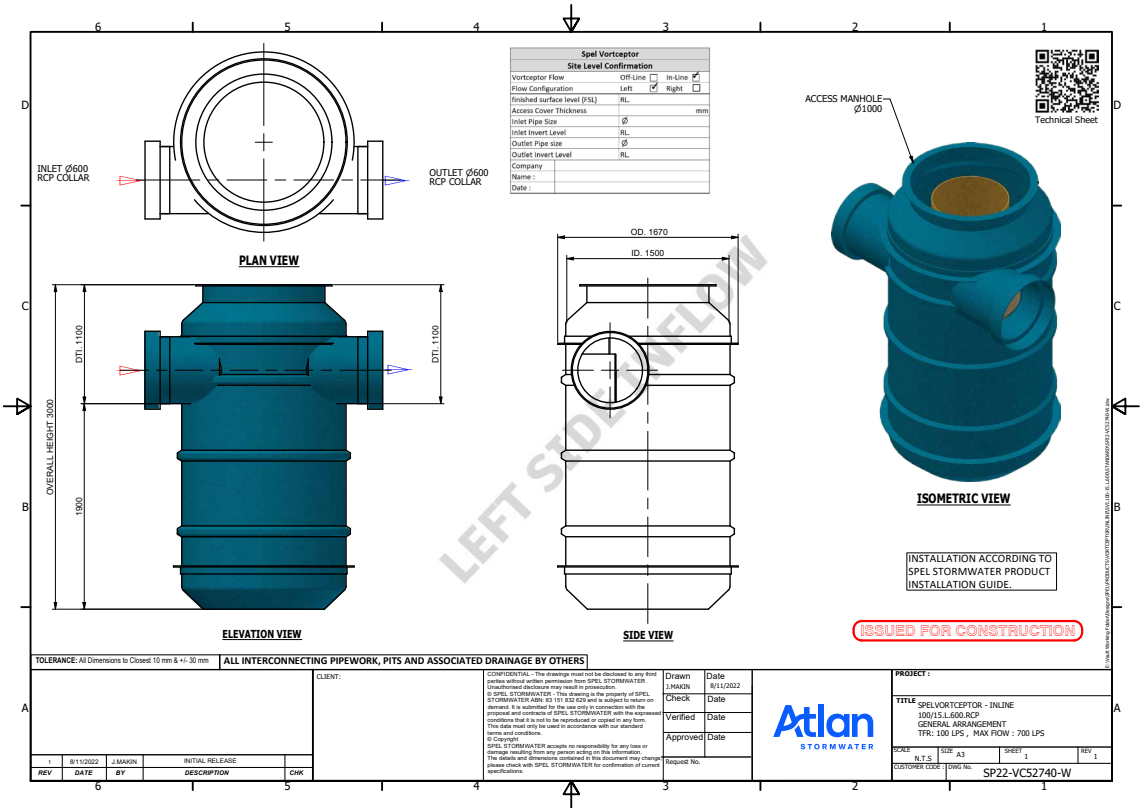


Inline Model SVI.055

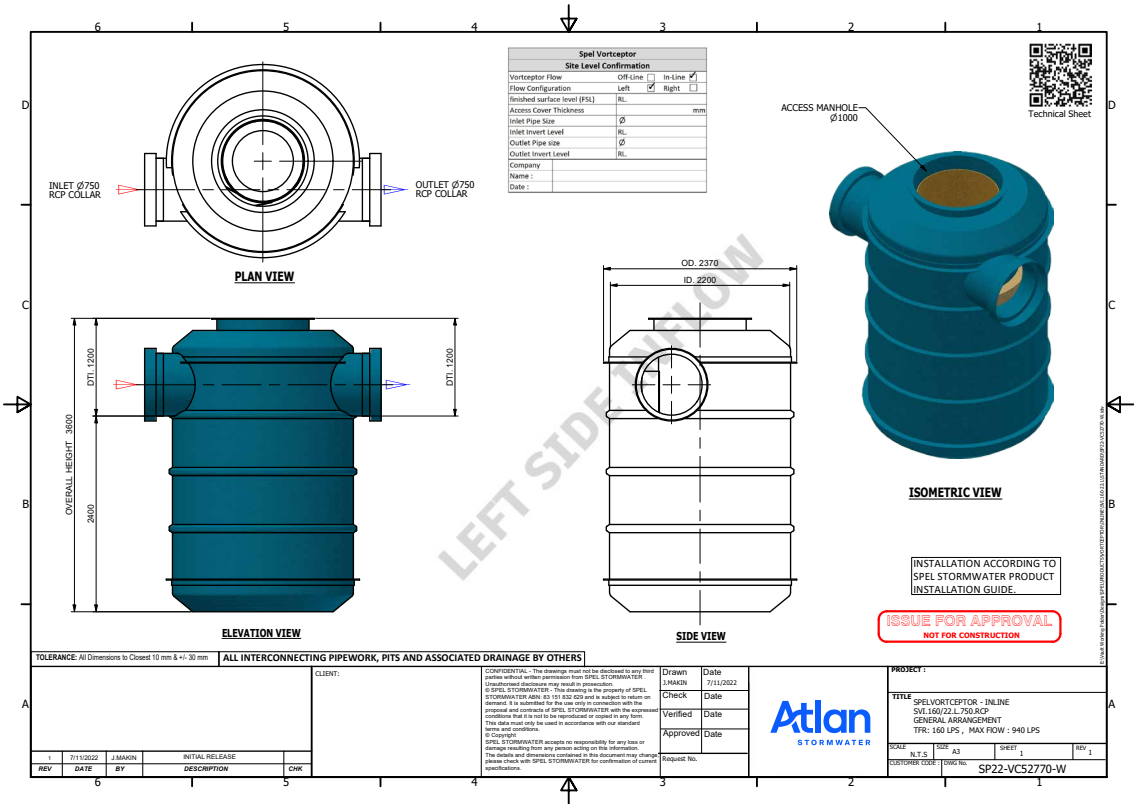


INLINE DRAWINGS

Inline Model SVI.100/15

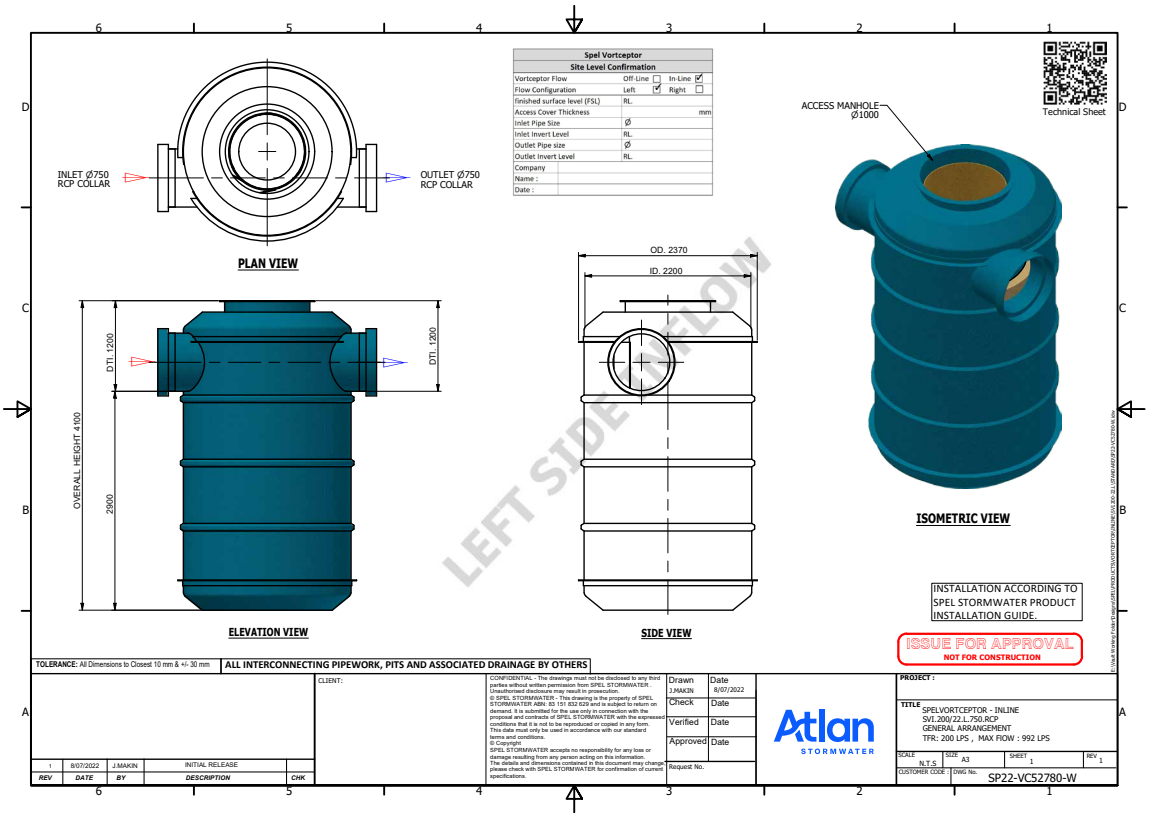


Inline Model SVI.160/22

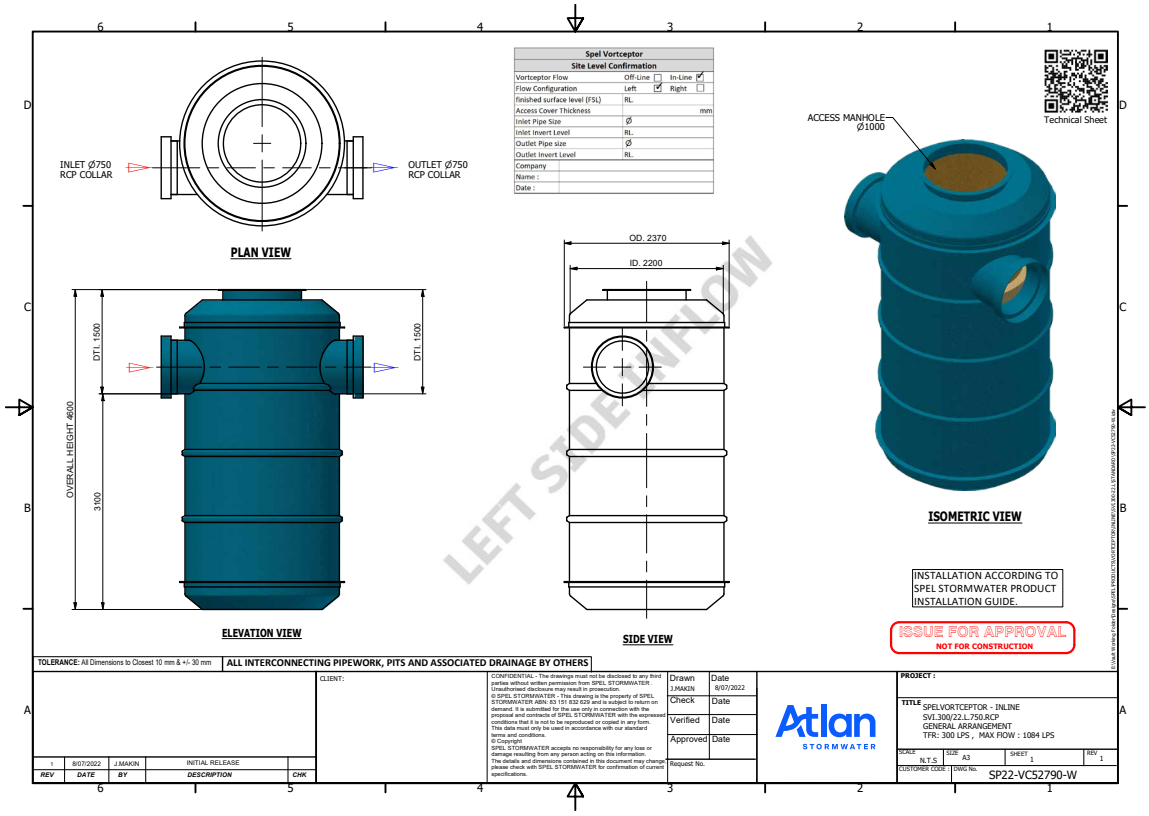


INLINE DRAWINGS

Inline Model SVI.200/22

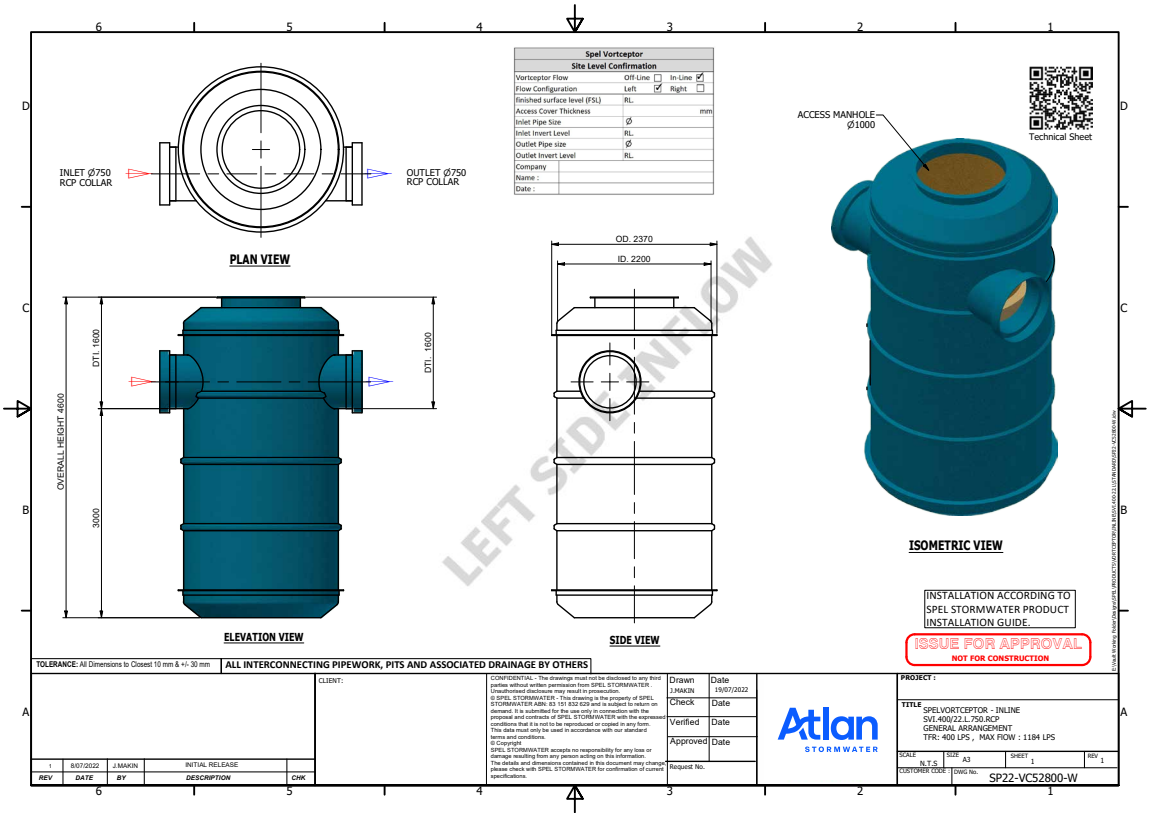


Inline Model SVI.300/22

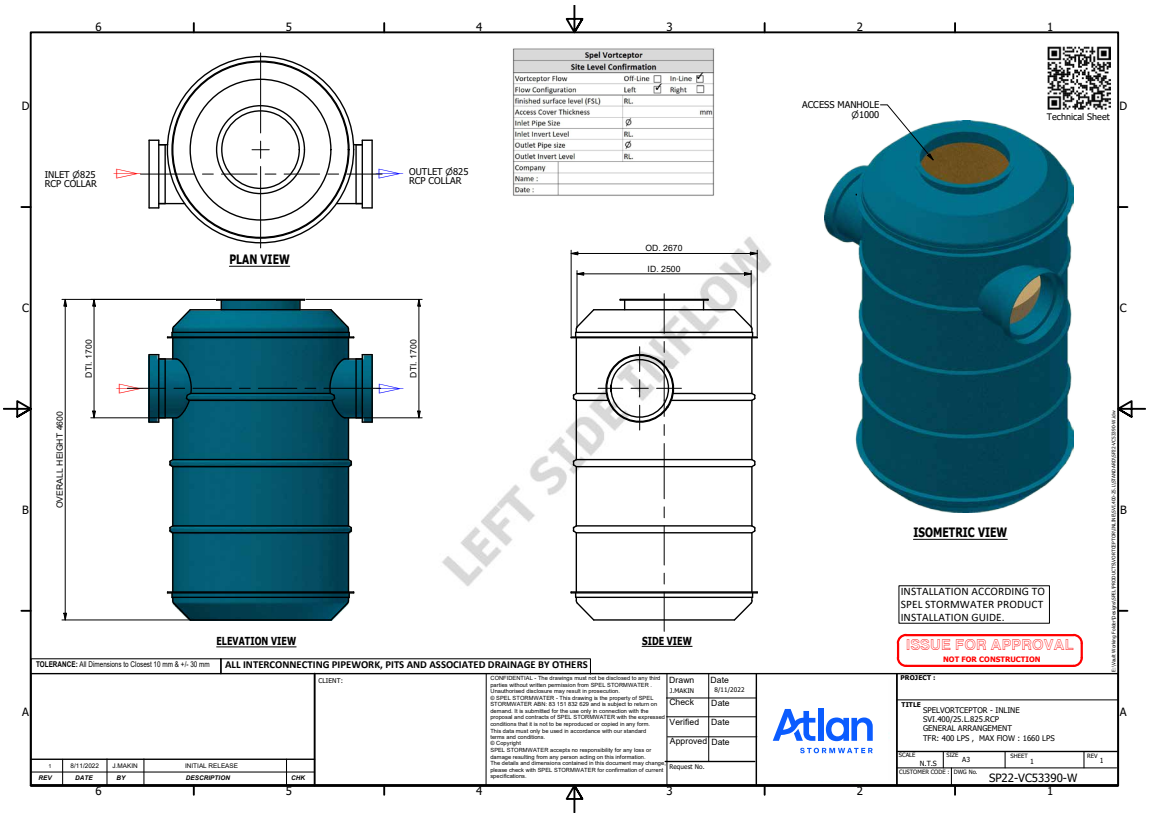


INLINE DRAWINGS

Inline Model SVI.400/22

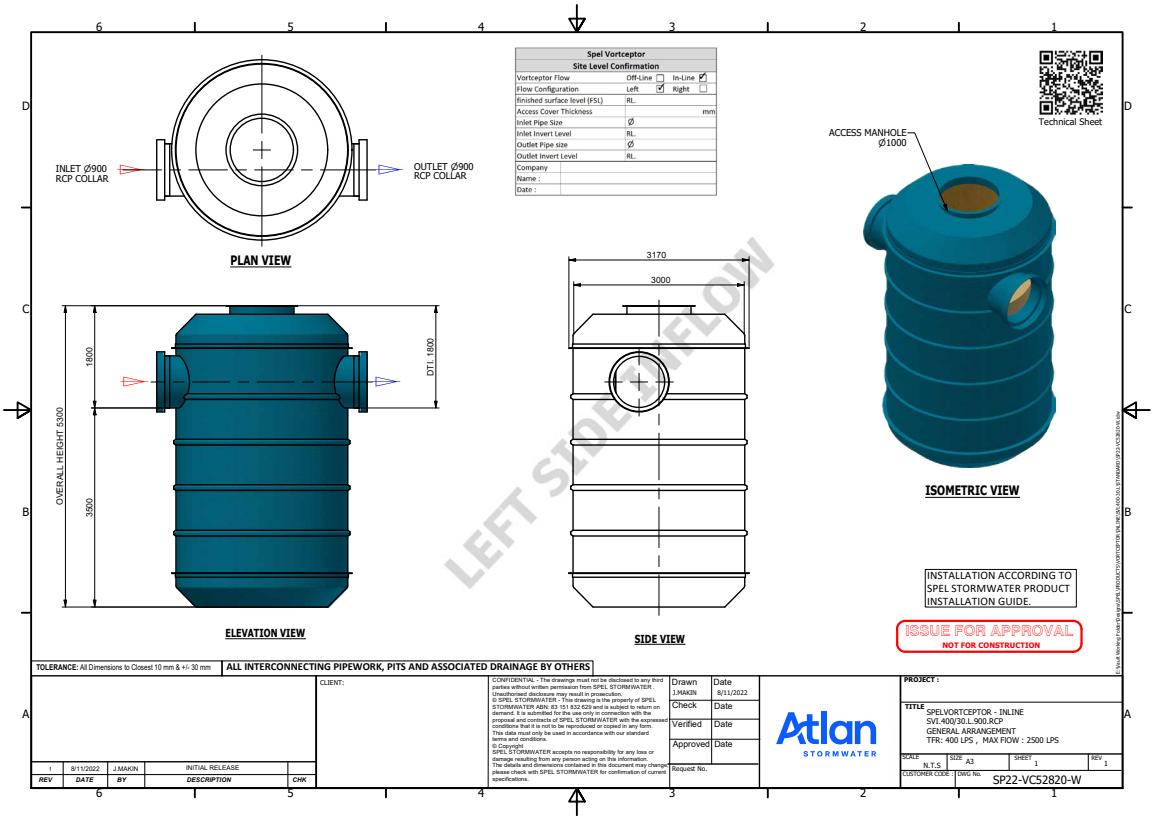


Inline Model SVI.400/25

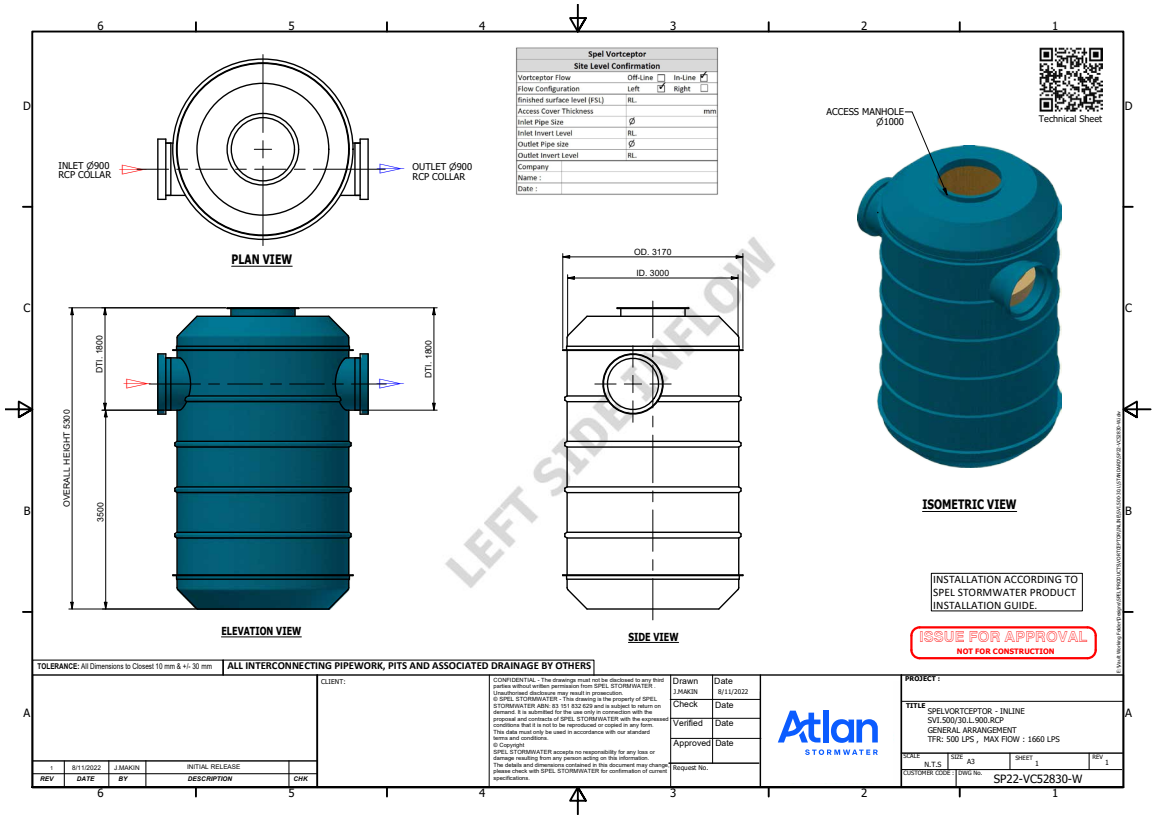


INLINE DRAWINGS

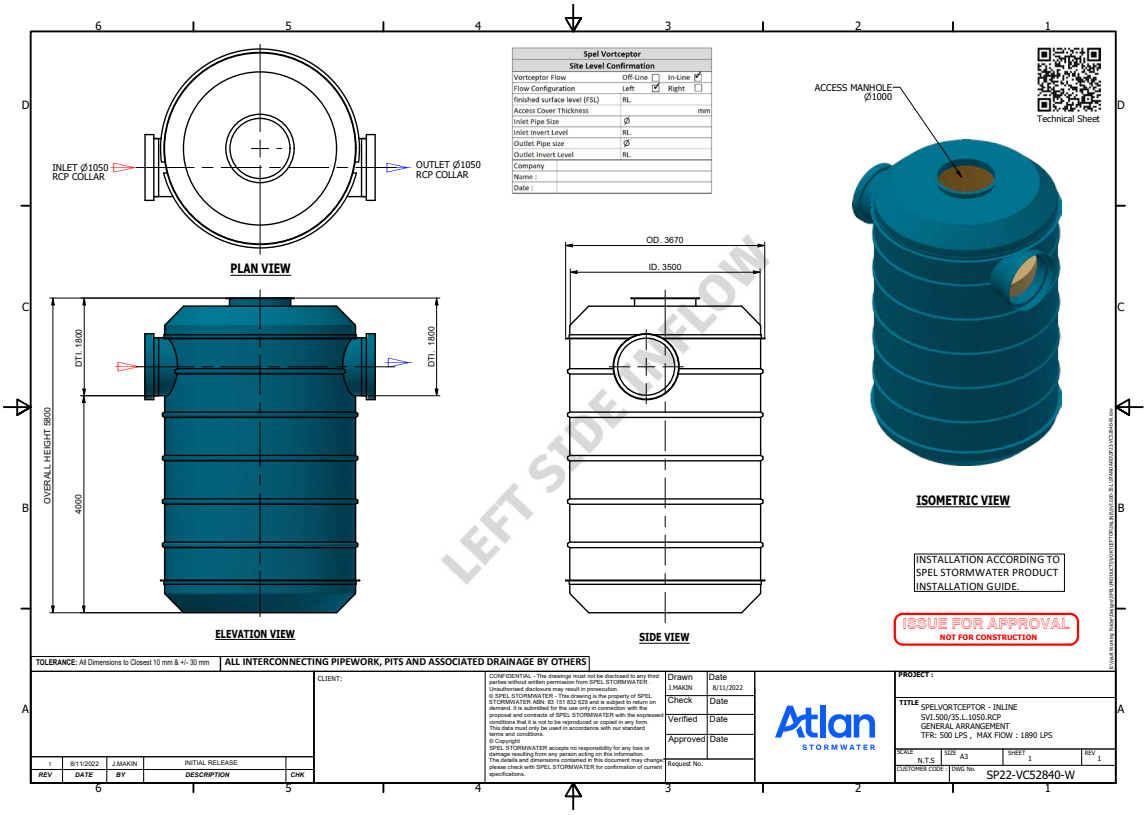
Inline Model SVI.400/30



Inline Model SVI.500/30

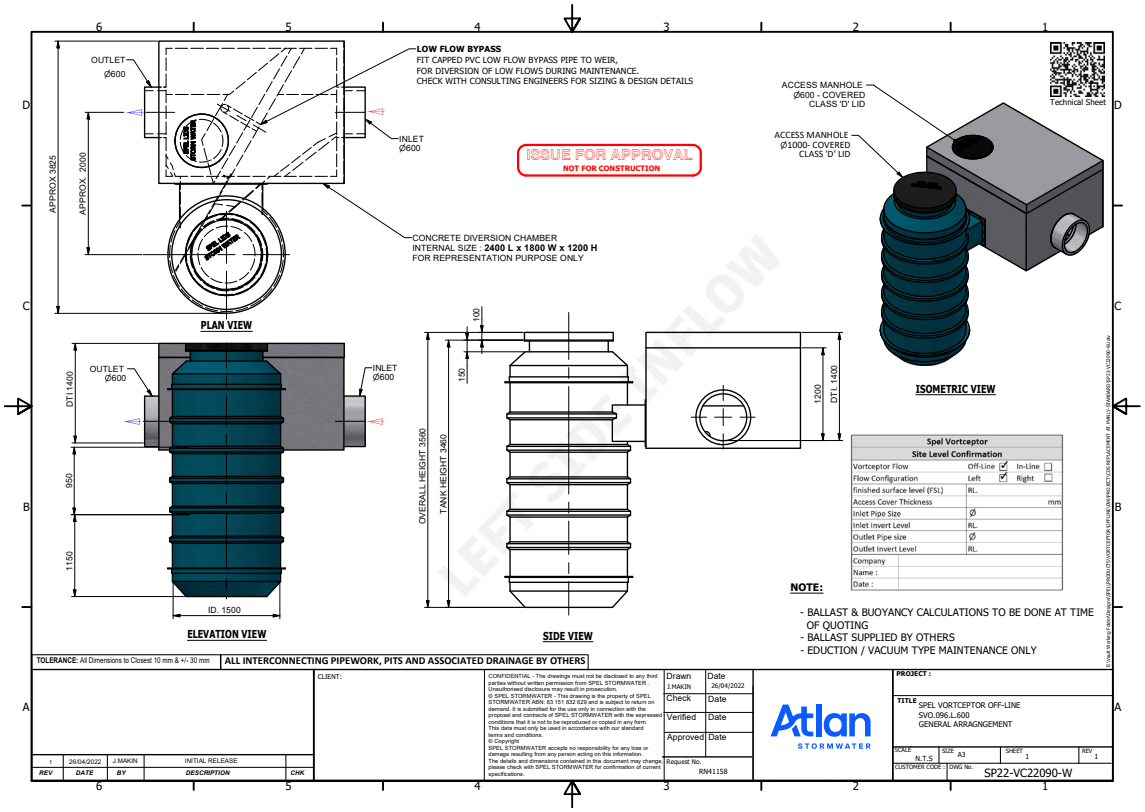


Inline Model SVI.500/35

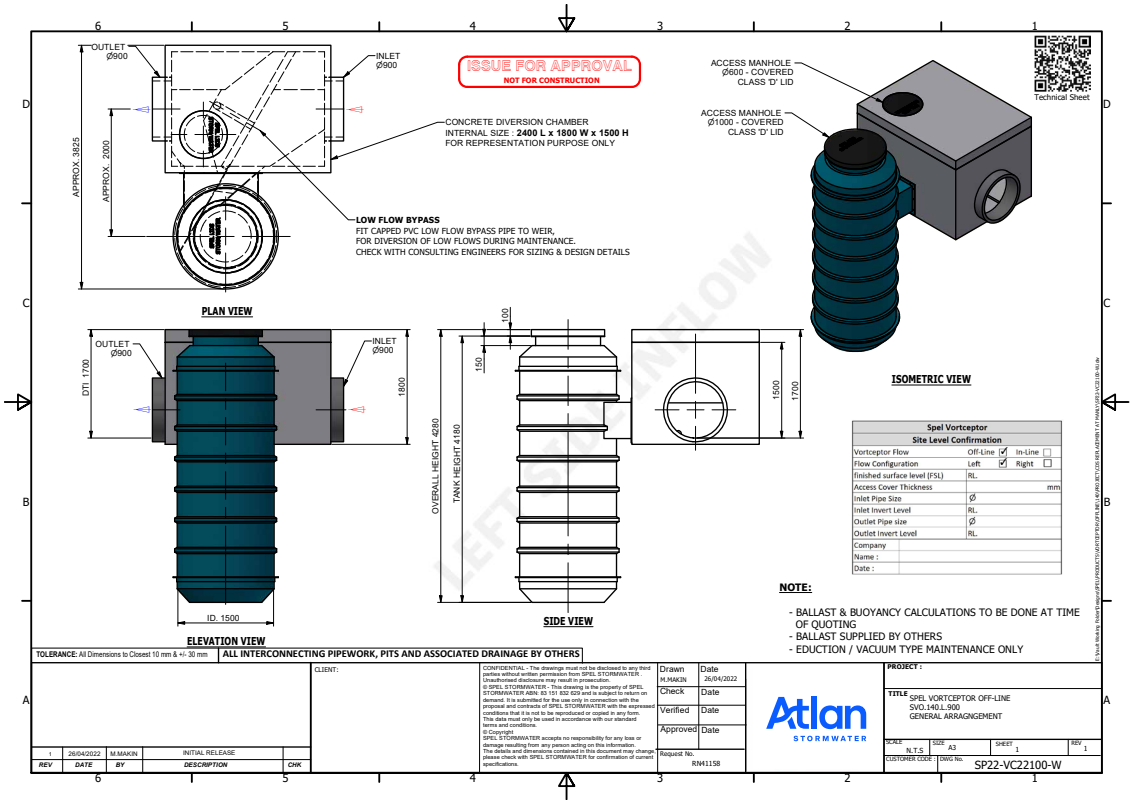


OFFLINE DRAWINGS

Offline Model SVO.096

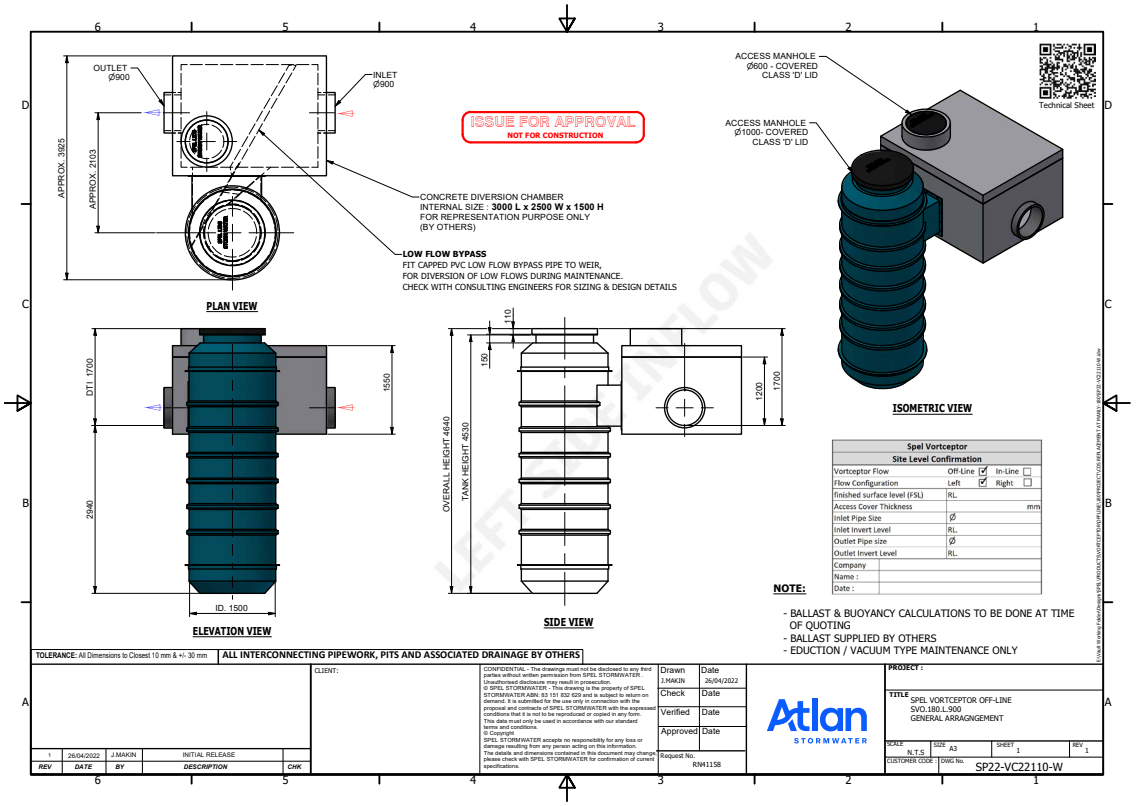


Offline Model SVO.140

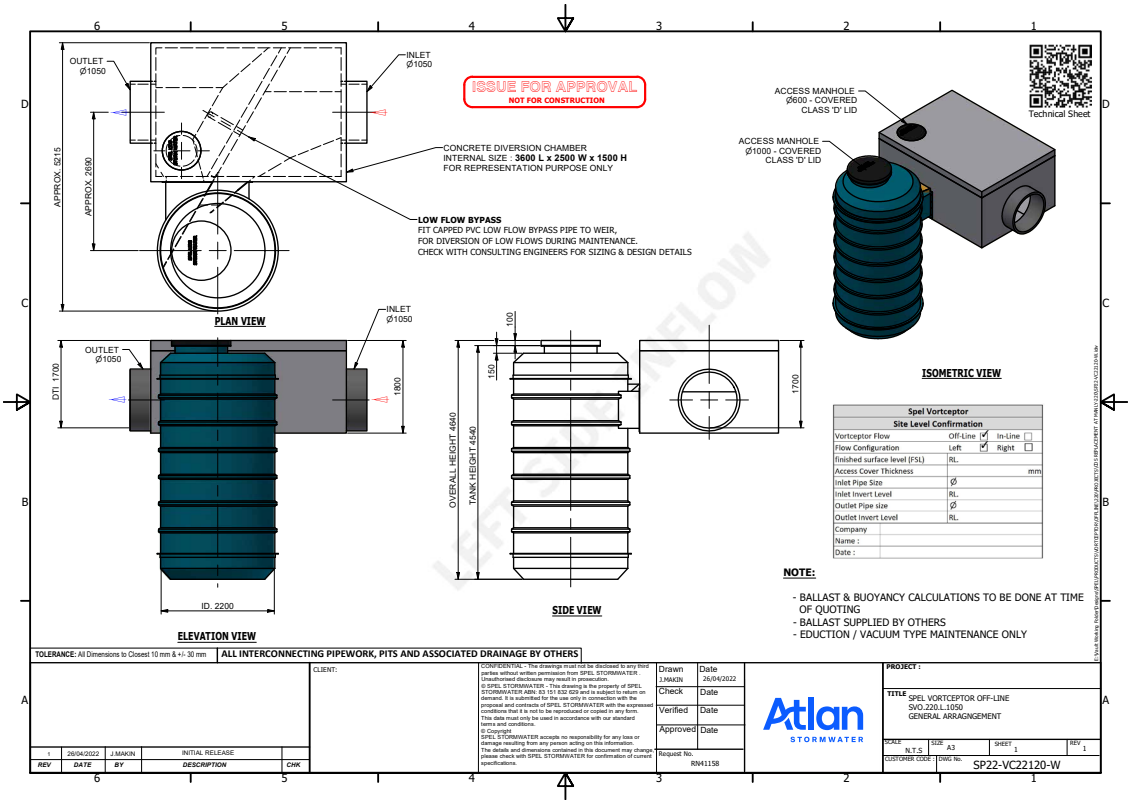


OFFLINE DRAWINGS

Offline Model SVO.180

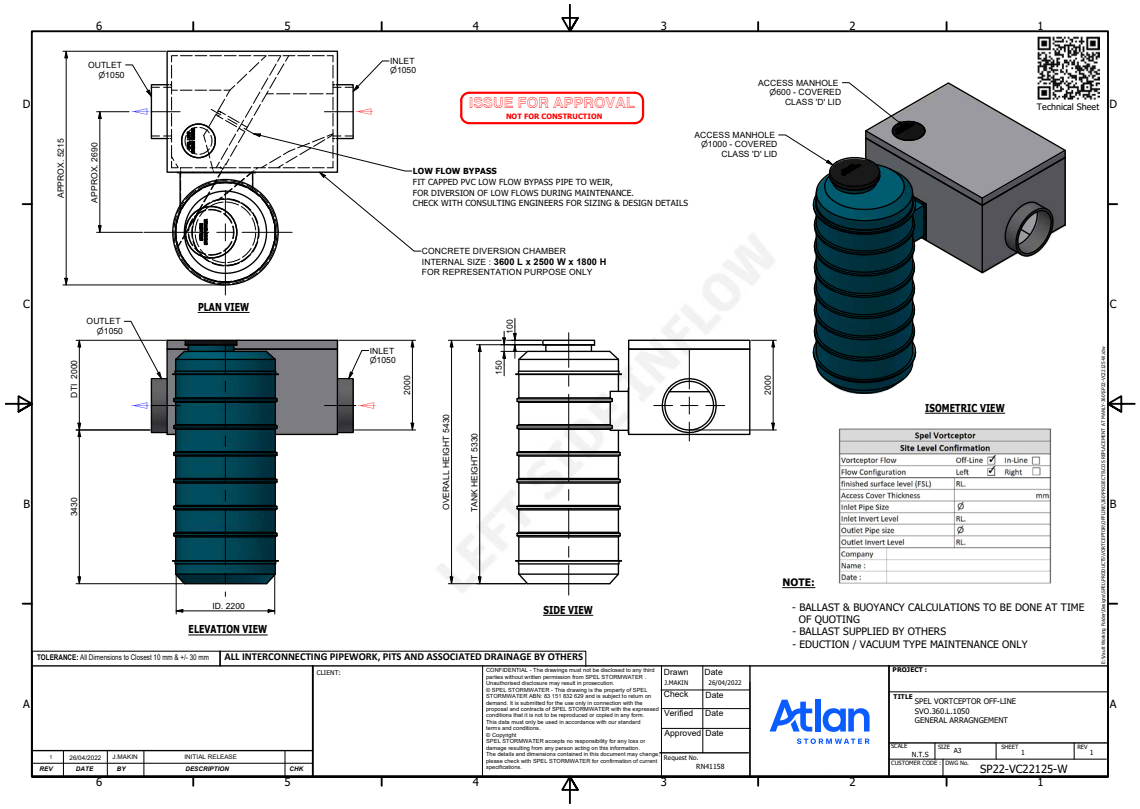


Offline Model SVO.220

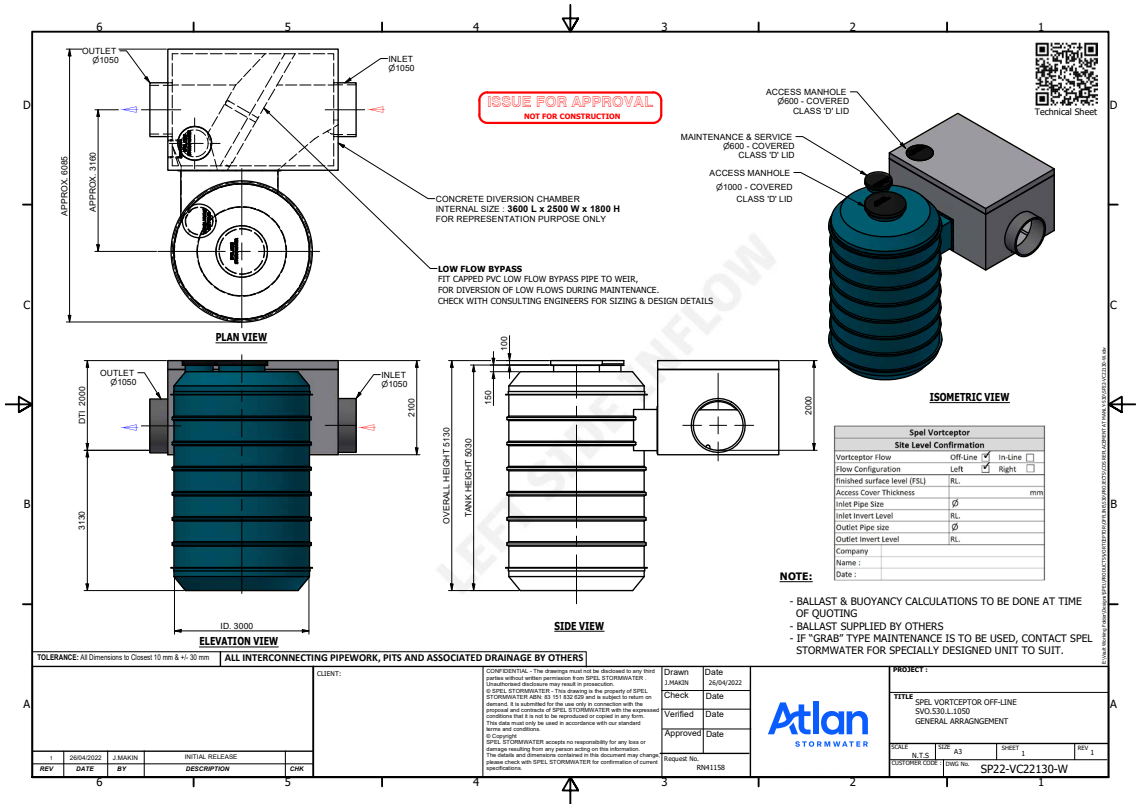


OFFLINE DRAWINGS

Offline Model SVO.360

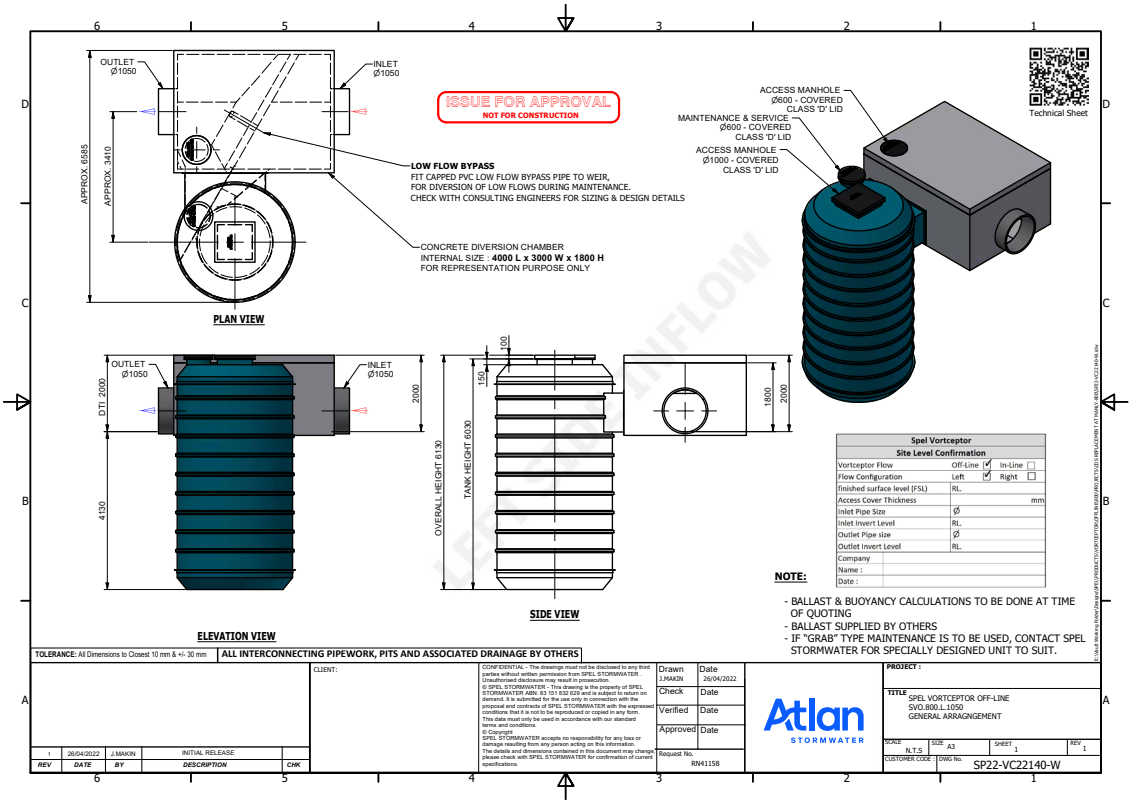


Offline Model SVO.530

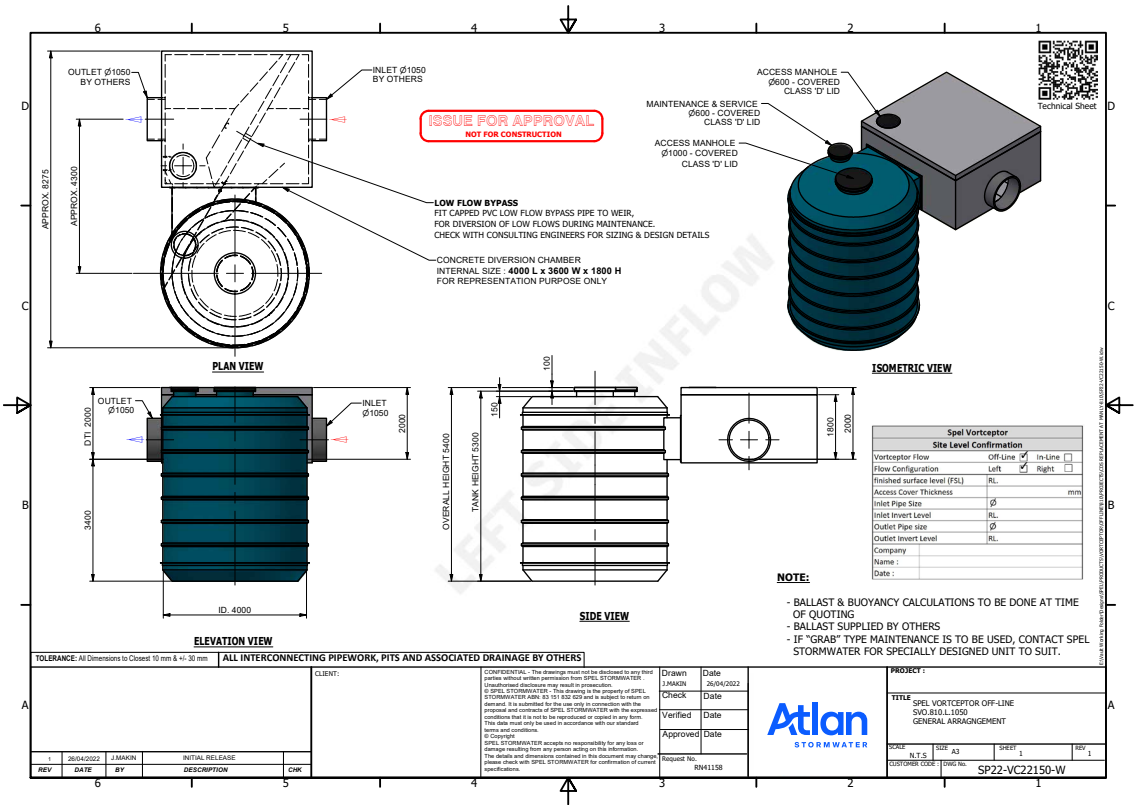


OFFLINE DRAWINGS

Offline Model SVO.800

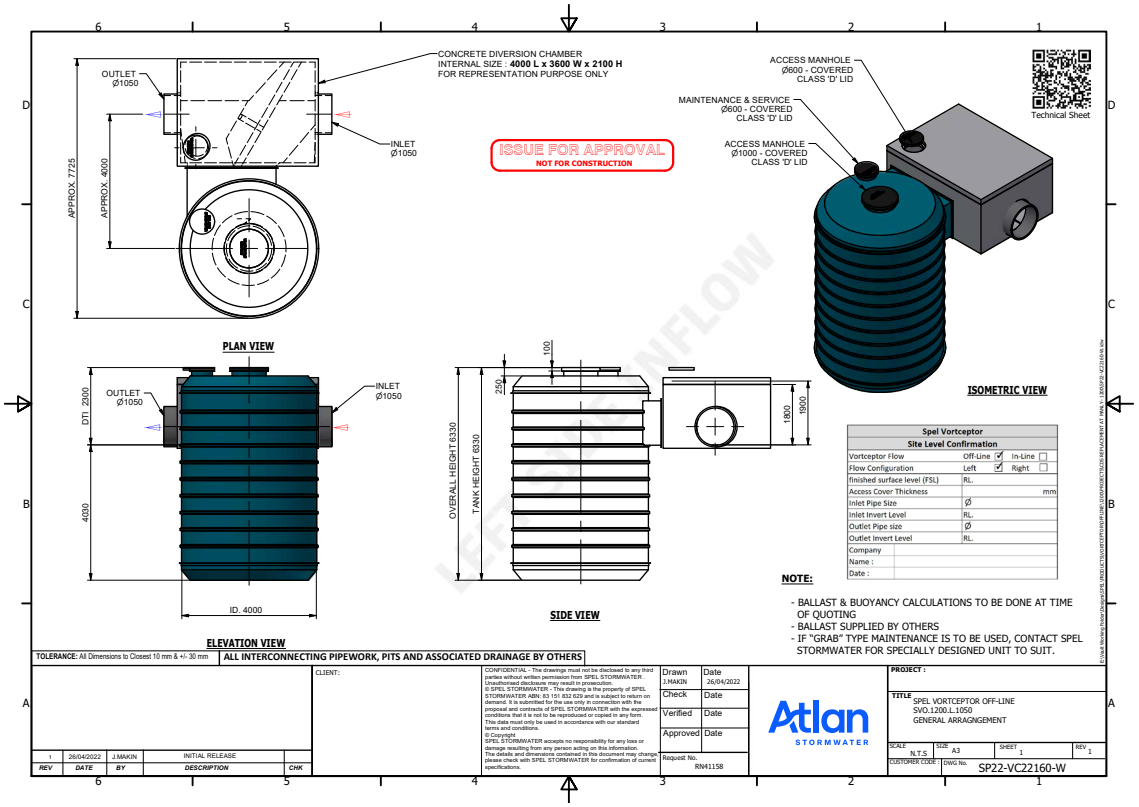


Offline Model SVO.810

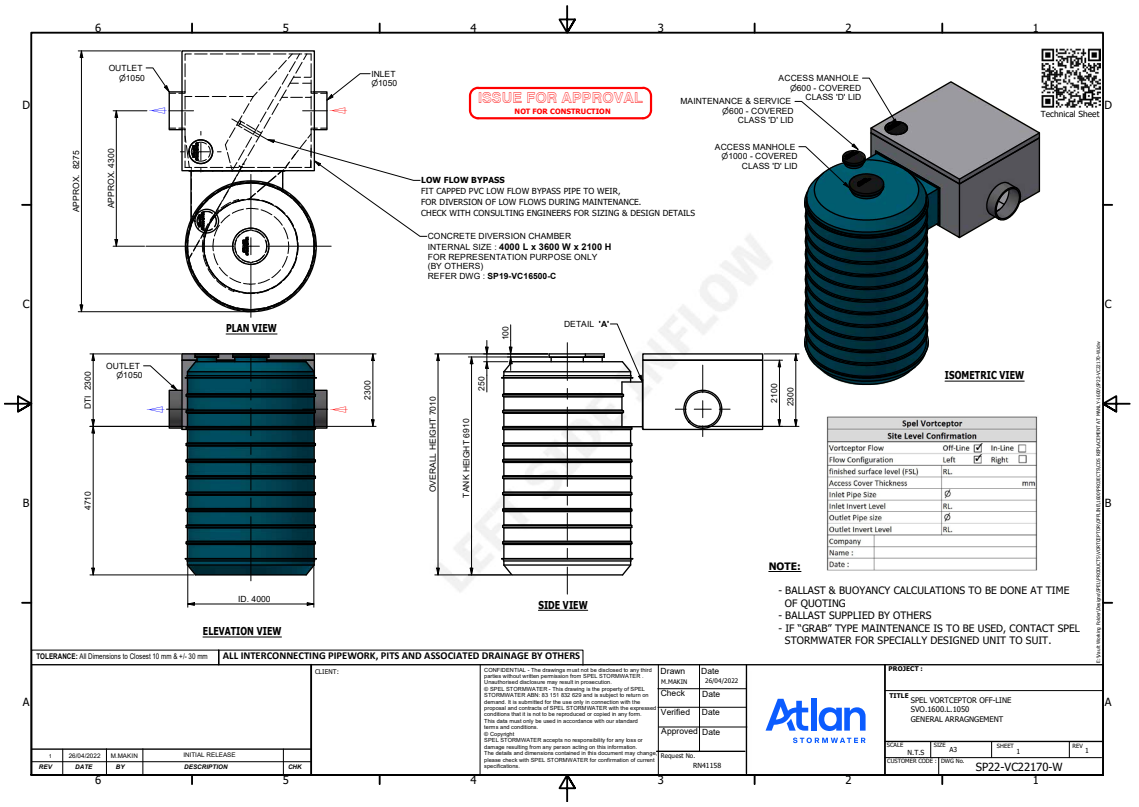


OFFLINE DRAWINGS

Offline Model SVO.1200



Offline Model SVO.1600

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Joy in water

'We believe clean waterways are a right not a privilege and we work to ensure a joy in water experience for you and future generations.'

Andy Hornbuckle

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