Stormwater Management Report

59-63 Trafalgar Avenue and 1a_b Valley Road, Lindfield
Issue A

Prepared for Castle Hill No.8 Pty Ltd

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ENGINEERS AUSTRALIA
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REVISION TABLE

Revision	Date	Issue Description	Issued by	Approved by	Signed
P1	11.04.2025	Preliminary Issue	CS	SELH	
A	17.04.25	Issued for Approval	CS	SELH	

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1 Executive Summary

This document is a stormwater management report for the proposed development located at 59-63 Trafalgar Avenue and 1a_b Valley Road, Lindfield.

The proposed development is illustrated in Figure 1.1 below.

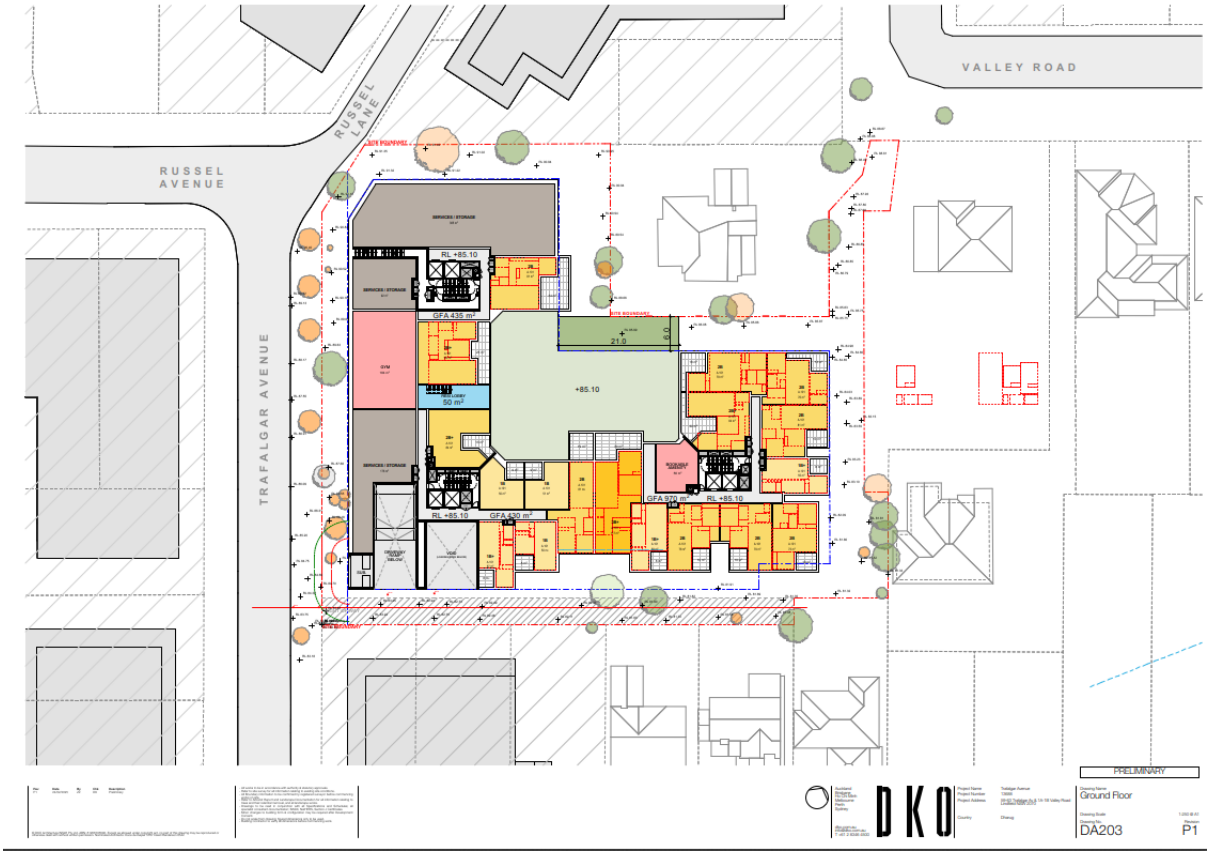


Figure 1.1 Ground Floor Plan

This report describes the stormwater on site detention and quality measures adopted for the development to address the local Council's requirements in terms of stormwater quality targets.

The stormwater devices/assets that have been adopted for the development are as follows:

- 126.03m^3 volume On-Site Detention Tank
- 20m^3 volume Rainwater Tank
- Stormfilter Chamber consisting of 22 x 690 PSorb Stormfilter Cartridges
- 6x200 Micron Oceanguard Baskets

2 Introduction

2.1 Brief

S&G Consultants Pty Ltd (SGC) have been engaged by Castle Hill No.8 Pty Ltd to prepare the stormwater management report for the development at 59-63 Trafalgar Avenue and 1a_b Valley Road, Lindfield.

The following tasks were carried out:

- Supplied documents and previous studies were reviewed;
- A concept stormwater drainage design has been prepared including supporting calculations; and
- This report has been compiled.

2.2 Limitation

This report is intended solely for Castle Hill No.8 Pty Ltd as the Client of SGC and no liability will be accepted for use of the information contained in this report by other parties than this client.

This report is limited to visual observations and to the information including the referenced documents made available at the time when this report was written.

2.3 Reference Documents

The following documents have been referenced in this report:

1. Site survey prepared by Norton Survey Partners, Ref: 21492, dated 20/01/2025;
2. Architectural plans prepared by DKO Architects;
3. Engineers Australia, Australian Rainfall & Runoff (AR&R 1999); and
4. Ku-Ring-Gai Council's DCP Part 24.

3 Natural & Built Environment

The site is located along Trafalgar Avenue in the suburb of Lindfield. The land is located in the Local Government Area of Ku-Ring-Gai Council.

The site is bounded by Trafalgar Avenue to the west and adjoining properties in all other directions. The use of this site has been previously for residential purposes.

The site has an irregular shape and is characterised by a natural gradient towards the south. Figure 3.1 shows the location of the site.

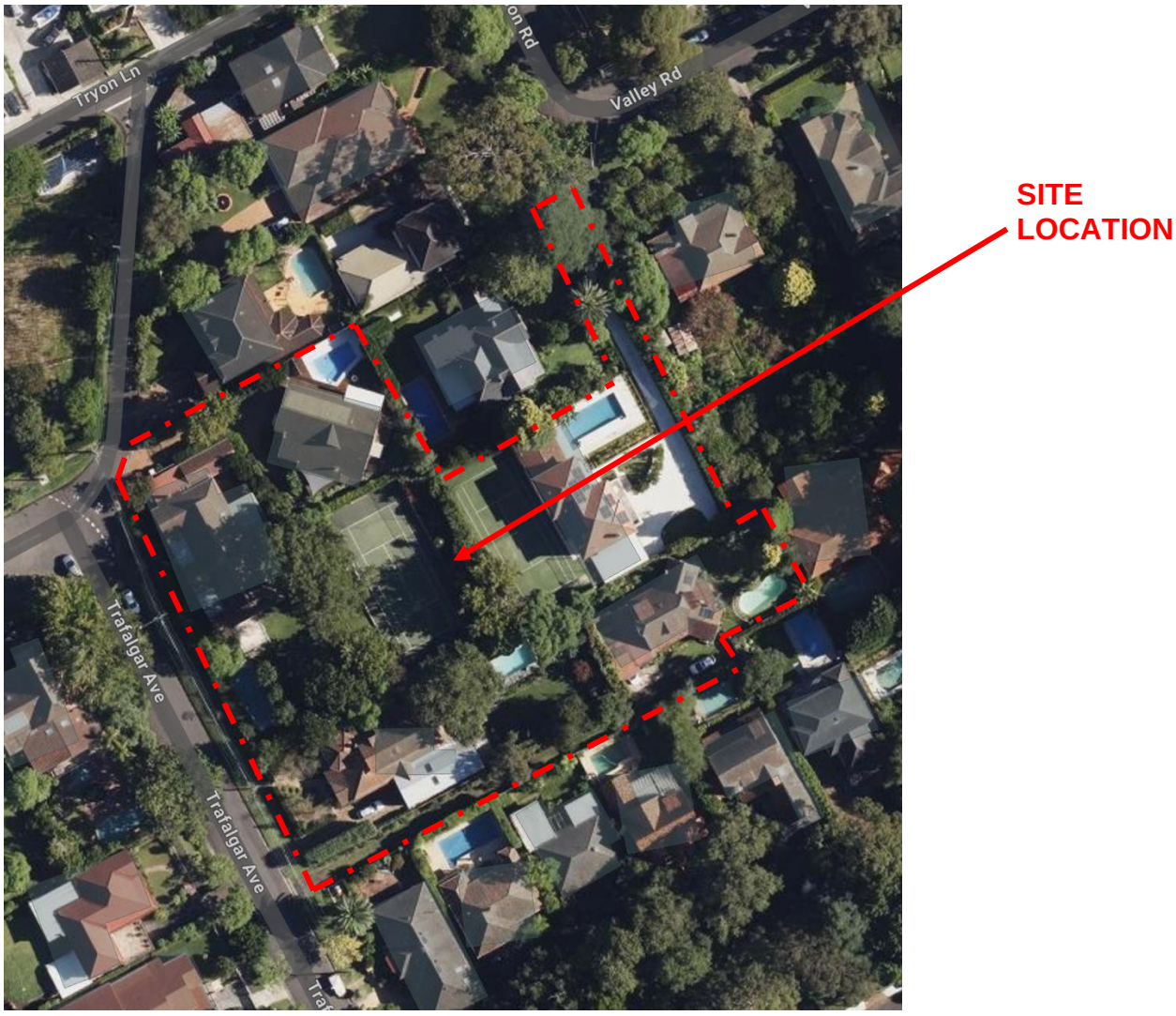


Figure 3.1 Locality Plan

4 On-Site Water Management

4.1 Objectives

On-site stormwater management report includes:

a. Authorities Requirements;

b. Water Conservation/Rainwater Tank;

c. Stormwater Management & Treatment;

d. On-Site Detention

e. Stormwater Disposal; and

f. Overland Flow Management.

4.2 Authorities Requirements

The council requirements for water management are provided in Part 24 of the DCP, specifically Section 24C. Some of these requirements are included in this report for reference.

4.3 Water Conservation/Rainwater Tank

Ku-ring-gai Development Control Plan Part 24C.4 - Mandatory Rainwater Tank Requirements states that, “The minimum tank storage volume is that required to meet the 50% reduction in runoff days specified in control 24B.3-4, or compliance with BASIX or the Green Star Rating, whichever is the greater”.

Based on the requirement above, a 20kL rainwater tank is proposed as part of the stormwater management for the proposed development to drain 838m^2 of roof area. The rainwater tank is to be used for irrigation of minimum 923m^2 of landscape/planter area.

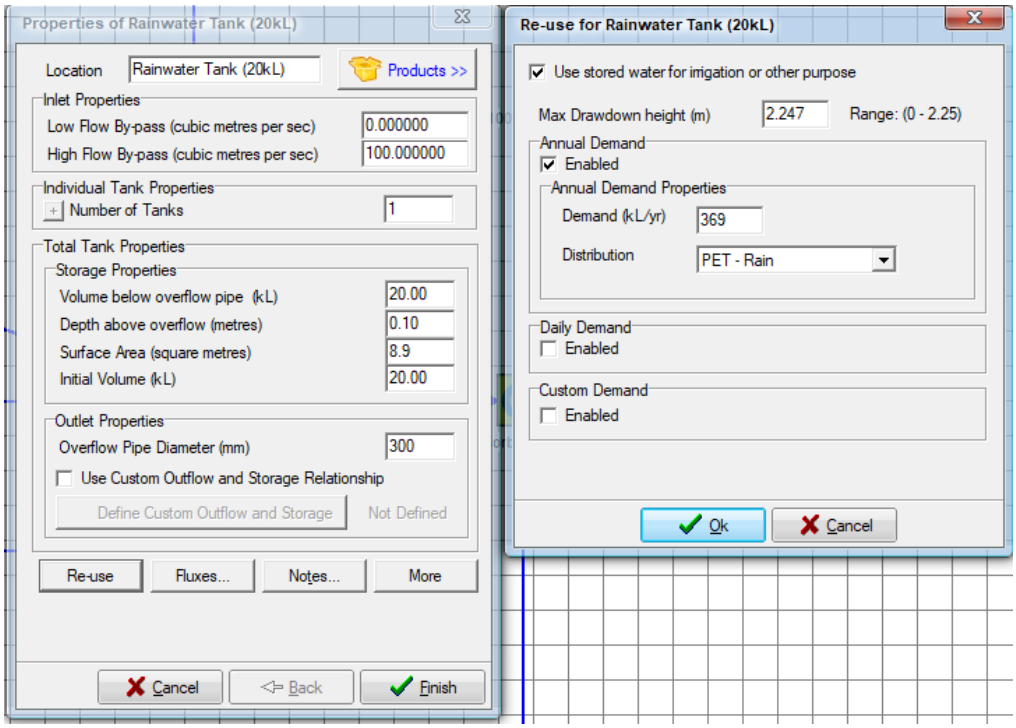


Figure 4.1 Rainwater Tank Inputs

Rainfall loss	1	mm	Water Usage - Landscape Watering			Water Usage - AAA Toilets		
Roof area	838	m2	Area to be watered	923	m2	No. of Toilets	0	
Rainwater tank size	20	m3	Watering rate	0.4	m3/yr/m2 *[a]*	AAA Toilet flush rate	0	L/flush *[c]*
%Full at start	80	%	Total water used	1.011	m3/day	Flushes	0	flush/pers/day *[c]*
			Water Usage - Car Wash Bay			Total water used	0	m3/day
Total# days	9611	days	Number units	0		Water Usage - 4A Washing Machines		
Total# wet days	1935	days	% of units using car wash	0	%	No. of units w. machines	0	
Total# OF days	759	days	Average washes	0	washes/yr/unit	Water use	0	L/wash
%reduction in wet days	60.8	%	Usage Rate	0	L/wash *[b]*	Washes per week	0	
			Total water used	0.000	m3/day	Total water used	0.00	m3/day
%of time tank is empty	40	%						
%of time tank is full	8	%	**Total Water usage**	1.011	m3/day			

Figure 4.2 Runoff Days Calculations

4.4 Stormwater Management & Treatment

It is proposed to collect and convey the roof and the surface water from the proposed development in a new stormwater system to cater for the 100-yr ARI storm event.

The runoff from the roof areas (838m^2) will be directed to the rainwater tank. The overflow from the tanks along with the surface runoff will be directed towards the stormfilter chamber. Stormfilters have the capacity to remove suspended solids, fine particles and other nutrients such as TSS, TP & TN.

Table 24C.6-1: Captured Stormwater Treatment Standards

Pollutant	Baseline Annual Pollutant Load (kg/ha/yr)	Standard to be achieved (kg/ha/yr)
Gross Pollutants	500	30% (70% reduction) = 150
Total Suspended Solids	900	15% (85% reduction) = 135
Total Phosphorus	2	35% (65% reduction) = 0.7
Total Nitrogen	15	55% (45% reduction) = 8.25

Figure 4.3 MUSIC Targets

A MUSIC model has been setup to determine if the proposed measures are adequate to treat the runoff from the catchment.

The MUSIC model diagram is included below for reference. The proposed measures achieve the requirements of council as detailed in the following table:

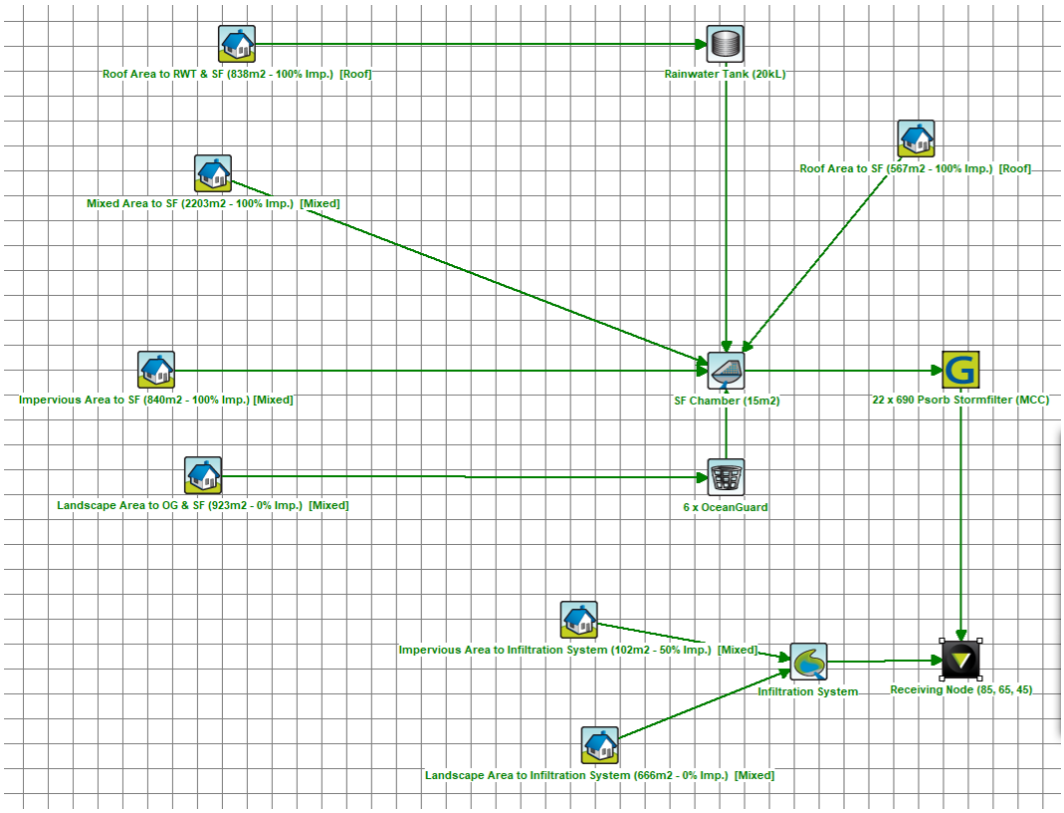
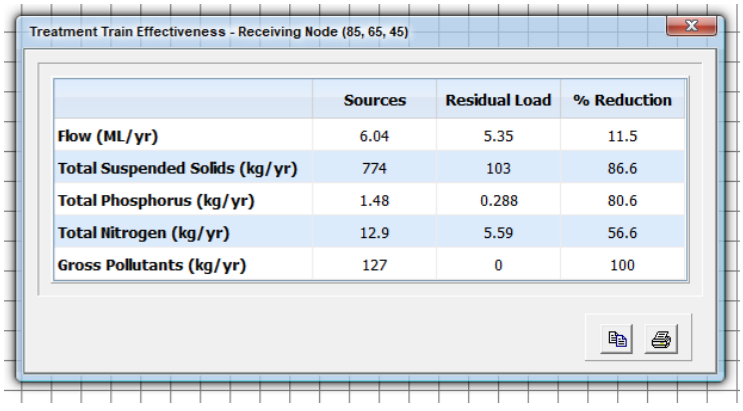


Figure 4.4 MUSIC Diagram



	Sources	Residual Load	% Reduction
Flow (ML/yr)	6.04	5.35	11.5
Total Suspended Solids (kg/yr)	774	103	86.6
Total Phosphorus (kg/yr)	1.48	0.288	80.6
Total Nitrogen (kg/yr)	12.9	5.59	56.6
Gross Pollutants (kg/yr)	127	0	100

Figure 4.5 MUSIC Results

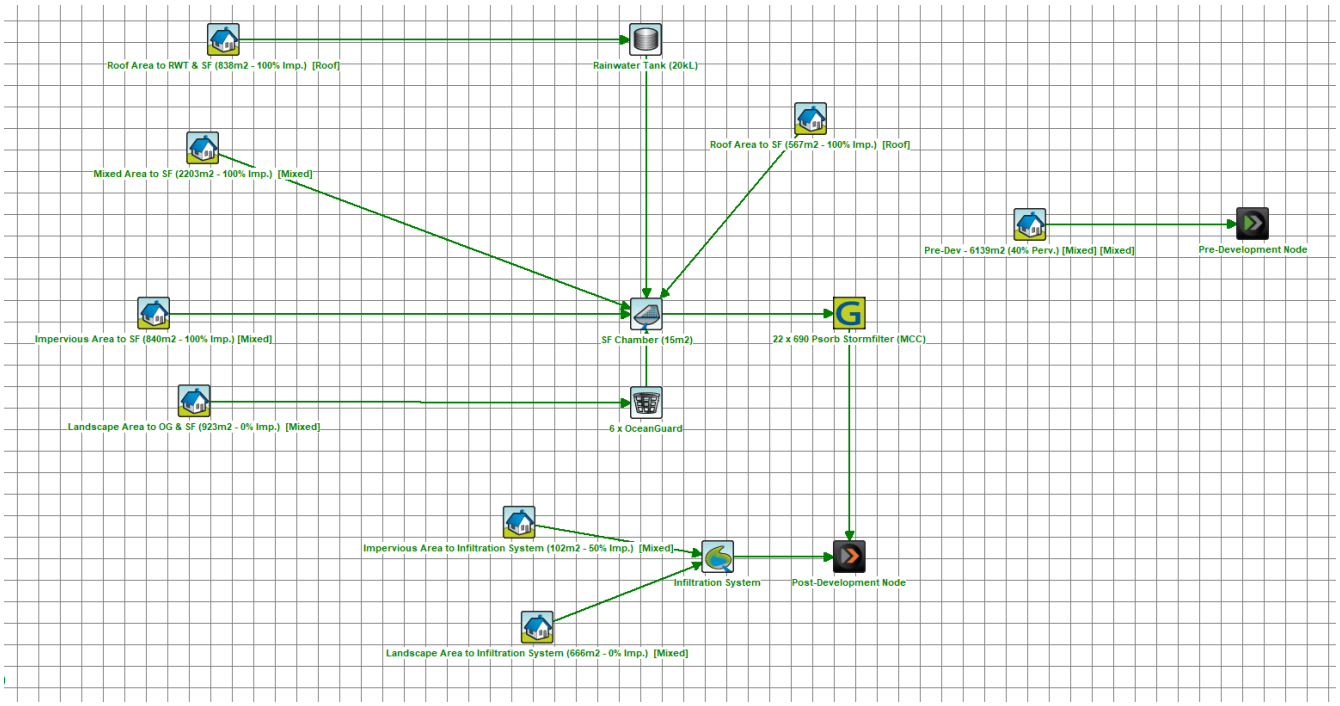
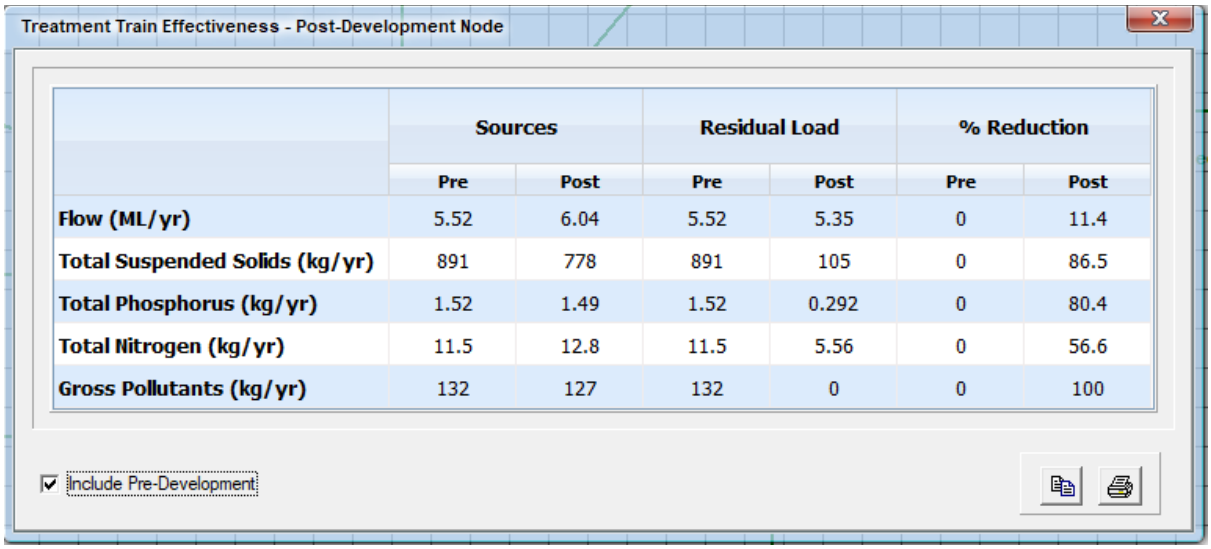


Figure 4.6 NORBE MUSIC Diagram



	Sources		Residual Load		% Reduction	
	Pre	Post	Pre	Post	Pre	Post
Flow (ML/yr)	5.52	6.04	5.52	5.35	0	11.4
Total Suspended Solids (kg/yr)	891	778	891	105	0	86.5
Total Phosphorus (kg/yr)	1.52	1.49	1.52	0.292	0	80.4
Total Nitrogen (kg/yr)	11.5	12.8	11.5	5.56	0	56.6
Gross Pollutants (kg/yr)	132	127	132	0	0	100

Figure 4.7 Pre-Development & Post-Development MUSIC Results

Pre-Development	Source (kg/yr)	Residual Load (kg/yr)	% Reduction
Flow (ML/yr)	5.52E+00	5.52E+00	0
Total Suspended Solids (kg/yr)	8.91E+02	8.91E+02	0
Total Phosphorus (kg/yr)	1.52E+00	1.52E+00	0
Total Nitrogen (kg/yr)	1.15E+01	1.15E+01	0
Gross Pollutants (kg/yr)	132	132	0

Post-Development	Source (kg/yr)	Residual Load (kg/yr)	% Reduction
Flow (ML/yr)	6.04E+00	5.35E+00	11.4
Total Suspended Solids (kg/yr)	7.78E+02	105	86.5
Total Phosphorus (kg/yr)	1.49E+00	2.92E-01	80.4
Total Nitrogen (kg/yr)	12.8	5.56	56.6
Gross Pollutants (kg/yr)	127	0.00E+00	100

NorBE	Pre-Development Load (kg/yr)	Post Development Load (kg/yr)	% Pre. Vs Post Reduction
Flow (ML/yr)	5.52	5.35	3.1%
Total Suspended Solids (kg/yr)	8.91E+02	105	**88.2%**
Total Phosphorus (kg/yr)	1.52	0.292	**80.8%**
Total Nitrogen (kg/yr)	11.5	5.56	**51.7%**
Gross Pollutants (kg/yr)	132	0	**100.0%**

Figure 4.8 NORBE Results

4.5 On-Site Detention

126.03m^3 below ground on-site detention tank has been provided to meet council's on-site detention requirements. The OSD has been sized using a catchment-based spreadsheet as required by council which is shown in Figure 4.9.

Project:	**Proposed Mixed-Use Development**		
Our Job No	**2024.0199**		
Location:	**59-63 Trafalgar Avenue and 1a_b Valley Road, Lindfield**		
CATCHMENT CODE	**GC1**		
CATCHMENT DISCHARGE RATE	**128.0**	**l/s/ha**	**[A]**
CATCHMENT STORAGE RATE	**336.0**	**m^3 / ha**	**[B]**
SITE DETAILS			
SITE AREA	6139	m^2	
60% OF SITE AREA	3683.4	m^2	**[C]**
AREAS NOT DRAINING TO OSD	768	m^2	
TOTAL IMPERVIOUS AREA	4550	m^2	**[D]**
IMPERVIOUS AREA BYPASSING OSD	102	m^2	**[E]**
PERMITTED SITE DISCHARGE			
C x A	47.15	l/s	**[FLOW 1]**
ADJUSTMENT FOR ANY UNCONTROLLED IMPERVIOUS FLOW			
E / D (<0.25)	0.02		**[F]**
FLOW 1 x F	1.06	l/s	**[FLOW 2]**
FLOW 1 - FLOW 2	**46.09**	l/s	**PSD**
SITE STORAGE REQUIREMENT			
C x B	**123.76**	m^3	**[SSR 1]**
IF THE STORAGE IS IN A LANDSCAPED BASIN			
SSR 1 x 1.2	**N/A**	m^3	**[SSR 2]**
ORIFICE CALCULATIONS			
HEIGHT DIFFERENCE BETWEEN TOP WATER SURFACE LEVEL AND THE CENTRE OF ORIFICE			
	2.34	**m**	**[G]**
ORIFICE DIAMETER	21.85 x SQRT(PSD/(SQRT(=	**119.9**	**mm**

Figure 4.9 OSD Calculation Sheet

4.6 Stormwater Disposal

It is proposed that the stormwater is to be discharged to a proposed kerb inlet pit located on Trafalgar Avenue. The proposed kerb inlet pit is to connect to a new pit downstream along 55 Trafalgar Avenue (existing headwall to be replaced by the new pit). Please refer to the Stormwater Plans prepared by S&G Consultants P/L.

4.7 Overland Flow Management

The site is not affected by overland flows.

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SGC

COUNCIL REF: _____

59-63 TRAFALGAR AVENUE & 1A-B VALLEY ROAD, LINDFIELD STORMWATER CONCEPT DESIGN



LOCALITY PLAN
NOT TO SCALE
COPYRIGHT OF NEARMAP

DRAWING INDEX			
SHEET No.	DWG. No.	DRAWING TITLE	REV.
01	S01-SW100	COVER SHEET & DRAWING INDEX	P01
02	S01-SW201	EROSION & SEDIMENT CONTROL PLAN & DETAILS	P01
03	S01-SW301	STORMWATER CONCEPT DESIGN BASEMENT 2 PLAN	P01
04	S01-SW302	STORMWATER CONCEPT DESIGN LOWER GROUND FLOOR PLAN	P01
05	S01-SW303	STORMWATER CONCEPT DESIGN GROUND FLOOR PLAN	P01
06	S01-SW304	STORMWATER CONCEPT DESIGN UPPER GROUND FLOOR PLAN	P01
07	S01-SW305	STORMWATER CONCEPT DESIGN LEVEL 1 PLAN	P01
08	S01-SW401	STORMWATER CONCEPT DESIGN DETAILS SHEET (1/2)	P01
09	S01-SW402	STORMWATER CONCEPT DESIGN DETAILS SHEET (2/2)	P01
10	S01-SW501	STORMWATER CONCEPT DESIGN MUSIC CATCHMENT PLAN & DETAILS	P01

DRAFT
NOT FOR CONSTRUCTION

PREPARED BY

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ARCHITECT

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CLIENT

LANDMARK

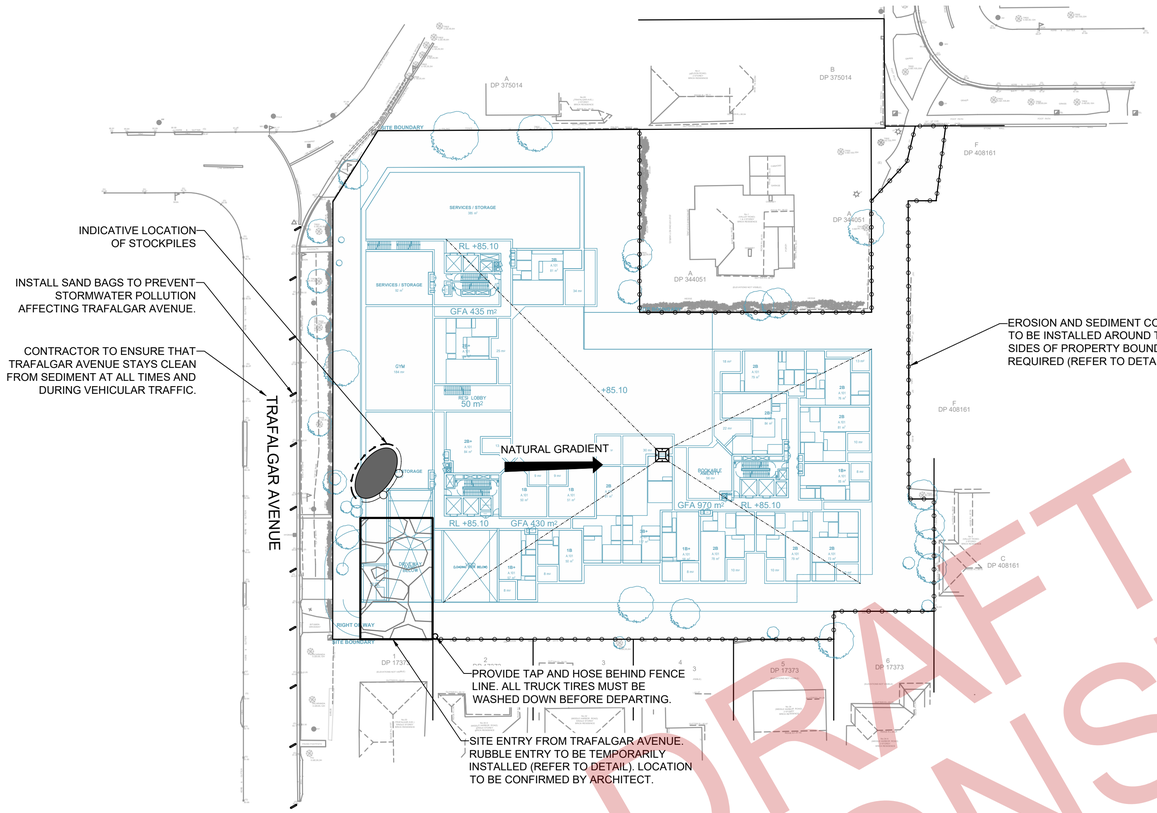
LGA

Ku·ring·gai Council

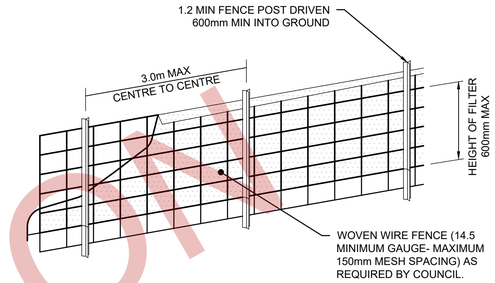
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PRELIMINARY
NOT FOR CONSTRUCTION

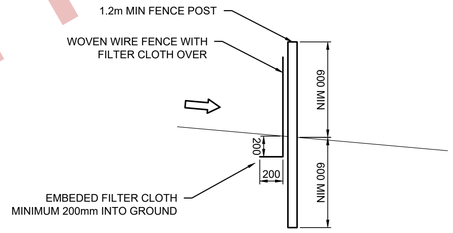
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EROSION AND SEDIMENT CONTROL
SCALE 1:200

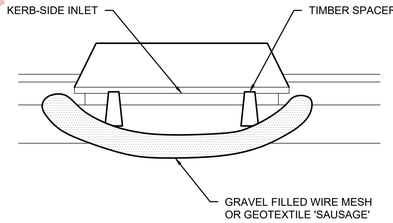


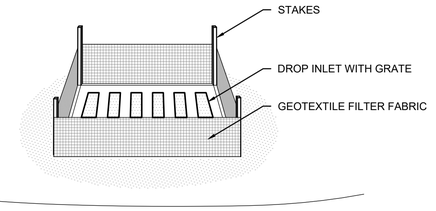
DIAGRAMMATIC VIEW



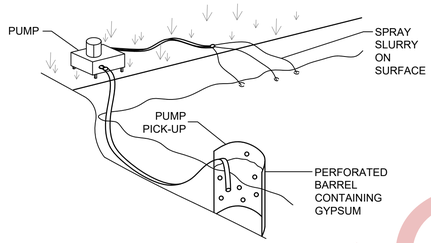
TYPICAL SECTION

SEDIMENT FENCE
NOT TO SCALE





NOTE:
1. FLOCCULATION TO BE USED IF WATER IS NOT CLEAR (ie. SEDIMENT GREATER THAN 50 mg/L) PRIOR TO DISCHARGING FROM TEMPORARY PUMP OUT
2. FOR RATES & AGENTS SEE APPENDIX E OF NEW SOUTH WALES DEPARTMENT OF HOUSING "MANAGING URBAN STORMWATER SOILS & CONSTRUCTION".



FLOCCULATION DETAIL
NOT TO SCALE

GENERAL NOTES

1. THIS PLAN IS A CONCEPT PLAN ONLY FOR STORMWATER DISPOSAL & EROSION CONTROL. IT IS NOT SUITABLE FOR CONSTRUCTION. THIS PLAN SHOULD BE ADAPTED BY THE BUILDER DURING DEMOLITION, EXCAVATION & CONSTRUCTION PHASES TO ENSURE ADEQUATE PERFORMANCE.
2. ALL DRAINAGE LAYOUT & DETAILS ARE DIAGRAMMATIC & INDICATIVE ONLY. ACTUAL LOCATION, SIZES, LEVELS & GRADES MAY ALTER WHEN DETAIL DESIGN WORKS ARE DOCUMENTED.

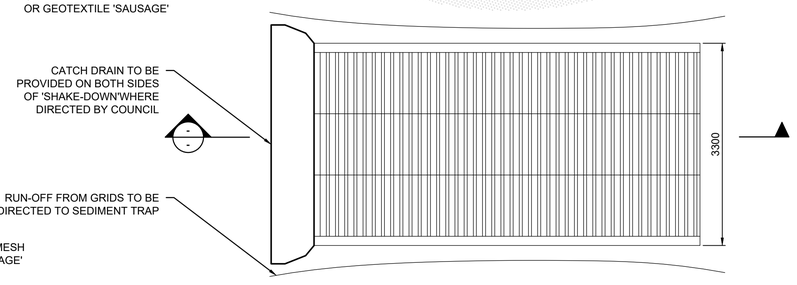
CLAY SOILS

A SYSTEM SHALL BE INSTALLED TO EITHER:

1. TRANSPORT STORMWATER RUNOFF WITH SUSPENDED SOLIDS FROM SITE VIA PUMP TRUCKS.
2. TREAT THE STORMWATER RUNOFF WITH SUSPENDED SOLIDS SO THE DISCHARGE WATER QUALITY TO COUNCIL STORMWATER DRAINAGE SYSTEM HAS A MAXIMUM CONCENTRATION OF SUSPENDED SOLIDS THAT DOES NOT EXCEED 50 MILLIGRAMS PER LITRE IN ACCORDANCE WITH THE PROTECTION OF THE ENVIRONMENT OPERATION ACT (POEO 1997) AND SHALL BE APPROVED BY LOCAL COUNCIL.

GEOTEXTILE INLET FILTER

GEOTEXTILE INLET FILTER IS PLACED IN EVERY PIT WITHIN THE SITE TO ENSURE THE RUNOFF WATER DURING CONSTUCTION NOT ENTER THE PITS.



PLAN VIEW

CONSTRUCTION NOTES

FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAT THE LENGTH OF THE INLET PIT

FILL THE SLEEVE WITH 25mm TO 50mm GRAVEL

FORM AN ELLIPTICAL CROSS-SECTION OF THE KERB INLET LEAVING A 100mm GAP AT THE TOP TO ACT AS AN EMERGENCY SPILLWAY

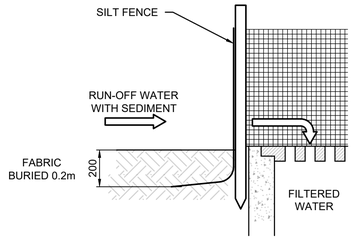
MAINTAIN THE OPENING WITH SPACER BLOCKS

FORM A SEAL WITH THE KERBING AND PREVENT SEDIMENT BYPASSING THE FILTER

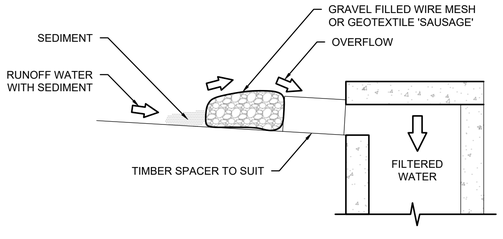
FIT TO ALL KERB INLETS AT SAG POINTS

EROSION & SEDIMENTATION CONTROL NOTES

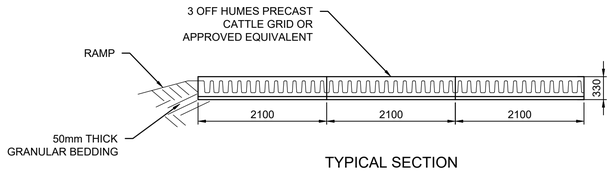
1. CONTRACTOR SHALL PROVIDE SEDIMENT FENCING MATERIAL DURING CONSTRUCTION TO THE LOW SIDE OF THE WORKS. TIE SEDIMENT FENCING MATERIAL TO CYCLONE WIRE SECURITY FENCE. SEDIMENT CONTROL FABRIC SHALL BE AN APPROVED MATERIAL (EG. HUMES PROPEX SILT STOP) STANDING 300mm ABOVE GROUND & EXTENDING 150mm BELOW GROUND.
2. EXISTING DRAINS LOCATED WITHIN THE SITE SHALL ALSO BE ISOLATED BY SEDIMENT FENCING MATERIAL.
3. NO PARKING OR STOCKPILING OF MATERIALS IS PERMITTED ON THE LOWER SIDE OF THE SEDIMENT FENCE.
4. GRASS VERGES SHALL BE MAINTAINED AS MUCH AS PRACTICAL TO PROVIDE A BUFFER ZONE TO THE CONSTRUCTION SITE.
5. CONSTRUCTION ENTRY/EXIT SHALL BE VIA THE LOCATION NOTED ON THE DRAWING. CONTRACTOR SHALL ENSURE ALL DROPPABLE SOIL & SEDIMENT IS REMOVED PRIOR TO CONSTRUCTION TRAFFIC EXITING SITE. CONTRACTOR SHALL ENSURE ALL CONSTRUCTION TRAFFIC ENTERING & LEAVING THE SITE DO SO IN A FORWARD DIRECTION.



GEOTEXTILE INLET FILTER
NOT TO SCALE



GRAVEL INLET FILTER (SAUSAGE)
NOT TO SCALE



TYPICAL SECTION

'CATTLE GRID' ALTERNATIVE
TEMPORARY CONSTRUCTION EXIT - NOT TO SCALE

DRAFT
NOT FOR CONSTRUCTION

Issue	Last revision title	By	Date	Status
P01	PRELIMINARY ISSUE	CS	16.04.25	01

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

Quality Control

DRAWN	DATE
CS	16.04.25
CHECKED	DATE
SH	16.04.25
DESIGNED	DATE
CS	16.04.25
VERIFIED	DATE
SH	16.04.25
APPROVED	DATE
SH	16.04.25

ENGINEERS AUSTRALIA
Chartered Professional Engineer
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Scales
0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE

Client
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Architect
DKO

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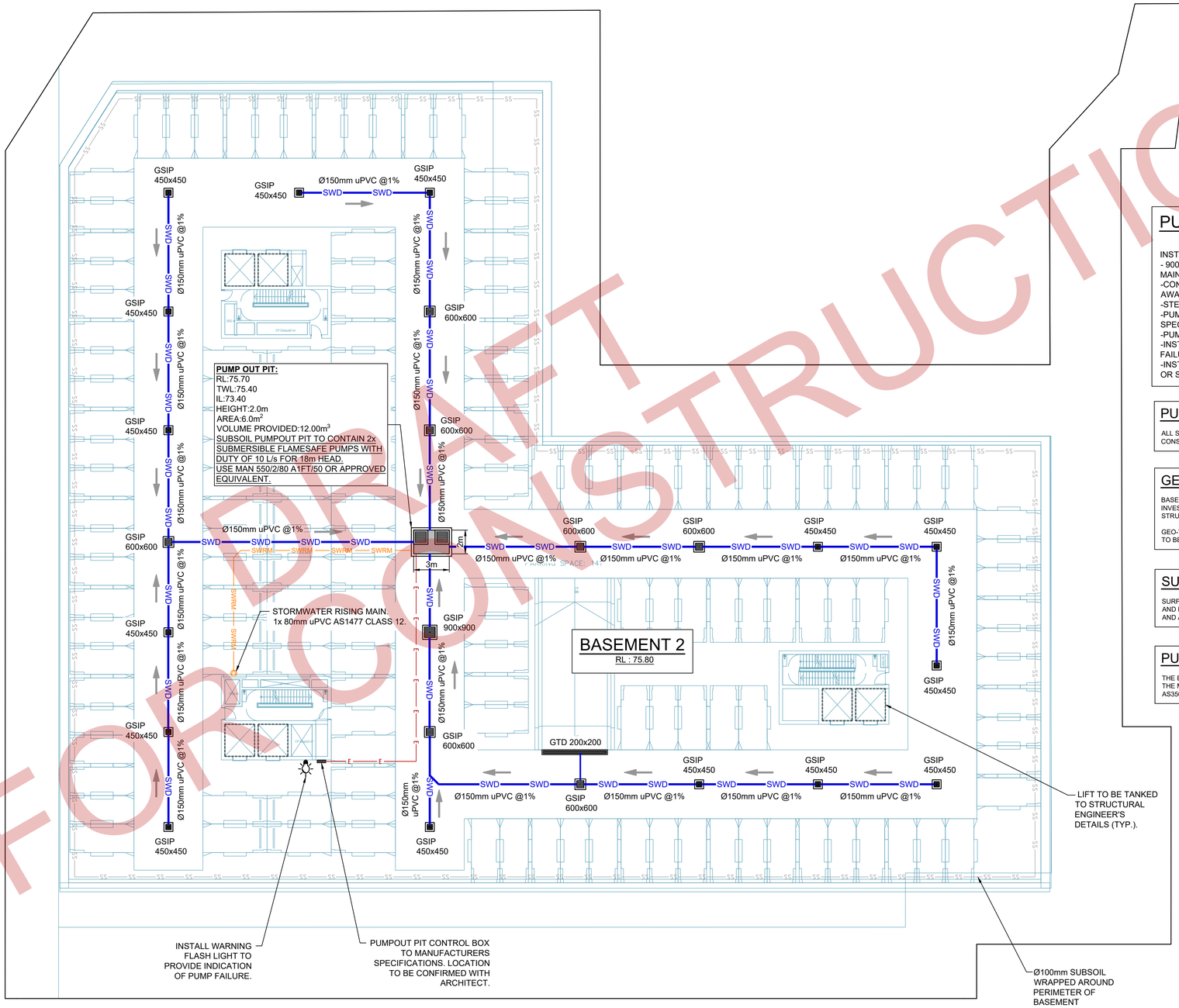
PROJECT
59-63 TRAFALGAR AVENUE &
1A-B VALLEY ROAD,
LINDFIELD
STORMWATER CONCEPT DESIGN

Grid	Datum	Sheet
	A.H.D.	02

Status: PRELIMINARY NOT FOR CONSTRUCTION
Drawing Title: EROSION & SEDIMENT CONTROL PLAN & DETAILS

Project No.	Set No. - Drg No.	Revision No.
20240199	S01-SW201	P01

A1 Plotted Wednesday, 16 April 2025, 11:02:47 AM By CHRISTIEMAXINE/SGC, File Name:Z:\Production\2024\20240199\S01-SW201-SW\20240199_S01-SW201.dwg



PUMP-OUT PIT NOTE:

INSTALL WITH THE FOLLOWING ITEMS:
- 900SQ HEAVY DUTY STEEL GRATED LID FOR ACCESS AND MAINTENANCE PURPOSES.
-CONFINED SPACE SIGN ABOVE PUMP OUT PIT FOR PUBLIC AWARENESS AND WARNING.
-STEP IRONS. REFER TO DETAILS.
-PUMPOUT PIT CONTROL BOX (CTRL) TO MANUFACTURERS SPECIFICATIONS. LOCATIONS TO BE CONFIRMED WITH ARCHITECT.
-PUMPS TO OPERATE IN ALTERNATE MODE TO INCREASE LIFESPAN
-INSTALL VISIBLE FLASHING LIGHT SYSTEM IN CASE OF PUMP FAILURE
-INSTALL 2x MAN 550/2/80 A1FT/50 FROM ZENIT WATER SOLUTIONS OR SIMILAR 3 PHASE PUMPS WITH 10L/s OUTFLOW FOR 18m HEAD

PUMP NOTE

ALL STORMWATER PUMPS TO BE FLAME SAFE TO ELECTRICAL CONSULTANT'S REQUIREMENTS.

GEO-TECHNICAL NOTE:

BASEMENT DRAINAGE DESIGN SUBJECT TO GEOTECHNICAL INVESTIGATION (INCLUDING WATER TABLE AND SEEPAGE RATE) AND STRUCTURAL DESIGN OF WALLS AND SLABS.

GEO-TECHNICAL ENGINEER TO CONFIRM IF THE BASEMENT NEEDS TO BE TANKED.

SURFACE GRADING NOTE:

SURFACES ARE TO BE GRADED TOWARDS SURFACE INLET PIT (GSIP) AND RAINWATER OUTLET (RWO) AT 1% MIN. FOR UNCOVERED AREA AND AT 0.5% MIN. FOR COVERED AREA.

PUMP-OUT DESIGN CALCS:

THE ENTIRE DRIVEWAY RAMP AREA IS COVERED SO THEREFORE, THE MINIMUM PUMP-OUT PIT SIZE IS 3m³ IN ACCORDANCE WITH AS3500.

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P01	PRELIMINARY ISSUE	CS	16.04.25	01
Issue	Last revision title	By	Date	Status

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

Quality Control

DRAWN	DATE
CS	16.04.25
CHECKED	DATE
SH	16.04.25
DESIGNED	DATE
CS	16.04.25
VERIFIED	DATE
SH	16.04.25
APPROVED	DATE
SH	16.04.25

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Scales
0m 2 4 6 8 10
SCALE 1:200 ON ORIGINAL SIZE

Client
LANDMARK

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PROJECT
59-63 TRAFALGAR AVENUE &
1A-B VALLEY ROAD,
LINDFIELD
STORMWATER CONCEPT DESIGN

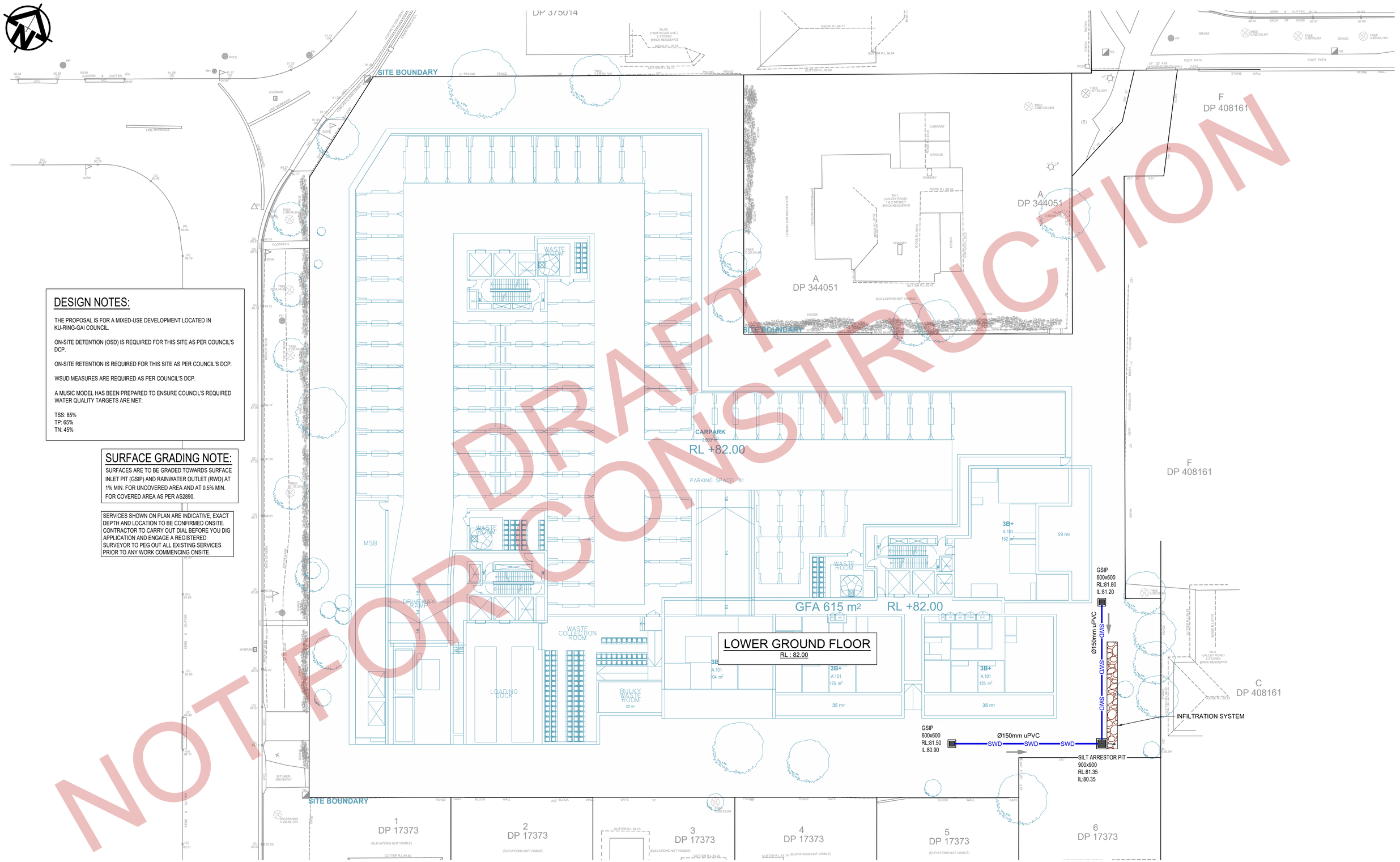
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	A.H.D.	03

Status
PRELIMINARY
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Drawing Title
STORMWATER CONCEPT DESIGN
BASEMENT 2 PLAN

Project No.	Set No. - Drg No.	Revision No.
20240199	S01-SW301	P01

A1 Plotted Wednesday, 16 April 2025 11:02:42 AM By CHRISTIESMAXIMSC - File Name:Z:\Production\2024\20240199 59-63 Trafalgar Avenue And 1a_b Valley Road, Lindfield\Cad\20240199_S01-SW301.dwg



DESIGN NOTES:

THE PROPOSAL IS FOR A MIXED-USE DEVELOPMENT LOCATED IN KU-RING-GAI COUNCIL.

ON-SITE DETENTION (OSD) IS REQUIRED FOR THIS SITE AS PER COUNCIL'S DCP.

ON-SITE RETENTION IS REQUIRED FOR THIS SITE AS PER COUNCIL'S DCP.

WSUD MEASURES ARE REQUIRED AS PER COUNCIL'S DCP.

A MUSIC MODEL HAS BEEN PREPARED TO ENSURE COUNCIL'S REQUIRED WATER QUALITY TARGETS ARE MET:

TSS: 85%
TP: 65%
TN: 45%

SURFACE GRADING NOTE:

SURFACES ARE TO BE GRADED TOWARDS SURFACE INLET PIT (GSIP) AND RAINWATER OUTLET (RWO) AT 1% MIN. FOR UNCOVERED AREA AND AT 0.5% MIN. FOR COVERED AREA AS PER AS2890.

SERVICES SHOWN ON PLAN ARE INDICATIVE, EXACT DEPTH AND LOCATION TO BE CONFIRMED ONSITE. CONTRACTOR TO CARRY OUT DIAL BEFORE YOU DIG APPLICATION AND ENGAGE A REGISTERED SURVEYOR TO PEG OUT ALL EXISTING SERVICES PRIOR TO ANY WORK COMMENCING ONSITE.

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Issue	Last revision title	By	Date	Status
P01	PRELIMINARY ISSUE	CS	16.04.25	01

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

Quality Control

DRAWN	DATE
CS	16.04.25
CHECKED	DATE
SH	16.04.25
DESIGNED	DATE
CS	16.04.25
VERIFIED	DATE
SH	16.04.25
APPROVED	DATE
SH	16.04.25

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SCALE 1:200 ON ORIGINAL SIZE

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PROJECT
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STORMWATER CONCEPT DESIGN

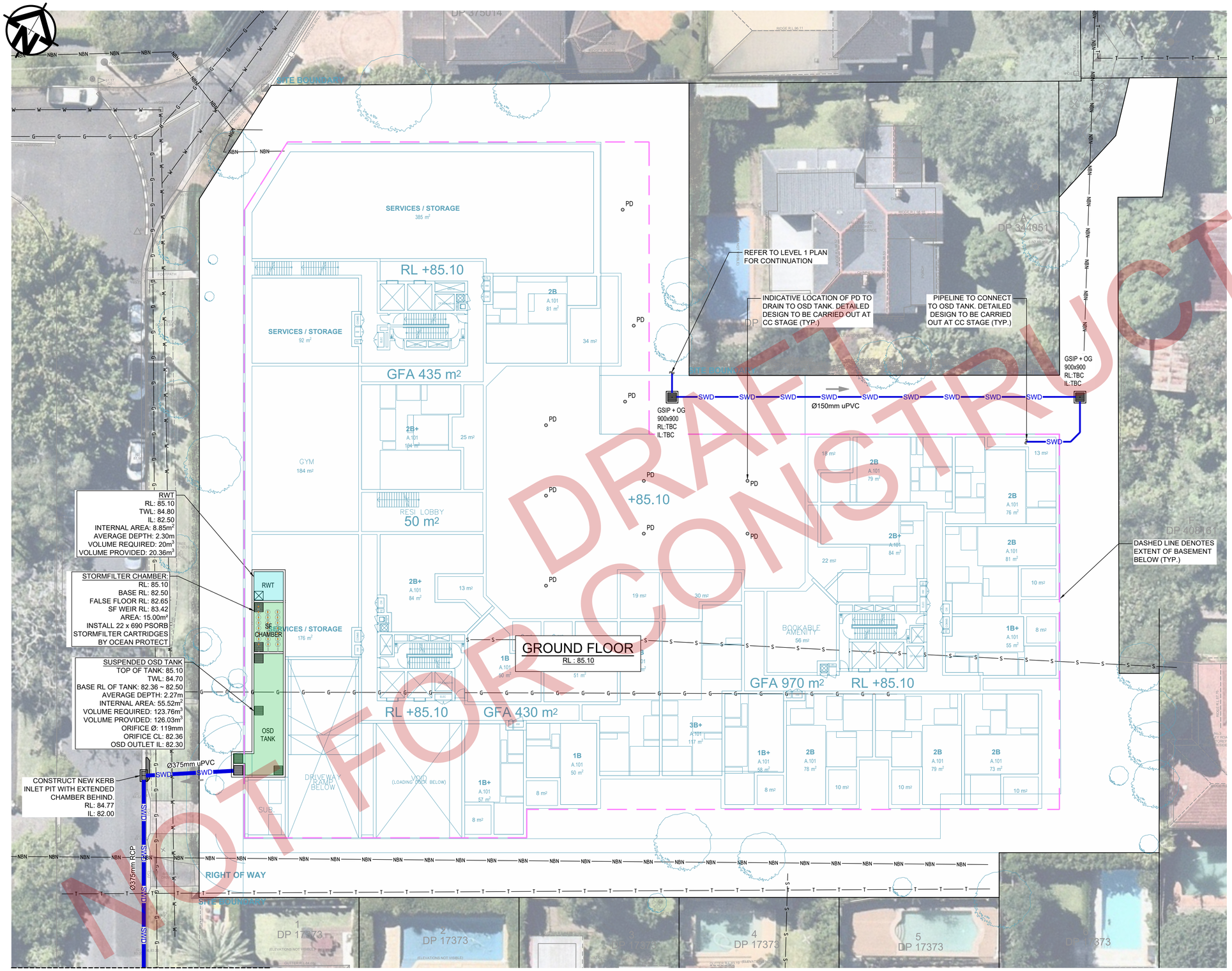
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Status
PRELIMINARY
NOT FOR CONSTRUCTION

Drawing Title
STORMWATER CONCEPT DESIGN
LOWER GROUND FLOOR PLAN

Project No.	Set No. - Drg No.	Revision No.
20240199	S01-SW302	P01

A1 Plotted Wednesday, 16 April 2025 11:52:36 AM By CHRISSMANASOC - File Name:Z:\Production\2024\20240199 59-63 Trafalgar Avenue And 1a_b Valley Road, Lindfield\Civil\CAD\S01 - SW\20240199_S01-SW302.dwg



REFER TO INSET A FOR CONTINUATION

INSET A

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Issue	Last revision title	By	Date	Status
P01	PRELIMINARY ISSUE	CS	16.04.25	01

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

Quality Control

DRAWN	DATE CS 16.04.25
CHECKED	DATE SH 16.04.25
DESIGNED	DATE CS 16.04.25
VERIFIED	DATE SH 16.04.25
APPROVED	DATE SH 16.04.25

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SCALE 1:200 ON ORIGINAL SIZE

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STORMWATER CONCEPT DESIGN

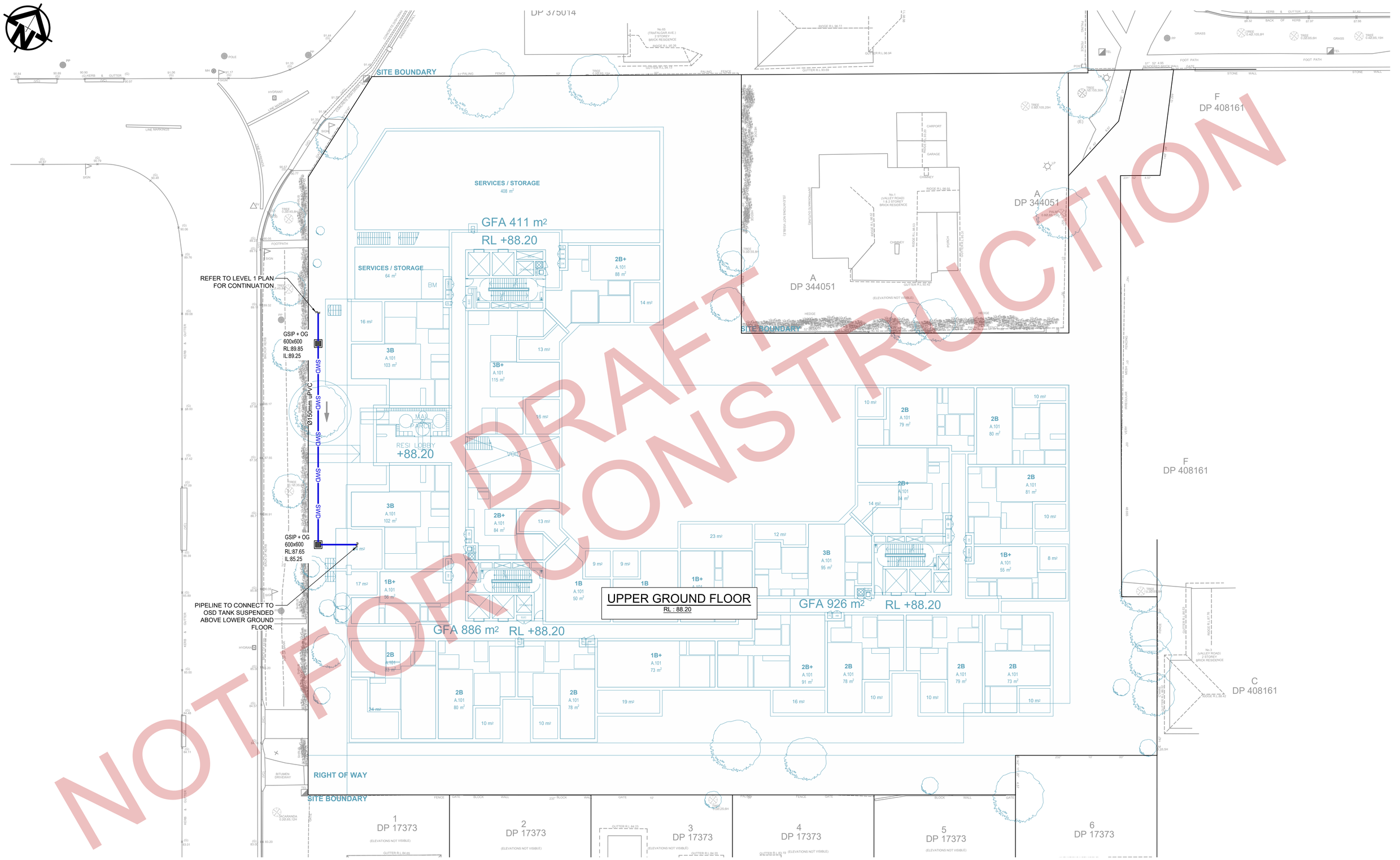
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Status
PRELIMINARY
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Drawing Title
STORMWATER CONCEPT DESIGN
GROUND FLOOR PLAN

Project No.	Set No. - Drg No.	Revision No.
20240199	S01-SW303	P01

A1 Portrait Wednesday, 16 April 2025 11:40:01 AM By CHRISSEMANASIOC - File Name: Z:\Production\2024\20240199 59-63 Trafalgar Avenue And 1a_b Valley Road, Lindfield\Civil\CAD\S01 - SW\20240199_S01-SW303.dwg



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Issue	Last revision title	By	Date	Status
P01	PRELIMINARY ISSUE	CS	16.04.25	01

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
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HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

Quality Control

DRAWN	DATE
CS	16.04.25
CHECKED	DATE
SH	16.04.25
DESIGNED	DATE
CS	16.04.25
VERIFIED	DATE
SH	16.04.25
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Scales

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SCALE 1:200 ON ORIGINAL SIZE

Client

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Architect

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PROJECT
59-63 TRAFALGAR AVENUE &
1A-B VALLEY ROAD,
LINDFIELD
STORMWATER CONCEPT DESIGN

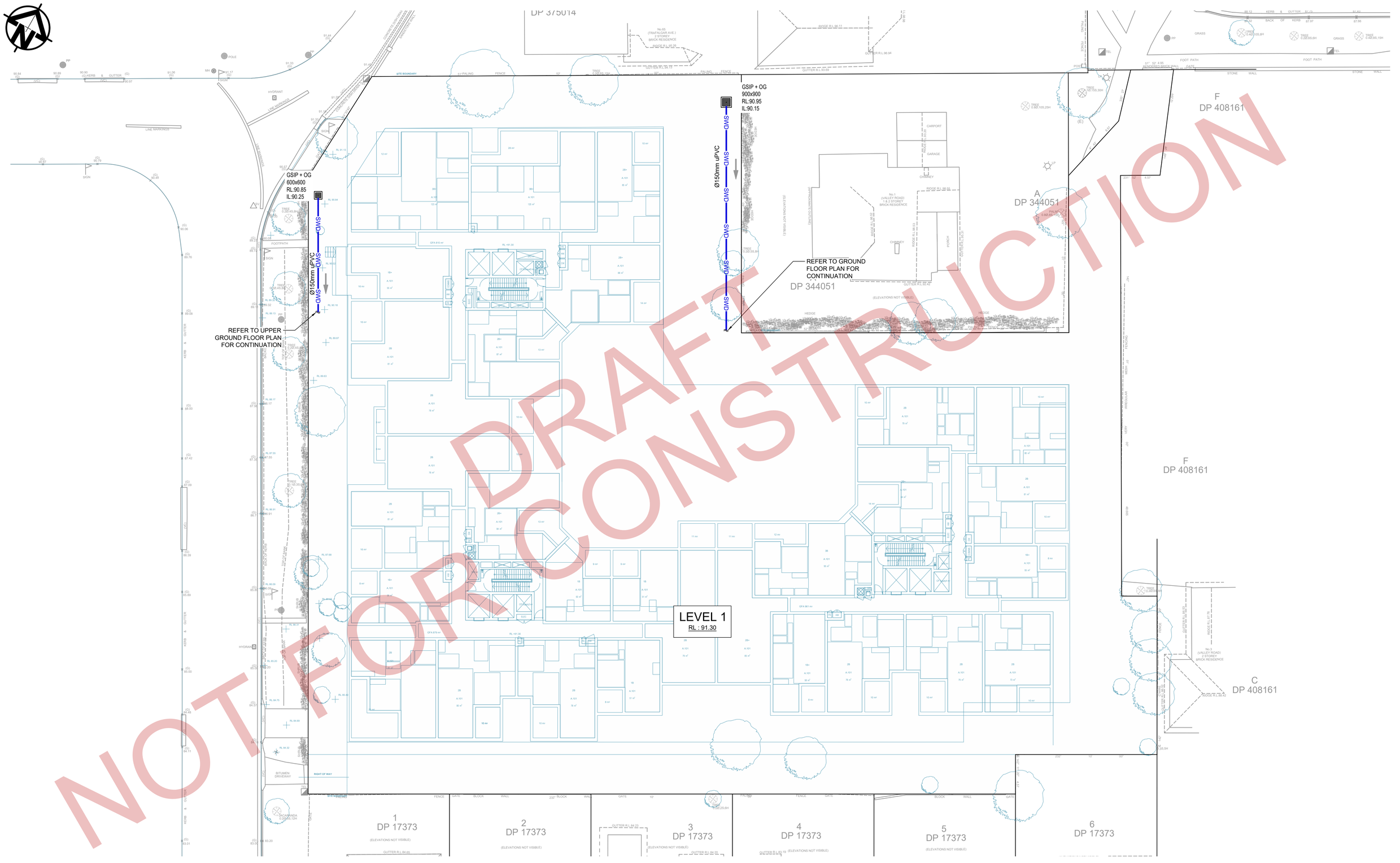
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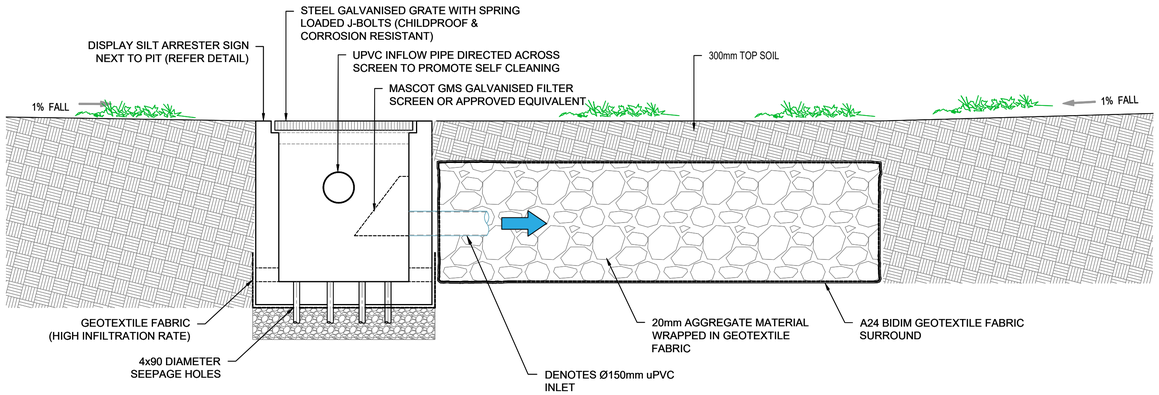
Status: PRELIMINARY NOT FOR CONSTRUCTION

Drawing Title
STORMWATER CONCEPT DESIGN
UPPER GROUND FLOOR PLAN

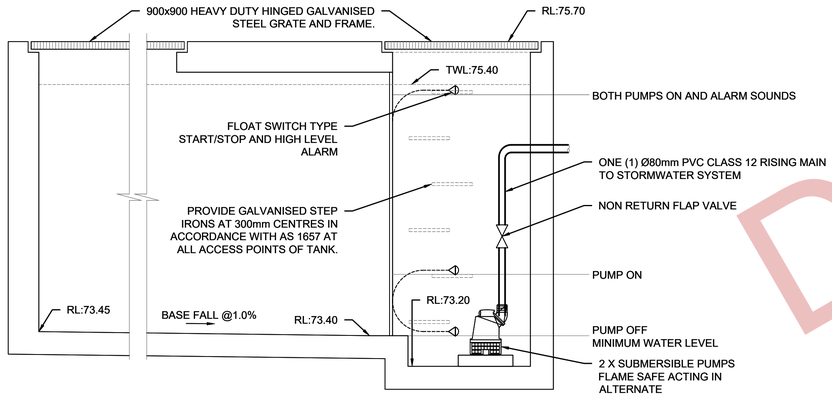
Project No.	Set No. - Drg No.	Revision No.
20240199	S01-SW304	P01

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DP 375014
No.65 (TRAFALGAR AVE.) 2 STOREY BRICK RESIDENCE
RIDGE R.L.96.28
GUTTER R.L.96.13
RIDGE R.L.96.13
GUTTER R.L.96.94
GUTTER R.L.93.69
SITE BOUNDARY
51 PALING FENCE
GSIP + OG 600x600 RL:90.85 IL:90.25
GSIP + OG 900x900 RL:90.95 IL:90.15
Ø150mm uPVC SWD
Ø150mm uPVC
REFER TO UPPER GROUND FLOOR PLAN FOR CONTINUATION
REFER TO GROUND FLOOR PLAN FOR CONTINUATION
DP 344051
No.1 (VALLEY ROAD) 1 & 2 STOREY BRICK RESIDENCE
CARPORT
GARAGE
CHIMNEY
PORCH
(ELEVATIONS NOT VISIBLE)
HEDGE
A
DP 344051
F
DP 408161
C
DP 408161
LEVEL 1
RL : 91.30
1
DP 17373
2
DP 17373
3
DP 17373
4
DP 17373
5
DP 17373
6
DP 17373
No.3 (VALLEY ROAD) 2 STOREY BRICK RESIDENCE
FOOT PATH
GRASS
STONE WALL
BYNONE WALL
KERB & GUTTER
BACK OF KERB
FOOTPATH
SIGN
HYDRANT
LINE MARKINGS
POLE
PP
TEL
LP
RIGHT OF WAY
BITUMEN DRIVEWAY
CONCRETE DRIVEWAY
FENCE
GATE
BLOCK WALL
GFA 810 m²
GFA 961 m²
GFA 673 m²
GFA 1,771 m²
GFA 1,771 m²
GFA 1,771

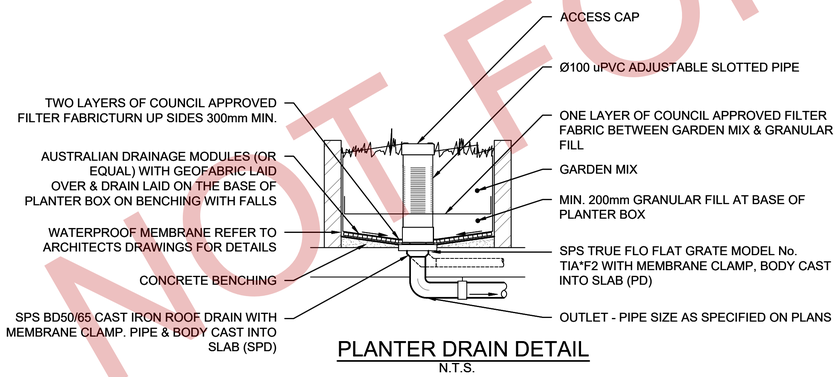


TYPICAL INFILTRATION PIT
N.T.S.

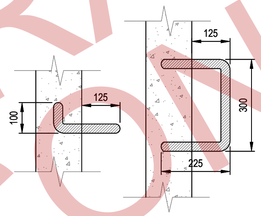


PUMP OUT TANK
AVERAGE HEIGHT:2.0m
WIDTH: 2.00m
LENGTH: 3.00m
VOLUME PROVIDED: 12.00m^3

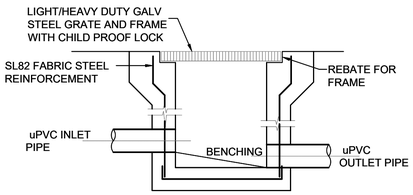
SUBSOIL PUMP OUT PIT
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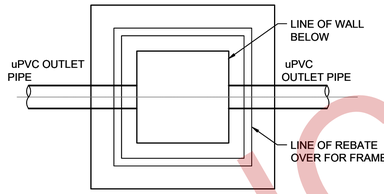
PLANTER DRAIN DETAIL
N.T.S.



STEP IRONS
N.T.S.

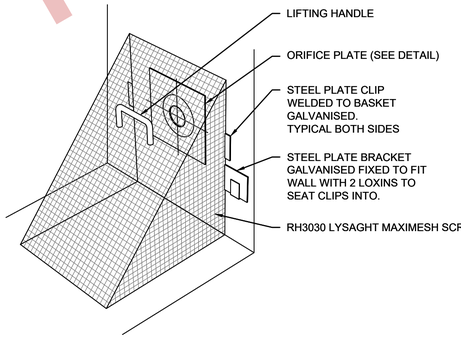


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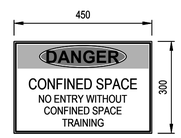


PLAN WITHOUT GRATE

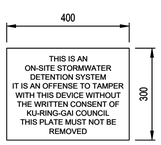
STORMWATER PIT
N.T.S.



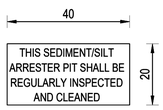
DEBRIS SCREEN
N.T.S.



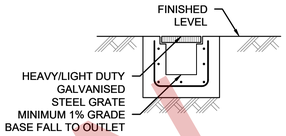
CONFINED SPACE SIGN
N.T.S.



OSD SIGN
N.T.S.



SILT ARRESTER SIGN
N.T.S.



GRATED TRENCH DRAIN
N.T.S.

SITEWORKS LEGEND

SWD	STORMWATER LINE
RW RW	STORMWATER LINE TO RAINWATER TANK
SS SS SS	SUBSOIL LINE
SWRM SWRM	STORMWATER RISING MAIN
S S	AUTHORITY SEWER LINE
W W	AUTHORITY WATER LINE
G G	AUTHORITY GAS LINE
OH OH	AUTHORITY OVER HEAD ELECTRICITY LINE
E E	AUTHORITY UNDERGROUND ELECTRICITY LINE
T T	AUTHORITY COMMS LINE
	GRATED SURFACE INLET PIT
	GRATED SURFACE INLET PIT WITH ENVIROPOD INSERT
	JUNCTION PIT
	GRATED TRENCH DRAIN
RWO	RAINWATER OUTLET
CO	CLEAR OUT POINT
DDO	DISH DRAIN OUTLET
PD	PLANTER DRAIN
	DOWNPIPE DROP
DP	DOWNPIPE
	WARNING LIGHT
00.00	FINISH SURFACE LEVEL

ABBREVIATIONS:

Ø or DIA	DIAMETER
CO	CLEAR OUT
DDO	DISH DRAIN OUTLET
DP	DOWNPIPE
e	EXISTING
FFL	FINISHED FLOOR LEVEL
GTD	GRATED TRENCH DRAIN
GSIP	GRATED SURFACE INLET PIT
IL	INVERT LEVEL
KIP	KERB INLET PIT
NGL	NATURAL GROUND LEVEL
OFP	OVERLAND FLOWPATH
OSD	ON-SITE DETENTION
RCP	REINFORCED CONCRETE PIPE
RL	REDUCED LEVEL
RWT	RAINWATER TANK
SW	STORMWATER
SWP	STORMWATER PIT
SWRM	STORMWATER RISING MAIN
SWS	STORMWATER SUMP
TOK	TOP OF KERB
TOW	TOP OF WALL
UPVC	

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Issue	Last revision title	By	Date	Status
P01	PRELIMINARY ISSUE	CS	16.04.25	01

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

Quality Control

DRAWN	DATE
CS	16.04.25
CHECKED	DATE
SH	16.04.25
DESIGNED	DATE
CS	16.04.25
VERIFIED	DATE
SH	16.04.25
APPROVED	DATE
SH	16.04.25

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Scales

Client
LANDMARK

Architect
DKO

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A.B.N. 21 118 222 530

PROJECT
59-63 TRAFALGAR AVENUE &
1A-B VALLEY ROAD,
LINDFIELD
STORMWATER CONCEPT DESIGN

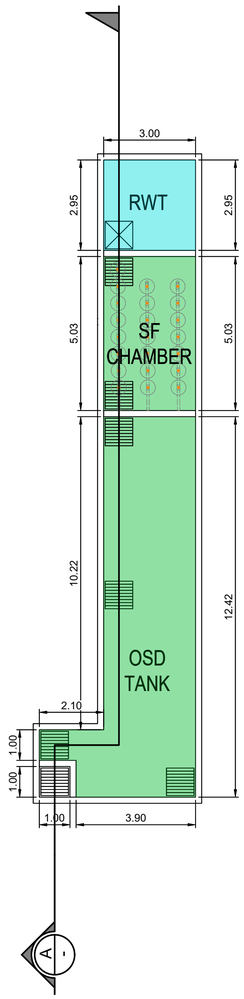
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Status
PRELIMINARY
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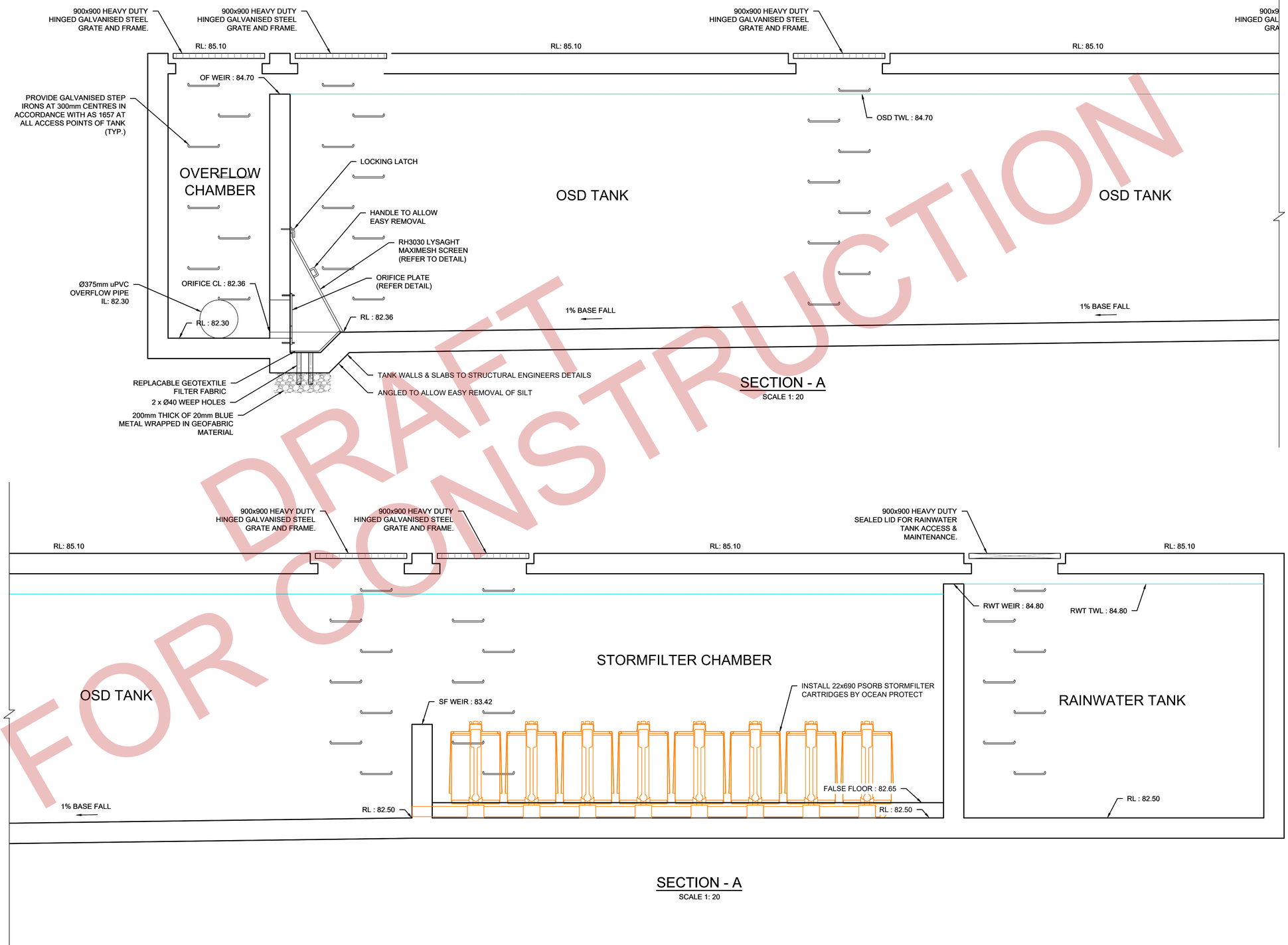
Drawing Title
STORMWATER CONCEPT DESIGN DETAILS SHEET (1/2)

Project No.	Set No. - Drg No.	Revision No.
20240199	S01-SW401	P01

A1 Plotted Wednesday, 16 April 2025 11:48:39 AM By CHRISBRAANSCC File Name:Z:\Production\2024\20240199 59-63 Trafalgar Avenue And 1a_b Valley Road, Lindfield\Civil\CAD\S01 - SW\20240199_S01-SW401.dwg

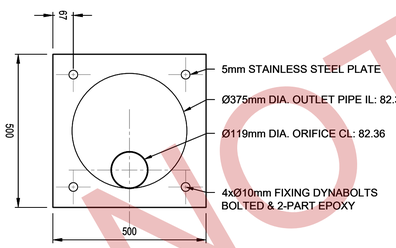


OSD TANK PLAN VIEW
SCALE 1: 100



SECTION - A
SCALE 1: 20

SECTION - A
SCALE 1: 20



ORIFICE PLATE
N.T.S.

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Scales
0m 0.2 0.4 0.6 0.8 1.0
SCALE 1:20 ON ORIGINAL SIZE
0m 1 2 3 4 5
SCALE 1:100 ON ORIGINAL SIZE

Client
LANDMARK

Architect
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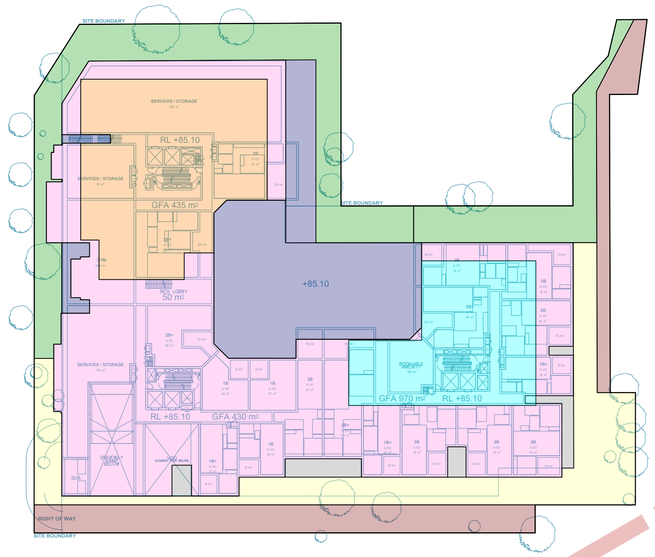
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	A.H.D.	09

Status: PRELIMINARY NOT FOR CONSTRUCTION

Drawing Title: STORMWATER CONCEPT DESIGN DETAILS SHEET (2/2)

Project No.	Set No. - Drg No.	Revision No.
20240199	S01-SW402	P01

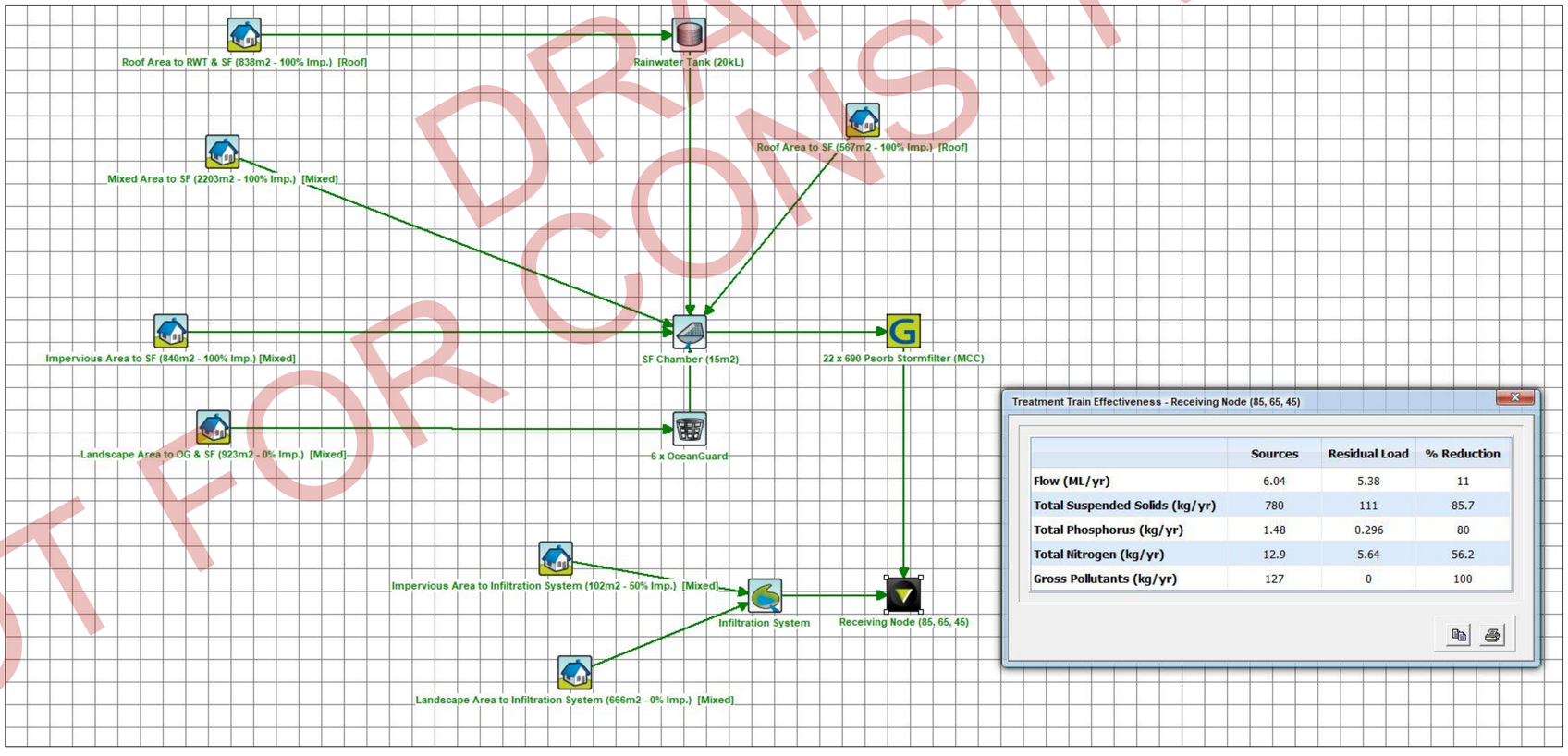
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LEGEND

- ROOF AREA TO RWT & SF (100% IMPERVIOUS) AREA: 838m²
- ROOF AREA TO SF (100% IMPERVIOUS) AREA: 567m²
- MIXED AREA TO SF (100% IMPERVIOUS) AREA: 2203m²
- IMPERVIOUS AREA TO SF (100% IMPERVIOUS) AREA: 840m²
- LANDSCAPE AREA TO OG & SF (0% IMPERVIOUS) AREA: 923m²
- IMPERVIOUS AREA TO INFILTRATION (50% IMPERVIOUS) AREA: 102m²
- LANDSCAPE AREA TO INFILTRATION (0% IMPERVIOUS) AREA: 666m²
- AREA PART OF EASEMENTS COUNTED AS BYPASS (NOT INCLUDED IN CALCS) AREA: 533m²

MUSIC CATCHMENT SITE BREAK UP PLAN
SCALE 1:500



Treatment Train Effectiveness - Receiving Node (85, 65, 45)

	Sources	Residual Load	% Reduction
Flow (ML/yr)	6.04	5.38	11
Total Suspended Solids (kg/yr)	780	111	85.7
Total Phosphorus (kg/yr)	1.48	0.296	80
Total Nitrogen (kg/yr)	12.9	5.64	56.2
Gross Pollutants (kg/yr)	127	0	100

MUSIC MODEL DIAGRAM AND RESULTS

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0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE

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LINDFIELD
STORMWATER CONCEPT DESIGN

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	A.H.D.	10

Status: PRELIMINARY NOT FOR CONSTRUCTION

Drawing Title
STORMWATER CONCEPT DESIGN
MUSIC CATCHMENT PLAN & DETAILS

Project No.	Set No. - Drg No.	Revision No.
20240199	S01-SW501	P01

A1 Plotted Wednesday, 16 April 2025, 11:26:19 AM By CHRISBEBAKANSC, File Name:Z:\Production\2024\20240199 59-63 Trafalgar Avenue And 1a,b Valley Road, Lindfield\Civil\CAD\S01 - SW\20240199_S01-SW501.dwg