

# PROPOSED RESIDENTIAL SUBDIVISION 23-27 WARRIEWOOD ROAD, WARRIEWOOD STORMWATER CONCEPT DESIGN STAGE II FOR DA



DRAWINGS LIST			
Sheet No.	DWG No.	TITLE	REV
1	SWDA100	COVER SHEET	A
2	SWDA102	SITE PLAN	A
3	SWDA200	STORMWATER CONCEPT DESIGN - RESIDENTIAL APARTMENT BASEMENT B2	A
4	SWDA202A	STORMWATER CONCEPT DESIGN - TOWNHOUSES FIRST FLOOR PLAN	A
5	SWDA202B	STORMWATER CONCEPT DESIGN - RESIDENTIAL DEPARTMENTS GROUND FLOOR	A
6	SWDA203	STORMWATER CONCEPT DESIGN - RESIDENTIAL APARTMENTS & TOWNHOUSES ROOF PLAN	A
7	SWDA300A	STORMWATER CONCEPT DESIGN - DETAILS SHEET 1 OF 2	A
8	SWDA300B	STORMWATER CONCEPT DESIGN - DETAILS SHEET 2 OF 2	A
9	SWDA400	EROSION & SEDIMENT CONTROL - PLAN AND DETAILS SHEET	A
10	SWDA500	STORMWATER CONCEPT DESIGN - MUSIC CATCHMENT PLAN	A

LOCALITY PLAN  
NOT TO SCALE  
COPYRIGHT OF SIX MAPS  
LOCALITY PLAN

ARCHITECT:



CLIENT:

THE KNOWLES  
GROUP- ARCARE



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- RIPARIAN
- PAVED AREA & DRIVEWAY  
1317m<sup>2</sup>
- COURTYARDS & PLANTER BOX  
3107m<sup>2</sup>
- LANDSCAPING  
377m<sup>2</sup>
- ROADS  
2444m<sup>2</sup>
- SHARED PEDESTRIAN / CYCLEWAY  
285m<sup>2</sup>
- ROOFS  
3040m<sup>2</sup>

WARRIEWOOD ROAD

**SITE PLAN**  
scale 1:250



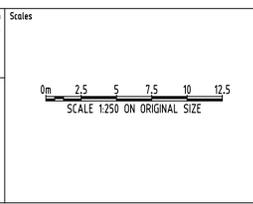
Issue	Last revision title	by	Date	Status
1-preliminary				
4-tender				
2-development application				
5-construction				
3-construction certificate				
6-other				

Discipline	Drawing Title and Number	Date	Rev.
ARCH	SITE PLAN	16.02.2018	1
STRUC	GROUND FLOOR SLAB PLAN PART 1&2	16.02.2018	E
MECH			
ELEC			
HYD			
FIRE			
LANDS	COMPOSITE LOWER GROUND & GROUND	11.06.2017	A
CIVIL			
SURVEY			

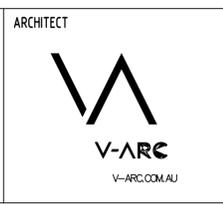
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Chartered Professional Engineer MEMBER

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QUALITY CONTROL	DATE
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CHECKED	
DESIGNED	
VERIFIED	DATE
SAM HADDAD	02.05.2017
NI CAUST CPENg NPER 224704	



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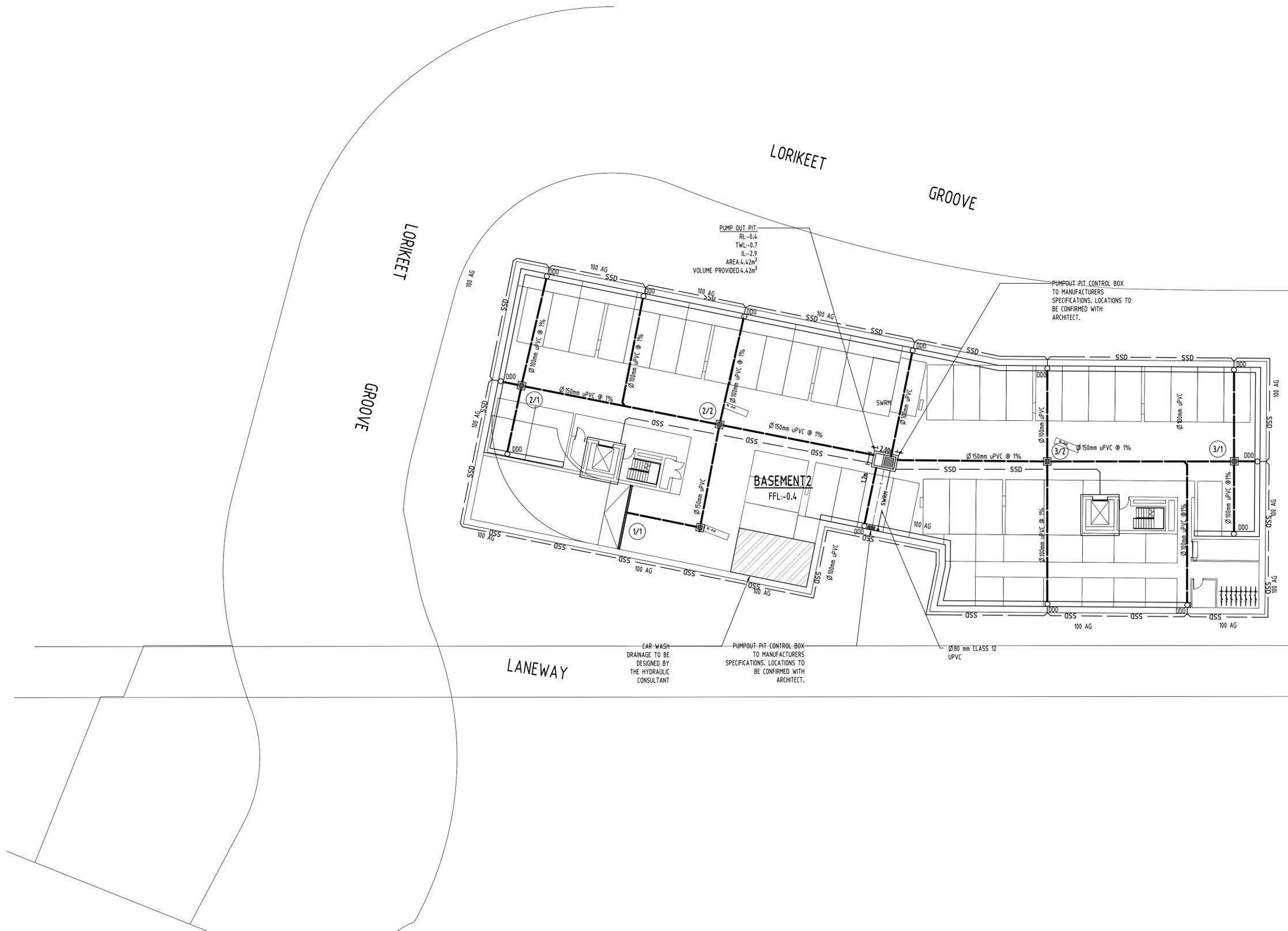
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A.B.N. 21 118 222 530

PROJECT  
**PROPOSED RESIDENTIAL APARTMENTS & TOWNHOUSES**  
23-27 WARRIEWOOD ROAD, WARRIEWOOD  
STAGE II

Drawing Status	FOR APPROVAL
Drawing Title	SITE PLAN
Project No	20160112
Drawing No	SWDA102
Revision No	P1

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	2 of 10	1:250 @ A1



**SUBSOIL DESIGN CALCS:**  
 100yr 2hr ARI STORM: 60.1mm/hr  
 ARIx2=120.2mm  
 AREA OF DRIVEWAY  
 RAMP UNCOVERED: 13.1m²  
 V=Axd  
 =13.10x(120.2/1000)  
 =1.57m³  
 THEREFORE ADOPT A MIN. PUMP OUT PIT SIZE OF 3.0m³ IN ACCORDANCE WITH AS3500.

**NOTE:**  
 BASEMENT DRAINAGE DESIGN SUBJECT TO GEOTECHNICAL INVESTIGATION AND STRUCTURAL DESIGN OF WALLS AND SLABS.

**PUMP-OUT PIT NOTE:**  
 EACH PUMP NEED TO BE INSTALLED FOLLOWING ITEMS:  
 -900SQ HEAVY DUTY CLASS "C" STEEL GRATED LID FOR ACCESS AND MAINTENANCE PURPOSES.  
 -CONFINED SPACE SIGN ABOVE PUMP OUT PIT FOR PUBLIC AWARENESS AND WARNING.  
 -STEP IRONS. REFER SW300 TO DETAILS.  
 -INSTALL TWO (2) K-30 SUBMERSIBLE PUMPS OR EQUAL EACH WITH A PUMP CAPACITY OF 10L/s AT 8m HEAD, FLOAT SWITCH AND CONTROL PANEL TO MANUFACTURER'S SPECIFICATIONS.

**NOTES:**  
 BASEMENT SLAB TO HAVE 1% MINIMUM FALL TO INLET PITS TO AS 2890 REQUIREMENTS.

PIT No.	TYPE	SIZE	GRATE & FRAME	RL	IL
1/1	GTD	200x200	HEAVY DUTY CLASS "C"	-0.4	-0.6
2/1	GSP	450x450	HEAVY DUTY CLASS "C"	-0.5	-0.95
2/2	GSP	600x600	HEAVY DUTY CLASS "C"	-0.5	-1.15
3/1	GSP	450x450	HEAVY DUTY CLASS "C"	-0.5	-0.95
3/2	GSP	450x450	HEAVY DUTY CLASS "C"	-0.5	-1.15

Discipline	Drawing Title and Number	Date	Rev.
ARCH	DA-105	04.2017	C
STRUC			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

QUALITY CONTROL	DATE
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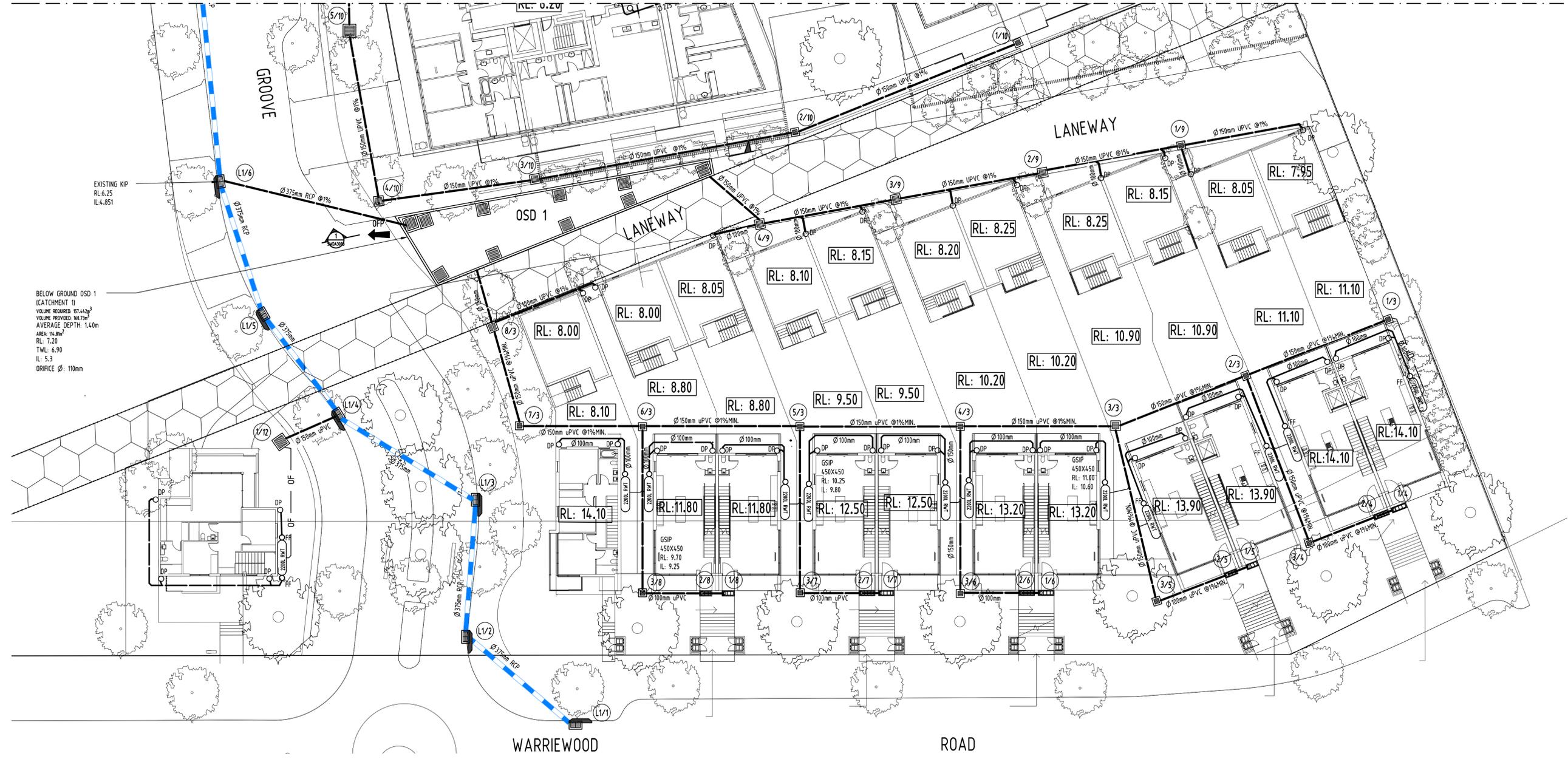
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PROJECT  
**PROPOSED RESIDENTIAL APARTMENTS & TOWNHOUSES**  
 23-27 WARRIEWOOD ROAD, WARRIEWOOD  
 STAGE II

Project No	Drawing No	Revision No
20160112	SWDA200	A



REFER TO SW202B FOR CONTINUATION



Issue	Last revision title	by	Date	Status
A	ISSUE FOR DA	LN	18.10.18	2
PT	PRELIMINARY	LN	17.09.18	1

Reference Coordination Drawing				
Discipline	Drawing Title and Number	Date	Rev.	
ARCH	DA-101	03.2017	C	
ARCH				
STRUCT				
MECH				
ELEC				
HYD				
FIRE				
LANDS				
CIVIL				
SURVEY				

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APPROVED		



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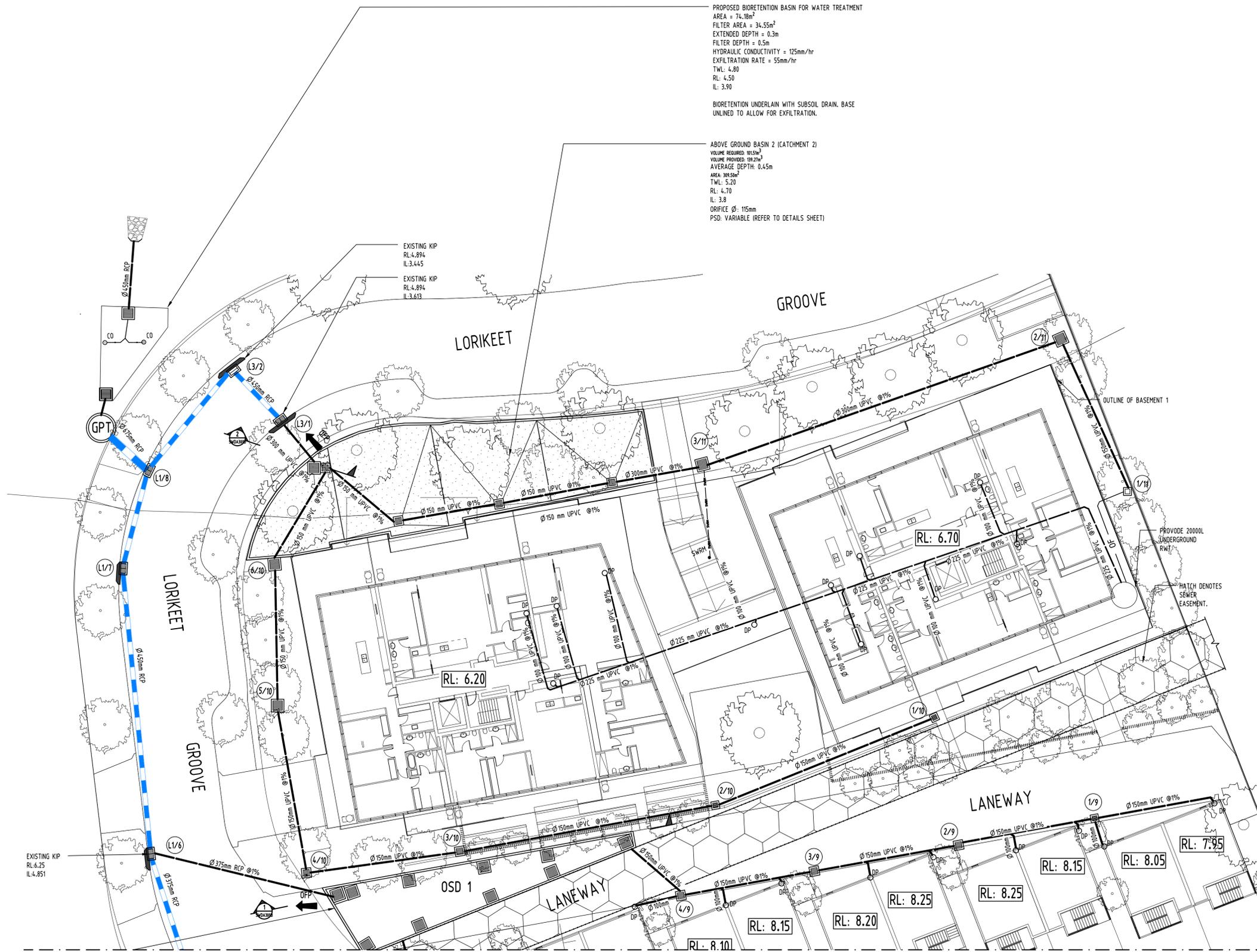
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PROJECT  
**PROPOSED RESIDENTIAL APARTMENTS & TOWNHOUSES**  
 23-27 WARRIEWOOD ROAD, WARRIEWOOD  
 STAGE II

Drawing Status	FOR APPROVAL
Drawing Title	NOT TO BE USED FOR CONSTRUCTION PURPOSES <b>STORMWATER CONCEPT PLAN</b> TOWNHOUSES FIRST FLOOR PLAN
Project No	20160112
Drawing No	SWDA202A
Revision No	A





PROPOSED BIORETENTION BASIN FOR WATER TREATMENT  
 AREA = 74.18m<sup>2</sup>  
 FILTER AREA = 34.55m<sup>2</sup>  
 EXTENDED DEPTH = 0.3m  
 FILTER DEPTH = 0.5m  
 HYDRAULIC CONDUCTIVITY = 125mm/hr  
 EXFILTRATION RATE = 55mm/hr  
 TWL: 4.80  
 RL: 4.50  
 IL: 3.90

BIORETENTION UNDERLAIN WITH SUBSOIL DRAIN. BASE UNLINED TO ALLOW FOR EXFILTRATION.

ABOVE GROUND BASIN 2 (CATCHMENT 2)  
 VOLUME REQUIRED: 1815m<sup>3</sup>  
 VOLUME PROVIDED: 592m<sup>3</sup>  
 AVERAGE DEPTH: 0.45m  
 AREA: 39.56m<sup>2</sup>  
 TWL: 5.20  
 RL: 4.70  
 IL: 3.8  
 ORIFICE Ø: 115mm  
 PSD: VARIABLE (REFER TO DETAILS SHEET)

EXISTING KIP  
 RL: 4.894  
 IL: 3.445

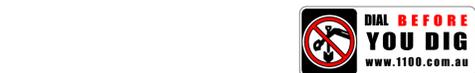
EXISTING KIP  
 RL: 4.894  
 IL: 3.613

EXISTING KIP  
 RL: 6.25  
 IL: 4.851

NOTE:  
 REFER TO CIVIL DESIGN FOR KIP DETAILS.

NOTE:  
 ALL PIPE ARE Ø100mm UPVC U.N.O.

REFER TO SW202A FOR CONTINUATION

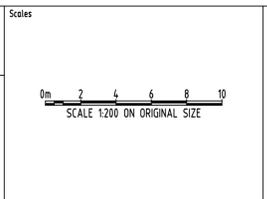


PIT AND GTD SCHEDULE					
PIT NO.	TYPE	SIZE	GRATE & FRAME	RL	IL
1/3	GSIP	450x450	LIGHT DUTY CLASS "B"	11.1	10.55
2/3	GSIP	450x450	LIGHT DUTY CLASS "B"	10.9	10.4
3/3	GSIP	600x600	LIGHT DUTY CLASS "B"	10.9	10.25
4/3	GSIP	450x450	LIGHT DUTY CLASS "B"	10.2	9.75
5/3	GSIP	450x450	LIGHT DUTY CLASS "B"	9.5	9.05
6/3	GSIP	450x450	LIGHT DUTY CLASS "B"	8.8	8.35
7/3	GSIP	450x450	LIGHT DUTY CLASS "B"	8.1	7.65
8/3	GSIP	600x600	LIGHT DUTY CLASS "B"	8.1	7.5
1/4	GSIP	200x200	LIGHT DUTY CLASS "B"	13.95	13.75
2/4	GSIP	450x450	LIGHT DUTY CLASS "B"	13.75	13.3
3/4	GSIP	450x450	LIGHT DUTY CLASS "B"	13.95	13.5
1/5	GSIP	200x200	LIGHT DUTY CLASS "B"	13.9	13.7
2/5	GSIP	200x200	LIGHT DUTY CLASS "B"	13.9	13.7
3/5	GSIP	450x450	LIGHT DUTY CLASS "B"	13.05	12.6
1/6	GSIP	200x200	LIGHT DUTY CLASS "B"	13.05	12.85
2/6	GSIP	200x200	LIGHT DUTY CLASS "B"	13.05	12.85
3/6	GSIP	450x450	LIGHT DUTY CLASS "B"	12.35	11.9
1/7	GSIP	200x200	LIGHT DUTY CLASS "B"	12.35	12.15
2/7	GSIP	200x200	LIGHT DUTY CLASS "B"	12.35	12.15
3/7	GSIP	450x450	LIGHT DUTY CLASS "B"	11.65	11.2
1/8	GSIP	450x450	LIGHT DUTY CLASS "B"	11.65	11.4
2/8	GSIP	450x450	LIGHT DUTY CLASS "B"	11.65	11.4
3/8	GSIP	450x450	LIGHT DUTY CLASS "B"	11.65	11.2
1/9	GSIP	450x450	HEAVY DUTY CLASS "C"	8.1	7.65
2/9	GSIP	600x600	HEAVY DUTY CLASS "C"	8.25	7.5
3/9	GSIP	600x600	HEAVY DUTY CLASS "C"	8.17	7.35
4/9	GSIP	450x450	HEAVY DUTY CLASS "C"	6.55	6.1
1/10	GSIP	450x450	LIGHT DUTY CLASS "B"	6.55	6.1
2/10	GSIP	450x450	LIGHT DUTY CLASS "B"	6.05	5.55
3/10	GSIP	600x600	LIGHT DUTY CLASS "B"	6.05	5.3
4/10	GSIP	600x600	LIGHT DUTY CLASS "B"	6.05	5.15
5/10	GSIP	900x900	LIGHT DUTY CLASS "B"	6.05	5
6/10	GSIP	900x900	LIGHT DUTY CLASS "B"	6.05	4.85
1/11	JP	450x450	LIGHT DUTY CLASS "B"	6.2	5.75
2/11	GSIP	900x900	LIGHT DUTY CLASS "B"	6.1	5.2
3/11	GSIP	900x900	LIGHT DUTY CLASS "B"	5.6	4.7
1/12	GSIP	450x450	LIGHT DUTY CLASS "B"	7.35	6.9

Reference Coordination Drawing			
Discipline	Drawing Title and Number	Date	Rev.
ARCH	DA-100	03.2017	C
MECH			
STRUKT			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

QUALITY CONTROL	
DRAWN	DATE
CHECKED	DATE
DESIGNED	DATE
VERIFIED	DATE
APPROVED	DATE

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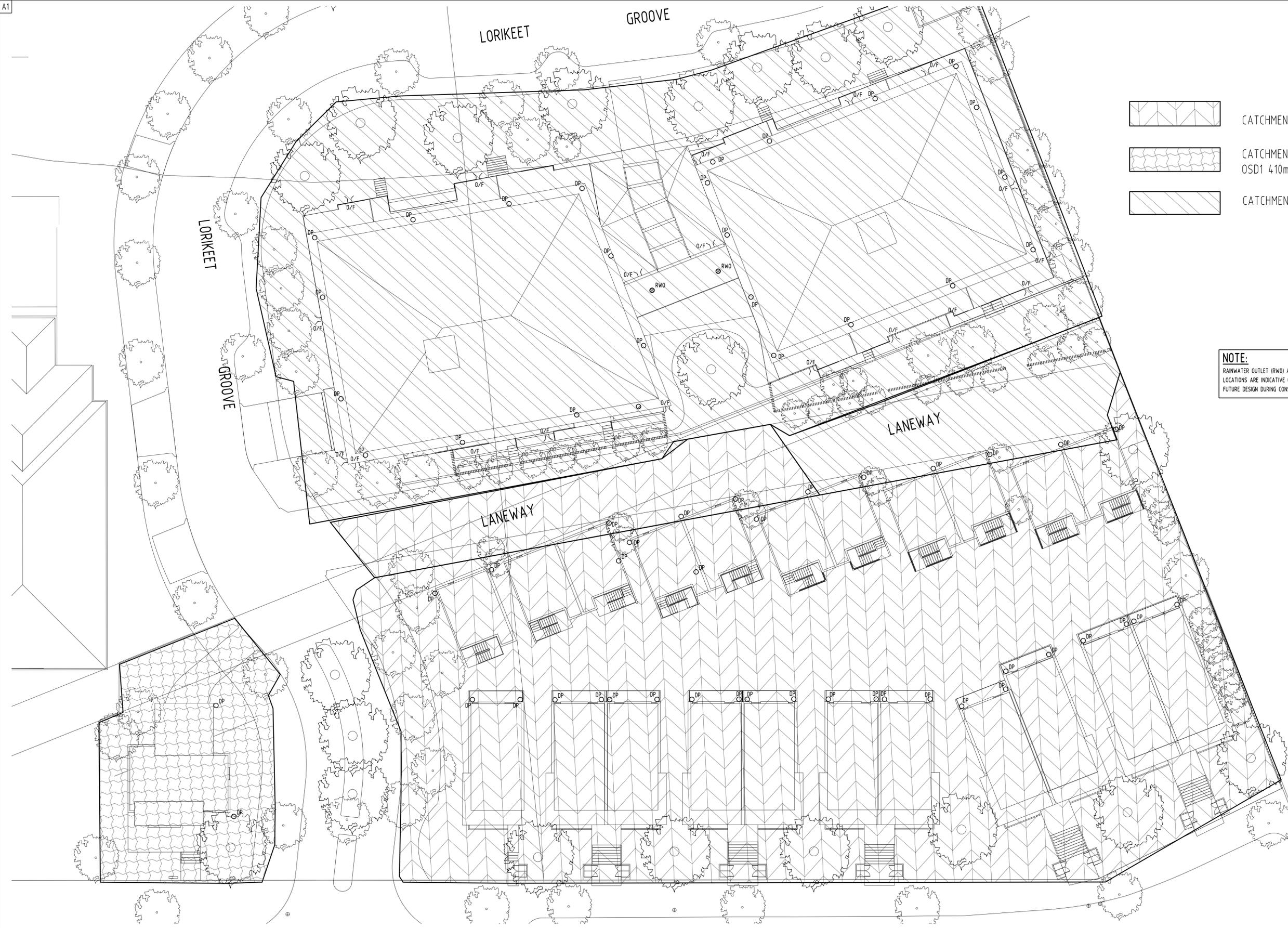
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PROJECT  
**PROPOSED RESIDENTIAL APARTMENTS & TOWNHOUSES**  
 23-27 WARRIEWOOD ROAD, WARRIEWOOD  
 STAGE II

Drawing Status FOR APPROVAL		
NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title <b>STORMWATER DRAINAGE PLAN</b> RESIDENTIAL DEPARTMENTS GROUND FLOOR		
Project No <b>20160112</b>	Drawing No <b>SWDA202B</b>	Revision No <b>A</b>

Issuer internal sequence and revision history			
Issue	Last revision title	by	Date
A	ISSUE FOR DA	LN	18.10.18
P1	PRELIMINARY	LN	17.09.18

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



-  CATCHMENT 1 (4370m2)
-  CATCHMENT 1 (ARE BYPASS OSD1 4.10m2)
-  CATCHMENT 2 (4020m2)

**NOTE:**  
 RAINWATER OUTLET (RWO) AND OVERFLOW (OF)  
 LOCATIONS ARE INDICATIVE ONLY AND SUBJECT TO  
 FUTURE DESIGN DURING CONSTRUCTION CERTIFICATE.

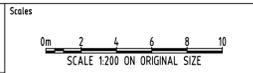


Reference Coordination Drawing			
Discipline	Drawing Title and Number	Date	Rev.
ARCH	DA-103	03.2017	C
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

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DESIGNED	DATE
VERIFIED	DATE
APPROVED	DATE



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**PROPOSED RESIDENTIAL APARTMENTS & TOWNHOUSES**  
 23-27 WARRIEWOOD ROAD, WARRIEWOOD  
 STAGE II

Drawing Status		
Project No	Drawing No	Revision No
20160112	SWDA203	A

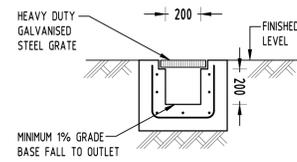
**Issuer internal sequence and revision history**

Issue	Last revision title	by	Date	Status
A	ISSUE FOR DA	LN	18.10.18	2
P1	PRELIMINARY	LN	17.09.18	1

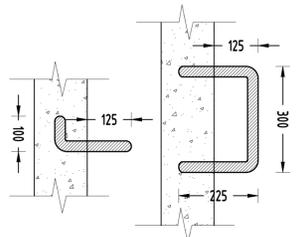
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**STORMWATER CONCEPT PLAN**  
 RESIDENTIAL APARTMENTS & TOWNHOUSES  
 ROOF PLAN

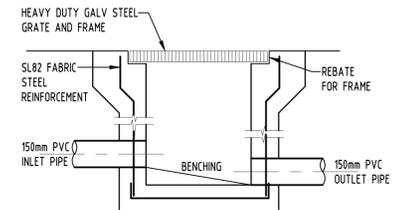
Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	6 of 10	1:200 @ A1



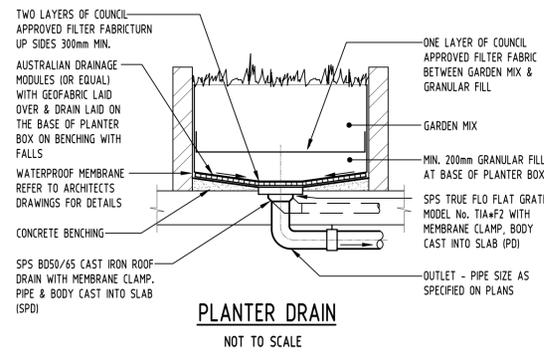
**GRADED TRENCH DRAIN**  
NOT TO SCALE



**STEP IRONS**  
SCALE 1:10



**STORMWATER PIT**  
SCALE 1:20



**PLANTER DRAIN**  
NOT TO SCALE

**LEGEND:**

- STORMWATER LINE
- SSD SUBSOIL LINE
- SWRM STORMWATER RISING MAIN
- GRATED SURFACE INLET PIT
- KERB INLET PIT
- OVERLAND FLOW PATH
- RAINWATER OUTLET
- DISH DRAIN OUTLET
- PLANTER DRAIN
- CAP
- DOWNPIPE

**DRAINAGE NOTES:**

ALL PIPES TO BE LAID ON 75mm SAND BED WITH THE BARRELS FULLY SUPPORTED

100mm AND 150mm DIAMETER PIPES TO BE LAID ON MINIMUM 1% GRADE

MINIMUM DEPTH OF COVER FOR PIPES NOT SUBJECT TO VEHICULAR LOADING TO BE 300mm

ALL DRAINAGE PIPES LAID UNDER PAVEMENT SHALL BE REINFORCED CONCRETE WITH RUBBER RING JOINTS

BACKFILL TRENCHES WITH COMPACTED SAND OR APPROVED AGGREGATE MATERIAL

HEAVY DUTY GRATES AND COVERS ARE TO BE PROVIDED IN TRAFFICABLE AREAS

PIT GRATE TO BE TYPE WELDLK OR APPROVED EQUIVALENT

ALL PITS SHALL BE PROVIDED WITH A LOCKING CLIP

ALL PITS SHALL BE MAINTAINED REGULARLY

TOP OF BENCHING SHALL BE TO THE HALF OF THE OUTLET PIPE DIAMETER

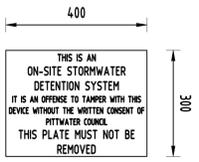
Ø100 SUBSOIL DRAINAGE PIPE 3000mm LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES

COMPRESSIVE STRENGTH f<sub>c</sub> FOR CAST IN SITU CONCRETE TO BE A MINIMUM OF 20MPa AT 28 DAYS

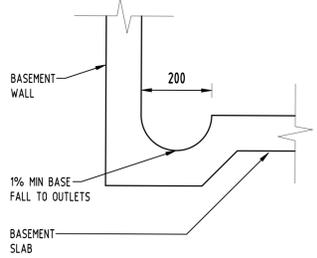
ISOLATED JOINTS TO BE PROVIDED TO ISOLATE CONCRETE PAVEMENTS FROM PITS

ALL TRENCH GRATES PROVIDED SHALL HAVE A MINIMUM CLEAR WIDTH OF 200mm

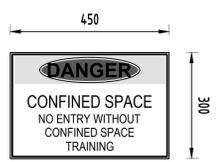
STORMWATER DRAINAGE CONNECTIONS TO THE MAIN SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL



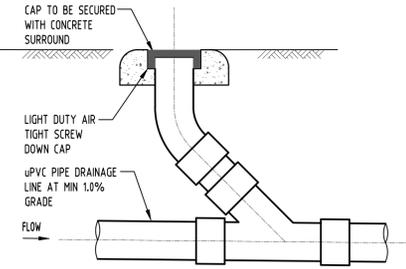
**OSD SIGN**  
SCALE 1:10



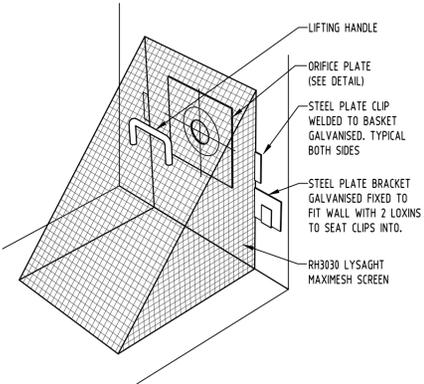
**DISH DRAIN**  
SCALE 1:10



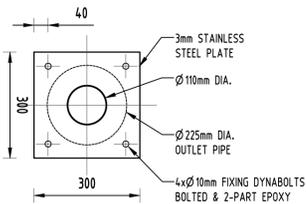
**CONFINED SPACE SIGN**  
SCALE 1:10



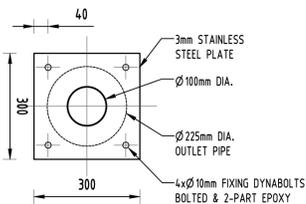
**CLEANING EYE**  
SCALE 1:10



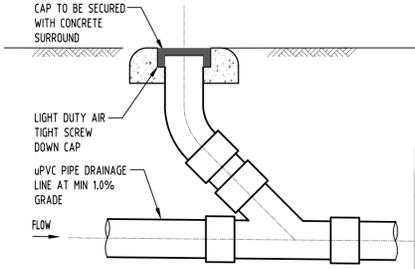
**DEBRIS SCREEN**  
NOT TO SCALE



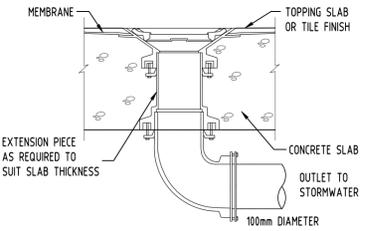
**ORIFICE PLATE FOR OSD 1**  
SCALE 1:10



**ORIFICE PLATE FOR OSD 2**  
SCALE 1:10



**CLEANING EYE**  
NOT TO SCALE



**RAINWATER OUTLET**  
NOT TO SCALE

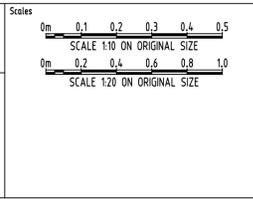
**TABLE 1. PRE VS POST (30% INCREASE IN RAINFALL+ CLIMATE CHANGE)**

The site is divided into 2 separate catchments							
<b>Catchment 1 (11 TOWNHOUSES)</b>							
Imp. Area	0.267 ha						
Per. Area	0.17 ha						
<b>Total Area</b>	<b>0.437 ha</b>						
<b>Catchment 1 (By pass OSD1)</b>							
Imp. Area	0.015 ha						
Per. Area	0.026 ha						
<b>Total Area</b>	<b>0.041 ha</b>						
<b>Catchment 2 (RESIDENTIAL DEVELOPMENT)</b>							
Imp. Area	0.234 ha						
Per. Area	0.167 ha						
<b>Total Area</b>	<b>0.402 ha</b>						
<b>Pre-Development</b>							
Catchment	B	1%-30min	1%-60min	1%-120min	1%-180min	1%-360min	
1	0.045	53	86	95	87	88	
2	0.04	52	83	91	85	84	
<b>Post-Development</b>							
Catchment	B	1%-30min	1%-60min	1%-120min	1%-180min	1%-360min	Volume required (m3)
1	0.045	39	71	83	76	73	157.442
By-pass OSD1	0.04	3	4	5	5	5	
2	0.055	46	82	86	76	74	101.151
							Volume provided (m3)
							160.73

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

QUALITY CONTROL	DATE
DRAWN	
CHECKED	
DESIGNED	
VERIFIED	
APPROVED	

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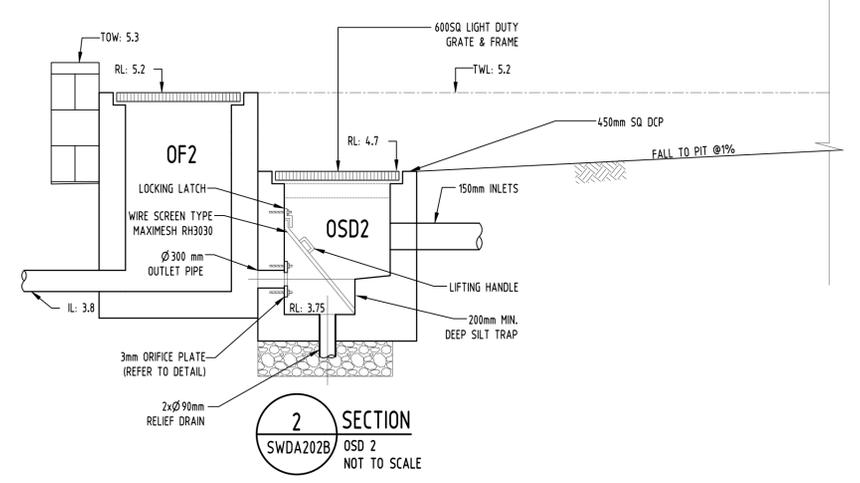
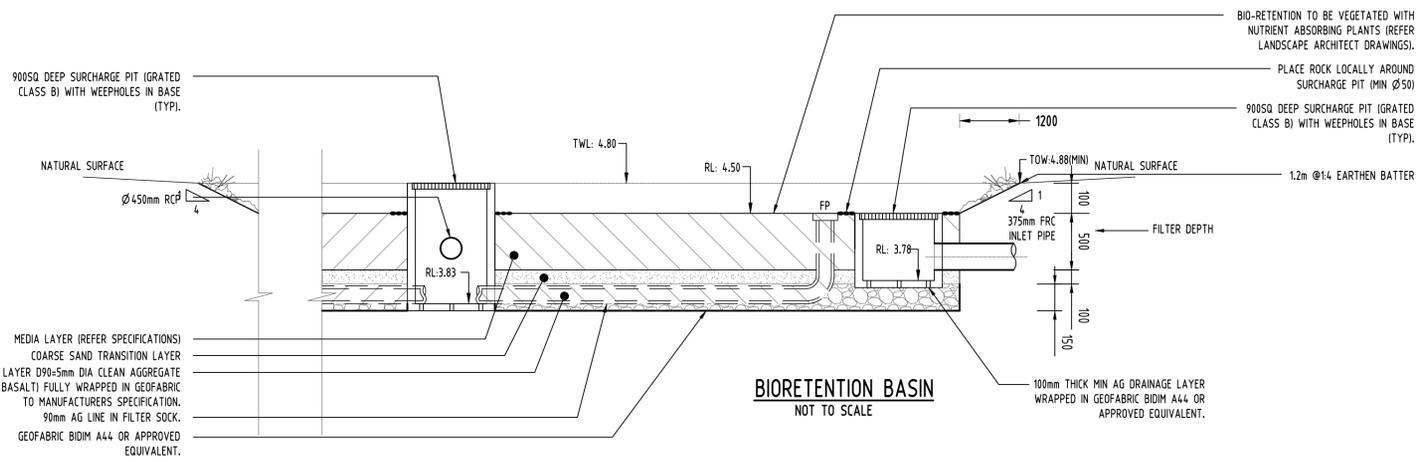
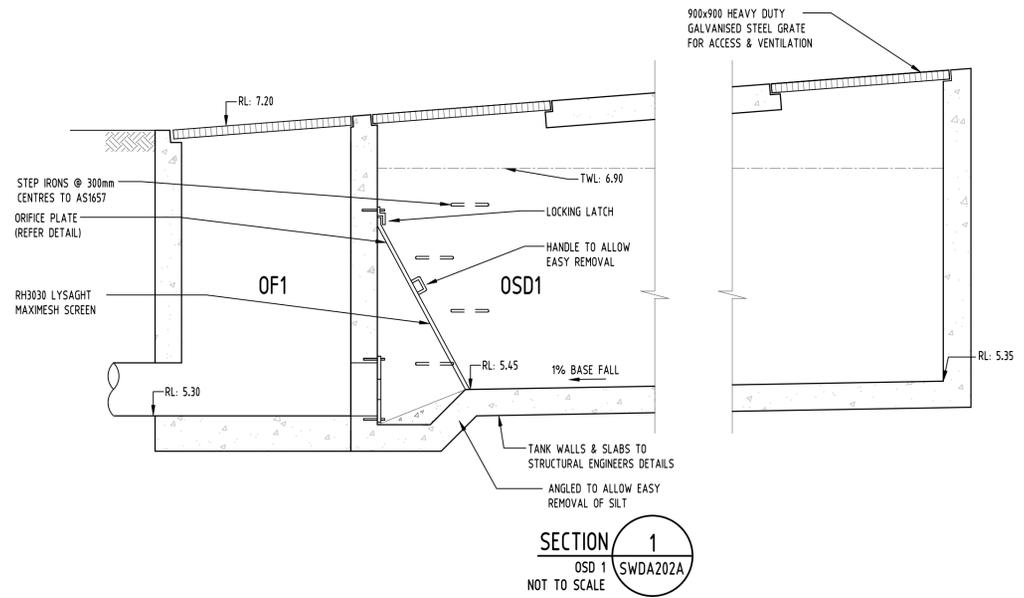
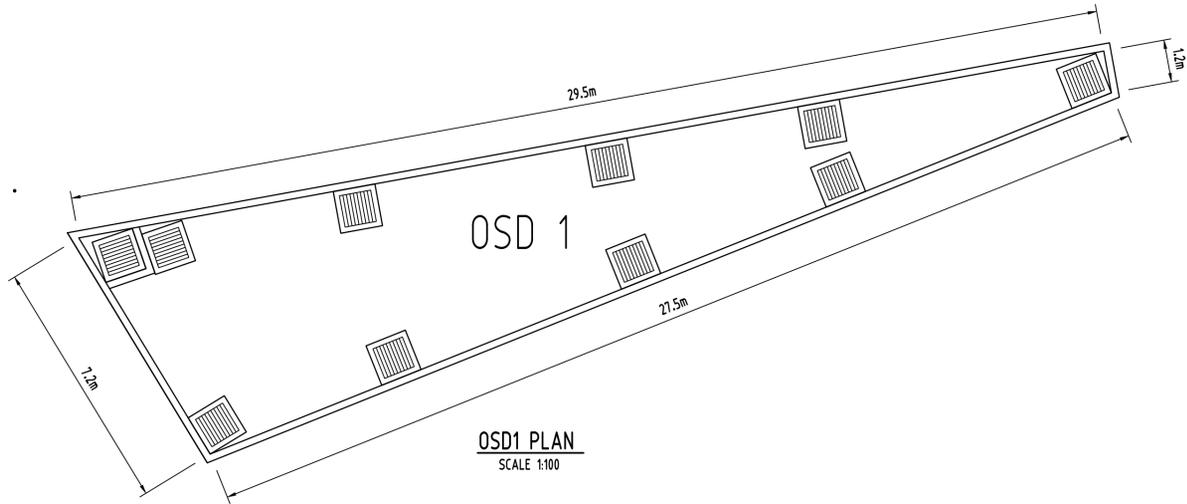
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PROJECT  
**PROPOSED RESIDENTIAL APARTMENTS & TOWNHOUSES**  
23-27 WARRIEWOOD ROAD, WARRIEWOOD  
STAGE II

Drawing Status	FOR APPROVAL
Drawing Title	NOT TO BE USED FOR CONSTRUCTION PURPOSES <b>STORMWATER CONCEPT PLAN</b> DETAILS SHEET 1 OF 2
Project No	20160112
Drawing No	SWDA300A
Revision No	A

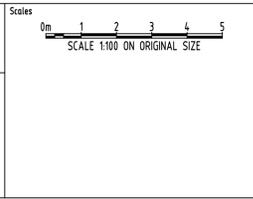
Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	7 of 10	AS SHOWN



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

QUALITY CONTROL	DATE
DRAWN	
CHECKED	
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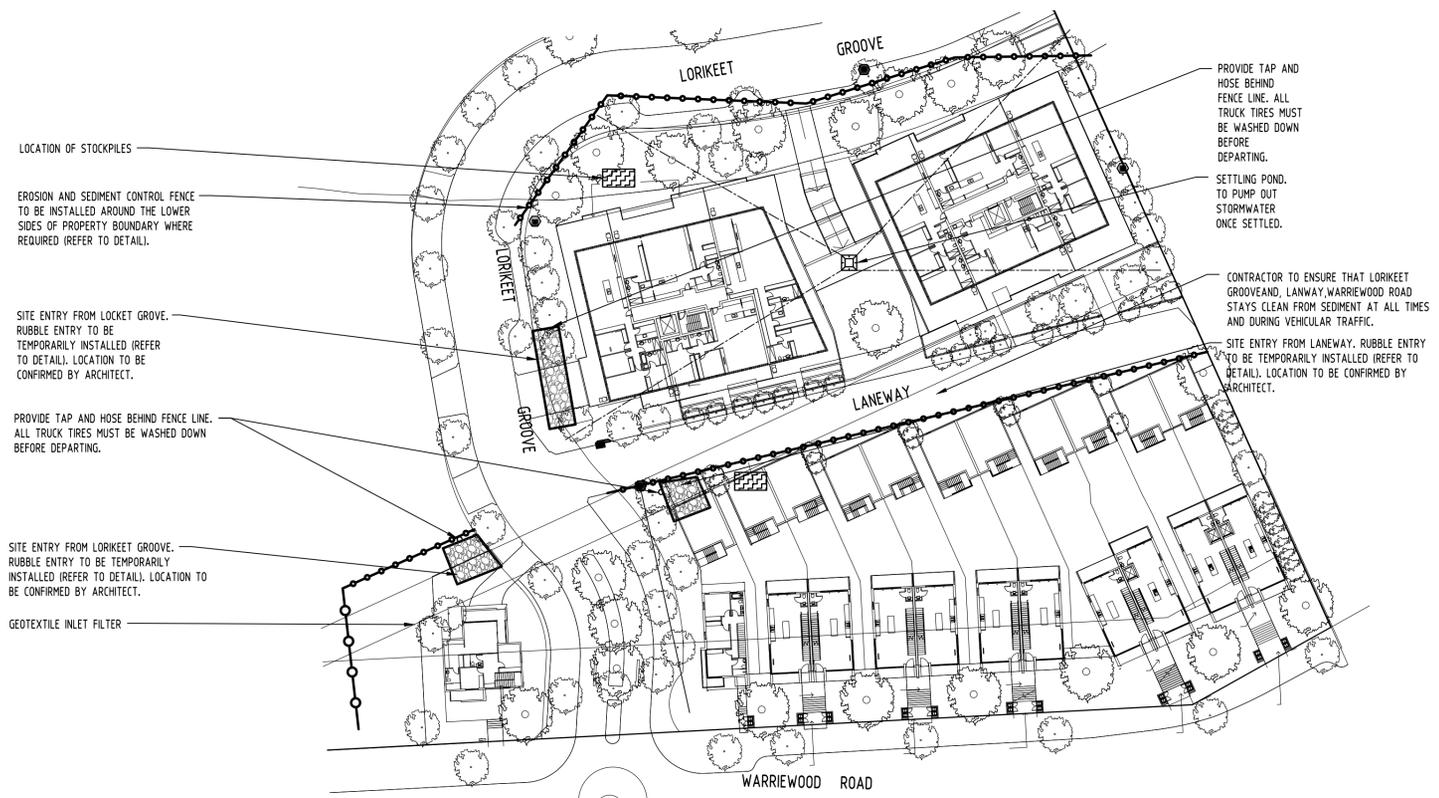
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PROJECT  
PROPOSED RESIDENTIAL  
APARTMENTS & TOWNHOUSES  
23-27 WARRIEWOOD ROAD, WARRIEWOOD  
STAGE II

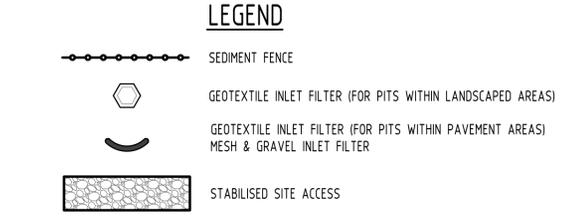
Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	8 of 10	1:200 @ A1

Project No	Drawing No	Revision No
20160112	SWDA300B	A

Drawing Status FOR APPROVAL  
NOT TO BE USED FOR CONSTRUCTION PURPOSES  
Drawing Title STORMWATER CONCEPT PLAN  
DETAILS  
SHEET 2 OF 2



**EROSION & SEDIMENT CONTROL PLAN**  
1:500



**EROSION & SEDIMENTATION CONTROL NOTES**

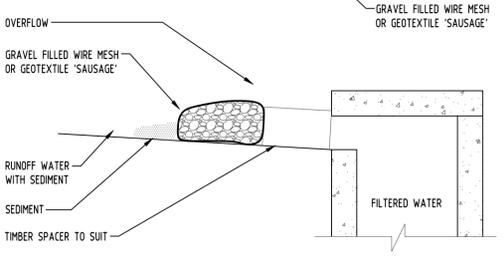
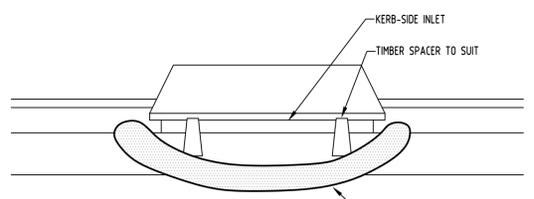
- CONTRACTOR SHALL PROVIDE SEDIMENT FENCING MATERIAL DURING CONSTRUCTION TO THE LOW SIDE OF THE WORKS. TIE SEDIMENT FENCING MATERIAL TO CYCLONE WIRE SECURITY FENCE. SEDIMENT CONTROL FABRIC SHALL BE AN APPROVED MATERIAL (EG. HUMES PROPEX SILT STOP) STANDING 300mm ABOVE GROUND & EXTENDING 150mm BELOW GROUND.
- EXISTING DRAINS LOCATED WITHIN THE SITE SHALL ALSO BE ISOLATED BY SEDIMENT FENCING MATERIAL.
- NO PARKING OR STOCKPILING OF MATERIALS IS PERMITTED ON THE LOWER SIDE OF THE SEDIMENT FENCE.
- GRASS VERGES SHALL BE MAINTAINED AS MUCH AS PRACTICAL TO PROVIDE A BUFFER ZONE TO THE CONSTRUCTION SITE.
- 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.

**GENERAL NOTES**

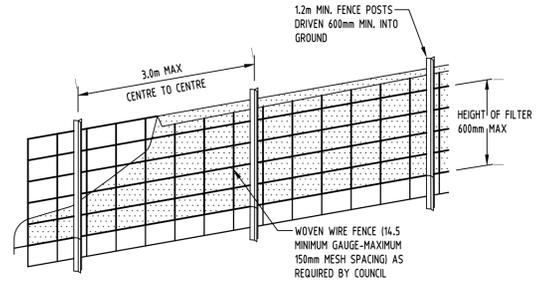
- THIS PLAN IS A CONCEPT PLAN ONLY FOR STORMWATER DISPOSAL & EROSION CONTROL. IT IS NOT SUITABLE FOR CONSTRUCTION. THIS PLAN SHOULD BE ADAPTED BY THE BUILDER DURING DEMOLITION, EXCAVATION & CONSTRUCTION PHASES TO ENSURE ADEQUATE PERFORMANCE.
- ALL DRAINAGE LAYOUT & DETAILS ARE DIAGRAMMATIC & INDICATIVE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

**CLAY SOILS**

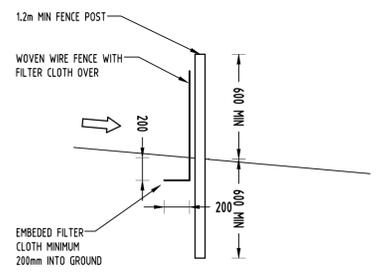
- A SYSTEM SHALL BE INSTALLED TO EITHER:
- TRANSPORT STORMWATER RUNOFF WITH SUSPENDED SOLIDS FROM SITE VIA PUMP TRUCKS.
  - TREAT THE STORMWATER RUNOFF WITH SUSPENDED SOLIDS SO THE DISCHARGE WATER QUALITY TO COUNCIL STORMWATER DRAINAGE SYSTEM HAS A MAXIMUM CONCENTRATION OF SUSPENDED SOLIDS THAT DOES 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**  
NOT TO SCALE



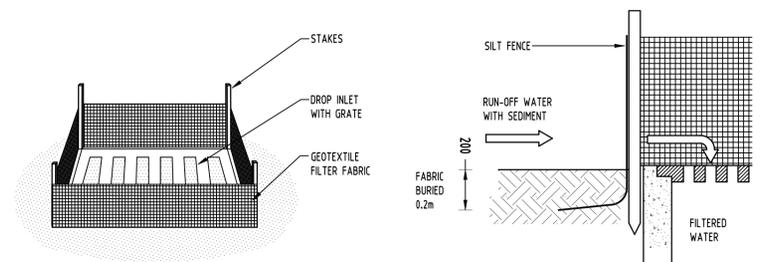
DIAGRAMMATIC VIEW



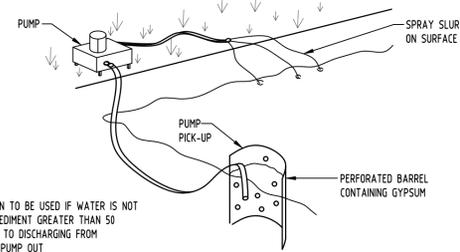
TYPICAL SECTION  
**SEDIMENT FENCE**  
NOT TO SCALE

**CONSTRUCTION NOTES:**

- FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN 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



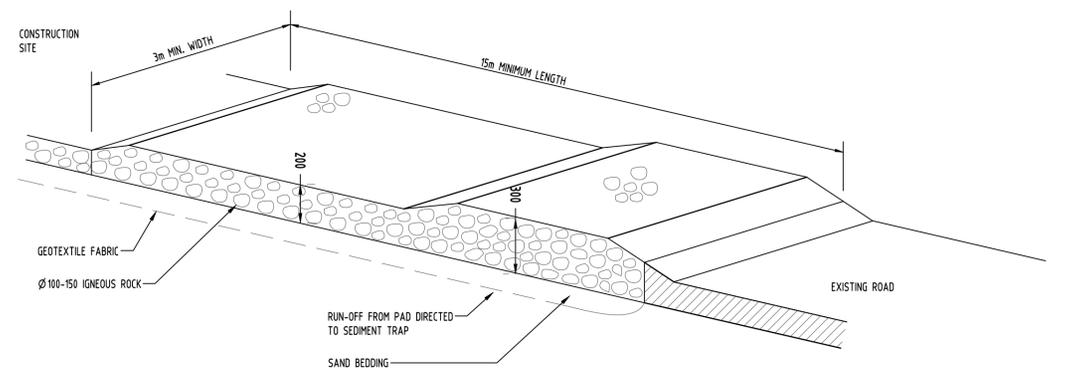
**GEOTEXTILE INLET FILTER**  
NOT TO SCALE



**NOTE:**

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

**FLOCCULATION DETAIL**  
NOT TO SCALE

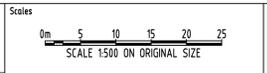


**TEMPORARY CONSTRUCTION EXIT**  
NOT TO SCALE



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

QUALITY CONTROL		DATE
DRAWN		
CHECKED		
DESIGNED		
VERIFIED		
APPROVED		



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PROJECT  
**PROPOSED RESIDENTIAL APARTMENTS & TOWNHOUSES**  
23-27 WARRIEWOOD ROAD, WARRIEWOOD  
STAGE II

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	9 of 10	AS SHOWN

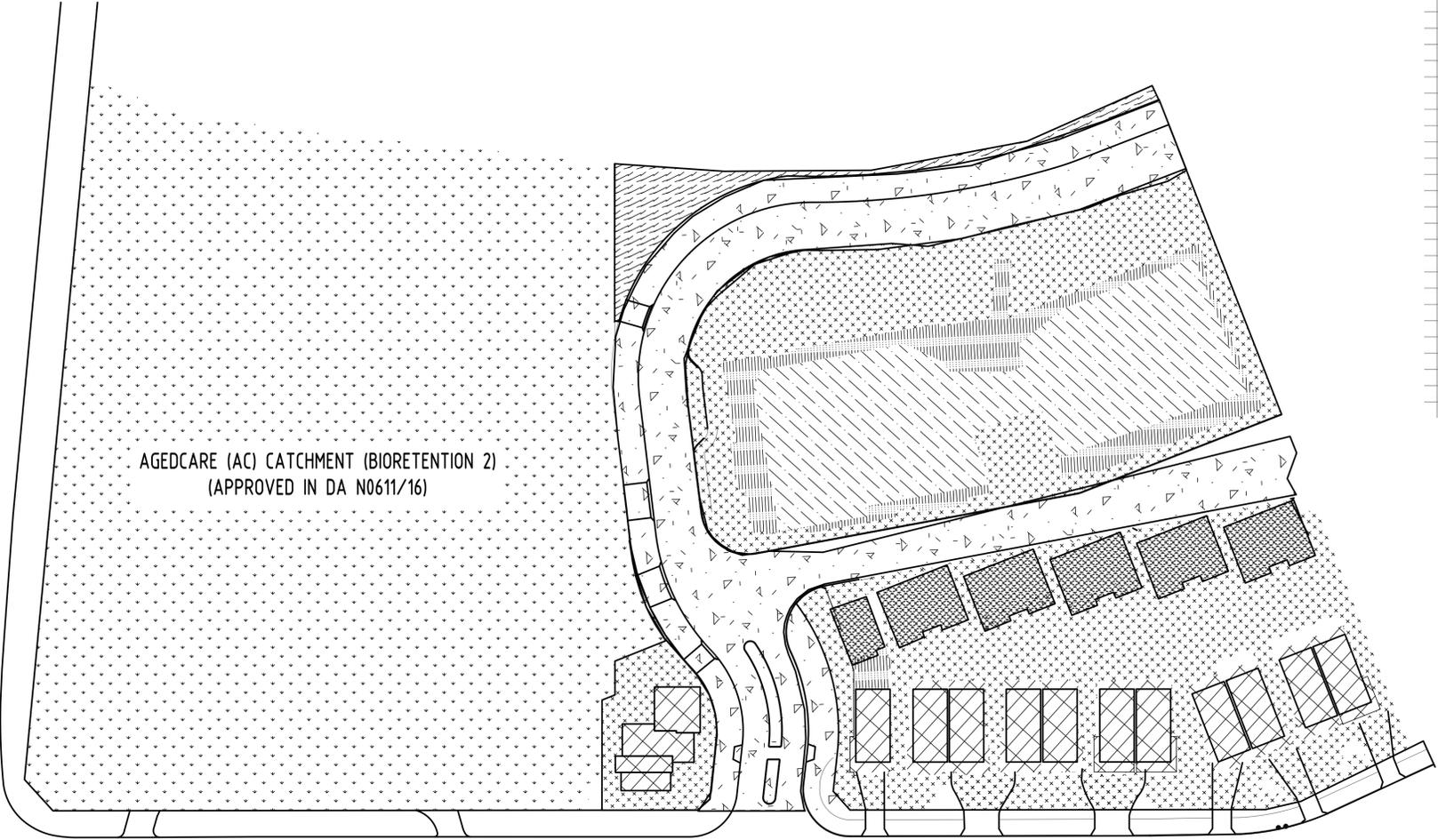
Drawing Status	FOR APPROVAL
Drawing Title	NOT TO BE USED FOR CONSTRUCTION PURPOSES
	<b>STORMWATER CONCEPT PLAN</b>
	EROSION & SEDIMENT CONTROL
	PLAN AND DETAILS SHEET
Project No	20160112 SWDA400
Drawing No	
Revision No	A

**TOWNHOUSES (TH) CATCHMENT (BIORETENTION 1)**

-  RIPARIAN ZONE INTO BIO 1. AREA: 317.07m<sup>2</sup>
-  COURTYARD INTO GPT & BIO 1. AREA: 3107m<sup>2</sup>
-  RESIDENTIAL APARTMENT ROOF INTO 20000L RWT, GPT & BIO 1. AREA: 1586m<sup>2</sup>
-  12 TOWNHOUSES ROOF INTO 12x2200L RWT, GPT & BIO 1. AREA: 850m<sup>2</sup>
-  SEALED ROADS INTO GPT & BIO 1. AREA: 2444m<sup>2</sup>
-  PAVED AREA INTO GPT & BIO 1. AREA: 1317m<sup>2</sup>
-  SEALED ROADS INTO GPT & BIO 1. AREA: 2444m<sup>2</sup>
-  ROOF INTO GPT & BIO 1. AREA: 605m<sup>2</sup>

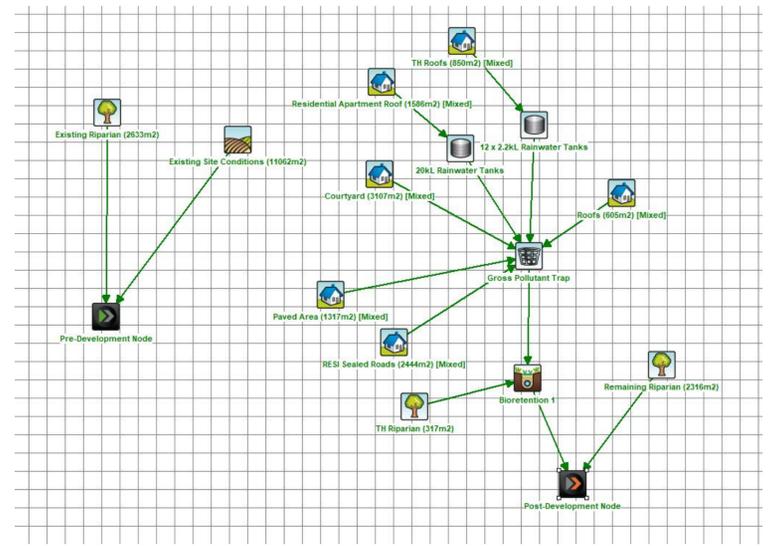
**AGEDCARE (AC) CATCHMENT (BIORETENTION 2)**

-  AREA WHICH MUSIC MODEL BEEN APPROVED IN DA N0611/16



AGEDCARE (AC) CATCHMENT (BIORETENTION 2)  
(APPROVED IN DA N0611/16)

MUSIC CATCHMENT PLAN  
SCALE 1500



MUSIC MODEL  
NOT TO SCALE

	Sources	Residual Load	% Reduction
Flow (ML/yr)	12.4	6.77	45.4
Total Suspended Solids (kg/yr)	2170	237	89.1
Total Phosphorus (kg/yr)	4.43	0.903	79.6
Total Nitrogen (kg/yr)	26.5	10.1	61.9
Gross Pollutants (kg/yr)	260	0	100

MUSIC RESULT  
NOT TO SCALE



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

QUALITY CONTROL	
DRAWN	DATE
CHECKED	DATE
DESIGNED	DATE
VERIFIED	DATE
APPROVED	DATE



Scopes

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PROJECT  
**PROPOSED RESIDENTIAL APARTMENTS & TOWNHOUSES**  
23-27 WARRIEWOOD ROAD, WARRIEWOOD  
STAGE II

Drawing Status FOR APPROVAL		
NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title <b>STORMWATER CONCEPT PLAN</b> MUSIC CATCHMENT PLAN		
Project No	Drawing No	Revision No
20160112	SWDA500	A

Issuer internal sequence and revision history			
Issue	Last revision title	by	Date
A	ISSUE FOR DA	LN	18.10.18
PT	PRELIMINARY	LN	17.09.18

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	10 of 10	AS SHOWN

A.B.N. 21 118 222 530