

# MIXED-USED DEVELOPMENT 1102 BARRENJOEY ROAD PALM BEACH NSW 2108

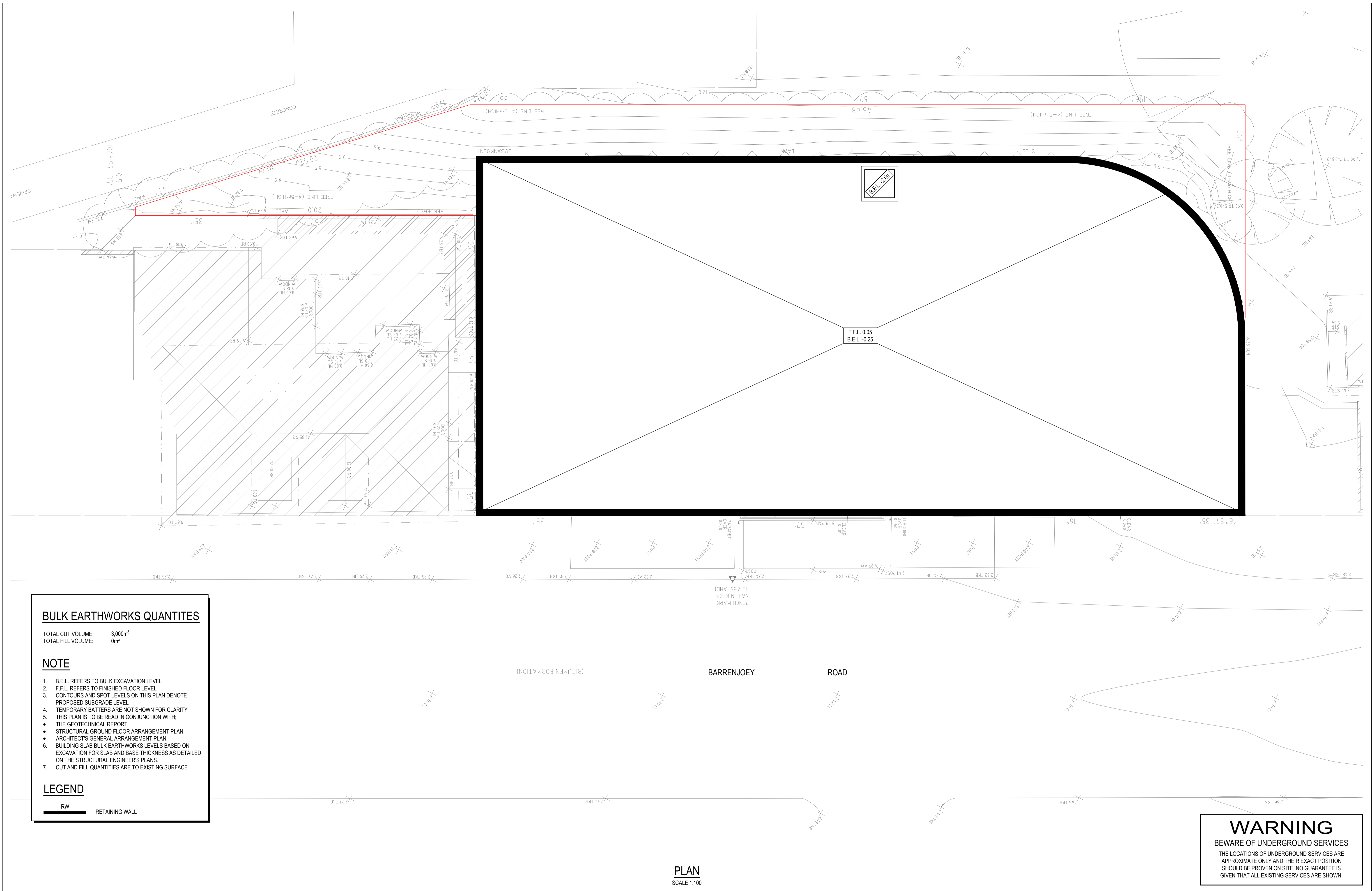
## CIVIL DRAWING LIST

C000	COVER SHEET
C201	BULK EARTHWORKS
C210	EROSION & SEDIMENT CONTROL PLAN
C401	DRAINAGE LAYOUT - BASEMENT
C402	DRAINAGE LAYOUT - GROUND
C403	DRAINAGE DETAILS



LOCALITY PLAN  
NTS

<b>REVISIONS:</b> <table border="1"> <thead> <tr> <th>No.</th> <th>REVISION DESCRIPTION</th> <th>DRAWN</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>ISSUED FOR S.4.55 APPLICATION</td> <td>HB</td> <td>19.04.21</td> </tr> </tbody> </table>		No.	REVISION DESCRIPTION	DRAWN	DATE	A	ISSUED FOR S.4.55 APPLICATION	HB	19.04.21	SCALE BAR  <small>                     COPYRIGHT © THE DRAWING IS COPYRIGHT AND THE PROPERTY OF VAN DER MEER (NSW) PTY LTD. IT MUST NOT BE REPRODUCED, COPIED OR USED WITHOUT THE AUTHORITY OF VAN DER MEER (NSW) PTY LTD.                      WHERE THE DRAWING HAS BEEN ALTERED, AMENDED OR CHANGED EITHER MANUALLY OR ELECTRONICALLY BY ANY THIRD PARTY, THIS IS AN UNCONTROLLED DOCUMENT ISSUED FOR INFORMATION PURPOSES ONLY. UNLESS SIGNED, FIGURES DIMENSIONS TAKE PRECEDENCE OVER SCALES. DO NOT SCALE REDUCED SIZE DRAWINGS. VERIFY DIMENSIONS PRIOR TO COMMENCING ANY ON-SITE OR OFF-SITE WORKS OR FABRICATION. IF IN DOUBT - ASK.                 </small>	 van der Meer Consulting LEVEL 6, 39 CHANDOS STREET ST LEONARDS NSW 2065 Telephone 61-2-9436 0433 Fax 61-2-9436 1370 <small>www.vandermeer.com.au van der Meer (NSW) Pty Ltd A.B.N. 56 158 266 301</small>	CLIENT <b>REFORM PROJECTS</b> 15/108 DUNNING AVENUE ROSEBERY NSW 2018  ARCHITECT <b>ROB MILLS ARCHITECTURE</b> 51 QUEEN STREET WOOLLAHRA NSW 2065	PROJECT TITLE <b>MIXED-USE DEVELOPMENT</b> 1102 BARRENJOEY ROAD PALM BEACH, NSW 2108  DRAWING TITLE <b>COVER SHEET</b>	DRAWING STATUS <b>APPROVAL ISSUE</b> NOT TO BE USED FOR CONSTRUCTION <table border="1"> <thead> <tr> <th>PROJECT LEADER</th> <th>DESIGNER</th> <th>SIGNATURE</th> </tr> </thead> <tbody> <tr> <td>MC</td> <td>LO</td> <td></td> </tr> <tr> <th>DRAFTSPERSON</th> <th>SCALE</th> <th>DATE</th> <th>SHEET SIZE</th> </tr> <tr> <td>LO</td> <td></td> <td>APRIL 2021</td> <td>A1</td> </tr> <tr> <th>JOB No.</th> <th>DRAWING No.</th> <th>REVISION</th> <th></th> </tr> <tr> <td>SY202-105</td> <td>C000</td> <td>A</td> <td></td> </tr> </tbody> </table>	PROJECT LEADER	DESIGNER	SIGNATURE	MC	LO		DRAFTSPERSON	SCALE	DATE	SHEET SIZE	LO		APRIL 2021	A1	JOB No.	DRAWING No.	REVISION		SY202-105	C000	A	
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**BULK EARTHWORKS QUANTITIES**

TOTAL CUT VOLUME: 3,000m<sup>3</sup>  
 TOTAL FILL VOLUME: 0m<sup>3</sup>

**NOTE**

1. B.E.L. REFERS TO BULK EXCAVATION LEVEL
2. F.F.L. REFERS TO FINISHED FLOOR LEVEL
3. CONTOURS AND SPOT LEVELS ON THIS PLAN DENOTE PROPOSED SUBGRADE LEVEL
4. TEMPORARY BATTERS ARE NOT SHOWN FOR CLARITY THIS PLAN IS TO BE READ IN CONJUNCTION WITH:
  - THE GEOTECHNICAL REPORT
  - STRUCTURAL GROUND FLOOR ARRANGEMENT PLAN
  - ARCHITECT'S GENERAL ARRANGEMENT PLAN
5. BUILDING SLAB BULK EARTHWORKS LEVELS BASED ON EXCAVATION FOR SLAB AND BASE THICKNESS AS DETAILED ON THE STRUCTURAL ENGINEER'S PLANS.
6. CUT AND FILL QUANTITIES ARE TO EXISTING SURFACE

**LEGEND**

RW RETAINING WALL

PLAN  
SCALE 1:100

**WARNING**  
 BEWARE OF UNDERGROUND SERVICES  
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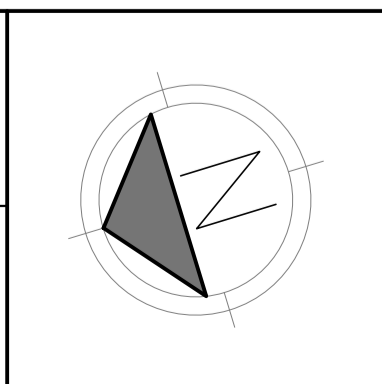
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A	ISSUED FOR S.4.55 APPLICATION

SCALE BAR  
0 1 2 3 4 5m 10m  
SCALE 1:100

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van der Meer Consulting  
**van der meer**  
 LEVEL 6, 39 CHANDOS STREET  
 ST LEONARDS NSW 2065  
 Telephone 61-2-9436 0433 Fax 61-2-9436 1370

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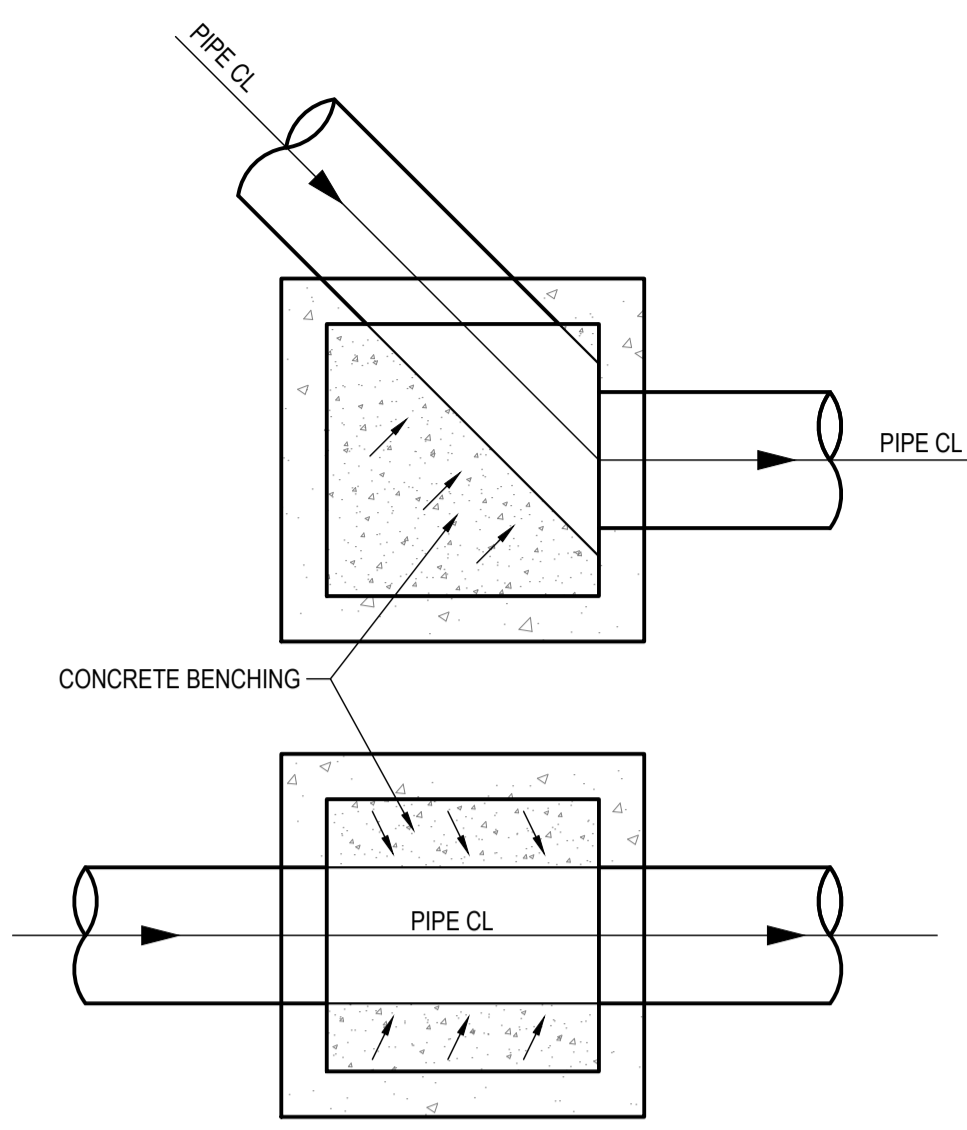
CLIENT  
**REFORM PROJECTS**  
 15/108 DUNNING AVENUE  
 ROSEBERY NSW 2018

ARCHITECT  
**ROB MILLS ARCHITECTURE**  
 51 QUEEN STREET WOOLLAHRA NSW 2065

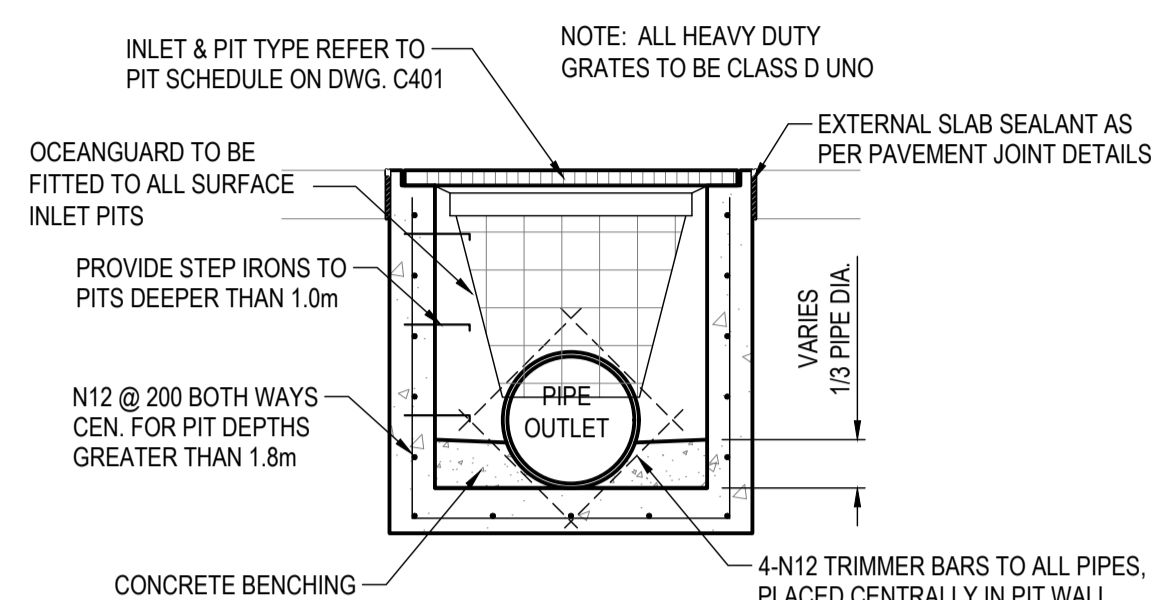
PROJECT TITLE  
**MIXED-USE DEVELOPMENT**  
 1102 BARRENJOEY ROAD  
 PALM BEACH, NSW 2108

DRAWING TITLE  
**BULK EARTHWORKS**

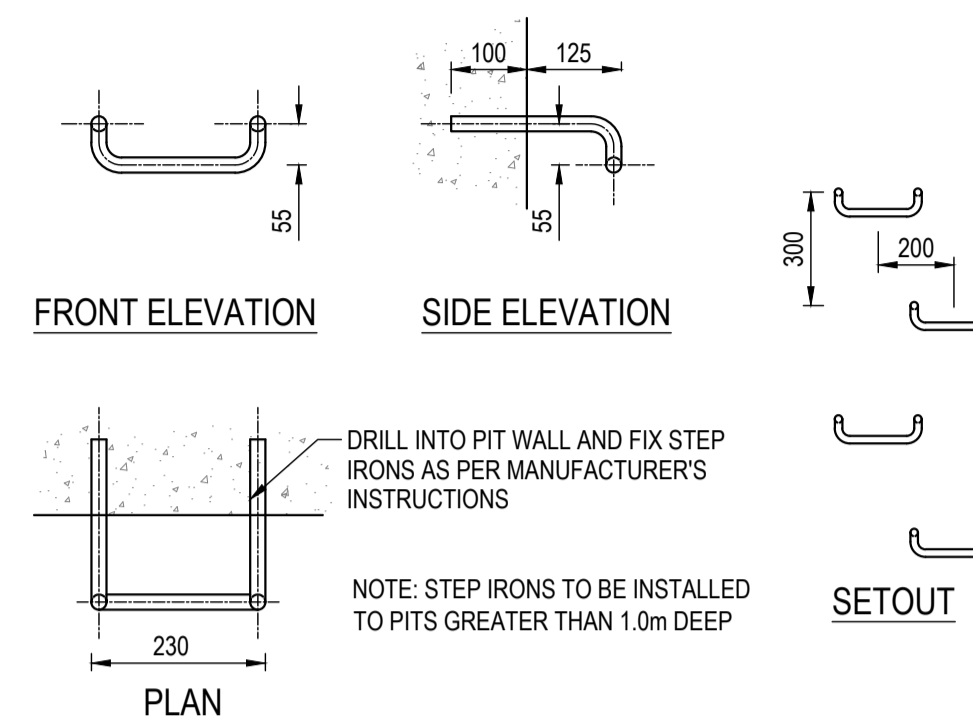
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<b>APPROVAL ISSUE</b>			
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DRAFTSPERSON LO	SCALE AS SHOWN	DATE APRIL 2021	SHEET SIZE A1
JOB No. SY202-105	DRAWING No. C201	REVISION A	



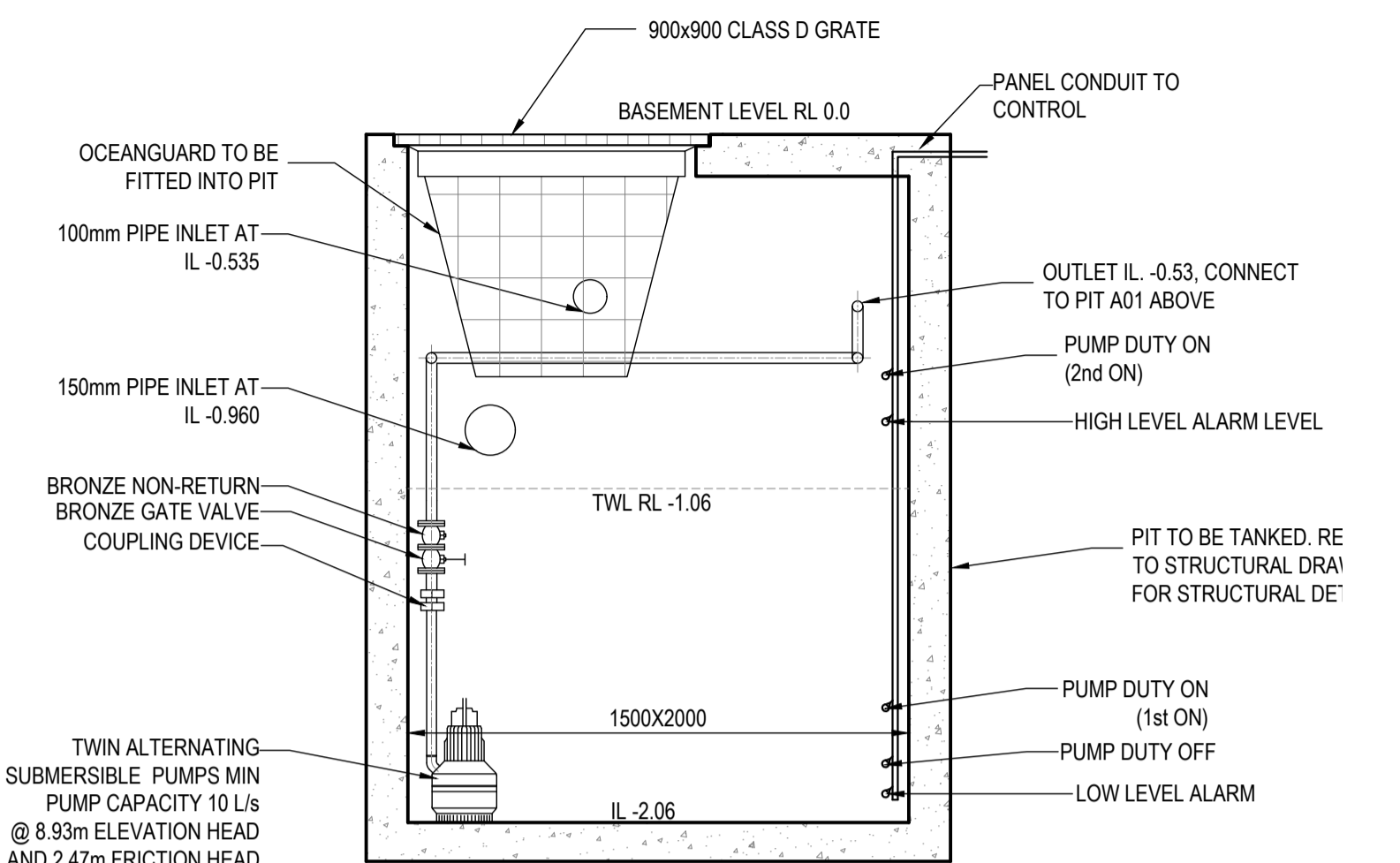
**TYPICAL CONCRETE BENCHING**  
SCALE 1:25



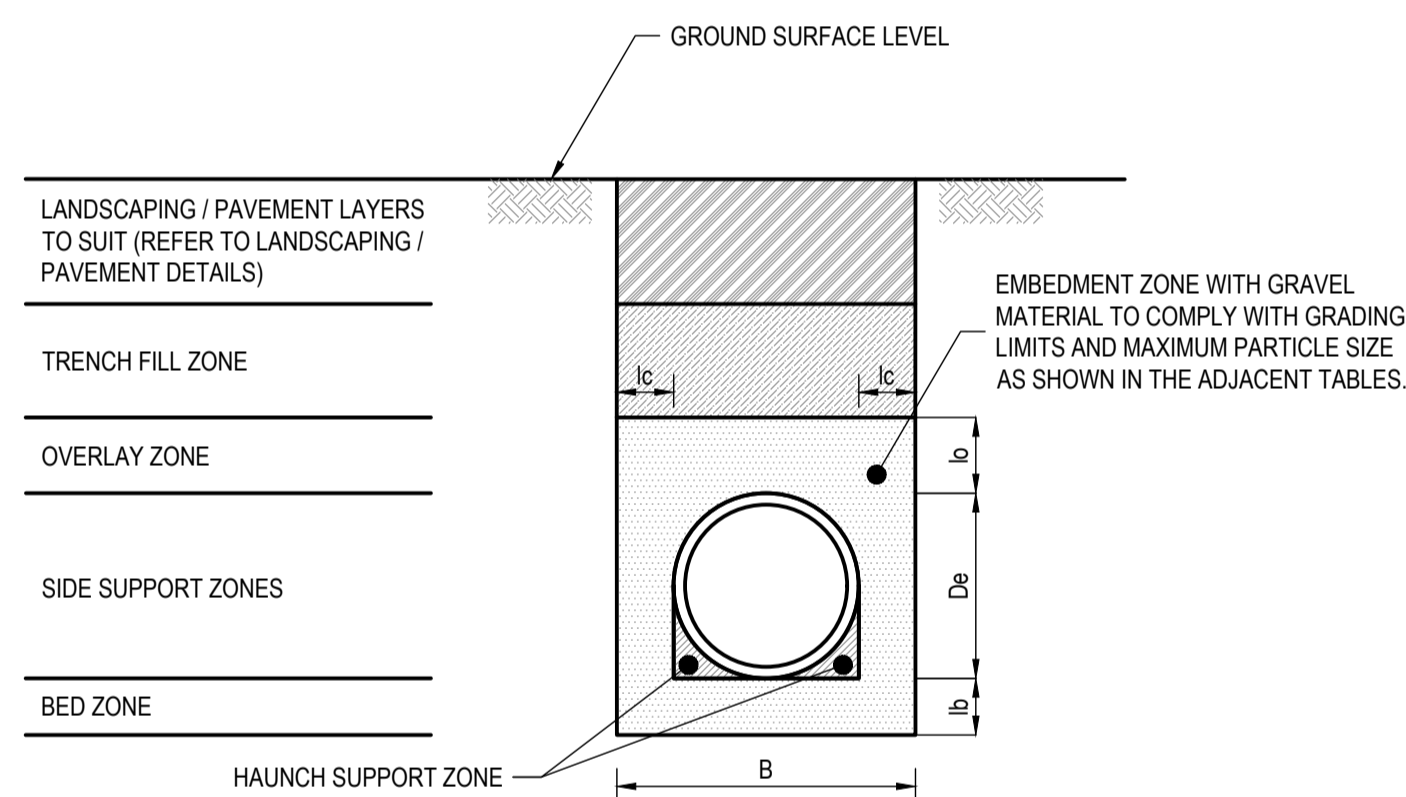
**TYPICAL INLET PIT & JUNCTION PIT**  
SCALE 1:25



**TYPICAL STEP IRON DETAIL**  
NTS



**PIT B4 DETAIL**  
SCALE 1:20



**FLEXIBLE PIPE SUPPORT**  
NTS

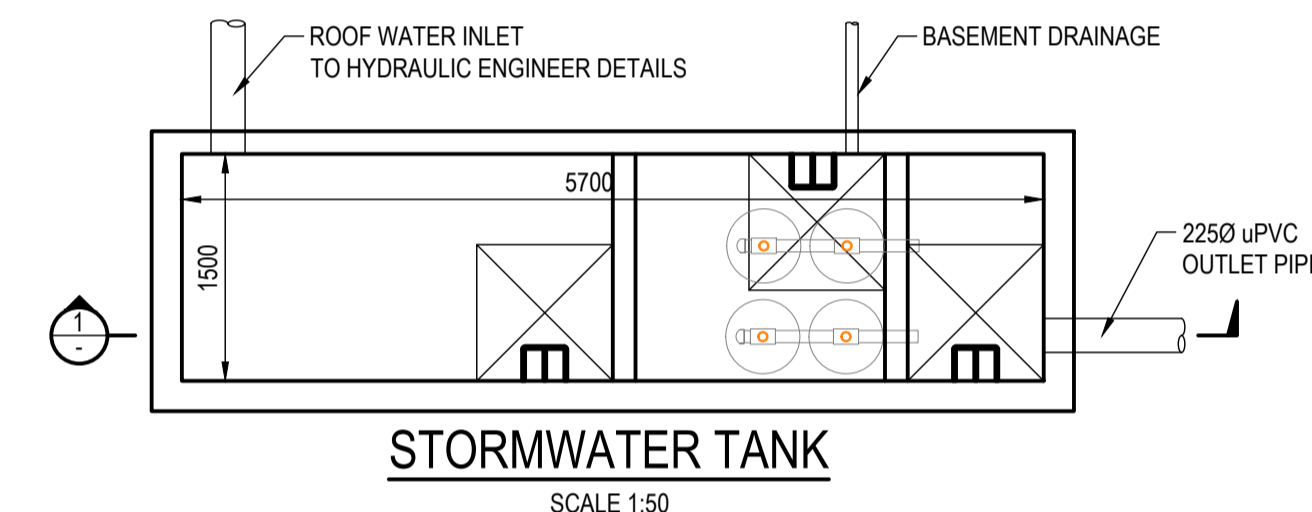
**COARSE AGGREGATE - LIMITS OF DEVIATION**

SIEVE APERTURE (mm)	LIMITS OF DEVIATION (%)											
	NOMINAL SIZE OF GRADED AGGREGATE (mm)					NOMINAL SIZE OF SINGLE-SIZE AGGREGATE (mm)						
	40	28	20	14	10	40	28	20	14	10	7	5
75.0	-	-	-	-	-	-	-	-	-	-	-	-
53.0	-	-	-	-	-	-	-	-	-	-	-	-
37.6	±10	-	-	-	-	±10	-	-	-	-	-	-
26.5	±15	±10	-	-	-	±10	±10	-	-	-	-	-
19.0	±15	±15	±10	-	-	±10	±10	±10	-	-	-	-
13.2	±10	±15	±15	±10	-	±5	±10	±10	±10	-	-	-
9.50	±10	±10	±15	±15	±10	-	±5	±10	±10	±10	-	-
6.70	±5	±10	±10	±15	±15	-	±5	±5	±10	±10	±10	-
4.75	-	±5	±5	±5	±10	-	-	-	±5	±10	±10	±10
2.36	-	-	-	-	±5	-	-	-	-	-	±10	±10
0.075	-	-	-	-	-	-	-	-	-	-	-	±10

NOTE: THE QUANTITY OF MATERIAL FINER THAN 0.075mm IN EACH COMPONENT OF A BLEND SHALL NOT EXCEED 2% FOR COARSE AGGREGATE, 5% FOR NATURAL FINE AGGREGATES OR 20% FOR MANUFACTURED FINE AGGREGATE. THE QUANTITY OF MATERIAL FINER THAN 0.002mm SHALL NOT EXCEED 1% FOR EACH OF THE COARSE AGGREGATES AND FOR EACH OF THE NATURAL FINE AGGREGATES.

De	MINIMUM TRENCH DIMENSIONS		
	lb	lc	lo
≥75	≤150	75	100
>150	≤300	100	150
>300	≤450	100	200
>450	≤900	150	300
>900	≤1500	150	350
>1500	≤4000	150	0.25De

EMBEDMENT MATERIAL MAXIMUM PARTICLE SIZE	
NOMINAL PIPE SIZE RANGE, DN	MAXIMUM PARTICLE SIZE
<100	10
≥100≤150	14
>150	20



**STORMWATER TANK**  
SCALE 1:50

**PUMP CAPACITY CALCULATION:**

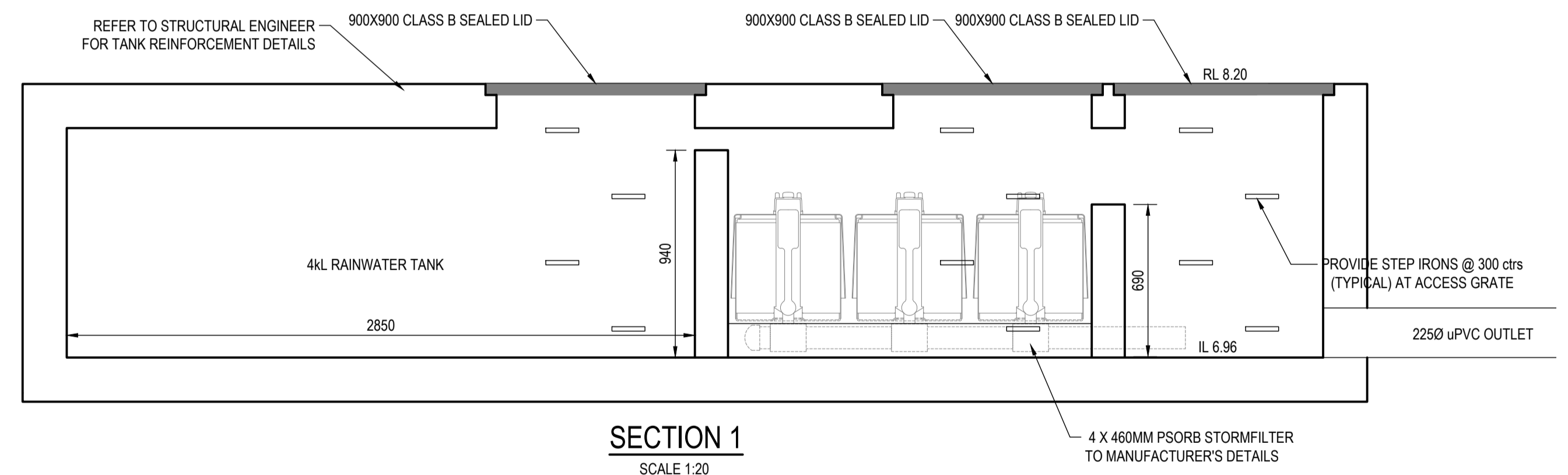
A = CATCHMENT AREA (m<sup>2</sup>)  
T = STORM DURATION (hr)  
I = RAINFALL INTENSITY (mm/hr)  
C<sub>r</sub> = COEFFICIENT OF RUNOFF

Q<sub>10YR/2hr</sub> = INFLOW AT 10YR ARI, 2hr DURATION:

Q<sub>10YR/2hr</sub> = C<sub>r</sub> x I<sub>10YR/2hr</sub>  
= 1 x 34  
= 34mm/hr

V, REQUIRED STORAGE

V = Q/1000 x T x A  
= (34/1000) x 2 x 22  
= 1.50m<sup>3</sup> < 3.0m<sup>3</sup>  
= 3.0m<sup>3</sup> PROVIDED



**SECTION 1**  
SCALE 1:20

REVISIONS:			
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A	ISSUED FOR S.4.55 APPLICATION	HB	19.04.21

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

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

SCALE 1:25: 0 1 2 3 4 5 1m 1.5 2m

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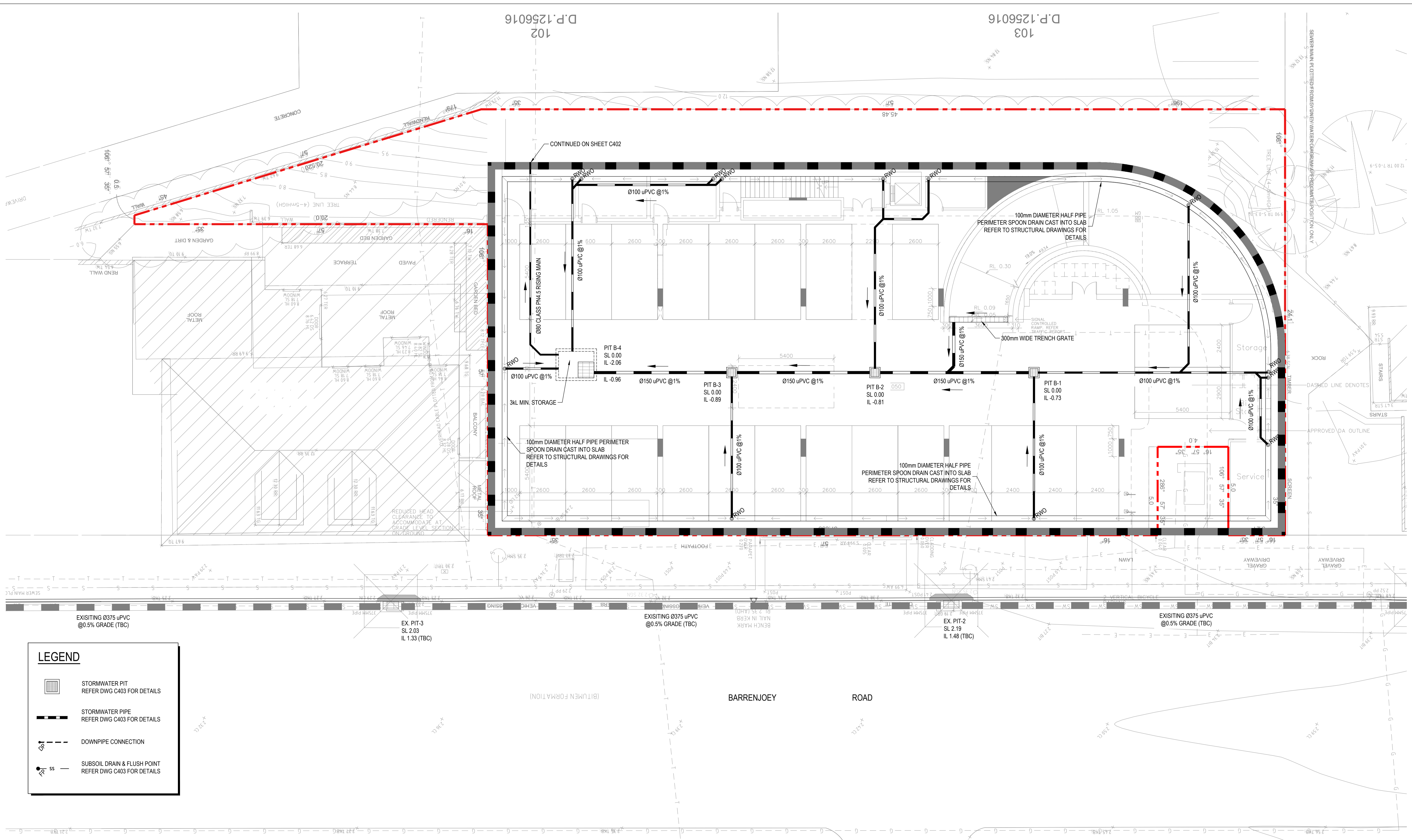
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51 QUEEN STREET WOOLLAHRA NSW 2065

PROJECT TITLE: **MIXED-USE DEVELOPMENT**  
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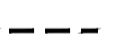
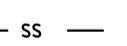
DRAWING TITLE: **DRAINAGE DETAILS**

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

PROJECT LEADER MC	DESIGNER LO	SIGNATURE	
DRAFTSPERSON LO	SCALE AS SHOWN	DATE APRIL 2021	SHEET SIZE A1
JOB No. SY202-105	DRAWING No. C403	REVISION	A



**LEGEND**

-  STORMWATER PIT  
REFER DWG C403 FOR DETAILS
-  STORMWATER PIPE  
REFER DWG C403 FOR DETAILS
-  DOWNPIPE CONNECTION
-  SUBSOIL DRAIN & FLUSH POINT  
REFER DWG C403 FOR DETAILS

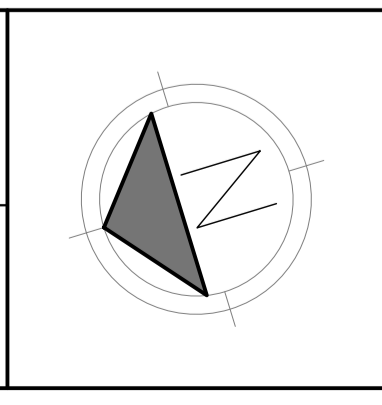
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**PLAN**  
 SCALE 1:100

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SCALE BAR  
 0 1 2 3 4 5m 10m  
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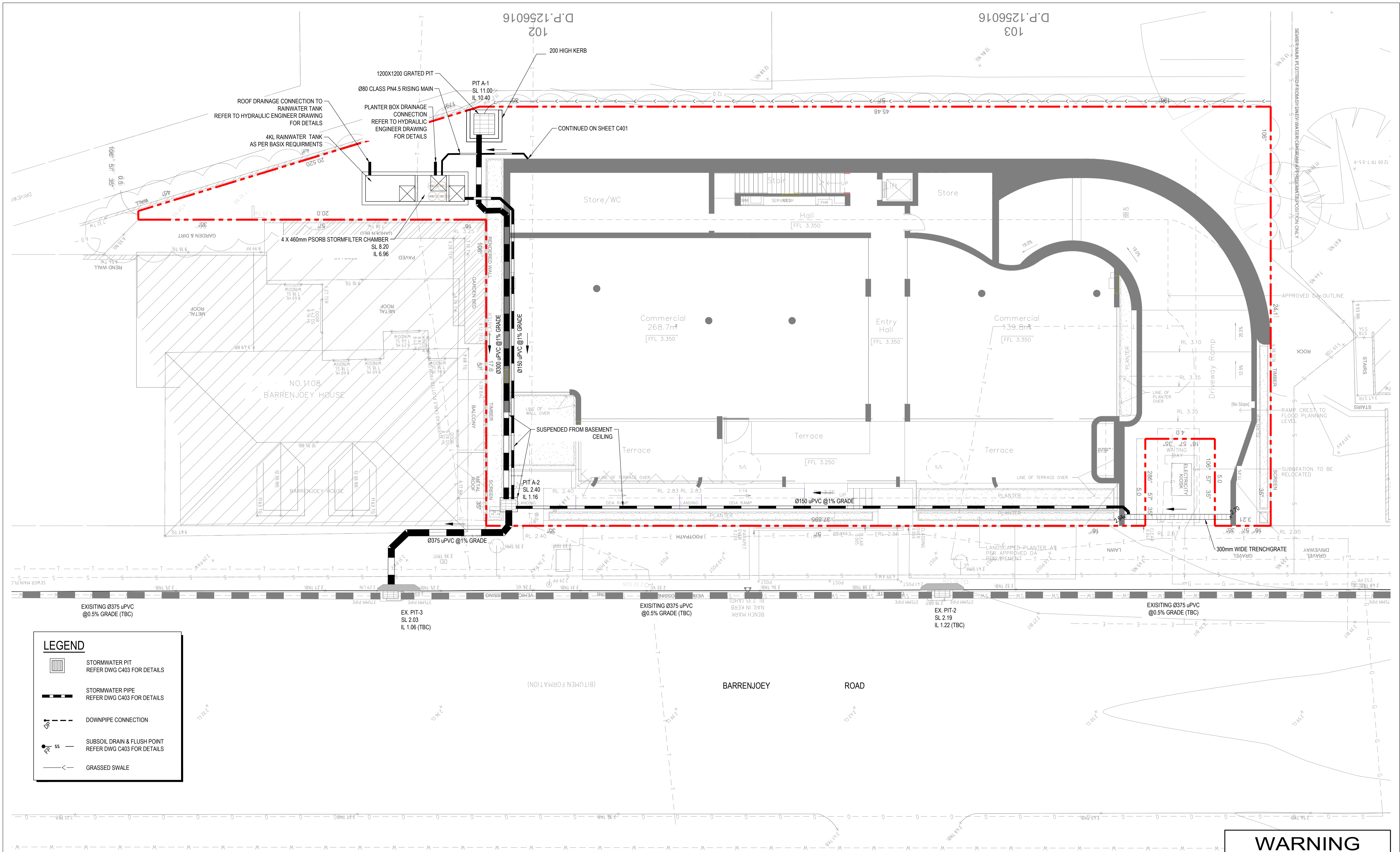
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**DRAWING TITLE**  
 DRAINAGE LAYOUT - BASEMENT

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JOB No. SY202-105	DRAWING No. C401	REVISION A	



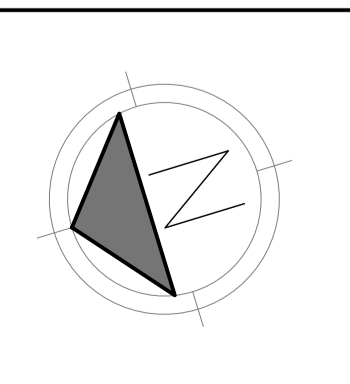
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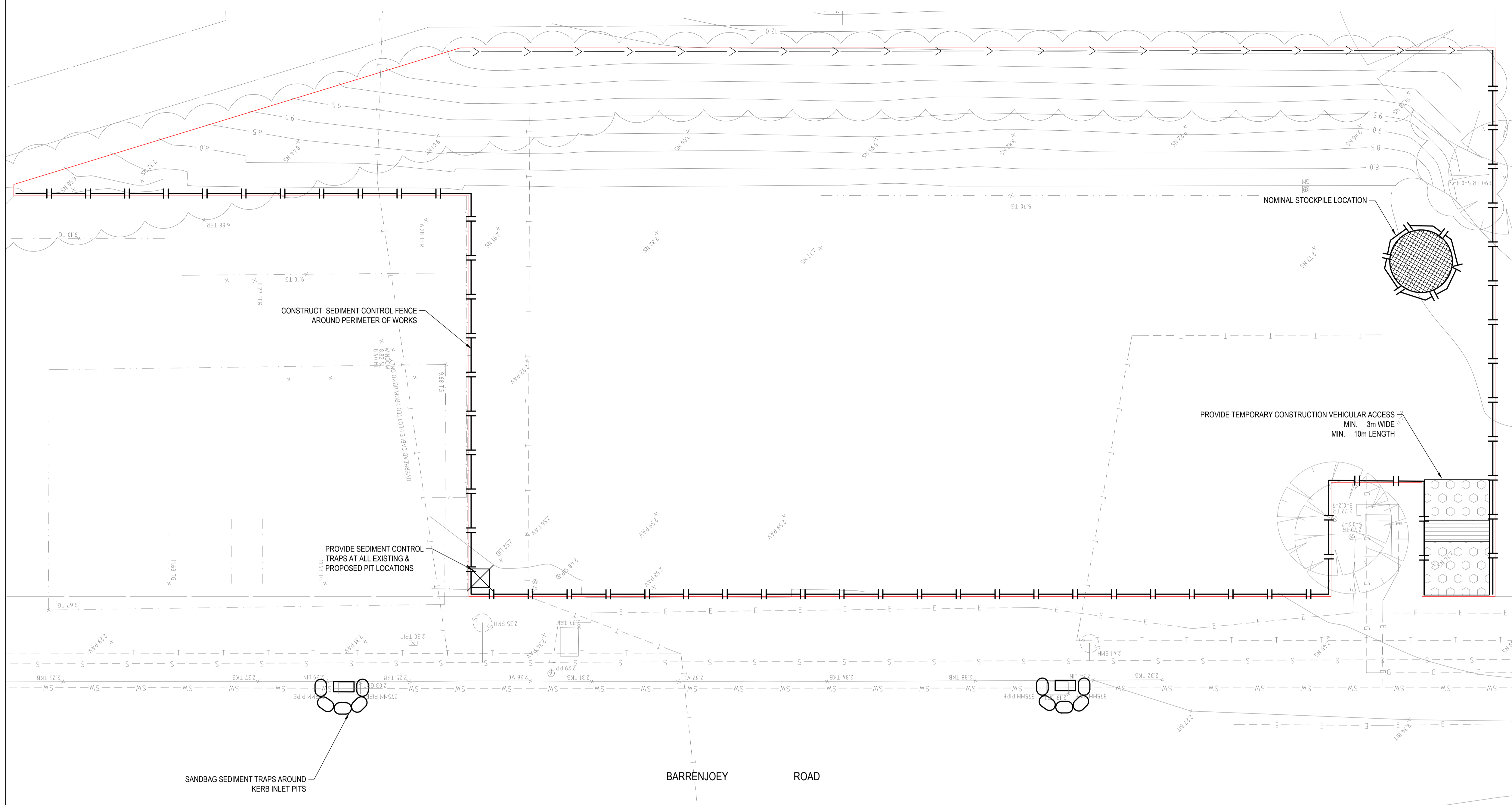
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DRAWING TITLE  
**DRAINAGE LAYOUT - GROUND**

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**EROSION AND SEDIMENT NOTES**

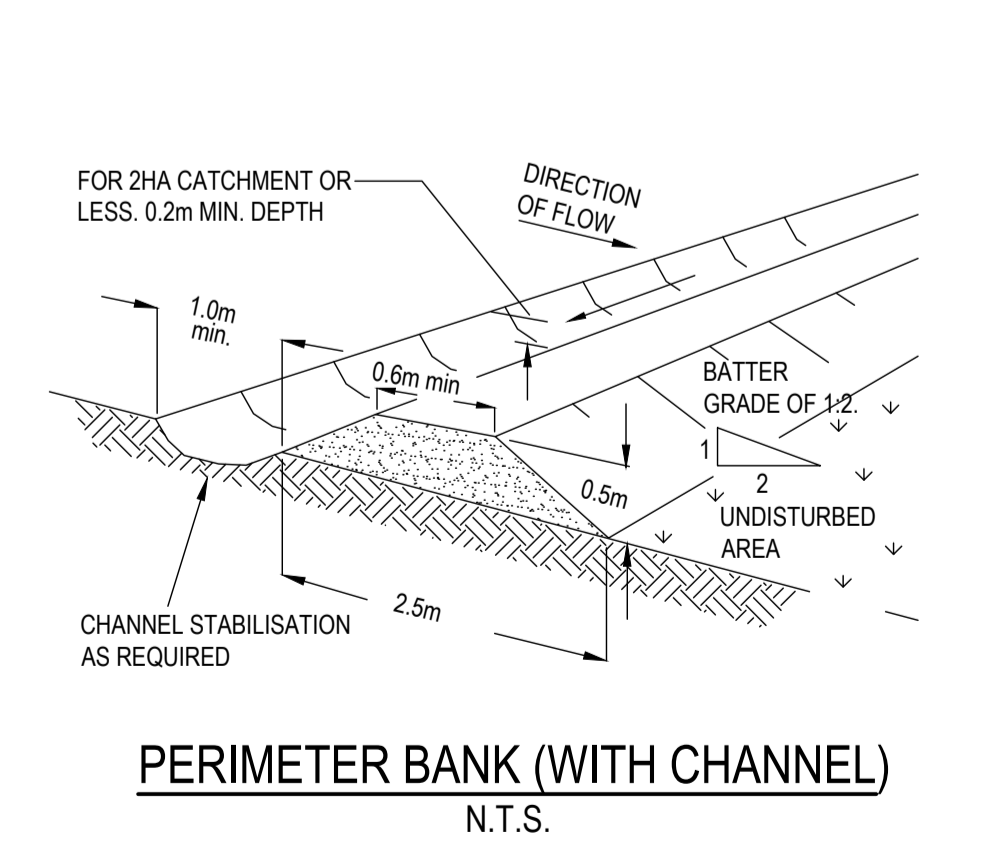
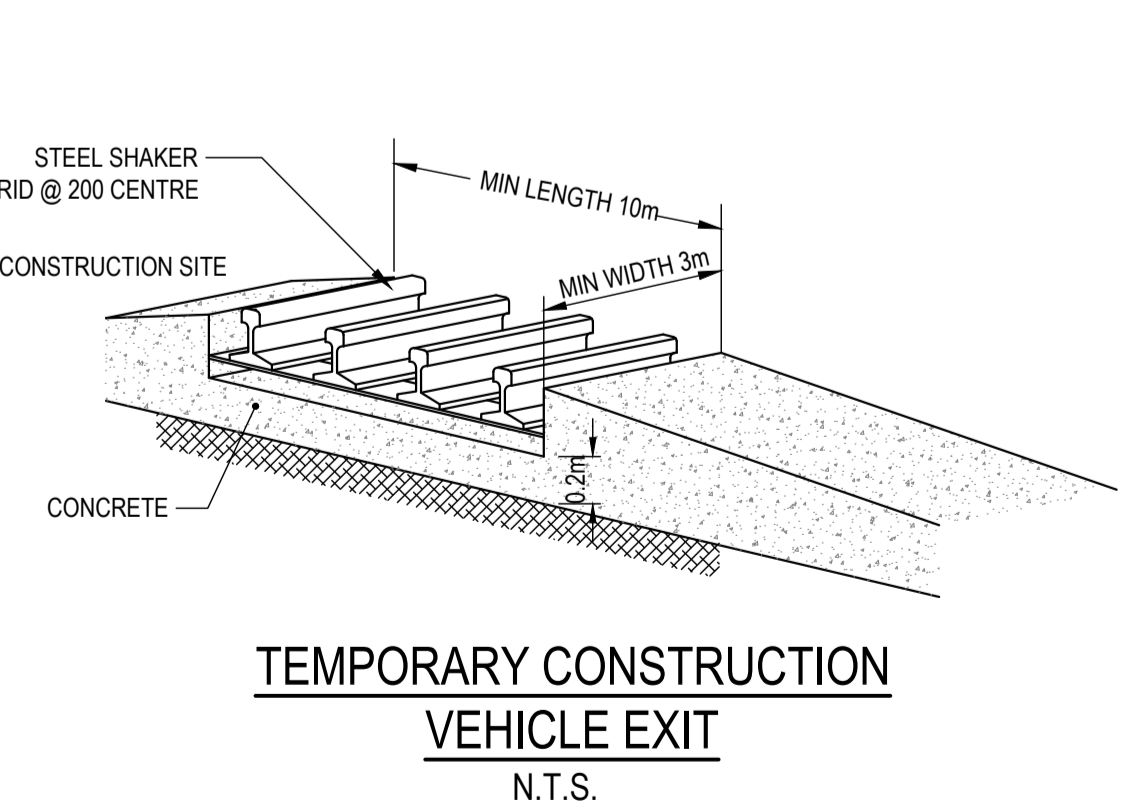
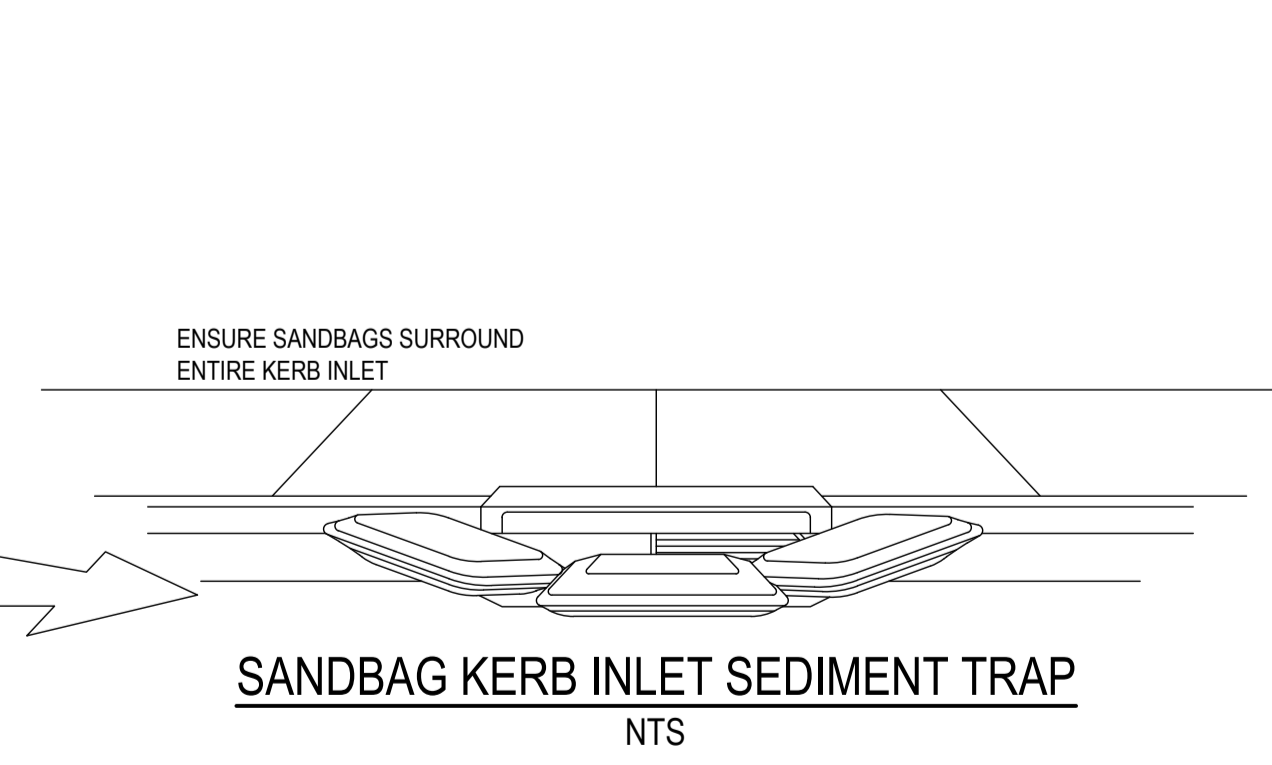
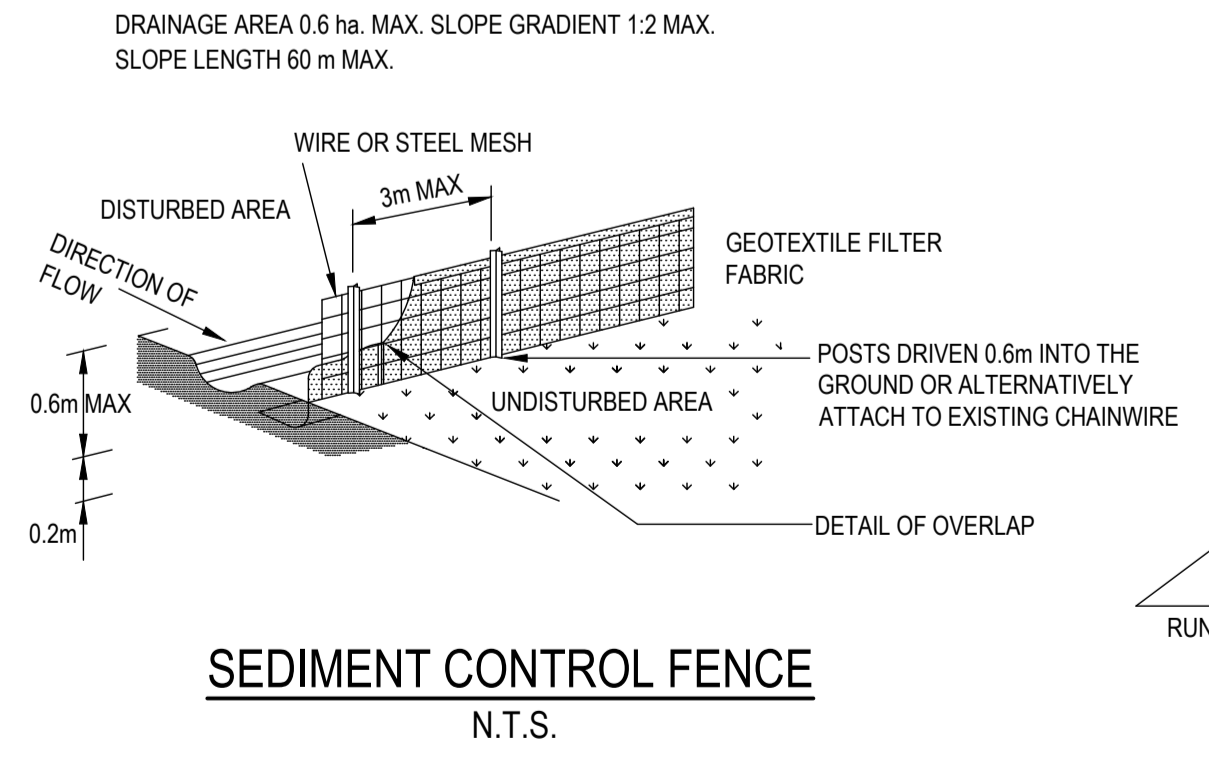
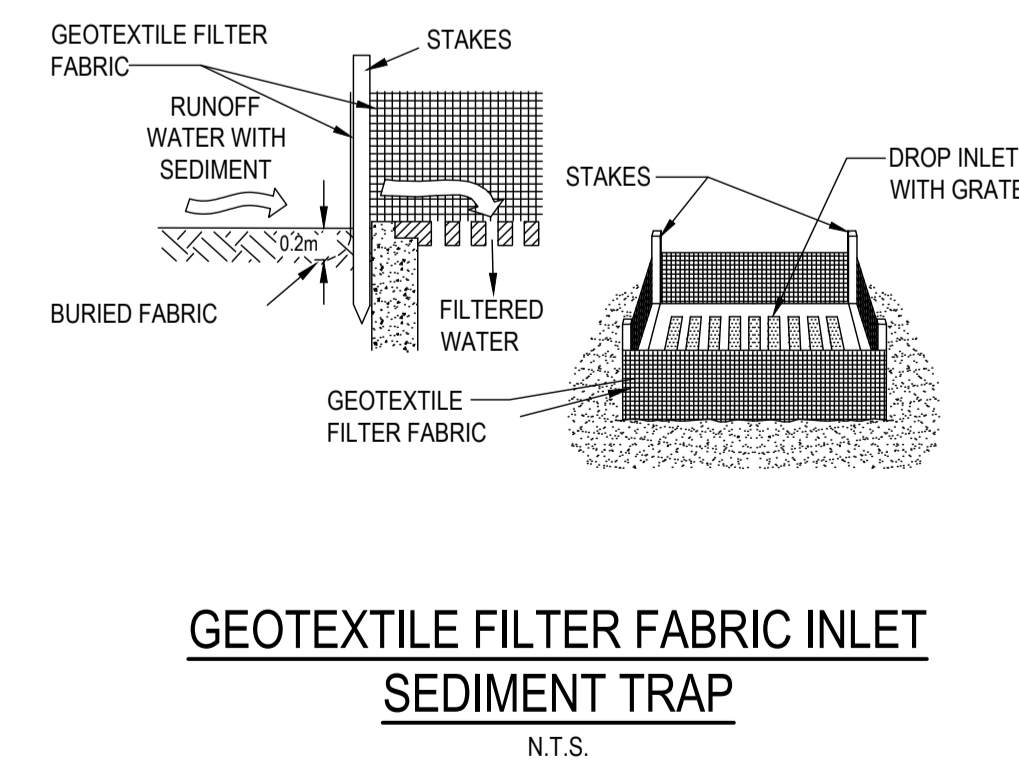
- B1. THIS PLAN IS TO BE READ IN CONJUNCTION WITH EROSION AND SEDIMENT CONTROL DETAILS AS SHOWN
- B2. THE CONTRACTOR SHALL IMPLEMENT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY AND TO THE SATISFACTION OF COUNCIL PRIOR TO THE COMMENCEMENT OF AND DURING CONSTRUCTION. NO DISTURBANCE TO THE SITE SHALL BE PERMITTED OTHER THAN IN THE IMMEDIATE AREA OF THE WORKS AND NO MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT COUNCIL'S APPROVAL. ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH STANDARDS OUTLINED IN NSW DEPARTMENT OF HOUSING'S "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTIONS".
- B3. TOPSOIL SHALL BE STRIPPED AND STOCKPILED OUTSIDE HAZARD AREAS SUCH AS DRAINAGE LINES. THIS TOPSOIL IS TO BE RESPREAD LATER ON AREAS TO BE REVEGETATED AND STABILISED ONLY, (I.E. ALL FOOTPATHS, BATTERS, SITE REGARDING AREAS, BASINS AND CATCHDRAINS). TOPSOIL SHALL NOT BE RESPREAD ON ANY OTHER AREAS UNLESS SPECIFICALLY INSTRUCTED BY THE SUPERINTENDENT. IF THEY ARE TO REMAIN FOR LONGER THAN ONE MONTH STOCKPILES SHALL BE PROTECTED FROM EROSION BY COVERING THEM WITH A MULCH AND HYDROSEEDING AND, IF NECESSARY, BY LOCATING BANKS OR DRAINS DOWNSTREAM OF A STOCKPILE TO RETARD SILT LADEN RUNOFF.
- B4. THE CONTRACTOR SHALL REGULARLY MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES AND REMOVE ACCUMULATED SILT FROM DEVICES SUCH THAT NO MORE THAN 60% OF THEIR CAPACITY IS LOST. ALL THE SILT IS TO BE PLACED OUTSIDE THE LIMIT OF WORKS. THE PERIOD FOR MAINTAINING THESE DEVICES SHALL BE AT LEAST UNTIL ALL DISTURBED AREAS ARE REVEGETATED OR AS DIRECTED BY THE SUPERINTENDENT OR COUNCIL.
- B5. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING CONSTRUCTION CONFINING ACCESS WHERE POSSIBLE TO NOMINATED STABILISED ACCESS POINTS.
- B6. THE CONTRACTOR SHALL IMPLEMENT DUST CONTROL BY REGULAR WETTING DOWN (BUT NOT SATURATING) DISTURBED AREA.
- B7. PROVIDE AND MAINTAIN SILT TRAPS AROUND ALL SURFACE INLET PITS UNTIL CATCHMENTS ARE REVEGETATED OR PAVED.
- B8. REVEGETATE ALL TRENCHES IMMEDIATELY UPON COMPLETION OF BACKFILLING.
- B9. ALL DRAINAGE PIPE INLETS TO BE CAPPED UNTIL :  
A) DOWNPIPES CONNECTED  
B) PITS CONSTRUCTED AND PROTECTED WITH SILT BARRIER
- B10. SILT FENCE MAINTENANCE INSPECTION TO BE CARRIED OUT EVERY 3 MONTHS AND AFTER EACH RAINFALL EVENT.
- B11. EROSION & SEDIMENT CONTROL SIGNAGE AVAILABLE FROM COUNCIL MUST BE ATTACHED TO THE MOST PROMINENT AVAILABLE STRUCTURE AND BE VISIBLE AT ALL TIMES WHEN ENTERING THE SITE FOR THE DURATION OF CONSTRUCTION.



**PLAN**  
SCALE 1:100

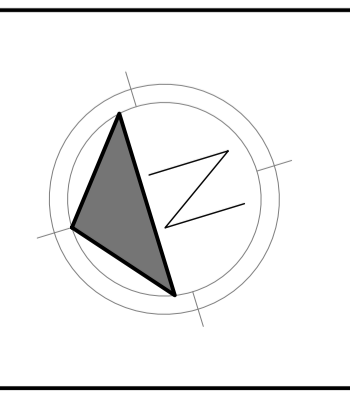
**LEGEND**

- STORMWATER SEDIMENT TRAPS AT ALL PROPOSED PIT INLETS
- TEMPORARY CONSTRUCTION VEHICLE EXIT
- SEDIMENT CONTROL FENCE
- STOCKPILE AREA
- SANDBAG KERB INLET SEDIMENT TRAP
- PERIMETER BANK WITH CHANNEL



REVISIONS:	SCALE BAR								
<table border="1"> <tr> <th>No.</th> <th>REVISION DESCRIPTION</th> <th>LO</th> <th>DATE</th> </tr> <tr> <td>A</td> <td>ISSUED FOR S.4.55 APPLICATION</td> <td>LO</td> <td>19.04.21</td> </tr> </table>	No.	REVISION DESCRIPTION	LO	DATE	A	ISSUED FOR S.4.55 APPLICATION	LO	19.04.21	<p>SCALE 1:100</p>
No.	REVISION DESCRIPTION	LO	DATE						
A	ISSUED FOR S.4.55 APPLICATION	LO	19.04.21						

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**van der Meer Consulting**  
**van der meer**  
LEVEL 6, 39 CHANDOS STREET  
ST LEONARDS NSW 2065  
Telephone 61-2-9436 0433 Fax 61-2-9436 1370  
www.vandermeer.com.au  
van der Meer (NSW) Pty Ltd  
A.B.N. 56 158 266 301

CLIENT  
**REFORM PROJECTS**  
15/108 DUNNING AVENUE  
ROSEBERY NSW 2018

ARCHITECT  
**ROB MILLS ARCHITECTURE**  
51 QUEEN STREET WOOLLAHRA NSW 2065

PROJECT TITLE  
**MIXED-USE DEVELOPMENT**  
1102 BARRENJOEY ROAD  
PALM BEACH, NSW 2108

DRAWING TITLE  
**EROSION AND SEDIMENT CONTROL PLAN**

DRAWING STATUS				
<b>APPROVAL ISSUE</b>				
NOT TO BE USED FOR CONSTRUCTION				
PROJECT LEADER	DESIGNER	SIGNATURE		
MC	LO			
DRAFTSPERSON	SCALE	DATE	SHEET SIZE	
LO	AS SHOWN	APRIL 2021	A1	
JOB No.	DRAWING No.	REVISION		
SY202-105	C210		A	

## Appendix 16 – On-site Detention Checklist

This checklist is to be used to determine the on-site stormwater disposal requirement for developments and must be completed and included with the submission of any development application for these works. Please read this form carefully for its notes, guidelines, definition and relevant policies.

For assistance and support, please contact Council's Development Engineering and Certification team on 1300 434 434.

<b>Part 1 Location of the Property</b>			
House Number	1102	Legal Property Description	
Street	Barrenjoey Road	Lot	11
Suburb	Palm Beach	Section	null
Postcode	2108	DP	1207743

<b>Part 2 Site Details</b>			
Northern Beaches Stormwater Regions (refer to Map 2 of Northern Beaches Council's Water Management for Development policy)	1	Total Site Area	1158m <sup>2</sup>
Pre-Development Impervious Area	635m <sup>2</sup>	Post-Development Impervious Area	807m <sup>2</sup>
Is the site of the development located within an established Flood Prone Land as referred to Council's Local Environmental Plans?  If yes, On-site stormwater Detention system (OSD) is not required and please proceed to part 5 of this checklist If no, please proceed to part 3 of this checklist.			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

<b>Part 3: Northern Beaches Stormwater Regions</b> (refer to Map 2 of Northern Beaches Council's Water Management for Development policy)
If the site of the development located within Region 1, please proceed to the part 4.1 of this checklist
If the site of the development located within Region 2, please proceed to the part 4.2 of this checklist
If the site of the development located within Region 3, please proceed to the part 4.3 of this checklist
If the site of the development located within Region 4, please refer to Council's Warriewood Valley Water Management Specification.

**Part 4 Determination of OSD Requirements**

**Part 4.1 Northern Beaches Stormwater Region 1**

Is the additional impervious area of the development more than 50 m<sup>2</sup> on a cumulative basis since February 1996? Yes  No

If yes, OSD is required and please refer to section 9.3.1 of Council's Water Management for Development Policy  
If no, OSD is not required and please proceed to the part 5 of this checklist

**Part 4.2 Northern Beaches Stormwater Region 2**

**Part 4.2.1 Description of Work**

Residential flat building, commercial, industrial, multiple occupancy development and subdivisions resulting in the creation of three lots or more, will require OSD in all case. Please provide a design in accordance with the section 9.3.2 of Council's Water Management for Development Policy. Any single residential building development, please proceed to part 4.2.2 of this checklist.

**Part 4.2.2 Exemption**

Is the site area less than 450m<sup>2</sup>? Yes  No

Does the site of the development drain directly to the ocean without the need to pass through a drainage control structure such as pipe, bridge, culvert, kerb and gutter or natural drainage system? Yes  No

Is it an alternation and addition development to the existing dwellings? Yes  No

If yes to any of the above questions, OSD is not required.  
If no to all the above questions, proceed to part 4.2.3

**Part 4.2.3 Determination of OSD Requirements**

Calculation	<p>a) Site area m<sup>2</sup> x 0.40 (40%) = ..... m<sup>2</sup></p> <p>b) Post- development impervious area = ..... m<sup>2</sup></p> <p><b>OSD will not be required when (a) is greater than (b)</b></p> <p>Is OSD required for this development (tick one only) Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If yes, provide a design in accordance with the section 9.3.2 of Council's Water Management for Development Policy. If no, OSD is not required and please proceed to part 5 of this checklist.</p>
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<b>Part 4.3 Northern Beaches Stormwater Region 3</b>	
<b>Part 4.3.1 Stormwater Zone</b>	
In the region, the method of stormwater control to be applied shall depend on the location of the site. Please refer to Map 3 of Northern Beaches Council's Water Management for Development policy.	
If the site of the development located within stormwater zone 1, please proceed to the part 4.3.2 of this checklist	
If the site of the development located within stormwater zone 2, please provide a design in accordance with the section 9.3.3.3 of Council's Water Management for Development Policy.	
If the site of the development located within stormwater zone 3, please provide a design in accordance with the section 9.3.3.4 of Council's Water Management for Development Policy.	
If the site of the development located within stormwater zone 4, please provide a design in accordance with the section 9.3.3.5 of Council's Water Management for Development Policy.	
<b>Part 4.3.2 Determination of OSD requirements in Stormwater Zone 1</b>	
<b>Part 4.3.2.1 For A New Building</b>	
1 ) Exemption	<p>a) Is the site area less than 400? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>b) Is the post-development impervious area less than 190 m<sup>2</sup>? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If yes to both questions, OSD is not required. If no to any of the above questions, please process to calculation</p>
2 ) Calculation	<p>a) Site area _____ m<sup>2</sup> x 0.35 = _____ m<sup>2</sup> + 50 = _____ m<sup>2</sup></p> <p>b) Post- development impervious area _____ m<sup>2</sup></p> <p>OSD will not be required when (b) is less than 250 m<sup>2</sup> and (a) is greater than (b) Is OSD required for this development? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If yes, provide a design in accordance with the section 9.3.3.2 of Council's Water Management for Development Policy. If no, OSD is not required and please proceed to part 5.</p>
<b>Part 4.3.2.2 For Alterations and Additions</b>	
If the current impervious area of the site is more than 60% of the site area, OSD will be required. Alternatively, please proceed to the next calculation section.	
1 ) Calculation	<p>Is the post development impervious area increased by less than 50 m<sup>2</sup>? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Is the post development impervious area less than 60% of the site area? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If yes to both questions, OSD is not required. If no to any of the above questions, provide a design in accordance with section 9.3.3.2 of Council's Water Management for Development Policy</p>

## Part 5 Disposal of Stormwater

Does the site fall naturally towards the street?

Yes  No

If yes, provide a design in accordance with section 5.1 of Council's Water Management for Development Policy.

If no, provide a design in accordance with section 5.5 of Council's Water Management for Development Policy.

## Definitions

Designed to help you fill out this application

**Site area:** This refers to the area of the land bounded by its existing or proposed boundaries.

**Impervious area:** This refers to driveways, parking spaces, pathways, paved areas, hardstand areas, roofed areas, garages and outbuildings.

**Pre Development Impervious area:** This refers all impervious areas of the site before the development.

**Post Development Impervious areas:** This refers all the impervious areas within the site after the development is completed.

