



INTEGRATED WATER MANAGEMENT REPORT

PROPOSED DEVELOPMENT

159 - 167 DARLEY ST W, MONA VALE NSW 2103

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Document Information

Project: Proposed Development

Report Reference: 2024081iwmpC

Certified For Issue: Stefan Koebisch NER

Document Control:

Revision	Issue Date	Author	Reviewer
A	05 November 2025	K Tomas	S Koebisch NER
B	06 November 2025	K Tomas	S Koebisch NER
C	12 November 2025	K Tomas	S Koebisch NER

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1. INTRODUCTION

1.1. Background

This Integrated Water Management Plan (IWMP), prepared by Samana Blue Engineering Pty Ltd, is submitted to the Department of Planning, Housing and Infrastructure (DPHI) on behalf of The Trustee for DREP1 Mona Vale Sub Trust (the Applicant) in support of a State Significant Development Application (SSDA), identified as SSD-91496958, for in-fill affordable housing at 159-167 Darley Street West, Mona Vale (the site).

This SSDA seeks consent for the design and construction of a new residential flat development comprising:

- Site preparation works including demolition, excavation and tree removal;
- Construction of three (3) x 6-storey residential flat buildings, comprising:
 - 82 apartments, including
 - 72 market apartments
 - 10 affordable apartments (10.5% of GFA)
 - Separate residential lobbies
 - Communal open spaces
- Construction of 1-3 storeys of basement parking, comprising:
 - 164 car parking spaces, including:
 - 156 residential spaces
 - Eight (8) accessible residential spaces
 - 27 bicycle parking spaces
 - Two (2) motorcycle parking spaces
 - Waste and storage facilities
- Associated landscaping, including transplanting of two (2) trees and planting of new trees and vegetation.

1.2. Revision C

Revision C of this report has been prepared to incorporate minor changes to the stormwater pit and pipe to avoid encroachment within the TPZ of the existing tree per the arborist's recommendation.

1.3. Site Description

The site is located at 159-167 Darley Street West, Mona Vale within the Northern Beaches Council Local Government Area (LGA). It is legally described as Lots 1-5 of DP11109 and owned by Darleydev Pty Ltd. The site has an area of approximately 6,122m², with a 76m frontage to Darley Street West to the northeast.

The site location is shown in Figure 1.



Figure 1 – Locality Map

1.4. Existing Site Features

The subject site fronts Darley St on the northern side, refer Figure 1. The site is bounded by residential dwellings on all other sides. The site is currently occupied by residential buildings. The total area occupied by the subject site is approximately 6,122m².

1.5. Surrounding Land Use

The subject site is surrounded predominately by various forms of residential uses.

2. WATER MANAGEMENT

In regard to item 11 Water Management of the Secretary's Environmental Assessment Requirements issued on 22 August 2025 from DPHI for incorporation in Environmental Impact Statement, we note the following:

- The below commentary details how the proposed drainage design and servicing infrastructure has been incorporated as part of the development (stormwater)
- The below commentary also demonstrates how the development complies with Council's drainage requirements and identifies proposed stormwater treatment and water quality management measures.

The aim of the stormwater management as seen in the engineering plans in the Appendix is to ensure that the development complies with the relevant controls in regard to WSUD, OSD and RWT.

2.1. Strategy

A large multipurpose stormwater tank is provided as a central collection point for runoff from the development. Runoff from the overland flow path at the rear of the property is not directed to the tank (refer separate flood impact assessment by others). All the roof water from the development will be directed to the rainwater tank which will surcharge over a weir for volumes exceeding 10m³ as per the BASIX requirements. The balance of the stormwater from the site (hardstand surface areas, basement and landscaping) will be directed into the WSUD chamber for treatment which will then surcharge over a weir into the OSD section. This will allow for three separate uses of stormwater:

- RWT re-use,
- WSUD water polishing and pollutant removal, then
- OSD mitigation and detention.

The OSD section discharges via a 300mm pipe to Council's existing kerb inlet pit in the street. The top volume level of stormwater within the OSD tank is lower than any inlet pits on the upstream line, preventing backwater surcharging.

2.2. Rainwater Tank (RWT)

All roof water will be collected via a gutter and downpipe system per the NCC requirements and directed to a 10m³ rainwater section within the stormwater tank. This has been sized at 10m³ per the BASIX requirements. Once the 10m³ is exceeded, the stormwater in the rainwater tank will surcharge over a weir into the main chamber of the OSD tank.

2.3. Water-Sensitive Urban Design (WSUD)

As most of the development is underlaid by a basement carpark, the surface areas of the site will comprise of pathways and landscaping above a concrete slab. These areas all drain to the WSUD chamber where 15 StormFilter (by Ocean Protect) cartridges will treat the water. Surcharging water will go over a weir into the main chamber of the OSD tank. The number of cartridges has been designed in accordance with the MUSIC model which has been prepared by Ocean Protect.

2.4. On-site Stormwater Detention (OSD)

OSD is provided to restrict all development runoff back to the pre-developed flows prior to discharge into Council's kerb inlet pit. After rainwater in the RWT has been re-used and hardstand impervious surface areas have been treated by the Ocean Protect cartridges, the balance of stormwater will surcharge across two weirs (one from each section) into the main OSD chamber of the tank.

The site is located in Region 1 – Northern Stormwater Region per Map 2 – Northern Beaches Stormwater Regions, refer Figure 2 for an extract.

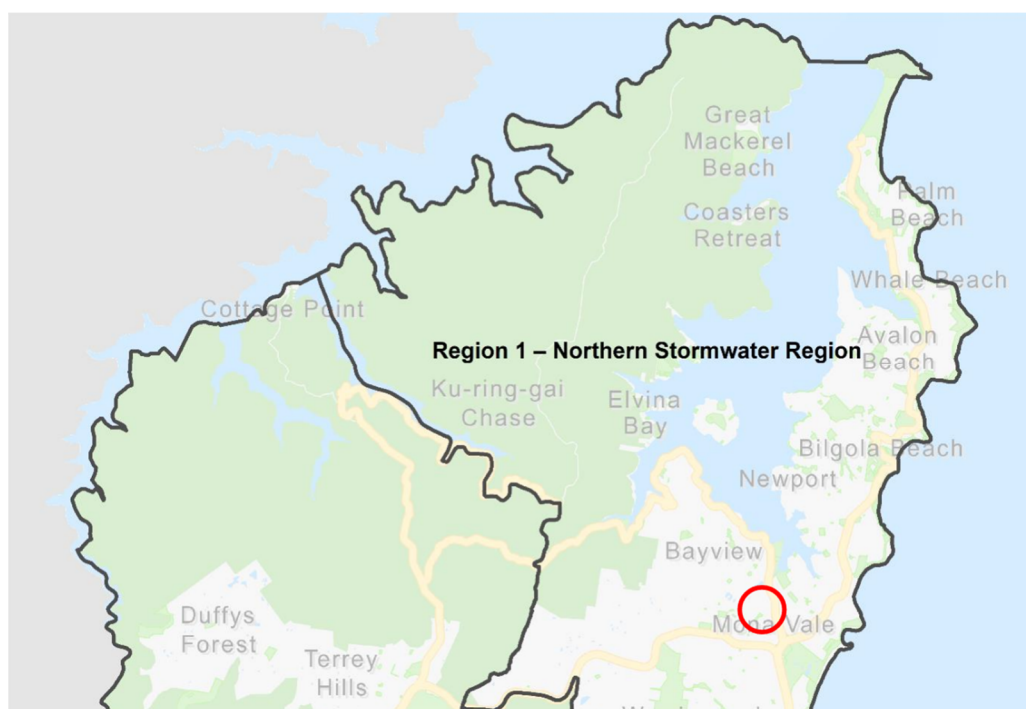


Figure 2 – Northern Beaches Stormwater Regions

Per Part 4.1 of the checklist, since the additional impervious area of the development is more than 50m², OSD is required, and section 9.3.1 should be referred to. Section 9.3.1 states that *“A Region 1 OSD system is to be designed to the storage and discharge requirements detailed in the Table 7 to ensure that the development does not increase stormwater discharge downstream of the land over and above that of the existing stormwater discharge conditions up to the 1% AEP storm event.”*

The OSD volume has been determined using Northern Beaches Council's on-site detention checklist Table 7 Requirements for Size and Allowable Discharge from On-site Detention Systems. With calculations for the 2,226m² increase in impervious areas (from 1,631m² pre-developed to 3,857m² post-developed) shown on the associated civil engineering plans, this requires a volume of 133.55m³. A weir and orifice plate have been designed to ensure that site discharge is in accordance with council requirements for all storms. The tank will discharge to a number of control pits and then to council's existing gully pit at the bottom of the cul-de-sac, where the water level will be much lower than the level in the tank, ensuring a free outlet.

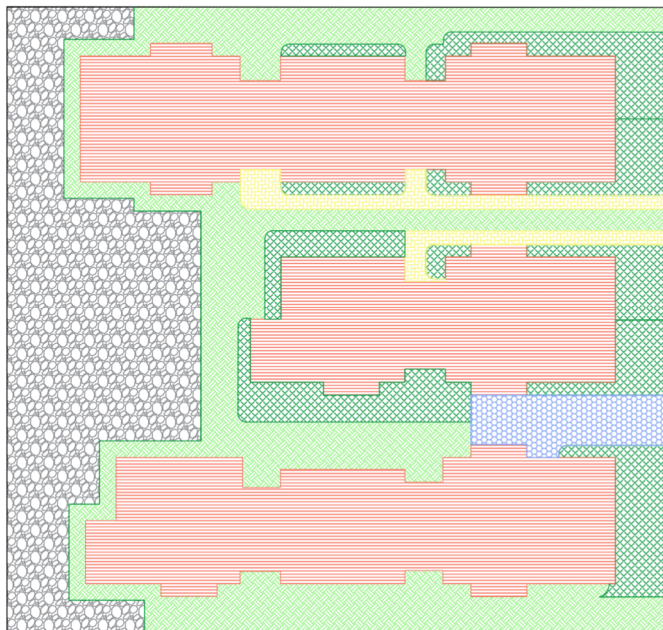
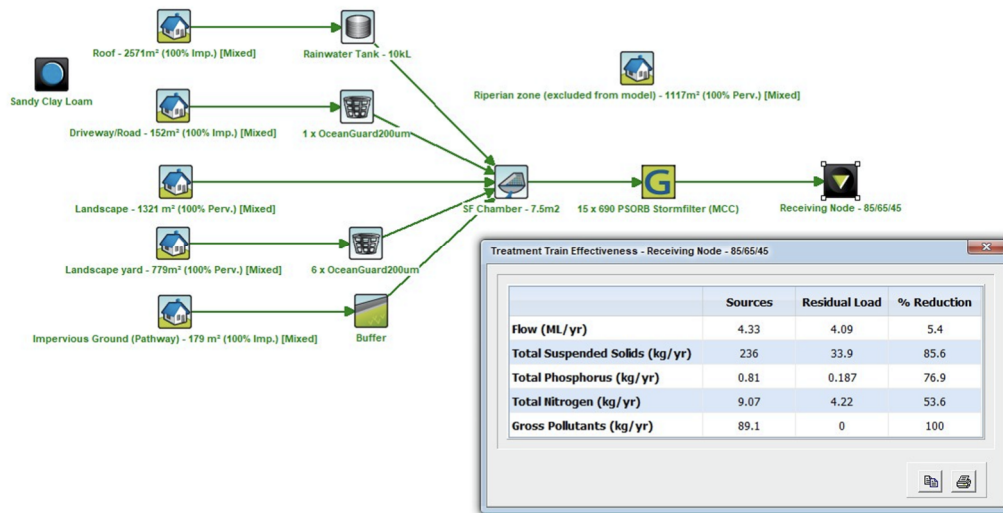
3. CONCLUSION

This Integrated Water Management Plan:

- Details the proposed drainage design and servicing for stormwater, and
- Demonstrates how it complies with council's drainage requirements and identifies a large stormwater tank for rainwater, WSUD, and OSD which minimizes adverse environmental impact.

Appendix 1 – MUSIC Model Results

MUSIC model results from Ocean Protect are attached in the following pages.



WSUD SITE AREA BREAK-UP

159-167 Darley St, MonaVale

September 18, 2025

- ROOF: 2,571m²
100% IMPERVIOUS
- ROAD: 152m²
100% IMPERVIOUS
- LANDSCAPE: 1321m²
100% PERVIOUS
- LANDSCAPE YARD: 779m²
100% PERVIOUS
- PATH: 179m²
100% IMPERVIOUS
- TOTAL AREA: 5,002m²
- EXCLUDED: 1117m²

Appendix 2 – Civil Engineering Concept Plans

Relevant civil engineering concept plans are attached in the following pages.

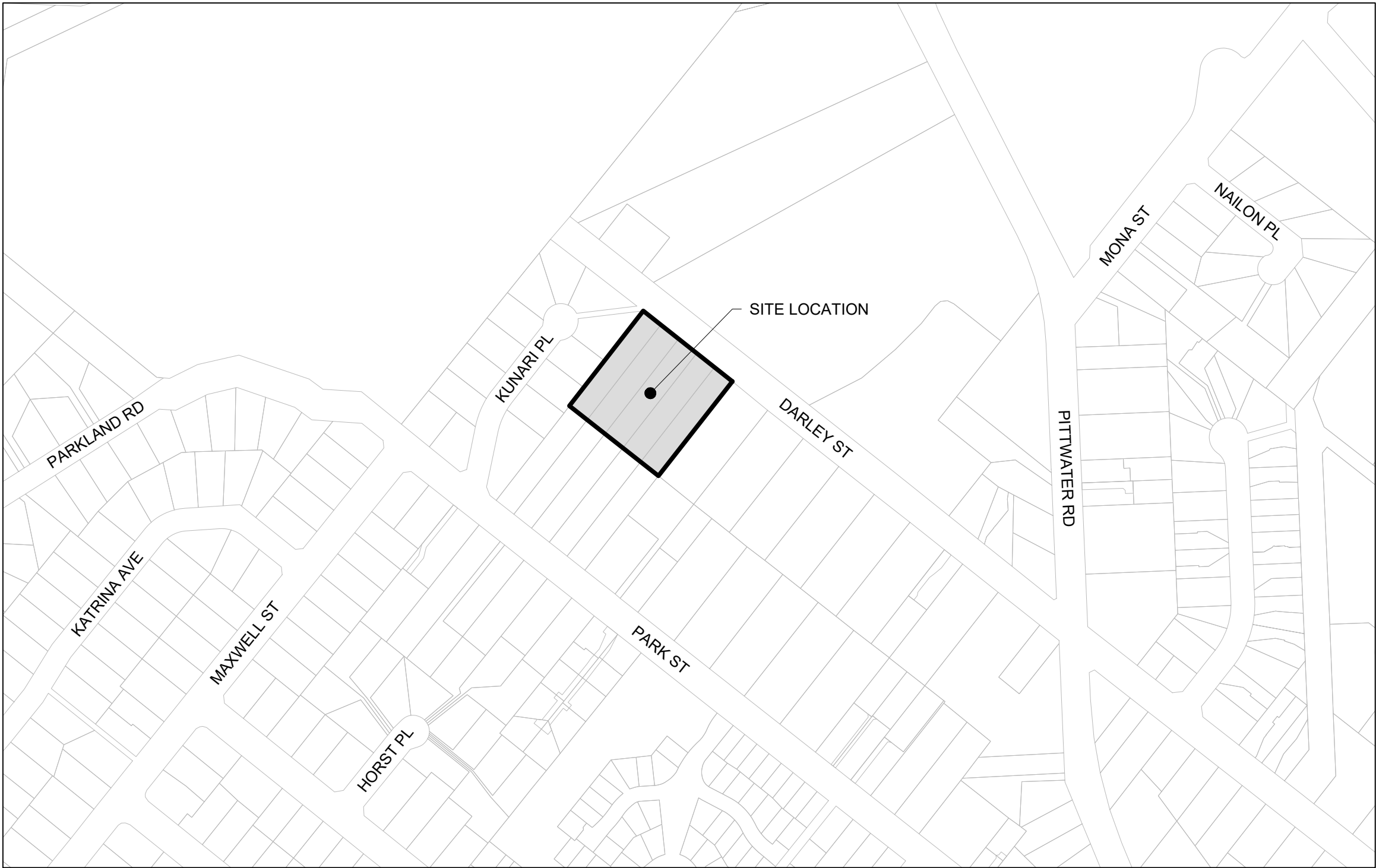
STORMWATER CONCEPT DESIGN

PROJECT:
PROPOSED DEVELOPMENT

AT:
159 - 167 DARLEY ST W, MONA VALE NSW 2103
Lot(s): LOT 1 - 5, DP11108

PROJECT No:
2024081DA

DRAWING SCHEDULE	
DRAWING No.	DRAWING TITLE
C00	LOCALITY MAP & SCHEDULE OF DRAWINGS
C01	GENERAL NOTES
C02	LEGENDS
C03	EXISTING LAYOUT PLAN
C04	EXISTING LAYOUT PLAN (AERIAL)
C05	CONCEPT STORMWATER PLAN - BASEMENT 3
C06	CONCEPT STORMWATER PLAN - BASEMENT 2
C07	CONCEPT STORMWATER PLAN - BASEMENT 1
C08	EXISTING IMPERVIOUS PLAN
C09	PROPOSED IMPERVIOUS PLAN
C10	STORMWATER CATCHMENT PLAN
C11	RWT + OSD + WSUD TANK PLAN
C12	RWT + OSD + WSUD TANK SECTION
C13	STORMWATER DETAILS
C14	SOIL AND WATER MANAGEMENT PLAN
C15	SOIL AND WATER MANAGEMENT DETAILS - 1 OF 2
C16	SOIL AND WATER MANAGEMENT DETAILS - 2 OF 2



LOCALITY MAP
NOT TO SCALE

DA / CONCEPT CIVIL ENGINEERING GENERAL NOTES

1. THESE NOTES ARE VERY IMPORTANT.
2. IF IN DOUBT - ASK
3. THESE DRAWINGS ARE CONCEPTUAL ONLY AND HAVE BEEN PROVIDED FOR COUNCIL ASSESSMENT ONLY
4. THESE DRAWINGS (INCLUDING DETAILS) ARE NOT INTENDED TO BE USED FOR CONSTRUCTION PURPOSES.
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7. EXISTING DETAILS HAVE BEEN SHOWN AS PROVIDED BY SURVEY / DBVD DATA OBTAINED AT THE COMMENCEMENT OF THE PROJECT. SBE MAY HAVE AUGMENTED SUCH DATA FOR FURTHER CLARITY BY ADDING NOTES, EXPLANATORY LEADERS, OR MINOR LINEWORK BASED ON OUR SITE INSPECTIONS OR REVIEW OF SITE PHOTOS.
8. ALL LEVELS ARE TO A.H.D

SCHEDULE OF REVISION CHANGES				
REV	DATE	BY	DESCRIPTION	CHANGES
A	05.11.2025	MV	ISSUED FOR APPROVAL	ORIGINAL DOCUMENT
B	11.11.2025	MV	MINOR UPDATE	MOVED STORMWATER PIT OUTSIDE TPZ ZONE

GENERAL

	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	EXISTING FENCE
	EXISTING KERB & GUTTER
	EXISTING BUILDING
	EXISTING SEWER
	EXISTING STORMWATER
	EXISTING TELECOM
	EXISTING WATER
	EXISTING GAS
	EXISTING ELECTRICITY
	EXISTING WATER METER
	EXISTING TELSTRA PIT
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER PIT
	EXISTING TREE
	EXISTING SPOT LEVEL
	EXISTING SIGN
	EXISTING ELECTRICITY POLE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	PROPOSED BOUNDARY
	PROPOSED CATCHMENT BOUNDARY
	PROPOSED KERB AND GUTTER
	PROPOSED 150mm BARRIER KERB
	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
	PROPOSED ELECTRICITY
	PROPOSED RISING MAIN
	PROPOSED SEWER
	PROPOSED STORMWATER
	PROPOSED WATER
	PROPOSED TELECOM
	PROPOSED FENCE
	PROPOSED RETAINING WALL
	PROPOSED SPOT LEVEL

EROSION AND SEDIMENT CONTROL

	PROPOSED TEMPORARY SEDIMENT FENCE
	FIELD INLET SEDIMENT TRAP
	TEMPORARY CONSTRUCTION ENTRY/EXIT SHAKE DOWN AND SEDIMENT TRAP
	DIVERSION BANK / DRAIN

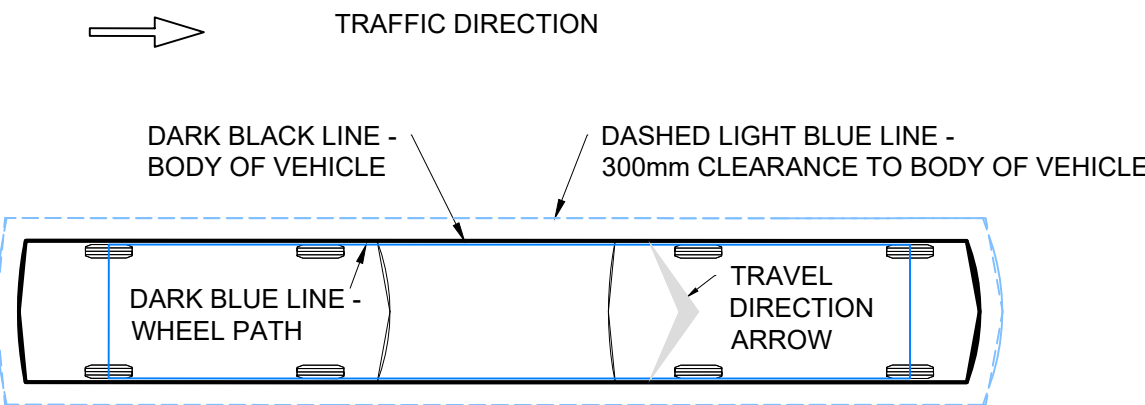
STORMWATER

	PROPOSED STORMWATER PIPE
	PROPOSED STORMWATER PIT
	PROPOSED JUNCTION PIT
	PROPOSED SEALED ACCESS
	FALL DIRECTION
	EXISTING OVERLAND FLOW DIRECTION
	PROPOSED OVERLAND FLOW DIRECTION

PAVEMENT

	PROPOSED CONCRETE
	PROPOSED COMPACTED GRAVEL
	PROPOSED BIO - RETENTION BASIN
	PROPOSED TURF
	PROPOSED SAWCUT LINE
	CONTROL JOINT
	EXPANSION JOINT
	FINISHED LEVEL

TRAFFIC



NOTE
300mm CLEARANCE IS THE AS2890.1 REQUIREMENT FOR
MANEOUVRING NEAR/AROUND PHYSICAL OBSTRUCTIONS

EARTHWORKS

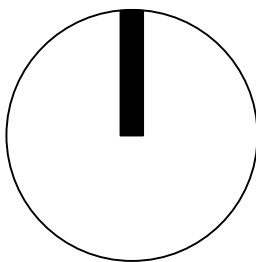
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	PROPOSED FILL (1.50m - 2.00m)
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	PROPOSED FILL (0.00m - 0.50m)
	PROPOSED CUT (0.00m - 0.50m)
	PROPOSED CUT (0.50m - 1.00m)
	PROPOSED CUT (1.00m - 1.50m)
	PROPOSED CUT (1.50m - 2.00m)
	PROPOSED CUT (2.00m - 2.50m)
	PROPOSED FINISHED CONTOURS

ABBREVIATIONS & ACRONYMS

AEP	ANNUAL EXCEEDANCE PROBABILITY
ARI	AVERAGE RECURRENCE INTERVAL
BDY	BOUNDARY
BEL	BULK EARTHWORKS LEVEL
BW	BOTTOM OF WALL
BYDA	BEFORE YOU DIG AUSTRALIA
CT	CURVE TO TANGENT POINT (SETOUT)
DP	DOWNPIPE
EL	EXISTING LEVEL
FFL	FINISHED FLOOR LEVEL
FL	FINISHED LEVEL
GL	GRATE LEVEL
HW	HEADWALL
IL	INVERT LEVEL
IP	INTERSECTION POINT (SETOUT)
K&C	KERB AND CHANNEL
KB	KERB BACK LEVEL
KI	KERB INVERT LEVEL
KIP	KERB INLET PIT
KL	KERB LIP LEVEL
KT	KERB TOP LEVEL
NTS	NOT TO SCALE
OL	OBVERT LEVEL
OSD	ON-SITE DETENTION
RL	RELATIVE LEVEL
RWO	RAINWATER OUTLET
RWT	RAINWATER TANK
SBE	SAMANA BLUE ENGINEERING PTY LTD
TBC	TO BE CONFIRMED
TC	TANGENT TO CURVE POINT (SETOUT)
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
WSUD	WATER SENSITIVE URBAN DESIGN

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REV	DESCRIPTION	BY	DATE



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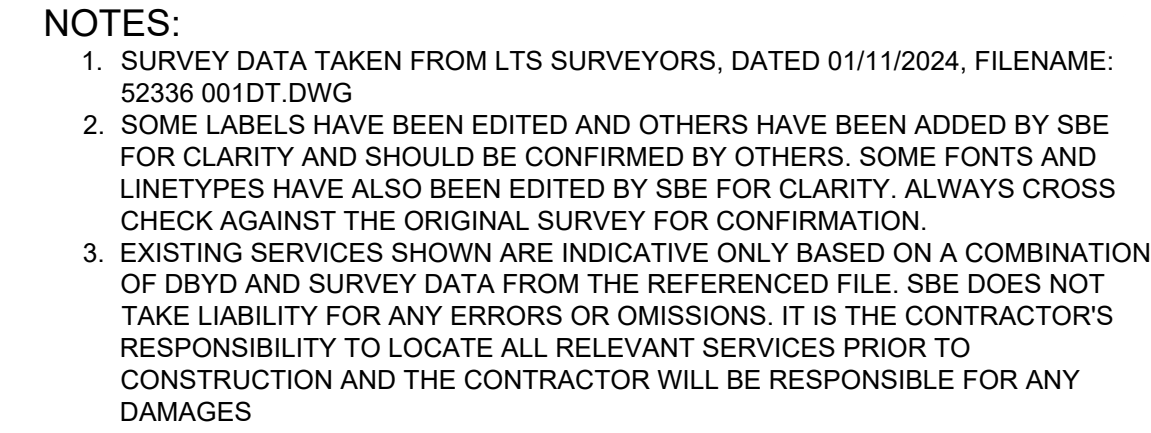
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LEGENDS

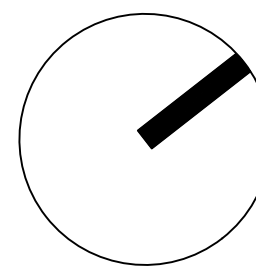
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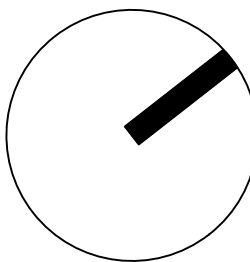


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EXISTING LAYOUT
PLAN (AERIAL)

PROPOSED DEVELOPMENT

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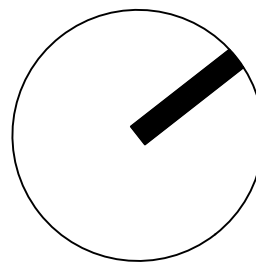
NOTES:

1. ALL BASEMENT 3 STORMWATER MUST BE DIRECTED TO THE PUMPOUT PIT.
2. ALL BASEMENT 1 & 2 MUST BE DIRECTED VIA DROPPER PIPES ON THE INSIDE OF THE BASEMENT WALLS AND CONNECTED DOWN TO THE BASEMENT 3 PUMPOUT PIT.
3. THE BASEMENT 3 PUMPOUT PIT MUST HAVE A DUAL RISING MAIN AND MUST BE CONNECTED UP TO THE WSUD TANK FOR TREATMENT.
4. LANDSCAPING AND AND PLANTER BEDS MUST BE DIRECTED TO WSUD CHAMBER PIT.
5. ALL ROOFWATER DOWNPIPES MUST BE DIRECTED TO TH RWT, THEN OVERFLOW INTO WSUD CHAMBER. ALL DOWNPIPES ARE NOT SHOWN ON THE CONCEPT PLANS.
6. THE WSUD & RWT HAVE A 1.2m HIGH WEIR WALL THAT ALLOWS SURCHARGING FLOWS TO BE DIRECTECTED TO THE OSD TANK. THE OSD TANK MUST HAVE A 3000Ø OVERFLOW PIPE TO BE DIRECTLY CONNECTED TO COUNCIL'S EXISTING KERB INLET PIT.
7. DETAILED DESIGN COORDINATION OF PIPES AND CLEARANCES TO BE DONE AT CC STAGE.
8. ALL LANDSCAPING PLANTER BEDS TO BE DIRECTED TO WSUD.
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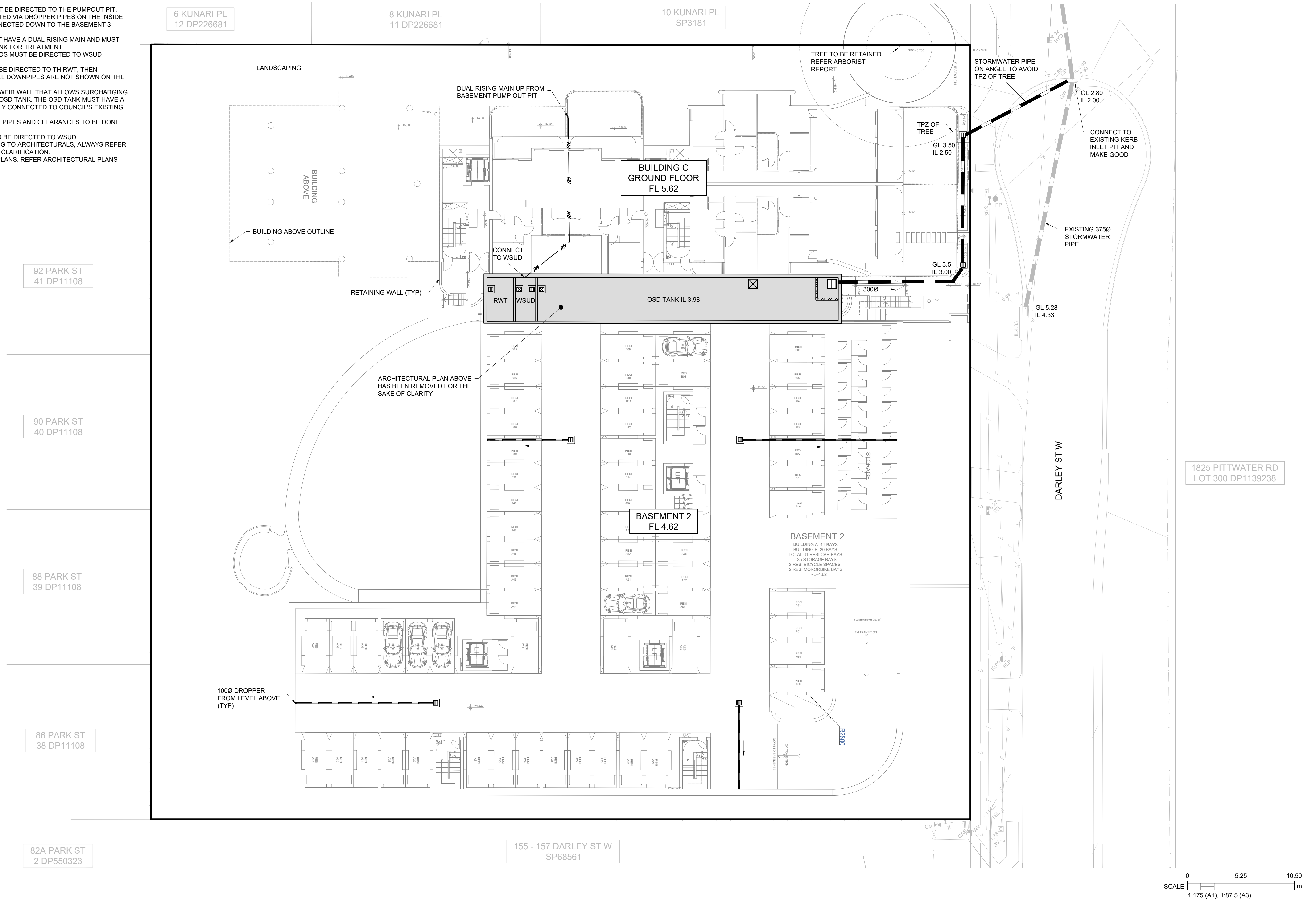
**CONCEPT
STORMWATER PLAN -
BASEMENT 3**

PROPOSED DEVELOPMENT
159 - 167 DARLEY ST W, MONA VALE NSW 2103

2024081DA - C05 B

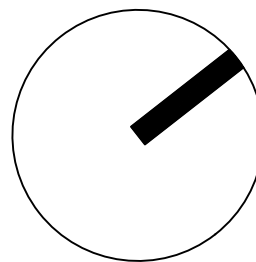
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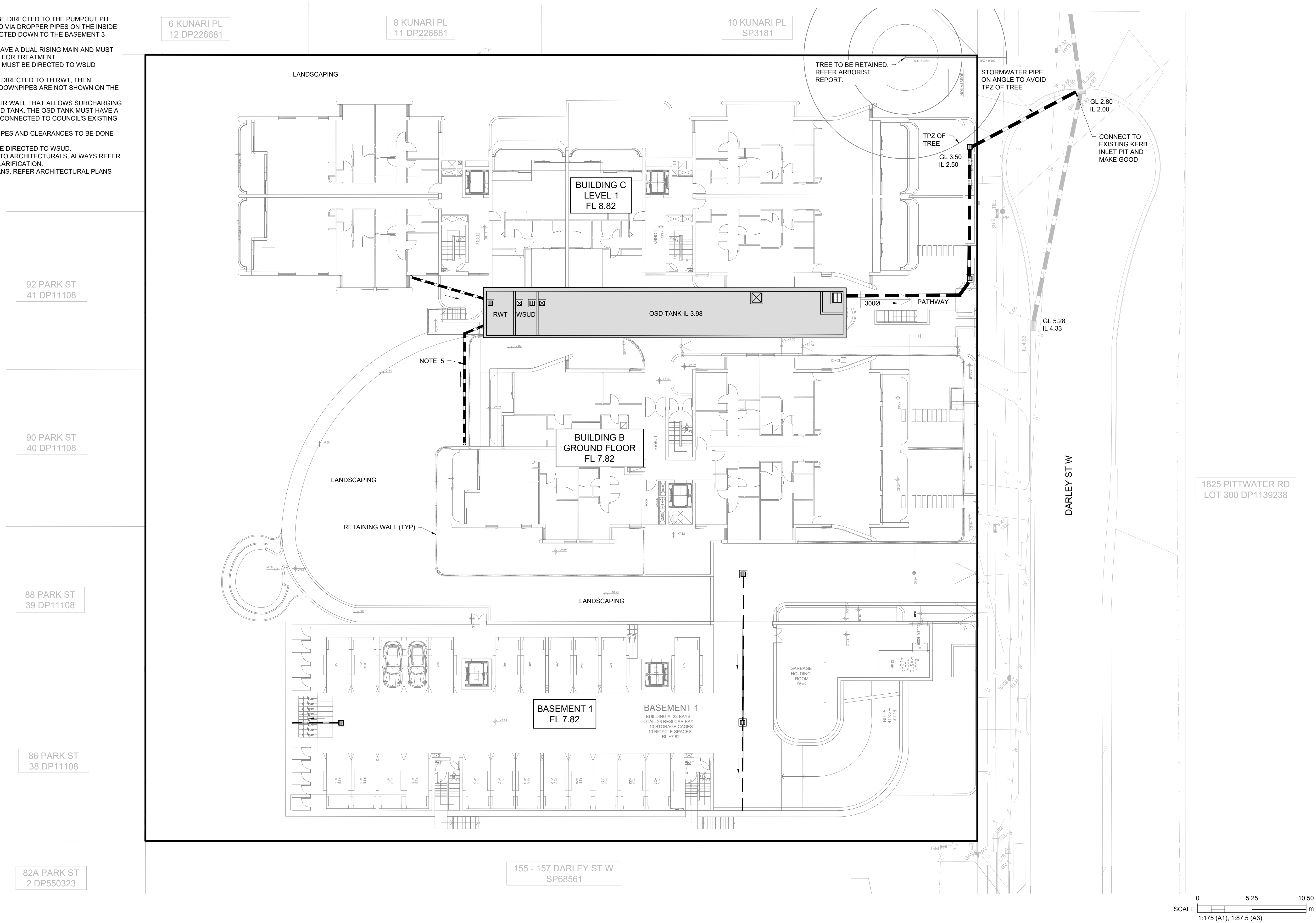
**CONCEPT
STORMWATER PLAN -
BASEMENT 2**

PROPOSED DEVELOPMENT
159 - 167 DARLEY ST W, MONA VALE NSW 2103

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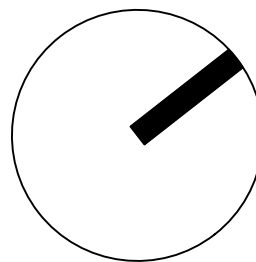
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1. ALL BASEMENT 3 STORMWATER MUST BE DIRECTED TO THE PUMPOUT PIT.
2. ALL BASEMENT 1 & 2 MUST BE DIRECTED VIA DROPPER PIPES ON THE INSIDE OF THE BASEMENT WALLS AND CONNECTED DOWN TO THE BASEMENT 3 PUMPOUT PIT.
3. THE BASEMENT 3 PUMPOUT PIT MUST HAVE A DUAL RISING MAIN AND MUST BE CONNECTED UP TO THE WSUD TANK FOR TREATMENT.
4. LANDSCAPING AND AND PLANTER BEDS MUST BE DIRECTED TO WSUD CHAMBER PIT.
5. ALL ROOFWATER DOWNPIPES MUST BE DIRECTED TO TH RWT, THEN OVERFLOW INTO WSUD CHAMBER. ALL DOWNPIPES ARE NOT SHOWN ON THE CONCEPT PLANS.
6. THE WSUD & RWT HAVE A 1.2m HIGH WEIR WALL THAT ALLOWS SURCHARGING FLOWS TO BE DIRECTECTED TO THE OSD TANK. THE OSD TANK MUST HAVE A 3000 OVERFLOW PIPE TO BE DIRECTLY CONNECTED TO COUNCIL'S EXISTING KERB INLET PIT.
7. DETAILED DESIGN COORDINATION OF PIPES AND CLEARANCES TO BE DONE AT CC STAGE.
8. ALL LANDSCAPING PLANTER BEDS TO BE DIRECTED TO WSUD.
9. SBE HAS UNDERTAKEN MINOR EDITING TO ARCHITECTURALS. ALWAYS REFER TO ARCHITECTURAL PLAN FOR FINAL CLARIFICATION.
10. NOT ALL TREES ARE SHOWN IN THE PLANS. REFER ARCHITECTURAL PLANS AND ARBORIST REPORT.



CIVIL ENGINEERING

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**CONCEPT
STORMWATER PLAN -
BASEMENT 1**

PROPOSED DEVELOPMENT

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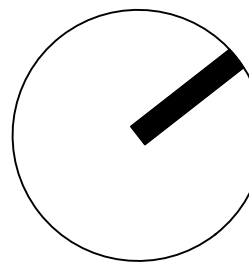
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LEGEND:

	EXISTING IMPERVIOUS
	PROPOSED IMPERVIOUS
	CATCHMENT BOUNDARY



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EXISTING IMPERVIOUS PLAN

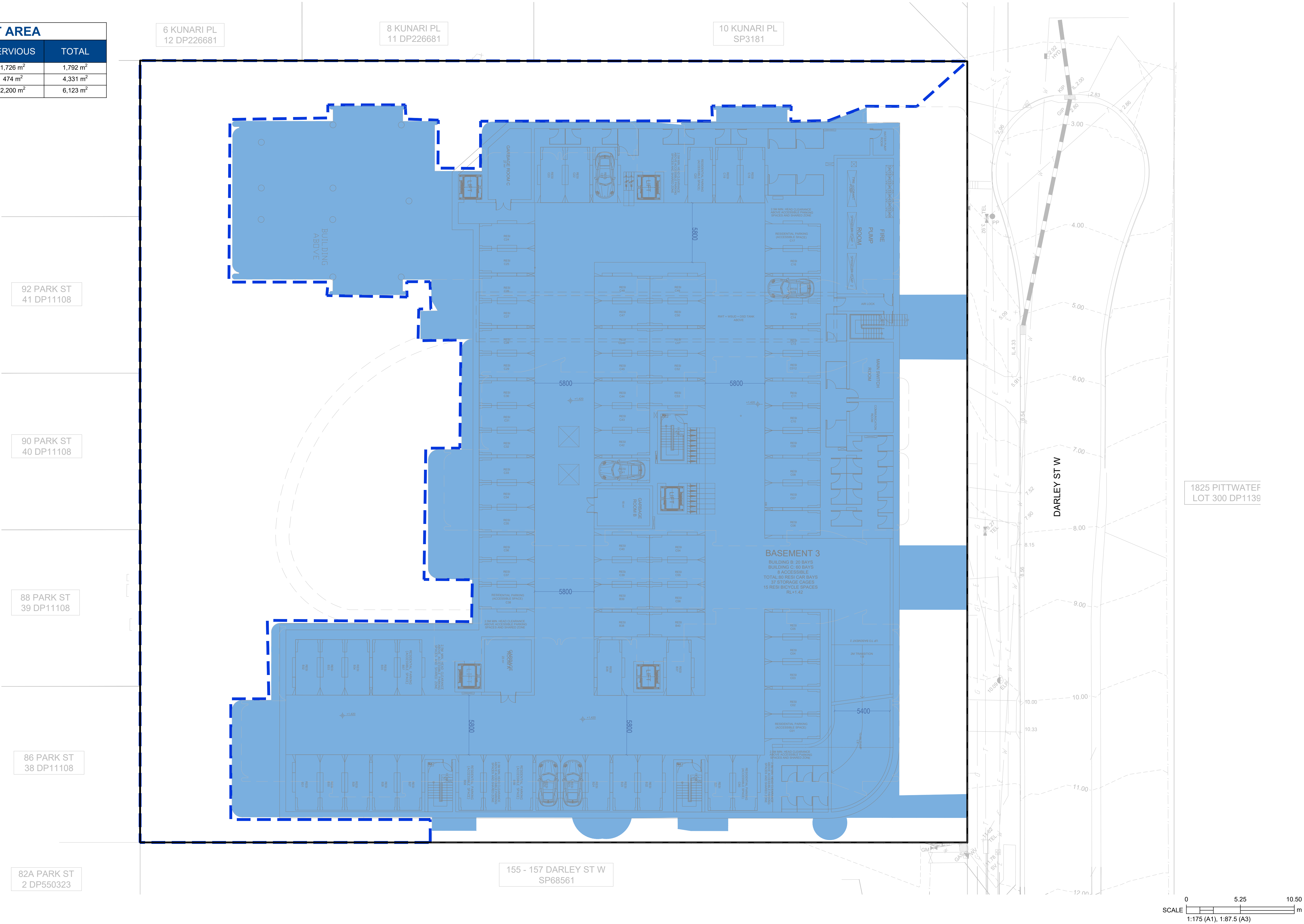
PROPOSED DEVELOPMENT

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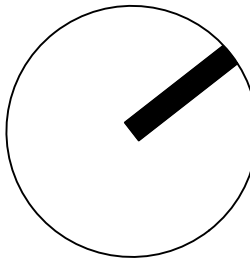
CATCHMENT AREA			
CATCHMENT	IMPERVIOUS	PERVIOUS	TOTAL
REAR	66 m ²	1,726 m ²	1,792 m ²
FRONT	3,857 m ²	474 m ²	4,331 m ²
TOTAL	3,923 m ²	2,200 m ²	6,123 m ²

- LEGEND:
- EXISTING IMPERVIOUS
 - PROPOSED IMPERVIOUS
 - CATCHMENT BOUNDARY



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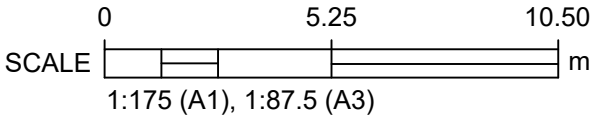
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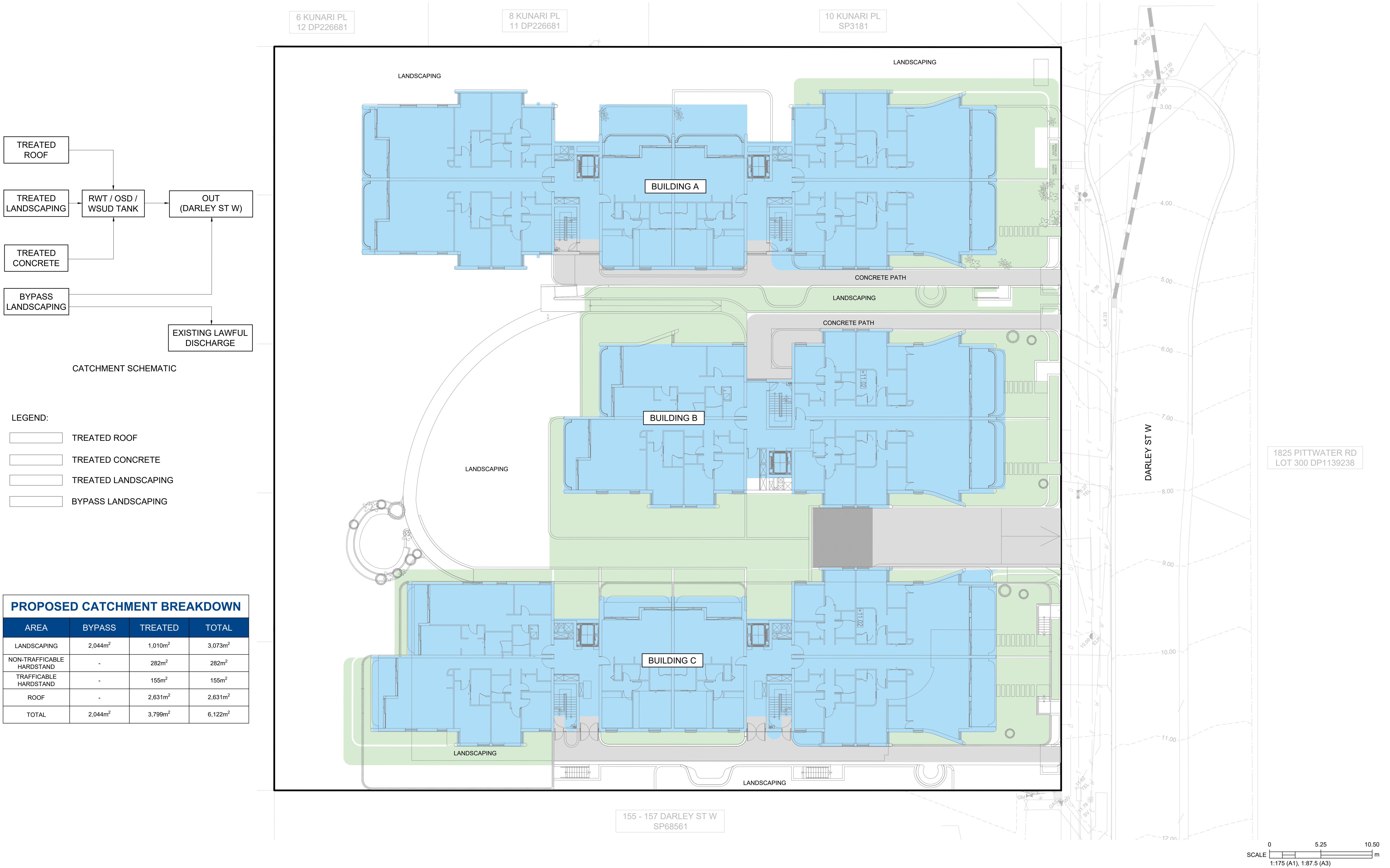
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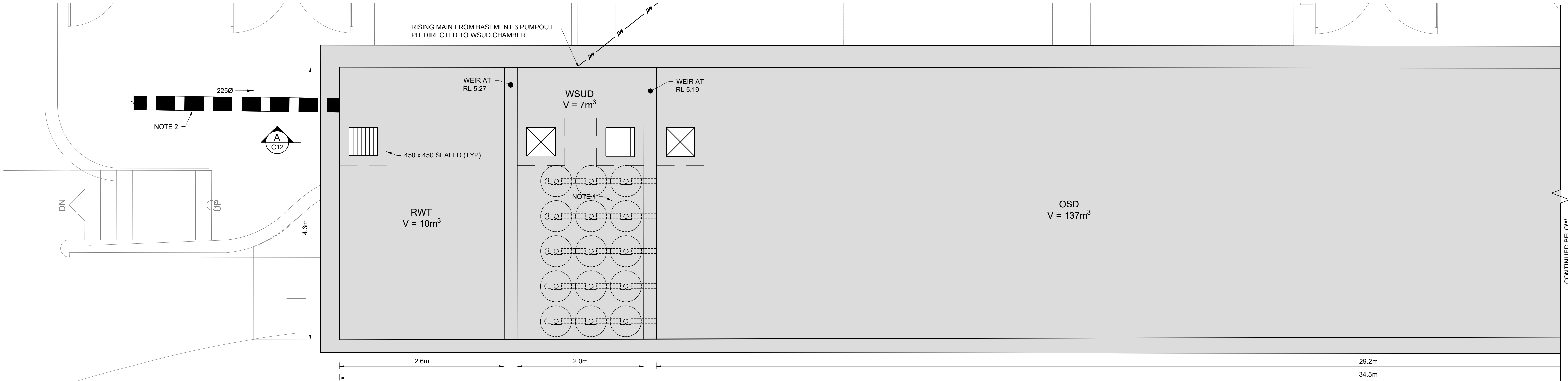
**PROPOSED
IMPERVIOUS PLAN**

PROPOSED DEVELOPMENT
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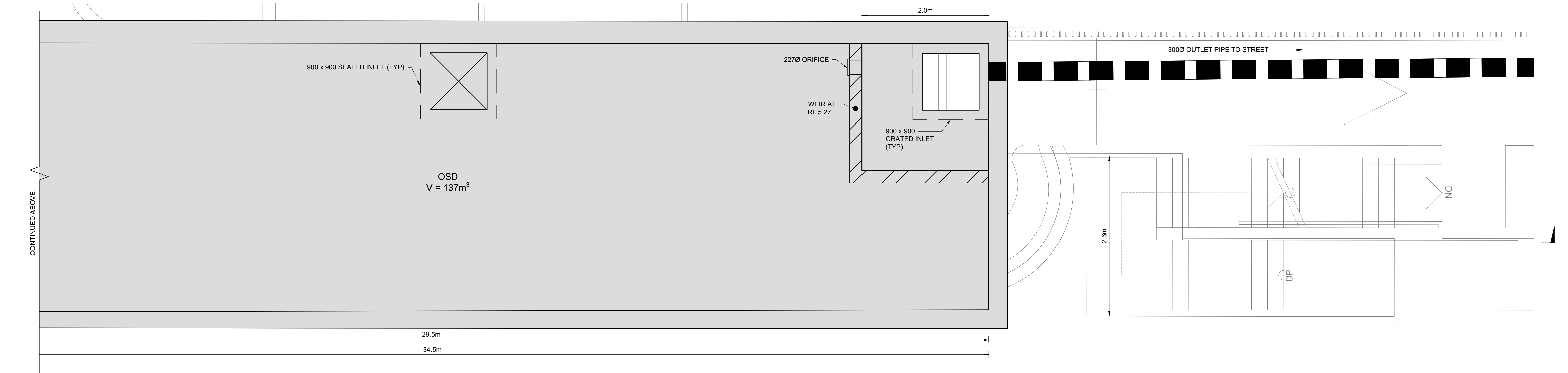
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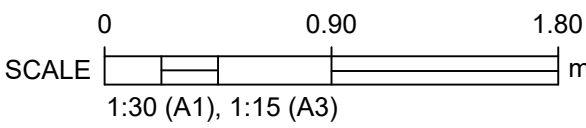


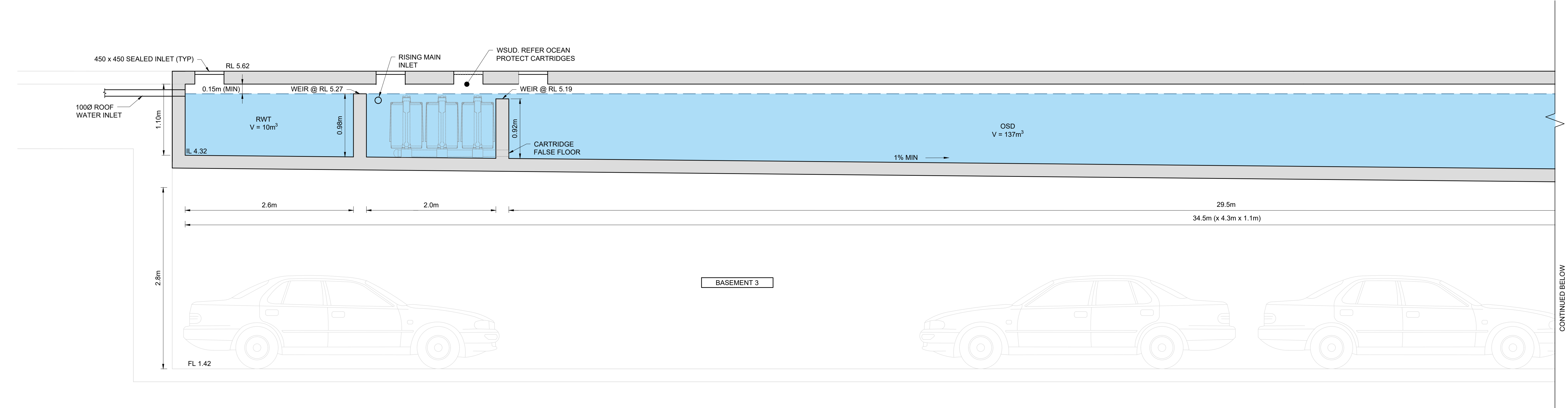


- NOTES:
- 1. 15 x OCEAN PROTECT STORMFILTER CARTRIDGES.
 - 2. ALL ROOFWATER DOWNPIPES MUST BE DIRECTED TO RWT PRIOR TO SURCHARGING INTO WSUD AND OSD.
 - 3. ARCHITECTURAL LINES ABOVE TANK HAS BEEN REMOVED FOR THE SAKE OF CLARITY.

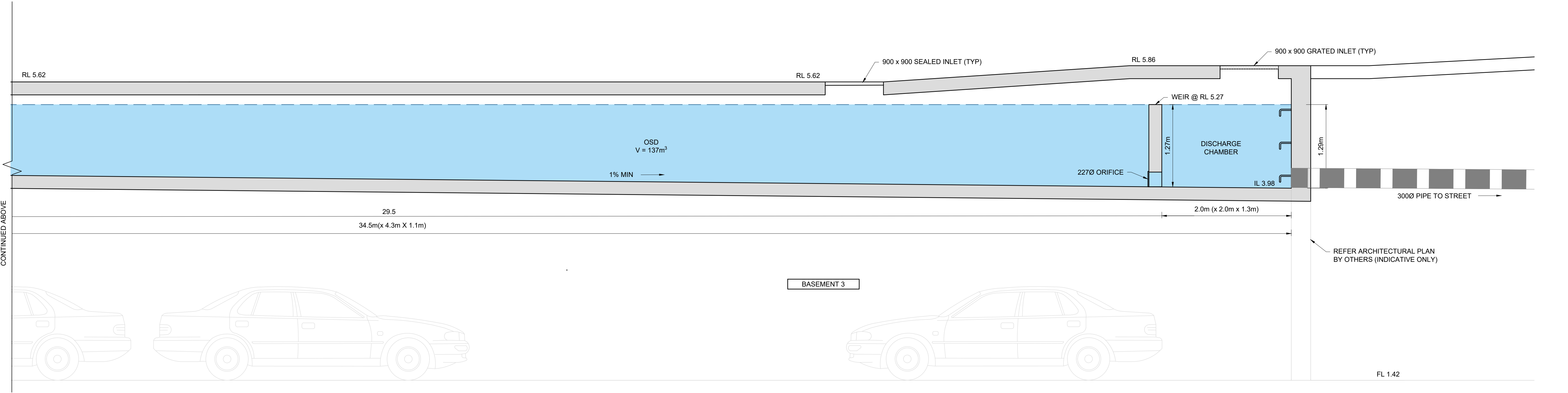


RWT + OSD + WSUD TANK PLAN
SCALE 1:40





- NOTES:
- 15 x OCEAN PROTECT STORMFILTER CARTRIDGES.
 - ALL RAINWATER MUST BE DIRECTED TO WSUD AND RWT TANK PRIOR TO SURCHARGING INTO THE OSD.



A
C11 TANK SECTION
SCALE 1:30

0 0.90 1.80
SCALE 1:30 (A1), 1:15 (A3) m

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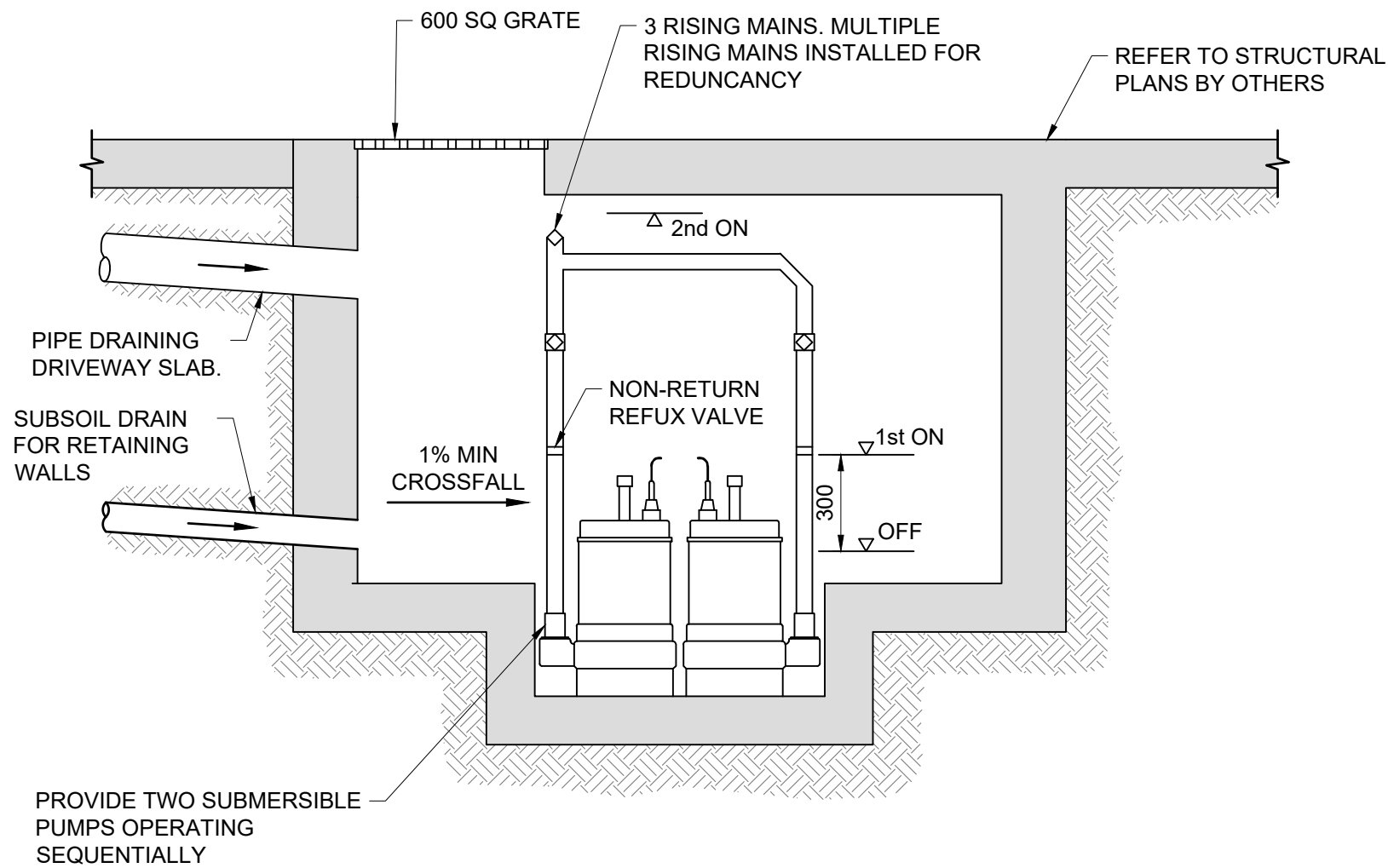
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**RWT + OSD + WSUD
TANK SECTION**

PROPOSED DEVELOPMENT
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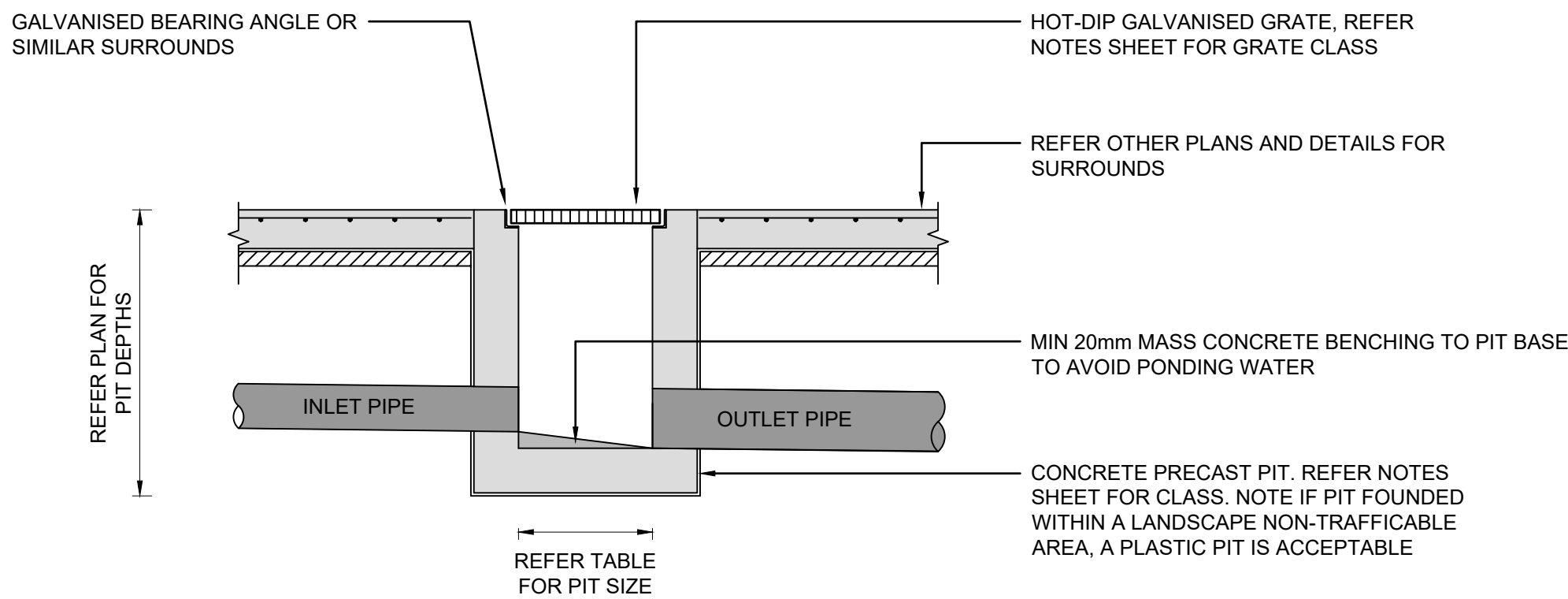
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BASEMENT PUMP-OUT TANK DETAIL
NTS

PUMP-OUT PIT DESIGN NOTES

1. NOT FOR CONSTRUCTION, PUMP OUT PIT DETAILS TO BE DETERMINED AT CC STAGE INCLUDING VOLUME AND PUMP CAPACITY.
2. THE PUMP OUT SYSTEM SHALL BE DESIGNED TO BE OPERATED IN THE FOLLOWING MANNER.
3. THE PUMP SHALL BE PROGRAMMED TO WORK ALTERNATIVELY SO AS TO ALLOW BOTH PUMPS TO HAVE EQUAL OPERATION LOAD AND PUMP LIFE.
4. A LOW LEVEL FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS.
5. A SECOND FLOAT SHALL BE PROVIDED AT A HIGHER LEVEL, APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL, WHEREBY ONE OF THE PUMPS WILL OPERATE AND DRAIN THE TANK TO THE LEVEL FLOAT.
6. A THIRD FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHOULD START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
7. AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL. THE ALARM SYSTEM SHALL BE PROVIDE WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.
8. CONTRACTOR IS TO CONFIRM PUMP ELECTRICAL LOAD AND CONNECTION WITH ELECTRICAL CONTRACTOR AT THE BEGINNING OF THE PROJECT.



TYPICAL CONCRETE INLET PIT
SCALE 1:20

- NOTES:
1. ENSURE CLIMB IRONS ARE PROVIDED UNDER LID AT 300 CTS TO COUNCIL'S SPECIFICATIONS WHERE PIT DEPTH IS DEEPER THAN 1000.
 2. SAMANA BLUE ENGINEERING RECOMMENDS THE PLUMBER PROVIDES 900 x 3000 LONG SUBSOIL DRAINAGE STUB PIPE SURROUNDED WITH 100mm THICKNESS OF NOMINAL 20mm COARSE FILTER MATERIAL WRAPPED IN GEOTEXTILE FILTER FABRIC (BIDUM A24 OR APPROVED SIMILAR). TO BE PARALLEL TO UPSTREAM SIDE OF EACH INLET PIPE.

CIVIL ENGINEERING

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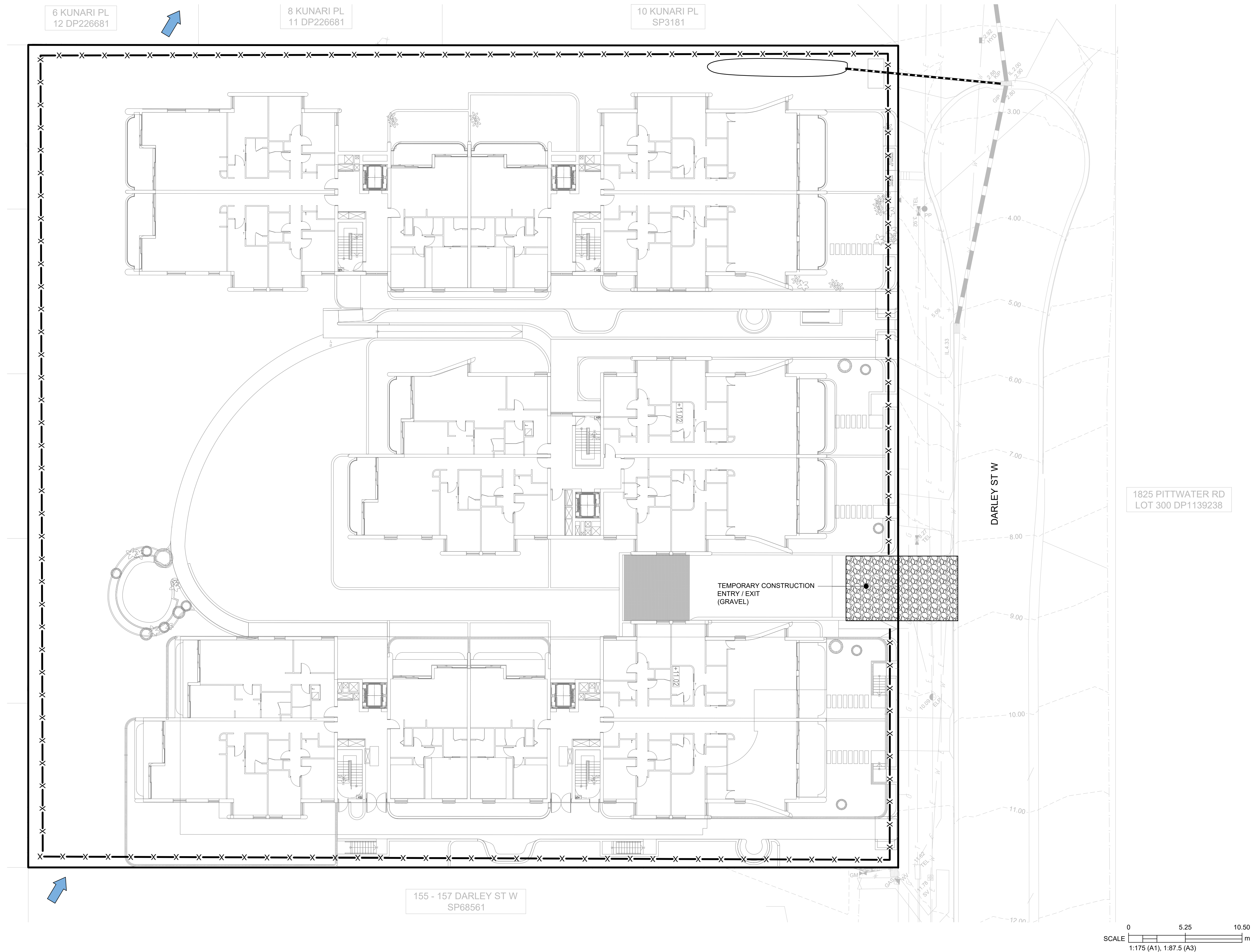
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STORMWATER
DETAILS

PROPOSED DEVELOPMENT

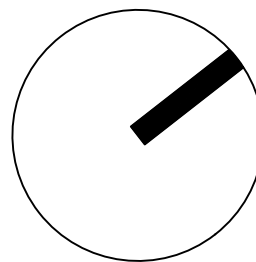
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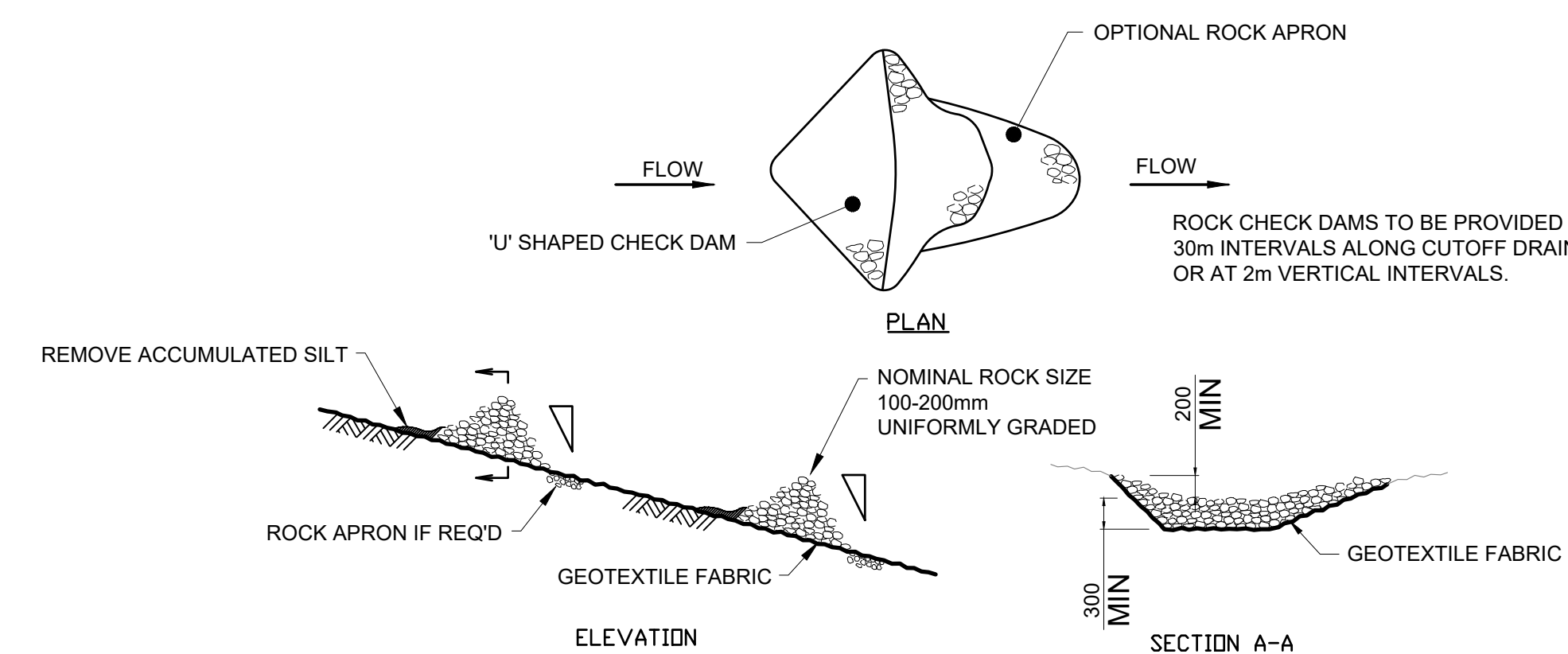
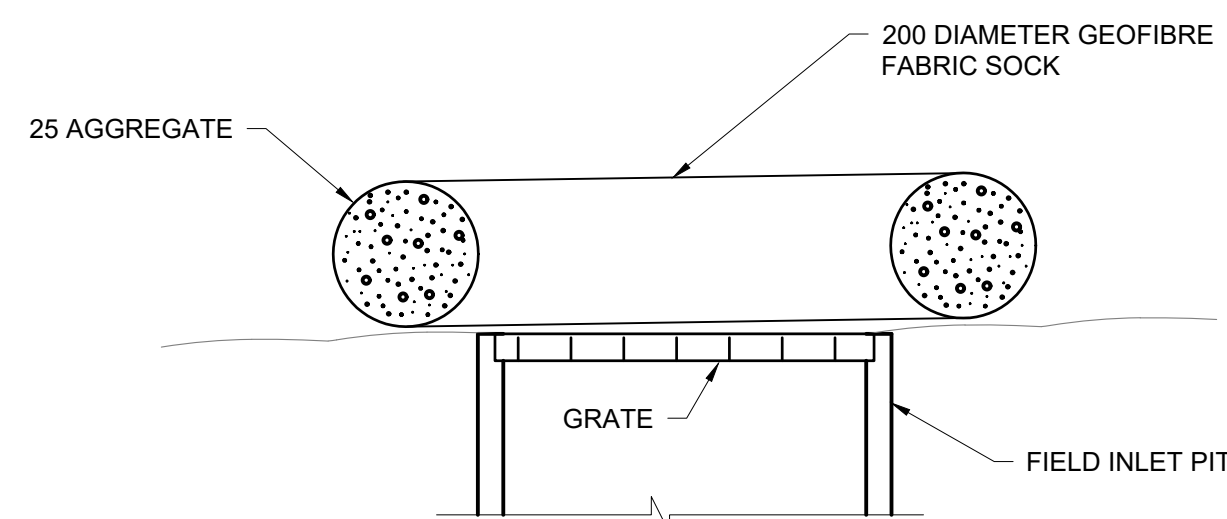
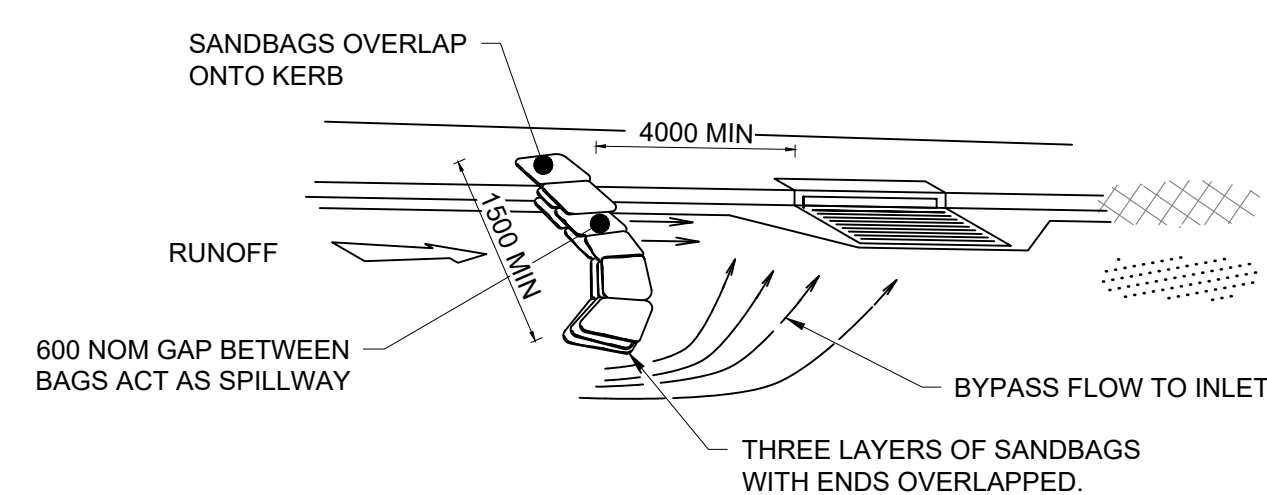
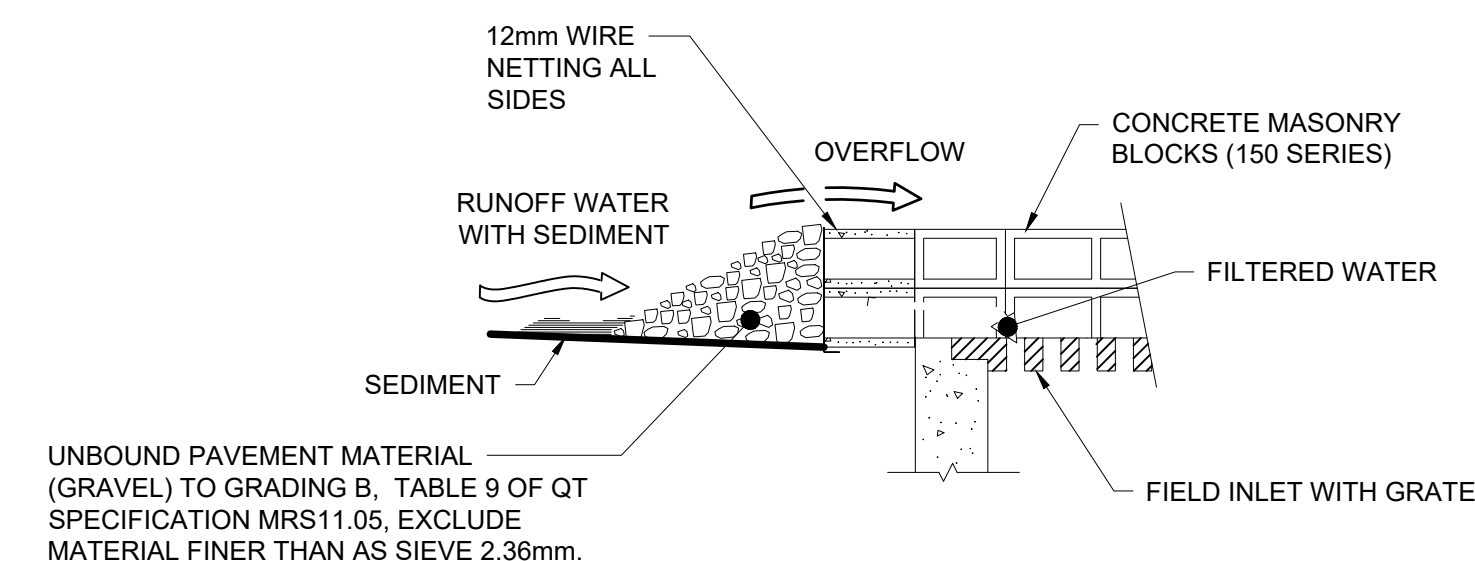
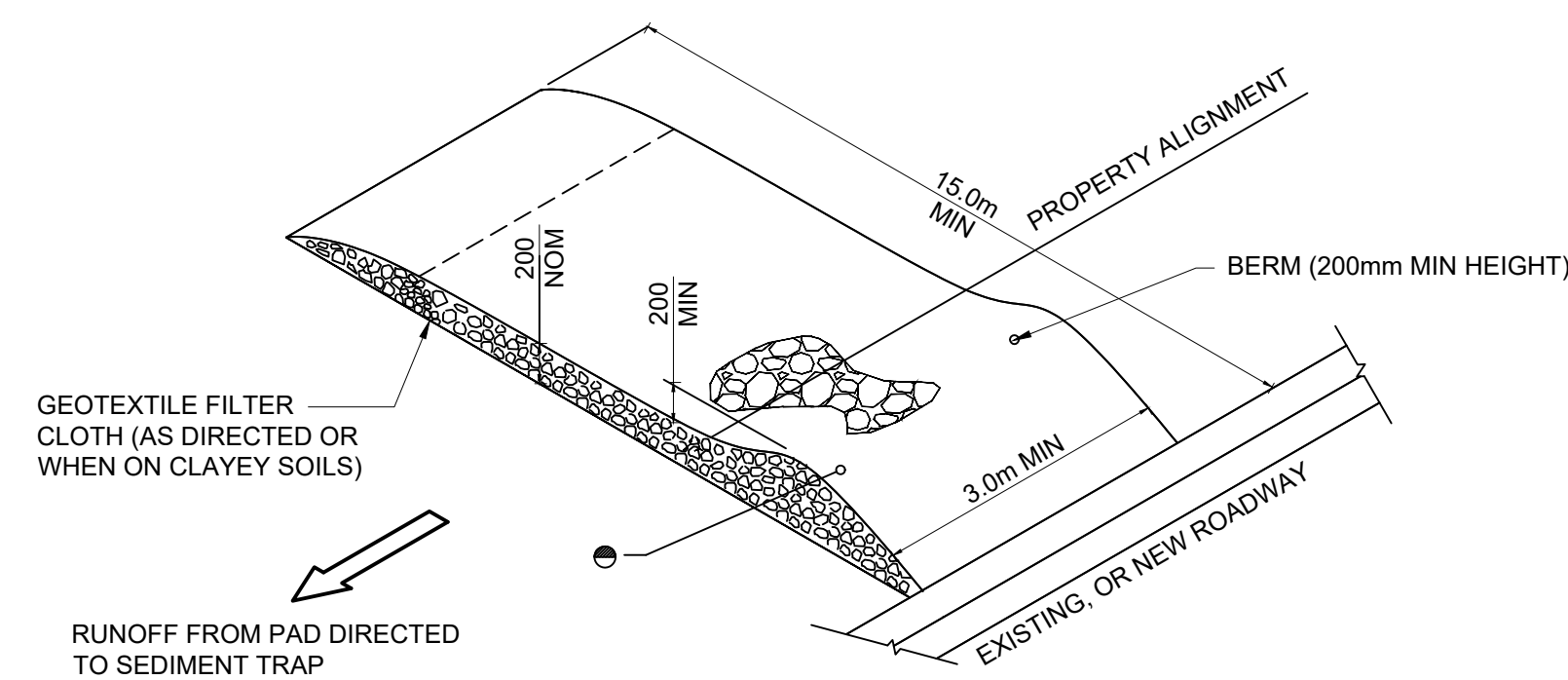
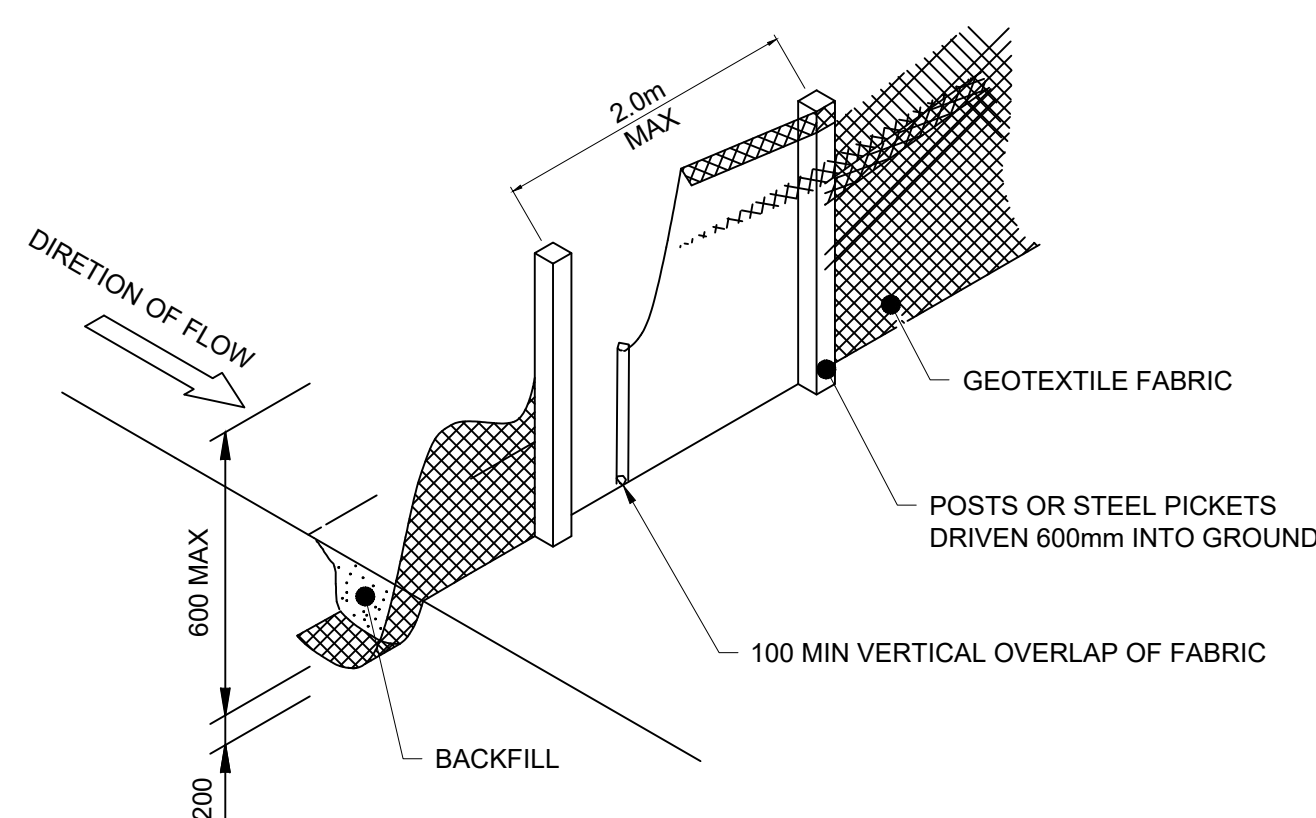
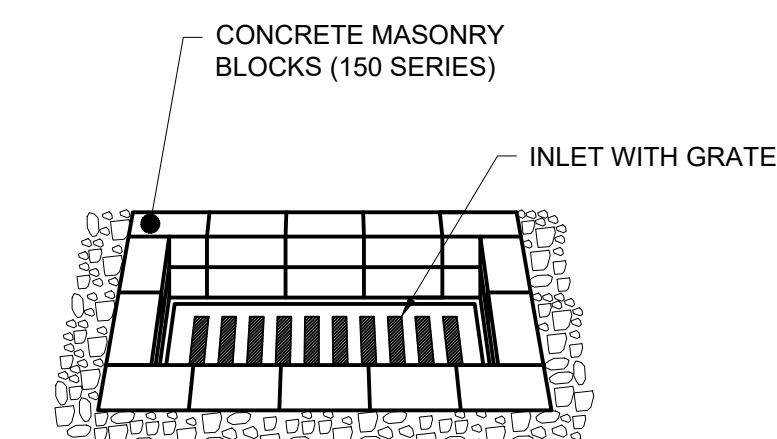
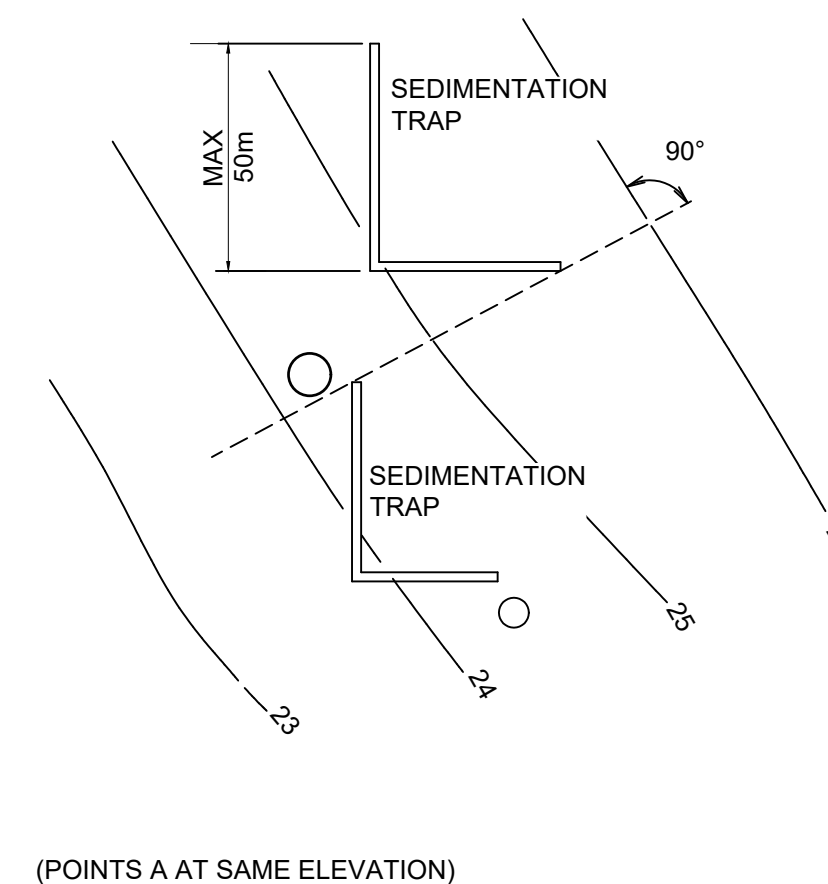
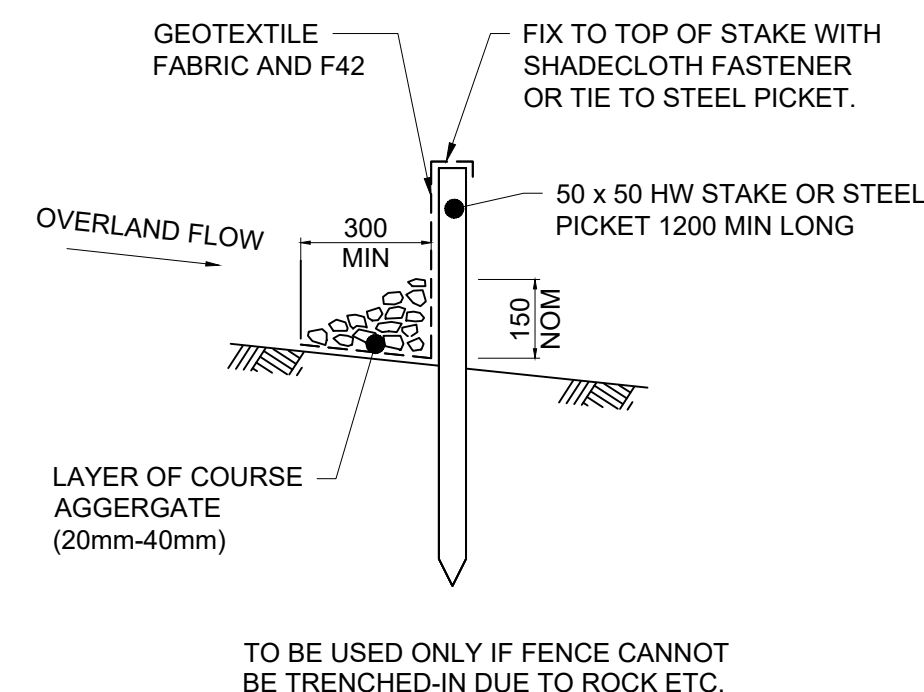
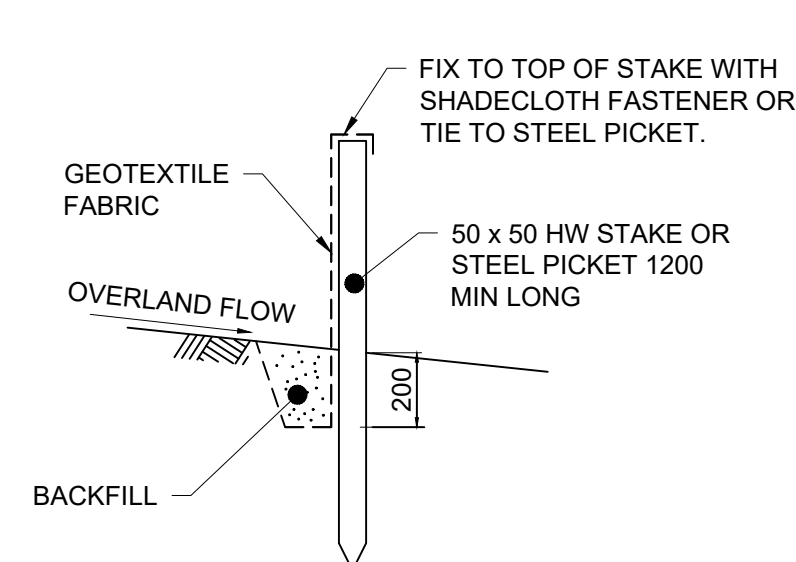
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**SOIL AND WATER
MANAGEMENT PLAN**

PROPOSED DEVELOPMENT
159 - 167 DARLEY ST W, MONA VALE NSW 2103

2024081DA - C14 B

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SOIL AND WATER MANAGEMENT DETAILS - 1 OF 2

PROPOSED DEVELOPMENT

159 - 167 DARLEY ST W, MONA VALE NSW 2103

2024081DA - C15 B

LEGEND

- UNBOUND PAVEMENT MATERIAL (GRAVEL) TO GRADING B, TABLE 9 OF QT SPECIFICATION MRS11.05, EXCLUDE MATERIAL FINER THAN AS SIEVE 2.36mm.
- WITHOUT F42 FABRIC, 2000 MAX CIC

SOIL AND WATER MANAGEMENT:

- GENERAL
 - TEMPORARY DRAINAGE CONTROL. FLOW SHOULD BE DIVERTED AROUND THE WORK SITE WHERE POSSIBLE.
 - ALL DRAINAGE, EROSION AND SEDIMENT CONTROLS TO BE INSTALLED AND BE OPERATIONAL BEFORE COMMENCING UP-SLOPE EARTHWORKS.
 - ALL CONTROL MEASURES TO BE INSPECTED EACH WORKING DAY AND AFTER SIGNIFICANT RUNOFF PRODUCING STORMS BY BUILDER / CONTRACTOR. TO BE MAINTAINED IN GOOD WORKING ORDER.
 - CONTROL MEASURES MAY BE REMOVED WHEN ON-SITE EROSION IS CONTROLLED AND 70% PERMANENT SOIL COVERAGE IS OBTAINED OVER ALL UPSTREAM DISTURBED LAND.
 - IN AREAS WHERE RUNOFF TURBIDITY IS TO BE CONTROLLED, EXPOSED SURFACES TO BE EITHER MULCHED, COVERED WITH EROSION CONTROL BLANKETS OR TURFED IF EARTHWORKS ARE EXPECTED TO BE DELAYED FOR MORE THAN 14 DAYS.
- SEDIMENT FENCE
 - NOT TO BE LOCATED IN AREAS OF CONCENTRATED FLOW.
 - NORMALLY LOCATED ALONG THE CONTOUR WITH A MAXIMUM CATCHMENT AREA 0.6 HA PER 100M LENGTH OF FENCE.
 - WOVEN FABRICS ARE PREFERRED, NON-WOVEN FABRICS MAY BE USED ON SMALL WORK SITES, I.E. OPERATIONAL PERIOD LESS THAN 6 MONTHS OR ON SITES WHERE SIGNIFICANT SEDIMENT RUNOFF IS NOT EXPECTED.
 - WHERE FENCES NEED TO BE LOCATED ACROSS THE CONTOUR THE LAYOUT SHALL CONFORM TO TYPICAL LAYOUT ACROSS GRADE.
 - FENCES ARE REQUIRED 2M MIN FROM TOE OF CUT OR FILL BATTERS, WHERE NOT PRACTICAL ONE FENCE CAN BE AT THE TOE WITH A SECOND FENCE 1M MIN AWAY. FENCE SHOULD NOT BE LOCATED PARALLEL WITH TOE IF CONCENTRATION OF FLOW WILL OCCUR BEHIND THE FENCE.
- TEMP CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP.
 - ADJACENT STORMWATER RUNOFF TO BE DIVERTED AWAY FROM ENTRY/EXIT.
 - WHEEL - WASH OR SPRAY UNIT MAY BE REQUIRED DURING WET WEATHER.
- ALL DIMENSIONS IN MILLIMETRES UNLESS INDICATED OTHERWISE.
- FIELD INLET
 - A STABILISED BYPASS OVERLAND FLOW PATH SHOULD EXIST ADJACENT TO THE FIELD INLET.
 - WATER LEVEL CONTROL PERIMETER BANKS MAY BE REQUIRED.
 - BLOCKS TO BE RESTRAINED BY A HORIZONTAL TIMBER RAIL AT BLOCK JOINT HEIGHT FIXED TO TIMBER STAKES AT CORNERS.
- CHECK DAMS
 - CATCHMENT AREA LIMITED TO 4 Ha.
 - USE IN MINOR OPEN DRAINS ONLY, (VELOCITY CONTROL), SEDIMENT COLLECTION IS A SECONDARY PURPOSE.
- STRAW BALES ARE ONLY FOR EMERGENCY USE ONLY.
- SAFETY ISSUES MUST BE CONSIDERED AT ALL TIMES, INCORPORATE TRAFFIC CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT.
- ALL EROSION AND SEDIMENT CONTROLS MUST MEET THE REQUIREMENTS OUTLINED IN THE LANDCOM PUBLICATION MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION - VOLUME 1, 4TH EDITION (2004).

SOIL AND WATER MANAGEMENT ADDITIONAL NOTES

- ESTABLISH A SINGLE STABILISED ENTRY/EXIT POINT (TEMPORARY CONSTRUCTION ENTRY/EXIT SHAKE DOWN)
- INSTALL SEDIMENT FENCE(S) ALONG THE LOW SIDE OF THE SITE.
- DIVERT UP-SLOPE WATER AROUND THE WORK SITE AND APPROPRIATELY STABILIZE ANY DRAINAGE CHANNELS.
- CLEAR ONLY THOSE AREAS NECESSARY FOR BUILDING WORK TO OCCUR.
- STOCKPILE TOPSOIL WITHIN THE SEDIMENT-CONTROL ZONE.
- STABILIZE EXPOSED EARTH BANKS E.G. VEGETATION, EROSION CONTROL BLANKETS.
- INSTALL ON-SITE WASTE RECEPTACLES E.G. MINI-SKIPS, BINS, REO CAGES. THESE SHOULD BE COVERED TO PREVENT WASTE BEING MOVED BY WIND.
- COMMENCE BUILDING ACTIVITIES.
- MAINTAIN ALL CONTROL MEASURES IN GOOD WORKING ORDER.
- REVEGETATE OR OTHERWISE STABILIZE THE SITE POLLUTION.
- FOR BASEMENT TEMPORARY HOLDING POND, PUMP OUT CLEAN WATER AFTER FLOCCULANT ADDED.
- WHERE PRACTICABLE, THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE AND AS RECOMMENDED IN THE TABLE BELOW.
- REFER TRAFFIC MANAGEMENT PLAN BY OTHERS FOR PEDESTRIAN DIVERSION.

LAND USE	LIMITATIONS	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN FIVE (PREFERABLY TWO) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UP-SLOPE) AND SEDIMENT FENCING (DOWN-SLOPE), OR SIMILAR MATERIALS
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF 7 METRES	THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS' ACTIVITIES. ALL SITE WORKERS WILL CLEARLY RECOGNISE THEIR BOUNDARIES THAT, WHERE APPROPRIATE,ARE MARKED WITH BARRIER MESH, SEDIMENT FENCING, OR SIMILAR MATERIALS.
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH	THINNING OF GROWTH MIGHT BE NECESSARY FOR FIRE HAZARD REDUCTION

CIVIL ENGINEERING

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SOIL AND WATER MANAGEMENT DETAILS - 2 OF 2

PROPOSED DEVELOPMENT

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2024081DA - C16 B