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Procon Developments Australia
PO Box 197
SEVILLE VIC 3139

Level 2 Kishorn Court
58 Kishorn Road
Mount Pleasant WA 6153

PO Box 1036
Canning Bridge WA 6153

Tel: (08) 9315 9955
Email: office@portereng.com.au
www.portereng.com.au

Attention: Matthew Zappia

Dear Matthew,

**LOT 838 AVONWEST – STAGE 1
#239 YILGARN AVENUE, NORTHAM
STORMWATER MANAGEMENT PLAN REV B**

This Stormwater Management Plan has been prepared in support of development approval application at proposed Lot 838 in Avonwest.

Lot 838 location is shown below in *Figure 1*. The site is bound by proposed road reserve to the north and east, industrial lot to the south and an environmental corridor to the west.



Figure 1 – Site location plan (overall subdivision bound in blue. Proposed site hatched in magenta).

PROPOSED DEVELOPMENT LAYOUT

The proposed development includes a warehouse facility with associated access and parking for trucks and light vehicles. A copy of the proposed development is presented in *Attachment A*.

Lot 838 will be developed across a number of stages with works initially limited to Stage 1. The development plans for the balance of lot were not available and such, an updated stormwater management plan is required when the balance of Lot 838 is developed.

LANDFORM

Lot 838 will be created as part of the Avon West subdivision. The proposed bulk earthworks plan for the subdivision layout shows the lot grades from a high of 177m in the south east boundary to a low of 168m in the north west boundary, an average grade of 3.5% or 1 in 28 from the south east to the north west.

The soils on site are expected to be Gravelly sands over clayey sand over hard ground and rock¹. Infiltration rates on site are recommended at 0.5m per day with a minimum separation of

Groundwater is not expected to be within 8m of surface levels on site². If groundwater is found during works, report to the engineer for further advice.

STORMWATER DESIGN PRINCIPALS

A requirement of the Avonwest subdivision was to prepare an Urban Water Management Plan (UWMP). This UWMP dictated on lot drainage requirements. All lots within Avon West must comply with the outcomes of the UWMP. *Table 1* provides a summary of these outcomes.

Aspect	UWMP Control
On lot detention	Systems are to be installed to detain 2m ³ for every 65m ² of lot area
Offsite discharge	Outlet pipe to the street drainage network via the lot connection pit limited to the predevelopment 1EY 30-minute event.
Treatment	Appropriate water quality treatment measures are required depending on the intended lot use.
Infiltration	0m per day.
Flood Protection	All finish floor levels to be set 500mm above the lot maximum flood level for the 1% AEP event.

Table 1: UWMP Design Requirements

¹ Douglas Partners Geotechnical Investigation, 89055.00, July 2018

² Oversby Consulting Urban Water Management Plan, B24046, March 2025 V1 - Section 4

STORMWATER DESIGN

The concept stormwater management plan is presented in *Attachment B*.

On Lot Detention

A combination of pits, pipes, drainage cells and rainwater harvesting tanks will be used to provide the minimum stormwater storage requirements for the lot. The storage shown in *Attachment B* complies with the UWMP's requirements.

The roof stormwater drainage will be conveyed to the below ground network by downpipes and discharge to the proposed rainwater tanks on site for storage and reuse within the commercial facility.

The remaining lot area will discharge to the below ground pit and pipe network with storage provided within the drainage cells below ground.

Offsite Discharge

An orifice plate will be installed on the outlet pipe to restrict flows compliant with the UWMP's requirements.

Treatment

The site's intended use is a warehouse and pavement for vehicles.

There is no vehicle wash down areas, fuel loading or other hydrocarbon uses. Hydrocarbon spills are not anticipated therefore a hydrocarbon separation is not required.

It is anticipated silts and larger objects are the likely water quality issues, these can be managed via the regular cleaning trapped pits and a baffle prior to the lot connection pit. These are documented in *Appendix B*.

Flood Protection

In the event of an extreme storm, the stormwater will flow north towards road where exits the site. All building floor levels are set compliant with UWMP.

CONCLUSION

The proposed site stormwater will be managed in accordance with the subdivision UWMP by the following measures:

1. Storage provided on site to detain 2m³ of stormwater for every 65m² of lot area.
2. The building roof area will be discharged into rainwater storage tanks.
3. Low flow outlet pipe to the road drainage network, controlled by orifice plate
4. Trapped pits and a baffle are documented.
5. The building floor level are set compliant with the UWMP.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'R Thomson', written in a cursive style.

RACHEL THOMSON
PROJECT ENGINEER

Enc.

ATTACHMENT A – CONCEPT DEVELOPMENT LAYOUT (STAGE 1)

ATTACHMENT B - STORMWATER MANAGEMENT PLAN



LEGEND

200

PROPOSED CONTOURS

ENVIRONMENTAL CORRIDOR

PROPOSED DRAINAGE PIPE

SUBDIVISION DRAINAGE PIPE

SUBDIVISION LOT CONNECTION PIPE

UNDERGROUND STORAGE STRUCTURE

AREA OF BUILDING

AREA OF PAVEMENT

AREA OF FOOTPATH

AREA OF LAWN

RAINWATER HARVESTING TANK

PROPOSED ROAD/KERB

LOT CONNECTION PIT (LCP)

PROPOSED DRAINAGE PIT

PROPOSED FINISHED PAVEMENT LEVELS

DRAINAGE SUMMARY TABLE

THE ON SITE STORMWATER SYSTEM WILL MANAGE THE LOT STORMWATER, IN ACCORDANCE WITH AVONWEST SUBDIVISIONS UWWP.

DESIGN SUMMARY

OVERALL LOT AREA 2.75ha
STAGE 1 LOT AREA 0.88ha

LOT STORAGE - STAGE 1

LOT STORAGE REQUIRED

2m³ OF STORAGE FOR EVERY 65m² OF LOT AREA: 270m³

LOT STORAGE AVAILABLE

RAINWATER TANKS 3No. = 99.7m³
SOAKWELLS 12 No. 1.8m dia x 1.2m deep = 36.6m³
PIPE: 375mm DIA 275m LENGTH = 30m³
DRAINAGE CELLS: 189m² BASE x 0.35m DEEP = 103.7m³
TOTAL = 270m³

OUTLET CONTROL

OUTLET CONTROLLED TO 1EY 30 MINUTE EVENT PRE DEVELOPMENT FLOW RATE: 18l/s
ORIFICE PLATE DIAMETER: 92mm

EMERGENCY OVERFLOW

THE PROPOSED STORMWATER NETWORK WILL MANAGE THE 1% AEP CRITICAL EVENT. IN THE EVENT OF A MAJOR FAILURE WITHIN THE ON SITE STORAGE NETWORK, THE STORMWATER WILL OVERFLOW TO THE ROAD RESERVE ALONG THE NORTHERN BOUNDARY OF THE LOT

