Product	Register Search Plus (CT 6281/488)
Date/Time	17/05/2023 03:58PM
Customer Reference	947PL
Order ID	20230517008342

REAL PROPERTY ACT, 1886
South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 6281 Folio 488

Parent Title(s) CT 6041/834, CT 6041/835

Creating Dealing(s) RTC 13943890

Title Issued 07/02/2023 **Edition** 1 **Edition Issued** 07/02/2023

Estate Type

FEE SIMPLE

Registered Proprietor

MICHELE DIANE RONAN
OF PO BOX 256 ALDGATE SA 5154

Description of Land

ALLOTMENT 102 DEPOSITED PLAN 131157
IN THE AREA NAMED MYLOR
HUNDRED OF NOARLUNGA

Easements

NIL

Schedule of Dealings

NIL

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

Certificate of Title

Title Reference:	CT 6281/488
Status:	CURRENT
Parent Title(s):	CT 6041/834, CT 6041/835
Dealing(s) Creating Title:	RTC 13943890
Title Issued:	07/02/2023
Edition:	1

Dealings

No lodged Dealings found.

SITE AND SOIL ASSESSMENT – 151 STOCK ROAD, MYLOR, SOUTH AUSTRALIA 5153

Owner:	Michele Ronan
Site:	151 Stock Road, Mylor SA 5153
Date:	30 May 2023
Job Reference:	SEA125

WASTEWATER APPROVAL CONDITIONS & NOTES APPLY
WWA: 473/W106/23
DATE: 22/06/2023

Executive Summary

Seed Enterprises (Seed) were engaged to undertake a site and soil assessment to determine the suitability of the proposed on-site domestic wastewater management system for the site located at 151 Stock Road, Mylor, South Australia ('the site').

The assessment was completed in accordance with the Government of South Australia DHA *On-site Wastewater Management Systems Code (the Code)* and Australian Standard AS/NZS 1547 *On-site domestic wastewater management (AS 1547).*

It is understood that a wastewater management system upgrade is required to satisfy council development conditions. System summary information is provided in Table 1.

Table 1 Summary information

Item	Detail
Postal Address	151 Stock Road, Mylor, South Australia 5153
Municipality	Adelaide Hills Council
Proposed Land Use	Mixed use – Residential, Ancillary accommodation and Worker's accommodation
Design Flow	1375 L/d
Anticipated Wastewater Load	• 6 equivalent persons for the primary dwelling at 125 L/p/d, • 3 equivalent persons for the ancillary dwelling at 125 L/p/d, and • 2 equivalent persons for the worker's accommodation at 125 L/p/d
Anticipated BOD	770 g/d
Treatment System	Existing Ozzi Kleen SA Health approved Aerated Wastewater Treatment System (AWTS) upgraded with a 150 watt air blower and dual diffusers.
Land Application System	Surface irrigation (Antelco ReuZit sprinklers)
Proposed Pump	Reefe RHV220 or Davey 53A/B (to be confirmed by plumber based on actual installation levels)

Aim

The aim of this assessment is to determine the suitability of the proposed on-site wastewater management system comprising an upgraded Ozzi Kleen AWTS to surface irrigation land application.

Methodology

The site and soil characteristics summarised in this report are based on the desktop review of available desktop information as well as a site inspection and an intrusive soil assessment.

General Site Characteristics

Table 2 General Site Information

Item	Detail
Parcel Identifier	D131157 A102, Certificate of Title Volume 6281 Folio 488, Hundred of Noarlunga
Postal Address	151 Stock Road, Mylor, South Australia 5153
Municipality	Adelaide Hills Council
Current Land Use	Mixed use residential
Proposed Land Use	Mixed use residential
Site Area	6.0583 ha
Site Slope	Variable, 5% - 30%
Average Rainfall	962.1 mm/year based on data between 1949 to the present from the Bureau of Meteorology (BOM) Longwood weather station (ID: 023727).
Point Potential Evapotranspiration	1200-1600 mm/year (based on BOM data collected between 1961 and 1990)
Water Supply Type	Roof capture and storage

Land Application Area Characteristics

Table 3 Localised Land Application Area Information

Item	Detail	Design Considerations
Localised slope	5%	None.
Proximity to registered waterbody	>50m	None.
Proximity to groundwater bore(s)	>50m	None.
Proximity to high tide coastal water	>100m	None.
Surface Drainage	Good	None.
Rocky Outcrops	No	None.
Existing Vegetation	Variable grasses, existing irrigation area planted out appropriately.	Irrigation area to be in-filled with salt-tolerant, water-loving vegetation. A 150mm surface layer of mulch shall be emplaced across the designated surface irrigation area, including the existing irrigation area, and shall be maintained at all times.

Adelaide Hills COUNCIL

WASTEWATER APPROVAL
CONDITIONS & NOTES APPLY
WWA: 473/W106/23
DATE: 22/06/2023

Soil Characteristics

The intrusive soil assessment was completed by Ginos Engineering on 18 May 2018. Approximate locations of the soil bore investigation locations are illustrated in the drawing in Attachment 2. Soil lithology observations have been inferred from Ginos Engineering Borelogs (Attachment 2) and have been summarised in the table below:

Table 4 Soil Lithology Summary

Item	Details	Design Considerations
Soil Profile Summary	Approximately 200mm silty/clayey sand layers (SC-SM) over sandy silty clay to a depth of 850mm (CL-CH) into sandy clay to 1700mm (CL) and clayey sand layers (SM) to the depth of the boreholes.	Good soakage soils underlain by practically impermeable soakage soils (as classified as per the Code).
Depth of Drilling	All boreholes were terminated at 3.0m below ground level (bgl).	None.
Depth to Water	No groundwater was encountered to a maximum depth of 3.0m bgl	None.
Depth to Bedrock	No bedrock was encountered to a maximum depth of 3.0m bgl	None
Surface Soil Properties	**Description:** Clayey SAND **USCS Classification:** Clayey SAND - SC **AS1547 Category 3:** Highly/moderately structured loams	Irrigation area is to be maintained with appropriate salt-tolerant, water loving vegetation. A 150mm surface layer of mulch shall be emplaced across the designated surface irrigation area and shall be maintained at all times. Adopt a Design Irrigation Rate (DIR) of 4.5mm/d as per section 8.4.2 of the Code.

System Design

The following table sets out the design requirements based on design calculations and observations from the site and soil investigation, taking into account site specific constraints.

Table 5 – System Design Summary

Item	Detail/Calculations	Design Recommendations
Adopted DIR	As per Soil Characteristics	4.5mm/d
Number of primary dwelling bedrooms	As per discussion with owner	3
Primary dwelling Equivalent Persons (EP)	As per the Code	6
Ancillary accommodation design EP (maximum)	As per discussion with owner	3
Worker's accommodation design EP (maximum)	As per discussion with owner	2
Hydraulic load per person	Based on a reticulated mains water system	125L/p/d
Hydraulic load (property)	Hydraulic Load x EP	1375L/d
Required irrigation application area	$\frac{\text{Total hydraulic load}}{\text{DIR}}$	306m^2
Design BOD per EP	As per the Code.	70 g/p/d
Total BOD	BOD x EP	770 g/d
Treatment system specification	Secondary	Ozzi Kleen AWTS with 150 watt air blower and dual diffusers.
Pump specification	To be confirmed by plumber onsite based on actual installation levels	Reefe RHV220 or Davey 53A/B (to be confirmed on-site by plumber).
Additional design requirements	BOD without primary treatment exceeds the capacity of a standard 10EP AWTS system by 10%.	In order to reduce the output BOD for the system (including the Dwelling, Ancillary accommodation and Worker's accommodation) to acceptable levels, the existing Ozzi Kleen AWTS will be upgraded by upsizing the existing 80 Watt air blower to a 150 watt air blower with dual diffusers.
Setback and separation distances	The location of the proposed wastewater management device (AWTS) to surface irrigation land application area are indicated on the attached figure (Attachment 1) and are in accordance with the principles of the Code	Should the AWTS or land application differ than the proposed, the minimum setback distances shall be retained. Should any encroachment be required, a wastewater engineer should be contacted prior to installation.

Adelaide Hills COUNCIL

WASTEWATER APPROVAL
CONDITIONS & NOTES APPLY
WWA: 473/W106/23
DATE: 22/06/2023

Conclusion & Recommendations

Based on the site and soil observations and engineering calculations presented in this report, Seed considers the proposed on-site wastewater management system comprising the upgraded Ozzi Kleen AWTS to 306m^2 of surface irrigation land application to be appropriate for this site. The system should be installed in the area denoted on the attached Figure (Attachment 1).

The existing septic tanks for the ancillary accommodations and the Worker's accommodations are to be decommissioned as per the drawing in Attachment 1. The existing Ozzi Kleen AWTS is to be appropriately drained, extracted and relocated to the new proposed location as depicted in Attachment 1. The AWTS is also to be upgraded by upsizing the existing 80 Watt air blower to a 150 watt air blower with dual diffusers. The sewer alignments shall be diverted to the proposed AWTS ensuring the alignment extends outside the backfilled AWTS and septic tank pits and maintain a minimum 1.65% grade to the invert of the AWTS.

The plumber installing the system shall ensure all wastewater at the site is directed to the new AWTS location.

The AWTS shall be relocated and commissioned by an appropriately qualified Plumber in accordance with Legislative requirements (including AS3500, the Code and the Plumbing Code of Australia) and the AWTS manufacturers operation, maintenance, and installation requirement. The AWTS shall be serviced quarterly by an appropriately trained service agent.

Closure

We trust this assessment is suitable for your purposes. Please contact me on 0433 383 183 should you have any queries.

Yours sincerely

Kym Butcher BE Mech, B M&CSci, NER – Environmental Engineering
Director, Principal Environmental Engineer

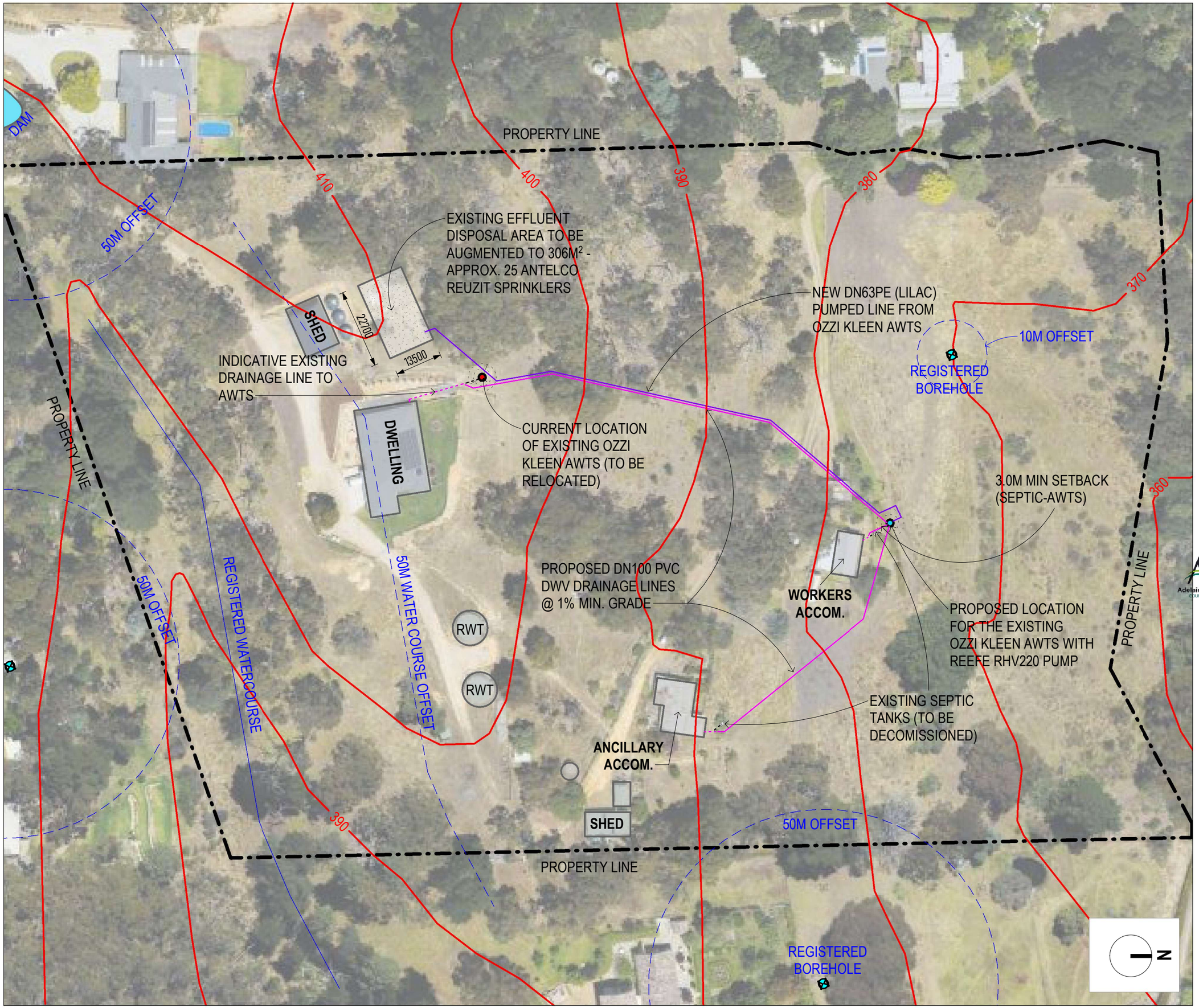
Attachments:

Attachment 1 – Drawings

Attachment 2 – Borehole Logs

Adelaide Hills COUNCIL

WASTEWATER APPROVAL CONDITIONS & NOTES APPLY
WWA: 473/W106/23
DATE: 22/06/2023



ADDRESS:

151 Stock Rd, Mylor

JOB DESCRIPTION:

Proposed Wastewater management layout plan

CLIENT:

Peter Meline

LEGEND:

- SUBSURFACE DISPOSAL AREA
- EXISTING STRUCTURES
- BOREHOLE LOCATION
- DN100 DWV (PROPOSED)
- DN63PE IRRIGATION LINE (LILAC)
- INFERRED SITE BOUNDARY
- CONTOUR LINE

WASTEWATER APPROVAL CONDITIONS & NOTES APPLY
WWA: 473/W106/23
DATE: 22/06/2023

Adelaide Hills COUNCIL

IMAGE SOURCE:

NatureMaps

REFERENCE NO:	SEA125-01
DRAWN:	MB
CHECKED:	KB

SEED ENTERPRISES

E: mark@seedenterprises.com.au
P: 0414409133

ORIGINAL DRAWING AT A3. DO NOT SCALE DIRECTLY OFF DRAWING. DIRECT ANY QUERIES AND OR DISCREPANCIES TO SEED ENTERPRISES AUSTRALIA.

DATE OF ISSUE:

GENERAL NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE SITE AND SOIL REPORT.
2. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THESE DRAWINGS. DIGITAL AND CONVERTED DATA USED TO COMPILE THESE DRAWINGS. ANY DISCREPANCIES ARE TO BE DIRECTED TO THE AUTHOR OF THE REPORT.
3. DIMENSIONS ARE SHOWN IN MILLIMETRES UNLESS INDICATED OTHERWISE.
4. IRRIGATION SETBACK TO BE 50.0M MINIMUM FROM WATER SOURCES INCLUDING WELLS, BORES, DAMS, OR NATURAL WATER COURSE LIKELY TO BE USED FOR HUMAN OR DOMESTIC PURPOSES IN ACCORDANCE WITH ON-SITE WASTEWATER SYSTEMS CODE.
5. ALL SITE WASTEWATER TO BE DIRECTED TO THE PROPOSED WASTEWATER MANAGEMENT SYSTEM.
6. ALL STORMWATER TO BE DIVERTED AWAY FROM THE PROPOSED IRRIGATION AREAS.
7. STANDARD VISUAL / AUDIBLE ALARM INSTALLED.
8. CONTRACTOR TO ENSURE ALL MINIMUM SETBACK DISTANCES ARE MAINTAINED. LOCATIONS ARE SHOWN INDICATIVELY, ACTUAL LOCATIONS WILL BE CONFIRMED ON SITE BASED ON SITE CONDITIONS, MAINTAINING THE MINIMUM SETBACK DISTANCES.

SEPTIC TANK

1. LOCATION OF EXISTING SEPTIC TANKS ARE SHOWN INDICATIVELY ONLY. A
2. MINIMUM SETBACK DISTANCES; 3M FROM BUILDINGS AND BOUNDARIES, 2.5M FROM SUBSURFACE SOAKAGE BED.
3. ALL SITE WASTEWATER MUST BE DIRECTED FROM EXISTING SEPTIC TANKS TO THE OZZI KLEEN AWTS IN PROPOSED LOCATION
4. MAINTAIN A MINIMUM 1.65% GRADE FROM DWELLING TO SEPTIC TANK.
5. MAINTAIN A MINIMUM 1% GRADE FROM EXISTING SEPTIC TANKS TO OZZI KLEEN AWTS

AEROBIC WASTEWATER TREATMENT SYSTEMS (AWTS)

1. EXISTING OZZI KLEEN IS TO BE RELOCATED AS PER THE PLAN DRAWINGS
2. LOCATION OF OZZI KLEEN AWTS SHOWN IS INDICATIVE ONLY. ACTUAL LOCATION MAY VARY SLIGHTLY ONSITE.
3. MINIMUM SETBACK DISTANCES = 3.0M FROM BUILDINGS AND BOUNDARIES AND SEPTIC TANKS. 1.5M FROM IRRIGATION AREA. 10.0M FROM REGISTERED WATERWAYS, WATER BODIES OR OPERATIONAL BOREHOLES
4. ALL PLUMBING TO BE IN ACCORDANCE WITH AS 3500
5. DESIGN FOR SIX (10) EQUIVALENT PERSONS OCCUPANCY WITH NO FOOD WASTE DISPOSAL.
6. WORK ON THE AWTS INSTALLATION SHALL NOT COMMENCE UNTIL THE COPIES OF THE “APPLICANT PLAN & CONDITIONS” HAVE BEEN RECEIVED BY THE APPLICANT.
7. THE OZZI KLEEN RP10 AWTS WILL BE UPGRADED BY UPSIZING THE EXISTING 80 WATT AIR BLOWER TO A 150 WATT AIR BLOWER WITH DUAL DIFFUSERS TO REDUCE THE OUTPUT BOD TO ACCEPTABLE LEVELS.

SURFACE IRRIGATION AREA

1. SOIL IMPROVEMENT THROUGH ADDING A SURFACE LAYER OF MULCH ACROSS THE DESIGNATED IRRIGATION AREA.
2. WARNING SIGNS MUST BE POSITIONED WITHIN THE LAND APPLICATION AREA TO INDICATE THAT RECYCLED WATER IS BEING USED FOR IRRIGATION. THE SIGNS MUST BE ON A WHITE BACKGROUND WITH RED LETTERING OF AT LEAST 20MM IN HEIGHT. THE SIGNS MUST BE CLEARLY VISIBLE FROM ALL SIDES AND MUST CONTAIN A WARNING SUCH AS: RECYCLED WATER - AVOID CONTACT/CONSUMPTION (AS PER ON-SITE WASTEWATER SYSTEMS CODE).
3. SURFACE IRRIGATION AREA SETBACKS 0.50M FROM ALLOTMENT BOUNDARY, 1.5M FROM BUILDINGS.

Adelaide Hills COUNCIL

WASTEWATER APPROVAL
CONDITIONS & NOTES APPLY
WWA: 473/W106/23
DATE: 22/06/2023

ADDRESS:

151 Stock Rd, Mylor

JOB DESCRIPTION:

Proposed Wastewater management layout plan - Notes

CLIENT:

Peter Meline

LEGEND:

IMAGE SOURCE:

REFERENCE NO:	SEA125-01
DRAWN:	MB
CHECKED:	KB

SEED ENTERPRISES

E: mark@seedenterprises.com.au
P: 0414409133

ORIGINAL DRAWING AT A3. DO NOT SCALE DIRECTLY OFF DRAWING. DIRECT ANY QUERIES AND OR DISCREPANCIES TO SEED ENTERPRISES AUSTRALIA.

DATE OF ISSUE:

GINOS ENGINEERING PTY LTD
Consulting Engineers
ABN 22 621 716 121
2nd Floor, 185 Victoria Square
Adelaide SA 5000
GPO Box 1170
Adelaide SA 5001
Telephone (08) 8212 4900
Facsimile (08) 8212 3829
Email:
email@ginosengineers.com.au

Soil Borelog

SR2

Job No: 31768
Client: WEEKS BUILDING GROUP
Site: LOT 151 STOCK ROAD MYLOR

SITE CLASSIFIER: GINOS ENGINEERING PTY LTD

18/05/2018

Note: For Site Details and Bore Locations refer to Attachment SR2-1

Bore 1	Bore 2	Bore 3	Colour	Consistency & Structure	MC	Soil Description	USC	Est. Ipt	Reactivity	Bearing
0-100	0-100	0-100	DK BR	FB	VD	SILTY SAND	SM	0	NP	LM
100-200	100-200	100-200	GREY	FB	D - VD	SILTY CLAYEY SAND	SC - SM	0.002	VL	LM - M
200-700	200-850	200-900	YELL RD OR MOTT	FIRM	≤ PL	SANDY SILTY CLAY	CL - CH	0.025	MH	M
700-1650	850-1750	900-1700	OR YELL BR	FB	≤ PL	SANDY CLAY	CL	0.015	LM - L	M
1650-3000	1750-3000	1700-3000	YELL - GREY OR YELL	FB	SM	CLAYEY SAND SLIGHTLY CEMENTED AT DEPTH	SC	0.005	VL	MH/ H TO INP

USC
GW Well graded gravel
GP Poorly graded gravel
GM Silty Gravel
GC Clayey gravel
SW Well graded sand
SP Poorly graded sand
SM Silty sand
SC Clayey sand
ML Silt of low plasticity
CL Clay of low plasticity
OL Organic soil of low plasticity
MH Silty of high plasticity
CH Clay of high plasticity
OH Organic soil of high plasticity
Pt Peaty Soil

CONSISTENCY/DENSITY INDEX
S, VS Soft, Very Soft
F Firm
St, VSt Stiff, Very Stiff
H Hard
Fb Friable
L, VL Loose, Very Loose
M Medium Dense
D Dense
VD Very Dense
G Granular
B Blocky
Pr Prismatic
Sl Slikensides
Gr Grain

MOISTURE/PLASTICITY/REACTIVITY
MC Moisture Content
PL Plastic Limit
OMC Optimum MC
LMH Low, Medium, High
NP Non Plastic
P Plasticity
<> Less than, Greater than
Da Damp
Mo Moist
D Dry
Hu Humid
W Wet
Sat Saturated
T Trace

Comments

1. Soil profile possesses **MODERATE** potential for active movement (Shrinking and swelling due to soil moisture variations).
2. Magnitude of Active movement would be of the order of **32** mm.
3. With reference to AS 2870 - 2011 the site is classified as Class **"M-D"**.

Adelaide Hills COUNCIL

WASTEWATER APPROVAL
CONDITIONS & NOTES APPLY
WWA: 473/W106/23
DATE: 22/06/2023

GINOS ENGINEERING PTY LTD
Consulting Engineers
ABN 22 621 716 121
2nd Floor, 185 Victoria Square
Adelaide SA 5000
GPO Box 1170
Adelaide SA 5001
Telephone (08) 8212 4900
Facsimile (08) 8212 3829
Email:
email@ginosengineers.com.au

Soil Borelog

SR2

Job No: 31768
Client: WEEKS BUILDING GROUP
Site: NO 151 STOCK ROAD MYLOR

SITE CLASSIFIER: GINOS ENGINEERING PTY LTD

18/05/2018

Note: For Site Details and Bore Locations refer to Attachment B1

Bore 4	Bore 5	Colour	Consistency & Structure	MC	Soil Description	USC	Est. Ipt	Reactivity	Bearing
0-100	0-100	DK BR	FB	VD	SILTY SAND	SM	0	NP	LM
100-250	100-150	GREY	FB	D - VD	SILTY CLAYEY SAND	SC - SM	0.002	VL	LM - M
-	150-750	YELL RD OR MOTT	FIRM	< PL	SANDY SILTY CLAY	CL - CH	0.025	MH	M
250-1300	750-1450	OR YELL BR	FB	< PL	SANDY CLAY	CL	0.015	LM - L	M
1300-1500	1450-3000	YELL - GREY OR YELL	FB	SM	CLAYEY SAND SLIGHTLY CEMENTED AT DEPTH	SC	0.005	VL	MH/ H TO INP

USC
GW Well graded gravel
GP Poorly graded gravel
GM Silty Gravel
GC Clayey gravel
SW Well graded sand
SP Poorly graded sand
SM Silty sand
SC Clayey sand
ML Silt of low plasticity
CL Clay of low plasticity
OL Organic soil of low plasticity
MH Silty of high plasticity
CH Clay of high plasticity
OH Organic soil of high plasticity
Pt Peaty Soil

CONSISTENCY/DENSITY INDEX
S, VS Soft, Very Soft
F Firm
St, VSt Stiff, Very Stiff
H Hard
Fb Friable
L, VL Loose, Very Loose
M Medium Dense
D Dense
VD Very Dense
G Granular
B Blocky
Pr Prismatic
Sl Slikensides
Gr Grain
* Possible collapsing soils

MOISTURE/PLASTICITY/REACTIVITY
MC Moisture Content
PL Plastic Limit
OMC Optimum MC
LMH Low, Medium, High
NP Non Plastic
P Plasticity
<> Less than, Greater than
Da Damp
Mo Moist
D Dry
Hu Humid
W Wet
Sat Saturated
T Trace

Comments

1. Soil profile possesses **MODERATE** potential for active movement (Shrinking and swelling due to soil moisture variations).
2. Magnitude of Active movement would be of the order of **32** mm.
3. With reference to AS 2870 - 2011 the site is classified as Class **"M -D".**

Adelaide Hills COUNCIL

WASTEWATER APPROVAL CONDITIONS & NOTES APPLY
WWA: 473/W106/23
DATE: 22/06/2023

NOTES

1. This is an engineering survey only and should not be used as a boundary identification survey.
2. Owner to peg site prior to construction
3. Stormwater and perimeter paving to be fully installed within 6 months of handover.
4. Cover to stormwater pipes in areas of vehicular traffic to be 300mm elsewhere 150mm.
5. This site is classified as Class **'M-D'** Flexible connections are necessary for all stormwater and sewer pipes.
6. For construction at or near boundary care must be taken to ensure stability of adjacent structures. Refer to Engineer if in doubt.
7. All stormwater disposal to satisfy Council's requirements.
8. The sewer run shown on this plan is indicative only. It is shown to determine whether sewer piers are required. Underfloor plumbing to be constructed as per Australian standards. Falls to be checked by builder prior to construction.

WASTEWATER APPROVAL CONDITIONS & NOTES APPLY
WWA: 473/W106/23
DATE: 22/06/2023

NOTE: ROOF DOWNPIPES MARKED 'PDP' TO BE DISCHARGED TO 1,000L RAINWATER TANK VIA A SEALED SYSTEM (REFER TO 'SDS'). ROOF DOWNPIPES MARKED 'PDP1' TO BE DISCHARGED TO 22,000L FIREFIGHTING TANK. ALLOW OVERFLOW FROM BOTH TANKS TO STORMWATER CONNECTION POINT AT GABION BASKET. DISCHARGE OUTLETS TO BE A MINIMUM 500mm ABOVE CONNECTION POINT. ALL SURFACE STORMWATER TO BE DISCHARGED DIRECTLY TO STORMWATER CONNECTION POINT VIA A GRAVITY SYSTEM.

DENOTES A 1,000L STORAGE RAINWATER TANK PLUMBED TO TOILET FLUSHING.

FRWT — DENOTES 22,000L RAINWATER TANK FOR FIREFIGHTING PURPOSES.

SOAKAGE BEDS

ZONE 1: 14m LONG x 2.25m WIDE (2 LATERALS)
ZONE 2: 14m LONG x 2.25m WIDE (2 LATERALS)
ZONE 3: 14m LONG x 2.25m WIDE (2 LATERALS)

TOTAL SOAKAGE AREA = 94.5 SQM.

0.6m DEEP CONVENTIONAL PRESSURE DOSED SOAKAGE BED SYSTEM TO BE INSTALLED BY LICENSED INSTALLER. FILL WITH 20-40mm AGGREGATE, PROVIDE GEOTEXTILE FABRIC AND COVER WITH TOPSOIL. REFER TO SECTION A.

GROUNDFOS UNILIFT AP12.40.08 PUMP (OR EQUIVALENT) USED WITHIN PUMP CHAMBER.
MAX HEAD = 14.2m
MAX FLOW RATE = 380L/min

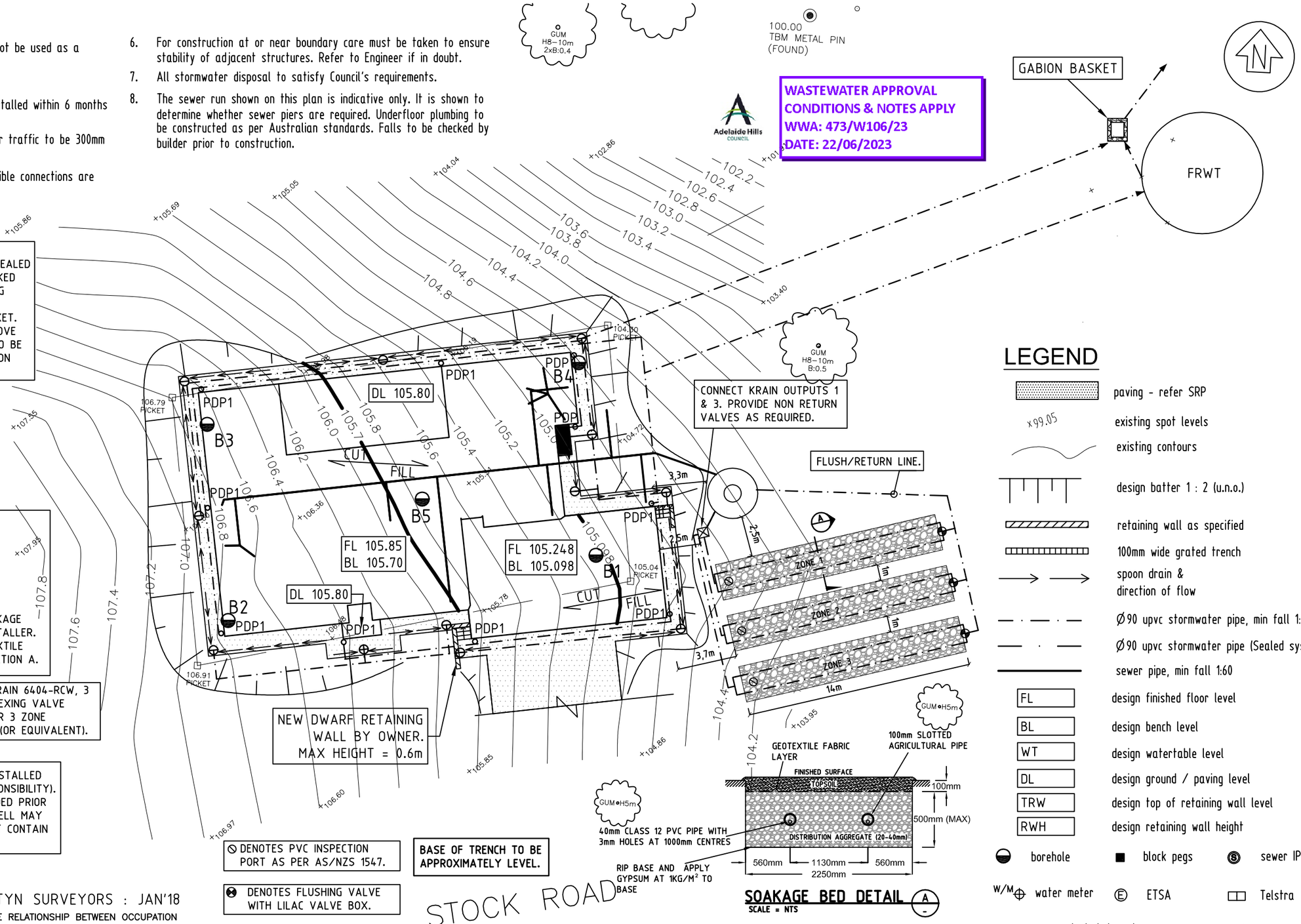
⊠ DENOTES KRAIN 6404-RCW, 3 OUTLET INDEXING VALVE CAMMED FOR 3 ZONE OPERATION (OR EQUIVALENT).

DENOTES 3,000L SEPTIC TANK TO BE INSTALLED BY LICENSED INSTALLER (OWNERS RESPONSIBILITY). SUITABLE OUTLET FILTER TO BE PROVIDED PRIOR TO PUMP CHAMBER. EXTERNAL PUMP WELL MAY BE PROVIDED IF SEPTIC TANK DOES NOT CONTAIN ISOLATED PUMP CHAMBER.

0 1 2 4 6 8 10M

SURVEYED BY MATTSON & MARTYN SURVEYORS : JAN'18

THIS IS NOT A BOUNDARY SURVEY, THEREFORE THE RELATIONSHIP BETWEEN OCCUPATION AND THE PLOTTED BOUNDARY IS INDICATIVE.
WHILE EVERY PRECAUTION IS TAKEN BY MATTSSON AND MARTYN SURVEYORS TO ENSURE TREE POSITIONS AND DIMENSIONS ARE SHOWN ACCURATELY, THESE MEASUREMENTS ARE ESTIMATES AND SHOULD BE USED AS A GUIDE ONLY. TREE DIMENSIONS ARE NOTED AS: H:TREE HEIGHT, B:TRUNK DIAMETER, C:TRUNK CIRCUMFERENCE, S:TREE CANOPY SPREAD.



⊘ DENOTES PVC INSPECTION PORT AS PER AS/NZS 1547.

⊗ DENOTES FLUSHING VALVE WITH LILAC VALVE BOX.

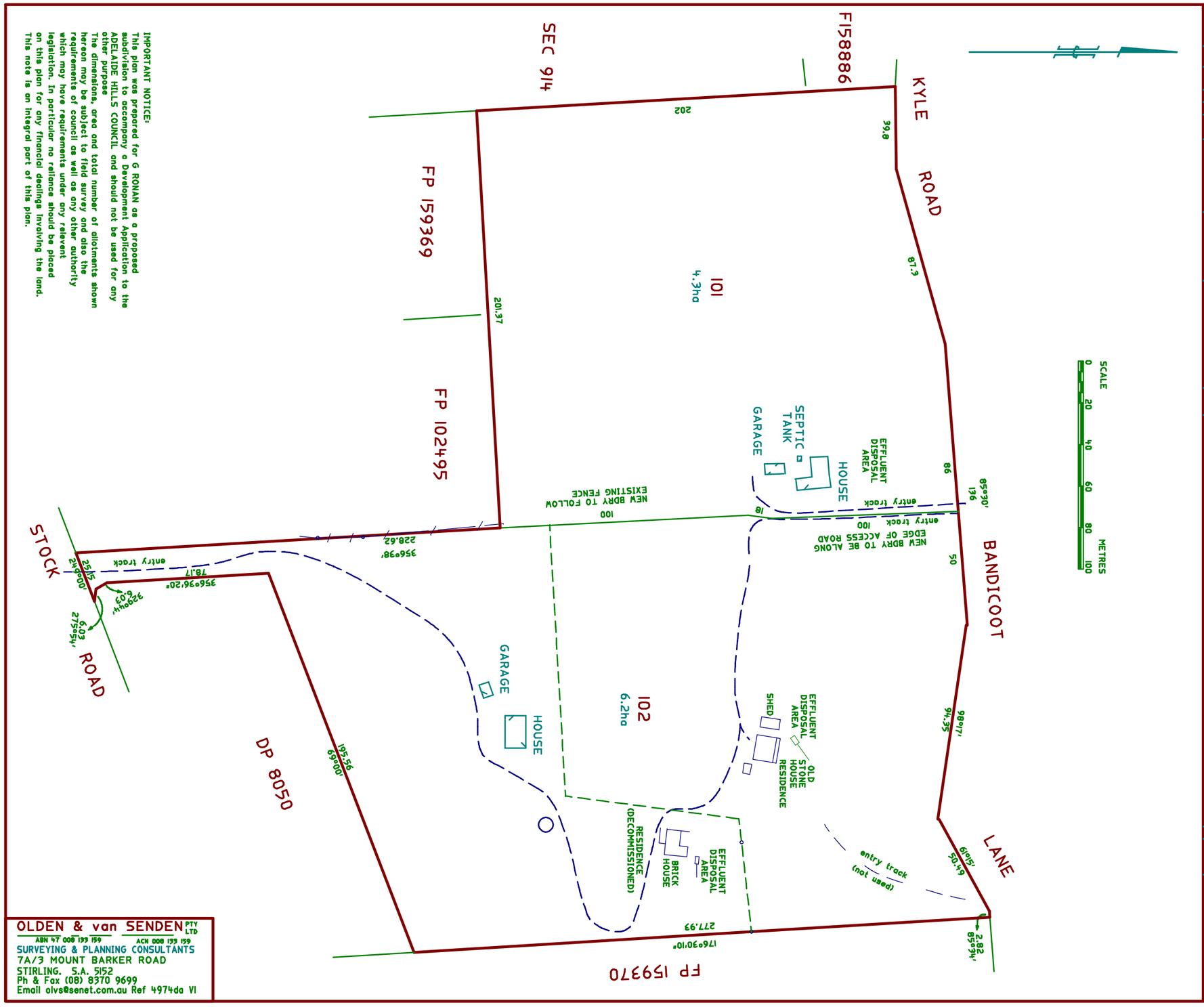
LEGEND

- paving - refer SRP
- x99.05 existing spot levels
- existing contours
- design batter 1 : 2 (u.n.o.)
- retaining wall as specified
- 100mm wide grated trench
- spoon drain & direction of flow
- Ø90 upvc stormwater pipe, min fall 1:200
- Ø90 upvc stormwater pipe (Sealed system)
- sewer pipe, min fall 1:60
- FL design finished floor level
- BL design bench level
- WT design watertable level
- DL design ground / paving level
- TRW design top of retaining wall level
- RWH design retaining wall height
- borehole
- block pegs
- sewer IP
- W/M water meter
- ETSA
- Telstra
- DP selected downpipe
- PDP PVC downpipe
- 300 x 300 grated sump (u.n.o)
- grated inlet 150 DIA

GINOS ENGINEERING PTY LTD
Consulting Engineers
A.B.N. 22 621 716 121
2nd Floor
185 Victoria Square
Adelaide SA 5000
Telephone: (08) 8212 4900
Facsimile: (08) 8212 3829

WEEKS BUILDING GROUP
DWELLING FOR: M RONAN
LOT 151 STOCK ROAD - MYLOR
SITE AND DRAINAGE PLAN

Drawn	VD	Scales	1:250
Design	VD/KB	Drawing Number	31768
Approved	KB		
Date	MAY'18		SR2-1



IMPORTANT NOTICE:
This plan was prepared for G RONAN as a proposed subdivision to accompany a Development Application to the ADELAIDE HILLS COUNCIL and should not be used for any other purpose
The dimensions, area and total number of allotments shown hereon may be subject to field survey and also the requirements of council as well as any other authority which may have requirements under any relevant legislation. In particular no reliance should be placed on this plan for any financial dealings involving the land. This note is an integral part of this plan.

OLDEN & van SENDEN PTY LTD
ABN 47 008 193 159 ACN 008 193 159
SURVEYING & PLANNING CONSULTANTS
7A/3 MOUNT BARKER ROAD
STIRLING. S.A. 5152
Ph & Fax (08) 8370 9699
Email olvs@senet.com.au Ref 4974da V1

PLAN NUMBER

THIS IS SHEET 1 OF 1 SHEETS

MAP REF 6627-3-k&q | DEV. NO. 473:D :00
TITLE SYSTEM REAL PROPERTY ACT
TITLE REFERENCE CT 6041/834 & CT 6041/835

IRRIGATION AREA..... DIVISION .....
HUNDRED.....NOARLUNGA.....
AREA .....MYLOR.....
COUNCIL ....ADELAIDE..HILLS..COUNCIL

PLAN OF DIVISION
ALLOTMENt293 & 94 IN D80410

SCALE AS SHOWN METRES

STATEMENTS CONCERNING EASEMENTS ANNOTATIONS AND AMENDMENTS

ALL DISTANCES ARE GROUND DISTANCES

BEARING DATUM ..... DISTANCE.....
DERIVED FROM .....

LOT SUMMARY

TOTAL AREA	10.5ha
RESERVE AREA	NIL
NO. OF EXISTING LOTS	2
NO. OF ADDITIONAL ALLOTS	NIL
LENGTH OF NEW ROAD	NIL
CONTOUR INTERVAL	N/A

ATTACHMENT G

The Vale – Tourist Accommodation (Work in Progress)

3 Bedroom, 1 bathroom, 2 toilets

Where you will sleep (up to 5 adults)

1 Bedroom – 1 Queen Bed

2 Bedroom – 1 Double Bed

3 Bedroom – 1 Single bed

Carparking for up to 3 vehicles only

About this Space

Nestled in a picturesque "hidden valley" is a newly renovated 3-bedroom home on 16 acres with beautiful views of the whole valley. Fresh air and serenity at its best! There is a fireplace for the colder months to snuggle up to, as well additional split systems for added heating and cooling. A fully functional kitchen to use if you want to stay in. Sitting on 16 acres, you are surrounded by an abundance of wildlife which includes Koalas, a family of Kangaroos that regularly visit, an array of birdlife, and you may even be lucky enough to see a Bandicoot – we are situated right in the middle of Bandicoot Valley, as well as our own sheep that venture the property. You will certainly feel as though you are so far "away from it all" even though you are only 30 minutes from the CBD, 5 minutes to Mylor and Aldgate, 10 minutes to Stirling and Hahndorf.

If you love bushwalking & hiking, there are certainly plenty to do starting right from your doorstep. Heysen trail is just one of many to choose from.

Visit walking.sa.gov.au will provide you with a list of walks, their duration, distance, difficulty level, terrain and location.

Yes, we are pet friendly.

Pets are welcome by prior arrangement, as we have other animals on the property to consider as well. There is a small secure yard attached to the house so you can bring your furry friend with you. There is also a large perimeter fence around the accommodation with guest access to approximately 8 acres out of the 16.

What the VALE has to offer:

Kitchen	**Laundry (in bathroom)**	**Entertainment**	**Heating / Cooling**
Space where guests can cook their own meals	Washing Machine	TV	2 split system airconditioners
Refrigerator	Dryer	Stereo	1 fireplace in main room
Microwave	Soap	Games	
Cooking basics	Toilet Paper	Books	**Outside**
Pots and pans, oil, salt and pepper	Iron		Outdoor table & chairs
Coffee, tea, sugar	Drying Rack	**Bathroom**	Private backyard – Fully fenced and secure for dog / or pet
Dishes and cutlery		Shower	Outdoor dining area
Bowls, chopsticks, plates, cups, etc.	**Bedroom/s**	Hair Dryer	BBQ
Freezer	Bed Linen	Cleaning Products	
Dishwasher	Quilt	Shampoo	
	Towels	Conditioner	
	Extra Pillows & Blankets	Body Soap	
	Clothing Storage	Hot Water	
	Hangers	Shower Gel	**General**
			Smoke Alarm/s

Teknika 900mm stainless steel gas stove top, with electric oven Hot water kettle Coffee maker Wine glasses Toaster Barbecue utensils Grill, bamboo skewers/iron skewers, etc.			Fire Extinguisher First Aid Kit Portable Fan/s Fresh Adelaide hills rainwater

ATTRACTIONS

The 'Valley of the Bandicoots' consists of a wildlife corridor stretching about five kilometres from Aldgate to Mylor, using a series of connected road reserves as the main 'backbone'. Adjoining these road reserves are six Council Reserves, a National Trust SA Reserve (Nurrutti) and about 50 private landholders. Some of the many walking trails border our property for easy access. Small numbers of the nationally endangered Southern Brown Bandicoot live along the Valley of the Bandicoots, along with much other wildlife.

Heysen Trail – part of the Heysen Trail is only 3km, 5 min drive away

The 1,200 kilometre hiking Heysen Trail passes through some of South Australia's most diverse and breathtaking landscapes, traversing coastal areas, native bushland, rugged gorges, pine forests and vineyards, as well as rich farmland and historic towns

Warrawong Wildlife Sanctuary & The Shed Cafe – 15 min walk

Open every weekend, and every day of the school holidays from 11:00am – 4:00pm

Have an up close and personal encounter with unique Australian wildlife. Book a Tour to wander from grassland, to rainforest, to wetland… There are 5 distinct habitats at the Sanctuary, where you will see koalas, kangaroos, wallabies, and more, all enjoying life in their natural surrounds.

Tour Down Under – This 10-day event brings both male and female UCI WorldTour professional cycling teams to race on the streets of Adelaide and regional South Australia each January.

Stangate House – 4km – 7 min drive

Set in the stunning Adelaide Hills, Stangate House and Gardens is a unique and gorgeous outdoor venue. With picturesque gardens, the setting is ideal for many types of events.

Take along provisions for a picnic and spend the day enjoying the tranquil garden setting. The garden was designed by Elsie Cornish, a renowned garden designer who landscaped with a unique sense of colour and composition. Home to one of Australia's largest oak trees where people have picnicked for over a hundred years, the gardens were also recognised by the International Camellia Society in 2012 as an International Camellia Garden of Excellence. While the camellias are in full bloom in early spring the garden has something magical to offer visitors anytime of the year

Hahndorf Farm Barn – 14km – 17 min drive. 2282 Mount Barker Road, Hahndorf

The Hahndorf Farm Barn is a unique blend of a children's farmyard and wildlife park. You can hold, touch and feed most of their animals in complete safety and at your own comfort level. There are many activities for kids at the farm and you can easily spend hours there enjoying quality time with the family.

Open 10am to 4pm 7 days a week

Tupelo Grove Nursery - 4.7km – 8 min. 104 Bradbury Road, Mylor

A large range of salvias, hellebores, herbaceous perennials, exotic Mediterranean climate plants, deciduous and evergreen shrubs. Native shrubs and perennials including suitable for frost.
Extensive selection of Aquatic plants for
garden pots, ponds and larger dams.
Open 10am to 4pm 7 days, closed Sundays in June, July & August.

Adelaide Rally – held in November, goes right past our doorway, just grab a chair walk to Aldgate Valley Road and or Stock road, and sit and watch all the classics fly by.

Mt Lofty National Park – 9km – 13 min drive. 9 Mawson Drive, Crafers
Meander along the multitude of paths that sprawl across 97 hectares – with a surprise awaiting you around every corner

Mount Lofty Summit – 11km – 15 min drive. 266 Mount Lofty Summit Road, Crafers
Mount Lofty Summit, the majestic peak of the Mount Lofty Ranges in the Adelaide Hills, provides spectacular panoramic views across Adelaide's city skyline to the coast. Each year more than 350,000 people visit the peak which rises more than 710 metres above sea level.
From the summit you can follow the popular walk down to Waterfall Gully, join the Heysen Trail or stroll along a walking trail through native bushland to Cleland Wildlife Park.
October to March — 6:00am — 11:00pm
April to September — 6:00am — 9:00pm

Beerenberg Farm, Hahndorf – 12km – 15 min drive
100% family-owned featuring delicious homemade Australian jams, chutneys, gourmet relishes, and sauces made on the premises. Visit the strawberry farm and experience the joys of pick your own strawberries and exploring the farm shop. Enjoy fresh food and drink in their brand new farm cafe, and take part in tastings, cooking demonstrations and more.

Mount Barker Shopping Precinct - 17km - 16min drive.

Hahndorf - 10km – 14 min drive
A picturesque town rich in history, food and culture. Settled by 19th-century Lutheran migrants, it's known for its original German-style architecture and artisanal food. Hahndorf Academy is home to the German Migration Museum, tracing local history. North of town, the Cedars houses the studio and art of German-born landscape painter Sir Hans Heysen.

WELLNESS & LIFESTYLE

Coco's Hair & Day Spa – 6.2km 10min drive
Housed in a historic two storey stone mansion in the heart of beautiful Stirling – just 15 minutes from Adelaide – Cocos Hair & Day Spa is your complete hair and beauty destination in the Adelaide Hills. Ph: 8339 3077

Gatekeepers Day Spa – 9.3km 13 min drive
Gatekeeper's is a destination day spa escape overlooking the stunning Adelaide Hills from the award-winning Mount Lofty House. PH: 08 8310 9229

Hahndorf Creek Day Spa – 9.1km 11min drive
The perfect destination to completely unwind and rediscover yourself in tranquil surroundings where you will be fully pampered in luxurious style. Ph: 0410 285 586

EATING AND DINING - just some of the locals

Yuki in the Hills – 3.5km - 6 min drive. 2 Strathalbyn Road, Aldgate
Traditional Japanese Cuisine
Lunch – Tue - Sun 7.30am – 4pm
Dinner - Tue - Sun 7:30am – 4pm

The Aldgate Chip Shop – 3.6km – 6 min drive. 4b/232 Mount Barker Road, Aldgate
Chicken & seafood takeaway
Tue – Sun 10am – 8pm

Fred Eatery – 3.5km – 6 min drive. 220 Mt Barker Road, Aldgate
All day breakfasts, casual lunches, sweet treats and its own house blend coffee.
Fully licensed featuring Adelaide Hills wines and ales, with elegant, contemporary dining areas, outdoor courtyard, mezzanine lounge and library.
Tue TO Sun 7:30am – 4pm

The Bridgewater Mill & Waterwheel – 4km – 6 min drive. 386 Mt Barker Road, Bridgewater
Dating back to the 1860's this refined eatery offers global fare, a deck & garden. The waterwheel is something else to see.
Open for Lunch Wednesday thru Sunday
Open for Dinner Friday & Saturday
Miss Perez Kitchen & Bar – 6km – 10 min drive. 2 Druid Avenue, Stirling
Contemporary Australian cuisine, Miss Perez prides itself on sourcing local quality ingredients.
The menu draws on cuisines from Latin America, Spain and Australia. Alongside shared plates and more substantial options, there's a range of burgers.
Mon 8am – 4pm, Tues – Fri 8am – Late, Saturday 9am – late, Sunday 9am – 4pm

The Loca-Vore – 6km – 10 min drive. 49 Mt Barker Road, Stirling
Sprawling wine bar and restaurant crafting tapas and tasting platters from locally sourced produce
Lunch Wed – Sun, Dinner Wed – Sat

Hardy's Verandah Restaurant – 9km – 13min drive. Mount Lofty House, 1 Mawson Drive, Crafers
3 Hat restaurant in the Adelaide Hills. Serving a seasonally changing degustation experience, following the 'Valley to Verandah' concept, paired with a multi-award-winning wine selection, sake collection, and creative cocktail menu.
Open 7 Days from 6pm
Saturday & Sunday High Tea from 12pm

The Summit Café & Function Centre – 11km – 15 min drive. 266 Mt Lofty Summit Road, Crafers
Summit restaurant serving upscale Modern Australian food, plus a cafe dishing up light bites.
Mon - Fri 9am – 4pm
Sat & Sun - 8am – 4.30pm

The Bridgewater Inn Hotel – 4km – 6 min drive. 387 Mount Barker Road, Bridgewater
Hefty pub meals and local wines in a warm, charming tavern with a beer garden, games and live music
Mon to Thurs: 12- 2:30pm | 5:30 to 8:30pm
Friday: 12 - 2:30pm | 5:30pm to 9pm
Saturday: 11.30 am - 9pm. Sunday: 11.30 am - 8pm

ADELAIDE HILLS WINERIES – surrounded by many, here are just a few….

Deviation Road Wines, Longwood – 7km – 10 min drive

Between the Vines, Longwood – 6km – 4 min drive

Sidewood Estate, Hahndorf - 9km – 11 min drive

Ambleside Distillery, Hahndorf - 10km – 11min drive

Hahndorf Hill Winery, Hahndorf – 11km – 14 min drive

Shaw & Smith, Balhannah 13km – 16 min drive

The Lane Vineyard, Hahndorf - 14km – 18min drive

TOURIST ACCOMMODATION

151 STOCK RD MYLOR

Stormwater Management

Building A has a total roof area of 133m^2.

The soil under Building A is classified as M-D (vide the **below** report by GINOS engineers date 18/5/2018).

The applicant has invoked table 3.3 of MBS 009 (Ministerial Building Standard - 009) with criteria for an ARI (Average Return Interval) 1 in 5 year for a 2 hour storm event.

GINOS ENGINEERING PTY LTD
Consulting Engineers
ABN 22 621 716 121
2nd Floor, 185 Victoria Square
Adelaide SA 5000
GPO Box 1170
Adelaide SA 5001
Telephone (08) 8212 4900
Facsimile (08) 8212 3829
Email:
email@ginosengineers.com.au

Soil Borelog SR2

Job No: 31768
Client: WEEKS BUILDING GROUP
Site: NO 151 STOCK ROAD MYLOR

SITE CLASSIFIER: GINOS ENGINEERING PTY LTD 18/05/2018 Note: For Site Details and Bore Locations refer to Attachment B1

Bore 4	Bore 5	Colour	Consistency & Structure	MC	Soil Description	USC	Est. Ipt	Reactivity	Bearing
0-100	0-100	DK BR	FB	VD	SILTY SAND	SM	0	NP	LM
100-250	100-150	GREY	FB	D - VD	SILTY CLAYEY SAND	SC - SM	0.002	VL	LM - M
-	150-750	YELL RD OR MOTT	FIRM	< PL	SANDY SILTY CLAY	CL - CH	0.025	MH	M
250-1300	750-1450	OR YELL BR	FB	< PL	SANDY CLAY	CL	0.015	LM - L	M
1300-1500	1450-3000	YELL - GREY OR YELL	FB	SM	CLAYEY SAND SLIGHTLY CEMENTED AT DEPTH	SC	0.005	VL	MH/ H TO INP

Comments

1. Soil profile possesses **MODERATE** potential for active movement (Shrinking and swelling due to soil moisture variations).
2. Magnitude of Active movement would be of the order of **32** mm.
3. With reference to AS 2870 - 2011 the site is classified as Class **"M -D"**.

USC

GW	Well graded gravel
GP	Poorly graded gravel
GM	Silty Gravel
GC	Clayey gravel
SW	Well graded sand
SP	Poorly graded sand
SM	Silty sand
SC	Clayey sand
ML	Silt of low plasticity
CL	Clay of low plasticity
OL	Organic soil of low plasticity
MH	Silty of high plasticity
CH	Clay of high plasticity
OH	Organic soil of high plasticity
Pt	Peaty Soil

CONSISTENCY/DENSITY INDEX

S, VS	Soft, Very Soft
F	Firm
St, VSt	Stiff, Very Stiff
H	Hard
Fb	Friable
L, VL	Loose, Very Loose
M	Medium Dense
D	Dense
VD	Very Dense
G	Granular
B	Blocky
Pr	Prismatic
Sl	Slikensides
Gr	Grain
*	Possible collapsing soils

MOISTURE/PLASTICITY/REACTIVITY

MC	Moisture Content
PL	Plastic Limit
OMC	Optimum MC
LMH	Low, Medium, High
NP	Non Plastic
P	Plasticity
<>	Less than, Greater than
Da	Damp
Mo	Moist
D	Dry
Hu	Humid
W	Wet
Sat	Saturated
T	Trace

Table 3.3 - Total *required* length of *soakage trench* (metres)
ARI = 1 in 5 year, 2 hour storm event

Soakage Trench dimensions (metres)		Soil Type	*Catchment Area* (m²)									
			20	*40*	*60*	*80*	*100*	*120*	*140*	*160*	*180*	*200*
			Total *required* length of *soakage trench* (metres)									
width	**0.3**	A/S	4.6	9.2	14	19	23	28	32	37	42	46
depth	0.5	M-D	8.1	16	24	33	41	49	57	65	73	81
width	**0.3**	A/S	2.6	5.3	7.9	11	13	16	19	21	24	27
depth	1	M-D	4.4	8.7	13	18	22	26	31	35	40	44
width	**0.3**	A/S	2.2	4.5	6.8	9.1	11	14	16	18	21	23
depth	1.2	M-D	3.7	7.4	11	15	19	22	26	30	33	37
width	**0.6**	A/S	2.5	5.0	7.6	10	13	15	18	20	23	25
depth	0.5	M-D	4.3	8.5	13	17	21	26	30	34	39	43
width	**0.6**	A/S	1.5	3.0	4.5	6.1	7.6	9.2	11	12	14	15
depth	1	M-D	2.3	4.6	7.0	9.3	12	14	16	19	21	23
width	**0.6**	A/S	1.2	2.6	3.9	5.2	6.6	7.9	9.2	11	12	13
depth	1.2	M-D	1.9	3.9	5.9	7.9	9.8	12	14	16	18	20
width	**0.9**	A/S	1.7	3.5	5.2	7.0	8.8	11	12	14	16	18
depth	0.5	M-D	2.9	5.8	8.7	12	15	17	20	23	26	29
width	**0.9**	A/S	1.0	2.1	3.1	4.2	5.3	6.4	7.5	8.6	9.6	11
depth	1	M-D	1.5	3.1	4.7	6.3	7.9	9.5	11	13	14	16
width	**0.9**	A/S	0.8	1.8	2.7	3.7	4.6	5.5	6.5	7.4	8.3	9.3
depth	1.2	M-D	1.3	2.7	4.0	5.3	6.7	8.0	9.4	11	12	13

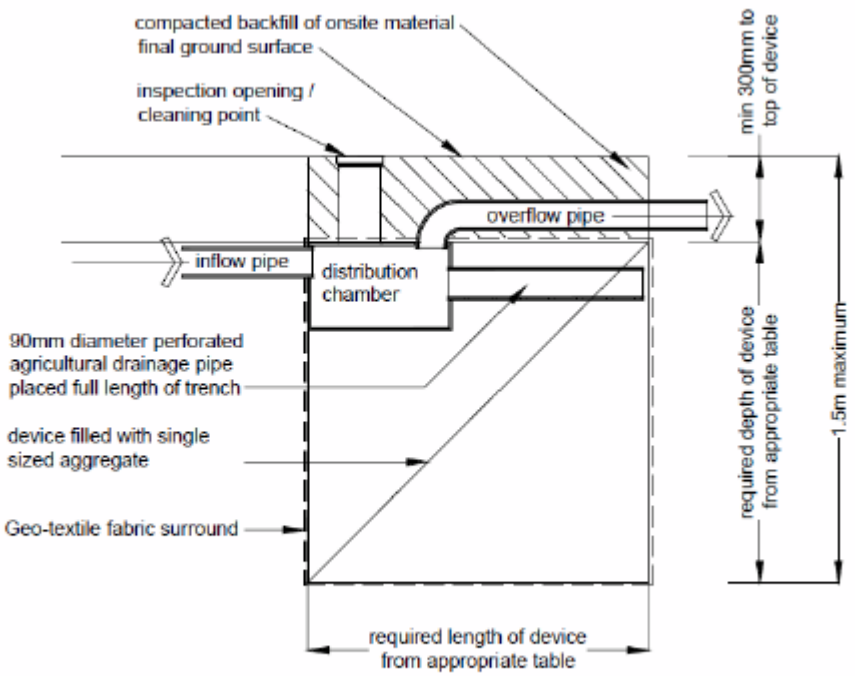
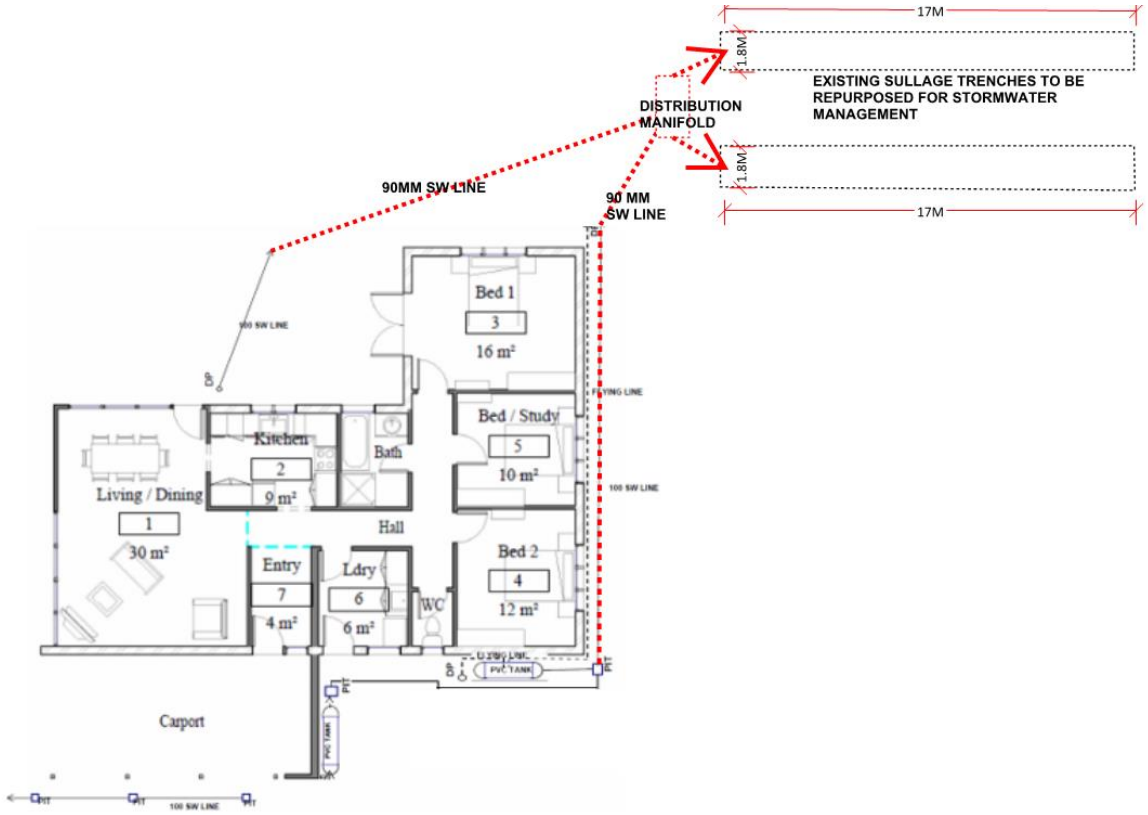


Figure 3.4 - soakage trench
Note: Figure 3.4 not to scale



CONCLUSION-

From the criteria given above,

A soakage trench 18m long, 1m deep and 600mm wide built in accordance Fig 3.4 (above) will meet MBS 009 regarding stormwater management for the above Development Application, and satisfy PO 3.1 and 3.2 of the Mount Lofty Ranges Water Supply Catchment (Area 2) Overlay. The client has indicated a desire to repurpose the existing sullage trenches for the purpose of stormwater management when the existing effluent system is superseded. Given that the existing sullage trenches have more than 2 times the contact area of the sullage trenches indicated in table 3.3 above it is considered that this would be more than adequate.

Peter Meline
RPIA, MAIBS, JP.

Environment Protection Authority
GPO Box 2607 Adelaide SA 5001
211 Victoria Square Adelaide SA 5000
T (08) 8204 2004
Country areas 1800 623 445

EPA Reference: PDI 606

30 November 2023

Melanie Scott
Adelaide Hills Council
63 Mount Barker Road
STIRLING SA 5152

mscott@ahc.sa.gov.au

Dear Melanie Scott

EPA Development Application Referral Response

Development Application Number	**23015113**
Applicant	**Ms Michelle Ronan**
Location	**151 Stock Road, Mylor**
Proposal	**Conversion of existing dwelling to tourist accommodation and to vary Development Application 473/481/2018 by seeking the removal of condition (4).**

This application was referred to the Environment Protection Authority (EPA) by the Assessment Panel at Adelaide Hills Council in accordance with section 122 of the *Planning, Development and Infrastructure Act 2016*. The following response is provided in accordance with section 122(5)(b)(ii) of the Planning, Development and Infrastructure Act.

The EPA assessment criteria are outlined in section 57 of the *Environment Protection Act 1993* and include the objects of the Environment Protection Act, the general environmental duty, relevant environment protection policies and the waste strategy for the State.

Advice in this letter includes consideration of the location with respect to existing land uses and is aimed at protecting the environment and avoiding potential adverse impacts upon the locality.

PROPOSAL

The proposal seeks to convert an existing dwelling to tourist accommodation and to vary development approval 473/481/2018 by seeking to delete Condition (4) which states as follows;

The existing dwelling on the land, identified on the site plan from Weeks Building Group drawing number SP01 Revision C dated 20 August 2018 shall be demolished within three (3) months of occupancy of the herein approved dwelling. Council shall be provided with a statement by the Applicant or owner within 14 days of occupancy advising the date occupancy of the new dwelling commenced. Occupancy is considered to have commenced when the owner/occupier has begun sleeping overnight within the dwelling on a consecutive or frequent basis.

The EPA understands that the existing on-site wastewater system currently on site would be decommissioned and replaced with a new system that would cater for the tourist accommodation as well as two residential dwellings located on the subject land.

SITE

The site of the proposed development is located at 151 Stock Road Mylor, which is more particularly described as Allotment 102 in Deposited Plan 131157 Certificate of Title Volume 628/Folio 488, Hundred of Noarlunga.

The site of the proposed development is located within:

- the Mount Lofty Ranges Water Protection Area (MLR WPA), as proclaimed under section 61A of the *Environment Protection Act 1993* (the EP Act)
- the Mount Lofty Ranges Water Supply Catchment (Area 2) as identified in the *Planning and Design Code*
- the Onkaparinga River catchment
- the Productive Rural Landscape Zone in the *Planning and Design Code*.

ENVIRONMENTAL ASSESSMENT

The trigger for referral of this development application to the EPA was for being a 'dwelling where a habitable dwelling or tourist accommodation already exists on the same allotment (including where a valid planning authorisation exists to erect a dwelling or tourist accommodation on the same allotment)' within the Mount Lofty Ranges Water Supply Catchment (Area 2) Overlay of the *Planning and Design Code*. The referral requires the EPA to provide assessment and direction on whether the proposed development would have a neutral or beneficial effect on water quality.

The site has not been inspected during the EPA's consideration of this application but has been viewed using mapping information available to the EPA, including recent aerial imagery, and considered according to existing knowledge of the site and the locality.

Water Quality

In water quality terms, unsewered residential development (such as detached dwellings and tourist accommodation) is considered one of the highest risk activities in a public water supply catchment due to historically poor management of on-site wastewater treatment systems. Potential pollutants from such activities include nutrients, microorganisms and pathogens from human effluent.

Previous water quality studies in the Mount Lofty Ranges Watershed have shown a direct relationship between development intensity and a decline in water quality. As most water pollution in the Mount Lofty Ranges Watershed is derived from diffuse sources, further pollution can only be prevented by avoiding incremental development that intensifies land use towards more polluting activities.

Wastewater Management

Given that the site of the development is unable to be connected into a community wastewater management system or sewer due to its location, the EPA's assessment of this application has primarily focused on the on-site treatment and disposal of wastewater and associated potential impacts on water quality. The EPA is concerned about the potential cumulative impact of nutrients contained in the treated wastewater draining into creeks and reservoirs.

The EPA notes that an OzziKleen RP10A+ has been proposed to be installed on the property to cater for a 6EP residential dwelling, 2EP residential cottage and 4EP tourist accommodation building on the subject land which is totally reliant on rainwater as the only source of water. Having regard to the information that has been provided, the EPA is satisfied that the proposed on-site wastewater system (OzziKleen RP10A+) to be appropriate for the site.

In addition to the above, the EPA further notes that an irrigation area measuring 312 square metres in area has also been proposed and is to be vegetated with ryegrass. The proposed irrigation would be located in an area >50m from the nearest watercourse and bore, where groundwater is noted as being >3m below ground level and the slope of the site is 5%. The location and proposed distance of separation from nearby sensitive water sources is considered acceptable to the EPA.

In respect to the planting of vegetation within the proposed irrigation area, the EPA understands that the vegetated ryegrass would be regularly maintained (mowed) to ensure that optimal growth rates and nutrient removal are achieved. Whilst the planting of ryegrass is considered acceptable, the EPA recommends that the mowed clippings should be removed from the site once the mowing of the ryegrass has been completed.

The EPA considers the potential environmental risks associated with the proposed development are low provided the construction, operation and management of the associated wastewater management system is undertaken in accordance with the plans and details submitted with the application. To ensure that this occurs in accordance with the specified design criteria, the EPA has directed the inclusion of a condition which is listed below.

Stormwater Management

If not managed appropriately, stormwater generally flows with pollutants, including those from building and construction activities, untreated into natural water bodies.

The EPA understands that roof runoff from the tourist accommodation building would be captured within two 3000L rainwater tanks. The Stormwater Management Plan prepared by DBN Consulting dated 6 October 2023 further indicates that the overflow from these tanks, along with runoff from the hardstand area and vehicle turning area of the driveway/carpark, would be treated in a bioretention zone and then

directed to infiltration trenches previously used as the septic infiltration trenches.

As the existing building and driveway already exist on the land and are not to be altered or modified as part of the current proposal, the EPA considers the use of a bioretention zone to manage runoff from this site to be unnecessary in this instance, as the runoff is considered to constitute "clean water." Given this, the EPA would raise no objection to the runoff being directed to an existing landscaped or vegetated area on the subject land, where it could slowly infiltrate through the existing soil.

CONCLUSION

The EPA considers that the above strategies will assist in minimising impacts from this development. The EPA therefore recommends that the objectives outlined above are included as conditions to ensure the final detailed design will achieve optimal environmental outcomes for the development. As such the EPA is satisfied that the proposal would have a neutral or beneficial impact on water quality.

DIRECTION

The relevant authority is directed to attach the following condition to any approval:

1. The on-site wastewater system must be installed in accordance with the Site and Soil Assessment Report prepared by Seed Enterprises, dated 6 October 2023, which includes the following:

    a. the installation of an Ozzi Kleen RP10A+ system
    b. the construction of a 312m^2 irrigation area, to be located more than 50m from the nearest watercourse, dam or bore, more than 1.2m from the seasonal groundwater table, on a slope less than 20% and not in the 10% AEP flood zone
    c. vegetating the irrigation area with rye grass and regularly mowing the grass to ensure optimal growth rates and therefore nutrient uptake
    d. bunding to direct surface runoff away from the irrigation area and creating a bund downhill to prevent any runoff, from over-irrigation, moving off site.

The following notes provide important information in relation to the development and are requested to be included in any approval:

- The applicant/owner/operator are reminded of its general environmental duty, as required by section 25 of the *Environment Protection Act 1993*, to take all reasonable and practicable measures to ensure that activities on the site and associated with the site (including during construction) do not pollute the environment in a way which causes or may cause environmental harm.
- More information about the Environment Protection Authority and the Environment Protection Act and policies can be found at: www.epa.sa.gov.au .

If you have any questions about this response, please contact Stephen Both, Senior Environmental Planner on (08) 8204 1112 or email stephen.both@sa.gov.au .

Yours faithfully

Hayley Riggs
Delegate
ENVIRONMENT PROTECTION AUTHORITY

06 October 2023

Mr Peter Meline
Adelaide Hills Development Services
22 West Terrace
Littlehampton SA 5250
E-mail: petermeline@bigpond.com

Our ref: 151 Stock Road Mylor SMP
Revision: 1

151 Stock Road, Mylor Development - Stormwater Management Plan

1 Introduction

This Stormwater Management Plan (SMP) has been prepared for the proposed retention of a building on 151 Stock Road, Mylor (site). The proposed building and hardstand surrounds (development footprint) to be retained are shown in Image 1 and has a total area of 310 m². Music and DRAINS modelling have been undertaken for the scenarios of pre-development, post development no treatment measures and post development with treatment measures.

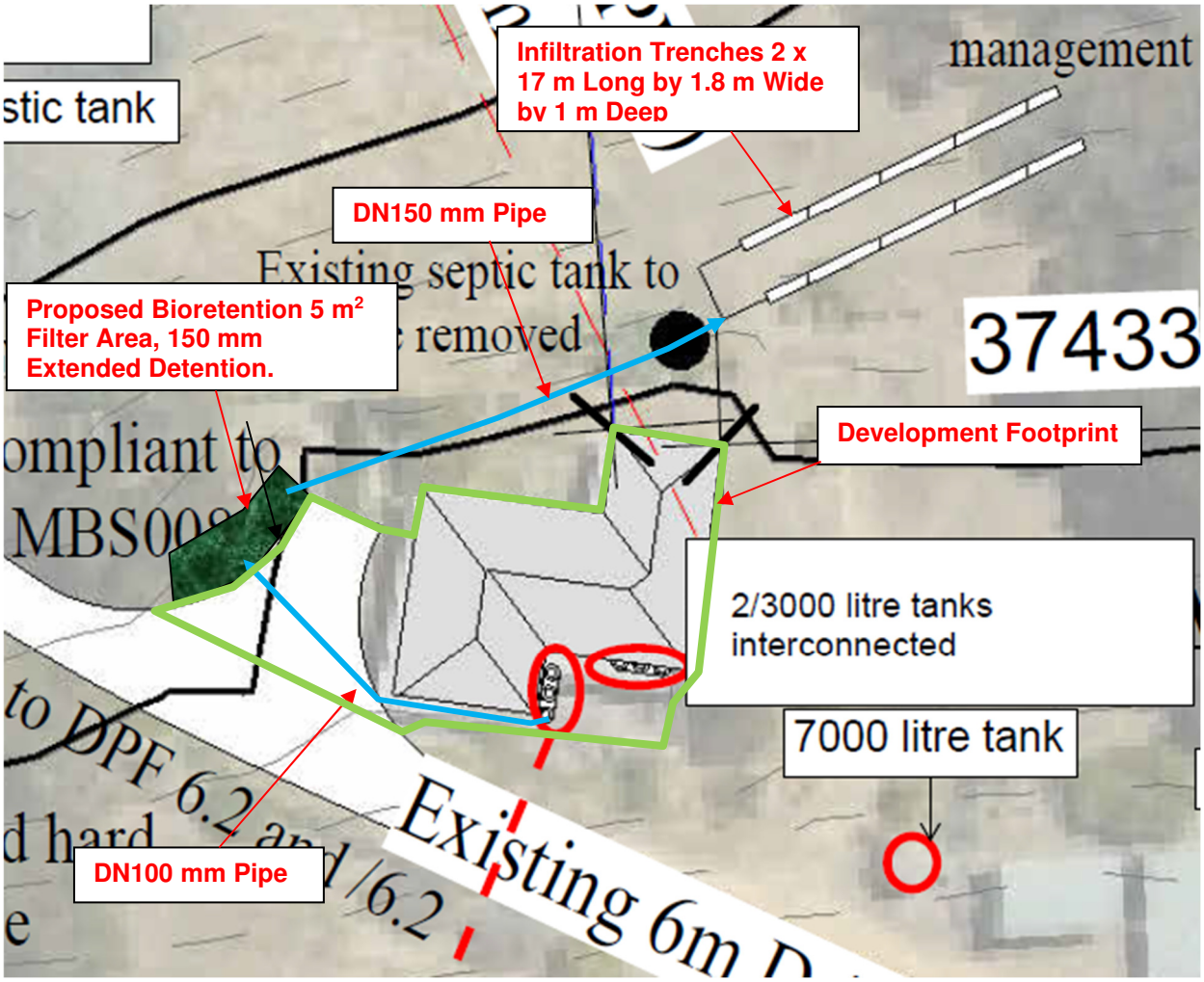


Image 1 – Existing site

This stormwater management plan summarises the existing stormwater system, proposed stormwater management strategy, hydrology and hydraulics, water quality and maintenance.

2 Existing Stormwater System

2.1 Existing Stormwater System and Soil Conditions

Stormwater runoff from the existing roof discharges to two 3,000 L rainwater tanks. Stormwater is reused on site. Overflows from the rainwater tanks discharges onto the ground and infiltrate. Stormwater runoff from existing hardstand areas infiltrates in the pervious areas surrounding the site.

Soil conditions at 151 Stock Road are shown in the Ginos Engineering bore hole logs shown in Image 2. The soil type at approximate 1 m depth is sandy clay, which has a typical infiltration rate of 36 mm/h or 1 x 10^{-5} m/s.

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Soil Borelog SR2

Job No: 31768
Client: WEEKS BUILDING GROUP
Site: NO 151 STOCK ROAD MYLOR

SITE CLASSIFIER: GINOS ENGINEERING PTY LTD 18/05/2018 Note: For Site Details and Bore Locations refer to Attachment B1

Bore 4	Bore 5	Colour	Consistency & Structure	MC	Soil Description	USC	Est. Ipt	Reactivity	Bearing
0-100	0-100	DK BR	FB	VD	SILTY SAND	SM	0	NP	LM
100-250	100-150	GREY	FB	D - VD	SILTY CLAYEY SAND	SC - SM	0.002	VL	LM - M
-	150-750	YELL RD OR MOTT	FIRM	< PL	SANDY SILTY CLAY	CL - CH	0.025	MH	M
250-1300	750-1450	OR YELL BR	FB	< PL	SANDY CLAY	CL	0.015	LM - L	M
1300-1500	1450-3000	YELL - GREY OR YELL	FB	SM	CLAYEY SAND SLIGHTLY CEMENTED AT DEPTH	SC	0.005	VL	MH/ H TO INP

USC
GW Well graded gravel
GP Poorly graded gravel
GM Silty Gravel
GC Clayey gravel
SW Well graded sand
SP Poorly graded sand
SM Silty sand
SC Clayey sand
ML Silt of low plasticity
CL Clay of low plasticity
OL Organic soil of low plasticity
MH Silty of high plasticity
CH Clay of high plasticity
OH Organic soil of high plasticity
Pt Peaty Soil

CONSISTENCY/DENSITY INDEX
S, VS Soft, Very Soft
F Firm
St, VSt Stiff, Very Stiff
H Hard
Fb Friable
L, VL Loose, Very Loose
M Medium Dense
D Dense
VD Very Dense
G Granular
B Blocky
Pr Prismatic
Sl Slikensides
Gr Grain
* Possible collapsing soils

MOISTURE/PLASTICITY/REACTIVITY
MC Moisture Content
PL Plastic Limit
OMC Optimum MC
LMH Low, Medium, High
NP Non Plastic
P Plasticity
<> Less than, Greater than
Da Damp
Mo Moist
D Dry
Hu Humid
W Wet
Sat Saturated
T Trace

Comments
1. Soil profile possesses **MODERATE** potential for active movement (Shrinking and swelling due to soil moisture variations).
2. Magnitude of Active movement would be of the order of **32** mm.
3. With reference to AS 2870 - 2011 the site is classified as Class **"M -D"**.

Image 2 – Soil conditions at 151 Stock Road.

2.2 Scenarios Simulated for Comparison Purposes

The following scenarios have been assessed using both MUSIC and DRAINS to compare pollutants generated and peak flows:

- Pre-development catchment. For MUSIC modelling the pre-development catchment was assumed to generate "Forest" pollutant loads. For DRAINS modelling the recommended losses in the Australian Rainfall Runoff Data Hub of 24 mm initial loss and 4.7 mm/h continuing loss were adopted.
- Post development no treatment. Roof and sealed road export relationships were used to calculate pollutants generated from the roof and surrounding hardstand areas. DRAINS

modelling assumes a 1 mm loss on impervious surfaces. The post development catchment is assumed to be 100% impervious.

- Post development with treatment. Roof and sealed road export relationships were used to calculate pollutants generated from the roof and surrounding hardstand areas. DRAINS modelling assumes a 1 mm loss on impervious surfaces. A bioretention basin with a 400 mm filter depth, filter area of 5 m^2 and extended detention depth of 150 mm has been included to treat overflows from 2 x 3 kL retention tanks and hardstand area on the western side of the building. The catchment area or development footprint is shown in Image 1. Treated stormwater from the bioretention basin will be conveyed by a DN150 mm pipe to 2 x 17 m long by 1 m deep by 1.8 m wide gravel infiltration trenches.

3 Hydrology and Hydraulics

3.1 Pre and Post Development Flow Calculations

The following DRAINS modelling parameters were used to calculate the 10% and 1% AEP flow rates for the three scenarios described in Section 2.2:

- Paved area loss equals 1 mm.
- Pervious area initial loss equals 24 mm.
- Pervious area continuing loss equals 4.7 mm/h.
- Pre-development site is 100% pervious.
- Post development site is 100% impervious.
- Infiltration rate for the gravel infiltration trench is assumed to be 36 mm/h or 1 x 10^{-5} m/s and the gravel void ratio is assumed to be 30%. No losses or detention have been allowed for in the bioretention basin.

3.1.1 DRAINS Modelling Results

A DRAINS model was established for the three scenarios described in Section 2.2. The DRAINS model was simulated for a range of storm durations (5 minutes to 6 hours) for the 10% and 1% AEP storm events, using the latest Australian Rainfall and Runoff, Temporal Patterns and Bureau of Meteorology, Intensity Frequency Duration data.

The DRAINS model configuration, 10% and 1% AEP DRAINS modelling results are shown in Appendix A. A summary of the DRAINS modelling results is shown in Table 1.

Table 1 – 10% and 1% AEP DRAINS modelling results

Scenario	10% AEP Peak Flow Rate (L/s)	1% AEP Peak Flow Rate (L/s)
Pre-development	2	5
Post development no treatment	7	12
Post development with treatment	0	0

The DRAINS modelling results show that the 10% and 1% AEP post development with treatment flow rates are less than the equivalent 10% and 1% AEP pre-development flow rate from the site and that there is no overflow from the proposed gravel infiltration trenches.

4 Stormwater Quality

A MUSIC model was established for the three scenarios described in Section 2.2, using the South Australian MUSIC Modelling Guidelines. The MUSIC model layout is shown in Image 3.

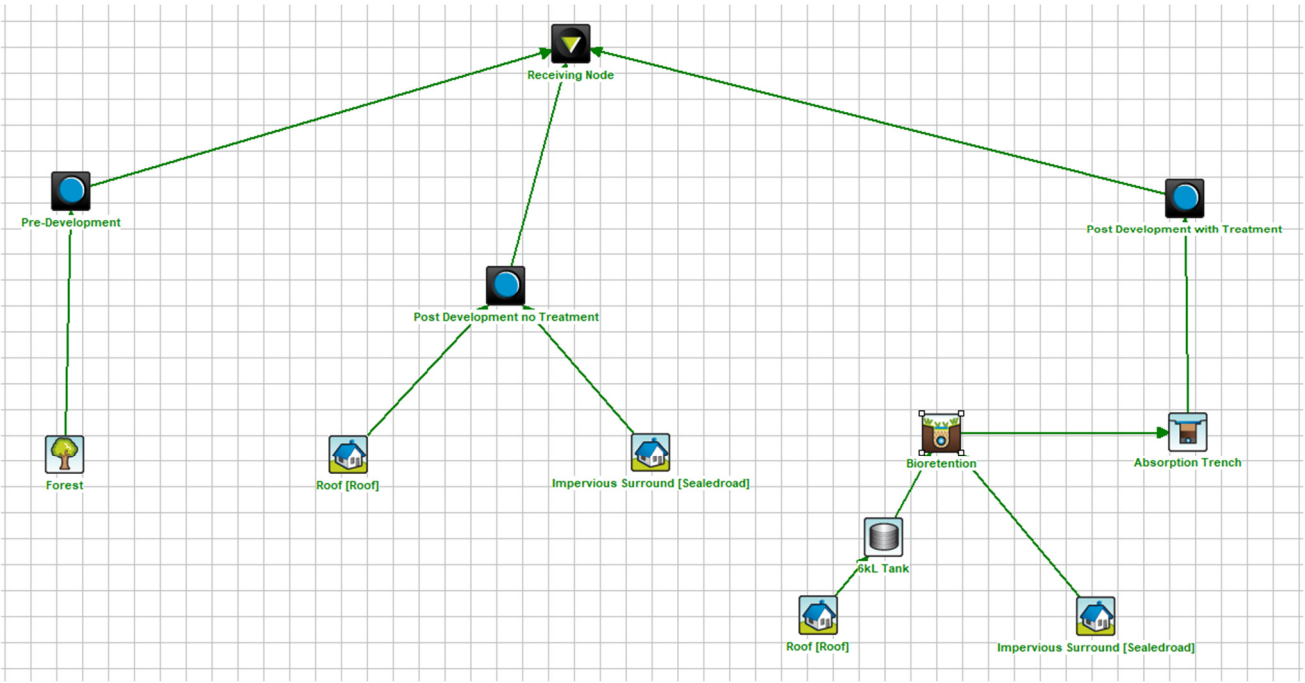


Image 3 – MUSIC modelling results

The post development with treatment MUSIC model assumes:

- The daily water usage for the building is 135 L/person/day.
- There are 2 people, and the occupancy rate is 50%.
- Overflows from the 2 x 3 kL retention tanks are directed to the bioretention basin.
- The bioretention basin filter area is 5 m^2, the filter media depth is 400 mm and the extended detention depth is 150 mm. Treated stormwater runoff is conveyed to the gravel infiltration trenches.

The MUSIC model was simulated using the Adelaide Hills rainfall and evaporation template. The MUSIC modelling results are summarised in Table 2.

<u>Legend</u>

TSS – Total Suspended Solids

TP – Total Phosphorus

TN – Total Nitrogen

Table 2 – MUSIC model results

Scenario	Flow (ML/year)	TSS (kg/year)	TP (kg/year)	TN (kg/year)
Pre-development	0.109	6.4	0.00734	0.0786
Post development no treatment	0.225	42.1	0.0813	0.522
Post development with treatment	0.0045	0.024	0.00028	0.0036

The MUSIC modelling results show that the proposed treatment measures, including retention tanks and reuse, bioretention basin and gravel infiltration trenches are adequate to reduce the post development pollutant loads to less than pre-development pollutant loads. Image 4 shows the percentage reduction in pollutant loads from the bioretention basin. The percentage reductions are greater than the standard targets of 80% TSS, 60% TP and 45% TN.

Treatment Train Effectiveness - Bioretention

	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.225	0.171	23.9
Total Suspended Solids (kg/yr)	42.7	2	95.3
Total Phosphorus (kg/yr)	0.0803	0.0227	71.7
Total Nitrogen (kg/yr)	0.529	0.145	72.5
Gross Pollutants (kg/yr)	8.11	0	100

Image 4 – Pollutant reduction from the bioretention basin.

It is recommended that the bioretention basin is planted with a high density of drought tolerant plant species. The bioretention basin should be planted extensively; at a density of 4 plants/m^2, depending on growth form. A higher density of planting should be provided at locations where concentrated stormwater enters the bioretention basin. Some typical plant species that are high in nitrogen removal are shown in Image 5. Mulch is not recommended as it tends to float and block outlets. The bioretention basin will have a grated field inlet pit at the outlet with a DN150 mm pipe to the gravel infiltration trenches.

Objective	Effective
Nitrogen removal	· *Baumea juncea* · *Baumea rubiginosa* · *Carex appressa* · *Carex tereticaulis* · *Ficinia nodosa* · *Goodenia ovata* · *Juncus amabilis* · *Juncus flavidus* · *Juncus pallidus* · *Juncus subsecundus* · *Melaleuca ericifolia* · *Melaleuca incana* · *Melaleuca lateritia*

Image 5 – High Nitrogen Removal Plant Species (CRC for Water Sensitive Cities)

5 Maintenance

The following inspection and maintenance measures are recommended to maintain the integrity of the stormwater system:

- Inspect the grated field inlet pit in the bioretention basin every month for the first 12 months to establish a cleaning regime. Remove any sediment build up in the pit and check that the outlet pipe is not blocked.
- Inspections to check for an excess of sediment, erosion or boggy conditions in the bioretention basin. Excess sediment should be removed to as close to original design levels as possible and erosion should be repaired by filling with sandy loam material and rock ballast if erosion continues to be a high risk.
- Regular pruning and weeding to remove any foreign species and any diseased plantings, to promote new growth. Monitor vegetation closely during the first year to ensure plants are becoming established and have sufficient water. Some irrigation may be required to establish new plants. Dead plants should be replaced with new plants.
- Check the gravel infiltration trenches for signs of any overflow during regular storm events. Overflows from the infiltration trenches during regular storm events may indicate that the trench is blocked and not functioning as per the design intent.
- Inspect the splitter pit, upstream of the gravel infiltration trenches, for any blockages or ponding water that would indicate a blockage in one or both of the infiltration trenches.

Routine maintenance inspections should be undertaken every 3 months and/or after rainfall events totalling 20 mm or more.

6 Summary

A stormwater management strategy has been developed for the retention of the proposed building that does not have any adverse impacts on the receiving environment. The proposed stormwater management strategy includes:

- Retention of stormwater runoff from the roof in 2 x 3 kL tanks for the purpose of reuse.
- Treatment of overflow from the retention tanks and surrounding hardstand areas in a 5 m^2 bioretention basin.
- Infiltration of treated stormwater runoff in 2 x 17 m long by 1 m deep by 1.8 m wide gravel infiltration trenches.

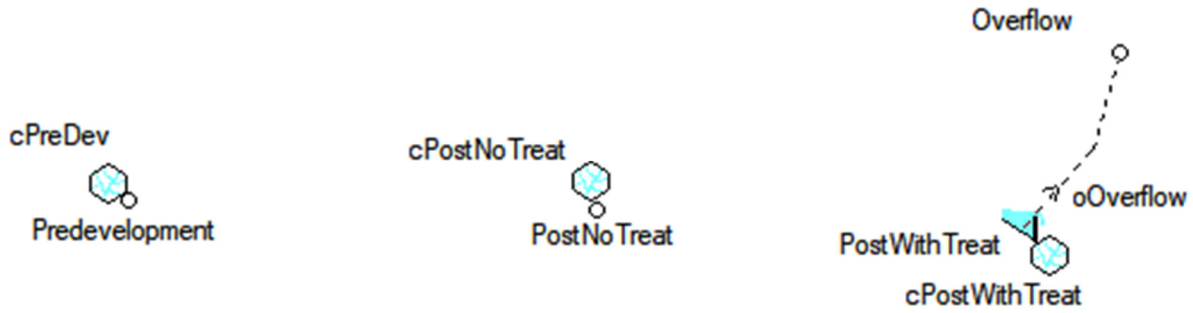
If you have any queries regarding this report, please contact the undersigned on 0422 150 775.

Yours faithfully
DBN Consulting Engineers Pty Ltd

Dean Nobbs
Director
0422 150 775

Appendix A – DRAINS Results

DRAINS Model Setup (below)



10% AEP DRAINS Model Results (below)

1% AEP DRAINS Model Results (below)