# **DEVELOPMENT APPLICATION CIVIL DESIGN PLANS** LOT 100 D.P.870284, No.2 **URQUHARTS LANE, STROUD DRIVEWAY AND STORMWATER QUALITY & QUANTITY PLANS.**

SHEET	DESCRIPTION	REVISION
1.	LOCALITY SKETCH AND INDEX OF SHEETS	С
2.	SITE PLAN VIEW	С
3.	RURAL GRAVEL DRIVEWAY CROSSING	В
4.	STORMWATER DETAIL PLAN VIEW	С
5.	STORMWATER QUANTITY CONTROL (DRAINS)	В
6.	STORMWATER QUALITY CONTROL (S3QM)	С

### CONSTRUCTION NOTES

- 2. EXISTING UNDERGROUND SERVICES WHERE ENCOUNTERED ARE TO BE STRICTLY RETAINED AND IF DISTURBED OR DAMAGED ARE TO BE REPLACED OR REPAIRED BY THE CONTRACTOR TO THEIR EXPENSE. ALTERNATIVELY CABLES ARE TO BE REDIRECTED AS DIRECTED.
- 3. MAKE SMOOTH JOIN WITH EXISTING ROADWAY WHERE THE NEW CONSTRUCTION MEETS THE EXISTING.
- 4. WORKS CARRIED OUT ROADWAY'S TO BE IN ACCORDANCE WITH COUNCILS REQUIREMENTS FOR TRAFFIC CONTROL AND DIRECTION. SIGNAGE, WORK SCHEDULES AND USE OF STOP AND GO CONTROLLERS TO BE APPROVED BY COUNCIL.
- PAVEMENT THICKNESS TO BE CARRIED OUT TO COUNCIL ENGINEERS SATISFACTION. SEE SHEET 03 FOR DETAILS. 6. PUBLIC UTILITY SERVICES TO BE ADJUSTED AS NECESSARY AND AS SHOWN.
- 7. VEHICULAR ACCESS & ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION WORKS.
- 8. WHERE KERB & GUTTER IS PLACED BY USE OF A KERB & GUTTER MACHINE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TAKING & TESTING OF CORE SAMPLES & FORWARDING OF TEST RESULTS TO COUNCIL & THE REMOVAL OF ALL KERB & GUTTER AT HIS OWN EXPENSE WHERE THE MINIMUM STRENGTH IS
- NOT ACHIEVED AFTER 28 DAYS IN ACCORDANCE WITH COUNCIL'S STANDARD SPECIFICATION. 9. ALL TEMPORARY ROAD CONSTRUCTION TO BE REMOVED & THE SURFACE TO BE REINSTATED AS NEAR AS POSSIBLE TO NATURAL CONDITIONS WHEN
- PERMANENT ACCESS IS AVAILABLE.
- 10. EARTHWORKS ARE TO BE CARRIED OUT TO THE SATISFACTION OF THE COUNCIL'S ENGINEER. UNSOUND MATERIAL IS TO BE REMOVED FROM LOTS AND ROADS PRIOR TO FILLING AND RE-USED ON SITE AS APPROPRIATE AND NECESSARY OR SUITABLY DISPOSED OF.
- 11. ALL FILL MATERIAL WITHIN LOTS INCLUDING BATTERS SHALL BE PLACED IN ACCORDANCE WITH AS.3798 TO LEVEL 1 INSPECTION & TESTING". 12. ALL FOOTPATHS, BERMS, BATTERS AND FILLED AREAS ARE TO BE COVERED WITH A MINIMUM THICKNESS OF 100mm OF TOPSOIL.
- 13. PIPELINES TO BE LAID IN TRENCH CONDITIONS (TYPE B' BEDDING).
- 14. MINIMUM COVER TO ALL PIPES GENERALLY IN ACCORDANCE WITH THE "CONCRETE PIPE SELECTION & INSTALLATION" PUBLICATION BY THE CONCRETE PIPE ASSOCIATION OF AUSTRALIA. 15. IMINIMUM OF 0.5m BETWEEN ANY PARALLEL PIPELINES.
- 16. ANY OVERTIME REQUIRED TO BE PAID TO ANY SERVICE AUTHORITY (OR THEIR AUTHORISED REPRESENTATIVE/CONTRACTOR) CAUSED BY THE CONTRACTOR WITH RESPECT TO THE CONSTRUCTION OF SERVICES SHALL BE PAID BY THE CONTRACTOR.
- 17. ALL DRAINAGE PITS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH COUNCIL'S SPECIFICATIONS.
- 18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, PROTECTION & REPAIR OF ANY UTILITY SERVICE SUPPLY WHICH MAY BE INTERFERED WITH DURING THE EXCAVATION AND/OR CONSTRUCTION OF THE WORKS WHETHER SHOWN ON ENGINEERING PLANS OR NOT.
- 19. ALL STORMWATER DRAINAGE LINES RUNNING LONGITUDINALLY WITHIN ROAD RESERVES ARE TO BE LOCATED WITHIN THE ROAD CARRIAGEWAY.
- 20. TEMPORARY POLLUTION CONTROL MEASURES SHALL BE CONSTRUCTED AND APPROVED PRIOR TO ANY OTHER WORKS BEING CARRIED OUT. 21. ALL WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS.
- 22. WHERE NECESSARY STREET SIGNAGE AND PAVEMENT MARKING IS TO BE PROVIDED IN ACCORDANCE WITH AS 1742.1–13 AND THE R.T.A. INTERIM GUIDE TO SIGNS AND MARKINGS.

# SAFETY IN DESIGN

- 1. IN ACCORDANCE WITH CLAUSE 295 OF THE "WORK HEALTH AND SAFETY REGULATION 2017" AND ADDITIONALLY REPORT ALSO ADDRESSES CLAUSES 61 & 64 OF THE REGULATION AND THE SAFE WORK AUSTRALIA "SAFE DESIGN OF STRUCTURES CODE OF PRACTICE - OCTOBER 2018". 2. THE DESIGN SAFETY ASSESSMENT HAS BEEN CARRIED OUT WITH REFERENCE TO THE LISTED DOCUMENTS FOR DESIGN TO BE SAFE SO FAR AS REASONABLY
- PRACTICABLE. HAZARD AND RISK IDENTIFICATION IS BASED ON INFORMATION AVAILABLE TO THE DESIGNER AT THE TIME OF THE DESIGN. 3. ASSESSMENT IS LIMITED TO THE SCOPE OF LE MOTTEE GROUP COMMISSION INCLUDING:
- 3.1. SITEWORKS
- 3.2. ROADS 3.3. STORMWATER DRAINAGE
- 3.4. EARTHWORKS
- 4. IDENTIFIED HAZARDS ARE THOSE WHICH ARE AFFECTED BY THE DESIGN, AND ARE WITHIN THE CONTROL OF THE DESIGNER.
- 5. HAZARDS AND RISK RELATING TO CONSTRUCTION, OPERATION, MAINTENANCE AND DEMOLITION MUST BE CONSIDERED BY THE OWNER, MANAGER, BUILDER, USER, MAINTAINER AND DEMOLISHER. ALL SUCH ENTITIES ARE ASSUMED TO BE QUALIFIED, COMPETENT AND EXPERIENCED.
- 6. SEEK ADVICE WHERE ACTIVITIES ARE OUTSIDE THE FIELD OF EXPERIENCE OF THE OPERATOR/BUILDER/MAINTAINER, INCLUDING BUT NOT LIMITED TO QUALIFIED STRUCTURAL AND GEOTECHNICAL ENGINEERS.
- 7. ATYPICAL HAZARDS HAVE BEEN IDENTIFIED IN THE DESIGN PROCESS. ATYPICAL HAZARDS IDENTIFIED ARE; 7.1. STORMWATER PIT AND PIPE CONSTRUCTION
- 7.2 TRAFFIC
- 8. WHERE STATE OR TERRITORY LEGISLATION EXISTS, OR OTHERWISE AS MAY BE REQUIRED, A DESIGN VERIFICATION STATEMENT WILL BE PROVIDED BY THE CONSULTING ENGINEER.



STRATA CERTIFICATION | ECOLOGY | BUSHFIRE ASSESSMENT

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INDEX OF SHEETS



			Technical Details: Azimuth -	MGA 2020	Title LO	CALITY SKETCH
			Datum -	AHD		LOK LKOLO2
ONS AMENDED J	JUN 25	BRC			Client	TIM &
DED TO INCLUDE EXTRA SWALE	JUN 25	BRC	Drawn -	B COOPER (CIVIL ENGINEER)	Site	LOT 100 D P 970294
FOR COMMENT FOR DEVELOPMENT APPROVAL	MAY 25	BRC				LOT 100 D.F.870284
	Date	Drawn	Surveyed-	LMG - MB 21/06/2024	Locality STROUD	

#### **AND INDEX OF SHEETS** ED SUBDIVISION JILL SCOTT - No.2 URQUHARTS LANE LGA MIDCOAST

NOT FOR CONSTRUCTION

9420 ENG-C

Our Ref:

01

of **06** 

**Brett Cooper** B.Eng (Hons) (Civil) Graduate Civil Engineer Dated: 18/6/2025

B.R. cooper

**Original Size** 

**A1** 



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RT	DENOTES RAINWATER HARVESTING TANK
	DENOTES GRATED PIT PIT SIZE TO SUIT DEPTH REQUIRED <u>DEPTH</u> <u>PIT SIZE</u> <450 300x300 450 - 600 450x450 600 - 900 600x600 900 - 1200 600x900 >1200 900x900
150Ø	DENOTES 100Ø PVC PIPE U.N.O. OR PIPE SIZE SHOWN. MIN. 0.5% FALL
	DENOTES SOLID LID PIT
* * * * * *	DENOTES PROPOSED RAINGARDENS (SEE DETAIL SHEET 04)
	DENOTES PROPOSED GRASSED SWALE 1 (SEE DETAIL SHEET 04)
	DENOTES PROPOSED GRASSED SWALE 2 (SEE DETAIL SHEET 04)



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SURVEYING | CIVIL ENGINEERING | TOWN PLANNING | PROJECT MANAGEMENT STRATA CERTIFICATION | ECOLOGY | BUSHFIRE ASSESSMENT

			Technical Details: Azimuth -	MGA 2020	Title	SITE P
E OUTLET TO DAM ADDED	JUN 25	BRC	Datum -	AHD	Client	
DED TO INCLUDE EXTRA SWALE	JUN 25 MAY 25	BRC	Drawn -	B COOPER (CIVIL ENGINEER)	Site	LOT 100 D.P.870284
s	Date	Drawn	Surveyed-	LMG - MB 21/06/2024	Locality STROUD	



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- TO BE REPLACED OR REPAIRED BY THE CONTRACTOR TO THEIR EXPENSE. ALTERNATIVELY CABLES ARE TO BE REDIRECTED AS DIRECTED.
- SIGNAGE, WORK SCHEDULES AND USE OF TRAFFIC CONTROLLERS TO BE APPROVED BY COUNCIL.
- WORKS.
- CONDITIONS WHEN PERMANENT ACCESS IS AVAILABLE
- REMOVED FROM LOTS AND ROADS PRIOR TO FILLING AND RE-USED ON SITE AS APPROPRIATE AND NECESSARY OR SUITABLY DISPOSED OF.

- CAUSED BY THE CONTRACTOR WITH RESPECT TO THE CONSTRUCTION OF SERVICES SHALL BE PAID BY THE CONTRACTOR.



MIDCOAST COUNCIL STANDARD DRAWING SD0102 - RURAL VEHICULAR DRIVEWAY



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			Technical Details: Azimuth -	MGA 2020	Title	RURAL GRAVEL	
			Datum -	AHD	Client		
DED TO INCLUDE EXTRA SWALE JU	JN 25	BRC	Drawn -	B COOPER (CIVIL ENGINEER)	Site		20
D FOR COMMENT FOR DEVELOPMENT APPROVAL	AY 25	BRC	Surveyed-	LMG - MB 21/06/2024	Locality	STROUD	-0-
	Jaie						





TIMBER POST & RA PAVED METAL GARAGE PAVED GRAVEL SHED INSTALL GRASSED SWALE 1 ON URQUHARTS LANE TO DIVERT WATER AS SHOWN. (SEE DETAIL THIS SHEET)

# STORMWATER LEGEND:

RT		
	DENUTES KAINWATEK MARVESTING TA	INK
	DENOTES GRATED PIT PIT SIZE TO SUIT DEPTH REQUIRED DEPTH <u>PIT SIZE</u> -(50 300×300	
	450 - 600 450×450 600 - 900 600×600 900 - 1200 600×900 >1200 900×900	
150Ø	DENOTES 100Ø PVC PIPE U.N.O. OR PIPE SIZE SHOWN. MIN. 0.5% FALL	
×	DENOTES SOLID LID PIT	
* * * * * *	DENOTES PROPOSED RAINGARDENS (SEE DETAIL SHEET 04)	
	DENOTES PROPOSED GRASSED SWALE (SEE DETAIL SHEET 04)	1
	DENOTES PROPOSED GRASSED SWALE (SEE DETAIL SHEET 04)	2
TOPSOIL		B-R Brei
		NO
ETAIL PL D SUBDI ILL SCOTT No.2 URQUI	AN VIEW VISION HARTS LANE	

LGA MIDCOAST

#### SURVEY LEGEND TREE CANOPY (APPROXIMATE) (And ) TREE R.L AT BASE OF TREE $\square$ CLOTHES LINE POWER POLE 0 TELSTRA PIT TELSTRA POST (6мн) SEWER MANHOLE STORMWATER PIT WATER METER HYDRANT ] = STOP VALVE SIGN POST FLOOR LEVEL BENCH MARK GATE - P - OVERHEAD POWER LINE 19.75 G GUTTER HEIGHT 21.90 R RIDGE HEIGHT — / — / - FENCE KERB OUTLET APPROX. SEWER LINE

cooper tt Cooper B.Eng (Hons) (Civil) luate Civil Engineer Dated: 18/6/2025

Original Size

**A1** 

# FOR CONSTRUCTION

Our Ref:

9420 ENG-C

Sheet No.

04 of **06** 

STORM COMPARISONS										
ST	ORMS		FLOW							
		UNDEVELOPED	DEVELOPED	DEV	CRITICAL DURATION HYDROGRAPHS (BOLDED)					
ARI	<b>TIME</b> 5 min	(m³/s)	(m³/s) 0.007	<b>(m³/s)</b> 0.007	0.008					
	10 min	0.000	0.006	0.006	0.007					
	15 min	0.001	0.006	0.005	0.006					
	20 min 25 min	0.003	0.007	0.004	0.005					
1EY AEF	30 min	0.005	0.006	0.002						
Ъ	45 min	0.006	0.007	0.001						
~	1 hour	0.007	<b>0.005</b>	OK	0.002					
	2 hour	0.006	0.007	0.001	0.001					
		0.000	0.000	OK						
	5 min	0.000	0.000	OK 0.008	0.010					
	10 min	0.000	0.007	0.007						
	15 min	0.003	0.007	0.004	0.008					
<u>م</u>	20 min 25 min	0.005	0.006	0.001	0.006					
AEI	30 min	0.007	0.008	0.001	┍┛┛┖╌╨┱┑╚					
%0	45 min	0.009	0.008	OK	0.004					
2 2	1 nour 1 5 hour	0.009	0.009	OK OK	0.002					
	2 hour	0.008	0.005	OK						
		0.000	0.000	OK	0 10 20 30 40 50 60 70 80					
$\vdash$	5 min	0.000	0.000	0.012	0.020					
	10 min	0.006	0.011	0.005						
	15 min	0.011	0.012	0.001	0.015					
д.	20 min 25 min	0.014	0.013	OK OK						
AE	30 min	0.017	0.014	OK						
20%	45 min	<b>0.018</b>	<b>0.011</b>	OK						
	1.5 hour	0.012	0.009	OK						
	2 hour	0.012	0.010	OK						
		0.000	0.000	OK OK	0 10 20 30 40 50 60 70 80					
	5 min	0.001	0.014	0.013	0.030					
	10 min 15 min	0.012	0.015	0.003	0.025					
	20 min	0.022	0.015	OK OK						
<u>н</u>	25 min	0.023	0.015	OK						
γ γ	<b>30 min</b>	<b>0.024</b>	<b>0.015</b>	OK						
10%	1 hour	0.020	0.015	OK						
	1.5 hour	0.017	0.013	OK						
	2 nour	0.016	0.012	OK OK						
		0.000	0.000	OK	0 10 20 30 40 50 60					
	5 min 10 min	0.005	0.015	0.010 OK	0.035					
	15 min	0.026	0.016	OK	0.030					
	20 min	0.030	0.016	OK	0.025					
ËP,	25 min 30 min	0.029	0.016 0.016	OK OK	0.020					
% A	45 min	0.025	0.016	OK	0.015					
5	1 hour	0.027	0.017	OK OK						
	2 hour	0.019	0.015	OK	0.005					
		0.000	0.000	OK						
$\vdash$	5 min	0.000	0.000	0.003	0.050					
	10 min	0.029	0.016	OK						
	15 min	0.038	0.020	OK	0.040					
<u>`</u>	25 min	0.040	0.020	OK	0.030					
AEF	30 min	0.037	0.023	OK						
2%	45 min 1 hour	0.034	0.023	OK OK						
	1.5 hour	0.025	0.021	OK						
	2 hour	0.024	0.022	OK						
		0.000	0.000	OK	0 10 20 30 40 50 60					
	5 min	0.017	0.016	OK	0.060					
	10 min 15 min	0.038	0.023	OK OK	0.050					
	20 min	0.050	0.034	OK	0.040					
Ľ.	25 min	0.048	0.037	OK						
6 AE	30 min 45 min	0.045	0.040	OK OK						
1%	1 hour	0.037	0.035	OK						
	1.5 hour	0.028	0.027	OK	0.010					
	∠ nour	0.028	0.027	OK	0.000					
		0.000	0.000	OK	0 10 20 30 40 50 60					



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#### STORMWATER QUANTITY MODELLING:

- 1. MODELLING OF THE CATCHMENT FOR THE PRE AND POST DEVELOPED SCENARIOS HAS BEEN UNDERTAKEN IN WATERCOM DRAINS VERSION 2025.01.9147.24925. STORM COMPARISON RESULTS ARE TABULATED THIS PAGE
- 2. DRAINS MODEL IS AVAILABLE FOR REVIEW BEING ARR2019 MODEL USING MODERN ARR STORMS USING THE IL-CL METHOD AS PER MIDCOAST COUNCIL SITE SPECIFIC STORMWATER GUIDELINES FEBRUARY 2024 SECTION 5.4.
- 3. MINOR STORMS ARE SET TO 10% AEP AS PER MIDCOAST COUNCIL AUSPEC 0041 ANNEXURE M5 FOR RURAL LOCAL STREET. MAJOR IS SET TO 1% AEP AS PER PER MIDCOAST COUNCIL AUSPEC 0074 SECTION 3.2. 4. AN UNDEVELOPED CATCHMENT WAS CREATED FOR COMPARISON BEING AN AREA OF 1000m<sup>2</sup> MODELLED AS
- 100% PERVIOUS.
- 5. A DEVELOPED CATCHMENT WAS CREATED FOR A POTENTIAL FURURE DEVELOPED PORTION OF LOT 2 OF 1000m<sup>2</sup> WHERE 600m<sup>2</sup> WOULD BE DEVELOPED. THE ROOF WAS MODELLED AS 300m<sup>2</sup> WITH THE REMAINING 700m<sup>2</sup> MODELLED AS 43% IMPERVIOUS TO ACHIEVE 600m<sup>2</sup> IMPERVIOUS AREA TOTAL.
- 6. ALL NODES ARE AS PER CATCHMENTS, BASINS AND PIPES ON THIS SHEET.
- RESULTS SHOWN IN DRAINS IMAGE ARE FOR MINOR INTERVAL (10% AEP) STORM ENSEMBLES. 7 8. A DETENTION BASIN WAS MODELLED FOR THE 5kL STORAGE IN THE TOP OF THE FUTURE RAIN TANK AND THE
- 200mm EXTENDED DETENTION IN THE RAINGARDEN TOTALLING 9.8m<sup>3</sup> FOR THE 600m<sup>2</sup> DEVELOPED SITE.
- 9. ALL FLOWS ARE SAFELY ROUTED TO PUBLIC DRAINAGE SYSTEM VIA THE ROOF TANK AND RAINGARDEN.
- 10. THEREFORE THE STORMWATER QUANTITY AND ROUTING COMPONENT OF THE DEVELOPMENT IS DEEMED SATISFIED.



DRAINS MODEL VIEW - MINOR STORM (10% AEP) NOT TO SCALE

DED TO INCLUDE EXTRA SWALE D FOR COMMENT FOR DEVELOPMENT APPROVAL	JUN 25 MAY 25 Date	BRC BRC Drawn	Technical Detail Azimuth - Datum - Drawn - Surveyed-	SE MGA 2020 AHD B COOPER (CIVIL ENGINEER) LMG - MB 21/06/2024	Title STOR Client Site Locality STROUD	MWATER QUAN FOR PROPOS TIM & LOT 100 D.P.870284
	Date	Drawn	Surveyeu-	LMG - MD 21/06/2024	Locality SIROUD	



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UNDEVELOPED CATCHMENT FOR COMPARISON - TOTAL AREAS OF RU5 (1000m²) AS 100% PERVIOUS. (SEE RESULTS IN TABLE)



#### STORMWATER QUALITY MODELLING:

- 1. WATER QUALITY TARGETS ARE MODELLED IN ACCORDANCE WITH COUNCIL'S GUIDELINES WHERE ENGINEERS AUSTRALIA - AUSTRALIAN RUNOFF QUALITY (ARQ) : A GUIDE TO WATER SENSITIVE URBAN DESIGN TARGETS ARE USED WHICH ARE LISTED BELOW.
- 2. AN AREA OF 1000m<sup>2</sup> WAS MODELLED WITH A 300m<sup>2</sup> ROOF, 300m<sup>2</sup> OF OTHER IMPERVIOUS AREA AND 400m<sup>2</sup> REMAINING PERVIOUS AREA.
- 3. THE FLOWS ARE "POLISHED" VIA THE RAINWATER TANK AND BIOFILTRATION RAINGARDEN.
- 4. MODELLING OF THE TREATMENT TRAIN HAS BEEN DONE USING S3QM WITH THE REPORT SHOWN ON THIS PAGE.
- 5. THE FOLLOWING PERCENTAGE LOAD REDUCTION TARGETS ARE SPECIFIED BY MIDCOAST COUNCIL USING ARQ GUIDELINES.
  - TOTAL SUSPENDED SOLIDS (TSS) 80% REDUCTION (TP) 60% REDUCTION
- TOTAL PHOSPHORUS
- TOTAL NITROGEN (TN) 45% REDUCTION
- GROSS POLLUTANTS (GP) 100% REDUCTION 8. MODEL RESULTS ARE TABULATED ON THIS PAGE. MODEL RESULTS ACHIEVE POLLUTANT LOAD REDUCTION TARGETS SPECIFIED BY MIDCOAST COUNCIL.
- 9. QUALITY MEASURES ARE SHOWN ON PLANS FOR CAPABILITY ONLY. SIZING SHOULD BE RECONSIDERED AT DWELLING STAGE AND ADJUSTED AS NECESSARY.

#### RAINWATER REUSE/OSD

- 1. STORAGE SIZE OF RAINWATER RE-USE TANKS SUBJECT TO BASIX
- CLASSIFICATION. 2. OVERFLOW FROM REUSE/OSD TANKS TO BE CONNECTED INTO RAINGARDEN AS SHOWN.
- 3. ALL ROOFWATER/DOWNPIPES TO BE CONNECTED TO REUSE/OSD TANKS.
- 5. THE REUSE TANK SYSTEM IS CONNECTED FOR USE IN TOILET FLUSHING,
- IRRIGATION, LAUNDRY, CAR WASHING AND OTHER APPROPRIATE PURPOSES. 6. THE COLLECTION SYSTEM INCORPORATES AN EFFECTIVE FIRST FLUSH DEVICES FOR REMOVING ROOF SURFACE CONTAMINATION. FIRST FLUSH TO BE PER DOWNPIPE OR COMMUNAL AT TANK VIA COMMON ABOVE OR UNDERGROUND
- 7. FIRST FLUSH IDEALLY TO BE MINIMUM 200 MILLILITRE PER METRE SQUARE OF ROOF AREA TO A MAXIMUM OF  $2LITRES/m^2$  AND IDEALLY  $1LITRES/m^2$  I.E. MINIMUM 30 LITRES PER 150m<sup>2</sup>, IDEALLY 100 LITRES PER 100m<sup>2</sup>.
- 8. BACKFLOW PREVENTION IS PROVIDED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.1.2
- 9. NOISE EMISSION FROM ANY PUMPS DO NOT EXCEED 5DB(A) ABOVE AMBIENT BACKGROUND NOISE LEVEL MEASURED AT THE NEAREST LOT BOUNDARY
- 10. ALL FIXTURES CONNECTED TO THE REUSE SYSTEM ARE MARKED 'NOT SUITABLE FOR DRINKING'.



BASE OF PIT. PROVIDE FREE DRAINING GRAVEL BASE UNDER PIT 0.3m SQ. BY 0.45m DEEP.

#### TYPICAL DETAIL OF ABOVE GROUND RAINWATER HARVESTING TANKS

NOT TO SCALE



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PIPE(S) OR CONTINUOUS DIVERTOR e.g. RAPID PLAS RT55WD OR SIMILAR.

	s3qm
	General De
Project Name:	
Project No.:	
Author:	
	Location De
Sae Address:	
Council Area:	
Rainfall Region:	
Total Area (m2):	
	Output Summ
Catchment Characteristic:	
Water Usage:	
Catchment 1	
Treatment Train:	
e vovr nater	
Treated Loads / Hows	



ROOF GUTTER

EXTERNAL TAP (MARKED NOT FOR DRINKING)

HOUSE SUPPLY TO TOILETS AND WASHING MACHINE



			Technical Details Azimuth -	s: MGA 2020	Title	STORMWATER QUA
SPREADER DIAGRAM REMOVED DED TO INCLUDE EXTRA SWALE D FOR COMMENT FOR DEVELOPMENT APPROVAL	JUN 25 JUN 25 MAY 25 Date	BRC BRC BRC Drawn	Datum - Drawn - Surveyed-	AHD B COOPER (CIVIL ENGINEER) LMG - MB 21/06/2024	Client Site Locality	TIM & LOT 100 D.P.870284 STROUD



$\rangle$	etails		
	9420		
	9420	Comments;	
	brett_cooper_94@hotmail.com	neticm Direction	
D	etails		
	2 Urguharts Lane, Stroud	Lot/DP No .:	100/870284
	MidCoast Council	Dominant Soil Texture:	Clay
	Taree	Design Mode and WQOs:	Design/TTE
	1000	No. Catchments:	1

mary			
	D	eveloped	L.,
Imperviousness(%)	60.0%	9	
Storage Capacity (kL)	3.0 kL	1	1
Demand (kL/yr)	318.4		
Utilisation (%)	42.75		
Efficiency (%)	99.42		
Tank Spills	36.99	<u> </u>	
Urban	1000.	0	
Agriculture	0.0	ŧ	
Forest	0.0		
	Biofilt Surfac Ed De Depth	ration: te Area=24.0, epth=0.2, F =0.4	
	Load	Train Effectiveness (%)	
Flow(ML)	0.63	20.5	
TSS(kg/yr)	4.9	92.6	80
TP (kg/yr)	0.059	61.6	60
TN (kg/yr)	0.53	66.5	45
Gross Pollutants (kg/yr)	0.0	100.0	100
Note:			

Brett Cooper B.Eng (Hons) (Civil) Graduate Civil Engineer Dated: 18/6/2025 NOT FOR CONSTRUCTION

Our Ref:

Sheet No.

ALITY CONTROL (S3QM) SED SUBDIVISION & JILL SCOTT 4 - No.2 URQUHARTS LANE LGA MIDCOAST

9420 ENG-C Original Size 06 of **06 A1**