

## DRAWING TRANSMITTAL

PROJECT NAME	Proposed D	evelopment				Job	No.	СС	C190	025	Disc	ipline		CIV	Sh	eet	1	Of	1
						Your	Ref.												
Property Address							Client	Name	)										
No.88 Lascelles R	oad, Narrawe	nna					Mart	in											
To Company Name &	Address						Atten	tion											
Bellmarch							Jon	Farre	r										
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ion farror@hollm	arah aam a		Del. N	lethod	NO. 0	t Copi	es			( A1 -	Print	A3 - Pi	ant D	- Disk	EF -	Electro	onic File	e)	
jon.larrer@pelin	larch.com.au	1	-	A1															
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DELIVER TO			Del. N	lethod	em	em	em	em											
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DELIVERY METHOD		M - Mail EP - E	xpress	Post	C - Co	ourier	F - Fa	x YP	- Your	Picku	p O - 0	Our Dr	op-off	EM -	Emai	l			
										Dat	e Of Is	ssue							
We enclose d	copies of drawings	s listed under.	Day		21	08	17	22											
Please de	estroy, or remove	from use,	Mont	h	03	04	05	05											
ali	l previous revision	IS.	Year		19	19	19	19											
Drawing Register			Dwg	No.						lss	ue Sta	atus							
Cover Sheet & Notes			C1		Α	в	С	D											
Stormwater Managem	ent Plan		C2		Α	В	С	D											
Stormwater Managem	ent Details No.1		C3		Α	В	С	D											
Stormwater Managem	ent Details No.2		C4		Α	В	С	D											
Stormwater Managem	ent Details No.3		C5		A	В	C	D											
Council Checklist			C6		Α	В	С	D											
			-																
			-																
Reason For Issue						1	ī	r		1	r	r		1		r	r		
A - Approval	B - Pricing	C - Constructi	on																
M - Amended	P - Preliminary	Q - Requested	t		_	<b>_</b>	DA/	DA/											
R - Review	I - I ender	X - Information	n		R		м	м		1		l				l	l		
DA - Development App	NICATION CC -	Construction Ce	rtificate					l		1		l				l	l		
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		Sent By :			ŝ	S	В	B											

# PROPOSED DEVELOPMENT Lot 95 (No.88) LASCELLES ROAD, NARRAWEENA STORMWATER MANAGEMENT PLANS

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DIAL BEFORE

YOU DIG

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IMPORTANT: THE CONTRACTOR

IS TO MAINTAIN A CURRENT SET

OF "DIAL BEFORE YOU DIG" DRAWINGS ON SITE AT ALL

TIMES

#### **GENERAL NOTES**

THESE PLANS SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT CONSULTANTS' PLANS, SPECIFICATIONS, CONDITIONS OF DEVELOPMENT CONSENT AND CONSTRUCTION CERTIFICATE REQUIREMENTS. WHERE DISCREPANCIES ARE FOUND ACOR CONSULTANTS (CC) MUST BE CONTACTED IMMEDIATELY FOR VERIFICATION WHERE THESE PLANS ARE NOTED FOR DEVELOPMENT APPLICATION 2. PURPOSES ONLY, THEY SHALL NOT BE USED FOR OBTAINING A CONSTRUCTION CERTIFICATE NOR USED FOR CONSTRUCTION PURPOSES SUBSOIL DRAINAGE SHALL BE DESIGNED AND DETAILED BY THE 3 STRUCTURAL ENGINEER. SUBSOIL DRAINAGE SHALL NOT BE CONNECTED INTO THE STORMWATER SYSTEM IDENTIFIED ON THESE PLANS UNLESS APPROVED BY ACOR CONSULTANTS (CC) STORMWATER CONSTRUCTION NOTES ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500 (CURRENT EDITION) AND THE REQUIREMENTS OF THE LOCAL COUNCIL'S POLICIES AND CODES THE MINIMUM SIZES OF THE STORMWATER DRAINS SHALL NOT BE 2 LESS THAN DN90 FOR CLASS 1 BUILDINGS AND DN100 FOR OTHER CLASSES OF BUILDING OR AS REQUIRED BY THE REGULATORY AUTHORITY THE MINIMUM GRADIENT OF STORMWATER DRAINS SHALL BE 1%, UNLESS NOTED OTHERWISE COUNCIL'S TREE PRESERVATION ORDER IS TO BE STRICTLY ADHERED TO. NO TREES SHALL BE REMOVED UNTIL PERMIT IS OBTAINED PUBLIC UTILITY SERVICES ARE TO BE ADJUSTED AS NECESSARY AT 5. THE CLIENT'S EXPENSE ALL PITS TO BE BENCHED AND STREAMLINED. PROVIDE STEP IRONS FOR ALL PITS OVER 1.2m DEEP MAKE SMOOTH JUNCTION WITH ALL EXISTING WORK VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL 8 TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION SERVICES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM INFORMATION SUPPLIED BY THE RELEVANT AUTHORITIES AND FIELD INVESTIGATIONS AND ARE NOT GUARANTEED COMPLETE NOR CORRECT. IT IS THE CLIENT & CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL PRIOR TO CONSTRUCTION 10. ANY VARIATION TO THE WORKS AS SHOWN ON THE APPROVED DRAWINGS ARE TO BE CONFIRMED BY ACOR CONSULTANTS (CC) PRIOR TO THEIR COMMENCEMENT

#### **RAINWATER RE-USE SYSTEM NOTES**

RAINWATER SUPPLY PLUMBING TO BE CONNECTED TO OUTLETS WHERE REQUIRED BY BASIX CERTIFICATE (BY OTHERS) TOWN WATER CONNECTION TO RAINWATER TANK TO BE TO THE SATISFACTION OF THE REGULATORY AUTHORITY. THIS MAY **REQUIRE PROVISION OF** 2.1. PERMANENT AIR GAP BACKFLOW PREVENTION DEVICE 2.2. NO DIRECT CONNECTION BETWEEN TOWN WATER SUPPLY AND THE RAIN WATER SUPPLY AN APPROVED STOP VALVE AND/OR PRESSURE LIMITING VALVE AT THE RAINWATER TANK PROVIDE APPROPRIATE FLOAT VALVES AND/OR SOLENOID VALVES TO CONTROL TOWN WATER SUPPLY INLET TO TANK IN ORDER TO ACHIEVE THE TOP-UP INDICATED ON THE TYPICAL DETAIL ALL PLUMBING WORKS ARE TO BE CARRIED OUT BY LICENSED PLUMBERS IN ACCORDANCE WITH AS/NZS3500.1 NATIONAL PLUMBING AND DRAINAGE CODE PRESSURE PUMP ELECTRICAL CONNECTION TO BE CARRIED OUT BY A LICENSED ELECTRICIAN ONLY ROOF RUN-OFF IS TO BE DIRECTED TO THE RAINWATER TANK SURFACE WATER INLETS ARE NOT TO BE CONNECTED PIPE MATERIALS FOR RAINWATER SUPPLY PLUMBING ARE TO BE APPROVED MATERIALS TO AS/NZS3500 PART 1 SECTION 2 AND TO BE CLEARLY AND PERMANENTLY IDENTIFIED AS 'RAINWATER'. THIS MAY BE ACHIEVED FOR BELOW GROUND PIPES USING IDENTIFICATION TAPE (MADE IN ACCORDANCE WITH AS2648) OR FOR ABOVE GROUND PIPES BY USING ADHESIVE PIPE MARKERS (MADE IN ACCORDANCE WITH AS1345) 10. EVERY RAINWATER SUPPLY OUTLET POINT AND THE RAINWATER TANK ARE TO BE LABELED 'RAINWATER' ON A METALLIC SIGN IN ACCORDANCE WITH AS1319 11. ALL INLETS AND OUTLETS TO THE RAINWATER TANK ARE TO HAVE SUITABLE MEASURES PROVIDED TO PREVENT MOSQUITO AND VERMIN ENTRY SHEET INDEX

-	
COVER SHEET & NOTES	SHEET C1
STORMWATER MANAGEMENT PLAN	SHEET C2
STORMWATER MANAGEMENT DETAILS SHEET No.1	SHEET C3
STORMWATER MANAGEMENT DETAILS SHEET No.2	SHEET C4
STORMWATER MANAGEMENT DETAILS SHEET No.3	SHEET C5
COUNCIL CHECKLIST	SHEET C6

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his dra	awing has been assigned an electronic code that signifies the drawing has been checked and approved by:	MR MICH	HAEL GO	DOWIN MIE	EAust CPEng NER	Client	Architect		ACOR Consultants (CC) Pty Ltd	Project
)	RE-ISSUED FOR DEVELOPMENT APPLICATION - RL REVISED	22.05.19	RH	BK	North				Platinum Building, Suite 2.01, 4 Ilya Avenue	
2	RE-ISSUED FOR DEVELOPMENT APPLICATION	17.05.19	RH	BK			DELLIVIARCH	ACI	ERINA NSW 2250, Australia	FRFUSED RES
3	ISSUED FOR DEVELOPMENT APPLICATION	08.04.19	SJ	BK			HOMES		T +61 2 4324 3499	DEVELOPMEN
۹	DRAFT ISSUED FOR CLIENT REVIEW	Α	SJ	BK						LOT 95 (No.88) LASCELL
sue	Description	Date	Drawn	Approved						NARRAWEENA
.0	) 1cm at full size 10cm							CONSULTANTS	ENGINEERS MANAGERS INFRASTRUCTURE PLANNERS DEVELOPMENT CONSULTANTS	NSW



2.

## NORTHERN BEACHES COUNCIL (WARRINGAH COUNCIL REQUIREMENTS) REFER TO WARRINGAH COUNCIL CHECKLIST ON SHEET C6

FULL COMPUTATION METHOD ADOPTED USING DRAINS PROGRAM. REFER TO DRAINS MODEL CC190025.drn

3. DRAINS SUMMARY

SITE AREA (m<sup>2</sup>) .681.4 % IMPERVIOUS PRE-DEVELOPED FOR CALCULATIONS. ...0%

PRE-DEVELOPED DISCHARGE FLOW RATES

5 year ARI	100 year ARI
20 L/S	NA

POST DEVELOPED SUMMARY	
ROOF AREA (m <sup>2</sup> )	
DRIVEWAY AREA + PATH (m <sup>2</sup> )	
+ 15% ADDITIONAL (m <sup>2</sup> )	
TOTAL IMPERVIOUS AREA (m <sup>2</sup> )	
FOR CALCULATION	

OSD CATCHMENT = 285m<sup>2</sup> (roof area + driveway 100% impervious) = 396.4m<sup>2</sup> (paths, landscape 33% impervious) OSD BYPASS

POST DEVELOPED DISCHARGE FLOW RATES

5 year ARI	100 year ARI
NA	15 L/S*

\*NOTE: 100 YEAR POST DEVELOPED FLOW OF 15L/S IS LESS THAN 5 YEAR PRE-DEVELOPED FLOW OF 20L/S

STORAGE VOLUME REQUIRED = 20.0m<sup>3</sup>

BASIX REOLUREMENT = 5 000 litre THEREFORE: MINIMUM ON-SITE DETENTION REQUIREMENT (20,000L - 5,000L) =15,000 litre. WE NOTE 27m3 HAS BEEN PROVIDED

5. OSD PSD.

4

5 year ARI	100 year ARI
NA	15.0 L/S

MAXIMUM HEADWATER DEPTH = 1.33m THEREFORE: ADOPT = 78mm ORIFICE

DESIGN PREPARED IN ACCORDANCE WITH WARRINGAH COUNCIL "ON SITE STORMWATER DETENTION TECHNICAL SPECIFICATION" AR&R & AS/NZS 3500.

### DEVELOPMENT APPLICATION ISSUE NOT FOR CONSTRUCTION

	Drawing Title COVER SHEET & NOTES								
	Drawn	Date	Scale A1	Q.A. Check	Date				
5 (No.88) LASCELLES ROAD,	SJ	21.03.19	AS NOTED	-	-				
AWEENA	Designed	Project No.		Dwg. No.	Issue				
	ВК	CC190025		C1	D				



NOTES	
ESERVED	FOF

#### WARNING LOCATION AND DEPTH OF ALL UNDERGROUND SERVICES TO BE INVESTIGATED WITH THE RELEVANT AUTHORITIES PRIOR TO COMMENCING WORK

PROVIDE 1 x 5,000 litre ABOVE GROUND TANK FOR RE-USE IN ACCORDANCE WITH THE REQUIREMENTS OF THE BASIX CERTIFICATE & COUNCIL REQUIREMENTS. INSTALL IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION, AS/NZS 3500, AND COUNCIL'S GUIDELINES. REFER SHEET C3

PROVIDE TANK RE-USE PUMP CONTROL UNIT TO MANUFACTURERS SPECIFICATION. PROVIDE FIRST FLUSH DEVICE OR EQUIVALENT PRIOR TO

	NOT	ES:								
	1.	1. TOP OF GRATE LEVELS HAVE BEEN DETERMINED FROM THE SURVEY DETAIL PROVIDED. FOLLOWING EARTHWORKS AND BENCHING, VALIDITY OF GRATE LEVELS SHOULD BE ASSESSED AND ADJUSTED AS REQUIRED TO MEET THE INTENT OF THE DESIGN. WHERE IN DOUBT CONTACT THE DESIGN ENGINEER.								
	2.	LANDSCAPE SURFACE DRAINAGE SYSTEM TO DETAIL BY OTHERS. THIS SYSTEM IS TO BE INTEGRATED WITH ANY LANDSCAPE REQUIREMENTS. THE COLLECTION OF LANDSCAPE STORMWATER SHALL BE CONVEYED BY A SEPARATE SYSTEM OF PITS AND PIPES. NO CONNECTION IS ALLOWED INTO THE RAINWATER PIPE SYSTEM IDENTIFIED AS SHOWN								
	3.	THE LOCATIONS OF DOWNPIPES SHOWN ON THIS DRAWING ARE INDICATIVE AND WILL NEED TO BE SITE VERIFIED BY THE BUILDER. ALL DOWNPIPES TO BE 90mm MIN. DIA. U.N.O. IF CHANGES ARE MADE TO THE NUMBER OR POSITION OF DOWNPIPES THE DESIGN ENGINEER SHALL BE CONTACTED FOR VERIFICATION.								
	4.	FOR CHARGED/SEALED LINES PROVIDED APPROPRIATE CLEAN OUT FACILITY AT LOW POINTS OF SYSTEM, TYP.								
_			Drowing Titl-							
1		AL.	STORN	IWATER	MANAG	EMENT				
	n		Drawn SJ	Date 21.03.19	Scale A1 AS NOTED	Q.A. Check	Date			

CC190025

C2



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D	RE-ISSUED FOR DEVELOPMENT APPLICATION - RL REVISED	22.05.19	RH	BK	North		
С	RE-ISSUED FOR DEVELOPMENT APPLICATION	17.05.19	RH	BK			
В	ISSUED FOR DEVELOPMENT APPLICATION	08.04.19	SJ	BK			
A	DRAFT ISSUED FOR CLIENT REVIEW	Α	SJ	BK			
Issue	Description	Date	Drawn	Approved			
1 0	1cm at full size 10cm						







IDENTIAL	Drawing Title STORMWATER MANAGEMENT DETAILS SHEET No.1								
	Drawn	Date	Scale A1	Q.A. Check	Date				
ES ROAD,	SJ	21.03.19	AS NOTED	-	-				
	Designed	Project No.		Dwg. No.	Issue				
	BK	CC190	025	C3	D				



DENTIAL	Drawing Title STORMWATER MANAGEMENT DETAILS SHEET No.2						
	Drawn	Date	Scale A1	Q.A. Check	Date		
S ROAD,	SJ	21.03.19	AS NOTED	-	-		
	Designed	Project No.		Dwg. No.	Issue		
	ВК	CC190	025	C4	D		



AR
LADE
Warringah Council

gah Council	On-site Stormwater Detention (OSD) Checklist For Single Dwelling Residential Developments								
This form is to be of new single dw submission of a carefully for its a	e used to determine if OSD will be required for demolition and reconstruction, or construction relling residential developments and must be completed and included with the any development application for these works. Please read both sides of this form pplications, guidelines and definitions.								
For assistance and support, please contact Council's Customer Service Centre on (02) 9942 2111.									
Address of Proposed Development									
Address of propo development	Dised Lot 95 DP (if applicable)								
	No. 88 Street LASCELLES ROAD								
	Suburb NARRAWEENA								
PART 1	PART 1 Exemption for properties that drain naturally away from the street								
Tick one only	Does the site fall naturally away from the street?								
	Yes Mo								
If yes, stormwater drainage must be in accordance with Council's Policy No. PDS-POL 136 'Stormwater Drainage from Low Level Properties'.									
Willia di Irria Irrant an	If no, proceed to the next part.								
PART 2	Is the site area less than 450m <sup>2</sup>								
Tick one only	Yes No 🗹								
	If yes, OSD is not required.								
	If no, proceed to next part.								
PART 3	Exemption for Direct Discharge to Ocean								
Tick one only	Does the site of the development drain directly to the ocean without the need to pass through a drainage control structure such as a pipe, bridge, culvert, kerb and gutter or natural drainage system?								
	Yes No								
	If yes, OSD is not required.								
1. I.B. 1. B. 1. Mar 1	If no, proceed to the next part.								

Tick one only	Is the site of the development located within an established Flood Prone Land as							
	Refer to section 2.6 of Council's OSD Technical Specification.							
	Yes No 🗹							
	If yes, OSD is not required.							
	If no, proceed to the next part.							
PART 5 De	termination of OSD Requirements							
3.1 Calculations	(a) Site area <u>684.1</u> m <sup>2</sup> x 0.40 = <u>273.6</u> m <sup>2</sup>							
	(b) Proposed and remaining impervious area <u>285</u> m <sup>2</sup>							
Please view below	OSD will not be required when (a) is greater than (b)							
examples	Is OSD required for this development (tick one only) Yes 🗹 No 🗌							
	If yes, then a design in accordance with the Streamlined Method in Council's OSD Technical Specification is to be provided with the Development Application (refer to Clause 3.1.1)							
	If no, OSD is not required.							
3.2 Example	If the proposed combined impervious area is greater than 40% of the site area, then OSD is required.							
	<i>Example 1</i> : Site Area = 600m <sup>2</sup> Total proposed & remaining impervious area = 290m <sup>2</sup>							
	600 x 0.4 = 240m <sup>2</sup> (290 > 240) OSD required							
	<i>Example 2:</i> Site Area = 800m <sup>2</sup> Total proposed & remaining impervious area = 290m <sup>2</sup>							
	800 x 0.4 = 320m <sup>2</sup> (290 < 320) OSD is not required							
DEFINITIONS								
Designed to help you fill out this application	Site area: This refers to the area of the land bounded by its existing or proposed boundaries.							
	Impervious areas: This refers to driveways, pathways, paved areas, hardstand areas, roofed areas, garages and outbuildings that are proposed and to be retained.							
	Where an existing structure is to be demolished to make way for a new dwelling, only the proposed impervious areas and remaining impervious areas are to be used in the calculations. No credit is given for existing impervious areas that are not retained.							
NOTES								
Please read before	1. Other works, ancillary buildings, commercial, industrial, subdivisions and multiple occupancy developments are to comply with Council's OSD Technical Specification.							
filling out this form								

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This	s drawing has been assigned an electronic code that signifies the drawing has been checked and approved by	MR MIC	HAEL	GOODWIN MI	EAust CPEng NER	Client	Architect		ACOR Consultants (CC) Pty Ltd	Project
D	RE-ISSUED FOR DEVELOPMENT APPLICATION - RL REVISED	22.05.1	RH	BK	North	MARTIN	BELLMARCH		Platinum Building, Suite 2.01, 4 Ilya Avenue	PRPOSED RESID
B	RE-ISSUED FOR DEVELOPMENT APPLICATION	17.05.1	A RH	BK			HOMES		ERINA NSW 2250, Australia T +61 2 4324 3499	DEVELOPMENT
A	DRAFT ISSUED FOR CLIENT REVIEW	A	SJ	BK						LOT 95 (No.88) LASCELLES
Issu	e Description	Date	Draw	n Approved						NARRAWEENA
1	0 1cm at full size 10cm	-	-					CONSULTA	NTS ENGINEERS MANAGERS INFRASTRUCTURE PLANNERS DEVELOPMENT CONSULTANTS	NOW

DENTIAL								
	Drawn	Date	Scale A1	Q.A. Check	Date			
ROAD,	SJ	21.03.19	AS NOTED	-	-			
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