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A21				DOCUMENT CERTIFICATION		NORTHERN BEACHES Consulting Engineers P/L		Architect: ADDSTYLE		Project: 55 BINBURRA AVE AVALON		Date: SEPT. 10	Design: P.M.	Drawn: LFC	Checked: RSW
27.9.10				Rick G. Wray BE(Civil), CPENG, MIEAust, NPER (Director Northern Beaches Consulting Engineers)		A.C.N. 076 121 616 A.B.N. 24 076 121 616 Suite 207, 30 FISHER ROAD DEE WHY N.S.W. 2099 Ph: (02) 9984 7000 Fax: (02) 9984 7444 e-mail: info@nbceconsulting.com.au web page: www.nbceconsulting.com.au		Client: BEN EGGLETON		Drawing Title: STORMWATER DETAILS		Job No: 100736		Drawing No: D02	
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ON SITE DETENTION SYSTEM SUMMARY NOTES			
TOTAL SITE AREA	613.7 m ²		
DESIGN METHOD USED	DRAINS		
PRE DEVELOPMENT IMPERVIOUS AREA	0 m ²	('STATE OF NATURE')	
POST DEVELOPMENT IMPERVIOUS AREA	267 m ²		
PRE DEVELOPMENT SITE DISCHARGE			
5 YR	16 l/s		
20 YR	27 l/s		
100 YR	38 l/s		
POST DEVELOPMENT SITE DISCHARGE	CONTROLLED	UN-CONTROLLED	
5 YR	7 l/s	9 l/s	
20 YR	10 l/s	14 l/s	
100 YR	12 l/s	19 l/s	
PORTION OF SITE THROUGH OSD	48 %		
ORIFICE SIZE	71 mm ϕ		
TYPE OF CONTROL	BELOW DECK TANKS		
OSD CALCULATED	8.0 m ³		
OSD REQUIRED BY PITTSWATER COUNCIL DCP21	9.0 m ³		
DIMENSION OF OSD PROVIDED	2 / 3.39 m ² x 1.33 m DEPTH		
VOLUME OF OSD	9.0 m ³		

STORMWATER NOTES:

- 1 - ALL PIPES TO BE 100mm ϕ UNLESS NOTED OTHERWISE.
- 2 - ALL PIPES TO BE uPVC TO AS 1254-2002 UNLESS NOTED OTHERWISE.
- 3 - ALL PIPES TO BE LAYED AT 1 % MINIMUM GRADE UNLESS NOTED OTHERWISE.
- 4 - ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS.
(NO COMPACTION REQUIRED BELOW LANDSCAPING)
COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM.
BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
- 5 - ALL DOWN PIPES TO BE 100mm ϕ UNLESS NOTED OTHERWISE.
- 6 - DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT WITH WORK.
- 7 - PROVIDE CLEANING EYES AT ALL DOWNPIPES.
- 8 - ALL PITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER.
CAST INSITU PITS TO HAVE 150mm THICK CONCRETE WALLS AND BASE.
WALLS TO BE REINFORCED WITH 1 N12 TOP TIE UNLESS NOTED OTHERWISE.
CAST INSITU PITS GREATER THAN 1000 DEEP TO BE MINIMUM 900x600 AND TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH N12 AT 300 EACH WAY UNLESS NOTED OTHERWISE.
- 9 - ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
- 10 - ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
- 11 - PRIOR TO COMMENCING ANY SITE WORKS THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL MEASURES TO APROVED SEDIMENT AND EROSION CONTROL PLAN, EPA GUIDELINES AND COUNCIL SPECIFICATIONS. ALL MEASURES TO REMAIN IN PLACE UNTIL COMPLETION AND STABILIZATION OF THE SITE TO COUNCIL SATISFACTION.
- 12 - ALL LEVELS SHOWN ARE TO AHD
- 13 - ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
- 14 - ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
- 15 - ALL WORKS TO BE IN ACCORDANCE WITH AS 3500-2003 NATIONAL PLUMBING DRAINAGE CODE PART 3 - STORMWATER DRAINAGE.

RAINWATER RE-USE TANKS:

1. CONSIDERING THE ROOF CATCHMENT AREA, LOCATION OF PROPERTY, INTENDED USE OF RAINWATER AND GARDEN SIZE WE RECOMMEND PROVIDING A MINIMUM 3000 L CAPACITY RAINWATER TANK FOR THE FOLLOWING USES:
a) TO WATER GARDEN AREAS b) CONNECT TO W.C. c) CONNECT TO WASHING MACHINE.
2. THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE.
3. REFERENCES:
COOMBS P.J. & KUCZERA G. (2001), "RAINWATER TANK DESIGN FOR WATER SUPPLY & STORMWATER MANAGEMENT." STORMWATER INDUSTRY ASSOCIATION REGIONAL CONFERENCE.
PATRICK DUPONT & STEVE SHACKEL, "RAINWATER"
AUSTRALIAN GOVERNMENT (2004), "GUIDANCE ON USE OF RAINWATER TANKS"
4. ALL CONNECTIONS TO PLUMBING AND RAINWATER TANKS TO BE IN ACCORDANCE WITH SYDNEY WATERS' GUIDE "INSTALLING A RAINWATER TANK" AVAILABLE AT www.sydneywater.com.au
5. PROVIDE A DUAL SUPPLY SYSTEM AND BACKFLOW PREVENTION SYSTEM IN ACCORDANCE WITH 'BASIX-DESIGN GUIDE FOR SINGLE DWELLINGS' BY NSW DEPARTMENT OF INFRASTRUCTURE, PLANING AND NATURAL RESOURCES.

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A2

			DOCUMENT CERTIFICATION		NORTHERN BEACHES Consulting Engineers P/L		Architect:	ADDSTYLE		Project: 55 BINBURRA AVE AVALON		Date:	SEPT. 10	Design:	P.M.	Drawn:	LFC	Checked:	RL
			Date: 10 Sept 10 Rick G. Wray BE (Civil), CPENG, MIEAust., NPER. (Director - Northern Beaches Consulting Engineers)		A.C.N. 076 121 616 A.B.N. 24 076 121 616 Suite 207, 30 FISHER ROAD DEE WHY N.S.W. 2099 Ph: (02) 9994 7000 Fax: (02) 9994 7444 e-mail: info@nbiconsulting.com.au web page: www.nbiconsulting.com.au		Client:	BEN EGGLETON		Drawing Title:		Job No:		100736		Drawing No:		D03	
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