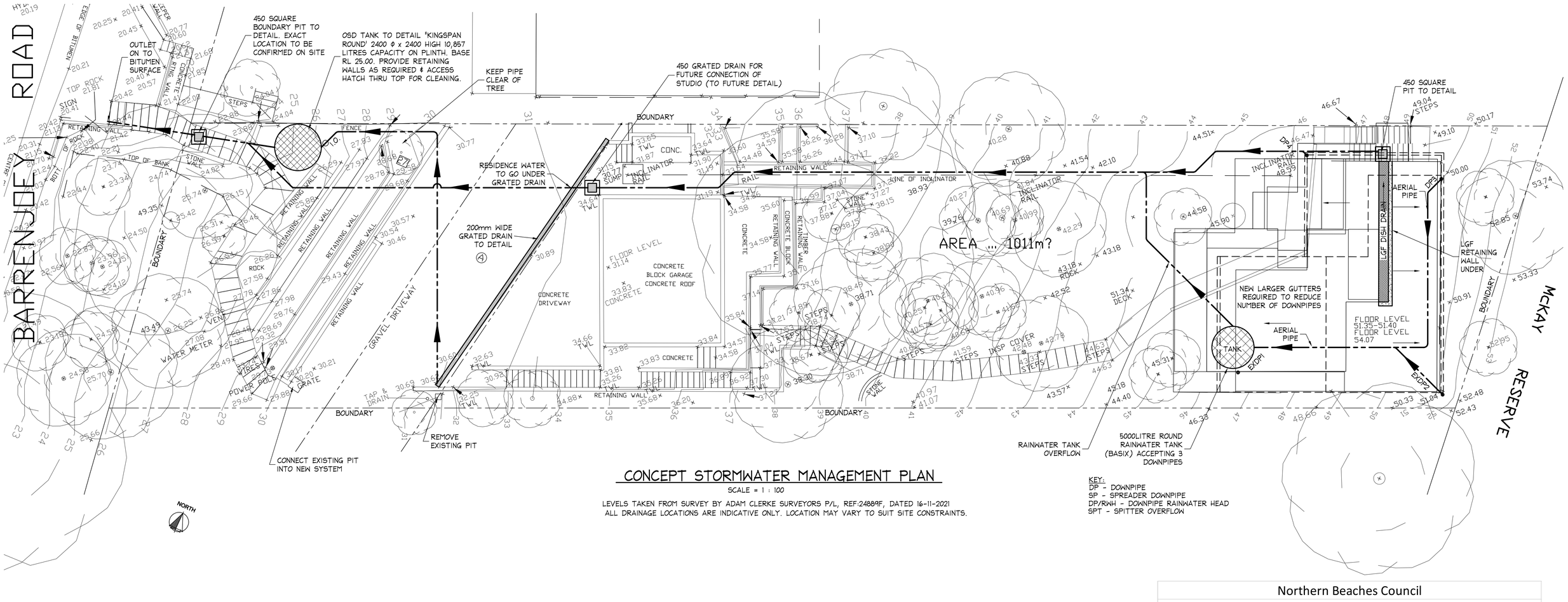


CONCEPT STORMWATER MANAGEMENT PLAN

SCALE = 1 : 100

LEVELS TAKEN FROM SURVEY BY ADAM CLERKE SURVEYORS P/L, REF:24889F, DATED 16-11-2021
ALL DRAINAGE LOCATIONS ARE INDICATIVE ONLY. LOCATION MAY VARY TO SUIT SITE CONSTRAINTS.

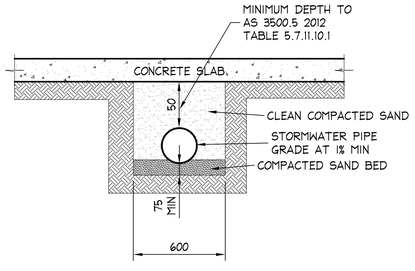
KEY:
DP - DOWNPIPE
SP - SPREADER DOWNPIPE
DP/RWH - DOWNPIPE RAINWATER HEAD
SPT - SPITTER OVERFLOW

STORMWATER NOTES:

1 - ALL PIPES TO BE 100mm ϕ SEWER GRADE uPVC UNLESS NOTED OTHERWISE.
2 - ALL PIPES TO BE uPVC TO AS 1254-2002 UNLESS NOTED OTHERWISE.
3 - ALL PIPES TO BE LAID 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 AS PER AS3500.
BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
5 - DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT WITH WORK.
6 - PROVIDE CLEANING EYES AT ALL DOWNPIPES.
7 - ALL PITS TO BE PRECAST, PREFORMED OR HDPE, IN ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS.
8 - ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
9 - ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
10 - PRIOR TO COMMENCING ANY SITE WORKS THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL MEASURES TO EPA GUIDELINES AND COUNCIL SPECIFICATIONS. ALL MEASURES TO REMAIN IN PLACE UNTIL COMPLETION AND STABILIZATION OF THE SITE TO COUNCIL SATISFACTION.
11 - ALL LEVELS SHOWN ARE TO AHD
12 - ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
13 - ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
14 - ALL WORKS TO BE IN ACCORDANCE WITH AS 3500.3-2021 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 5000 L CAPACITY RAINWATER TANK (FROM 97 m2 OR ROOF) FOR THE FOLLOWING USES:
   a) TO WATER GARDEN AREAS b) VEHICLE WASHING .
2. THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE.
3. REFERENCES:
   COOMBES 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"
   AVAILABLE AT www.sydneywater.com.au
4. ALL CONNECTIONS TO PLUMBING AND RAINWATER TANKS TO BE IN ACCORDANCE WITH SYDNEY WATERS' GUIDE "INSTALLING A RAINWATER TANK"
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.
6. PROVIDE A PROPRIETARY FIRST FLUSH DIVERTER UPSTREAM OF THE RAINWATER TANK.



TYPICAL TRENCHING DETAIL

SCALE = 1 : 20

ONSITE DETENTION SYSTEM SUMMARY NOTES - NORTHERN BEACHES COUNCIL

COUNCIL'S " WATER MANAGEMENT FOR DEVELOPMENT POLICY, REVISED 26/2/2021" USED
SECTION 5.5 - FOR REGION 1 - NORTHERN CATCHMENTS

TOTAL SITE AREA	1011 m^2	
DESIGN METHOD USED	COUNCIL	
PRE DEVELOPMENT IMPERVIOUS AREA	183.3 m^2	18.1%
POST DEVELOPMENT IMPERVIOUS AREA	360.5 m^2	35.7%
ADDITIONAL IMPERVIOUS AREA - SINCE 1996	177.2 m^2	

9.3.1 - MORE THAN 50 SQ METRES ADDITIONAL
OSD REQUIRED - RUN DRAINAGE TO STREET
5000L RAINWATER TANK TO BE INSTALLED
FROM TABLE 7 PAGE 40, & APPENDIX 9 PAGE 72, 12000L OSD TANK REQUIRED,
WITH ORIFICE TO ATTENUATE OUTFLOW TO LESS THAN 6L/SEC FOR ADDITIONAL IMPERVIOUS
BUT A REDUCTION IN OSD TANK SIZE CAN BE EFFECTED BY USE OF PORTION OF RAINWATER TANK
25% of 5000 L (BASIX) TANK CAN BE OFFSET TOWARDS OSD TANK, THEN OSD BECOMES 10750L CAPACITY
ORIFICE SIZE 43mm

GUTTER CALCULATIONS

Northern Beaches Council
Gutter Calculations -20 yr ARI Storm
Alterations & Additions
940 Barrenjoey Road Palm Beach
to AS 3500.3 - 2021 & AS 3500.5- 2012 & BCA2016

Eaves Gutters	Horizontal Area A_h	Slope Factor	Area A_c	$^{20}I_5$ from Appendix 1 Table 7.6.3.2	From Figure 5.6.4.1.b 5.6.4.7.1	Downpipe Table 5.6.4.1.b Table 5.6.4.7.1
	m^2		m^2	mm/hr	mm^2	mm
EXDP1	39	1.27	49.5	201	9400	100 dia
EXDP2	29.2	1.27	37.1	201	7300	100 dia
DP3	29.2	1.27	37.1	201	7300	100 dia
DP4	22	1.05	23.1	201	5000	90 dia
	119.4					
new Eaves Gutters - Lysaght Half Round						
Area -				9400	mm^2	
New Larger Gutters to be provided to reduce number of new DPs required						
in way of windows & decks, For all existing & New Gutters						
Larger DPs required as shown in same location						
& Gutters Graded at 1 in 500 to New & Existing Downpipes						
All underground Pipes to be 100 Dia Sewer Grade PVC UNO						

A1

NOTES:

1. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES AND DRAWING SCHEDULE REFER TO DRAWING NUMBER: S01.

CHARTERED ENGINEERING INSTITUTE OF AUSTRALIA MEMBER

DOCUMENT CERTIFICATION
Date : JUNE 2023
Bruce Lewis .....
(Principal : Peninsula Consulting Engineers)
BE(Civil),CPEng,MIEAust.,NPER.
Institute of Engineers Membership No. 879131

Date:	Rev:	Amendment:
7-06-2023	A	FOR COUNCIL SUBMISSION
26-05-2023	P1	DRAFT

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Project:
PROPOSED WORKS
at: 940 BARRENJOEY ROAD
PALM BEACH
for: MR & MRS LEEDER-KEMP

Drawing Title:
STORMWATER MANAGEMENT PLAN & DETAILS

Job No:	Drawing No:	Rev:
23-0509	H01	A