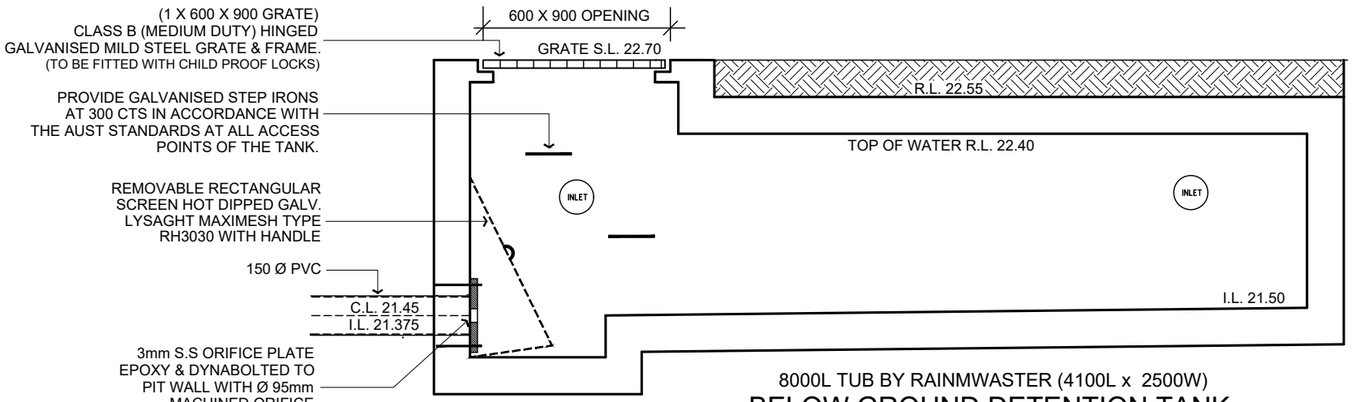
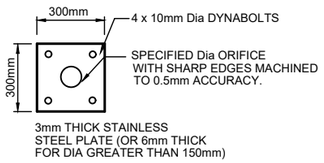
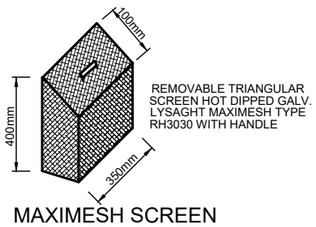


8000L TUB BY RAINMWASTER (4100L x 2500W)

BELOW GROUND DETENTION TANK

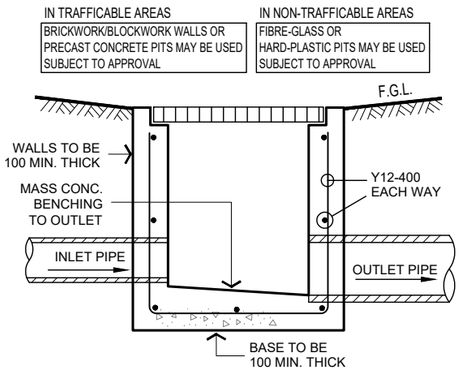


ORIFICE PLATE DETAIL



MAXIMESH SCREEN

TO BE PLACED AT ALL



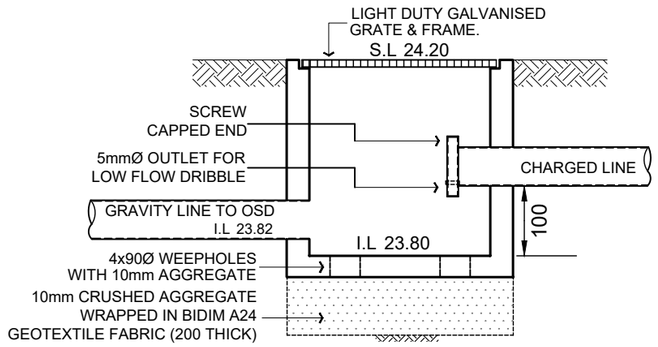
TYPICAL PIT SECTION A

STORMWATER LAYOUT NOTES

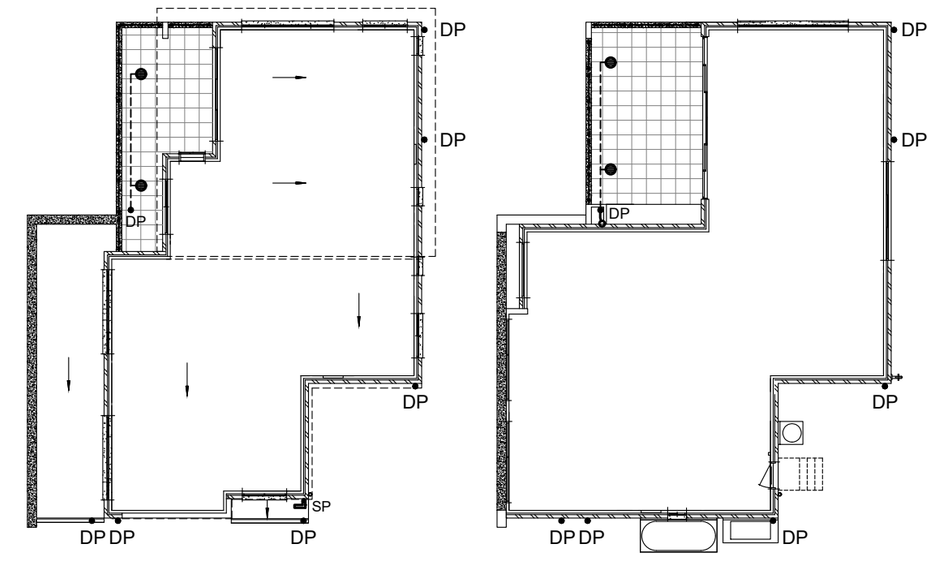
1) PITS DEEPER THAN 600mm TO BE 600 X 900 W, ELSE 375 SQ U.N.O.
2) ALL PIPES TO HAVE 1% MIN. GRADE U.N.O.
3) ALL DOWNPIPES TO BE 100 X 50 BOX or 90 Ø.
4) PIPES TO BE U.P.V.C. OR STORMWATER PIPE TO A.S.1254.
5) PITS TO BE STANDARD PRECAST CONCRETE PITS OR BRICK RENDERED WITH CONCRETE HEAVY DUTY GRATES SIZED AS PITS PER PLAN.
6) NO SEWER VENTS, GULLY PITS OR SIMILAR TO BE LOCATED BELOW THE MAXIMUM WATER SURFACE LEVEL IN DETENTION BASINS.
7) PERSONS UTILISING THIS PLAN FOR ANY PURPOSES SHALL VERIFY THE DATUM & RESPECTIVE LEVELS PRIOR TO COMMENCING ANY WORKS & NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
8) DRIVEWAY LEVELS PROVIDED FOR DRAINAGE DESIGN PURPOSES ONLY. LEVELS MAY BE ADJUSTED TO SUIT FINAL HOUSE CUT/FILL CONDITIONS BUT NEED TO MAINTAIN INTENT OF DRAINAGE SYSTEM. ENGINEER TO BE CONSULTED PRIOR TO CONSTRUCTION TO ENSURE INTENT MAINTAINED.
9) END OF EXISTING DRAINAGE LINE TO BE EXPOSED & LEVELS CONFIRMED BY BUILDER PRIOR TO COMMENCEMENT OF WORKS.
10) BUILDERS TO ENSURE SERVICES CONNECTIONS TO HOUSE DO NOT CONFLICT WITH DRAINAGE DESIGN REQUIREMENTS.
11) ALL WORKS TO BE CONSTRUCTED TO GOOD BUILDING PRACTICE & MATERIALS TO MEET ACCEPTED SPECIFICATIONS.

LEGEND

P1	PIT LABEL	G.F.L.	GARAGE FLOOR LEVEL
	SUMP PIT	0.00	EXISTING REDUCED LEVEL
FG	300x300 FLOOR GULLY	R.L 157.00	PROPOSED REDUCED LEVEL
	100/150 Ø GARDEN GULLY	DP	DOWNPIPE
	DRAINAGE PIPE	SP	SPITTER/SPREADER
	AERIAL PIPE	CE	CLEANING EYE
S.L.	SURFACE LEVEL		SEDIMENT FENCE
I.L.	INVERT LEVEL	AG	AG LINE
F.F.L.	FINISHED FLOOR LEVEL		OVERLAND FLOW

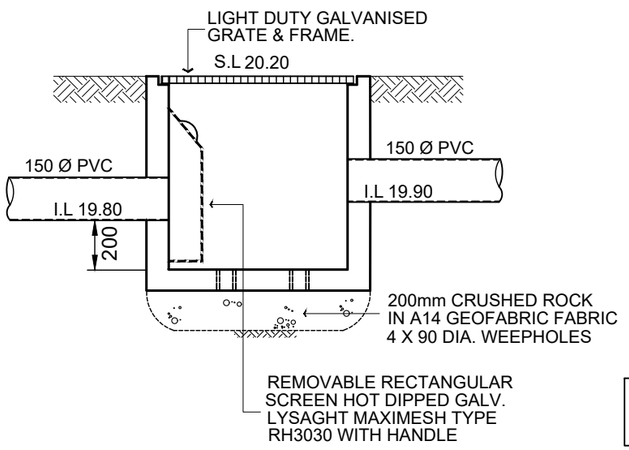


PIT CO1 - 350x350
CLEAN-OUT PIT
FOR CHARGED LINE SYSTEMS



GUTTER SELECTED: APEX HI FRONT QUAD 150 GUTTER (8505MM2)
ALL DOWNPIPES TO BE 90 Ø PVC MIN

ROOF & FIRST FLOOR LAYOUT
SCALE 1:200/A3

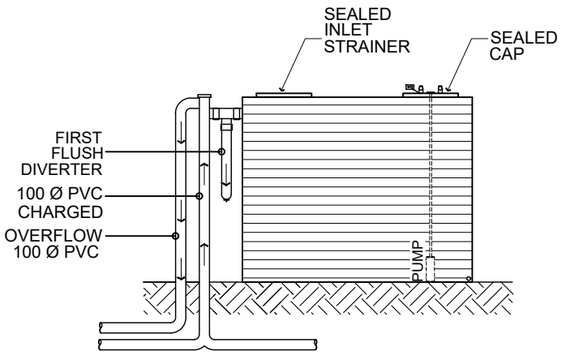


PIT P1 - 450x450

ENSURE ALL CONNECTIONS WITHIN CHARGED SYSTEM ARE SOLVENT WELDED

ALL DOWNPIPES ARE TO BE ENTIRELY PVC. PIPES ARE TO BE SEALED UPTO U/S OF ROOF GUTTERS

ROOF GUTTERS I.L. 29.91
TANK INLET I.L. 27.94
HEAD PRESSURE - 1970mm



RAINWATER TANK CONFIGURATION
BY DESIGNER TANKS
NOTE: SYSTEM TO BE FULLY SEALED

STORMWATER LAYOUT NOTES

1) PITS DEEPER THAN 600mm TO BE 600 X 900 W, ELSE 375 SQ U.N.O.
2) ALL PIPES TO HAVE 1% MIN. GRADE U.N.O.
3) ALL DOWNPIPES TO BE 100 X 50 BOX or 90 Ø.
4) PIPES TO BE U.P.V.C. OR STORMWATER PIPE TO A.S.1254.
5) PITS TO BE STANDARD PRECAST CONCRETE PITS OR BRICK RENDERED WITH CONCRETE HEAVY DUTY GRATES SIZED AS PITS PER PLAN.
6) NO SEWER VENTS, GULLY PITS OR SIMILAR TO BE LOCATED BELOW THE MAXIMUM WATER SURFACE LEVEL IN DETENTION BASINS.
7) PERSONS UTILISING THIS PLAN FOR ANY PURPOSES SHALL VERIFY THE DATUM & RESPECTIVE LEVELS PRIOR TO COMMENCING ANY WORKS & NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
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9) END OF EXISTING DRAINAGE LINE TO BE EXPOSED & LEVELS CONFIRMED BY BUILDER PRIOR TO COMMENCEMENT OF WORKS.
10) BUILDERS TO ENSURE SERVICES CONNECTIONS TO HOUSE DO NOT CONFLICT WITH DRAINAGE DESIGN REQUIREMENTS.
11) ALL WORKS TO BE CONSTRUCTED TO GOOD BUILDING PRACTICE & MATERIALS TO MEET ACCEPTED SPECIFICATIONS.

LEGEND

P1	PIT LABEL	G.F.L.	GARAGE FLOOR LEVEL
	SUMP PIT	0.00	EXISTING REDUCED LEVEL
FG	300x300 FLOOR GULLY	R.L 157.00	PROPOSED REDUCED LEVEL
	100/150 Ø GARDEN GULLY	DP	DOWNPIPE
	DRAINAGE PIPE	SP	SPITTER/SPREADER
	AERIAL PIPE	CE	CLEANING EYE
S.L.	SURFACE LEVEL		SEDIMENT FENCE
I.L.	INVERT LEVEL	AG	AG LINE
F.F.L.	FINISHED FLOOR LEVEL		OVERLAND FLOW

alwdesign
CIVIL ENGINEERING CONSULTANTS
P: 02 9802 5509 E: admin@alwdesign.com.au
M: 0413 763 432 69 DELANGE ROAD, PUTNEY NSW 2112

JOB NUMBER: SW22252
DRAWING NUMBER: SW22252 - S1

PROJECT: PROPOSED RESIDENTIAL DWELLING AT LOTS 34+35, # 231-233 MCCARRS CREEK RD, CHURCH POINT NSW
DRAWING: SITE STORMWATER MANAGEMENT LAYOUT

DESIGNED	DRAWN	CHECKED:
A.W	N.W	ANDREW L WAHBE - BE (CIVIL) MIEAUST PENG

DRAWINGS NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED BY DESIGNING ENGINEER

ISSUE	REVISION DESCRIPTION	APPR. DATE
A	ISSUED FOR DEVELOPMENT APPLICATION	12/08/22

DCP
S.L 22.70
C.L 21.45
I.L 21.375
600x900

LENGTH	= 3900mm
WIDTH	= 2200mm
AVERAGE DEPTH	= 932mm
VOLUME STORED	= 8.00 m3

BELOW GROUND DETENTION TANK
SHOWN HATCHED

MAX POOL RL	= 22.40
MAX DEPTH	= 950mm
VOLUME STORED	= 8.00 m3
VOLUME REQUIRED	= 7.80 m3

PIT P1
S.L 20.20
I.L 19.80
450x450

DCP
S.L 22.70
C.L 21.45
I.L 21.375
600x900

PIT P1
S.L 26.88
I.L 26.48
350x350

DRAINAGE REQUIREMENT TO W.C POLICY

SITE AREA	= 734 m2
SITE COVERAGE AREA	= 313 m2
SITE COVERAGE	= 43 %

ON-SITE DETENTION IS REQUIRED

AREA ROUTED THROUGH OSD	
IMPERVIOUS AREA	= 253 m2
PERVIOUS AREA	= 205 m2
AREA BYPASSING OSD	
IMPERVIOUS AREA	= 60 m2
PERVIOUS AREA	= 205 m2
OSD VOLUME REQUIRED	= 7.30 m3
RAINWATER TANK (PER BASIX)	= 3.00 m3
OSD TANK VOLUME STORAGE	= 8.00 m3
TOTAL VOLUME STORAGE	= 11.0 m3
PRE-DEVELOPED DISCHARGE	= 33.0 L/s
PROPOSED ST.STEEL ORIFICE Ø	= 95 mm
LIMITED DISCHARGE THRU OSD	= 18.0 L/s
UNCONTROLLED FLOW	= 15.0 L/s

OSD PARAMATERS DETERMINED WITH 'DRAINS'. FILE IS AVAILABLE FOR REVIEW. EMAIL REQUESTED TO: admin@alwdesign.com.au

ROAD
CREEK
McCARRS

DISCHARGE TO EDGE OF EXISTING DISH DRAIN TO THE SATISFACTION OF NORTHERN BEACHES COUNCIL. OUTLET I.L. 14.60 (APPROX)

BM NAIL IN EDGE OF BITUMEN RL=14.45 AHD

R.L. 22.75
R.L. 26.95
FFL 23.281
FFL 27.135
FFL 24.310
DP
'A'
'B'
'X'
'F'
EDGE OF BITUMEN
TOP OF BANK
S.M.H SL=14.12

PIT P2
S.L 22.50
I.L 22.10
450x450

PIT CO1
S.L 24.20
I.L 23.90
350x350

PIT P3
S.L 26.88
I.L 26.48
350x350

PIT P4
S.L 26.88
I.L 26.48
350x350

RAINWATER TANK AS SHOWN ON PLAN

PROVIDE A RAINWATER TANK 3000L IN CAPACITY TO SUIT ALL BASIX REQUIREMENTS. TANK TO BE CONNECTED AS SPECIFIED IN BASIX REPORT.

ENSURE ALL CONNECTIONS WITHIN CHARGED SYSTEM ARE SOLVENT WELDED

ALL DOWNPIPES ARE TO BE ENTIRELY PVC. PIPES ARE TO BE SEALED UPTO U/S OF ROOF GUTTERS

ROOF GUTTERS I.L. 29.91
TANK INLET I.L. 27.94
HEAD PRESSURE - 1970mm

PIPE SCHEDULE

TAG	SIZE	MATERIAL	GRADE	DESCRIPTION
'A'	100 Ø	P.V.C	1% MIN	REGULAR GRAVITY PIPE
'B'	150 Ø	P.V.C	1% MIN	REGULAR GRAVITY PIPE
'X'	100 Ø	P.V.C	CHARGED	TO FEED RAINWATER TANK
'F'	100 Ø	P.V.C	1% MIN	FLUSHING LINE - CAPPED END

SITE STORMWATER MANAGEMENT LAYOUT
SCALE 1:200/A3

alwdesign
CIVIL ENGINEERING CONSULTANTS
P: 02 9802 5509 E: admin@alwdesign.com.au
M: 0413 763 432 69 DELANGE ROAD, PUTNEY NSW 2112

JOB NUMBER: SW22252
DRAWING NUMBER: SW22252 - S2

PROJECT: PROPOSED RESIDENTIAL DWELLING AT LOTS 34+35, # 231-233 MCCARRS CREEK RD, CHURCH POINT NSW
DRAWING: ROOF LAYOUT & GENERAL DETAILS

DESIGNED	DRAWN	CHECKED:
A.W	N.W	ANDREW L WAHBE - BE (CIVIL) MIEAUST PENG

DRAWINGS NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED BY DESIGNING ENGINEER

ISSUE	REVISION DESCRIPTION	APPR. DATE
A	ISSUED FOR DEVELOPMENT APPLICATION	12/08/22

Appendix 16 – On-site Detention Checklist

This checklist is to be used to determine the on-site stormwater disposal requirement for developments and must be completed and included with the submission of any development application for these works. Please read this form carefully for its notes, guidelines, definition and relevant policies.

For assistance and support, please contact Council's Development Engineering and Certification team on 1300 434 434.

Part 1 Location of the Property		SW22252	
House Humber	231-233	Legal Property Description	
Street	MCCARRS CREEK RD	Lot 34+35	
Suburb	CHURCH POINT	Section	
Postcode		DP 20097	

Part 2 Site Details			
Northern Beaches Stormwater Regions (refer to Map 2 of Northern Beaches Council's Water Management for Development policy)	1	Total Site Area	734
Pre-Development Impervious Area	0	Post-Development Impervious Area	313
Is the site of the development located within an established Flood Prone Land as referred to Council's Local Environmental Plans? If yes, On-site stormwater Detention system (OSD) is not required and please proceed to part 5 of this checklist If no, please proceed to part 3 of this checklist.			Yes ☐ No ☑

Part 3: Northern Beaches Stormwater Regions (refer to Map 2 of Northern Beaches Council's Water Management for Development policy)
If the site of the development located within Region 1, please proceed to the part 4.1 of this checklist
If the site of the development located within Region 2, please proceed to the part 4.2 of this checklist
If the site of the development located within Region 3, please proceed to the part 4.3 of this checklist
If the site of the development located within Region 4, please refer to Council's Warriewood Valley Water Management Specification.

Part 4 Determination of OSD Requirements

Part 4.1 Northern Beaches Stormwater Region 1	
Is the additional impervious area of the development more than 50 m^2 on a cumulative basis since February 1996?	Yes ☑ No ☐
If yes, OSD is required and please refer to section 9.3.1 of Council's Water Management for Development Policy If no, OSD is not required and please proceed to the part 5 of this checklist	

Part 4.2 Northern Beaches Stormwater Region 2	
Part 4.2.1 Description of Work	
Residential flat building, commercial, industrial, multiple occupancy development and subdivisions resulting in the creation of three lots or more, will require OSD in all case. Please provide a design in accordance with the section 9.3.2 of Council's Water Management for Development Policy. Any single residential building development, please proceed to part 4.2.2 of this checklist.	
Part 4.2.2 Exemption	
Is the site area less than 450m^2?	Yes ☐ No ☐
Does the site of the development drain directly to the ocean without the need to pass through a drainage control structure such as pipe, bridge, culvert, kerb and gutter or natural drainage system?	Yes ☐ No ☐
Is it an alternation and addition development to the existing dwellings?	Yes ☐ No ☐
If yes to any of the above questions, OSD is not required. If no to all the above questions, proceed to part 4.2.3	
Part 4.2.3 Determination of OSD Requirements	
Calculation	a) Site area m^2 x 0.40 (40%) = ... m^2 b) Post- development impervious area = ... m^2 **OSD will not be required when (a) is greater than (b)** Is OSD required for this development (tick one only) Yes ☐ No ☐ If yes, provide a design in accordance with the section 9.3.2 of Council's Water Management for Development Policy. If no, OSD is not required and please proceed to part 5 of this checklist.

Part 4.3 Northern Beaches Stormwater Region 3	
Part 4.3.1 Stormwater Zone	
In the region, the method of stormwater control to be applied shall depend on the location of the site. Please refer to Map 3 of Northern Beaches Council's Water Management for Development policy.	
If the site of the development located within stormwater zone 1, please proceed to the part 4.3.2 of this checklist	
If the site of the development located within stormwater zone 2, please provide a design in accordance with the section 9.3.3.3 of Council's Water Management for Development Policy.	
If the site of the development located within stormwater zone 3, please provide a design in accordance with the section 9.3.3.4 of Council's Water Management for Development Policy.	
If the site of the development located within stormwater zone 4, please provide a design in accordance with the section 9.3.3.5 of Council's Water Management for Development Policy.	
Part 4.3.2 Determination of OSD requirements in Stormwater Zone 1	
Part 4.3.2.1 For A New Building	
1) Exemption	a) Is the site area less than 400? Yes ☐ No ☐ b) Is the post-development impervious area less than 190 m^2? Yes ☐ No ☐ If yes to both questions, OSD is not required. If no to any of the above questions, please process to calculation
2) Calculation	a) Site area _____m^2 x 0.35 = _____m^2 + 50 = _____m^2 b) Post- development impervious area _____m^2 OSD will not be required when (b) is less than 250 m^2 and (a) is greater than (b) Is OSD required for this development? Yes ☐ No ☐ If yes, provide a design in accordance with the section 9.3.3.2 of Council's Water Management for Development Policy. If no, OSD is not required and please proceed to part 5.
Part 4.3.2.2 For Alterations and Additions	
If the current impervious area of the site is more than 60% of the site area, OSD will be required. Alternatively, please proceed to the next calculation section.	
1) Calculation	Is the post development impervious area increased by less than 50 m^2? Yes ☐ No ☐ Is the post development impervious area less than 60% of the site area? Yes ☐ No ☐ If yes to both questions, OSD is not required. If no to any of the above questions, provide a design in accordance with section 9.3.3.2 of Council's Water Management for Development Policy

Part 5 Disposal of Stormwater
Does the site fall naturally towards the street? Yes ☐ No ☐ If yes, provide a design in accordance with section 5.1 of Council's Water Management for Development Policy. If no, provide a design in accordance with section 5.5 of Council's Water Management for Development Policy.

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 area:** This refers to driveways, parking spaces, pathways, paved areas, hardstand areas, roofed areas, garages and outbuildings. **Pre Development Impervious area**: This refers all impervious areas of the site before the development. **Post Development Impervious areas**: This refers all the impervious areas within the site after the development is completed.