

PIPEWORK

-----STW-----	STORMWATER
-/-/-/-SS-/-/-/-/-	SUBSOIL
-----DP-----	DOWNPIPE
-----RD-----	ROOF DRAINAGE

PIPEWORK SYMBOLS

	R	RISER
	D	DROPPER
	COF	CAPPED OFF
	HP	HORIZONTAL PENETRATION
	DOF	DIRECTION OF FLOW
	NC	NEW CONNECTION
	C	CONTINUATION
	MH	MAN HOLE
	CO	CLEAR OUT
	STWKIP	STORMWATER KERB INLET PIT
	STWIP	STORMWATER INLET PIT
	GRD	GRATED DRAIN
	SO	SAFETY OVERFLOW
	SP	SPREADER
	RWO	RAINWATER OUTLET
	BRWO	BALCONY RAINWATER OUTLET
	PRWO	PLANTER RAINWATER OUTLET
	SRWO	SPOON DRAIN RAINWATER OUTLET

ABBREVIATIONS

FFL	FINISH FLOOR LEVEL
IL	INVERT LEVEL
RL	REDUCED LEVEL
UPVC	UNPLASTICIZED POLYVINYL CHLORIDE
NTS	NOT TO SCALE
UNO	UNLESS NOTED OTHERWISE
SQ	SQUARE
mm	MILLIMETRES
m	METRES
m ²	SQUARE METRES
m ³	CUBIC METRES
/sec	PER SECOND
MIN	MINIMUM
MAX	MAXIMUM
APPR	APPROXIMATELY
DIA	DIAMETER
EX	EXISTING
AHD	AUSTRALIAN HEIGHT DATUM

STORMWATER GENERAL NOTES

ALL IN ACCORDANCE WITH COUNCIL'S
STORMWATER REQUIREMENTS

PIPEWORK DESIGN

ALL PIPEWORK IS SIZED AND DESIGNED TO HANDLE
A 1:100 YEAR EVENT RAINFALL

PIPEWORK

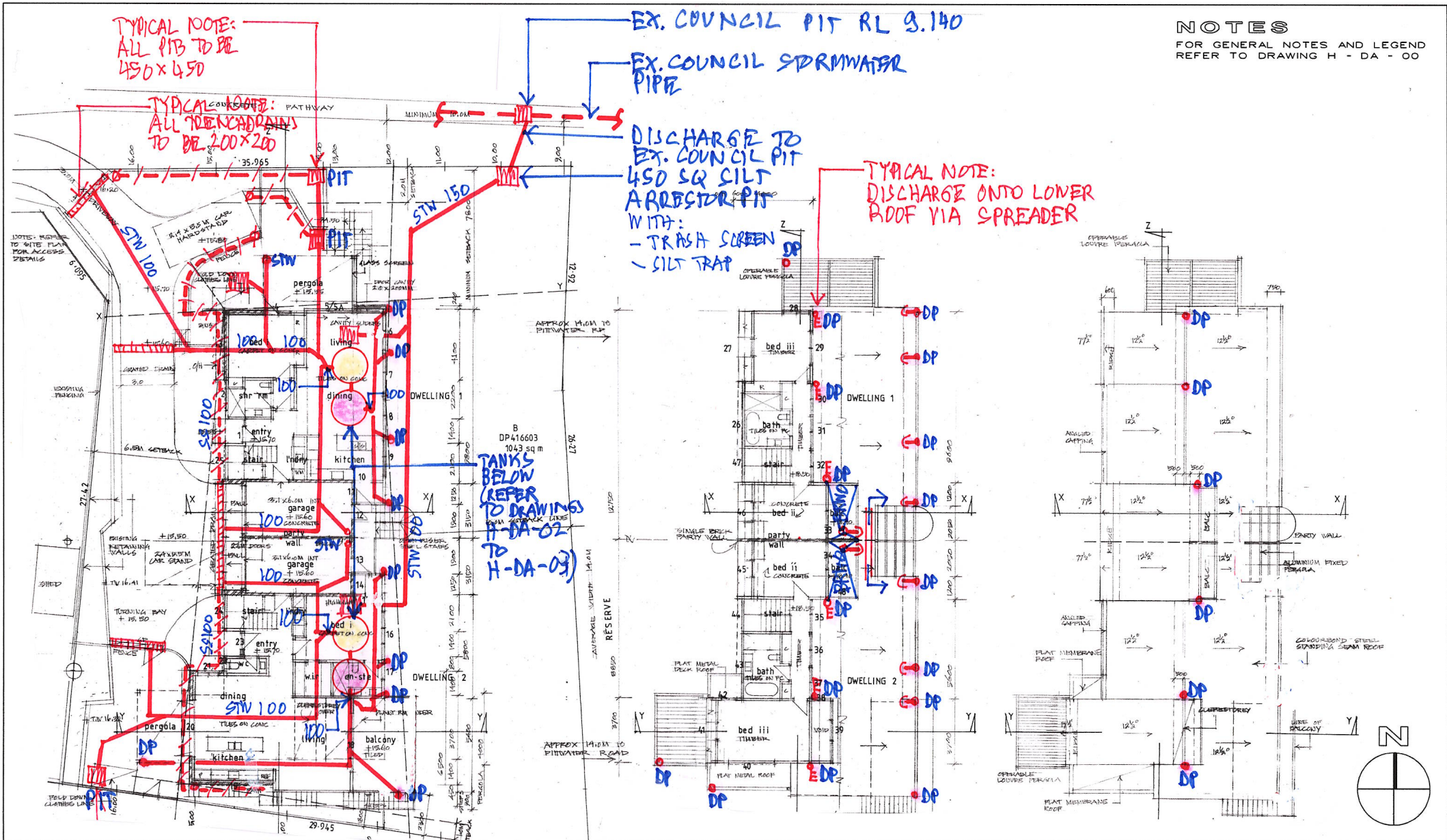
ALL PIPEWORK TO BE 100mm @ 1% FALL (UNO)

STORMWATER PIT SIZES

MINIMUM INTERNAL MEASUREMENTS:				
DEPTH TO BASE OF CHAMBER	RECTANGULAR		CIRCULAR	LADDER / STEP IRON
	WIDTH	LENGTH		
SMALLER THAN 600	450	450	600	NO
601 TO 900	600	600	900	NO
901 TO 1200	600	900	1050	NO
GREATER THAN 1200	900	900	1050	YES

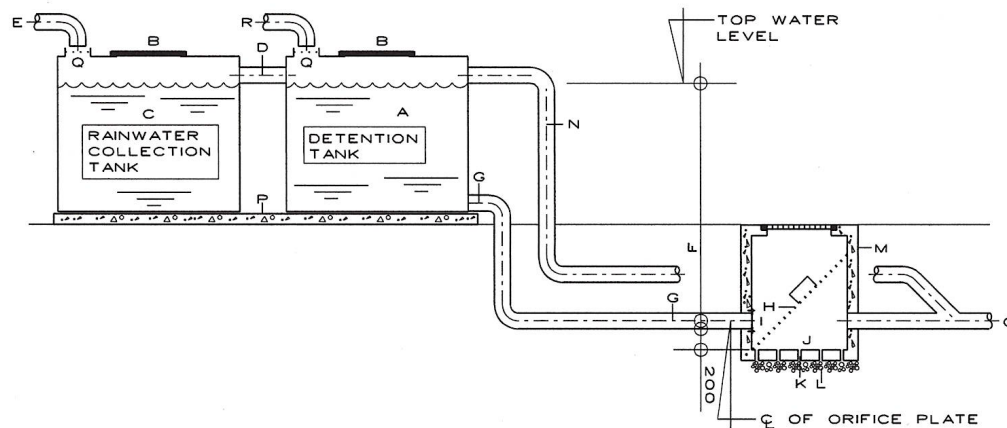
			CLIENT MARGE GAMBLE	PROJECT 1851 PITTWATER ROAD BAYVIEW	DRAWING TITLE COVER SHEET & LEGEND		
			itmdesign consulting hydraulic engineers unit 6 / 3 apollo st, warriewood nsw 2102 po box 1438 mona vale nsw 1660 tel (02) 9997 1566 email: markus@itmdesign.com.au pty ltd	ARCHITECT EMIAT	SCALE NTS	JOB No 21 / 154	
A	ISSUED FOR DA	4.4.22					
REV	DESCRIPTION	DATE					
					DISCIPLINE HYD	DRAWING No H-DA-00	REVISION A

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



NOTES

FOR GENERAL NOTES AND LEGEND
REFER TO DRAWING H - DA - 00



ITEM	DESCRIPTION	
A	PREFABRICATED DETENTION TANK	4.5m ³
B	ACCESS LID	
C	PREFABRICATED RAINWATER COLLECTION TANK	4.0m ³
D	HIGH LEVEL OVERFLOW PIPE BETWEEN TANKS	100mm DIA
E	ROOF DRAINAGE INLET PIPE (VIA FIRST FLUSH SYSTEM)	REFER TO PLAN
F	MAX. WATER LEVEL ABOVE ϕ OF ORIFICE PLATE	2.0m
G	LOW LEVEL OUTLET PIPE	100mm DIA
H	TRASH SCREEN	REFER TO DETAIL 2
I	ORIFICE PLATE	REFER TO DETAIL 3
J	SILT TRAP	200mm DEEP
K	WEEP HOLES 20mm DIA	ϕ 200mm CENTRE
L	BLUE METAL BED (WRAPPED IN GEOFABRIC)	200mm HIGH
M	CONTROL / SILT ARRESTOR PIT	450mm SQ
N	HIGH LEVEL EMERGENCY OVERFLOW PIPE	100mm DIA
O	DISCHARGE TO COUNCIL'S DRAINAGE SYSTEM	100mm DIA
P	PLINTH	
Q	INLET SCREEN	
R	SURFACE DRAINAGE INLET PIPE	REFER TO PLAN

EACH DWELLING (2 IN TOTAL)

EACH DWELLING (AS PER BASIX REPORT) 2 IN TOTAL

APPROX. (DEPENDING ON FINAL TANK MODEL CHOSEN)

ON DRAWING H - DA - 03

DETAIL 1:
DIAGRAMMATIC SECTION
THROUGH TANKS
NTS

STORMWATER REQUIREMENTS

ALL IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S
STORMWATER REQUIREMENTS (OLD PITTWATER COUNCIL AREA / POLICY)

AREA CALCULATIONS

TOTAL SITE AREA: 1043.0m²
INCREASE IN IMPERVIOUS AREAS: 112.4m²

ON SITE DETENTION

ADDITIONAL 100m² - 150m² IMPERVIOUS AREAS: 9.0m³ DETENTION REQ.

PERMISSIBLE SITE DISCHARGE

ADDITIONAL 100m² - 150m² IMPERVIOUS AREAS: 4.0 ltrs / sec PSD

RAINWATER COLLECTION

RAINWATER COLLECTION TANKS: REFER TO DETAIL 1

			CLIENT MARGE GAMBLE	PROJECT 1851 PITTWATER ROAD BAYVIEW	DRAWING TITLE TANK DETAILS (PART 1 OF 2)		
			itmdesign consulting hydraulic engineers unit 6 / 3 apollo st, warriewood nsw 2102 po box 1438 mona vale nsw 1660 tel(02) 9997 1566 email: markus@itmdesign.com.au pty ltd	ARCHITECT EMIAT	SCALE	JOB No	
					NTS	21 / 154	
					DISCIPLINE	DRAWING No	REVISION
A	ISSUED FOR DA	4.4.22			HYD	H-DA-02	A
REV	DESCRIPTION	DATE					

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NOTES

FOR GENERAL NOTES AND LEGEND
REFER TO DRAWING H - DA - 00

HANDLE

ORIFICE PLATE BEHIND

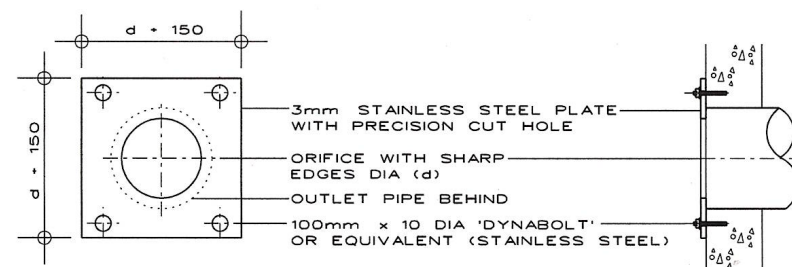
TRASH SCREEN TO PROTECT THE ORIFICE
& DOWNSTREAM DRAINAGE SYSTEM
MATERIAL:

STAINLESS STEEL OR GALVANISED
MESH SCREEN (MAXIMESH RH 3030 OR
EQUIVALENT)

PLACEMENT:

SCREEN MUST BE PLACED SO THAT THE
LONG AXIS OF THE OVAL SHAPED HOLES
ARE HORIZONTAL WITH THE PROTRUDING
LIP ANGLED UPWARDS AND
FACING DOWNSTREAM

DETAIL 2:
REMOVABLE TRASH
SCREEN
NTS



CALCULATION OF ORIFICE SIZE

- PSD = PERMISSABLE SITE DISCHARGE IN [m³/s]
A = CROSSSECTIONAL AREA OF ORIFICE PLATE IN [m²]
C = DISCHARGE CO-EFFICIENT (0.6 FOR ORIFICE PLATE)
G = ACCELERATION DUE TO GRAVITY = 9.81 [m/s]
H = MAX. HEIGHT / HEAD OF WATER ABOVE THE
CENTRE LINE OF THE ORIFICE PLATE IN [m]
D = ORIFICE DIAMETER IN [mm]

$$A = \frac{PSD}{C \times \sqrt{2 \times G \times H}} = \frac{0.0045}{0.6 \times \sqrt{2 \times 9.81 \times 2}} = 0.0012 \text{ m}^2$$

$$D = \sqrt{\frac{A \times 4}{\pi}} = \sqrt{\frac{0.0012 \times 4}{\pi}} \times 1000 \text{ mm/m} = 39 \text{ mm DIA}$$

DETAIL 3:
ORIFICE PLATE
NTS

			CLIENT MARGE GAMBLE	PROJECT 1851 PITTWATER ROAD BAYVIEW	DRAWING TITLE TANK DETAILS (PART 2 OF 2)
			itmdesign consulting hydraulic engineers unit 6 / 3 apollo st, warriewood nsw 2102 po box 1438 mona vale nsw 1660 tel (02) 9997 1566 email: markus@itmdesign.com.au	ARCHITECT EMIAT	SCALE NTS
					JOB No 21/154
A	ISSUED FOR DA	4.4.22			DISCIPLINE DRAWING No HYD H-DA-03
REV	DESCRIPTION	DATE			REVISION A

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