#### **DESIGNED BY:**



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### FOR: Maree Jaloussis Hayes

JOB NO: SW -152-2307

DATE: 10/09/2023

DRAWING NO	DRAWING TITLE
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11	EROSION AND SEDIMENT CONTROL PLAN
12	EROSION AND SEDIMENT CONTROL DETAIL

# STORMWATER MANAGEMENT PLAN

## FOR PROPOSED SUBDIVISION

107 IRIS STREET, BEACON HILL, NSW



**ISSUED FOR: DA** 

#### STORMWATER DRAINAGE GENERAL

- THESE DRAWINGS SHALL BE READ IN CONJUCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS. ALL DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECT AND ENGINEER FOR DECISION BEFORE PROCEEDING WITH THE WORK
- DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THESE DRAWINGS, REFER TO ARCHITECT'S FINAL DRAWINGS.
- THE BUILDER SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING AND NEW SERVICES, AND SHALL BE RESPONSIBLE FOR DAMAGE TO THE SAME.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SSA CODES, AND THE BY-LAWS AND ORDINANCES OF THE COUNCIL EPA AND WORKCOVER AS 3500 PART 2 & 3
- PREPARE PROGRESSIVELY AND FURNISH TO THE ENGINEER WORK AS EXECUTED DRAWINGS OF THE SAME SIZE AND QUALITY AS THIS DRAWING BUT ACCORDANCE WITH DA CONDITIONS AND CC REQUIREMENTS.
- GIVE SUFFICIENT NOTICE SO THAT INSPECTION MAY BE CARRIED OUT AT THE FOLLOWING STAGES: WORK READY FOR SPECIFIED TESTING. WORK READY TO BE COVERED OR CONCEALED.
- OBTAIN APPROVAL BEFORE INTERRUPTING AN EXISTING SERVICE. KEEP THE NUMBER OF INTERRUPTIONS TO A MINIMUM.
- · LAY PIPES TO THE LEVELS SHOWN ON THE DRAWINGS AND IN ANY CASE NOT LESS THAN THE FOLLOWING:
- DIA. 100 MM @ 1.0%, DIA 150 MM @ 1.0%, DIA 225 MM @ 0.5%, DIA 300 MM @ 0.5%
- ENDS OF PIPES AND STUB CONNECTIONS TO BE SEALED WITH O AN APPROVED SEALED DISC.
- MILD STEEL STAR PICKET 1200 mm LONG WITH 300 mm PAINTED GREEN EXTENDED ABOVE GROUND LEVEL TO BE PLACED AT EACH INTERLOTMENT DRAINAGE CONNECTION POINT.
- GEOTEXTILE FABRIC TO BE PLACED UNDER RIP RAP SCOUR **PROTECTION**

#### STORMWATER DRAINAGE NOTES:

- CONTRACTOR IS TO VERIFY THE LEVEL AND LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF EXCAVATION.
- THE CONTRACTOR IS TO VERIFY ANY CONFLICT OF SERVICES IN THE ROAD RESERVE OR SUBJECT PROPERTY AND THE

- ENGINEER IS TO BE NOTIFIED AT THE EARLIEST POSSIBLE CONVENIENCE
- THE CONTRACTOR TO VERIFY THE INVERT LEVELS AT POINT OF CONNECTION TO EXISTING STORMWATER SYSTEM AND REPORT ANY CONFLICT OF LEVELS
- ALL BUILDINGS HAVE RAISED SO THERE IS AT LEAST 150 mm STEP UP INTO THE BUILDING TO ALLOW SUFFICIENT FREEBOARD FOR OVERLAND FLOWS IN THE CASE OF PIPE BLOCKAGE
- DOWNPIPES AND PITS LOCATIONS AND LEVELS MAY BE VARIED. TO SUIT THE SITE CONDITIONS, AFTER ENGINEERING APPROVAL
- DOWNPIPES SHOWN ARE INDICATIVE ONLY ALL ROOF. GUTTERING AND DOWNPIPES TO THE CURRENT AUSTRALIAN STANDARDS
- DRAINAGE PIPES TO BE CONCRETE ENCASED WHERE LOCATED UNDER DRIVEWAY OR BUILDING
- ALL PIPES TO BE FULLY HOUSED INTO PIT WALLS AND JOINED / SEAL IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
- GRADE ALL PAVED AND GRASSED AREAS AWAY FROM THE BUILDING
- TOP OF GRATE TO BE POSITIONED TO CATCH ALL UPSTREAM SURFACE FLOWS AS INDICATED BY PLANS.
- ALL PIPES WITHIN THE PROPERTY TO BE MIN. OF 150 DIA. @ 1% MIN GRADE LINO
- ANY PIPES OVER 16% GRADE SHALL HAVE CONCRETE BULHEADS AT ALL JOINTS
- ALL PITS WITHIN THE PROPERTY AREA TO BE FITTED WITH WELDOK OR APPROVED EQUIVALENT GRATES TO AS3996:
  - O LIGHT DUTY FOR LANDSCAPE AREAS

HEAVY DUTY WHERE SUBJECTED TO VEHICULAR CROSSING

- ANY PIPES BENEATH RELEVANT LOCAL AUTHORITY ROAD TO BE RUBBER RING JOINTED RCP, UNO.
- ALL PITS IN ROADWAYS ARE TO BE FITTED WITH HEAVY DUTY GRATES WITH LOCKING BOLTS AND CONTINEOUS HINGE
- ALL COURTYARD AND LANDSCAPE PITS TO BE 400 SQUARE. UNO
- ALL PLANTER BOXES AND BALCONIES TO BE CONNECTED TO THE PROPOSED STORMWATER DRAINAGE LINE.
- 1200 IN DEPTH
- 25 MPa

- PROVIDE CONCRETE BENCHING ACROSS PIT TO SUIT INLET AND
   RAINWATER TANK TO BE CONNECTED TO ALL TOILETS, LAUNDRY **OUTLET PIPES AS DETAILED**
- DIA 100 SUBSOIL DRAINAGE PIPE 3.0 M LONG WRAPPED IN DESIGN NOTES FABRIC SOCK TO BE PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100 MM MIN. ABOVE PIT FLOOR
- SUB SOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS AND EMBANKMENTS WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM, UNO
- SELECTED GRANULAR BACKFILL IS TO BE PLACES AGAINST THE FULL HEIGHT OF THE PIT VERTICAL FACES AND FOR A HORIZOONTAL DISTANCE EQUAL TO ONE-THIRD THE HEIGHT OF THE STRUCTURE.
- MORTAT BASES TO BE SHAPED TO GIVE MIN 20 mm FALL **ACROSS PITS**
- MORTAR BASES TO BE DISHED TO SUIT ADJOINING PIPE SIZES TO GICE SELF CLEAINSING PITS.
- WHERE PIT DEPTH EXCEEDS STANDARD DEPTH, CONCRETE SHALL BE USED AS PIT BASE, AND ALSO TO GAIN REQUIRED INLET/OUTLET LEVELS
- THE INLET PIPE OBVERT IS TO BE HIGHER THAT THE OUTLET
- ALL SWAYLES SHALL HAVE A TURFED INVERT EXTENDING 0.5 m SEDIMENT BARRIER AROUND PIT: UP THE SIDE SLOPES
- HAND EXCAVATE STORMWATER PIPES IN VICINITY OF TREE ROOTS
- FOOTHPATH CROSSING LEVELS SHOWN ARE TO BE ADJUSTED TO FINAL COUNCIL'S ISSUED LEVELS
- ALL FENCES MUST BE RAISED 150 mm FROM THE FINISHED GROUND LEVELS SO THAT OVERLAND FLOWS FROM UPSTREAM PROPERTIES ARE NOT RESTRICTED OR BLOCKED.

#### **RAINWATER TANK NOTES:**

- THE SYSTEM TO BE INSTALLED WITH THE FOLLOWING CONSIDERATIONS:
- A 'FIRST FLUSH' DIVERSION TO REMOVE ROOF CONTAMINANTS
- ADEQUATE SCREENING TO PROVIDE MOSQUITO BREEDING AND ENTRY OF ANIMAL OR FLOATING MATTER
- PROVIDE STEP IRONS TO STORMWATER PITS GREATER THAN TANKS TO BE PLUMBED TO TOP-UP FROM THE POTABLE WATER SUPPLY DURING DRY PERIOD WHEN THE TANK IS 80% EMPTY.
- COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS TO BE MIN. NO DIRECT CROSS-CONNECTION WITH THE POTABLE WATER SUPPLY AND AN AIR GAP MAINTAINED ABOVE THE OVERFLOW IN THE TANK.

AND AT LEAST ONE (1) OUTDOOR TAP.

- ALL EVE GUTTERS AND DOWNPIPES ARE DESIGNED FOR 10 YEAR ARI STORM EVENT.
- BOX GUTTER AND RAINWATER HEADS ARE DESIGNED FOR 100 YEAR ARI STORM EVENT
- INTENSITY FREQUENCY DURATION (IFD) DESIGN CHART OBTAINED FROM BUREAU OF METEOROLOGY HAS BEEN USED TO DESIGN ON SITE DETENTION SYSTEM.

#### OSEDIMENT FENCE

- SEDIMENT CONTROL DEVICES ARE TO BE IN PLACE PRIOR TO ANY DEMOLITION OR CONSTRUCTION.
- CONSTRUCT A SILT BARRIER FENCE AS SHOWN ON PLAN AND TO DETAILS AS ABOVE.
- SEDIMENT CONTROL DEVICES ARE TO BE MAINTAINED IN GOOD WORKING ORDER UNTIL COMPLETION OF ALL SITE WORKS OR TO THE SATISFACTION OF THE COUNCIL SUPERVISING OFFICER.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

- FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE.
- SUPPORT GEOTEXTILE WITH MESH TIED TO THE POSTS AT 1000 MM CENTERS
- DONOT COVER INLET WITH GEOTEXTILE

#### STANDARD PIPE TRENCH

- SAND FREE FROM ROCK OR OTHER HARD AND SHARP OBJECTS THAT WOULD RETAINED ON 13.2 SEIVE
- CRISHED ROCK OR GRAVEL OF APPROVED GRADING UP TO MAX SIZE OF 14 mm
- THE EXCAVATED MATERIAL MAY BE USED IF IT IS FREE FROM ROCK OR HARD MATTER AND BROKEN UP SO STHAT IT CONTAINS NO SOIL LUMPS HAVING ANY DIMENSION GREATER THAN 75 mm WHICH WOULD PREVENT ADEQUATE COMPACTION OF THE BEDDING
- MATERIAL FOR PIPE SIDE SUPPORT SHOULD BE ADEQUATELY TAMPED IN LAYERS OF NOT MORE THAN 150 mm.
- PIPE OVERLAY MATERIAL SHOULD BE LEVELLED AND TAMPED IN LAYERS TO A MINIMUM HEIGHT OF 150 mm ABOVE THE CROWN OF THE PIPE
- FOR MIN COVER REFER TO AS3500

Α	ISSUED FOR DA	CS	10/09/202
Rev	Description	Ву	Date

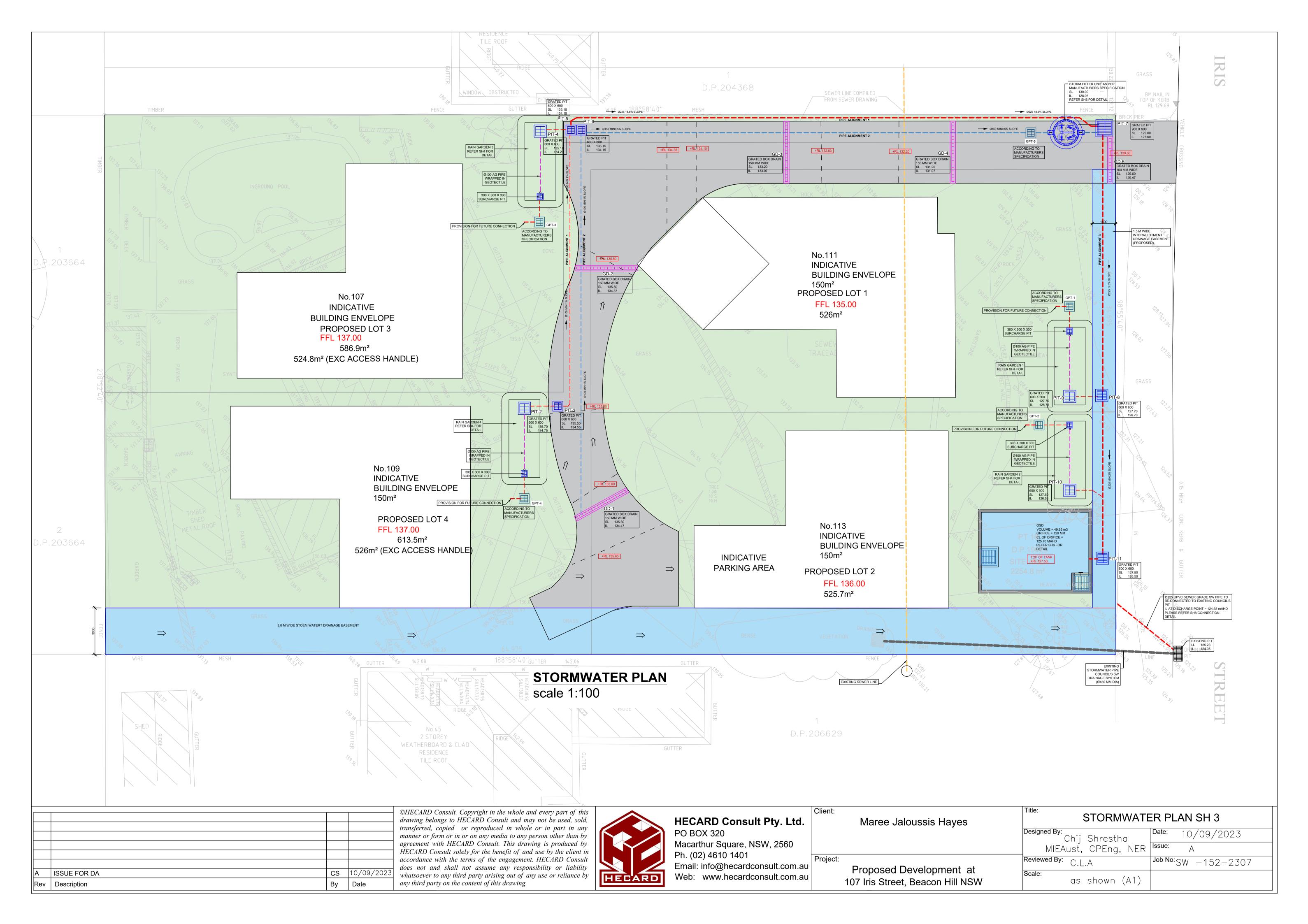
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lient: Maree Jaloussis Hayes	GENERAL NOTES SH2			
-	Designed By: Chij Shrestha	Date: 10/09/2023		
		Issue: A		
· ·	Reviewed By: C.L.A	<sup>Job No:</sup> SW −152−2307		
Proposed Development at	Scale: as shown (A3)			



ONE RAINGARDEN IS PROPOSED AT THE LOWEST POSSIBLE LOCATION OF THE EACH LOTS. THE SURFACE AREA REQUIRED FOR THE RAINGARDEN IS EQUAL TO 10 THE RAINGARDENS FOR DETAIL, PLEASE REFER THE SECTION AND PLAN OF RAIN GARDEN. FOLLOWING AREA THE DETAIL SPECIFICATION OF EACH RAINGARDEN.

ENERAL REQUIREMENTS THE RAIN GARDEN SHOULD BE CONSTRUCTED AS LATE AS POSSIBLE IN THE PROJECT OTHERWISE SEDIMENT AND GROSS POLLUTANTS GENERATED BY BUILDING WORKS WILL DAMAGE THE RAIN GARDEN.

THE RAIN GARDEN MUST BE LOCATED AT THE OWEST PART OF THE SITE, CLEAR OF DRIVEWAYS, SERVICES AND OTHER CONSTRAINTS.

FOR LOTS THAT FALL TO THE STREET THE RAIN ARDEN MUST BE PROVIDED IN THE FRONT SETBACK.

GARDEN MUST BE PROVIDED IN THE REAR YARD.

OTHERWISE, THE RAIN GARDEN CAN BE ANY SHAPE PROVIDED THE SURFACE AREA MATCHES THAT REQUIRED FOR THE SITE, AS REFERRED TO IN THE RESTRICTION THAT APPEARS ON THE PROPERTY TITLE. LEAR OF OBSTRUCTIONS.

THE SURFACE AREA REQUIRED FOR THE SITE, AS REFERRED TO IN THE RESTRICTION THAT APPEARS ON THE PROPERTY TITLE, REFERS TO THE AREA OF THE RAIN GARDEN MEASURED FROM THE TOP OF THE ATTER (THE AREA WHERE PONDING WILL OCCUR).

THE MINIMUM RAIN GARDEN WIDTH IS 1.1M

SHOULD BE 800MM (MINIMUM). THIS DEPTH IS COMPOSED MEDIA" AND "EXTENDED DETENTION AREA". WHICH ARE

THE STORAGE VOLUME REQUIRED FOR THE SITE. AS REFERRED TO IN THE RESTRICTION THAT APPEARS ON THE PROPERTY TITLE, REFERS TO THE AREA ABOVE THE SURFACE (WHERE PONDING WILL OCCUR). IMPORTANTLY, THE AREA BELOW THE SURFACE DOES NOT COUNT TOWARDS THIS VOLUME. FOR EXAMPLE, WHERE THE RESTRICTION CALLS FOR A RAIN GARDEN WITH A SURFACE AREA OF 10M2 AND A STORAGE VOLUME OF 1.5M3, 150MM OF PONDING OVER THE 10M2 FOOTPRINT WILL PROVIDE THE 1.5M3 OF REQUIRED

DESCRIBED IN MORE DETAIL BELOW.

BOTH THE SURFACE AREA AND STORAGE VOLUME ARE IMPORTANT, HENCE WHY THEY ARE BOTH CITED IN THE RESTRICTION THAT APPEARS ON THE PROPERTY TITLE. A RAIN GARDEN WITH THE CORRECT SURFACE AREA BUT NO DEPRESSION/ PONDING ABOVE THE WHILST A RAIN GARDEN WITH THE CORRECT VOLUME (VIA DEEPER PONDING) BUT WITH A SMALLER SURFACE AREA WILL NOT COMPLY/ TREAT STORMWATER QUALITY

10. NOTING THAT THE SYSTEM IS DESIGNED TO HOLD WATER, THE RAIN GARDEN FOOTPRINT NEEDS TO BE SETBACK FROM THE DWELLING AND ANY PROPERTY BOUNDARY, THE TYPICAL BATTER CALLED FOR IN THE TOP OF THE BATTER IS LOCATED ON THE PROPERTY BOUNDARY, THE TREATMENT AREA/ FILTER MEDIA WOULD THEN BE SETBACK 450MM FROM THE BOUNDARY,

GEOTEXTILE FABRIC LINING MUST BE PROVIDED IN THE BASE OF THE RAIN GARDEN AND ALL SIDES.

COMPLYING WITH THIS REQUIREMENT.

12. GEOTEXTILE FABRIC LINING MUST NOT B PROVIDED BETWEEN LAYERS AS IT INCREASES THE RISK CLOGGING, STOPPING THE SYSTEM FROM FUNCTIONING PROPERLY.

WHERE INFILTRATION FROM THE RAIN GARDEN (SALINITY, GROUNDWATER LEVELS ETC:) MPERMEABLE (WATERPROOF) LINER MUST ALSO BE PROVIDED IN THE BASE OF THE RAIN GARDEN AND ALL

14. A SUB-SOIL DRAIN IN THE BASE OF THE RAIN GARDEN AND ONE FLUSHING POINT (MINIMUM) MUST BE

DEPENDING ON THE SIZE AND SHAPE OF THE RAIN GARDEN, A SINGLE SUB-SOIL DRAIN MUST BE LOCATED CENTRALLY IN THE BASE OF THE RAIN GARDEN OR TWO PARALLEL SUB-SOIL DRAINS PROVIDED ON EITHER SIDE OF THE BASE OF THE RAIN GARDEN.

16. THE SUB-SOIL DRAIN CAN BE EITHER 90MM DIAMETER FLEXIBLE AGRICULTURAL PIPE DRAIN (AG-DRAIN) IN A SOCK OR A 100MM DIAMETER PERFORATED PIPE WITH NO SOCK. A PERFORATED PIPE IS PREFERRED AS IT IS EASIER TO CLEAN WHILST RIBBED

PIPES RETAIN MOISTURE WHICH MAY ATTRACT PLANT

THE BASE OF THE RAIN GARDEN MUST FAL OWARDS THE SUB-SOIL DRAIN.

THE SUB-SOIL DRAIN MUST CONNECT TO "INTER-ALLOTMENT DRAINAGE PIT" THAT EXISTS IN THE LOW POINT OF THE SITE.

WHERE THE RAIN GARDEN IS LOCATED FURTHER HAN 2M FROM THE EXISTING "INTER-ALLOTMENT SIMILAR) "OUTLET PIT" WILL BE REQUIRED BETWEEN THE IN GÁRDEN AND THE "INTER-ALLOTMENT DRAINAGE T". THIS IMPORTANT DESIGN DETAIL IS SHOWN ON THE TANDARD DRAWING, WHICH INCLUDES AN EXAMPLE OF RAIN GARDEN LOCATED AWAY FROM THE EXISTING 'INTER-ALLOTMENT DRAINAGE PIT".

SIMILARLY, AN "OUTLET PIT" MUST BE USED WHERE THE SURFACE LEVEL OF THE EXISTING "INTER-ALLOTMENT DRAINAGE PIT" DOES NOT MATCH THE PROPOSED PONDING/ TOP WATER LEVEL OF THE

ONCE THE DEPTH OF PONDING IN THE RAIN GARDEN HAS EXCEEDED 150MM STORMWATER WILL OVERFLOW INTO THE "INTER-ALLOTMENT DRAINAGE PIT" (OR NEW "OUTLET PIT" AS ABOVE). THE AREA BETWEEN THE RAIN GARDEN AND THE "OUTLET PIT" MUST REMAIN

THE SURFACE LEVEL OF THE "INTER-ALLOTMENT DRAINAGE PIT" (OR NEW "OUTLET PIT" AS ABOVE) MUST BE 150MM HIGHER THAN THE SURFACE LEVEL WITHIN THE RAIN GARDEN, TO ALLOW FOR EXTENDED

ALL SURFACE AREAS, DOWNPIPES, OVERFLOW FROM THE RAINWATER TANK MUST BE DIRECTED TOWARDS THE RAIN GARDEN.

ANY PIPED DRAINAGE FROM THE SITE MUST BE ONNECTED TO A NEW 300MM SQUARE PLASTIC (OR

TRANSFER INFLOW TO THE SURFACE, SO THAT IT MAY

MUST BE 150MM LOWER THAN THE SURFACE LEVEL OF THE "INTER-ALLOTMENT DRAINAGE PIT" (OR NEW "OUTLET PIT" AS ABOVE) AND THE SURROUNDING

FINISHED GROUND LEVEL TO PROVIDE FOR "EXTENDED

ETENTION" ABOVE THE RAIN GARDEN.

ITS ON SITE DIRECTED TO THIS "SURCHARGE PIT" MUST HIGHER THAN THE SURFACE LEVEL OF THE 'SURCHARGE PIT".

WEEP HOLES MUST BE DRILLED IN THE BASE OF THE BASE. THESE WEEP HOLES MUST STILL ALLOW ORMWATER TO SURCHARGE INTO THE "EXTENDED ETENTION" AREA.

THE AREA UNDERNEATH THE "SURCHARGE PIT" MUST BE FILLED USING CLEAN, FINE GRAVEL SIMILAR TO THAT USED IN THE "DRAINAGE LAYER" (SEE BELOW).

A WELL DESIGNED AND LOCATED RAIN GARDEN WILL LIMIT THE AMOUNT OF ADDITIONAL DRAINAGE PIPES/ REQUIRED TO BE PROVIDED.

THIS LAYER IS 150MM DEEP (MINIMUM) THIS LAYER MUST CONSIST OF CLEAN, FINE

DRAINAGE (BOTTOM) LAYER

HE SUB-SOIL DRAIN.

THE PURPOSE OF THIS LAYER IS TO COLLECT AND THROUGH THE "FILTER MEDIA" AND "TRANSITION LAYER"

RANSITION (MIDDLE) LAYER 5. THIS LAYER IS 100MM DEEP (MINIMUM).

'DRAINAGE LAYER". THIS LAYER MUST CONSIST OF CLEAN. WELL-GRADED SAND/ COARSE SAND MATERIAL NTAINING LITTLE OR NO FINES.

THE PURPOSE OF THE TRANSITION LAYER IS TO STOP THE DOWNWARD MIGRATION OF SMALLER PARTICLES BETWEEN THE "FILTER MEDIA" AND

THIS LAYER IS WHERE THE MAJORITY OF THE WATER QUALITY TREATMENT OCCURS AND SO THE SOURCING AND PLACEMENT OF THIS MATERIAL IS CRITICAL TO THE EFFECTIVE OPERATION OF THE

THIS LAYER IS 400MM DEEP (MINIMUM)

THIS LAYER MUST BE PLACED ON TOP OF THE RANSITION LAYER".

THE MATERIAL USED MUST COMPLY WITH THE THIS LAYER MUST HAVE A LOAMY SAND TEXTURE.

ELETERIOUS MATERIAL AND TOXICANTS AND IS NOT SATURATED HYDRAULIC CONDUCTIVITY

RMEABILITY) OF 100MM/HR. PARTICLE SIZE DISTRIBUTION:

FINE GRAVEL (<3%) (2.0MM TO 3.4MM)

VERY FINE SAND (5% TO 30%) (0.05MM TO 0.15MM) FINE SAND (10% TO 30%) (0.15MM TO 0.25MM) MEDIUM TO COARSE SAND (40% TO 60%) (0.25MM TO COARSE SAND (7% TO 10%) (1.0MM TO 2.0MM)

THE ORGANIC MATTER CONTENT MUST BE LESS AN 5% (WEIGHT TO WEIGHT). PH AS FOR "NATURAL SOILS AND SOIL BLENDS" OF

ELECTRICAL CONDUCTIVITY (EC) AS FOR "NATURAL SOILS AND SOIL BLENDS" < 1.2DS/M

PHOSPHOROUS CONCENTRATION < 100MG/KG

ONCE PLACED THIS LAYER MUST BE LIGHTLY PARTICLES (90% STANDARD COMPACTION).

THE SURFACE LEVEL OF THE "SURCHARGE PIT MUST MATCH THE LEVEL WITHIN THE RAIN GARDEN.

HOSPHORUS SENSITIVE PLANTS ARE USED).

THE SURFACE LEVEL OF THE "INTER-ALLOTMENT DRAINAGE PIT" (OR NEW "OUTLET PIT") MUST MATCH THE LEVEL SURROUNDING THE RAIN GARDEN, 150MM HIGHER THAN THE LEVEL WITHIN THE RAIN GARDEN (NAMELY,

THE SIDES OF THE RAIN GARDEN MUST BE BATTERED AT 1(V):3(H). THIS BATTER MUST NOT EXTEND OVER THE "FILTER MEDIA".

PROPOSED IN PLACE OF THE BATTER, WHICH FOR SURFACE AREA AND STORAGE VOLUME MUST STILL BE

THE AREA RETWEEN THE RAIN GARDEN AND THE "INTER-ALLOTMENT DRAINAGE PIT" (OR NEW "OUTLET PIT") MUST BE SHAPED TO DIRECT OVERFLOW TOWARDS "INTER-ALLOTMENT DRAINAGE PIT" (OR NEW

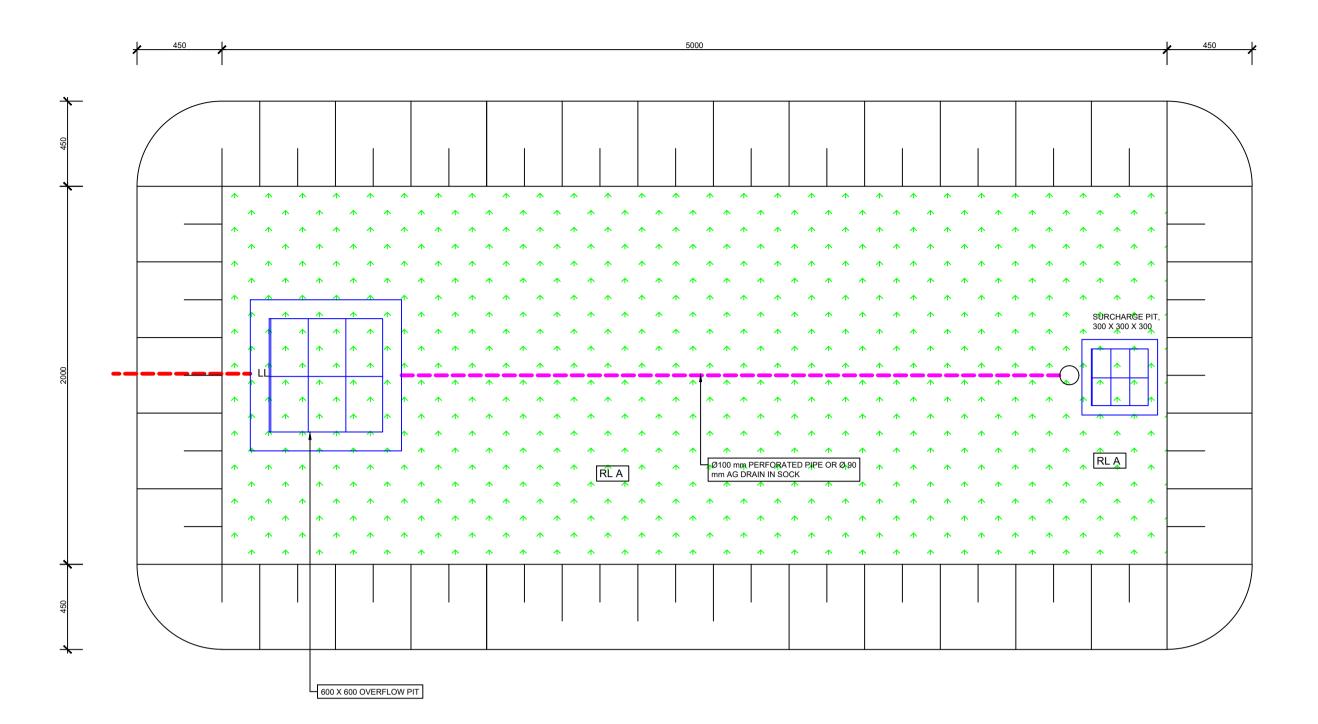
THIS IS THE MINIMUM LEVEL TO WHICH THE RAIN GARDEN CAN BE CONSTRUCTED BEFORE A BUILDER IS
ABLE TO ISSUE PRACTICAL COMPLETION. THIS ONLY APPLIES WHERE THE LANDOWNER IS RESPONSIBLE FOR ANDSCAPING. WHERE THE BUILDER IS RESPONSIBLE FOR LANDSCAPING, THIS MUST OCCUR BEFORE PRACTICAL COMPLETION OF THE

PROJECT. THE PCA CANNOT ISSUE ANY OCCUPATION CERTIFICATE UNTIL THE RAINGARDEN HAS BEEN

AS ACHIEVING THIS MINIMUM LEVEL OF COMPLETION. WHERE THERE IS TO BE A DELAY BETWEEN THE ANDSCAPING (BELOW), AN ADDITIONAL LAYER OF SECTEXTILE FABRIC LINING MUST BE PROVIDED OVER THE RAIN GARDEN EXTENDING TO THE TOP OF THE BATTER TO PROTECT THE "FILTER MEDIA" FROM

1. THE SHAPING OF THE SURFACE OF THE RAIN ARDEN CARRIED OUT AT THIS STAGE MUST ENSURE THE AREA FOR PONDING (150MM) IS ALLOWED FOR. AS NOTED EARLIER, A RAIN GARDEN WITH THE CORRECT SURFACE AREA BUT NO DEPRESSION/ PONDING ABOVE THE SURFACE WILL NOT COMPLY/ DETAIN STORMWATER.

SEDIMENT AND GROSS POLLUTANTS.



- THE RAIN GARDEN MUST BE LOCATED AT THE LOWEST PART OF THE SITE, CLEAR OF DRIVEWAY, SERVICES AND
- THE FILTER MEDIA TO BE SETBACK 450 mm FROM THE BOUNDARY.
- BASE OF THE RAIN GARDEN. GEOTEXTILE FABRIC LINING MUST NOT BE PROVIDED
- BETWEEN LAYERS. WHERE INFILTRATION FROM THE RAIN GARDEN IN TO THE SURROUNDING SOIL IS INDESIRABLE, AN IMPERBEABLE

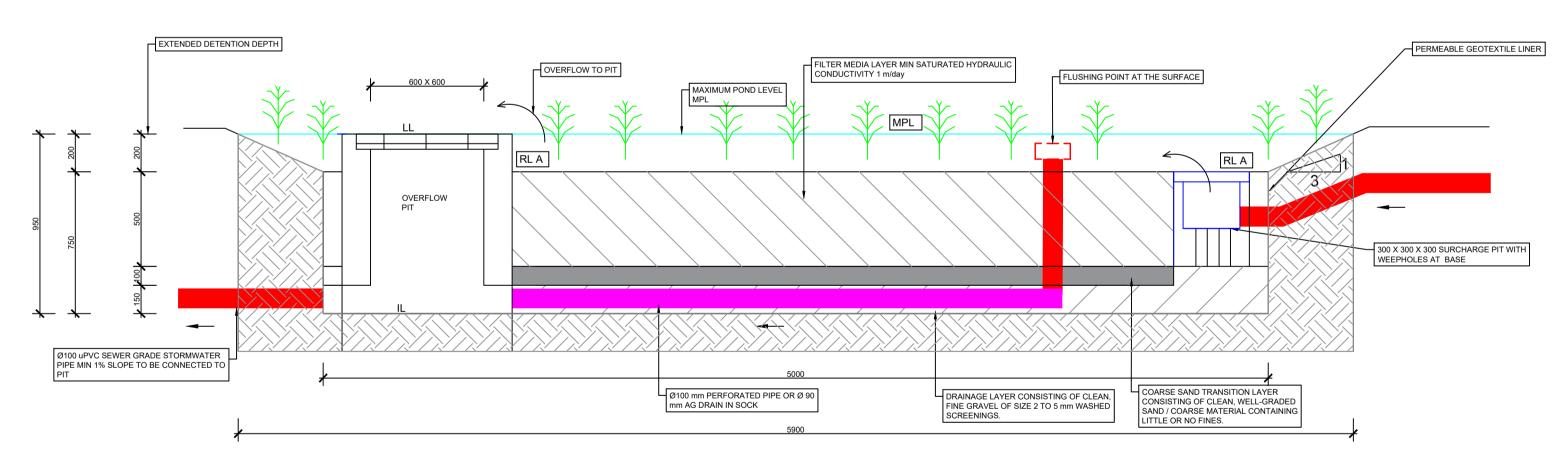
LINER MUST ALSO BE PROVIDED IN THE BASE OF THE RAIN

GEOTEXTILE FABRIC LINING MUST BE PROVIDED AT THE

THE BASE OF RAIN GARDEN MUST FALL TOWARDS THE SUB-SOIL DRAIN

GARDEN AT ALL SIDES.

TYPICAL RAINGARDEN PLAN scale 1:20



### **SECTION AT AA** scale 1:20

LOT	LID LEVEL	INVERT LEVEL	MAXIMUM POND LEVEL	REDUCED LEVEL
LOT	LL	IL	MPL	RL-A
1	127.7	126.75	127.7	127.5
2	127.5	126.55	127.5	127.3
3	135.18	134.23	135.18	134.98
4	135.7	134.75	135.7	135.5

Α	ISSUE FOR DA	CS	10/09/2023
Rev	Description	Ву	Date

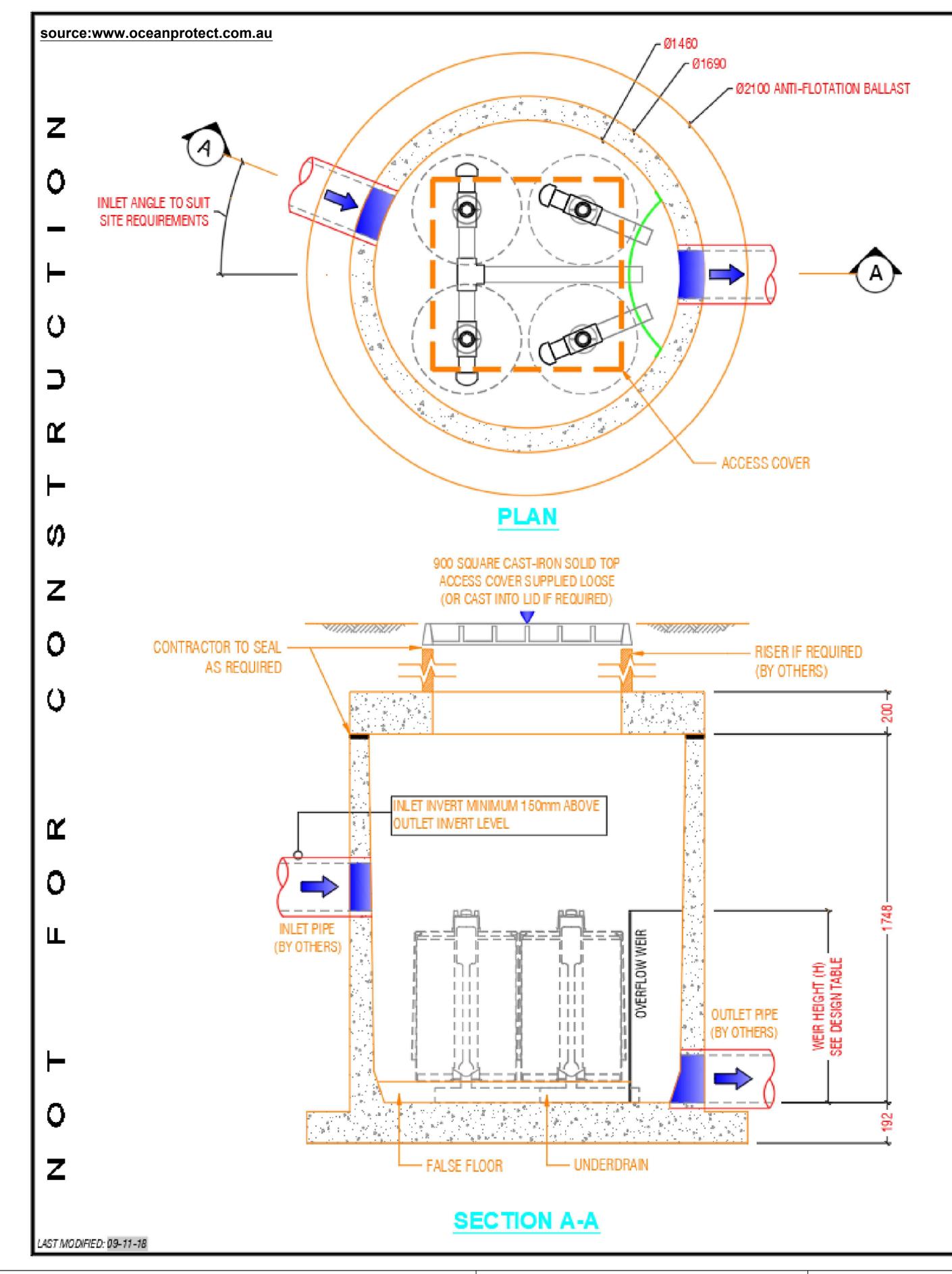
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Maree Jaloussis Hayes	RAINGARDEN DETAIL SH4		
	Designed By: Chij Shrestha	Date: 10/09/2023	
	MILAust, CPEng, NER	Issue:	
oject: Proposed Development at	Reviewed By: C.L.A	Job No: SW -152-2307	
107 Iris Street, Beacon Hill NSW	Scale: as shown (A1)		

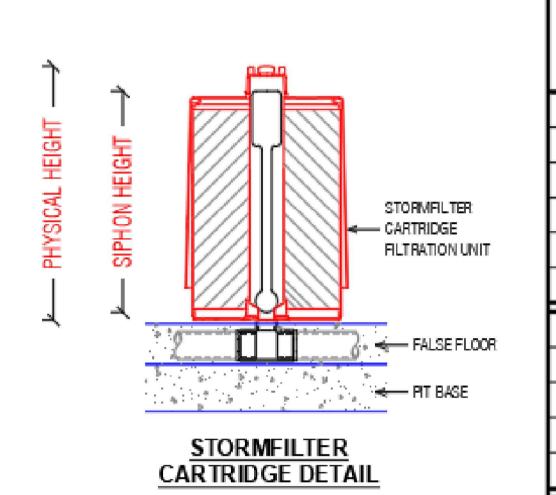


### STORMFILTER DESIGN TABLE

- STORMFILTER TREATMENT CAPACITY VARIES BY NUMBER OF FILTER CARTRIDGES INSTALLED.
- THE STANDARD CONFIGURATION IS SHOWN. ACTUAL CONFIGURATION OF THE SPECIFIED STRUCTURE(S) PER CERTIFYING ENGINEER WILL BE SHOWN ON SUBMITTAL DRAWING(S).
- ENGINEER WILL BE SHOWN ON SUBMITTAL DRAWING(S).
   FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 178mm.

CARTRIDGE NAME / SIPHON HEIGHT (mm)	690	460	310
CARTRIDGE PHYSICAL HEIGHT (mm)	840	600	600
TYPICAL WEIR HEIGHT [H] (mm)	920	690	540
CARTRIDGE FLOW RATE FOR ZPG MEDIA (L/s)	1.6	1.1	0.7
CARTRIDGE FLOW RATE FOR PSORB MEDIA (L/s)	0.9	0.46	0.39

STRUCTURE ID



## SITE SPECIFIC DATA REQUIREMENTS

					4.8
NUMBER OF CARTRIDGES REQ'D 4					
SIPHON HEIGHT (310 / 460 / 690) [ 460					
MEDIA TYPE (ZPG)	/ PSORB)	[	H	PSORB	
WATER QUALITY FI	LOW RATE (L	./S) [	0.	46	
HYDRAULIC CAPA(	CITY (L/S)			90	
PIPE DATA:	I.L.	MATI	ERIAL	DIAMETE	?
INLET PIPE #1	[ ]	[	]	[	]
INLET PIPE #2	[ ]	]	]	[	]
INLET PIPE #3	[ ]	[	]	[	]
OUTLET PIPE	[ ]	[	]	[	]
PRECAST MANHOL	E WEIGHT		41	00kg	
PRECAST LID WEIGHT		11	00kg		

### GENERAL NOTES

- PRECAST STRUCTURE SUPPLIED WITH CORE HOLES TO SUIT OUTER DIAMETER OF NOMINATED PIPE SIZE / MATERIAL.
- PRECAST STRUCTURE SHALL MEET W80 WHEEL LOAD RATING ASSUMING A MAXIMUM EARTH COVER OF 2.0m AND A
  GROUND WATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CERTIFYING ENGINEER TO
  CONFIRM ACTUAL GROUNDWATER ELEVATION. PRECAST STRUCTURE SHALL BE IN ACCORDANCE WITH AS3600.
- IF THE PEAK FLOW RATE, AS DETERMINED BY THE SITE CERTIFYING ENGINEER, EXCEEDS THE PEAK HYDRAULIC CAPACITY OF THE SYSTEM, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.
- ALL WATER QUALITY TREATMENT DEVICES REQUIRE PERIODIC MAINTENANCE. REFER TO OPERATION AND MAINTENANCE MANUAL FOR GUIDELINES AND ACCESS REQUIREMENTS.
- 5. SITE SPECIFIC PRODUCTION DRAWING WILL BE PROVIDED ON PLACEMENT OF ORDER.
- 6. DRAWING NOT TO SCALE.

### INSTALLATION NOTES

PHONE: 1300 354 722

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS
  AND SHALL BE SPECIFIED BY CERTIFYING ENGINEER.
- CONTRACTOR TO PROVIDE ALL EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING DETAIL PROVIDED SEPARATELY).
- 3. CONTRACTOR TO APPLY SEALANT TO ALL JOINTS AND TO PROVIDE, INSTALL AND GROUT INLET AND OUTLET PIPES.



OCEAN PROTECT
4 CARTRIDGE STORMFILTER SYSTEM
DN1460 MANHOLE
SPECIFICATION DRAWING

Α	ISSUE FOR DA	CS	10/09/2023
Rev	Description	Ву	Date

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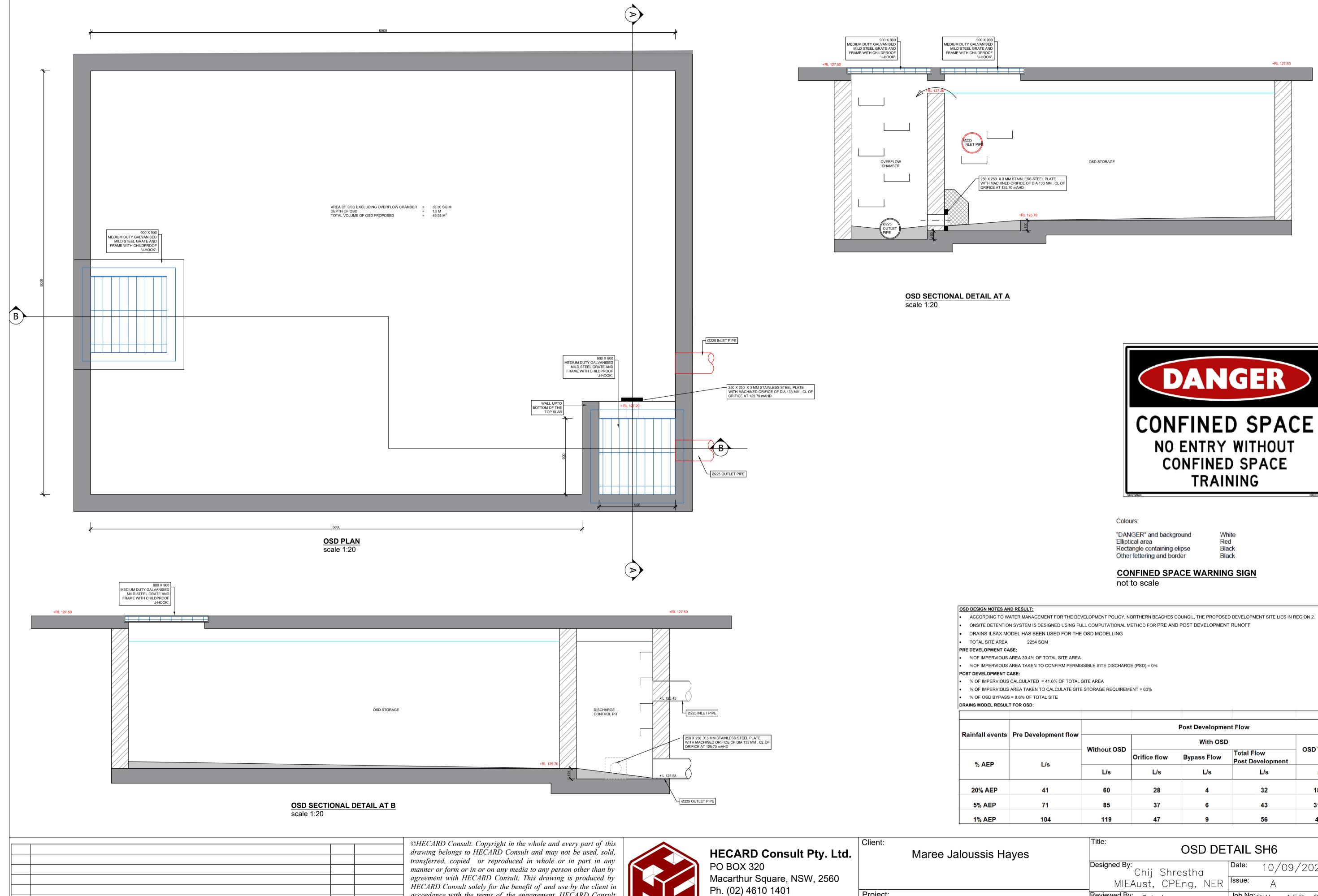
Client:

Maree Jaloussis Hayes

Proposed Development at 107 Iris Street, Beacon Hill NSW

www.oceanprotect.com.au

	R DETAIL SH 5
Designed By: Chij Shrestha	Date: 10/09/2023
MILAust, CPEng, NER	Issue: A
Reviewed By: C.L.A	Job No: SW -152-2307
Scale: as shown (A1)	



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HECARD

CS 10/09/2023

By Date

ISSUE FOR DA

Description

37 31.31 49.3 OSD DETAIL SH6 10/09/2023 Chij Shrestha Issue: MIEAust, CPEng, NER Reviewed By: C.L.A Job No: SW -152-2307 Email: info@hecardconsult.com.au Proposed Development at Web: www.hecardconsult.com.au as shown (A1) 107 Iris Street, Beacon Hill NSW

+RL 127.50

NO ENTRY WITHOUT

**CONFINED SPACE** 

**TRAINING** 

White

Red Black

Black

Post Development Flow

With OSD

Bypass Flow

L/s

L/s

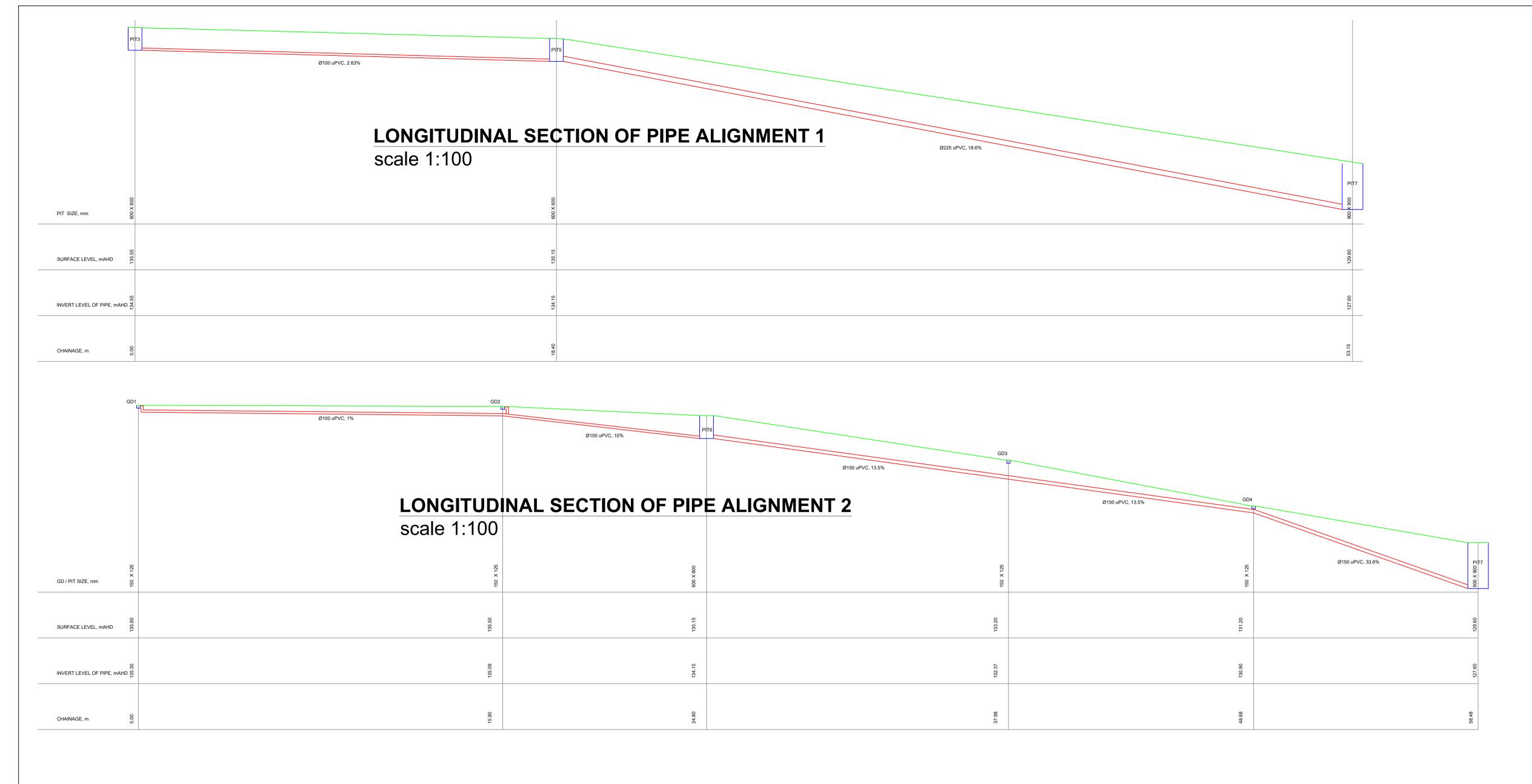
28

**Total Flow** 

L/s

OSD Volume

18.73



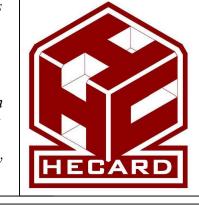


# LONGITUDINAL SECTION OF PIPE ALIGNMENT 3

scale 1:100

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Description	Ву	Date

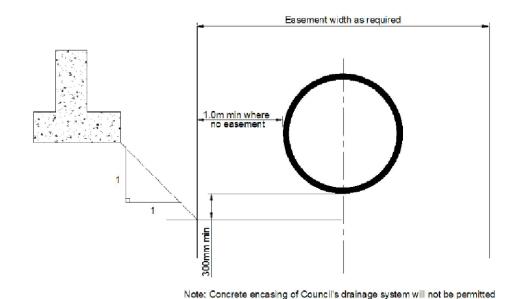
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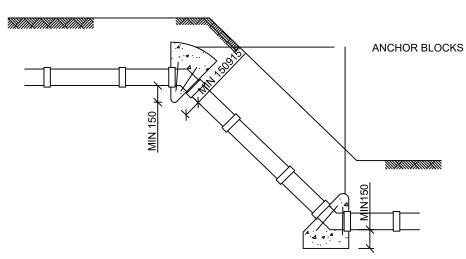


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Email: info@hecardconsult.com.au
Web: www.hecardconsult.com.au

Client:  Maree Jaloussis Hayes	Title: PIPE LONG S	SECTION SH7
Marco darodolo Hayoo	Designed By: Chij Shrestha MIEAust, CPEng, NER	Date: 10/09/2023
Project:		Job No: SW -152-2307
Proposed Development at 107 Iris Street, Beacon Hill NSW	Scale: as shown (A1)	

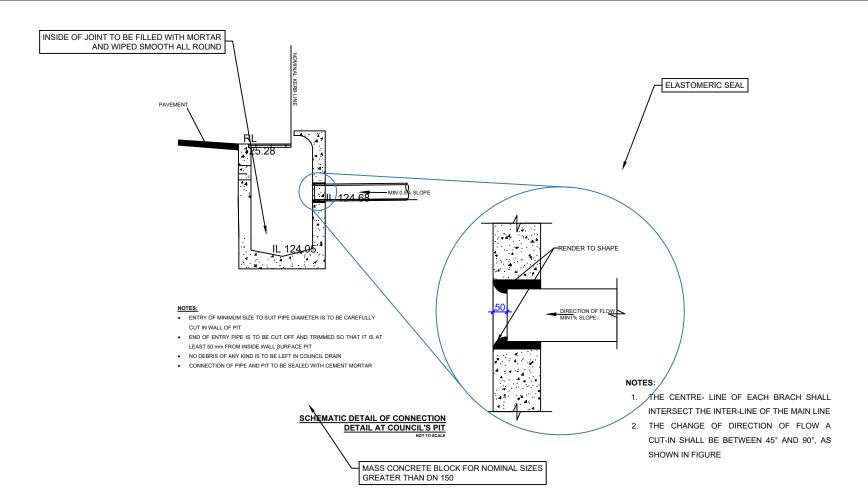




### TYPICAL ANCHOR BLOCK DETAIL FOR SLOPE **GREATER THAN 1:5** not to scale

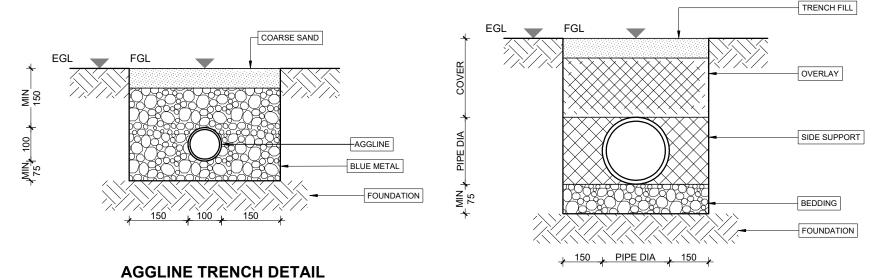
WHERE THE GRADIENT OF A SITE OF STORMWATER DRAIN EXCEEDS 1:5, ANCHOR BLOCKS SHALL BE INSTALLED:

- a) AT THE BEND OR JUNCTION AT THE TOP AND BOTTOM OF THE STORMWATER DRAIN
- AT INTERVAL NOT EXCEEDING 3.0 m
- THICKNESS OF ANCHOR BLOCKS SHOULD NOT BE LESS THAN 150
- TWO STEEL REINFORCEMENT BAR BARS NOT LESS THAN 10 mm DIA BENT TO A RADIUS ABOUT 200 mm SHALL BE PROVIDED TO ANCHOT BLOCKS
- e) ANCHOR BLOCKS SHOULD NOT COVER ANY FLEXIBLE JOINTS



#### **JUNCTION CONNECTION DETAIL**

not to scale



#### scale 1:10

### STANDARD PIPE TRENCH DETAIL

scale 1:10

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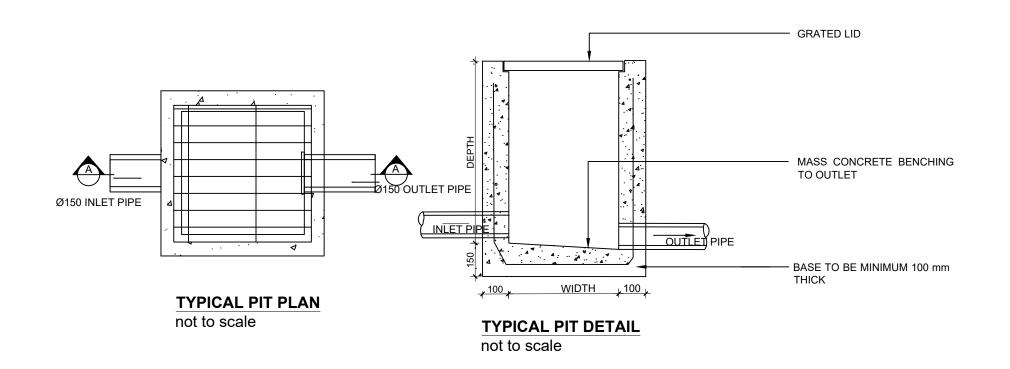


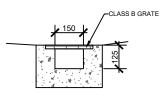
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Web: www.hecardconsult.com.au

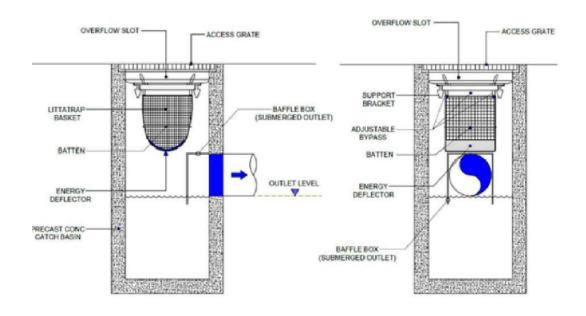
Client: Maree Jaloussis Hayes	PIPE CONNECTION AND TRENCH DETAIL S			
	Designed By: Chij Shrestha	Date: 10/09/2023		
	MIEAusť, CPEng, NER	Issue: A		
•	Reviewed By: C.L.A	<sup>Job No:</sup> SW −152−2307		
Proposed Development at 107 IRIS STREET, BEACON HILL, NSW	Scale: as shown (A3)			





**TYPICAL GRATED DRAIN** 

not to scale





# TYPICAL GPT DETAIL not to scale

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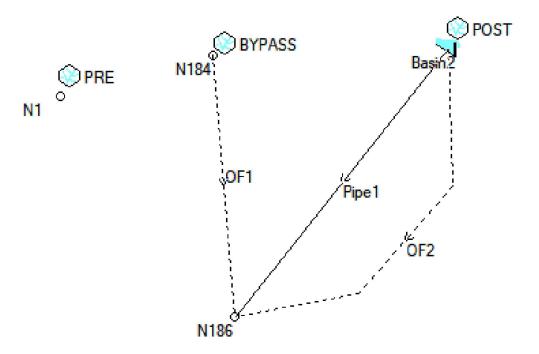


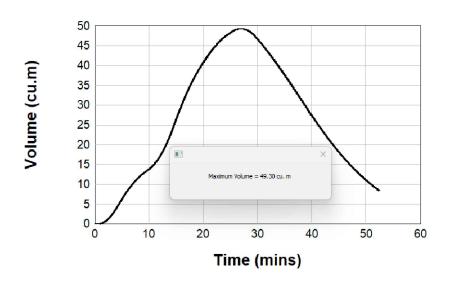
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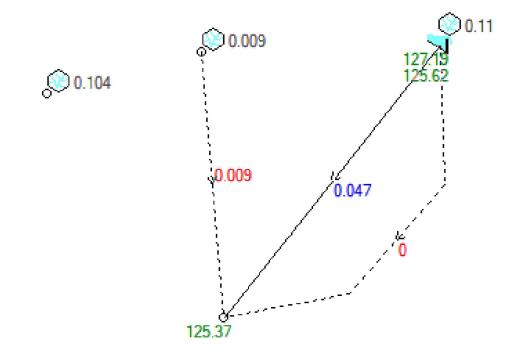
Ph. (02) 4610 1401 Email: info@hecardconsult.com.au Web: www.hecardconsult.com.au

ient: Maree Jaloussis Hayes	Title: PIT DETAIL SH9		
	Designed By: Chij Shrestha Date: 10/09/2023		
	MIEAust, CPEng, NER   Issue: A		
roject: Proposed Development at	Reviewed By: C.L.A Job No: SW -152-2307		
107 IRIS STREET, BEACON HILL, NSW	Scale: as shown (A3)		

## DRAINS MODEL FOR OSD AND RESULTS







Rainfall events	Dro Dovolonment flow		ı	Post Developme	nt Flow	
Kaiiliali events	Pre Development flow	Will COD		With OSD		000 1/ 1
% AEP	L/s	Without OSD	Orifice flow	Bypass Flow	Total Flow Post Development	OSD Volume
/I ALI	Lis	L/s	L/s	L/s	L/s	m³
20% AEP	41	60	28	4	32	18.73
5% AEP	71	85	37	6	43	31.31
1% AEP	104	119	47	9	56	49.3

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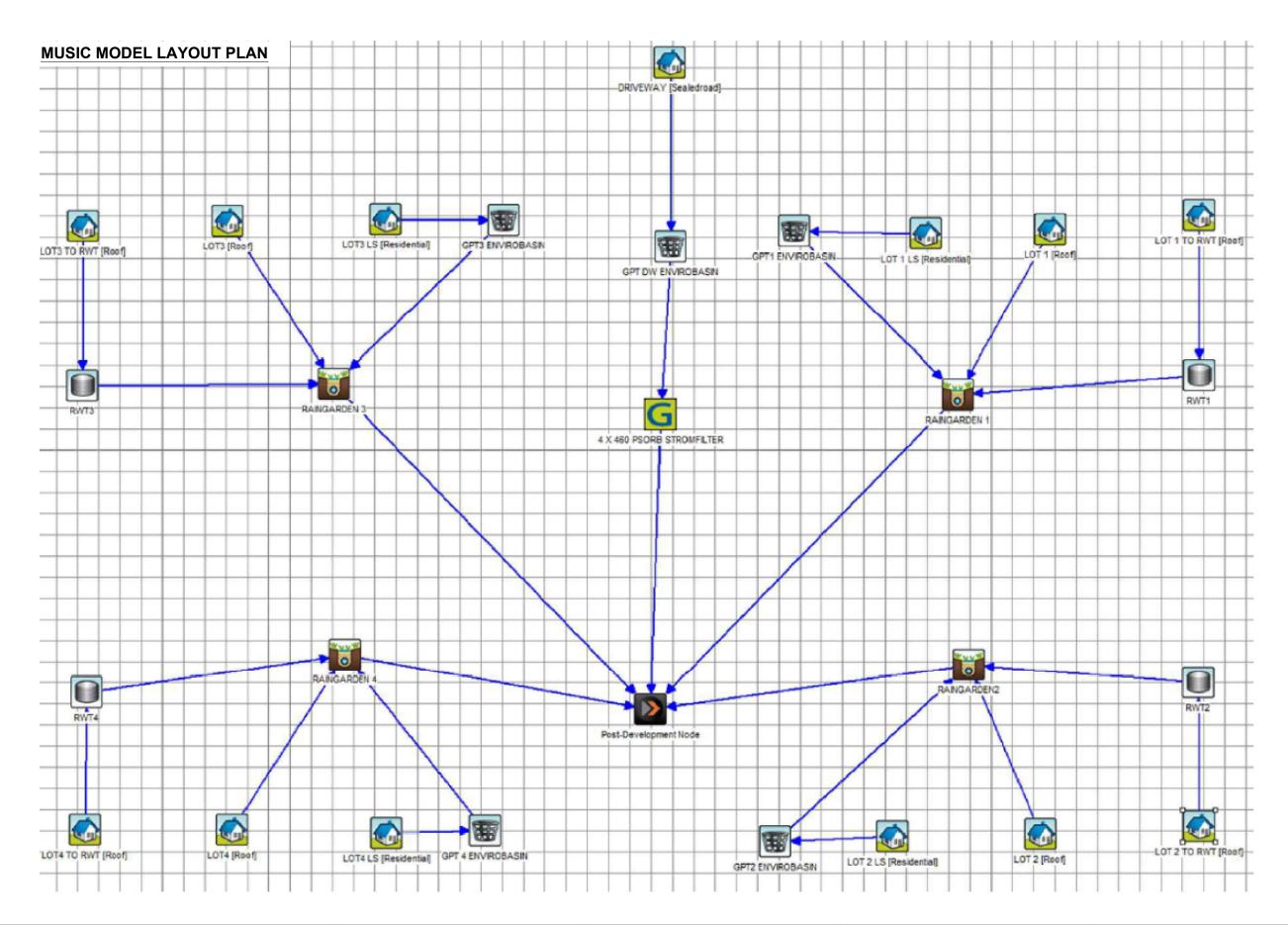
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<sup>ent:</sup> Maree Jaloussis Hayes	DRAINS MODEL SH10		
•	Designed By: Chij Shrestha	Date: 10/09/2023	
	MIEAusť, CPEng, NER	Issue: A	
oject: Proposed Development at	Reviewed By: C.L.A	<sup>Job No:</sup> SW −152−2307	
107 IRIS STREET, BEACON HILL, NSW	Scale: as shown (A3)		



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lient: Maree Jaloussis Hayes	Title: MUSIC MODEL PLAN SH 11			
	Designed By: Chij Shrestha	Date: 10/09/20		
		Issue: A		
roject: Proposed Development, at	Reviewed By: C.L.A	<sup>Job No:</sup> SW −152−		

107 IRIS STREET, BEACON HILL, NSW

10/09/2023

Job No: SW -152-2307

as shown (A3)