PROPOSED DEVELOPMENT
No.27 WAINE STREET, FRESHWATER
STORMWATER MANAGEMENT PLANS

LEGEND

- DENOTES ON-SITE DETENTION TANK
- DENOTES ON-SITE RETENTION TANK
- DENOTES DWELLING FOOTPRINT
- SW — DENOTES 100mm DIA. STORMWATER/SURFACE WATER SYSTEM PIPE AT 1% MIN. GRADE U.N.O.
- RW — DENOTES 100mm DIA. FULLY SEALED RAINWATER SYSTEM PIPE U.N.O.
- 150 RW — DENOTES RAINWATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
- 150 SW — DENOTES STORMWATER/SURFACE WATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
- 65 W/RM — DENOTES RISING MAIN AND PIPE DIA. U.N.O.
- 100 SS — DENOTES SUBSOIL DRAINAGE LINE AND DIA. WRAPPED IN GEOFABRIC U.N.O.
- DP — DENOTES DOWNPIPE
- IO — DENOTES INSPECTION OPENING WITH SCREW DOWN LID AT FINISHED SURFACE LEVEL
- CO — DENOTES INSPECTION OPENING WITH SCREW DOWN LID AT FINISHED SURFACE LEVEL FOR SYSTEM FLUSHING PURPOSES
- STORMWATER PIT - SOLID COVER
- STORMWATER PIT - GRATED INLET
- DENOTES GRATED DRAIN
- DENOTES ABSORPTION TRENCH
- NON RETURN VALVE
- PUMP
- STOP VALVE (ISOLATION VALVE)
- 240v REQUIRED
- IL23.31 — DENOTES LEVEL OF INLET /OUTLET OF STORMWATER PIPE. NOTE: UNLESS NOTED OTHERWISE, THE BASE OF THE PIT IS THE SAME AS THE PIPE INLET/OUTLET.

DIAL BEFORE YOU DIG

DIAL BEFORE YOU DIG www.1100.com.au

IMPORTANT: THE CONTRACTOR IS TO MAINTAIN A CURRENT SET OF "DIAL BEFORE YOU DIG" DRAWINGS ON SITE AT ALL TIMES.

GENERAL NOTES

1. THESE PLANS SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT CONSULTANTS' PLANS, SPECIFICATIONS, CONDITIONS OF DEVELOPMENT CONSENT AND CONSTRUCTION CERTIFICATE REQUIREMENTS. WHERE DISCREPANCIES ARE FOUND ACOR CONSULTANTS (CC) MUST BE CONTACTED IMMEDIATELY FOR VERIFICATION
2. WHERE THESE PLANS ARE NOTED FOR DEVELOPMENT APPLICATION PURPOSES ONLY, THEY SHALL NOT BE USED FOR OBTAINING A CONSTRUCTION CERTIFICATE NOR USED FOR CONSTRUCTION PURPOSES
3. SUBSOIL DRAINAGE SHALL BE DESIGNED AND DETAILED BY THE STRUCTURAL ENGINEER. SUBSOIL DRAINAGE SHALL NOT BE CONNECTED INTO THE STORMWATER SYSTEM IDENTIFIED ON THESE PLANS UNLESS APPROVED BY ACOR CONSULTANTS (CC)

STORMWATER CONSTRUCTION NOTES

1. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500 (CURRENT EDITION) AND THE REQUIREMENTS OF THE LOCAL COUNCIL'S POLICIES AND CODES
2. THE MINIMUM SIZES OF THE STORMWATER DRAINS SHALL NOT BE LESS THAN DN90 FOR CLASS 1 BUILDINGS AND DN100 FOR OTHER CLASSES OF BUILDING OR AS REQUIRED BY THE REGULATORY AUTHORITY
3. THE MINIMUM GRADIENT OF STORMWATER DRAINS SHALL BE 1%, UNLESS NOTED OTHERWISE
4. COUNCIL'S TREE PRESERVATION ORDER IS TO BE STRICTLY ADHERED TO. NO TREES SHALL BE REMOVED UNTIL PERMIT IS OBTAINED
5. PUBLIC UTILITY SERVICES ARE TO BE ADJUSTED AS NECESSARY AT THE CLIENT'S EXPENSE
6. ALL PITS TO BE BENCHED AND STREAMLINED. PROVIDE STEP IRONS FOR ALL PITS OVER 1.2m DEEP
7. MAKE SMOOTH JUNCTION WITH ALL EXISTING WORK
8. VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION
9. SERVICES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM INFORMATION SUPPLIED BY THE RELEVANT AUTHORITIES AND FIELD INVESTIGATIONS AND ARE NOT GUARANTEED COMPLETE NOR CORRECT. IT IS THE CLIENT & CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL PRIOR TO CONSTRUCTION
10. ANY VARIATION TO THE WORKS AS SHOWN ON THE APPROVED DRAWINGS ARE TO BE CONFIRMED BY ACOR CONSULTANTS (CC) PRIOR TO THEIR COMMENCEMENT

RAINWATER RE-USE SYSTEM NOTES

1. RAINWATER SUPPLY PLUMBING TO BE CONNECTED TO OUTLETS WHERE REQUIRED BY BASIX CERTIFICATE (BY OTHERS)
2. TOWN WATER CONNECTION TO RAINWATER TANK TO BE TO THE SATISFACTION OF THE REGULATORY AUTHORITY. THIS MAY REQUIRE PROVISION OF:
   - 2.1. PERMANENT AIR GAP
   - 2.2. BACKFLOW PREVENTION DEVICE
3. NO DIRECT CONNECTION BETWEEN TOWN WATER SUPPLY AND THE RAIN WATER SUPPLY
4. AN APPROVED STOP VALVE AND/OR PRESSURE LIMITING VALVE AT THE RAINWATER TANK
5. PROVIDE APPROPRIATE FLOAT VALVES AND/OR SOLENOID VALVES TO CONTROL TOWN WATER SUPPLY INLET TO TANK IN ORDER TO ACHIEVE THE TOP-UP INDICATED ON THE TYPICAL DETAIL
6. ALL PLUMBING WORKS ARE TO BE CARRIED OUT BY LICENSED PLUMBERS IN ACCORDANCE WITH AS/NZS3500.1 NATIONAL PLUMBING AND DRAINAGE CODE
7. PRESSURE PUMP ELECTRICAL CONNECTION TO BE CARRIED OUT BY A LICENSED ELECTRICIAN
8. ONLY ROOF RUN-OFF IS TO BE DIRECTED TO THE RAINWATER TANK . SURFACE WATER INLETS ARE NOT TO BE CONNECTED
9. PIPE MATERIALS FOR RAINWATER SUPPLY PLUMBING ARE TO BE APPROVED MATERIALS TO AS/NZS3500 PART 1 SECTION 2 AND TO BE CLEARLY AND PERMANENTLY IDENTIFIED AS 'RAINWATER'. THIS MAY BE ACHIEVED FOR BELOW GROUND PIPES USING IDENTIFICATION TAPE (MADE IN ACCORDANCE WITH AS2648) OR FOR ABOVE GROUND PIPES BY USING ADHESIVE PIPE MARKERS (MADE IN ACCORDANCE WITH AS1345)
10. EVERY RAINWATER SUPPLY OUTLET POINT AND THE RAINWATER TANK ARE TO BE LABELED 'RAINWATER' ON A METALLIC SIGN IN ACCORDANCE WITH AS1319
11. ALL INLETS AND OUTLETS TO THE RAINWATER TANK ARE TO HAVE SUITABLE MEASURES PROVIDED TO PREVENT MOSQUITO AND VERMIN ENTRY

SHEET INDEX

NORTHERN BEACHES COUNCIL

SITE AREA (m²) 552
POST DEVELOPED IMPERVIOUS AREA (m²) 433 (78%)

1. FULL COMPUTATION METHOD ADOPTED USING DRAINS PROGRAM. REFER TO DRAINS MODEL CC220258.drn

DESIGN HAS BEEN PREPARED IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY.

PIT GRATE INLET TYPE

GRATE TYPE	TRAFFIC CONDITIONS
A - EXTRA LIGHT DUTY	FOOTWAYS AND AREAS ACCESSIBLE ONLY TO PEDESTRIANS AND PEDAL CYCLISTS.
B - LIGHT DUTY	FOOTWAYS THAT CAN BE MOUNTED BY VEHICLE
C - MEDIUM DUTY	MALLS AND PEDESTRIAN AREAS OPEN TO SLOW MOVING COMMERCIAL VEHICLES.
D - HEAVY DUTY	CARRIAGEWAYS OF ROADS AND AREAS OPEN TO COMMERCIAL VEHICLES.

TABLE AS PER AS3996 - LATEST EDITION. ENGINEER TO BE NOTIFIED IF LOAD CONDITIONS LISTED ABOVE ARE EXCEEDED.

DEVELOPMENT APPLICATION ISSUE
NOT FOR CONSTRUCTION

DRAWINGS MUST BE PRINTED IN COLOUR

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPROVAL	30.06.23	RH	BK
A	ISSUE FOR DEVELOPMENT APPLICATION	24.10.22	CL	BK

North

1 0 1cm at full size 10cm

Client: PYCO AT GREENSLOPES PTY LTD

Architect: FUSE ARCHITECTS

ACOR CONSULTANTS
ACOR Consultants (CC) Pty Ltd
Platinum Building, Suite 2.01, 4 Ilya Avenue
ERINA NSW 2250, Australia
T +61 2 4324 3499
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED RESIDENTIAL DEVELOPMENT
No.27
WAINE STREET
FRESHWATER

Drawing Title: COVER SHEET & NOTES

Drawn	Date	Scale A1	Q.A. Check	Date
CL	SEP 2022	AS NOTED	-	-

Designed	Project No.	Dwg. No.	Issue
BK	CC220258	C1	B

NOTES:

1. TOP OF GRATE LEVELS HAVE BEEN DETERMINED FROM THE SURVEY DETAIL PROVIDED. FOLLOWING EARTHWORKS AND BENCHING, VALIDITY OF GRATE LEVELS SHOULD BE ASSESSED AND ADJUSTED AS REQUIRED TO MEET THE INTENT OF THE DESIGN. WHERE IN DOUBT CONTACT THE DESIGN ENGINEER.

2. DOWNPIPES CONVEYING ROOF WATER TO DISCHARGE TO RAINWATER TANK INDEPENDANT OF ANY OTHER STORMWATER SYSTEM ON SITE. REFER TO HYDRAULIC SERVICES PLANS FOR LOCATION OF ALL DOWNPIPES AND PIPE ALIGNMENTS WITHIN THE BUILDING ENVELOPE. HYDRAULIC ENGINEER TO ALLOW TO TIE IN AS REQUIRED TO THE STORMWATER CONCEPT SHOWN ON THESE PLANS TYP UNO.

3. DOWNPIPES AND PIPES LOCATED WITHIN THE BUILDING ENVELOPE ARE TO BE DOCUMENTED & COORDINATED BY THE HYDRAULIC SERVICES ENGINEER.

WARNING
LOCATION AND DEPTH OF ALL UNDERGROUND SERVICES TO BE INVESTIGATED WITH THE RELEVANT AUTHORITIES PRIOR TO COMMENCING WORK

RW DENOTES UNDERGROUND ROOF WATER ONLY LINE. CONNECT ROOFWATER DOWNPIPES TO THIS SYSTEM IN ACCORDANCE WITH THE BASIX REQUIREMENT & CONVEY TO THE ON SITE RETENTION TANK TYP UNO

BASEMENT PUMPOUT TANK
INSTALL 5000 LITRE MIN. POLYTHENE PACKAGED PUMP STATION KWIKFLO POLLUTION SERVICES OR EQUAL.
REFER TO SHEET C3 FOR DETAILS.
FINAL PUMPOUT VOLUME TO BE CONFIRMED AT CC STAGE.

WAINE STREET

450 SQ SWP
RL - 20.60 nom
IL - 20.00 nom

DOWNPIPES AND OUTLETS CONVEYING SURFACE WATER RUNOFF FROM ABOVE TO CONNECT TO THIS LINE

450 SQ SWP
RL - 19.10 nom
IL - 18.50 nom

WATER RISING MAIN

PIT P2
450 SQUARE PIT WITH MEDIUM DUTY GRATED INLET
TOP OF GRATE - 15.58 nom

BIN ROOM

WATER METER

GAS METER

ENTRY

BASEMENT
FFL RL.15.68

COMBINED OSD / OSR TANK
OSR VOLUME : 2,200 LITRES MIN.
(BASIX REQUIREMENT T.B.C)
OSD VOLUME: 15,000 LITRE MIN.
100 YEAR ARI DISCHARGE TO KERB : 18 l/s
PROVIDE 105mm ORIFICE
REFER TO SHEET C4 FOR DETAILS.

OSR

OSD

PIT P1
450 SQUARE PIT WITH MEDIUM DUTY GRATED INLET
TOP OF GRATE - 15.58 nom

CROSSOVER AND DRIVEWAY TO BE IN ACCORDANCE WITH COUNCIL REQUIREMENTS. THE LEVELS AND DESIGN OF THE CROSSOVER AND DRIVEWAY SHALL BE BY OTHERS.

DOWNPIPES AND OUTLETS CONVEYING SURFACE WATER RUNOFF FROM ABOVE TO CONNECT TO THIS LINE

BENCHMARK (NAIL TK)
RL +22.39 AHD

DISCHARGE STORMWATER TO K & G TO THE SATISFACTION OF COUNCIL. MAKE GOOD EXISTING CONSTRUCTION. INVERT LEVEL OF OUTLET SHALL BE SITE CONFIRMED PRIOR TO COMMENCEMENT OF WORKS.
DESIGN INVERT: IL 14.64 nom

IL 14.70 NOM

200 x 100 GALV. RHS. @ 1% MIN.

+ RL.15.68

450 SQ SWP
RL - 20.60 nom
IL - 20.15 nom

SPEL CHAMBER
1 x HALF HEIGHT SPEL FILTER
TO BE DETAILED AT CC STAGE

CONSTRUCT 150 WIDE GRATED BOX DRAIN MIN 150 DEEP INVERT TO GRADE TO OUTLET AT A MINIMUM GRADE OF 2%.
TOP OF GRATE 15.68 nom

CONSTRUCT 150 WIDE GRATED BOX DRAIN MIN 150 DEEP MIN. INVERT TO GRADE TO OUTLET AT A MINIMUM GRADE OF 2%.
TOP OF GRATE 15.68 nom

CONSTRUCT SECTION OF PIPE THROUGH BASEMENT AT HIGH LEVEL. STRAP PIPE ALONG WALL IN ACCORDANCE WITH AS3500

SW SURFACE WATER DRAINAGE SYSTEM.
FINAL PIPE & PIT ALIGNMENT EXTERNAL TO THE BUILDING ENVELOPE TO BE DETERMINED AT CC STAGE DOCUMENTATION TYP UNO

25 WAINE ST
BRICK
4 STOREY
RESIDENTIAL APARTMENT

STORMWATER LEGEND

- RW — DENOTES 100mm DIA. FULLY SEALED UNDERGROUND RAINWATER SYSTEM PIPE U.N.O.
- SW — DENOTES 100mm DIA. UNDERGROUND STORMWATER / SURFACE WATER SYSTEM PIPE AT 1% MIN. GRADE U.N.O.
- W/RM — DENOTES WATER RISER MAIN (BY OTHERS)
- 150 RW — DENOTES RAINWATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
- 150 SW — DENOTES STORMWATER/SURFACE WATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.

STORMWATER MANAGEMENT PLAN

SCALE - 1:75/A1, 1:150/A3

0 0.75 1.5 3 4.5 6 7.5m

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPROVAL	30.06.23	RH	BK
A	DRAFT ISSUE FOR COMMENT	24.10.22	CL	BK

1 0 1cm at full size 10cm

North

Client: PYCO AT GREENSLOPES PTY LTD

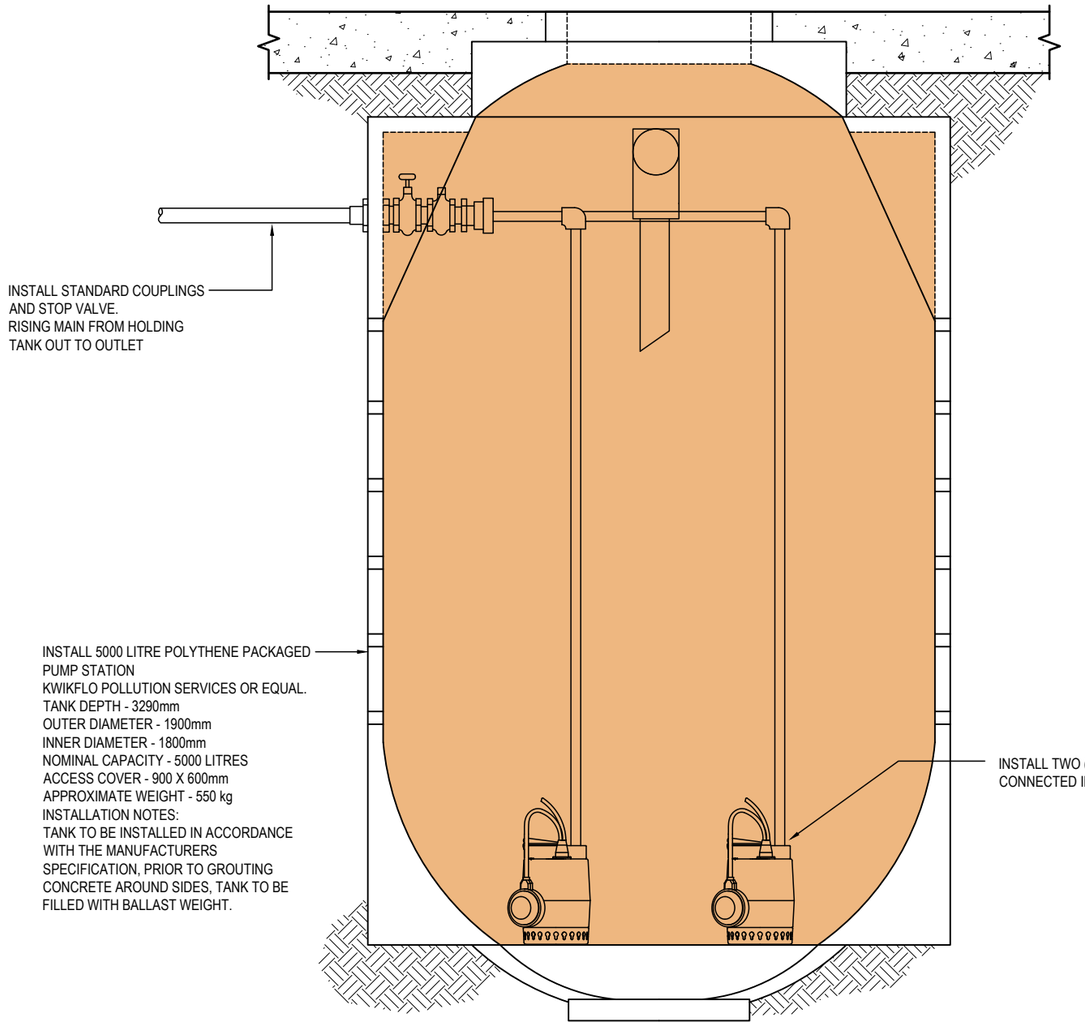
Architect: FUSE ARCHITECTS

ACOR CONSULTANTS
ACOR Consultants (CC) Pty Ltd
Platinum Building, Suite 2.01, 4 Ilya Avenue
ERINA NSW 2250, Australia
T +61 2 4324 3499
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED RESIDENTIAL DEVELOPMENT
No.27
WAINE STREET
FRESHWATER

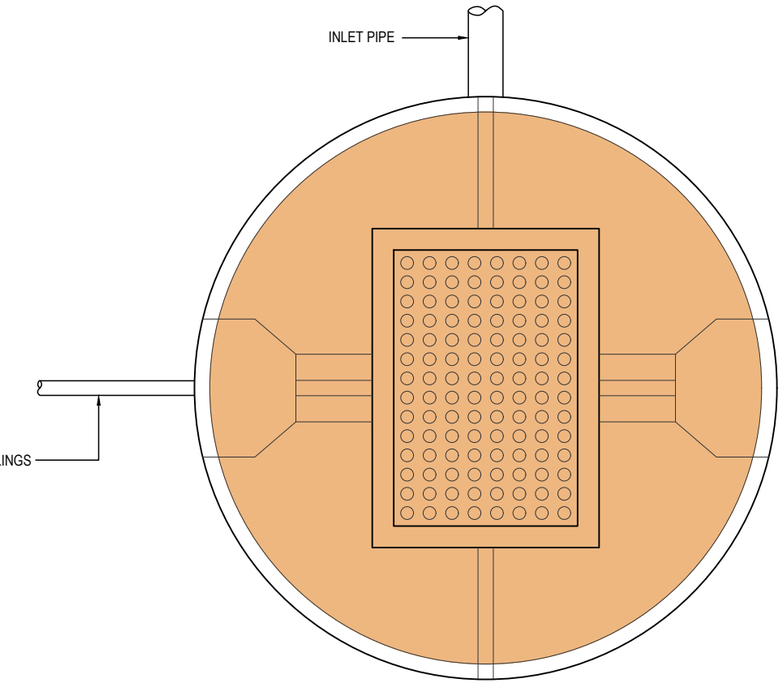
Drawing Title: STORMWATER MANAGEMENT PLAN - SITE & BASEMENT LAYOUT

Drawn	Date	Scale A1	Q.A. Check	Date
CL	SEP 2022	AS NOTED	-	-
Designed	Project No.		Dwg. No.	Issue
BK	CC220258		C2	B



PUMP-OUT TANK SYSTEM - SECTION

SCALE - 1:10/A1, 1:20/A3



PUMP-OUT TANK SYSTEM - PLAN

SCALE - 1:10/A1, 1:20/A3

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPROVAL	30.06.23	RH	BK
A	ISSUE FOR DEVELOPMENT APPLICATION	24.10.22	CL	BK

North

1 0 1cm at full size 10cm

Client: PYCO AT GREENSLOPES PTY LTD

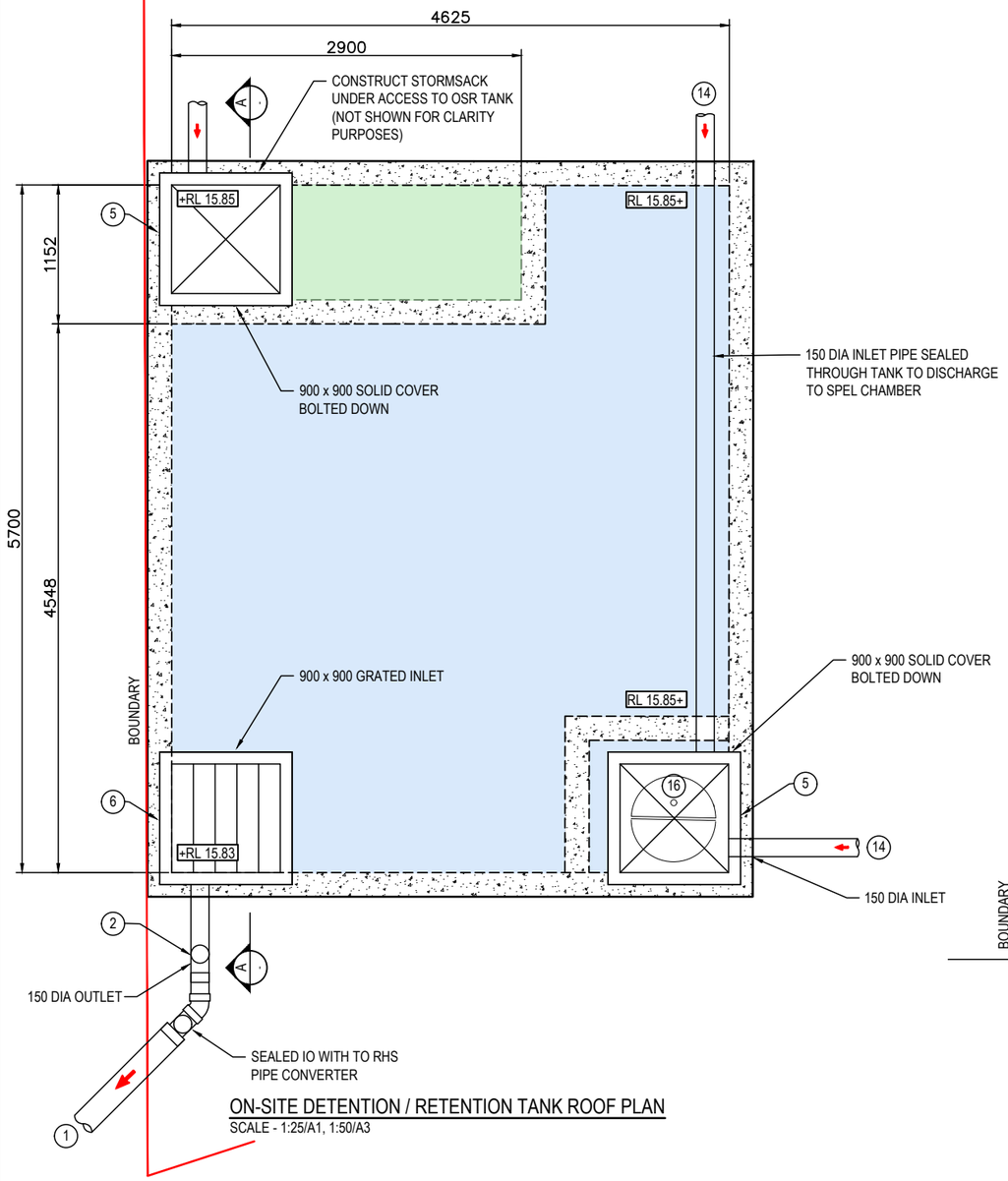
Architect: FUSE ARCHITECTS

ACOR Consultants (CC) Pty Ltd
Platinum Building, Suite 2.01, 4 Ilya Avenue
ERINA NSW 2250, Australia
T +61 2 4324 3499
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED RESIDENTIAL DEVELOPMENT
No.27
WAINE STREET
FRESHWATER

Drawing Title: STORMWATER MANAGEMENT DETAILS SHEET No.1

Drawn	Date	Scale A1	Q.A. Check	Date
CL	SEP 2022	AS NOTED	-	-
Designed	Project No.		Dwg. No.	Issue
BK	CC220258		C3	B

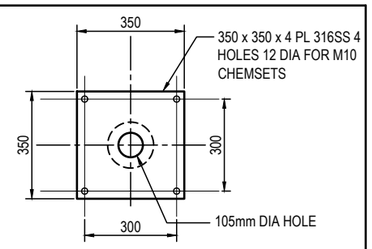


ON-SITE DETENTION / RETENTION TANK ROOF PLAN

SCALE - 1:25/A1, 1:50/A3

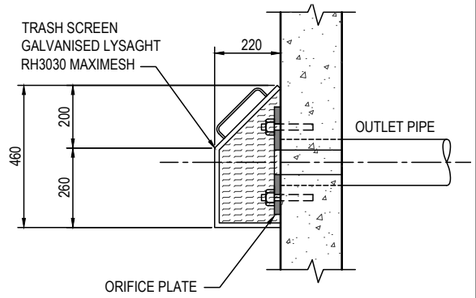
LEGEND

1	150 DIA OUTLET PIPE	9	PVC PIPE CLASS '16' RISING MAIN - BY OTHERS
2	150 DIA HIGH LEVEL OUTLET PIPE	10	PROVIDE GALVANISED STEP IRONS AT 300mm CENTRES WHERE DEPTH EXCEEDS 1100mm IN ACCORDANCE WITH THE AUST. STANDARDS AT ALL ACCESS POINTS OF THE TANK, TYP.
3	350 x 350 x 4 PL 316SS 4 HOLES 12 DIA FOR M10 CHEMSETS	11	ROOF WATER INLET PIPE (INDICATIVELY SHOWN)
4	TRASH SCREEN LYSAGHT RH3030 GALV. REMOVABLE WITH HANDLE	12	RAINWATER HIGH LEVEL OVERFLOW WEIR
5	900 x 900 SOLID COVER BOLTED DOWN	13	900 x 900 x 200 DEEP SUMP
6	900 x 900 HD GRATED INLET BOLTED DOWN	14	SURFACE WATER INLET PIPE (INDICATIVELY SHOWN)
7	RE-USE PUMP TO MANUFACTURERS SPECIFICATIONS	15	CONCRETE BENCHING
8	NON-RETURN VALVE	16	1 x HALF HEIGHT SPEL FILTER



ORIFICE PLATE DETAIL

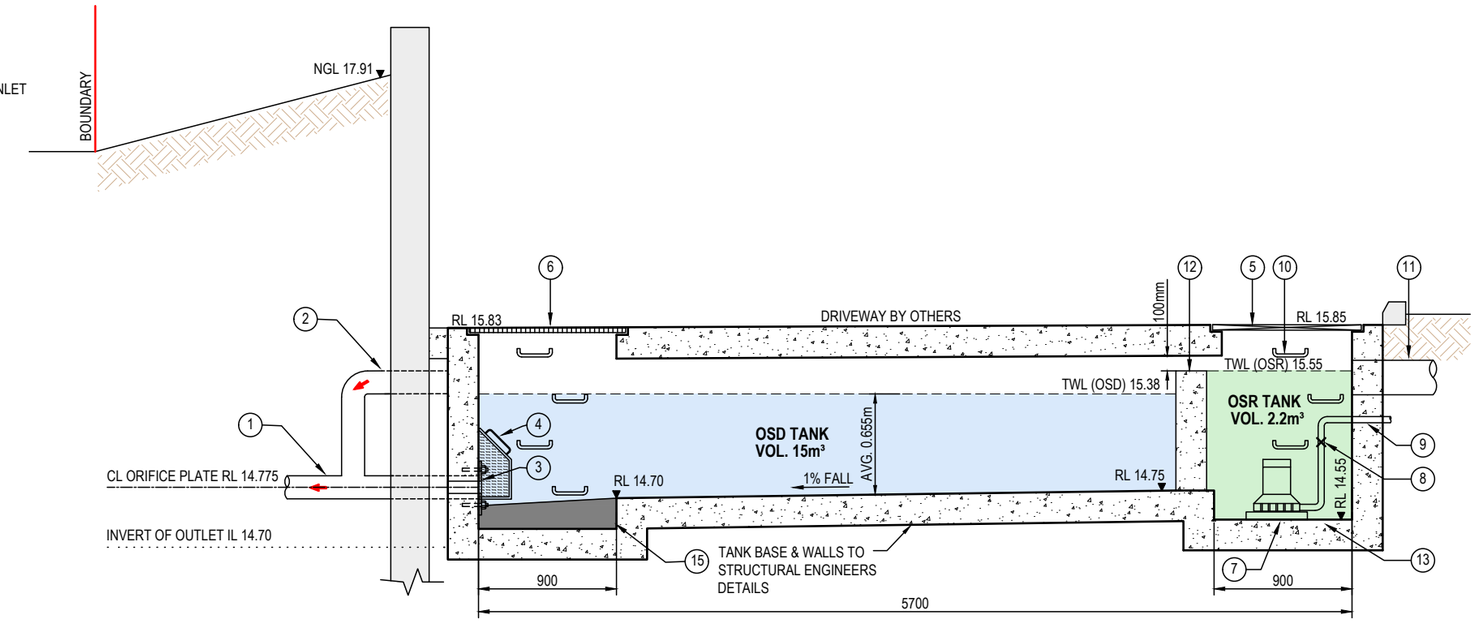
SCALE - 1:10/A1, 1:20/A3



SIDE VIEW CROSS SECTION

TRASH SCREEN

SCALE 1:10/A1, 1:20/A3



A / C2 OSD TANK SECTION

SCALE 1:20

DANGER
CONFINED SPACE
NO ENTRY WITHOUT CONFINED SPACE TRAINING

PROVIDE CONFINED SPACE SIGNAGE AT ENTRY POINTS INTO TANK.

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPROVAL	30.06.23	RH	BK
A	ISSUE FOR DEVELOPMENT APPLICATION	24.10.22	CL	BK

North

1 0 1cm at full size 10cm

Client: PYCO AT GREENSLOPES PTY LTD

Architect: FUSE ARCHITECTS

ACOR Consultants (CC) Pty Ltd
Platinum Building, Suite 2.01, 4 Ilya Avenue
ERINA NSW 2250, Australia
T +61 2 4324 3499
ACOR CONSULTANTS ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED RESIDENTIAL DEVELOPMENT
No.27
WAINE STREET
FRESHWATER

Drawing Title: STORMWATER MANAGEMENT DETAILS SHEET No.2

Drawn	Date	Scale A1	Q.A. Check	Date
CL	SEP 2022	AS NOTED	-	-
Designed	Project No.		Dwg. No.	Issue
BK	CC220258		C4	B

EROSION & SEDIMENT LEGEND

1. INSTALL SEDIMENT FENCING REFER DETAIL SD 6-8, SHEET C6. WHERE UNDER CANOPY AREAS OF TREES TO BE RETAINED, FENCING NOT TO BE DUG INTO THE GROUND BUT INSTEAD ATTACHED TO GROUND BY TIGHTLY PACKED SANDBAGS.

2. NOTE: PROVIDE PROTECTION TO DRAINAGE PITS FOLLOWING PIT INSTALLATION. REFER DETAIL SD6-12 ON SHEET C6

3. THE EXISTING CROSSOVER & LAYBACK ARE TO BE RETAINED FOR SITE ACCESS UNTIL REASONABLE COMPLETION OF CONSTRUCTION WORKS

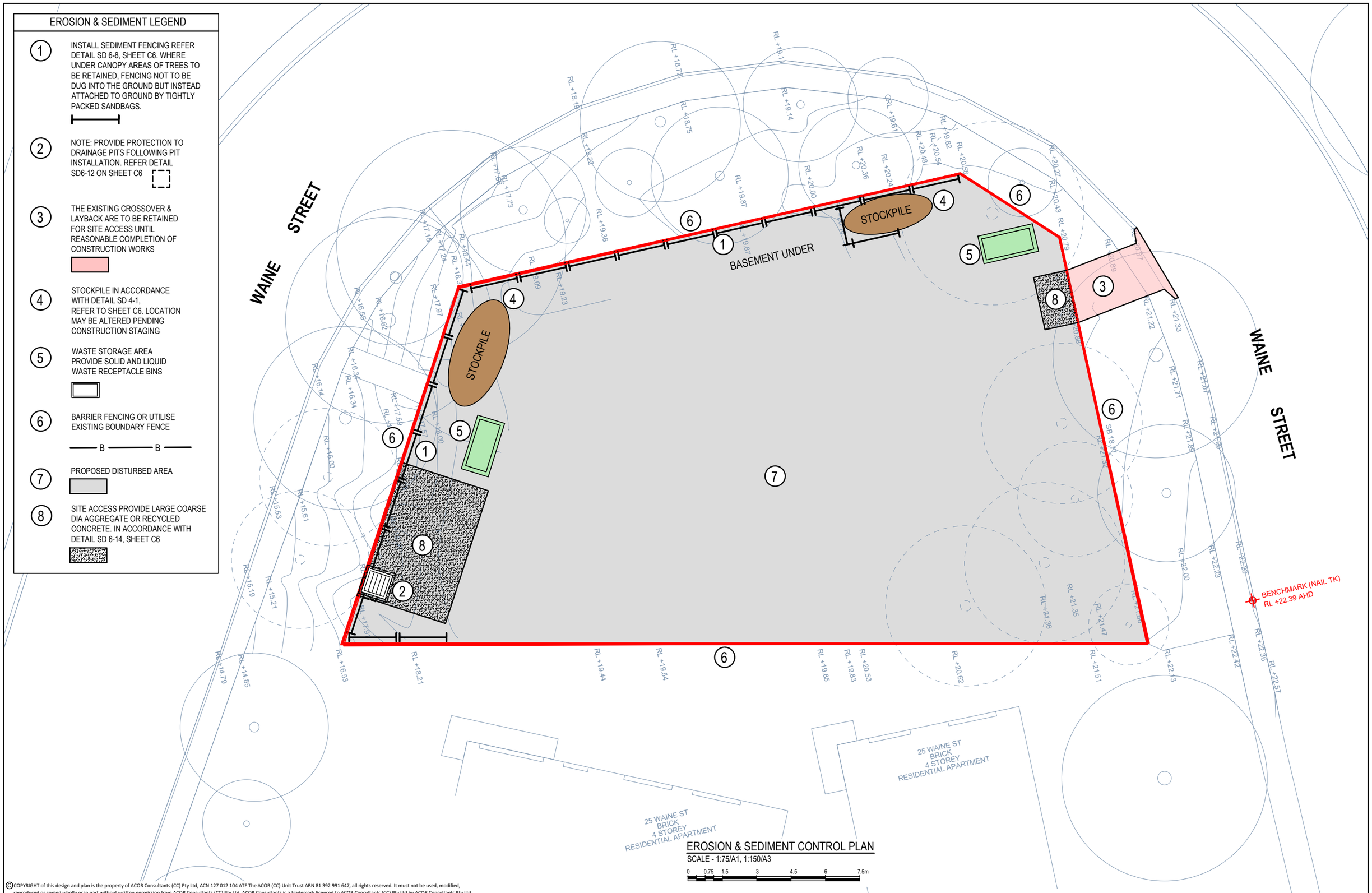
4. STOCKPILE IN ACCORDANCE WITH DETAIL SD 4-1, REFER TO SHEET C6. LOCATION MAY BE ALTERED PENDING CONSTRUCTION STAGING

5. WASTE STORAGE AREA PROVIDE SOLID AND LIQUID WASTE RECEPTACLE BINS

6. BARRIER FENCING OR UTILISE EXISTING BOUNDARY FENCE — B — B —

7. PROPOSED DISTURBED AREA

8. SITE ACCESS PROVIDE LARGE COARSE DIA AGGREGATE OR RECYCLED CONCRETE. IN ACCORDANCE WITH DETAIL SD 6-14, SHEET C6



EROSION & SEDIMENT CONTROL PLAN

SCALE - 1:75/A1, 1:150/A3

0 0.75 1.5 3 4.5 6 7.5m

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPROVAL	30.06.23	RH	BK
A	ISSUE FOR DEVELOPMENT APPLICATION	24.10.22	CL	BK

1cm at full size 10cm

North

Client: PYCO AT GREENSLOPES PTY LTD

Architect: FUSE ARCHITECTS

ACOR Consultants (CC) Pty Ltd
Platinum Building, Suite 2.01, 4 Ilya Avenue
ERINA NSW 2250, Australia
T +61 2 4324 3499
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED RESIDENTIAL DEVELOPMENT
No.27
WAINE STREET
FRESHWATER

Drawing Title: EROSION & SEDIMENT CONTROL PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
CL	SEP 2022	AS NOTED	-	-
Designed	Project No.		Dwg. No.	Issue
BK	CC220258		C5	B

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

1. THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT.
2. CONTRACTORS WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, 1998 (BLUE BOOK).
3. ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

LAND DISTURBANCE INSTRUCTIONS

4. DISTURBANCE TO BE NO FURTHER THAN 5 (PREFERABLY 2) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON APPROVED PLANS. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
5. ACCESS AREAS ARE TO BE LIMITED TO A MAXIMUM WIDTH OF 10 METRES THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON-SITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
6. ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.
7. WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE:
   - A) INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
   - B) CONSTRUCT THE STABILISED SITE ACCESS.
   - C) CONSTRUCT DIVERSION DRAINS AS REQUIRED.
   - D) INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
   - E) INSTALL GEOTEXTILE INLET FILTERS AROUND ANY ON-SITE DROP INLET PITS.
   - F) CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
   - G) UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE.
   - H) GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
   - I) REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.
5. ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING.
6. ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL LATER.

SITE MAINTENANCE INSTRUCTIONS

7. THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
   - A) ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
   - B) REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5 METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS AND PAVED AREAS.
   - C) REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT STRUCTURE HAS BEEN EXCEEDED.
   - D) ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY.
   - E) CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS. MAKE ONGOING CHANGES TO THE PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS ON THE WORK-SITE OR ELSEWHERE IN THE CATCHMENT.
   - F) MAINTAIN EROSION AND SEDIMENT CONTROL STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.
8. THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:
   - A) THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS.
   - B) THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS.
   - C) THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE.
   - D) THE NEED FOR DUST PREVENTION STRATEGIES.
   - E) ANY REMEDIAL WORKS TO BE UNDERTAKEN.

   THE LOGBOOK WILL BE KEPT ON-SITE AND MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF THE WORKS.

SEDIMENT CONTROL INSTRUCTIONS

9. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOIL AS NEAR AS POSSIBLE TO THEIR SOURCE.
10. SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES.
11. SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR.
12. STOCKPILES ARE NOT TO BE LOCATED WITHIN 5 METRES OF HAZARD AREAS INCLUDING AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS AND DRIVEWAYS.
13. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR WATER HAS BEEN TREATED BY AN APPROVED DEVICE.
14. TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
15. ACCESS TO SITES SHOULD BE STABILISED TO REDUCE THE LIKELIHOOD OF VEHICLES TRACKING SOIL MATERIALS ONTO PUBLIC ROADS AND ENSURE ALL-WEATHER ENTRY/EXIT.

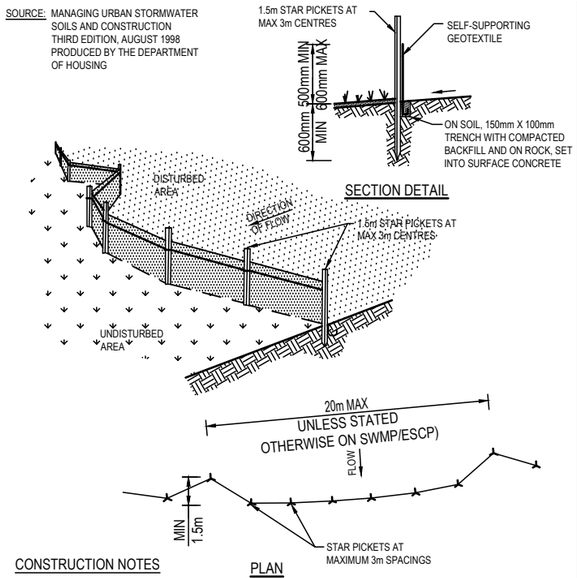
SOIL EROSION CONTROL INSTRUCTIONS

16. EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER, UNLESS OTHERWISE NOTED, THAN:
    - 2(H):1(V) WHERE SLOPE LENGTH LESS THAN 12 METRES
    - 2.5(H):1(V) WHERE SLOPE LENGTH BETWEEN 12 AND 16 METRES.
    - 3(H):1(V) WHERE SLOPE LENGTH BETWEEN 16 AND 20 METRES.
    - 4(H):1(V) WHERE SLOPE LENGTH GREATER THAN 20 METRES.
17. ALL WATERWAYS, DRAINS, SPILLWAYS AND THEIR OUTLETS WILL BE CONSTRUCTED TO BE STABLE IN AT LEAST THE 1:20 YEAR ARI, TIME OF CONCENTRATION STORM EVENT.
18. WATERWAYS AND OTHER AREAS SUBJECT TO CONCENTRATED FLOWS AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUNDCOVER C-FACTOR OF 0.05 (70% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION. FLOW VELOCITIES ARE TO BE LIMITED TO THOSE SHOWN IN TABLE 5-1 OF "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION", DEPT OF HOUSING 1998 (BLUE BOOK). FOOT AND VEHICULAR TRAFFIC WILL BE PROHIBITED IN THESE AREAS.
19. STOCKPILES AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.1 (60% GROUND-COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION.
20. ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, DURING CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.15 (50% GROUND COVER) WITHIN 20 WORKING DAYS FROM INACTIVITY EVEN THOUGH WORKS MAY CONTINUE LATER.
21. FOR AREAS OF SHEET FLOW USE THE FOLLOWING GROUND COVER PLANT SPECIES FOR TEMPORARY COVER: JAPANESE MILLET 20 KG/HA AND OATS 20 KG/HA.
22. PERMANENT REHABILITATION OF LANDS AFTER CONSTRUCTION WILL ACHIEVE A GROUND-COVER C-FACTOR OF LESS THAN 0.1 AND LESS THAN 0.05 WITHIN 60 DAYS. NEWLY PLANTED LANDS WILL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER WILL BE APPLIED AS NECESSARY.
23. REVEGETATION SHOULD BE AIMED AT RE-ESTABLISHING NATURAL SPECIES. NATURAL SURFACE SOILS SHOULD BE REPLACED AND NON-PERSISTANT ANNUAL COVER CROPS SHOULD BE USED.

WASTE CONTROL INSTRUCTIONS

24. ACCEPTABLE BINS WILL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHING, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES WILL BE PROVIDED AT LEAST WEEKLY. DISPOSAL OF WASTE WILL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.
25. ALL POSSIBLE POLLUTANT MATERIALS ARE TO BE STORED WELL CLEAR OF ANY POORLY DRAINED AREAS, FLOOD PRONE AREAS, STREAMBANKS, CHANNELS AND STORMWATER DRAINAGE AREAS. STORE SUCH MATERIALS IN A DESIGNATED AREA UNDER COVER WHERE POSSIBLE AND WITHIN CONTAINMENT BUNDS.
26. ALL SITE STAFF AND SUB-CONTACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
27. ANY DE-WATERING ACTIVITIES ARE TO BE CLOSELY MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.
28. PROVIDE DESIGNATED VEHICULAR WASHDOWN AND MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS.

SOURCE: MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION THIRD EDITION, AUGUST 1998 PRODUCED BY THE DEPARTMENT OF HOUSING

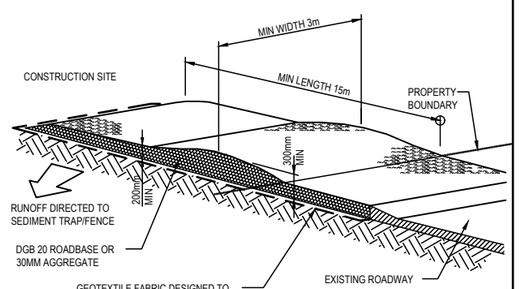


CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND, 3 METRES APART.
3. DIG A 150 MM DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150 MM OVERLAP.

SEDIMENT FENCE SD 6-8

SOURCE: MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION THIRD EDITION, AUGUST 1998 PRODUCED BY THE DEPARTMENT OF HOUSING

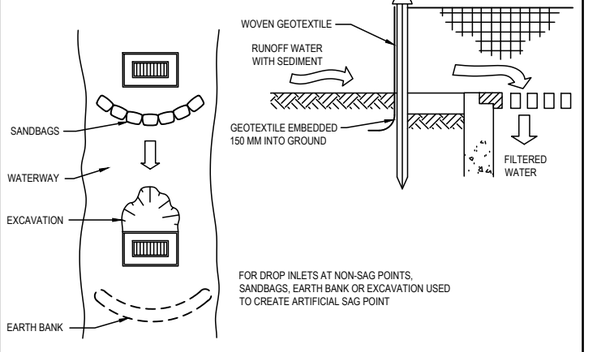


CONSTRUCTION NOTES:

1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200MM THICK PAD OVER GEOTEXTILE USING ROADBASE OR 30MM AGREGATE. MINIMUM LENGTH 15M OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP.

STABILISED SITE ACCESS SD 6-14

SOURCE: MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION THIRD EDITION, AUGUST 1998 PRODUCED BY THE DEPARTMENT OF HOUSING

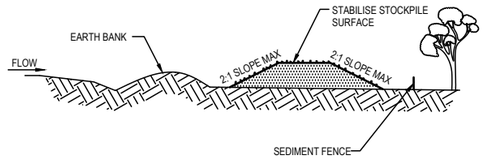


CONSTRUCTION NOTES:

1. FABRICATE A SEDIMENT BARRIER FROM GEOTEXTILE OR STRAW BALES.
2. SUPPORT GEOTEXTILE WITH MESH TIED TO POSTS AT 1 METRE CENTRES.
3. DO NOT COVER INLET WITH GEOTEXTILE.
4. CONSTRUCTION DETAILS ARE SIMILAR TO TYPICAL SEDIMENT FENCING DETAIL.

GEOTEXTILE INLET FILTER SD 6-12

SOURCE: MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION THIRD EDITION, AUGUST 1998 PRODUCED BY THE DEPARTMENT OF HOUSING



CONSTRUCTION NOTES:

1. LOCATE STOCKPILE AT LEAST 5 METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS A LOW, FLAT, ELONGATED MOUND.
3. WHERE THERE IS SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METERS IN HEIGHT.
4. REHABILITATE IN ACCORDANCE WITH THE SWMP/ESCP.
5. CONSTRUCT EARTH BANK (STANDARD DRAWING 5-2) ON THE UPSLOPE SIDE TO DIVERT RUN OFF AROUND THE STOCKPILE AND A SEDIMENT FENCE (STANDARD DRAWING 6-7) 1 TO 2 METRES DOWNSLOPE OF STOCKPILE.

STOCKPILES SD 4-1

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPROVAL	30.06.23	RH	BK
A	ISSUE FOR DEVELOPMENT APPLICATION	24.10.22	CL	BK

North

0 1cm at full size 10cm

Client: PYCO AT GREENSLOPES PTY LTD

Architect: FUSE ARCHITECTS

ACOR CONSULTANTS
ACOR Consultants (CC) Pty Ltd
Platinum Building, Suite 2.01, 4 Ilya Avenue
ERINA NSW 2250, Australia
T +61 2 4324 3499
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED RESIDENTIAL DEVELOPMENT
No.27
WAINE STREET
FRESHWATER

Drawing Title: EROSION & SEDIMENT CONTROL NOTES & DETAILS

Drawn	Date	Scale A1	Q.A. Check	Date
CL	SEP 2022	AS NOTED	-	-
Designed	Project No.		Dwg. No.	Issue
BK	CC220258		C6	B

STORMWATER QUALITY REPORT

1 INTRODUCTION

A CATCHMENT BASED WATER QUALITY MODEL WAS DEVELOPED TO ASSESS THE STORMWATER RUNOFF QUALITY IN ACCORDANCE WITH THE REQUIREMENTS OF TABLE 5 OF NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY. IN THIS REGARD WE REFER TO THE PRESCRIBED TARGETS TABLED FOLLOWING:

TABLE 1 - STORMWATER POLUTANT REDUCTION TARGETS

STORMWATER POLLUTANT	REDUCTION TARGETS
GROSS POLLUTANT	90%
TOTAL SUSPENDED SOLIDS (TSS)	85%
TOTAL PHOSPHORUS (TP)	65%
TOTAL NITROGEN (TN)	45%

2 STUDY METHODOLOGY

THE OBJECTIVES OF THIS REPORT ARE TO:

- ASSESS THE RUNOFF QUALITY FOR THE UNTREATED POST DEVELOPED SCENARIO AND IDENTIFY STORMWATER QUALITY CONTROLS LIKELY TO IMPACT ON RUNOFF QUALITY.
- ASSESS THE STORMWATER QUALITY FOR THE POST DEVELOPED SCENARIO INCLUDING THE MEASURES PROPOSED TO MEET THE POLLUTANT REMOVAL TARGETS .

THE REPORT IS BASED ON THE APPLICATION OF MUSIC SOFTWARE (MODEL FOR URBAN STORMWATER IMPROVEMENT CONCEPTUALISATION). IN THIS REGARD THE MODEL IS DEFINED AS FOLLOWS:

- A STORMWATER QUALITY MODEL TO CONVERT RAINFALL AND EVAPOTRANSPIRATION INTO RUNOFF.
- ESTIMATION OF STORMWATER FLOW AND POLLUTION GENERATION BY SIMULATING THE PERFORMANCE OF STORMWATER TREATMENT DEVICES INDIVIDUALLY AND AS PART OF A TREATMENT TRAIN.

THE MODEL DEFINES WATER QUALITY PROFILES FOR BOTH TREATED AND UNTREATED POST DEVELOPED SCENARIOS. THE TREATED POST DEVELOPED MODEL INCLUDES PARAMETERS WHICH REPRESENT THE WATER QUALITY MEASURES.

3 STORMWATER QUALITY MODELLING

3.1 GENERAL

THE FOLLOWING PARAMETERS WERE ASSESSED FOR THE HYDROLOGICAL MODELLING ASSOCIATED WITH THE CATCHMENT.

- RAINFALL/RUNOFF AND EVAPOTRANSPIRATION.
- SUB CATCHMENT DIVERSIONS.
- LAND USE (PERVIOUS AND IMPERVIOUS)

3.2 RAINFALL/RUNOFF AND EVAPOTRANSPIRATION

THE ADOPTED RAINFALL, RUNOFF AND EVAPOTRANSPIRATION USED IN THIS STUDY IS IN ACCORDANCE WTH THE VALUES RECOMMENDED IN NORTHERN BEACHES COUNCIL WSUD & MUSIC MODELLING GUIDELINES. THE DETAILS ARE SUMMARISED IN TABLE 3.1 AND 3.2

TABLE 3.1 - DETAILS OF DAILY RAINFALL DATA

STATION	NAME	PERIOD	TIMESTEP
066062	SYDNEY OBSERVATORY HILL	01/01/1981-31/12/1985	6 min

TABLE 3.2 - SUMMARY OF POTENTIAL EVAPOTRANSPIRATION (PET)

JAN	FEB	MAR	APR	MAY	JUN
180	135	128	85	58	43
JUL	AUG	SEP	OCT	NOV	DEC
43	58	88	127	152	163

3.3 CATCHMENT DEFINITION

THE POST DEVELOPED CATCHMENT CHARACTERISTICS ARE IDENTIFIED IN TABLE 3.3.

TABLE 3.3 - POST DEVELOPMENT SUB CATCHMENT DETAILS

SUB CATCHMENT ID	SUB CATCHMENT AREA (ha)	% IMPERVIOUS AREA	% PERVIOUS AREA
ROOF TO RAINWATER TANK	0.016	100	0
DRIVEWAY TO PUMP OUT	0.003	100	0
TERRACE (NORTH) TO OSD	0.006	100	0
TERRACE (SOUTH) TO OSD	0.006	100	0
PATH TO OSD	0.001	100	0

4 MUSIC MODEL

THE MUSIC MODEL IS BASED ON A 6 min RAINFALL-RUNOFF MODEL IN CONJUNCTION WITH REPRESENTATIVE BASEFLOW AND STORMFLOW EVENT MEAN CONCENTRATIONS (EMCs).

4.1 WATER QUALITY PARAMETERS

THE ADOPTED VALUES OF VARIOUS MUSIC RAINFALL AND RUNOFF PARAMETERS ARE SUMMARISED IN TABLE 4.1 IN ACCORDANCE WTH THE VALUES RECOMMENDED IN NORTHERN BEACHES COUNCIL WSUD & MUSIC MODELLING GUIDELINES.

TABLE 4.1 - ADOPTED MUSIC RAINFALL/RUNOFF PARAMETERS

PARAMETER	VALUE
IMPERVIOUS AREA PROPERTIES	
RAINFALL THRESHOLD (mm/DAY)	1.5 (0.3 ROOFS)
PERVIOUS AREA PROPERTIES	
SOIL STORAGE CAPACITY (mm)	120
SOIL INITIAL STORAGE (% OF CAPACITY)	25
FIELD CAPACITY (mm)	80
INFILTRATION CAPACITY COEFFICIENT - a	200
INFILTRATION CAPACITY EXPONENT - b	1.0
GROUNDWATER PROPERTIES	
INITIAL DEPTH (mm)	10
DAILY RECHARGE RATE (%)	25
DAILY BASEFLOW RATE (%)	5
DAILY DEEP SEEPAGE RATE (%)	0

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPROVAL	30.06.23	RH	BK
A	ISSUE FOR DEVELOPMENT APPLICATION	24.10.22	CL	BK

North

1cm at full size

Client: PYCO AT GREENSLOPES PTY LTD

Architect: FUSE ARCHITECTS

ACOR CONSULTANTS
ACOR Consultants (CC) Pty Ltd
Platinum Building, Suite 2.01, 4 Ilya Avenue
ERINA NSW 2250, Australia
T +61 2 4324 3499
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED RESIDENTIAL DEVELOPMENT
No.27
WAINE STREET
FRESHWATER

Drawing Title: STORMWATER QUALITY REPORT SHEET 1 OF 2

Drawn	Date	Scale A1	Q.A. Check	Date
CL	SEP 2022	AS NOTED	-	-
Designed	Project No.		Dwg. No.	Issue
BK	CC220258		C7	B

4.1 WATER QUALITY PARAMETERS CONT.

STORMWATER QUALITY IS CHARACTERISED USING EVENT MEAN CONCENTRATION (EMCs) UNDER STORM AND BASE FLOW CONDITIONS. THE VALUE OF WATER QUALITY PARAMETERS ADOPTED IN THIS STUDY IS SUMMARISED IN TABLE 4.2

TABLE 4.2 - ADOPTED MUSIC WATER QUALITY PARAMETERS

LAND-USE CATEGORY		Log_{10} TSS (mg/L)		Log_{10} TP (mg/L)		Log_{10} TN (mg/L)	
		STORM FLOW	BASE FLOW	STORM FLOW	BASE FLOW	STORM FLOW	BASE FLOW
GENERAL URBAN	MEAN	2.15	1.20	-0.60	-0.85	0.30	0.11
	STD DEV	0.32	0.17	0.25	0.19	0.19	0.12
ROADS	MEAN	2.43	1.20	-0.3	-0.85	0.34	0.11
	STD DEV	0.32	0.17	0.25	0.19	0.19	0.12
ROOFS	MEAN	1.30	1.10	-0.89	-0.82	0.30	0.32
	STD DEV	0.32	0.17	0.25	0.19	0.19	0.12

4.2 STORMWATER TREATMENT MEASURES

THE PROPOSED STORMWATER TREATMENT MEASURES INCLUDED IN THE POST DEVELOPED MODEL ARE AS FOLLOWS:

- 1 X SPEL FILTER (SF.14-EMC HALF HEIGHT)
- 2,200 LITRE RAINWATER TANK WITH SPEL STORMSACK BENEATH INLET PIPE TO TANK.

THE SCHEMATIC LAYOUT FOR THE POST DEVELOPED MUSIC MODEL IS DEPICTED IN FOLLOWING FIGURE 1

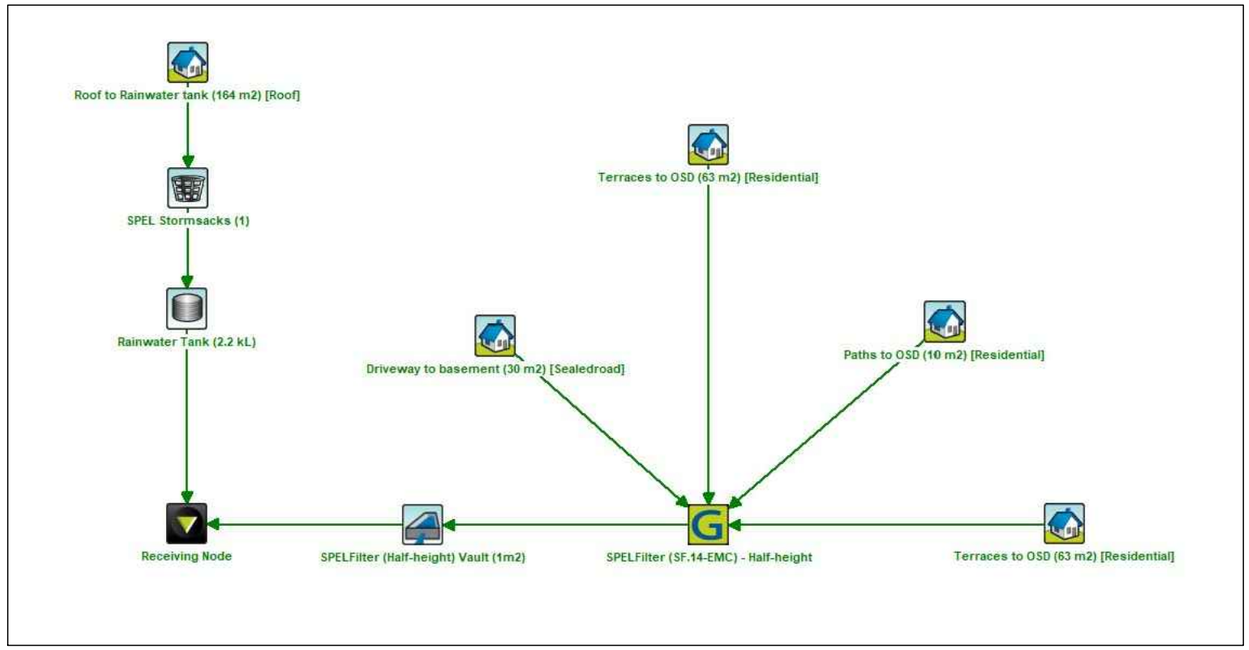


FIGURE 1 - MUSIC MODEL SCHEMATIC

5 RESULTS & CONCLUSION

BASED ON THE FOREGOING AND THE ACHIEVED POLLUTANT REDUCTION RESULTS DEPICTED IN TABLE 5.1 THE PROPOSED STORMWATER QUALITY TREATMENT MEASURES MEET THE REQUIRED TARGETS OF NORTHERN BEACHES COUNCIL.

TABLE 5.1 - TREATMENT TRAIN EFFECTIVENESS

Treatment Train Effectiveness - Receiving Node

	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.383	0.291	23.9
Total Suspended Solids (kg/yr)	44	6.06	86.2
Total Phosphorus (kg/yr)	0.093	0.0308	66.9
Total Nitrogen (kg/yr)	0.846	0.378	55.3
Gross Pollutants (kg/yr)	9.71	0	100

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPROVAL	30.06.23	RH	BK
A	ISSUE FOR DEVELOPMENT APPLICATION	24.10.22	CL	BK

North

Client: PYCO AT GREENSLOPES PTY LTD

Architect: FUSE ARCHITECTS

ACOR CONSULTANTS
ACOR Consultants (CC) Pty Ltd
Platinum Building, Suite 2.01, 4 Ilya Avenue
ERINA NSW 2250, Australia
T +61 2 4324 3499
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED RESIDENTIAL DEVELOPMENT
No.27
WAINE STREET
FRESHWATER

Drawing Title: STORMWATER QUALITY REPORT SHEET 2 OF 2

Drawn	Date	Scale A1	Q.A. Check	Date
CL	SEP 2022	AS NOTED	-	-

Designed	Project No.	Dwg. No.	Issue
BK	CC220258	C8	B