























# PROPOSED DEVELOPMENT

## Lot 17 (No.3) BROOKVALE AVENUE, BROOKVALE

### STORMWATER MANAGEMENT PLANS

LEGEND	
	DENOTES ON-SITE DETENTION TANK
	DENOTES ON-SITE RETENTION TANK
	DENOTES DWELLING FOOTPRINT
	DENOTES 100mm DIA. STORMWATER/SURFACE WATER SYSTEM PIPE AT 1% MIN. GRADE U.N.O.
	DENOTES 100mm DIA. FULLY SEALED RAINWATER SYSTEM PIPE U.N.O.
	DENOTES RAINWATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
	DENOTES STORMWATER/SURFACE WATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
	DENOTES RISING MAIN AND PIPE DIA. U.N.O.
	DENOTES SUBSOIL DRAINAGE LINE AND DIA. WRAPPED IN GEOFABRIC U.N.O.
	DENOTES DOWNPIPE
	DENOTES INSPECTION OPENING WITH SCREW DOWN LID AT FINISHED SURFACE LEVEL
	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
	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**  
[www.1100.com.au](http://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	
COVER SHEET & NOTES	SHEET C1
STORMWATER MANAGEMENT PLAN	SHEET C2
STORMWATER MANAGEMENT DETAILS SHEET No.1	SHEET C3
STORMWATER MANAGEMENT DETAILS SHEET No.2	SHEET C4
EROSION & SEDIMENT CONTROL NOTES	SHEET C5
EROSION & SEDIMENT CONTROL PLAN	SHEET C6
EROSION & SEDIMENT CONTROL DETAIL SHEET	SHEET C7
ON SITE DETENTION CHECKLIST	SHEET C8

<b>WARRINGAH COUNCIL REQUIREMENTS</b>	
1. REFER TO WARRINGAH COUNCIL CHECKLIST ON SHEET C8	
2. FULL COMPUTATION METHOD ADOPTED USING DRAINS PROGRAM. REFER TO DRAINS MODEL CC210062.drn	
3. DRAINS SUMMARY	
SITE AREA (m <sup>2</sup> ).....	706
IMPERVIOUS PRE-DEVELOPED FOR CALCULATIONS.....	253 (35%)
PRE-DEVELOPED DISCHARGE FLOW RATES	
5 year ARI	100 year ARI
23 L/S	41 L/S
ROOF AREA (m <sup>2</sup> ).....265 DRIVEWAY AREA + MISC. (m <sup>2</sup> ).....84 + 131 + 15% ADDITIONAL (m <sup>2</sup> ).....105.9 TOTAL IMPERVIOUS AREA (m <sup>2</sup> ).....585 FOR CALCULATION	
OSD CATCHMENT = 480 m <sup>2</sup> (100% IMPERVIOUS) OSD BYPASS = 226 m <sup>2</sup> (15% IMPERVIOUS)	
POST DEVELOPED DISCHARGE FLOW RATES FROM OSD	
5 year ARI	100 year ARI
11 L/S	17 L/S
4. STORAGE VOLUME REQUIRED = 15m <sup>3</sup> REFER SHEET C3 FOR DETAILS	
5. TOTAL POST DEVELOPED SITE DISCHARGE INCLUDING BYPASS	
5 year ARI	100 year ARI
18 L/S	29 L/S
MAXIMUM HEADWATER DEPTH = 1m THEREFORE: ADOPT = 90mm ORIFICE TOP STORED WSL - RL 23.00	
DESIGN PREPARED IN ACCORDANCE WITH WARRINGAH COUNCIL "ON SITE STORMWATER DETENTION TECHNICAL SPECIFICATION", WATER MANAGEMENT DEVELOPMENT POLICY, WARRINGAH DCP 2011, AR&R & AS/NZS 3500.	

DEVELOPMENT APPLICATION ISSUE  
NOT FOR CONSTRUCTION

DRAWINGS MUST BE PRINTED IN COLOUR

A	ISSUED FOR DEVELOPMENT APPROVAL	10.06.21	RH	BK	
Issue	Description	Date	Drawn	Approved	
1	10m at full size				

North

**PRIMO DESIGN  
PTY LTD**

**Client**

**Architect**

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**PROPOSED RESIDENTIAL  
DEVELOPMENT**

LOT 17 (No. 3)  
BROOKVALE AVENUE  
BROOKVALE

**Project**

Drawing Title			
<b>COVER SHEET &amp; NOTES</b>			
Drawn	Date	Scale	A1
RH	JUN 21	AS NOTED	
Q.A. Check	Date		
BK	10.06.21		
Designed	Project No.	Dwg. No.	Issue
BK	CC210062	C1	A

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. FOR CHARGED/SEALED LINES PROVIDE APPROPRIATE CLEAN OUT FACILITY AT LOW POINTS OF SYSTEM, TYP.
3. ALL PLANTER BEDS TO HAVE ATLANTIS DRAINAGE CELL COMPLETE WITH PLANTER DRAIN OUTLET.
4. STORMWATER PIPES WITHIN CEILING SPACES OVER HABITABLE AREAS AND THE ADJACENT VERTICAL STACK TO BE ACOUSTICALLY LAGGED. REFER TO ACOUSTIC ENGINEERS REPORT FOR FURTHER DETAIL.

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

**BASEMENT PUMPOUT TANK**

REFER TO SHEET C4 FOR DETAILS  
MINIMUM STORAGE CAPACITY BASED ON DRIVEWAY CATCHMENT AREA OF 60m<sup>2</sup> = 10m<sup>3</sup>  
APPROXIMATE TANK DIMENSIONS  
INTERNAL LENGTH 4.0m  
INTERNAL WIDTH 2.0m  
INTERNAL DEPTH 1.25m  
COVER LEVEL 20.55NOM.

--- DENOTES SEALED SOLVENT WELDED AERIAL LINE @ 1% GRADE. SUPPORT PIPE THRU BASEMENT IN ACC. WITH AS/NZS 3500.3. CONNECT ALL SURFACE WATER & DOWNPIPES TO AERIAL DRAINAGE SYSTEM UNDER SOFFIT OF GROUND FLOOR SLAB.  
FINAL PIPE ALIGNMENTS AND CONNECTIONS TO BE DETERMINED AT CC STAGE.

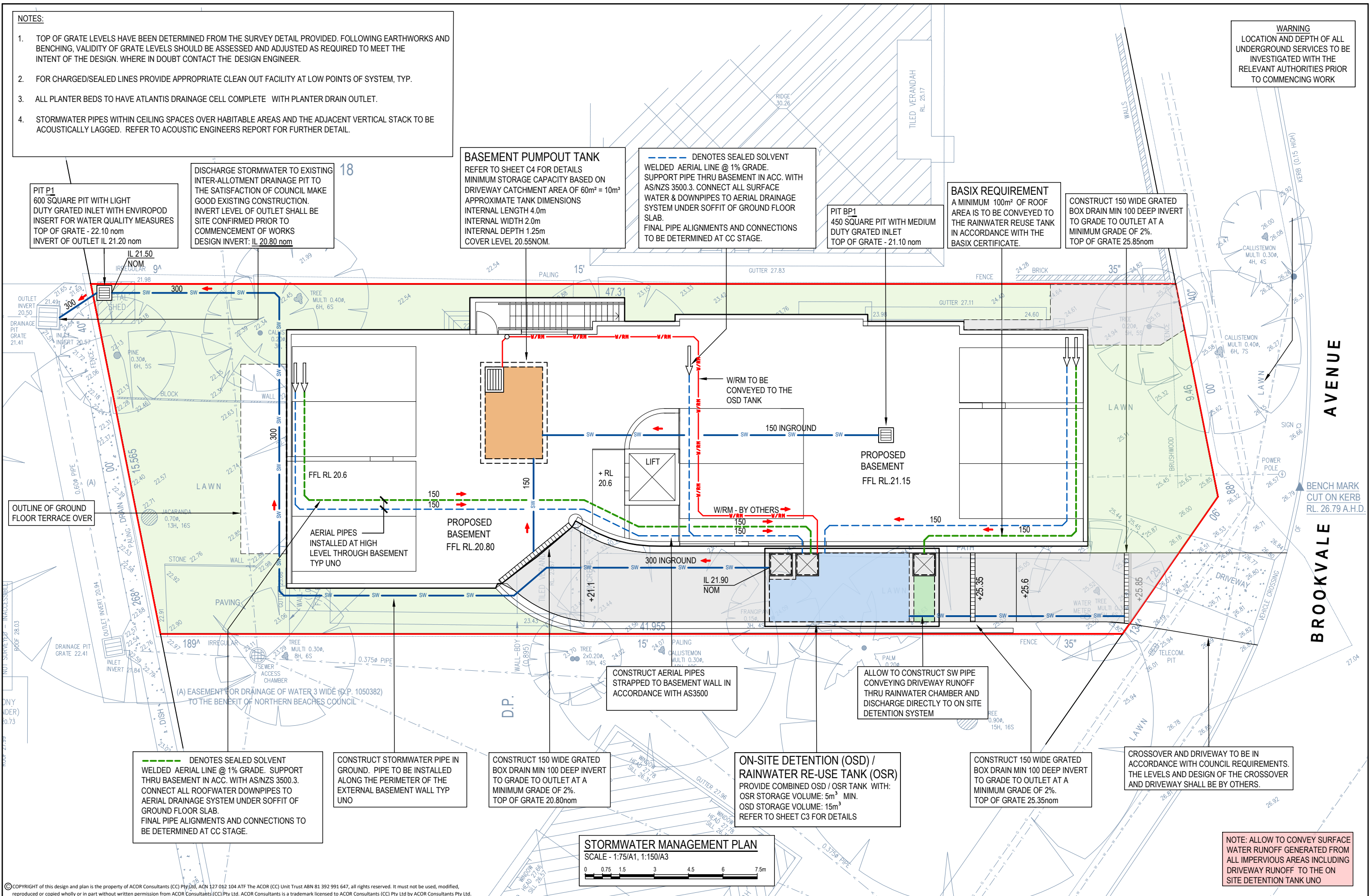
**BASIX REQUIREMENT**  
A MINIMUM 100m<sup>2</sup> OF ROOF AREA IS TO BE CONVEYED TO THE RAINWATER REUSE TANK IN ACCORDANCE WITH THE BASIX CERTIFICATE.

CONSTRUCT 150 WIDE GRATED BOX DRAIN MIN 100 DEEP INVERT TO GRADE TO OUTLET AT A MINIMUM GRADE OF 2%.  
TOP OF GRATE 25.85nom

**PIT P1**  
600 SQUARE PIT WITH LIGHT DUTY GRATED INLET WITH ENVIROPOD INSERT FOR WATER QUALITY MEASURES  
TOP OF GRATE - 22.10 nom  
INVERT OF OUTLET IL 21.20 nom

DISCHARGE STORMWATER TO EXISTING INTER-ALLOTMENT DRAINAGE PIT 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 20.80 nom

**PIT BP1**  
450 SQUARE PIT WITH MEDIUM DUTY GRATED INLET  
TOP OF GRATE - 21.10 nom



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Issue	Description	Date	Drawn Approved
1	10m at full size		

Client  
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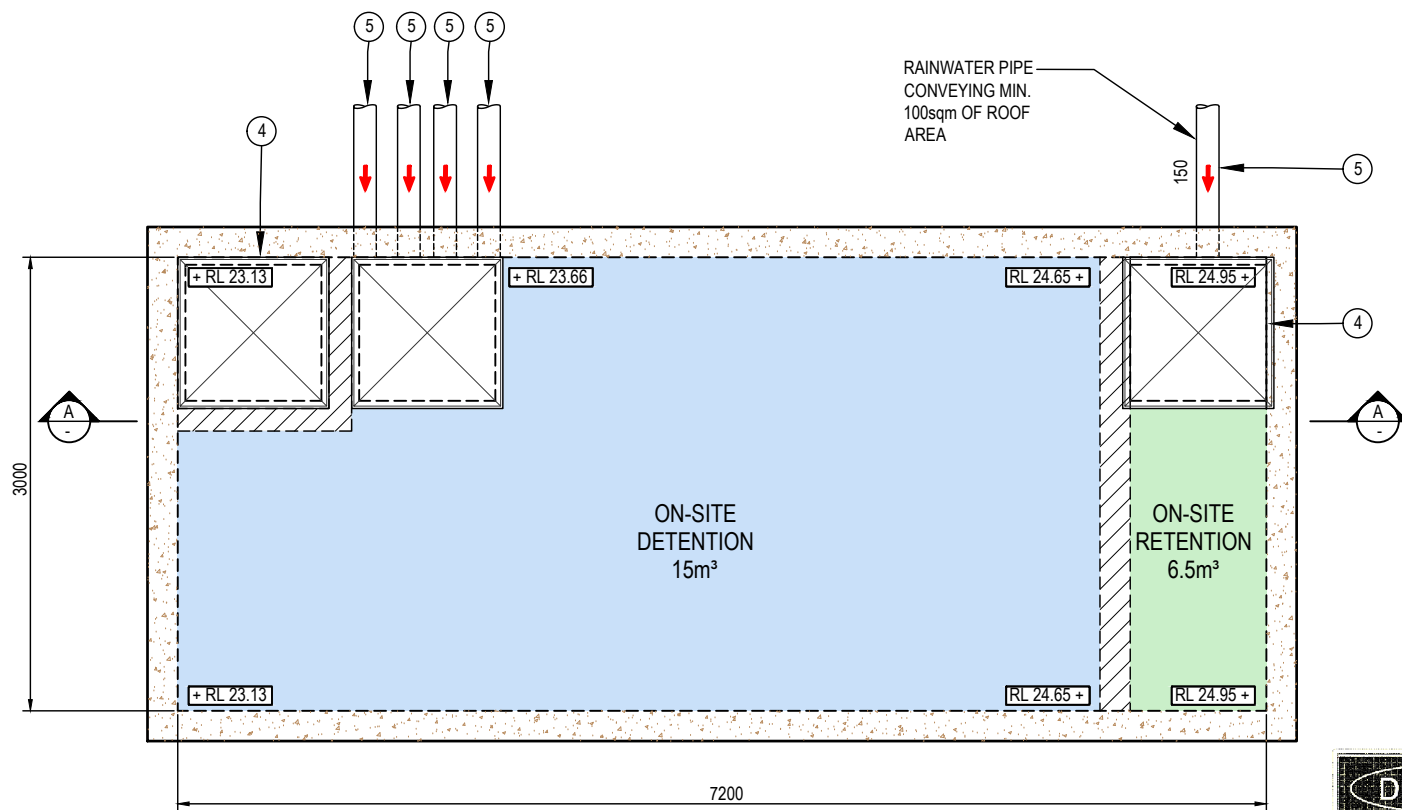
Architect  
**BARRY RUSH  
& ASSOCIATES  
PTY LTD**

**AcOR**  
CONSULTANTS  
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

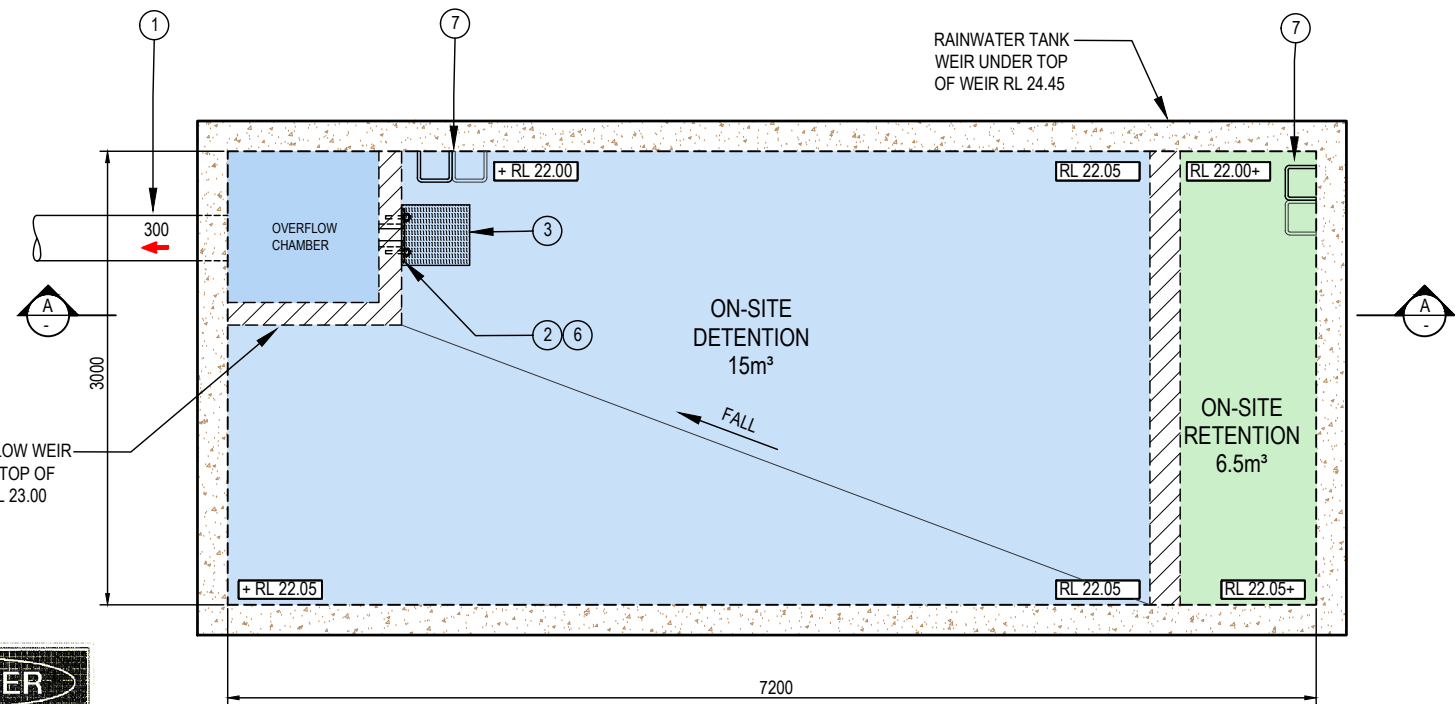
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Project  
**PROPOSED RESIDENTIAL  
DEVELOPMENT**  
LOT 17 (No. 3)  
BROOKVALE AVENUE  
BROOKVALE

Drawing Title <b>STORMWATER MANAGEMENT PLAN</b>			
Drawn RH	Date JUN 21	Scale AS NOTED	A1 Q.A. Check BAK
Designed BK	Project No. CC210062	Dwg. No. C2	Issue A



ON-SITE DETENTION / RETENTION ROOF PLAN  
SCALE - 1:25/A1, 1:50/A3

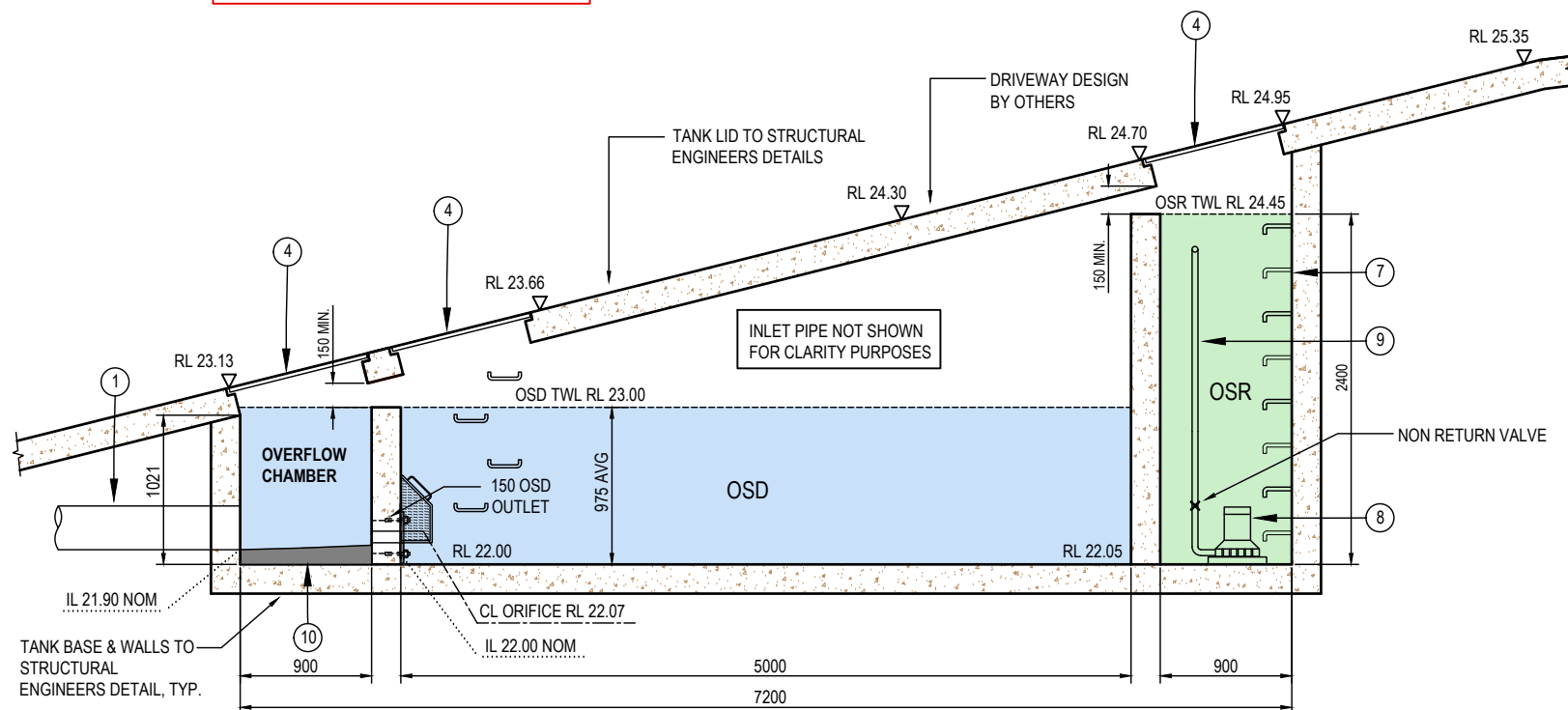


ON-SITE DETENTION / RETENTION BASE PLAN  
SCALE - 1:25/A1, 1:50/A3

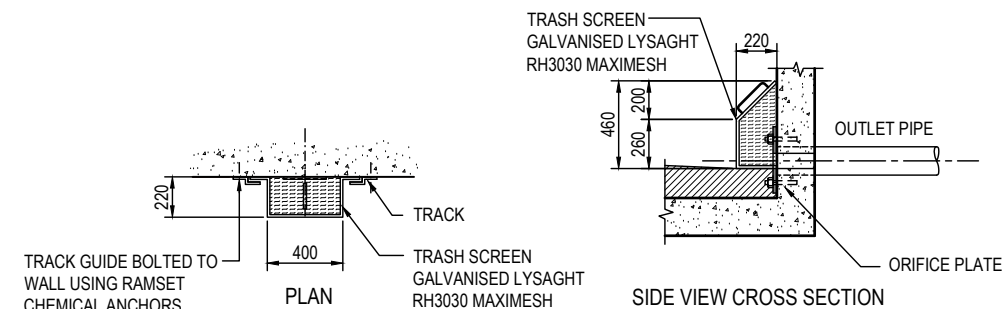


PROVIDE CONFINED SPACE SIGNAGE  
AT ENTRY POINTS INTO TANK.

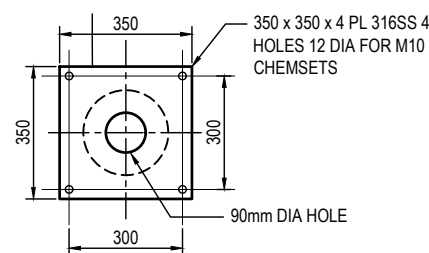
RAINWATER REUSE TO BE  
USED FOR IRRIGATION PURPOSES



SECTION A - ON-SITE DETENTION / RETENTION  
SCALE - 1:25/A1, 1:50/A3



DETAIL 1 TRASH SCREEN  
NTS



DETAIL 2 - ORIFICE PLATE  
NTS

LEGEND			
①	300 DIA OVERFLOW PIPE	⑥	OSD OUTLET
②	350 x 350 x 4 PL 316SS 4 HOLES 12 DIA FOR M10 CHEMSETS REFER TO DETAIL 2 SHEET C8	⑦	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	TRASH SCREEN LYSAGHT RH3030 GALV. REMOVABLE WITH HANDLE REFER TO DETAIL 1 SHEET CX	⑧	RAINWATER REUSE PUMP BY OTHERS
④	900 x 900 SOLID WATERTIGHT BOLTED DOWN COVER	⑨	NON POTABLE SUPPLY PVC PIPE CLASS 16 RISING MAIN - BY OTHERS
⑤	INLET PIPE/S	⑩	MASS CONCRETE BENCHING

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Issue	Description	Date	Drawn Approved
1	1cm at full size		

Client  
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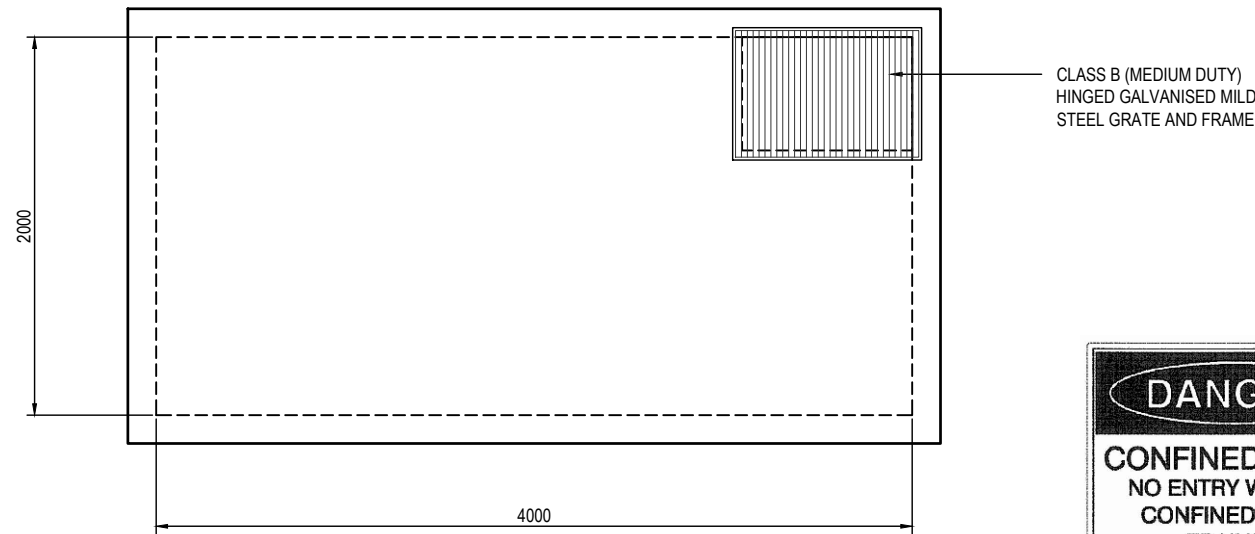
Architect  
**BARRY RUSH  
& ASSOCIATES  
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Project  
**PROPOSED RESIDENTIAL  
DEVELOPMENT**  
LOT 17 (No. 3)  
BROOKVALE AVENUE  
BROOKVALE

Drawing Title STORMWATER MANAGEMENT DETAILS SHEET No.1			
Drawn RH	Date JUN 21	Scale AS NOTED	Q.A. Check BAK
Designed BK	Project No. CC210062	Dwg. No. C3	Issue A





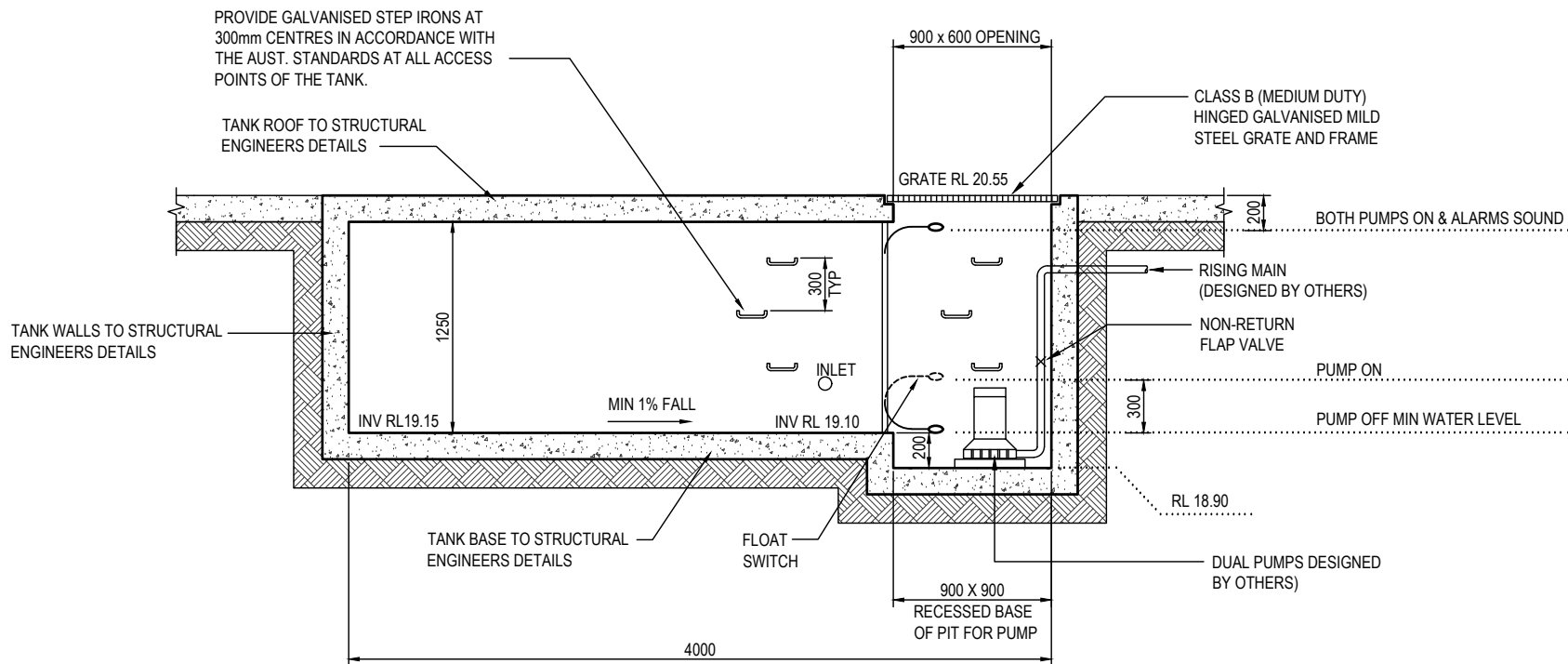
INSTALL CONFINED SPACE WARNING SIGN

PUMP OUT TANK PLAN  
SCALE 1:20/A1, 1:40/A3

### STANDARD PUMP OUT DESIGN NOTES

THE PUMP SYSTEM SHALL BE OPERATED IN THE FOLLOWING MANNER:-

1. THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE
2. A FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.
3. A SECOND FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHALL START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
4. AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.
5. A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINTS TO THE PUMP OUT STORAGE TANK.



PUMP OUT TANK  
AVERAGE HEIGHT = 1.25m  
WIDTH = 2.0m  
LENGTH = 4.0  
VOLUME PROVIDED = 10m<sup>3</sup>

TYPICAL SECTION THROUGH PUMP OUT TANK  
SCALE 1:20/A1, 1:40/A3

### PUMP-OUT TANK MAINTENANCE SCHEDULE

#### MAINTENANCE CONTRACT

NOTE: A 24 HOUR X 12 MONTHLY EMERGENCY AND MAINTENANCE CONTRACT SHALL BE OBTAINED FROM A COMPANY CAPABLE OF EXECUTING THE WORK AND SHALL BE KEPT IN FORCE BY THE PROPERTY OWNER(S) FOR THE LIFE OF THE BUILDING.

THE MAINTENANCE CONTRACT SHALL BE CARRIED OUT EVERY THREE (3) MONTHS AND SHALL INCLUDE THE FOLLOWING ACTIVITIES:

1. CLEAN OUT ALL PITS OF SILT AND DEBRIS.
2. CHECK AND CLEAN OUT, IF NECESSARY, ALL PIPELINES.
3. CHECK:
  - 3.1. PUMPS FOR WEAR
  - 3.2. PUMP OIL SEALS
  - 3.3. PUMP STRAINER AND CLEAN
4. CARRY OUT ROUTINE MAINTENANCE TO PUMPS AS RECOMMENDED BY THE MANUFACTURER.
5. CHECK OPERATIONAL SEQUENCE OF LEVEL SWITCHES, PUMPS AND CONTROL PANEL.
6. THE EMERGENCY CONTRACT SHALL PROVIDE FOR A 24 HOUR X 7 DAY PER WEEK SERVICE.

THE CONTRACTOR SHALL PROVIDE A NAME PLATE STATING NAME, WORKING HOURS, TELEPHONE NUMBER AND OUT OF HOURS NUMBER AND SUCH NAME PLATE SHALL BE FIXED TO THE FRONT OF THE CONTROL PANEL.

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North			
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1	1cm at full size		

Client  
**PRIMO DESIGN  
PTY LTD**

Architect  
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& ASSOCIATES  
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**PROPOSED RESIDENTIAL  
DEVELOPMENT**  
LOT 17 (No. 3)  
BROOKVALE AVENUE  
BROOKVALE

Drawing Title <b>STORMWATER MANAGEMENT DETAILS SHEET No.2</b>					
Drawn RH	Date JUN 21	Scale AS NOTED	A1	Q.A. Check BAK	Date 10.06.21
Designed BK	Project No. <b>CC210062</b>	Dwg. No. C4	Issue A		

# EROSION AND SEDIMENT CONTROL NOTES

## GENERAL INSTRUCTIONS

- THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT.
- 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).
- ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

## LAND DISTURBANCE INSTRUCTIONS

- 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.
- 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.
- ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.
- WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE:
  - INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
  - CONSTRUCT THE STABILISED SITE ACCESS.
  - CONSTRUCT DIVERSION DRAINS AS REQUIRED.
  - INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
  - INSTALL GEOTEXTILE INLET FILTERS AROUND ANY ON-SITE DROP INLET PITS.
  - CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
  - UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE.
  - GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
  - REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.
- ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING.
- 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

- THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
  - ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
  - 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.
  - REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT STRUCTURE HAS BEEN EXCEEDED.
  - ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY.
  - 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.
  - MAINTAIN EROSION AND SEDIMENT CONTROL STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.
- THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:
  - THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS.
  - THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS.
  - THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE.
  - THE NEED FOR DUST PREVENTION STRATEGIES.
  - 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

- 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.
- SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES.
- SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR.
- 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.
- 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.
- TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
- 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

- 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.
- 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.
- WATERWAYS AND OTHER AREAS SUBJECT TO CONCENTRATED FLOWS AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND COVER 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.
- 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.
- 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.
- 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.
- 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.
- 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

- 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.
- 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.
- ALL SITE STAFF AND SUB-CONTACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
- ANY DE-WATERING ACTIVITIES ARE TO BE CLOSELY MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.
- PROVIDE DESIGNATED VEHICULAR WASHDOWN AND MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS.

## PROCEDURE FOR DE-WATERING

- ENSURE PERMISSION FOR DE-WATERING IS RECEIVED FROM AUTHORITIES BEFORE PUMPING OUT.
- AN ON-SITE TREATMENT PROCESS DISCHARGING TO THE STORMWATER SYSTEM WILL BE IMPLEMENTED. ALL SITE WATERS DURING CONSTRUCTION WILL BE CONTAINED ON SITE AND RELEASED ONLY WHEN pH IS BETWEEN 8.5 & 6.5, SUSPENDED SOLIDS ARE LESS THAN 50mg/L, TURBIDITY LESS THAN 100 NTU'S, OIL AND GREASE LESS THAN 10mg/L AND BIOCHEMICAL OXYGEN DEMAND (BOD5) LESS THAN 30mg/L (FOR STORMS LESS INTENSE THAN 1 IN 5 YEAR EVENTS).
- METHODS OF SAMPLING AND ANALYSIS OF WATER QUALITY WILL BE IN ACCORDANCE WITH THE APPLICABLE METHOD LISTED IN THE EPA PUBLISHED APPROVED METHODS FOR THE SAMPLING ANALYSIS OF WATER POLLUTANTS IN NEW SOUTH WALES.
- WHERE LABORATORY ANALYSIS IS REQUIRED AS INDICATED BY IN-SITU TESTING, APPROPRIATE SAMPLE BOTTLES AND PRESERVATIVES WILL BE USED AND GUIDANCE FOR THE SAMPLING METHOD OBTAINED FROM APPLICABLE PARTS OF AS5667.1 AND AS5667.6. ANALYSIS WILL BE UNDERTAKEN WHERE PRACTICAL BY A NATA REGISTERED LABORATORY CERTIFIED TO PERFORM THE APPLICABLE ANALYSIS.
- A FURTHER INSPECTION WILL BE CARRIED OUT DURING A STORM EVENT (DURING WORK HOURS WHERE POSSIBLE) TO ENSURE CONTROLS ARE COPING WITH THE EVENT. THIS APPLIES TO ANY RAIN EVENT AS WELL.
- AS EXCAVATION TO TOP SOIL PROGRESSES, ANY WATER COLLECTED AT THE BOTTOM OF EXCAVATIONS WILL BE DIVERTED TO A TEMPORARY SEDIMENTATION BASIN OR SETTLEMENT TANK. IF THE WATER CONTAINS ONLY SEDIMENTS, IT WILL BE FILTERED AND PUMPED TO STORMWATER. BEFORE THIS CAN HAPPEN IT MUST CONTAIN LESS THAN 50mg/L TOTAL SUSPENDED SOLIDS.
- POLLUTED WATER MUST NOT ENTER THE STORMWATER SYSTEM. IN SOME CIRCUMSTANCES, A LIQUID WASTE COMPANY MAY BE REQUIRED TO COLLECT CONTAMINATED WATER FOR DISPOSAL AT A LICENSED TREATMENT FACILITY

										Client		Architect		Project		Drawing Title	
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EROSION & SEDIMENT LEGEND

1

INSTALL SEDIMENT FENCING REFER  
DETAIL SD 6-8, SHEET C7. 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 C7

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 C7

5

WASTE STORAGE AREA  
PROVIDE SOLID AND LIQUID  
WASTE RECEPTACLE BINS

6

BARRIER FENCING OR UTILISE  
EXISTING BOUNDARY FENCE

7

PROPOSED DISTURBED AREA

8

SITE ACCESS PROVIDE LARGE COARSE DIA  
AGGREGATE OR RECYCLED CONCRETE. IN  
ACCORDANCE WITH DETAIL SD 6-14, SHEET C7

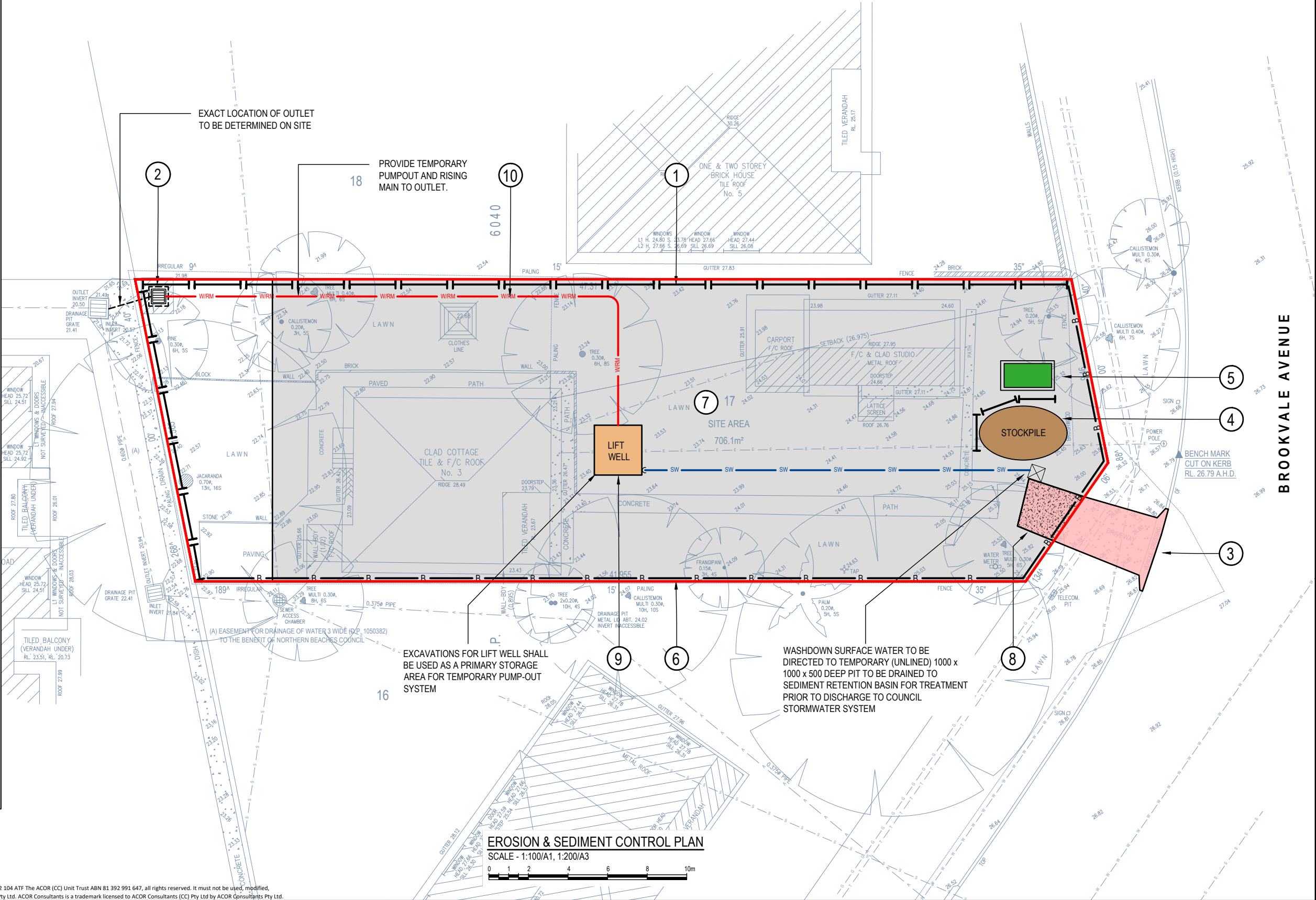
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PROVIDE TYPE 'D' SEDIMENT  
RETENTION BASIN.  
NOMINAL SIZE: 4.0m x 4.0m x 0.5m DEEP  
VOLUME = 8.0m³  
TO BE CONFIRMED AT CC STAGE  
DISCHARGE TO BE CONTROLLED PUMP  
OUT FOLLOWING FLOCCULATION

10

PROVIDE TEMPORARY PUMP OUT AND  
RISING MAIN TO OUTLET.

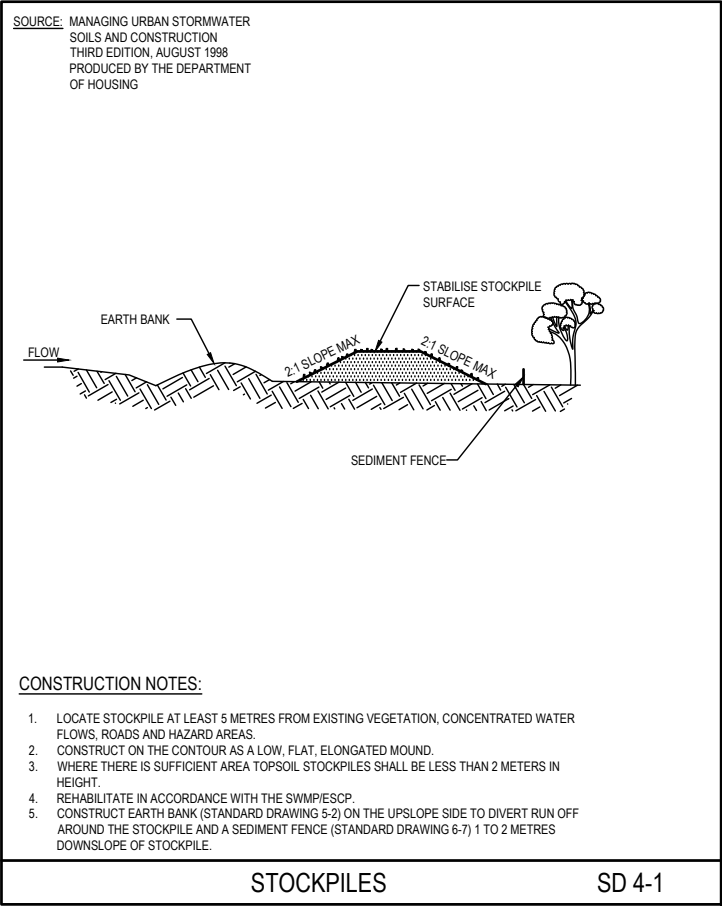
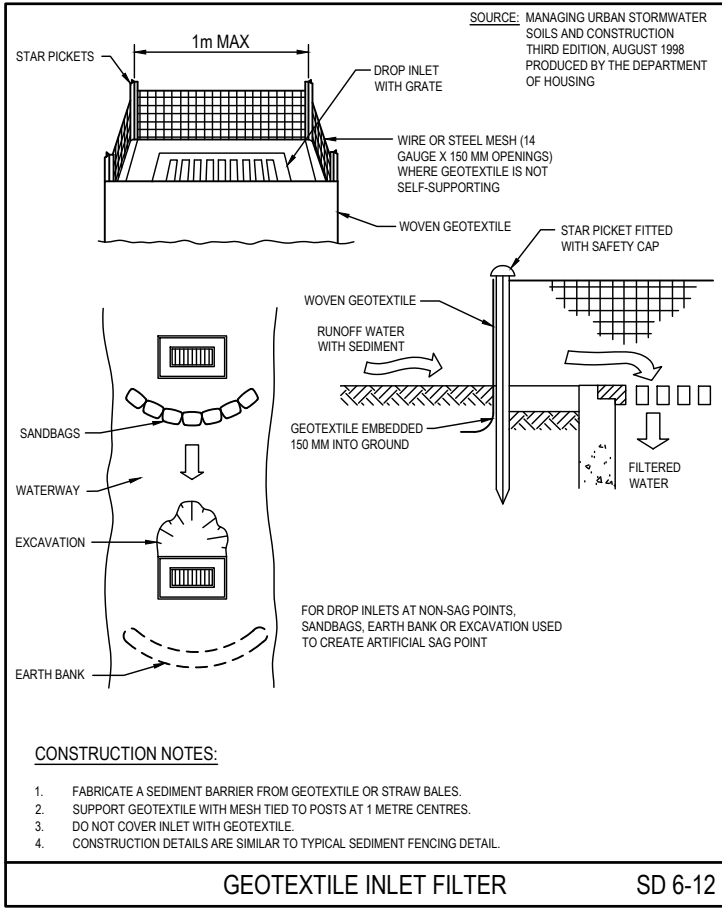
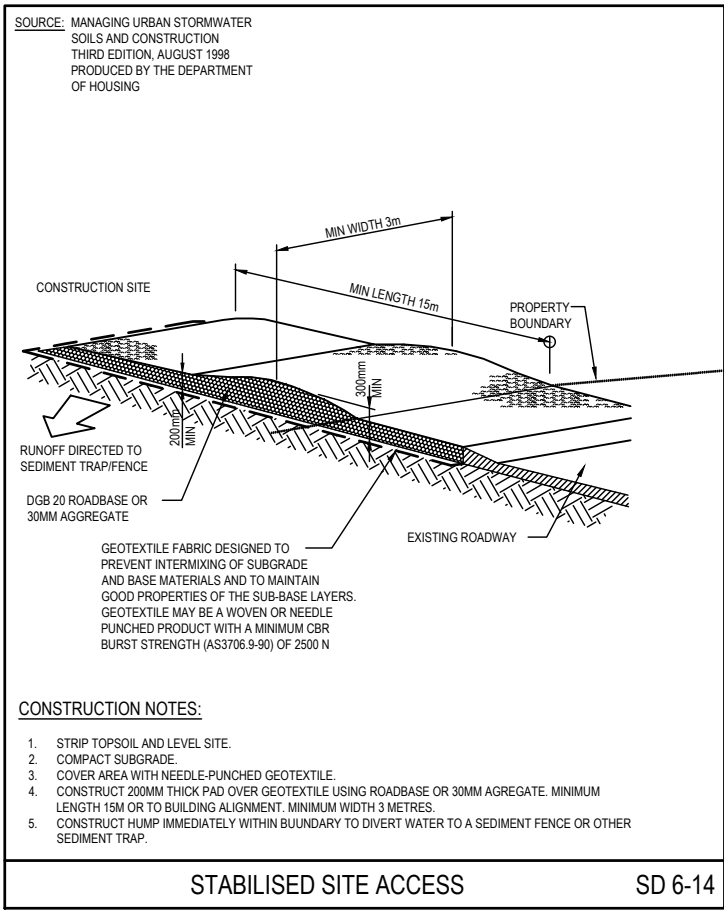
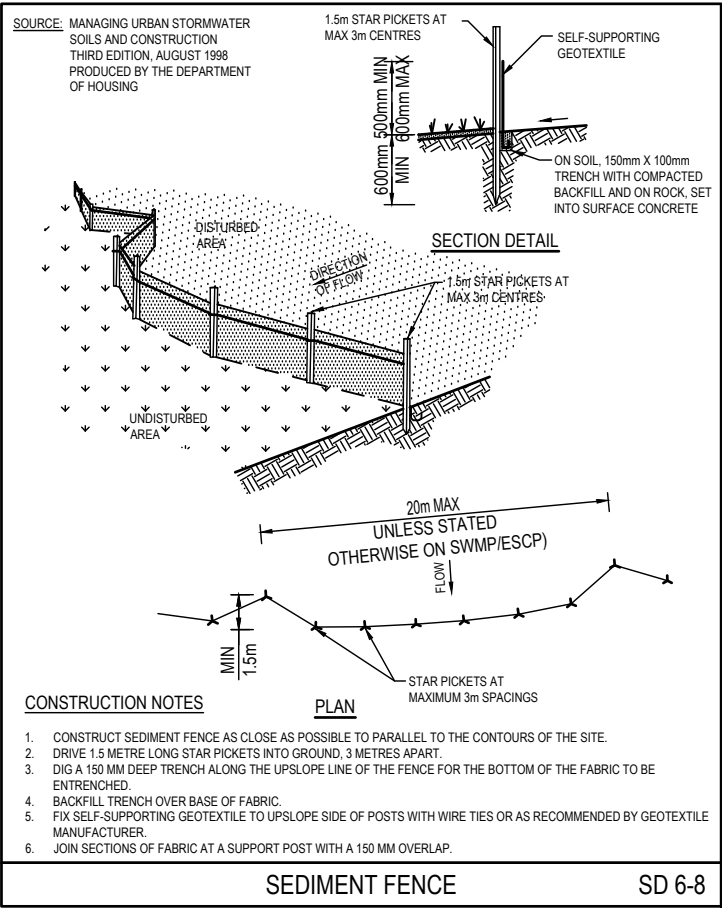
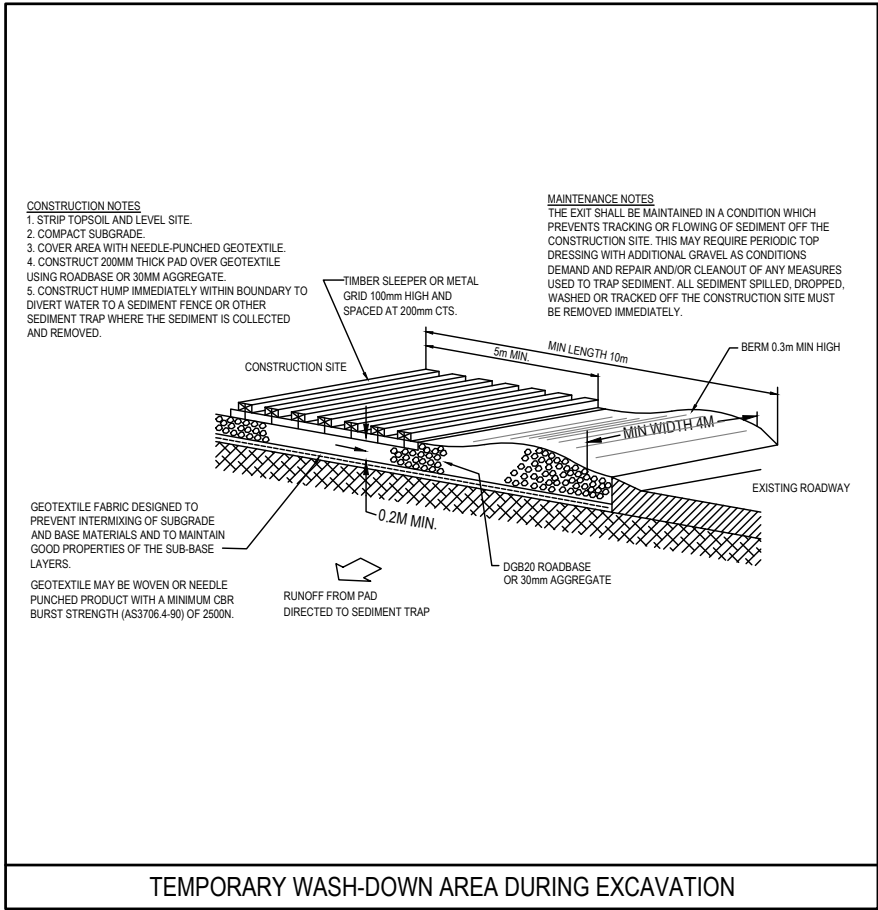
TREE BARRIERS REQUIRED IN ACCORDANCE WITH THE  
ARBORISTS REPORT



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Client				Architect				Project				Drawing Title			
PRIMO DESIGN PTY LTD				BARRY RUSH & ASSOCIATES PTY LTD				PROPOSED RESIDENTIAL DEVELOPMENT				EROSION & SEDIMENT CONTROL PLAN			
A		ISSUED FOR DEVELOPMENT APPROVAL		10.06.21		RH		BK		Date		JUN 21		Scale	
Issue		Description		Date		Drawn		Approved		Project No.		CC210062		Dwg. No.	
														C6	
														A	





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					North
A	ISSUED FOR DEVELOPMENT APPROVAL	10.06.21	RH	BK	
Issue	Description	Date	Drawn	Approved	
1	1cm at full size				

Client
PRIMO DESIGN PTY LTD

Architect
BARRY RUSH & ASSOCIATES PTY LTD

<b>AcOR</b> CONSULTANTS
ENGINEERS   MANAGERS   INFRASTRUCTURE PLANNERS   DEVELOPMENT CONSULTANTS

Project
<b>ACOR Consultants (CC) Pty Ltd</b> Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia T +61 2 4324 3499
<b>PROPOSED RESIDENTIAL DEVELOPMENT</b> LOT 17 (No. 3) BROOKVALE AVENUE BROOKVALE

Drawing Title					
EROSION & SEDIMENT CONTROL DETAIL SHEET					
Drawn	Date	Scale	A1	Q.A. Check	Date
RH	JUN 21	AS NOTED	BAK		10.06.21
Designed	Project No.	Dwg. No.	Issue		
BK	CC210062	C7	A		



Warringah Council

## On-site Stormwater Detention (OSD) Checklist

For Single Dwelling Residential Developments

This form is to be used to determine if OSD will be required for demolition and reconstruction, or construction of new single dwelling residential developments and must be completed and included with the submission of any development application for these works. Please read both sides of this form carefully for its applications, guidelines and definitions.

For assistance and support, please contact Council's Customer Service Centre on (02) 9942 2111.

### Address of Proposed Development

Address of proposed development	Lot	17	DP (if applicable)	6040
	No.	3	Street	BROOKVALE AVE
	Suburb	BROOKVALE		

### PART 1 Exemption for properties that drain naturally away from the street

Tick one only	Does the site fall naturally away from the street?
	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	If yes, stormwater drainage must be in accordance with Council's Policy No. PDS-POL 136 'Stormwater Drainage from Low Level Properties'.
	If no, proceed to the next part.

### PART 2 Is the site area less than 450m<sup>2</sup>

Tick one only	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	If yes, OSD is not required.
	If no, proceed to next part.

### PART 3 Exemption for Direct Discharge to Ocean

Tick one only	Does the site of the development drain directly to the ocean without the need to pass through a drainage control structure such as a pipe, bridge, culvert, kerb and gutter or natural drainage system?
	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	If yes, OSD is not required.
	If no, proceed to the next part.

x

### PART 4 Exemption for Flood Affected Areas

Tick one only	Is the site of the development located within an established Flood Prone Land as referred to in the Warringah Local Environmental Plan? Refer to section 2.6 of Council's OSD Technical Specification.
	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	If yes, OSD is not required.
	If no, proceed to the next part.

### PART 5 Determination of OSD Requirements

3.1 Calculations	(a) Site area 706 m <sup>2</sup> x 0.40 = 282.4 m <sup>2</sup> (b) Proposed and remaining impervious area 480 m <sup>2</sup>
Please view below examples	OSD will not be required when (a) is greater than (b) Is OSD required for this development (tick one only) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, then a design in accordance with the Streamlined Method in Council's OSD Technical Specification is to be provided with the Development Application (refer to Clause 3.1.1) If no, OSD is not required.
3.2 Example	If the proposed combined impervious area is greater than 40% of the site area, then OSD is required. <i>Example 1:</i> Site Area = 600m <sup>2</sup> Total proposed & remaining impervious area = 290m <sup>2</sup> 600 x 0.4 = 240m <sup>2</sup> (290 > 240) OSD required <i>Example 2:</i> Site Area = 800m <sup>2</sup> Total proposed & remaining impervious area = 290m <sup>2</sup> 800 x 0.4 = 320m <sup>2</sup> (290 < 320) OSD is not required

### DEFINITIONS

Designed to help you fill out this application	<b>Site area:</b> This refers to the area of the land bounded by its existing or proposed boundaries. <b>Impervious areas:</b> This refers to driveways, pathways, paved areas, hardstand areas, roofed areas, garages and outbuildings that are proposed and to be retained. Where an existing structure is to be demolished to make way for a new dwelling, only the proposed impervious areas and remaining impervious areas are to be used in the calculations. No credit is given for existing impervious areas that are not retained.
--	---

### NOTES

Please read before filling out this form	1. Other works, ancillary buildings, commercial, industrial, subdivisions and multiple occupancy developments are to comply with Council's OSD Technical Specification. 2. A reduction in the OSD volume required may be permitted. Refer to Council's "OSD Rainwater Re-use Policy for Single Residential Dwellings". If OSD is required, then a design for OSD in accordance with Council's "OSD Technical Specifications" is to be provided with the development application.
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For assistance and support, please contact Council's Customer Service Centre on (02) 9942 2111

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North				Client	PRIMO DESIGN PTY LTD	Architect	BARRY RUSH & ASSOCIATES PTY LTD	ACOR Consultants (CC) Pty Ltd Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia T +61 2 4324 3499	Project	PROPOSED RESIDENTIAL DEVELOPMENT LOT 17 (No. 3) BROOKVALE AVENUE BROOKVALE	Drawing Title	ON SITE DETENTION CHECKLIST					
A	ISSUED FOR DEVELOPMENT APPROVAL	10.06.21	RH	BK								Drawn	Date	Scale	A1	Q.A. Check	Date
												RH	JUN 21	AS NOTED		BAK	10.06.21
Issue	Description	Date	Drawn	Approved								Designed	Project No.	Dwg. No.		Issue	
												BK	CC210062	C8		A	