

EXACT ENGINEERS

PROPOSED ALTERATIONS, ADDITIONDS & SECONDARY DWELLING

21 ROYAL AVENUE, BIRRONG

DRAWING INDEX - STORMWATER						
Sheet Number Revision Date Sheet Title						
S-0.0	Α	03/02/25	COVER SHEET			
S-0.1	А	03/02/25	GENERAL NOTES - SHEET 1			
S-1.1	Α	03/02/25	STORMWATER PLAN			
S-2.1	Α	03/02/25	STORMWATER DETAILS - SHEET 1			
S-2.2	Α	03/02/25	STORMWATER DETAILS - SHEET 2			
S-2.3	Α	03/02/25	STORMWATER DETAILS - SHEET 3			





PROJECT PROPOSED ALTERATIONS, ADDITIONDS & SECONDARY		ISSUE / REVISION DESCRIPTION	DATE	TITLE	NAME
DWELLING 21 ROYAL AVENUE,BIRRONG	Α	ISSUE FOR APPROVAL	03/02/25	DRAWN	E.N
	-	-	-		□.IN
	-	-	-	CHECKED	Z.C
TITLE	-	-	-	CHECKED	2.0
COVER SHEET	-	-	-	SCALE @ A3	N/A
		-	-	JOB No.	SHEET No.
AKTREUM BUILDING DESIGNER	-	-	-	JB770	0.00
AKTREUM BUILDING DESIGNER		-	-	36770	S-0.0

GENERAL NOTES:

- 1. ALL WORKS SHALL BE IN ACCORDANCE WITH B.C.A AND AS3500.3.
- 2. ALL EXISTING LEVELS TO BE CONFIRMED BY BUILDER PRIOR TO CONSTRUCTION.
- 3. THE BUILDER SHALL ENSURE THAT THE STORMWATER ENGINEERS 2. DRAWINGS CORRESPOND TO THE ARCHITECTURAL, STRUCTURAL, AND LANDSCAPING DRAWINGS. IF THERE EXISTS ANY DISCREPANCIES BETWEEN THE DRAWINGS, THE BUILDER SHALL REPORT THE DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORKS.
- 4. PRIOR TO COMMENCING ANY WORKS, THE BUILDER SHALL ENSURE THAT THE INVERT LEVELS OF WHERE THE SITE STORMWATER SYSTEM CONNECTS INTO THE COUNCILS KERB/DRAINAGE SYSTEM MATCHED THE DESIGN LEVELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER.
- 5. THE DRAINAGE CONTRACTOR IS TO LOCATE AND RELOCATE AS NECESSARY ALL SERVICES ON SITE.
- ALL LEVELS SHALL RELATE TO THE ESTABLISHED BENCH MARK. THIS IS TYPICALLY METRES TO AUSTRALIAN HEIGHT DATUM (AHD).
- 7. ALL DOWNPIPES TO BE 100MM DIAMETER UNLESS NOTED OTHERWISE.
- 8. ALL DOWN PIPES TO HAVE LEAF GUARDS
- 9. ALL LINES ARE TO BE 100MM DIAMETER uPVC AT A MINIMUM 1.0% SLOPE UNLESS NOTED OTHERWISE. LINES ARE TO BE SEWER-GRADE AND SEALED.
- 10. ALL PIPES TO HAVE MINIMUM 150MM COVER IF LOCATED WITHIN PROPERTY.
- ALL THE CLEANING EYES (OR INSPECTION EYES) FOR THE UNDERGROUND PIPES HAVE TO BE TAKEN UP TO THE FINISHED GROUND LEVEL FOR EASY IDENTIFICATION AND MAINTENANCE PURPOSES.
- 12. ALL SUB-SOIL DRAINAGE SHALL BE OF A MINIMUM 100MM DIAMETER AND SHALL BE PROVIDED WITH A FILTER SOCK. THE SUBSOIL DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH DETAILS TO BE PROVIDED BY THE LANDSCAPE ARCHITECT OR STORMWATER ENGINEER.
- 13. ALL RETAINING WALLS SHALL BE CONSTRUCTED COMPLETELY WITHIN THE PROPERTY BOUNDARY LIMITS TO DETAILS PREPARED BY THE STRUCTURAL ENGINEER. WALLS FORMING THE ON-SITE DETENTION SYSTEM SHALL BE OF MASONARY/BRICK/CONCRETE CONSTRUCTION AND WATER TIGHT.
- 14. ALL MULCHING TO BE USED WITHIN THE AREA DESIGNATED AS ON-SITE DETENTION STORAGE SHALL BE OF A NON-FLOTABLE MATERIAL SUCH AS DECORATIVE RIVER GRAVEL. PINE PARK MULCHING SHALL NOT BE USED WITHIN THE DETENTION STORAGE AREA.
- 15. ALL DRAINAGE WORKS ARE TO AVOID TREE ROOTS. ROOT BARRIER TO BE INSTALLED ADJACENT TO TREE ZONES WHERE DRAINAGE MAY BE AT RISK.
- 16. ALL WORK WITHIN COUNCIL RESERVE TO BE INSPECTED BY COUNCIL PRIOR TO CONSTRUCTION.
- 17. COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL.

RAINWATER TANKS:

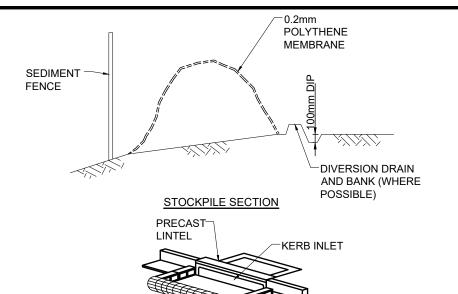
- RAINWATER TANK, DRAINED ROOF AREAS AND REUSE PLUMBING TO COMPLY WITH BASIX REQUIREMENTS AND CERTIFICATE.
- 2. ADEQUATE SCREENING TO PREVENT MOSQUITO BREEDING AND ENTRY OF ANIMAL OR FLOATING MATTER.
- 3. A 'FIRST FLUSH' DIVERSION TO REMOVE ROOF CONTAMINANTS MUST BE PROVIDED.
- TANKS TO BE PUMPED TO TOP-UP FROM THE POTABLE WATER SUPPLY DURING DRY PERIOD WHEN THE TANK IS 80% EMPTY.
- 5. PUMP TO BE SUITABLY SOUNDPROOFED.
- 6. A SIGN IS TO BE INSTALLED NEAR THE RAINWATER TANK HIGHLIGHTING "NOT FOR HUMAN CONSUMPTION".

SEDIMENT & EROSION CONTROL:

- PLANS ARE MINIMUM REQUIREMENTS AND ARE TO BE USED AS A GUIDE ONLY. EXACT MEASURES USED SHALL BE DETERMINED ON SITE IN CONJUNCTION WITH PROGRAM OF CONTRACTORS WORKS.
- 2. IMMEDIATELY FOLLOWING SETTING OUT OF THE WORKS, BUT PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL WALK THE SITE TO NOMINATE THE LOCATIONS AND TYPES OF SEDIMENT AND EROSION CONTROL MEASURE TO BE ADOPTED. THESE MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CLEARING OR EARTHWORKS AND MAINTAINED UNTIL THE WORKS ARE COMPLETED AND NO LONGER POSE AN EROSION HAZARD, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
- 3. IMMEDIATELY FOLLOWING SETTING OUT OF THE WORKS, BUT PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL WALK THE SITE TO IDENTIFY AND MARK TREES WHICH ARE TO BE PRESERVED. NOTWITHSTANDING THE ABOVE, THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO MINIMISE DISTURBANCE TO EXISTING VEGETATION AND GROUND COVER OUTSIDE THE MINIMUM AREAS REQUIRED TO COMPLETE THE WORKS AND SHALL BE RESPONSIBLE FOR RECTIFICATION, AT ITS OWN COST, OF ANY DISTURBANCE BEYOND THOSE AREAS.
- 4. PROVIDE GULLY GRATE INLET SEDIMENT TRAPS AT ALL GULLY PITS.
- 5. PROVIDE SILT FENCING ALONG PROPERTY LINE AS DIRECTED BY SUPERINTENDENT
- 6. ADDITIONAL CONTROL DEVICES TO BE PLACED WHERE DIRECTED BY THE
- 7. ALTERNATIVE DESIGNS TO BE APPROVED BY SUPERINTENDENT PRIOR TO CONSTRUCTION.
- 8. WASH DOWN/RUMBLE AREA TO BE CONSTRUCTED WITH PROVISIONS RESTRICTING ALL SILT AND TRAFFICKED DEBRIS FROM ENTERING THE STORMWATER SYSTEM.
- 9. NO WORK OR STOCKPILING OF MATERIALS TO BE PLACED OUTSIDE OF SITE WORK
- APPROPRIATE EROSION AND SEDIMENT CONTROLS TO BE USED TO PROTECT STOCKPILES AND MAINTAINED THROUGHOUT CONSTRUCTION.
- 11. IT IS THE CONTRACTORS RESPONSIBILITY TO TAKE DUE CARE OF NATURAL VEGETATION. NO CLEARING IS TO BE UNDERTAKEN WITHOUT PRIOR APPROVAL FROM THE SUPERINTENDENT.
- 12. TO AVOID DISTURBANCE TO EXISTING TREES, EARTHWORKS WILL BE MODIFIED AS DIRECTED ON SITE BY THE SUPERINTENDENT.

SEDIMENT FENCE:

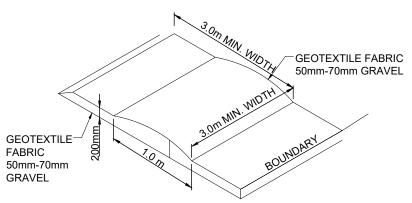
- 1. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS WITH GALVANISED WIRE TIES. STAPLES OR ATTACHMENT BELTS.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 150MM AND FOLDED.
- 3. POSTS SHALL NOT BE SPACED MORE THAN 3.0 METRES APART
- FOR EXTRA STRENGTH TO SILT FENCE, WOVEN WIRE (14MM GAUGE, 150MM MESH SPACING) TO BE FASTENED SECURELY BETWEEN FILTER CLOTH AND POSTS BY WIRE TIES OR STAPLES
- 5. INSPECTIONS SHALL BE PROVIDED ON A REGULAR BASIS, SPECIALLY AFTER RAINFALL AND EXCESSIVE SILT DEPOSITS REMOVED WHEN "BULGES" DEVELOP IN SILT FENCE SEDIMENT FENCES SHALL BE CONSTRUCTED WITH SEDIMENT TRAPS AND EMERGENCY SPILLWAYS AT SPACINGS NO GREATER THAN 40M ON FLAT TERRAIN DECREASING TO 20M SPACINGS ON STEEP TERRAIN
 - ALL WORK TO BE IN ACCORDANCE WITH AS3500.3.1 AND AS3500.3.2
 - NOTIFY ENGINEER OF ANY DISCREPANCIES ON SITE
- DIAL BEFORE YOU DIG. PRIOR TO COMMENCING WORK
- SILT ARRESTOR/ GRATED INLET PITS 450X450 U.N.O
- ALL WORK IN ACCORDANCE WITH THE LOCAL GOVERNMENT ACT. COUNCILS STANDARD SPECIFICATION AND CODES AND TO THE SATISFACTION OF COUNCILS SUPERVISING OFFICER.
- THIS PLAN TO BE READ IN CONJUNCTION WITH PLANS PREPARED BY THE ARCHITECTS AND STRUCTURAL ENGINEERS PLANS.
- INSTALL TEMPORARY SEDIMENT BARRIERS AROUND ALL INLET PITS TO DETAIL UNTIL SURROUNDING AREAS ARE PAVED OR GRASSED.
- CONTRACTOR IS TO VERIFY THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF EXCAVATION FOR DRAINAGE.
- ALL PITS TO BE BENCHED TO HALF PIPE SECTION AND TO HAVE GALVANISED STEEL GRATES AND SURROUNDS.
- PIPE GRADES SHOWN ARE INDICATIVE MINIMUM
- PIPES ARE TO BE LAID TO I.L. LEVELS INDICATED AT PITS.
- ALL STORMWATER TO CONNECT TO EXISTING STORMWATER MAIN, LOCATION TO BE CONFIRMED ONSITE



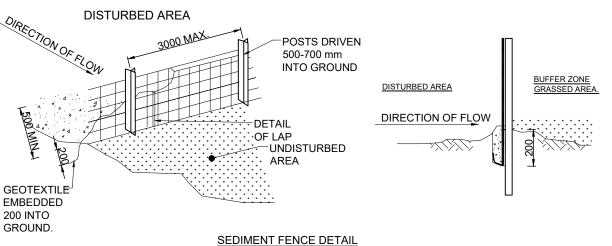


SPACEF

BLOCKS



TEMPORARY CONSTRUCTION



GESIMEIVITE

ROLL OF NETTING

FILLED WITH

GRAVEL

50mm TO 75mm





PROJECT		ISSUE / REVISION DESCRIPTION	DATE	TITLE	NAME
PROPOSED ALTERATIONS, ADDITIONDS & SECONDARY DWELLING	Α	ISSUE FOR APPROVAL	03/02/25	DRAWN	E.N
21 ROYAL AVENUE,BIRRONG	-	-	-	DRAWN	E.IN
21 NOTAL AVERGE, BIR NOTO	-	-	-	CHECKED	Z.C
TITLE	-	-	-	CHECKED	2.0
GENERAL NOTES - SHEET 1	-	-	-	SCALE @ A3	N/A
	-	-	-	JOB No.	SHEET No.
CLIENT AKTREUM BUILDING DESIGNER	-	-	-	JB770	S-0.1
ARTREUM BUILDING DESIGNER	-	-	-	05/70	0-0.1

DESIGN SUMMARY

CANTERBURY-BANKSTOWN COUNCIL SITE AREA = 490.5 (APPROX) m² MAIN DWELLING ROOF AREA = 220.7 m² (APPROX) SECONDARY DWELLING ROOF AREA = 85.0 m²

1:100 ARI 5MIN. = 202 mm/hr 1:20 ARI 5MIN. = 160 mm/hr CATCHMENT PER DP = 30m²

(APPROX)

- 1. EAVE GUTTER MINIMUM EFFECTIVE AREA
- 2. ALL CHARGED LINES MUST BE OF PRESSURE GRADE AND JOINTS ARE TO BE SOLVENT WELDED
- THE PIPE SYSTEM INCLUDING DOWNPIPES MUST BE CONSTRUCTED FROM SUITABLY DURABLE MATERIALS
- 4. FLUSHING POINTS/SEALED CLEANING EYES ARE TO BE PROVIDED AT LOWEST POINTS IN THE SYSTEM AND AT FRONT BOUNDARY PRIOR TO COUNCIL LAND AND SHOULD BE EASE TO ACCESS
- 5. ALL SURFACE PIT SHALL BE CAST IN SITU OR PRECAST CONCRETE PIT

OSD WARRANT:

SITE AREA = 490.5m2 (APPROX) PROPOSED IMPERVIOUS AREA = 358.2m2 PROPOSED PERVIOUS AREA = 132.3m2

\$\frac{358.2}{490.5} \times 100 = 73.0\% IMPERVIOUS AREA HENCE NO OSD REQUIRED AS IT IS LESS THAN 75\%, REFER TO CANTERBURY BANKSTOWN DCP 2023, CHAPTER 3.1 - DEVELOPMENT ENGINEERING STANDARDS, SECTION 4 - ON-SITE DETENTION SYSTEMS.

LEGEND



PROPOSED STORMWATER

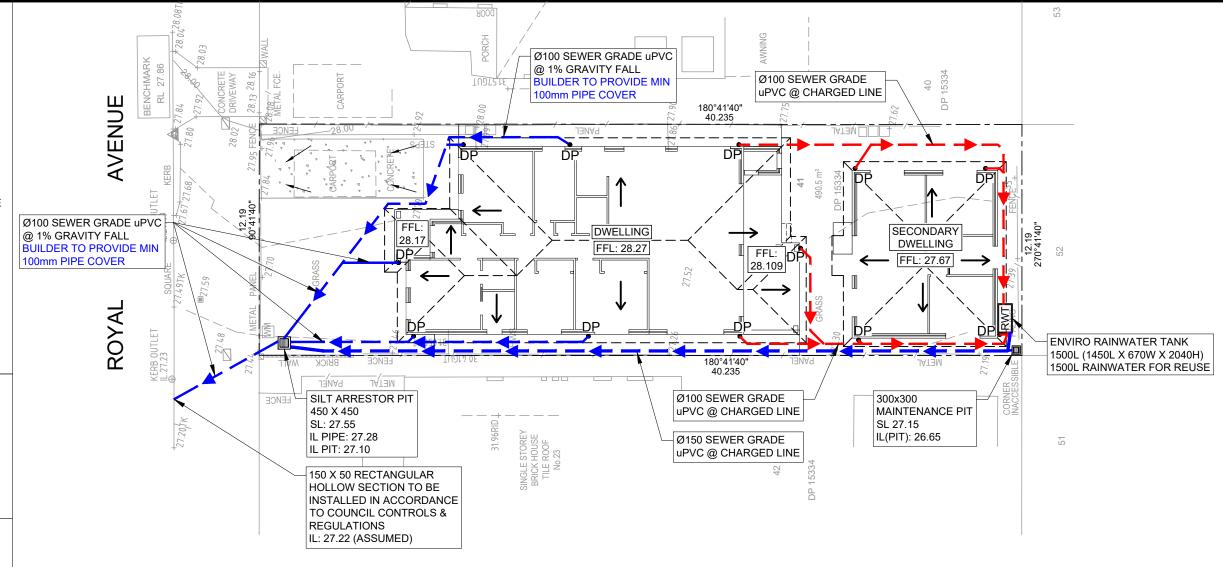
DRAINING TO RWT

ROOF SLOPE

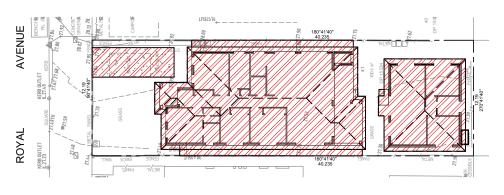
SURFACE FLOW ARROWS

DP ● 90Ø DOWNPIPE

RWT PROPOSED RWT



GROUND FLOOR - STORMWATER PLAN



SITE IMPERVIOUS PLAN 1:400 SERVICES SHOWN ARE INDICATIVE ONLY.
CONTRACTOR SHALL CONFIRM ALL SERVICE
LOCATIONS AND DEPTH PRIOR TO EXCAVATION

ALL PIPES AND GUTTERS SIZED FOR STORM EVENTS UP TO AND INCLUDING THE 5% AEP. ALL PIPES TO BE SEWER GRADE uPVC

ALL DRAINAGE LINES BEND AND PITS ARE TO BE SEALED.

PLUMBER TO MAKE GOOD CONNECTION TO COUNCIL STORMWATER PIPE. IF ANY ISSUES CONTACT ENGINEER IMMEDIATELY.

ALL DRAINAGE LINES ARE TO BE A MINIMUM OF Ø100mm SEWER GRADE uPVC @ 1% UNLESS NOTED OTHERWISE. ALL PIPES SIZED FOR 1% AEP STORM EVENT

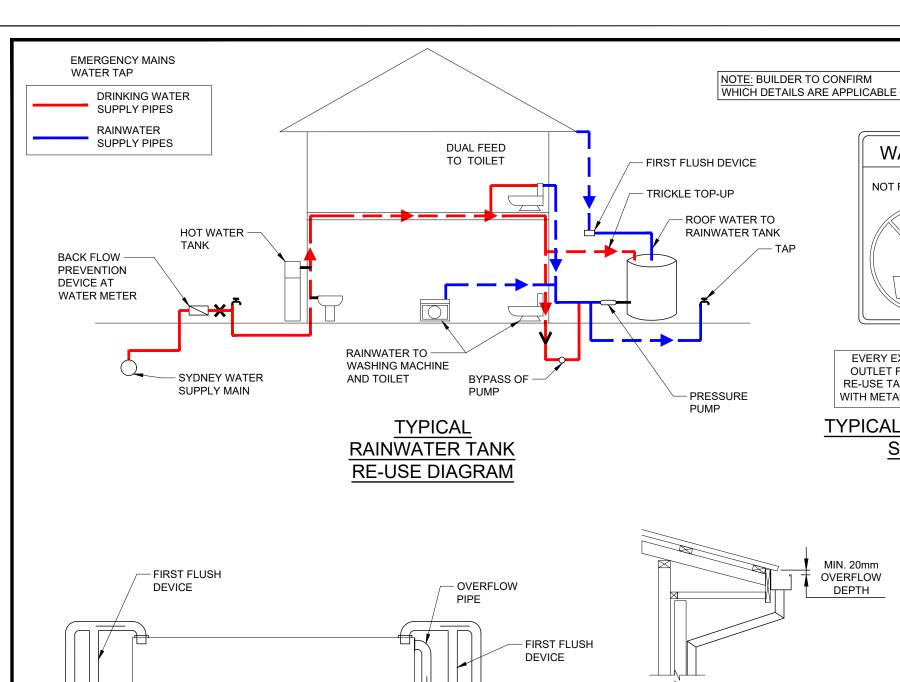
ALL PIPE WORK IS SHOWN INDICATIVELY/
DIAGRAMMATICALLY AND SHOULD NOT BE SCALED OF
THE PLAN, THE DOWNPIPES ARE TO RUN ALONG THE WALL
OF THE SECONDARY DWELLING

- 1. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S DCP
- 2. THE CONTRACTOR IS TO LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE IF NECESSARY
- 3. ALL PIPES ARE TO BE 100mm U.P.V.C ON 1% MINIMUM GRADE U.N.O AND TO HAVE MIN 200mm COVER





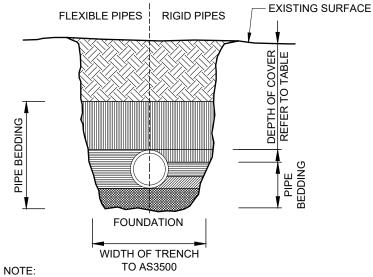
PROJECT		REV	ISSUE / REVISION DESCRIPTION	DATE	TITLE	NAME
PROPOSED ALTERATIONS, ADDITIONDS & SECONDARY DWELLING	Α	ISSUE FOR APPROVAL	03/02/25	DD AVA/N	E.N	
	21 ROYAL AVENUE,BIRRONG	-	-	-	DRAWN	E.IN
	ZT NOTAL AVENUE, BINNONG	-	-	-	CHECKED	7.0
TITLE		-	-	-	CHECKED	Z.C
	STORMWATER PLAN	-	-	-	SCALE @ A3	1:200
		-	-	-	JOB No.	SHEET No.
CLIENT	AKTREUM BUILDING DESIGNER	-	-	-	JB770	S-1.1
	AKTREUM BUILDING DESIGNER	-	-	-	35770	0-1.1





EVERY EXTERNAL SUPPLY OUTLET FROM RAINWATER RE-USE TANK TO BE LABELED WITH METALLIC WARNING SIGN

TYPICAL WARNING SIGN



STORMWATER DRAINS CONSTRUCTED OF OTHER THAN CAST IRON. DUCTILE IRON OR GALVANISED STEEL HAVING COVER LESS THAN THAT SPECIFIED IN THE TABLE SHALL

BE COVERED WITH AT LEAST 50mm OVERLAY AND SHALL BE PAVED WITH AT LEAST:

a. 100mm THICKNESS OF REINFORCED CONCRETE WHERE SUBJECT TO HEAVY VEHICULAR LOADING.

TYPICAL PIPE LAYING DETAIL

LEGEND - TRENCH BACKFILL									
SYMBOL FLEXIBLE PIPES RIGID PIPES									
	BACK FILL								
	PIPE OVERLAY								
	PIPE SIDE SUPPORT SIDE ZONE								
	-	HAUNCH ZONE							
	PIPE UNDERLAY	BED ZONE							

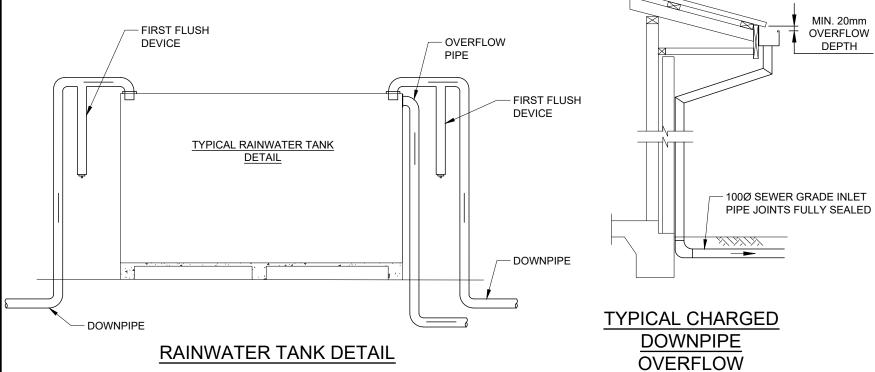
MINIMUM PIPE COVER

(FROM FINISHED SURFACE TO TOP OF PIPE)

(FROM FINISHED SURFA	CE TO TOP OF PIPE)	
	MINIMUN	I COVER (mm)
FOOTINGS	CAST/ DUCTILE	OTHER AUTHORISED
	IRON GAL STEEL	PRODUCTS(*)
1. NOT SUBJECT TO VEHICULAR LOADING:		
A. WITHOUT PAVEMENT		
I. FOR SINGLE DWELLING.	0	100
ii. OTHER THAN SINGLE DWELLINGS.	0	300
B. WITH PAVEMENT OF		
BRICK/ UNREINFORCED CONCRETE	0(**)	50(**)
1. SUBJECT TO VEHICULAR LOADING:		
A. OTHER THAN ROADS:		
I. WITHOUT PEVEMENT.	300	450
ii. WITH PAVEMENT OF.	0(** 4)	40/** #\
- REINF. CONC. FOR HEAVY VEHICLES	0(** #)	10(** #)
- BRICK/UNREINF. CONC. LIGHT VEHICLES B. ROADS	0(** #)	75(** #)
i. SEALED	300	500
ii. UNSEALED	300	500
3. SUBJECT TO CONSTRUCTION VEHICLES OR IN	1330	
EMBANKMENT CONDITIONS	300	500

*) INCLUDES OVERLAY ABOVE THE TOP OF THE PIPE OF NOT LESS THAN 50mm THICK
**) BELOW THE UNDERSIDE OF THE PAVEMENT

#) SUBJECT TO COMPLIANCE WITH AS1762. AS2033. AS/NZS 2566.1. AS3725 OR AS 4060.

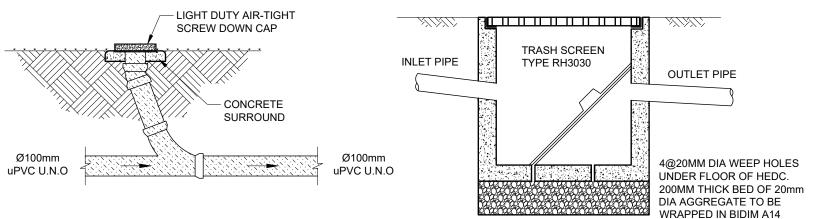


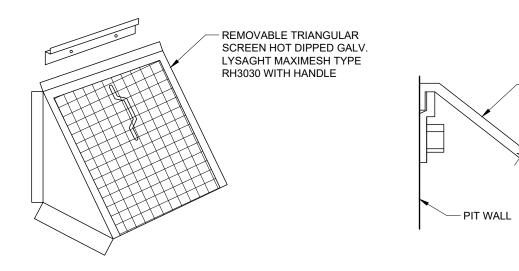




PROJECT PRODUCED ALTERATIONS ADDITIONES & SECONDARY		ISSUE / REVISION DESCRIPTION	DATE	TITLE	NAME
PROPOSED ALTERATIONS, ADDITIONDS & SECONDARY DWELLING 21 ROYAL AVENUE, BIRRONG	Α	ISSUE FOR APPROVAL	03/02/25	DD AVA/NI	E.N
	-	-	-	DRAWN	
2110171271721102,511110110	-	-	-	CHECKED	Z.C
TITLE	-	-	-	CHECKED	2.0
STORMWATER DETAILS - SHEET 1	-	-	i	SCALE @ A3	1:20
	-	-	-	JOB No.	SHEET No.
AKTREUM BUILDING DESIGNER	-	-	-	JB770	S-2.1
AVIVEON BOILDING DESIGNEK		_		105770	O 2.1

NOTE: BUILDER TO CONFIRM WHICH DETAILS ARE APPLICABLE



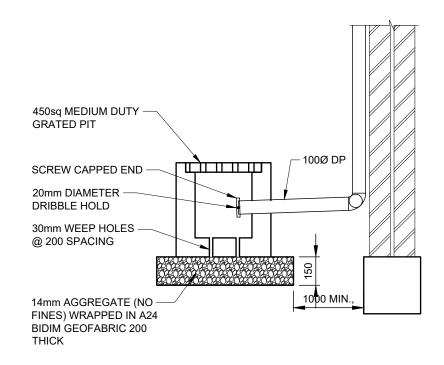


SCREEN

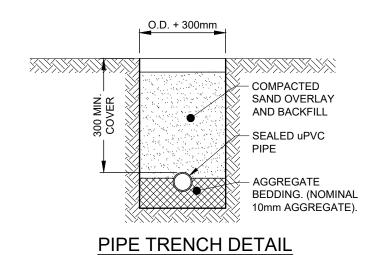
TYPICAL INSPECTION RISER DETAIL

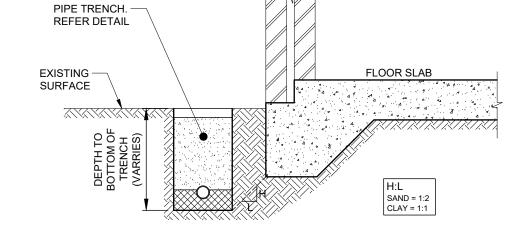
TYPICAL SILT ARRESTOR
PIT DETAIL

TYPICAL MULTI-PURPOSE FILTER SCREEN



TYPICAL "CLEAN-OUT" PIT FOR CHARGED LINES



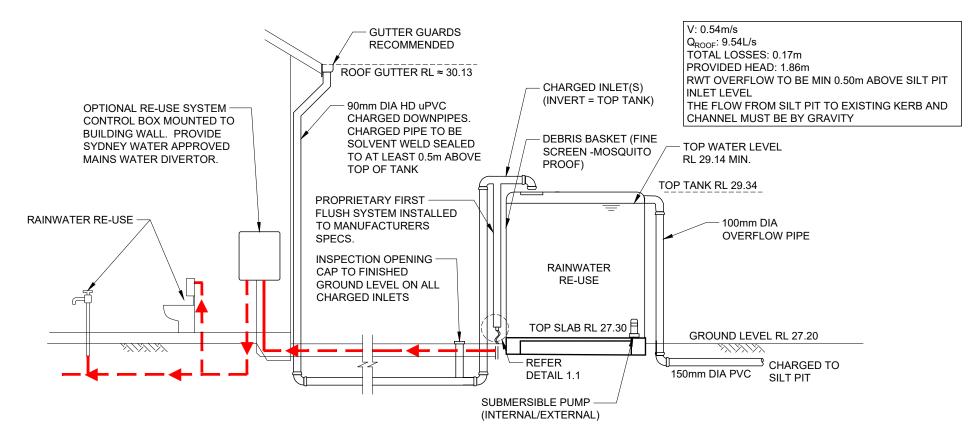


TRENCH EXCAVATION NEAR FOOTINGS

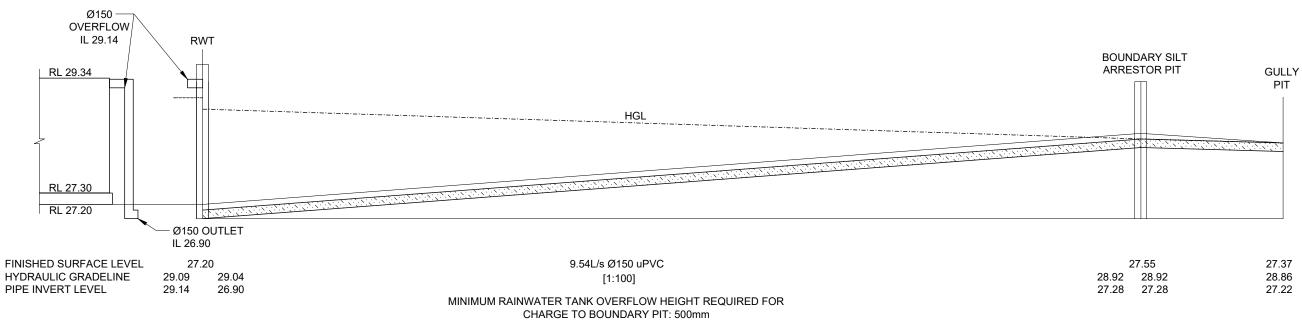




PROJECT PROPOSED ALTERATIONS, ADDITIONDS & SECONDARY DWELLING 21 ROYAL AVENUE, BIRRONG	REV	ISSUE / REVISION DESCRIPTION	DATE	TITLE	NAME
	Α	ISSUE FOR APPROVAL	03/02/25	DRAWN	E.N
	-	-	-	DRAWN	E.IN
ZI NOTAL AVENUE, BINNONG		-	-	CHECKED	Z.C
TITLE	-	-	-	CHECKED	2.0
STORMWATER DETAILS - SHEET 2	-	-	-	SCALE @ A3	1:20
-		-	-	JOB No.	SHEET No.
AKTREUM BUILDING DESIGNER	-	-	-] JB770	S-2.2
AK I REUM BUILDING DESIGNER		_	_	30110	0-2.2



RAINWATER RE-USE TANK



HGL ANALYSIS DIAGRAM





PROJECT		ISSUE / REVISION DESCRIPTION	DATE	TITLE	NAME
PROPOSED ALTERATIONS, ADDITIONDS & SECONDARY DWELLING 21 ROYAL AVENUE, BIRRONG	Α	ISSUE FOR APPROVAL	03/02/25	DD AVA/A	E.N
	-	-	-	DRAWN	E.IN
ZI NO MENVENOL, BINNONO	-	-	-	CHECKED	Z.C
TITLE	-	-	-	CHECKED	2.0
STORMWATER DETAILS - SHEET 3		-	-	SCALE @ A3	1:20
	-	-	-	JOB No.	SHEET No.
CLIENT AKTREUM BUILDING DESIGNER	-	-	-	JB770	S-2.3
ANTREUM BUILDING DESIGNER		-	-	35770	0 2.0