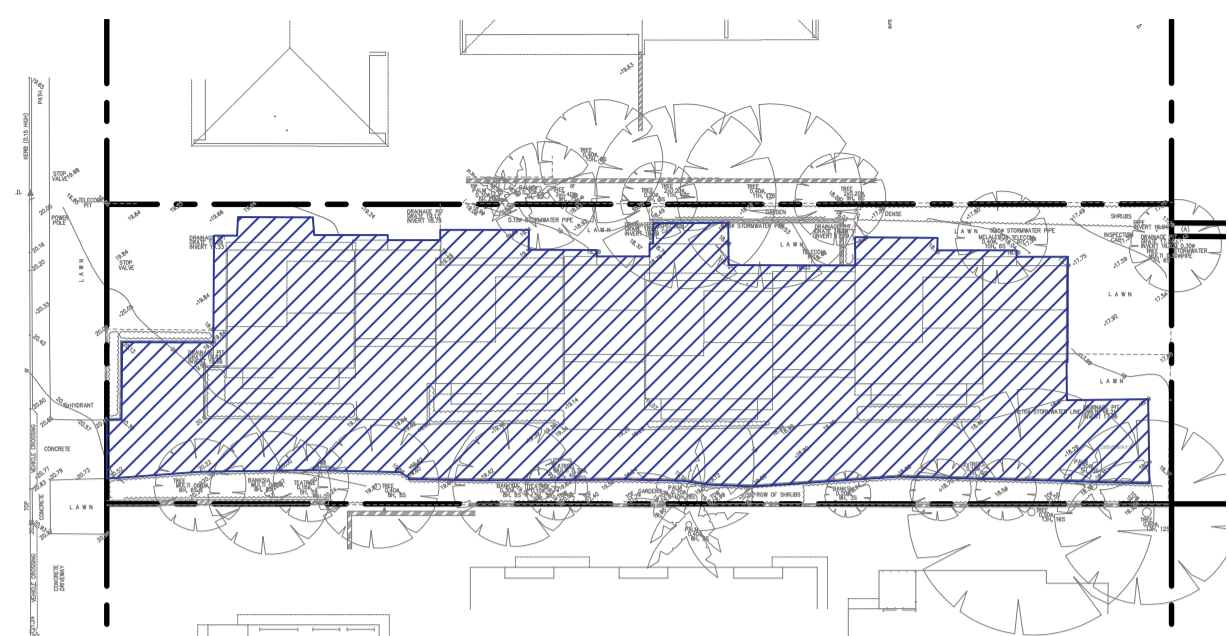


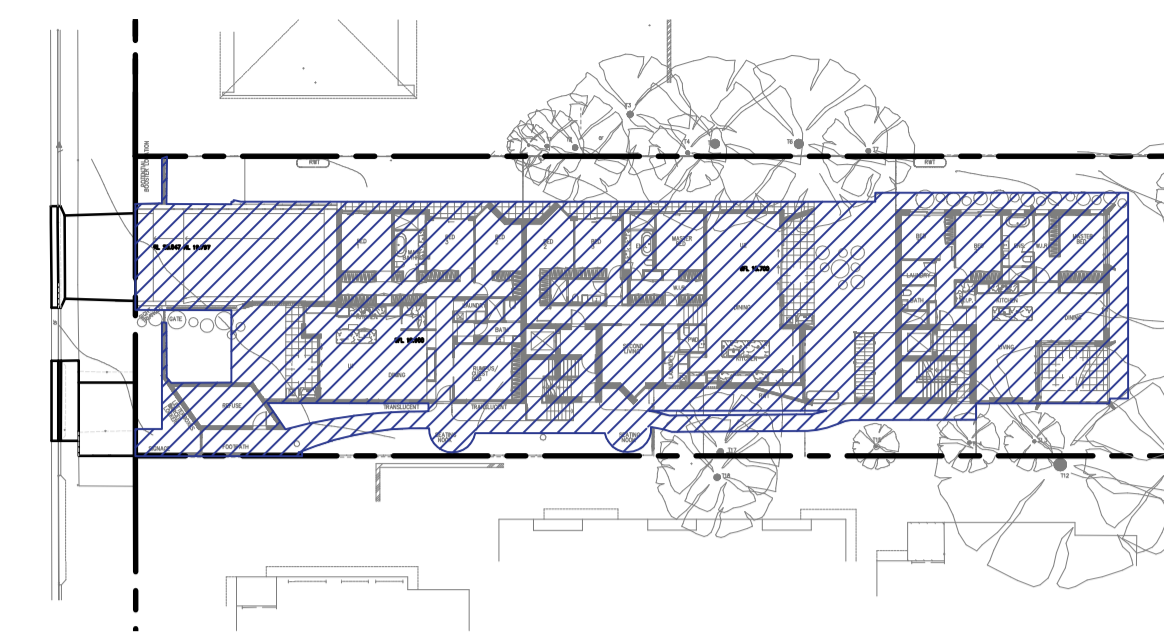
NOT FOR CONSTRUCTION



PROPOSED RESIDENTIAL FLAT BUILDING 32 GOLF AVENUE, MONA VALE



EXISTING IMPERVIOUS AREA: 969m² (70%)
SCALE = 1 : 500



PROPOSED IMPERVIOUS AREA: 961m² (69%)
SCALE = 1 : 500

STORMWATER DRAINAGE NOTES:

- ALL PIPES TO BE 100mm Ø UNLESS NOTED OTHERWISE.
- ALL PIPES TO BE uPVC TO AS 1254-2002 UNLESS NOTED OTHERWISE.
- ALL PIPES TO BE LAYED AT 1% MINIMUM GRADE UNLESS NOTED OTHERWISE.
- ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS. (NO COMPACTION REQUIRED BELOW LANDSCAPING). COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM. BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
- ALL DOWN PIPES TO BE 100mm Ø UNLESS NOTED OTHERWISE.
- DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT WITH WORK.
- PROVIDE CLEANING EYES AT ALL DOWNPIPES.
- ALL PITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER. CAST INSITU PITS TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH 1 N12 TOP TIE UNLESS NOTED OTHERWISE. CAST INSITU PITS GREATER THAN 1000 DEEP TO BE MINIMUM 900x600 AND TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH N12 AT 250 EACH WAY UNLESS NOTED OTHERWISE.
- ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
- ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL CLEARANCES AND SPECIFICATIONS.
- PRIOR TO COMMENCING ANY SITE WORKS THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL MEASURES TO APPROVED SEDIMENT AND EROSION CONTROL PLAN, EPA GUIDELINES AND COUNCIL SPECIFICATIONS. ALL MEASURES TO REMAIN IN PLACE UNTIL COMPLETION AND STABILIZATION OF THE SITE TO COUNCIL SATISFACTION.
- ALL LEVELS SHOWN ARE TO AHD UNLESS NOTED OTHERWISE.
- ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
- ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
- ALL WORKS TO BE IN ACCORDANCE WITH AS 3500.3:2018 NATIONAL PLUMBING DRAINAGE CODE PART 3 - STORMWATER DRAINAGE.
- UNLESS NOTED OTHERWISE, SUB-SOIL DRAINS ARE TO BE INSTALLED IN ACCORDANCE WITH AS3500.3 ALONGSIDE WALLS THAT IMPEDE THE NATURAL FLOW OF GROUNDWATER. THIS MAY ALSO INVOLVE TRENCHING INTO THE CLAY OR ROCK SUBGRADE TO DIRECT GROUNDWATER AWAY FROM STRUCTURES.
- IF NOT INDICATED ON PLANS, PROVIDE LEAF CATCHERS TO ALL DOWNPIPES.
- EXISTING STORMWATER SYSTEM TO BE CHECKED AND UPGRADED AS REQUIRED IN ACCORDANCE WITH AS 3500.3:2018.
- CARE SHOULD BE TAKEN WHEN UNDERTAKING WORKS IN THE VICINITY OF SELECTED TREES NOT TO DISTURB THE TREE ROOT SYSTEM. HAND DIGGING OF TRENCHES MAY BE NECESSARY. REFER ARBORISTS REPORT WHERE REQUIRED.
- CONTRACTOR TO LOCATE ALL EXISTING SERVICES PRIOR TO EXCAVATION AND NOTIFY ENGINEER OF ANY POTENTIAL CLASHES WITH THE PROPOSED DRAINAGE EASEMENT PIPE LINE.
- ALL SUB-SOIL DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH THE STRUCTURAL AND GEOTECHNICAL REQUIREMENTS, AUSTRALIAN STANDARDS AS 3500.3:2018 AND IS TO BE DIRECTED TO THE SITE DRAINAGE SYSTEM BY MEANS OF GRAVITY DISCHARGE ONLY. DO NOT CONNECT SUB-SOIL PIPES TO AREAS WITH HIGHER SURFACE LEVELS U.N.O..
- ALL PIPES SHOWN ARE INDICATIVE ONLY AND MINIMUM CLEARANCES FROM THE EXTERNAL WALLS OF BUILDINGS, FOR THE EXCAVATION OF TRENCHES, ARE TO BE PROVIDED IN ACCORDANCE WITH AS 3500.3:2018.
- ANY COMPONENTS OF THE EXISTING SYSTEM PROPOSED TO BE RETAINED ARE TO BE CERTIFIED DURING CONSTRUCTION TO BE IN GOOD CONDITION AND OF ADEQUATE CAPACITY TO CONVEY ADDITIONAL RUNOFF AND BE REPLACED OR UPGRADED IF REQUIRED.
- ANY CHARGED PIPES MUST BE A MINIMUM OF 100mm (UNLESS NOTED OTHERWISE) WITH ALL JOINTS MUST BE SOLVENT WELDED. A CLEANING EYE, OR FLUSH OUT POINT, MUST BE PROVIDED AT THE LOW POINT IN THE SYSTEM WITHIN A PIT THAT CAN BE DRAINED TO AN ONSITE DISPERSAL SYSTEM.
- PROVISION IS TO BE MADE FOR THE COLLECTION AND DISPOSAL IN AN APPROVED MANNER OF ANY OVERLAND FLOW OR SUB-SURFACE FLOW ENTERING THE SUBJECT PROPERTY, OR CONCENTRATED AS A RESULT OF THE PROPOSED WORKS. ANY REDIRECTION OR TREATMENT OF FLOWS ENTERING THE PROPERTY SHALL NOT ADVERSELY AFFECT ANY OTHER PROPERTIES.
- PREVENT ANY STORMWATER EGRESS INTO ADJACENT PROPERTIES BY CREATING PHYSICAL BARRIERS AND SURFACE DRAINAGE INTERCEPTION.
- GUTTER GUARDS MUST BE INSTALLED ON ALL GUTTERS TO MINIMISE DEBRIS ENTERING THE SYSTEM.
- ALL SUB-SOIL DRAINAGES, STRIP DRAINS AND DRAINAGE PITS SHALL DISCHARGE TO THE ESTABLISHED SITE DISCHARGE POINT U.N.O AND BE CONSTRUCTED IN ACCORDANCE WITH AS3500.3:2018 REQUIREMENTS.
- OVERFLOW PATHS SHALL BE PROVIDED TO ALLOW FOR FLOWS IN EXCESS OF THE CAPACITY OF THE PIPE/DRAINAGE SYSTEM DRAINING THE SITE.
- WHERE ANY NEW STORMWATER DRAINAGE SYSTEM CROSSES THE FOOTPATH AREA WITHIN ANY ROAD, SEPERATE APPROVAL UNDER SECTION 138 OF THE ROAD ACT 1993 MUST BE OBTAINED FROM COUNCIL FOR THOSE WORKS PRIOR TO THE ISSUE OF ANY CONSTRUCTION CERTIFICATE.
- CONCEALED DOWNPIPES MUST BE INSTALLED IN ACCORDANCE WITH SECTION 4.5.6 OF AUSTRALIAN STANDARDS AS3500.3:2018 REQUIREMENTS. BUILDER TO ENSURE LOCATIONS DO NOT RESTRICT NORMAL OPERATION OF DOORS, WINDOWS, ACCESS OPENINGS OR OCCUPANCY OF A BUILDING, DO NOT CAUSE NUISANCE OR LEAD TO INJURY OF A PERSON, DO NOT INTERFERE WITH THE STRUCTURAL INTEGRITY OF THE WALL OR COLUMN, AS CLOSE AS PRACTICABLE TO THE SUPPORTING STRUCTURE, ARE PROTECTED FROM MECHANICAL DAMAGE, AT LEAST 100mm CLEAR OF ANY ELECTRICAL CABLE OR GAS PIPE, AT LEAST 50mm FROM ANY OTHER PIPEWORK OR SERVICE. CONCEALED DOWNPIPES TO HAVE INSPECTION OPENINGS THAT EXTEND TO THE FACE OF THE WALL OR SLAB FOR MAINTENANCE. SEAMS AND JOINTS TO BE WATERTIGHT. IF INSPECTION OPENINGS ARE REQUIRED FOR TESTING AND MAINTENANCE PURPOSES, INSPECTION OPENINGS SHALL HAVE A NOMINAL SIZE OF NOT LESS THAN THE NOMINAL DIAMETER OF THE DOWNPIPE.
- WHERE A DOWNPIPE IS CONNECTED TO A SITE STORMWATER DRAIN LOCATED BELOW A SLAB-ON-GROUND, THE CONNECTION OF A CONCEALED DOWNPIPE SHALL BE LOCATED ABOVE THE LEVEL OF THE FLOOR.
- SUPPORT SYSTEMS OF DOWNPIPES OR PIPEWORK MUST BE INSTALLED IN ACCORDANCE AUSTRALIAN STANDARDS AS3500.3:2018 REQUIREMENTS.
- FOR CONCEALED EAVES GUTTERS, U.N.O THE TOP EDGE OF THE FASCIA SHOULD NOT BE LESS THAN 25mm BELOW THE TOP OF THE BACK OF THE GUTTER, OR INTEGRAL FLASHING (TAIL) WITH THE TOP EDGE OF THE FLASHING NOT LESS THAN 25mm ABOVE THE TOP OF THE FASCIA.
- THE FOLLOWING ABBREVIATIONS DENOTE:
FSL - FINISHED SURFACE LEVEL OR RL - REDUCED LEVEL
IL - INVERT LEVEL OF PIPE
INV - INVERT LEVEL OF PIT
CL - CENTRELINE OF ORIFICE
TWL - TOP WATER LEVEL

ONSITE DRAINAGE CALCULATIONS – NORTHERN BEACHES COUNCIL WATER MANAGEMENT POLICY (2021)		
TOTAL SITE AREA	1,394 m ²	
COUNCIL ZONE AREA	Region 1	
DEVELOPMENT TYPE	NEW SENIORS DEVELOPMENT	
TOAL SITE IMPERVIOUS AREA (EXISTING)	961 m ² (69% IMPERVIOUS)	
TOAL SITE IMPERVIOUS AREA (PROPOSED)	1,002 m ² (72% IMPERVIOUS)	
TOTAL INCREASE IN IMPERVIOUS AREA	41 m ² < 50 m ²	
RAINWATER VOLUME (BASIX) REQUIRED	2.0 m ³	
RAINWATER VOLUME PROVIDED	6.0 m ³ IN TOTAL	
AS THE DEVELOPMENT DOES NOT RESULT IN AN INCREASE IN IMPERVIOUS AREA OF MORE THAN 50m ² , ONSITE STORMWATER DETENTION (OSD) IS NOT REQUIRED ACCORDING TO PART 4.1 OF COUNCIL'S WATER MANAGEMENT POLICY (2021). THIS HAS BEEN CONFIRMED AS AN ACCEPTABLE APPROACH ACCORDING TO COUNCIL ENGINEERS.		
WATER SENSITIVE URBAN DESIGN TO NORTHERN BEACHES COUNCIL: WSUD & MUSIC MODELLING GUIDLINES		
WSUD MUSIC SUMMARY	% REDUCTION	TARGET
TOTAL SUSPENDED SOLIDS (TSS)	89 %	85 %
TOTAL PHOSPHOROUS (TP)	77 %	65 %
TOTAL NITROGEN (TN)	86 %	45 %
GROSS POLLUTANTS (GP)	100 %	90 %

NOTE:
THE SUBSTITUTION OF AN "EQUIVALENT" DEVICE FOR THE STORMWATER TREATMENT MEASURE APPROVED UNDER THE DEVELOPMENT CONSENT MUST SUBMITTED TO THE PRINCIPAL CERTIFYING AUTHORITY FOR APPROVAL PRIOR TO INSTALLATION.

STORMWATER PUMPOUT (WET WELL PP1) CALCULATIONS TO AS3500.3	
PROVIDE TWO CENTRIFUGAL DRAINAGE SUMP PUMPS WITH SINGLE-PHASE ELECTRIC MOTOR CAPABLE OF DISCHARGING 10.0 L/S EACH AGAINST A TOTAL HEAD OF (7.5m) WITH 10 STARTS PER HOUR MAXIMUM. CLASS 1 ZONE 2 CERTIFIED PUMPS FOR HAZARDOUS AREAS ARE REQUIRED SWITCHING SHALL PROVIDE FOR ALTERNATIVE OPERATION OF THE PUMPS, HIGH LEVEL SWITCH ON/OFF, 2ND PUMP, AND A RED LIGHT ALARM PLACED PERMANENTLY IN THE BASEMENT AREA ACTIVATED BY HIGH LEVEL SWITCH ON. FINAL PUMP OUT VOLUME AND PUMP DUTY IS SUBJECT TO DETAILED GEOTECHNICAL INFORMATION OBTAINED DURING EARTHWORKS AND EXCAVATION.	
REQUIRED VOLUME:	
AREA DRAINING TO THE PUMPOUT PIT = 70 m ² (DRIVEWAY AREA)	
SEEPAGE AREA DRAINING TO THE PUMPOUT PIT: (BASEMENT WALLS)	
SEEPAGE RATE = 1 L/min/m (CONFIRMED BY GEOTECHNICAL ENGINEER)	
BASEMENT WALL PERIMETER = 150 m (APPROXIMATE OF RETAINING)	
BASEMENT SEEPAGE RUNOFF = 2.75 L/s	
Q = [C x I (100 YR, 2 HR) x A / 3600] + SEEPAGE RUNOFF	
= [(1.08 x 47.6 x 70) / 3600] + 2.50	
= 1.00 + 2.50	
= 3.50 L/s	
VOLUME ACCUMULATED (100 YEAR ARI, 2 HOUR STORM):	
V _{100/120} = (3.50L/s x 2hrs x 3600s)/1000	WET WELL STORAGE CAPACITY = V _{100/120} - PC ₃₀ = 7.20 m ³
= 25.20 m ³	
VOLUME PUMPED IN 30 MINS:	
PC ₃₀ = (10.0L/s x 0.5hrs x 3600s)/1000	
= 18.00 m ³	
VOLUME PUMPED IN 5 MINS:	
PC ₅ = (10.0L/s x 0.083hrs x 3600s)/1000	
= 3.00 m ³	
WET-WELL VOLUME AND SPECIFICATIONS TO BE CONFIRMED DURING TO CONSTRUCTION IN ACCORDANCE WITH GEOTECHNICAL AND STRUCTURAL REQUIREMENTS.	

SURVEY NOTES:

- THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY THE PROJECT SURVEY. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. RTS CIVIL CONSULTING ENGINEERS PTY LTD DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE.
- SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT THE ENGINEER.
- REFERENCE SHOULD BE MADE DIRECTLY TO THE SURVEYOR BEFORE SETTING OUT.

EXISTING UNDERGROUND SERVICES NOTES:

- THE LOCATIONS OF UNDERGROUND SERVICES SHOWN IN THIS SET OF DRAWINGS HAVE BEEN PLOTTED FROM SURVEY INFORMATION AND SERVICE AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE.
- RTS CIVIL CONSULTING ENGINEERS PTY LTD CANNOT GUARANTEE THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.
- CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY.
- CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.
- CONTRACTORS ARE TO UNDERTAKE A SERVICES SEARCH, PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.
- CONTRACTOR IS TO CONFIRM FINDINGS FOR THE LOCAL COUNCIL OR SYDNEY WATER IN RELATION TO THE SEWER OR WATER MAINS LOCATED. CONFIRMATION OF MAINS IS REQUIRED PRIOR TO CONSTRUCTION. POSSIBLE CONFLICT OF SERVICES ARE TO BE REPORTED TO THE SUPERINTENDENT OR ENGINEER FOR FURTHER DIRECTIONS.

EXTERNAL NOTES:

- ALL ACTIVITIES AND WORKS EXTERNAL TO THE SITE, OR THAT AFFECT PUBLIC ROADS, ARE TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S CODES AND STANDARDS.
- PUBLIC FOOTPATHS SHALL BE RECONSTRUCTED TO THE SATISFACTION OF COUNCIL'S DIRECTOR OF ENGINEERING SERVICES. A ROAD OPENING PERMIT SHALL BE OBTAINED FOR ALL WORKS CARRIED OUT IN A PUBLIC OR COUNCIL CONTROLLED LAND.
- RESTORATION OF LANDSCAPING, ROADS AND PATHS SHALL BE TO COUNCIL'S REQUIREMENTS. ALL OTHER RESTORATION SHALL BE TO THE SATISFACTION OF THE AFFECTED PARTIES.
- WHERE WORKS ARE UNDERTAKEN ON PUBLIC ROADS, ADEQUATE TRAFFIC CONTROL AND DIRECTIONS TO MOTORISTS SHALL BE PROVIDED BY OTHERS.

DRAWING SCHEDULE:

- SW001 - COVER PAGE, NOTES & CALCULATIONS SHEET 1 OF 2
- SW002 - COVER PAGE, NOTES & CALCULATIONS SHEET 2 OF 2
- SE100 - SEDIMENT & EROSION CONTROL PLAN
- SE200 - SEDIMENT & EROSION CONTROL PLAN DETAILS
- SW100 - SITE STORMWATER CATCHMENT & EASEMENT PLAN
- SW101 - BASEMENT 1 & 2 STORMWATER MANAGEMENT PLAN
- SW102 - GROUND STORMWATER MANAGEMENT PLAN
- SW200 - STORMWATER DRAINAGE DETAILS SHEET 1 OF 2
- SW201 - STORMWATER DRAINAGE DETAILS SHEET 2 OF 2
- SW300 - STORMWATER EASEMENT PIPELINE LONGITUDINAL SECTION

MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS AS3500.3 - TABLE 7.5.2.1			
DEPTH TO INVERT OF OUTLET	MINIMUM INTERNAL DIMENSIONS (mm)		
	RECTANGULAR	CIRCULAR	
	Width	Length	Diameter Ø
≤ 450	350	350	-
≤ 600	450	450	600
> 600 ≤ 900	600	600	900
> 900 ≤ 1200	600	900	1000
> 1200	900	900	1000



NO INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON OR NEAR THE SITE.

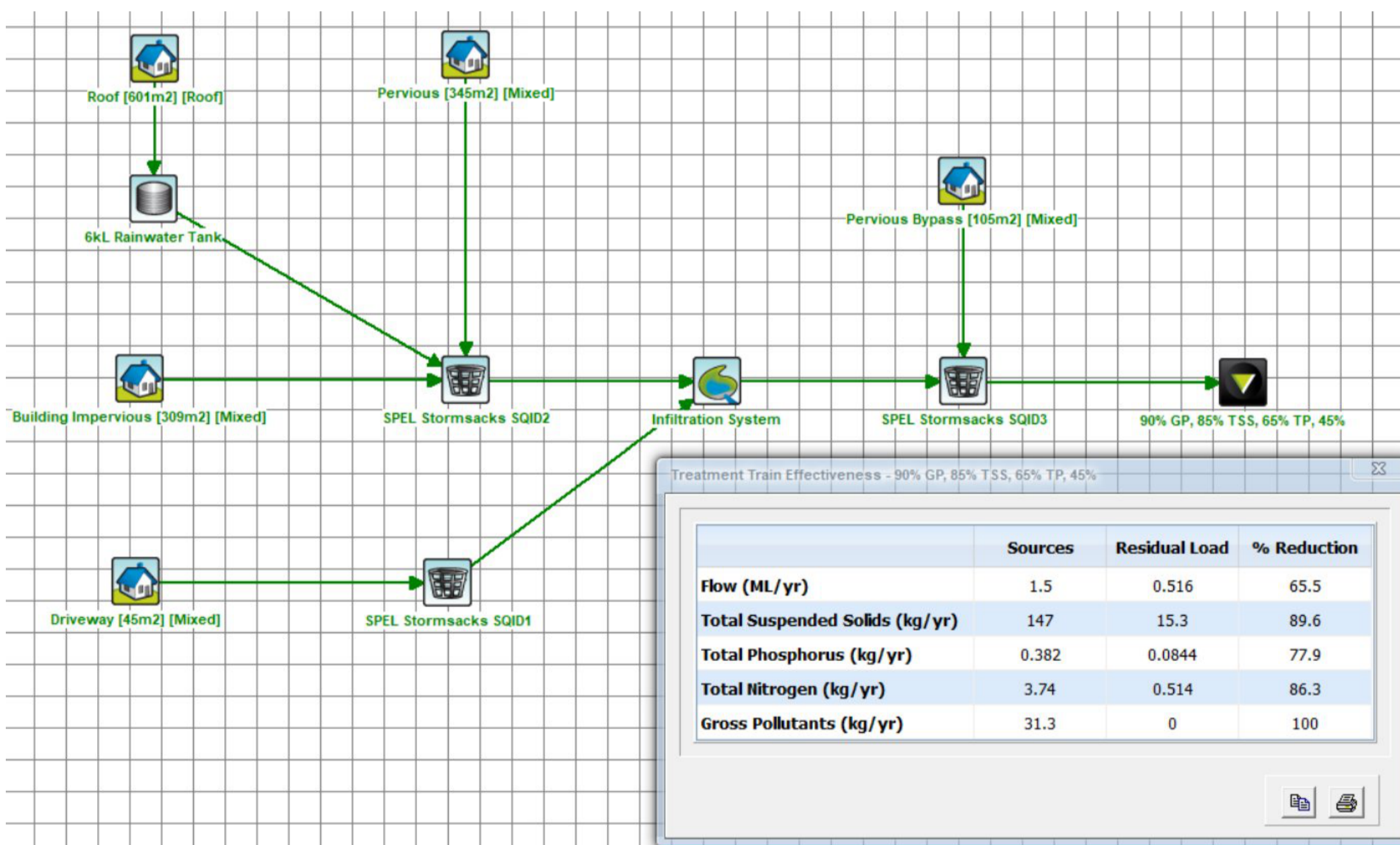
DEVELOPERS & EXCAVATORS MAY BE HELD FINANCIALLY RESPONSIBLE BY THE ASSET OWNER SHOULD THEY DAMAGE UNDERGROUND NETWORKS.

CARELESS DIGGING CAN DIGGING CAN:

- CAUSE DEATH OR SERIOUS INJURY TO WORKERS AND THE GENERAL PUBLIC
- INCONVENIENCE USERS OF ELECTRICITY, GAS, WATER AND COMMUNICATIONS
- LEAD TO CRIMINAL PROSECUTION AND DAMAGES CLAIMS
- CAUSE EXPENSIVE FINANCIAL LOSSES TO BUSINESS
- CUT OFF EMERGENCY SERVICES
- DELAY PROJECT COMPLETION TIMES WHILE THE DAMAGE IS REPAIRED

MINIMISE YOUR RISK AND TALK BEFORE YOU DIG. - TEL. 1100

ALL DIMENSIONS MUST BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.



MUSIC MODEL SUMMARY

A1 ORIGINAL		Issued for: DEVELOPMENT APPLICATION		Title:	Initial:	Date:	Architect:		Project and Drawing Title:		Local Council:	
		Approved by:		DESIGN	R.M.	07.04.2025	WALSH ARCHITECTS		32 GOLF AVENUE, MONA VALE COVERPAGE, NOTES & CALCULATIONS SHEET 1 OF 2		NORTHERN BEACHES	
		Date : 11.04.25		DRAWN	S.M.	07.04.2025	Client:				Project Number:	
A		11.04.25	STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION	CHECKED	R.M.	11.04.2025	LAXDTX 2 PTY LTD				Drawing ID:	
Rev:		Date:	Description:	APPROVED	R.M.	11.04.2025					Issue:	
											240101_1 SW001 A	

- NOTES:**
1. U.N.O REFER TO THE COVERPAGE 001 SERIES FOR DETAILED NOTES AND CALCULATIONS.
 2. ALL DIMENSIONS SHALL BE VERIFIED ONSITE BY BUILDER BEFORE COMMENCING WITH WORK.

STORMWATER PUMP-OUT AND 'WET WELL' NOTES:

1. PUMPED SYSTEMS ARE FOR AREAS NORMALLY LESS THAN 2,000m2 WHERE IT IS NOT POSSIBLE FOR THE STORMWATER TO BE DISCHARGED BY GRAVITY THROUGH THE AVAILABLE GRAVITATIONAL POINT OF CONNECTION. ALL WORKS ARE TO BE IN ACCORDANCE WITH AS3500.3 – PLUMBING AND DRAINAGE: STORMWATER DRAINAGE – SECTION 9 – PUMPED SYSTEMS.
2. TO ENSURE THAT SEEPAGE WATER IS NOT BEING PUMPED CONTINUALLY OUT TO THE STREET, THE PUMPS IN THE BASEMENT OR LOWER LEVEL OF PROPERTY SHALL BE ADJUSTED TO PERMIT STORAGE IN THE SYSTEM PRIOR TO THE PUMPS SWITCHING ON (REFER DETAILS FOR STORAGE VOLUME AND LEVELS). THE PUMPS SHOULD THEN DISCHARGE ALL WATER SO THAT ONLY MINIMAL WATER REMAINS OVER THE PUMP INTAKE, AS REQUIRED BY THE MANUFACTURER.
3. THE PUMPS SHALL OPERATE ALTERNATELY TO LEVELS INDICATED ON THE SUPPLIED ENGINEERING DETAILS WITH BOTH PUMPS OPERATING IN UNISON AT THE LEVELS INDICATED (SYSTEM TO BE FITTED WITH ALARM SYSTEM – BY OTHERS). THE SECOND PUMP WILL BEING TO OPERATE IF THE WATER LEVEL CONTINUES TO RISE ABOVE THE MAXIMUM WATER LEVEL AFTER THE FIRST PUMP HAS COME ON. SIGNAGE IS TO BE DISPLAYED WITHIN THE LOW AREA OF THE BASEMENT INDICATING PERMIT ADDITIONAL STORAGE VOLUME IS EXPECTED (UP TO 200mm IN DEPTH) DURING A MAJOR STORM EVENT.
4. THE REQUIRED PUMPING RATE SHALL BE CALCULATED BASED ON AN ASSESSMENT OF THE EXPECTED INFLOW AND, WHERE APPROPRIATE, THE ALLOWABLE DISCHARGE RATE. HOWEVER, UNLESS NOTED OTHERWISE, THE MINIMUM PUMP CAPACITY OF A BASEMENT (BELOWGROUND) SYSTEM SHOULD NOT BE LESS THAN 10 L/s.
5. PUMPS SHALL BE IN DUPLICATE. THE MAXIMUM CAPACITY OF EACH PUMP SHALL BE SELECTED SO THAT THE CAPACITY OF THE SYSTEM RECEIVING THE DISCHARGE IS NOT EXCEEDED. THE PUMP CONTROLS SHALL BE SET UP TO ENABLE ALTERNATE PUMP OPERATION AT EACH START. IN THE EVENT THAT A PUMP FAILS TO OPERATE WHEN THE WATER LEVEL IN THE WET WELL REACHES THE PUMP START, THE OTHER PUMP SHALL BE ACTIVATED AND A VISIBLE ALARM INITIATED. IF BOTH PUMPS FAIL TO OPERATE AN AUDIBLE ALARM SHALL BE INITIATED IN ACCORDANCE WITH SECTION 8.3.7 OF AS3500.3. LOCATE HIGH AND LOW LEVEL ALARMS CLEAR OF INLETS TO PREVENT FALSE ALARMS. THE HIGH LEVEL ALARM SHOULD BE SET NO HIGHER THAN 100 MM ABOVE THE INVERT OF THE INLET PIPE, PROVIDED THAT FLOODING OF HABITABLE OR STORAGE AREAS AND VEHICLE GARAGES SHALL BE AVOIDED. WHERE FLOODING COULD OCCUR THE OVERFLOW AND HIGH-LEVEL ALARM SHALL BE LOWERED ACCORDINGLY TO PREVENT FLOODING.
6. THE MINIMUM WET WELL STORAGE BETWEEN THE HIGH AND LOW WORKING LEVELS EXPRESSED IN CUBIC METRES SHALL BE 1% OF THE CATCHMENT AREA IN m2 BUT IN ANY CASE SHALL NOT BE LESS THAN 3 m3, OR AS OTHERWISE DIRECTED OR APPROVED BY THE AUTHORITY HAVING JURISDICTION.
7. THE CAPACITY OF THE PUMPED SYSTEM (WET WELL) SHALL BE ACHIEVED BY A COMBINATION OF PUMP CAPACITY AND WET WELL STORAGE BETWEEN THE HIGH AND LOW WORKING LEVELS OF THE WET WELL. THE COMBINED EFFECTIVE STORAGE COMPRISING THE VOLUME ABLE TO BE PUMPED IN 30 MIN PLUS THE WET WELL STORAGE SHALL NOT BE LESS THAN THE VOLUME OF THE RUN-OFF FROM THE STORM OF ARI = 10 YEARS AND DURATION OF 120 MIN, LEV AS OTHERWISE DIRECTED BY THE AUTHORITY HAVING JURISDICTION.
8. PUMPING EQUIPMENT SHALL BE SECURELY FIXED TO THE WET WELL USING CORROSION RESISTANT FIXINGS.
9. PUMPS SHALL BE FITTED WITH A GATE VALVE AND NON-RETURN VALVE ON THE DELIVERY SIDE OF EACH PUMP.
10. PUMPS SHALL HAVE FLANGES OR UNIONS INSTALLED TO FACILITATE REMOVAL.
11. PUMPS SHALL BE CONTROLLED SO AS TO LIMIT THE NUMBER OF STARTS PER HOUR TO WITHIN THE CAPACITY OF THE ELECTRICAL MOTORS AND EQUIPMENT, AND SHALL, AS FAR AS PRACTICABLE, EMPTY THE CONTENTS OF THE WET WELL AT EACH OPERATION.
12. PUMPS ARE TO OPERATE ONLY DURING HOURS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION.
13. VALUE OF HEAD IS TO BE CONFIRMED ONCE EXCAVATION COMPLETE AND PRIOR TO ORDERING PUMPS AND EQUIPMENT.
14. PUMP SPECIFICATIONS AND PRESSURE PIPE DIAMETER ARE TO BE DETERMINED BY THE PUMP MANUFACTURER.
15. PROVIDE LITTER SCREEN ABOVE PUMP SET.
16. ALL ELECTRICAL MOTORS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH AS3000.

INSTALLATION OF PIPEWORK NEAR AND UNDER BUILDINGS NOTES:

- THE FOLLOWING APPLY TO A DRAIN IN CLOSE PROXIMITY TO FOOTINGS OR FOUNDATIONS:
1. WHERE THE DRAIN PASSES UNDER A STRIP FOOTING, ITS ANGLE OF INTERSECTION WITH THE FOOTING IN THE HORIZONTAL PLANE SHALL BE NOT LESS THAN 45°, AND THE MINIMUM CLEARANCE BETWEEN THE TOP OF THE DRAIN TO THE UNDERSIDE OF THE FOOTING SHALL BE 25mm.
 2. IF THE DRAIN IS LAID THROUGH FOOTINGS OR WALLS, OTHER THAN BELOW-GROUND EXTERNAL WALLS, IT SHALL BE INSTALLED WITH AN ANNULAR SPACE OF NOT LESS THAN 25mm FILLED WITH A LINER OF FLEXIBLE MATERIAL.
 3. THE DRAIN MAY BE LAID THROUGH BELOW-GROUND EXTERNAL WALLS, PROVIDED–
 - a. TWO FLEXIBLE JOINTS ARE PROVIDED EXTERNALLY WITHIN 800mm OF THE EXTERNAL FACE OF THE WALL, AND SUCH JOINTS ARE NOT LESS THAN 600mm APART; AND
 - b. THE PENETRATION OF THE WALL IS MADE WATERTIGHT.
 4. WHERE THE DRAIN IS TO BE LAID PARALLEL TO A FOOTING, THE TRENCH SHALL BE LOCATED AS FOLLOWS:
 - a. THE DRAIN SHALL BE LAID–
 - b. IN ACCORDANCE WITH NCC VOLUME TWO; AND
 - c. FOR SINGLE DWELLINGS, AS SHOWN IN FIGURE 6.2.8 OF AS3500.3.

INSPECTIONS BY ENGINEER

- 48 HOURS NOTICE IS REQUIRED BEFORE ANY SITE INSPECTION. ANY STRUCTURAL ELEMENT NOT INSPECTED BY RTS CIVIL WILL NOT BE CERTIFIED BY RTS CIVIL CONSULTING ENGINEERS PTY LTD.
1. BEARING STRATA OF ALL FOOTINGS PRIOR TO CONCRETE POUR BY GEOTECHNICAL ENGINEER.
 2. ANY REINFORCEMENT PRIOR TO CONCRETE POUR.
 3. TIMBER AND STEEL FRAMING PRIOR TO CLADDING OR LINING.
 4. STEEL LINTELS AFTER INSTALLATION.
 5. CONTACT YOUR PCA (PRINCIPAL CERTIFYING AUTHORITY) AS TO REQUIREMENTS FOR MANDATORY CRITICAL STAGE INSPECTIONS IN ACCORDANCE WITH REVISED EP&A ACT REGULATIONS EFFECTIVE JULY 1, 2004.
 6. INSPECTION BY GEOTECHNICAL ENGINEER OVER 1.5m OF VERTICAL CUT THROUGH SANDSTONE BED ROCK TO PERMIT IDENTIFICATION OF DEFECTS AND REMEDIAL MEASURES INITIATED.
 7. SCHEDULE OF CONSTRUCTION STAGES REQUIRING INSPECTION:
 - a. FOLLOWING PLACEMENT OF PIPE BEDDING MATERIAL. CONFIRM TRENCH/PIPE LOCATION, ADEQUACY OF DEPTH OF COVER, BEDDING MATERIAL AND DEPTH.
 - b. FOLLOWING JOINING OF PIPES AND CONNECTION TO COUNCIL'S STORMWATER SYSTEM.
 - c. FOR DISPERSION TRENCH SYSTEMS:–
- (i) FOLLOWING SET OUT TO CONFIRM LOCATION, LENGTH AND VOLUME OF STORAGE.

NOTE:
THE BUILDER/CONTRACTOR SHALL LOCATE ALL EXISTING PUBLIC UTILITY SERVICES WITHIN THE SITE, FOOTPATH AREA AND ROAD RESERVE PRIOR TO THE COMMENCEMENT OF ANY WORKS. ALL LOCATIONS AND LEVELS OF SERVICES SHALL BE REPORTED TO THE STORMWATER ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORKS TO ENSURE THAT THERE ARE NO OBSTRUCTIONS IN THE LINE OF THE DRAINAGE DISCHARGE PIPES.

A1 ORIGINAL

Issued for: DEVELOPMENT APPLICATION	Title: DESIGN	Initial: R.M.	Date: 07.04.2025
Approved by:	DRAWN	S.M.	07.04.2025
Date : 11.04.25	CHECKED	R.M.	11.04.2025
Rhys Mikhail	APPROVED	R.M.	11.04.2025
Director Principal Engineer NER: 25700982 RPEQ: 17490 BEng (Civil) Hons MIEAust. CPEng NER RPEQ APEC InPrE(Aus)			

RTS CIVIL CONSULTING ENGINEERS
STORMWATER • CIVIL • FLOOD MITIGATION
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Architect: **WALSH ARCHITECTS**

Cient: **LAXDTX 2 PTY LTD**

Project and Drawing Title:
**32 GOLF AVENUE, MONA VALE
COVERPAGE, NOTES & CALCULATIONS
SHEET 2 OF 2**

Local Council: NORTHERN BEACHES		
Project Number: 240101_1SW002	Drawing ID:	Issue: A

INFILTRATION/ABSORPTION TRENCH NOTES (METHOD 1):

1. EXCAVATE THE TRENCH ALONG A LEVEL SITE CONTOUR TO PROVIDE AT LEAST 100mm COVER OVER THE TOP OF THE LINER.
2. THE TRENCH FLOOR SHOULD BE LEVEL, EVENLY RAKED, AND HAVE NO LOW SPOTS WHICH WOULD ALLOW 'PONDING'.
3. ALLOW AT LEAST 75mm OVERLAP FOR EACH LENGTH OF EVERTRENCH.
4. IDEALLY, THREE SPREADER BARS (OPTIONAL) SHOULD BE FITTED INTO EACH STANDARD EVERTRENCH LINER, THE FIRST 220mm FROM THE INLET END, THEN EQUALLY SPACED ALONG THE EXCAVATION.
5. CUT THE PIPE ENTRY HOLE IN ONE TRENCH LINER END CAP. AN EASYDRAIN™ PIT BOSS MAY BE USED TO ENSURE A SECURE CONNECTION. FIT THE CAPS TO THE LINER AND CONNECT THE PIPING FROM THE SEPTIC TANK OR SULLAGE DISTRIBUTOR.
6. COVER THE EVERTRENCH WITH GEOTEXTILE FABRIC AND PLACE A QUANTITY OF 20–25mm AGGREGATE MATERIAL ALONG THE TRENCH LINER AND AT BOTH ENDS, SO THAT THE TOP OF THE LINER IS JUST COVERED. RAKE LEVEL.
7. LAY GEOTEXTILE OVER THE AGGREGATE FOR THE FULL LENGTH OF THE TRENCH.
8. COVER THE GEOTEXTILE WITH A LAYER OF APPROVED SANDY LOAM AND LEAVE A MOUND FOR NATURAL COMPACTION. TURF MAY BE LAID OVER THE TRENCH AREA. DO NOT COMPACT THE TRENCH AREA OR EXPOSE IT TO TRAFFIC.
9. THESE TRENCHES ARE GENERALLY LIMITED TO SITES WHERE SOIL IS CONSIDERED PERMEABLE ENOUGH TO 'SOAK UP' THE EXPECTED AMOUNTS OF WASTE–WATER. THE TRENCH SHOULD BE WIDE ENOUGH TO ACCEPT THE SELECTED EVERTRENCH LINER AND DEEP ENOUGH SO THAT THE TOP OF THE SELECTED LINER IS AT LEAST 100mm BELOW THE SOIL SURFACE LEVEL.
10. TRENCH TO BE HAND DUG AROUND TREE ROOT SYSTEM IN ACCORDANCE WITH ARBORIST AND/OR LOCAL COUNCIL REQUIREMENTS.
11. A GEOTECHNICAL ENGINEERS REPORT OR RECOMMENDATIONS MAY BE REQUIRED FOR AREAS OF LOW SOIL INFILTRATION RATES OR FOR LARGER DEVELOPMENTS. THE ENGINEER SHOULD BE NOTIFIED DURING CONSTRUCTION AND EXCAVATION OF TRENCHES TO CONFIRM SUITABILITY OF SOILS.
12. WHERE POSSIBLE, INSTALL HIGH LEVEL EMERGENCY OVERFLOW PIPE AND CONNECT TO SITE DRAINAGE SYSTEM OR NEAREST DISCHARGE POINT IN ACCORDANCE WITH AS3500.3.2 AND/OR COUNCIL REQUIREMENTS.
13. DO NOT CONNECT SUB–SOIL DRAINAGE LINES THAT ARE LESS THAN 150mm ABOVE THE SURFACE LEVEL OF THE TRENCH. NOTIFY ENGINEER IF THE DEVELOPMENT HAS LOW LAYING SUB–SOIL DRAINAGE LINES.

TRANSPIRATION/DISPERSION TRENCH NOTES (METHOD 2):

1. EXCAVATE AN AREA 1800mm WIDE AND 300mm DEEP ALONG A LEVEL SITE CONTOUR.
2. EXCAVATE A CENTRAL TRENCH ALONG THE FULL LENGTH OF THE PREPARED AREA FOR THE SELECTED LINER. THE TOP OF THE LINER SHOULD BE LEVEL WITH THE BOTTOM OF THE PREPARED AREA. THE FLOOR SHOULD BE LEVEL, EVENLY RAKED, WITH NO LOW SPOTS.
3. CARRY OUT STEPS 3, 4, 5, 6 & 7 LISTED FOR METHOD 1 (ABSORPTION TRENCH).
4. COVER THE GEOTEXTILE AND FLOOR OF THE WIDER EXCAVATION WITH 100mm of 10mm AGGREGATE, THEN 100mm of COARSE SAND, AND FINALLY WITH SANDY LOAM.
5. LEAVE A MOUND FOR NATURAL COMPACTION. TURF MAY BE LAID OVER THE AREA. DO NOT COMPACT THE AREA OR EXPOSE IT TO TRAFFIC.
6. THIS METHOD ARE GENERALLY USED WHERE LOCAL SOIL CONDITIONS CANNOT COPE WITH THE VOLUME OF WASTE–WATER IN THE NORMAL NARROW ABSORPTION TRENCH SYSTEMS. TRANSPIRATION ENCOURAGES TREATED WASTE–WATER TO BE TAKEN UP BY PLANT ROOTS OVER A WIDE AREA, AS WELL AS PERMEATING THE SOIL, OFFERING ADDITIONAL SAFETY FOR SOIL ABSORPTION SYSTEMS. BEDS CONSIST OF STANDARD WIDH TRENCHES THAT ARE DEEPER THAN NORMAL, WITH THE AREA ABOVE THE SELECTED TRENCH LINER OF MUCH GREATER WIDTH, AND FILLED WITH AGGREGATE TO ALLOW EASIER MOVEMENT OF MOISTURE.



LOCALITY PLAN
NOT TO SCALE

RAINWATER HARVESTING REQUIREMENTS:

1. CONSIDERING THE ROOF CATCHMENT AREA, LOCATION OF PROPERTY, INTENDED USE OF RAINWATER AND GARDEN SIZE WE RECOMMEND PROVIDING A RAINWATER TANK FOR USE AS PER BASIX REQUIREMENTS, HCCRENS WATER SMART PRACTICE NOTE (N),4 AND THE NSW HEALTH REQUIREMENTS FOR NON DRINKING USE ONLY AS FOLLOWS:
 - a) TO WATER GARDEN AREAS b) TO BASIX REQUIREMENTS
2. THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE.
3. REFERENCES: COOMBS P.J. & KUCZERA G. (2001), "RAINWATER TANK DESIGN FOR WATER SUPPLY & STORMWATER MANAGEMENT." STORMWATER INDUSTRY ASSOCIATION REGIONAL CONFERENCE. PATRICK DUPONT & STEVE SHACKEL, "RAINWATER" AUSTRALIAN GOVERNMENT (2004), "GUIDANCE ON USE OF RAINWATER TANKS".
4. ALL CONNECTIONS TO PLUMBING AND RAINWATER TANKS TO BE IN ACCORDANCE WITH SYDNEY WATERS' GUIDE "INSTALLING A RAINWATER TANK" AVAILABLE AT www.sydneypwater.com.au OR FROM LOCAL COUNCIL GUIDELINES.
5. PROVIDE A DUAL SUPPLY SYSTEM AND BACKFLOW PREVENTION SYSTEM IN ACCORDANCE WITH 'BASIX–DESIGN GUIDE FOR SINGLE DWELLINGS' BY NSW DEPARTMENT OF INFRASTRUCTURE, PLANNING AND NATURAL RESOURCES AND AS3500.1.
6. IF NOT SPECIFIED ON PLANS, THE FIRST FLUSH SYSTEM IS TO HAVE A MINIMUM SIZE OF 20L PER 100m2 OF ROOF CATCHMENT AREA PRIOR TO ENTERING THE RAINWATER TANK. INDIVIDUAL SITE ANALYSIS IS REQUIRED IN HEAVILY POLLUTED AREAS TO DETERMINE IF LARGER VOLUMES OF FIRST FLUSH RAINWATER ARE TO BE DIVERTED. IF IN DOUBT, CHECK WITH LOCAL HEALTH AUTHORITIES.
7. SCREENED DOWNPIPE RAINWATER HEAD OR OTHER SUITABLE LEAF AND DEBRIS DEVICE TO BE INSTALLED ON EACH DOWNPIPE. SCREEN MESH TO BE 4–6mm AND DESIGNED TO BE SELF–CLEANING.
8. FIRST FLUSH DEVICES, OR APPROVED ALTERNATIVE, TO BE INSTALLED WITH AN AUTOMATED DIVERSION AND DRAINAGE SYSTEM, THAT IS, NO MANUAL DIVERSION AND DRAINAGE VALVES. REFER TYPICAL FLUSH OUT PIT FOR DETAILS. THIS SHOULD CATER FOR THE FIRST 1mm OF RAINFALL.
9. BEFORE PURCHASING MATERIALS OR PAINT TO BE USED ON ROOF CATCHMENT AREAS, THE MANUFACTURER'S RECOMMENDATIONS ON LABELS AND BROCHURES FOR RAINWATER TANK SUITABILITY TO BE READ AND ADHERED TO.
10. PRE–STORAGE PITS FOR UNDERGROUND RAINWATER STORAGE TANKS AND FLOSH OUT PITS MAY ASSIST IN LIMITING SILT, AND PREVENT VERMIN, INSECTS (INCLUDING MOSQUITOES) AND DEBRIS FROM ENTERING THE RAINWATER STORAGE AREA.
11. RAINWATER TANK TO BE WATER PROOFED IN ACCORDANCE WITH HB 230–2008
12. BUILDER OR PLUMBER TO ENSURE THE INSTALLATION OF THE RAINWATER TANK SYSTEM IS IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS AND THE RAINWATER TANK DESIGN AND INSTALLATION HANDBOOK – HB 230–2008. IF IN DOUBT CONTACT ENGINEER.
13. NOISE EMISSIONS FROM ANY PUMPS DO NOT EXCEED 5dB(A) ABOVE AMBIENT BACKGROUND NOISE LEVEL MEASURED AT THE ALLOTMENT BOUNDARY.
14. AT THE COMPLETION OF THE WATER SERVICE INSTALLATION AND PRIOR TO HYDROSTATIC TESTING, THE SYSTEM SHALL BE THOROUGHLY FLUSHED TO REMOVE ANY FOREIGN MATTER. THE FLUSHING SHALL BE UNDERTAKEN IN ACCORDANCE WITH AS3500.1 REQUIREMENTS – APPENDIX I, PARAGRAPH I3 AND CONTINUE UNTIL THE FLUSHED WATER RUNS COMPLETELY CLEAR. THE SYSTEM SHALL THEN BE PRESSURE TESTED IN ACCORDANCE WITH CLAUSE 16.3.1.
15. AT THE COMPLETION OF THE WATER SERVICE INSTALLATION THE RAINWATER STORAGE TANKS ARE TO BE TESTED IN ACCORDANCE WITH SECTION 16 OF AS3500.1.

SEDIMENT BASIN CALCULATIONS ACCORDING TO INTERNATIONAL EROSION CONTROL ASSOCIATION (IECA) 2008 AND BEST PRACTICE EROSION REQUIREMENTS

SEDIMENT BASIN SELECTION	TYPE C
MINIMUM SETTLING AREA (As)	As = Ks He Q = 3410 x 1.2 x (0.5 x 0.026) = 92.1 m ²
TOTAL SETTLING VOLUME	V = 92.1 x 0.6 = 53.2 m ³

WHERE:
As = AVERAGE SURFACE AREA OF SETTLING ZONE
Ks = SEDIMENT SETTLENT COEFFICIENT = 3410
He = HYDRAULIC EFFICIENCY CORRECTION FACTOR = 1.2
Q = DESIGN DISCHARGE = 0.5 x Q1
Q1 = 1 in 1 YEAR ARI DISCHARGE FOR SITE = 26 L/s

REDUCED SETTLING VOLUME DUE TO PUMP–OUT (DRAWDOWN):

$$V_{in} = C \times l \times A = 0.7 \times 0.093 \times 1394 = 91 \text{ m}^3/\text{hr}$$

$$Q_{pump} = \frac{V_{in}}{T_{drawdown}} = \frac{91}{72} = 1.26 \text{ m}^3/\text{hr}$$

(PROVIDE MIN. PUMP OUT RATE WITH 7.5m PRESSURE HEAD)

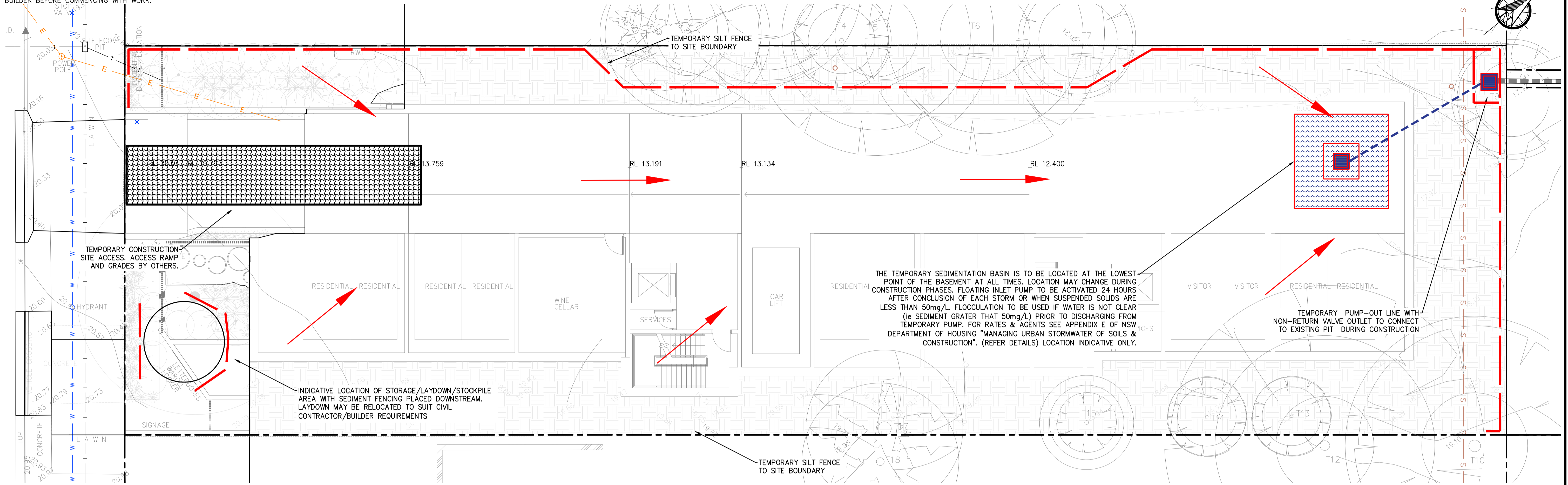
$$V_{settling} = \frac{(g \times (\text{FINE SILT PARTICLE SIZE}^2)(\text{SEDIMENT DENSITY} \times \text{WATER DENSITY})}{18 \times \text{DYNAMIC VISCOSITY OF WATER}}$$

$$= \frac{(9.81 \times (0.0002^2)(2650 \times 1000)}{18 \times 0.001} = 0.094 \text{ m}^3/\text{hr}$$

$$V_{basin_reduced} = (V_{in} \times T_{retention}) / T_{drawdown} = (91 \times 6) / 72 = 7.6 \text{ m}^3 \text{ (PROVIDE MIN. VOLUME FOR 0.6m DEPTH)}$$


NOT FOR CONSTRUCTION

- NOTES:**
 1. U.N.O REFER TO THE COVERPAGE 001 SERIES FOR DETAILED NOTES AND CALCULATIONS.
 2. ALL DIMENSIONS SHALL BE VERIFIED ONSITE BY BUILDER BEFORE COMMENCING WITH WORK.



THE TEMPORARY SEDIMENTATION BASIN IS TO BE LOCATED AT THE LOWEST POINT OF THE BASEMENT AT ALL TIMES. LOCATION MAY CHANGE DURING CONSTRUCTION PHASES. FLOATING INLET PUMP TO BE ACTIVATED 24 HOURS AFTER CONCLUSION OF EACH STORM OR WHEN SUSPENDED SOLIDS ARE LESS THAN 50mg/L. FLOCCULATION TO BE USED IF WATER IS NOT CLEAR (ie SEDIMENT GRATER THAN 50mg/L) PRIOR TO DISCHARGING FROM TEMPORARY PUMP. FOR RATES & AGENTS SEE APPENDIX E OF NSW DEPARTMENT OF HOUSING "MANAGING URBAN STORMWATER OF SOILS & CONSTRUCTION". (REFER DETAILS) LOCATION INDICATIVE ONLY.

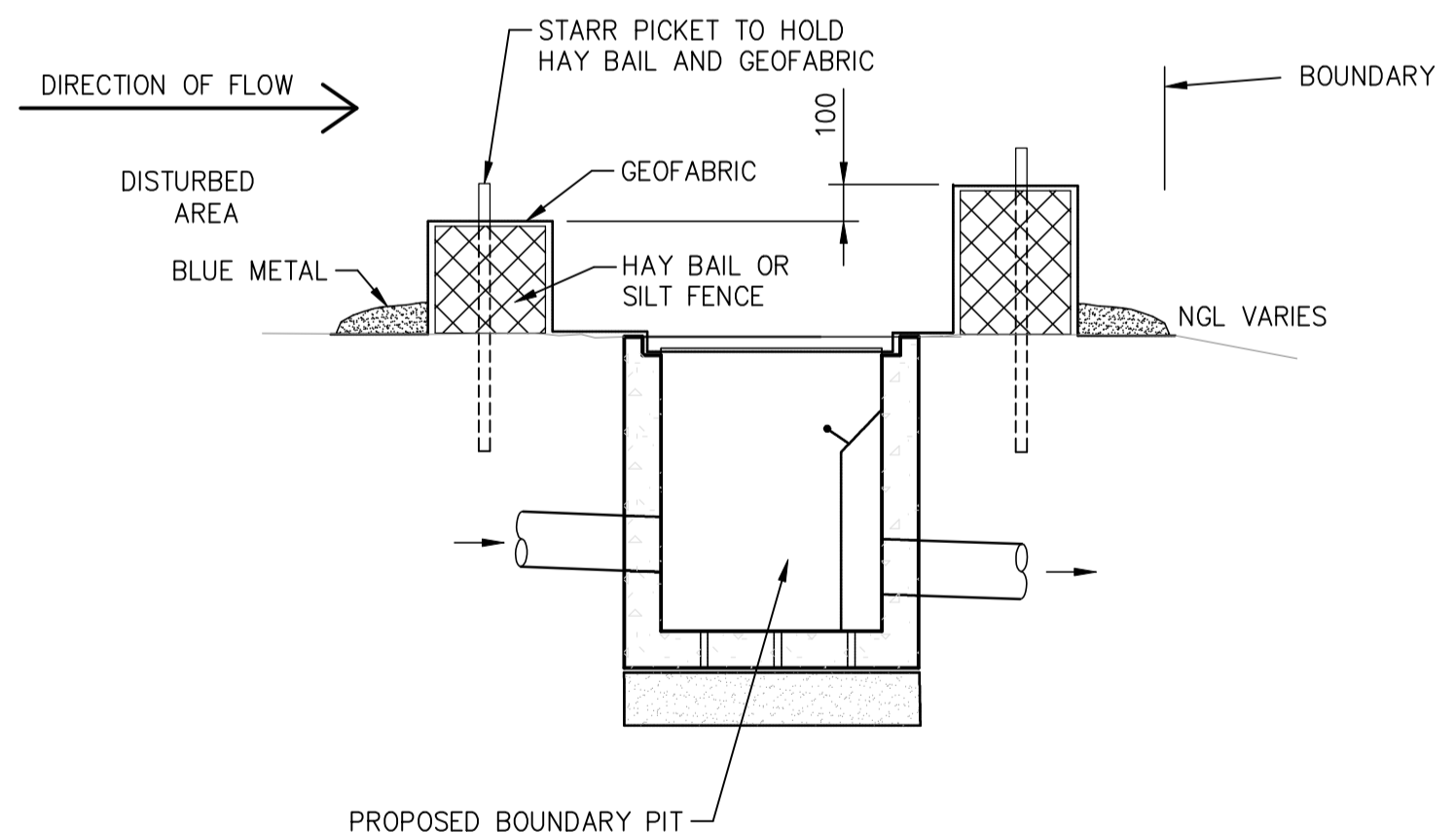
SEDIMENT & EROSION CONTROL PLAN

SCALE = 1 : 100

EROSION CONTROL NOTES:

1. SILT FENCE AND ASSOCIATED WORKS INCLUDING INTERCEPTOR DRAIN IS TO BE INSTALLED BEFORE THE COMMENCEMENT OF ANY EXCAVATION.
2. CUTS TO BE EXECUTED TO THE REQUIRED LEVEL USING CONVENTIONAL EXCAVATION MACHINERY. INITIALLY THE DEPTH OF FILL/CLAY IS TO BE ESTABLISHED TO ENSURE NEIGHBOURING PROPERTIES ARE NOT ADVERSELY AFFECTED. EARTH BATTERS TO BE A MAXIMUM SLOPE OF 1.0 m VERT. TO 1.7 m HORIZ. (AS PER GEOTECHNICAL REPORT). ANY BATTERS GREATER THAN 1.0 m VERT. TO 1.7 m HORIZ. ARE TO BE ADEQUATELY SHORED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS.
3. ANY PERMANENT RETAINING STRUCTURE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS.
4. ALL PERMANENT RETAINING STRUCTURES ARE TO BE COMPLETED WITH MINIMUM DELAY FOLLOWING EXCAVATION.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER.
6. CONTRACTOR TO MINIMISE DISTURBED AREAS.
7. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS.
8. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE.
9. ROADS AND FOOTPATH TO BE 'SWEEP' DAILY.

WARNING!
 EXPOSED EXCAVATION FACES SHOULD BE EXPECTED TO RECEIVE SEEPAGE FROM SURFACE AND SUBSURFACE WATER FLOW EMANATING FROM THE SOIL. THIS CAN RESULT IN RELAXATION OF EXCAVATION FACES CAUSING INSTABILITY. THEREFORE, EXCAVATION FACES SHOULD NOT REMAIN OPEN FOR LONG PERIODS OF TIME UNLESS ASSESSED TO BE STABLE BY A GEOTECHNICAL PROFESSIONAL. AN EXCAVATION TRENCH SHOULD ALSO BE INSTALLED AT THE BASE OF EXCAVATION CUTS TO BELOW FLOOR SLAB LEVELS TO REDUCE THE RISK OF LONG-TERM DAMPNESS. TRENCHES, AS WELL AS ALL NEW BUILDING GUTTERS, DOWNPIPES AND STORMWATER INTERCEPT TRENCHES SHOULD BE CONNECTED TO A STORMWATER SYSTEM DESIGNED BY A HYDRAULIC ENGINEER WHICH DISCHARGES TO THE COUNCIL'S STORMWATER SYSTEM OFF SITE.



SEDIMENT TRAP CONSTRUCTION SPECIFICATION:

- 1 - SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
- 2 - THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.
- 3 - CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN A MANNER, THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
- 4 - THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE CONSTRUCTED DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

SCHEDULE OF WORKS:

1. SILT FENCE AND ASSOCIATED WORKS INCLUDING INTERCEPTOR DRAIN IS TO BE INSTALLED BEFORE THE COMMENCEMENT OF ANY EXCAVATION.
2. CUTS TO BE EXECUTED TO THE REQUIRED LEVEL USING CONVENTIONAL EXCAVATION MACHINERY. INITIALLY THE DEPTH OF FILL/CLAY IS TO BE ESTABLISHED TO ENSURE NEIGHBOURING PROPERTIES ARE NOT ADVERSELY AFFECTED. EARTH BATTERS TO BE A MAXIMUM SLOPE OF 1.0 m VERT. TO 1.7 m HORIZ. (AS PER GEOTECHNICAL REPORT). ANY BATTERS GREATER THAN 1.0 m VERT. TO 1.7 m HORIZ. ARE TO BE ADEQUATELY SHORED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS.
3. ANY PERMANENT RETAINING STRUCTURE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS.
4. ALL PERMANENT RETAINING STRUCTURES ARE TO BE COMPLETED WITH MINIMUM DELAY FOLLOWING EXCAVATION.

NOTE:
 THE BUILDER/CONTRACTOR SHALL LOCATE ALL EXISTING PUBLIC UTILITY SERVICES WITHIN THE SITE, FOOTPATH AREA AND ROAD RESERVE PRIOR TO THE COMMENCEMENT OF ANY WORKS. ALL LOCATIONS AND LEVELS OF SERVICES SHALL BE REPORTED TO THE STORMWATER ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORKS TO ENSURE THAT THERE ARE NO OBSTRUCTIONS IN THE LINE OF THE DRAINAGE DISCHARGE PIPES.

NOTE: PIT, PIPE & DOWNPIPE LOCATIONS ARE INDICATIVE ONLY & MAY VARY DUE TO CONSTRAINTS. IF IN DOUBT, ASK!

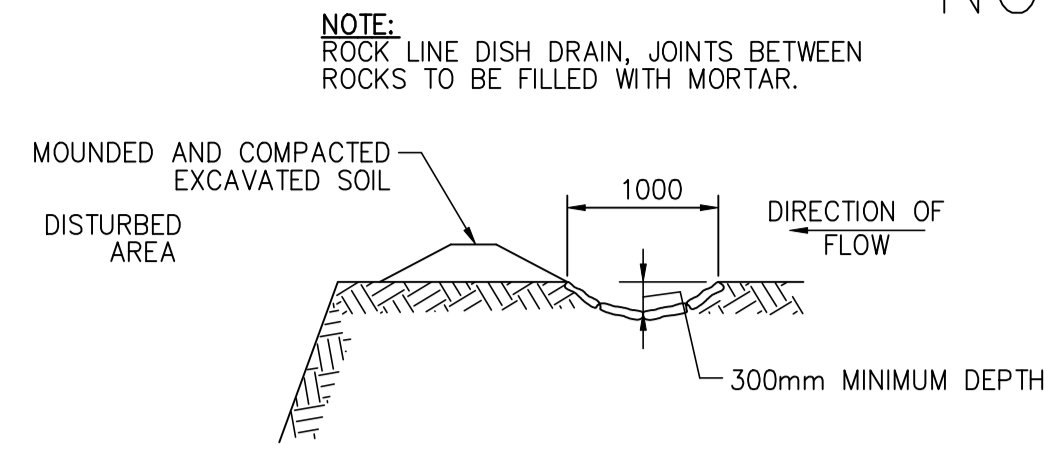
WARNING! CARE WHEN DIGGING AROUND TREE ROOTS. HAND DIGGING ONLY! MAY REQUIRE ARBORIST SUPERVISION.

A1 ORIGINAL		Issued for: DEVELOPMENT APPLICATION	Title: DESIGN	Initial: R.M.	Date: 07.04.2025	<p>STORMWATER • CIVIL • FLOOD MITIGATION</p> <p>ABN: 81 615 065 588 Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au</p>	Architect: WALSH ARCHITECTS	Project and Drawing Title: 32 GOLF AVENUE, MONA VALE	Local Council: NORTHERN BEACHES	
A		Date: 11.04.25	DRAWN	S.M.	07.04.2025		Client: LAXDTX 2 PTY LTD	SEDIMENT & EROSION CONTROL PLAN	Project Number: 240101_1	Drawing ID: SE100
Rev:	Date:	Description:	Checked	R.M.	11.04.2025					
			APPROVED	R.M.	11.04.2025					

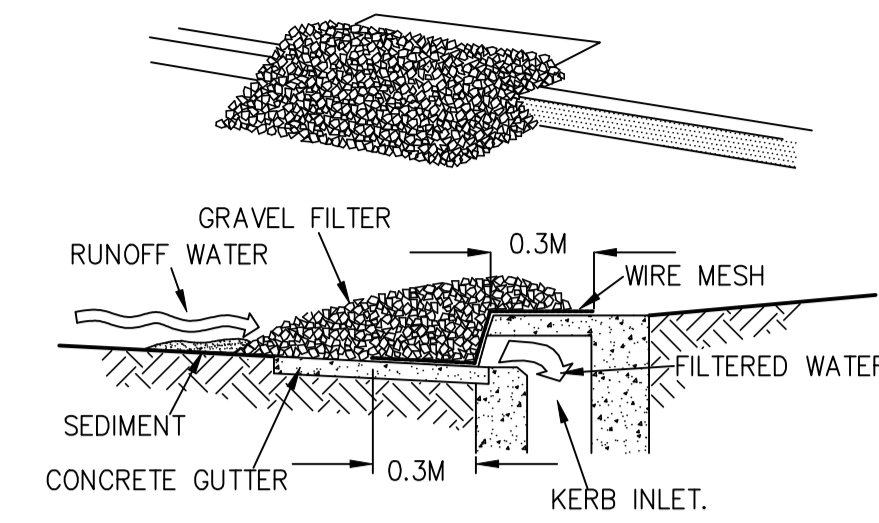


NOTES:
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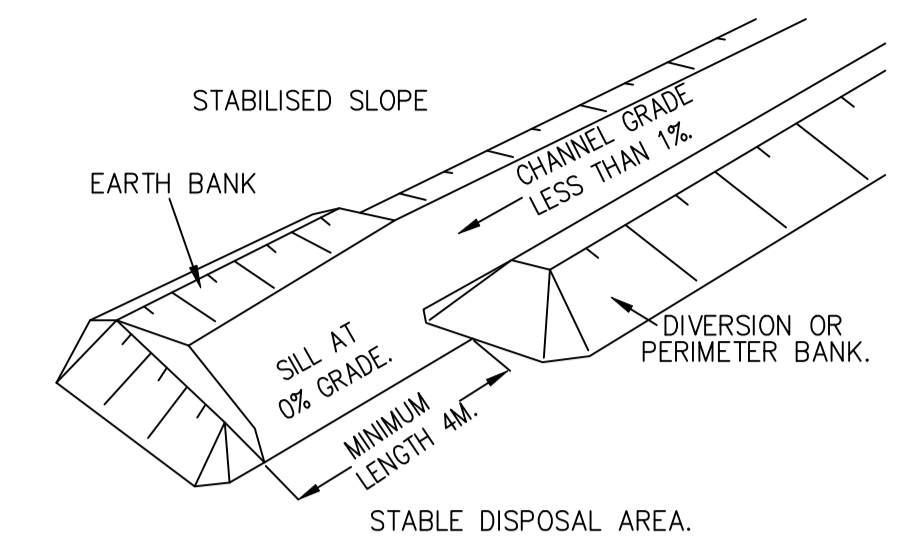
NOT FOR CONSTRUCTION



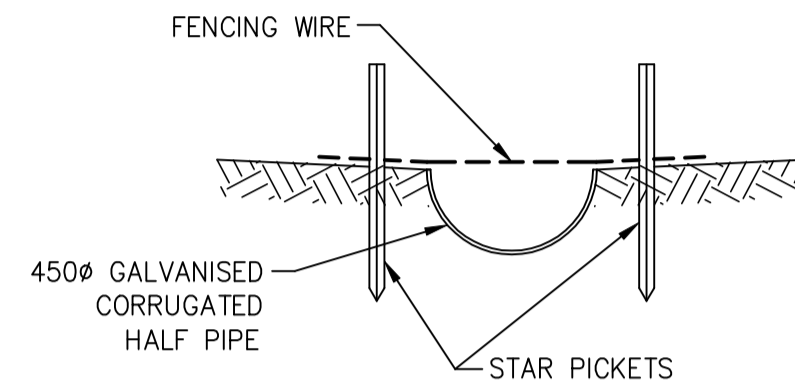
CATCH DRAIN – ROCK LINED
 SCALE = N.T.S.



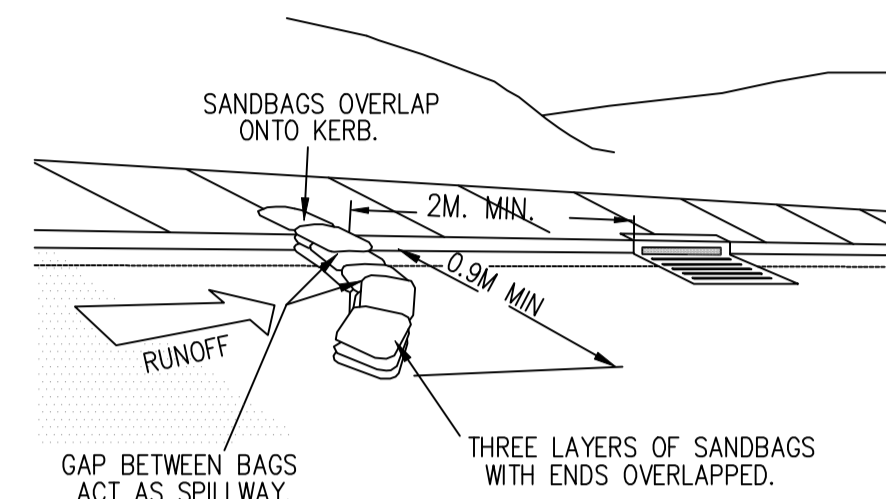
GRAVEL KERB INLET SEDIMENT TRAP
 SCALE = N.T.S.



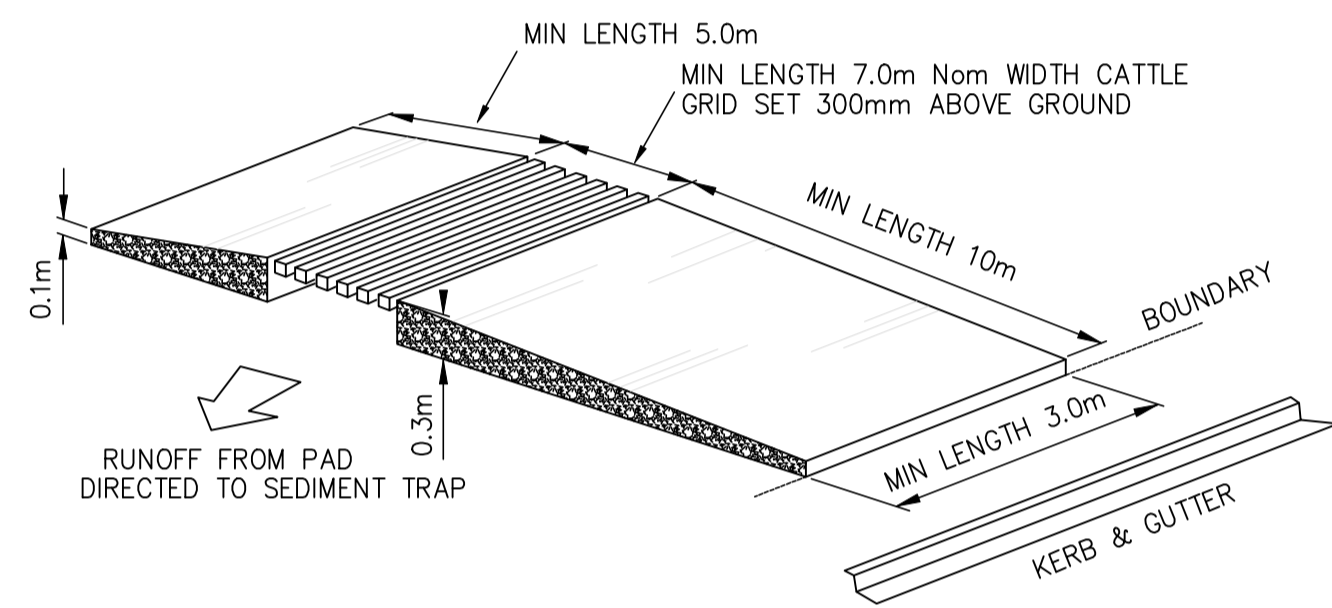
TYPICAL SPREADER DETAIL
 SCALE = N.T.S.



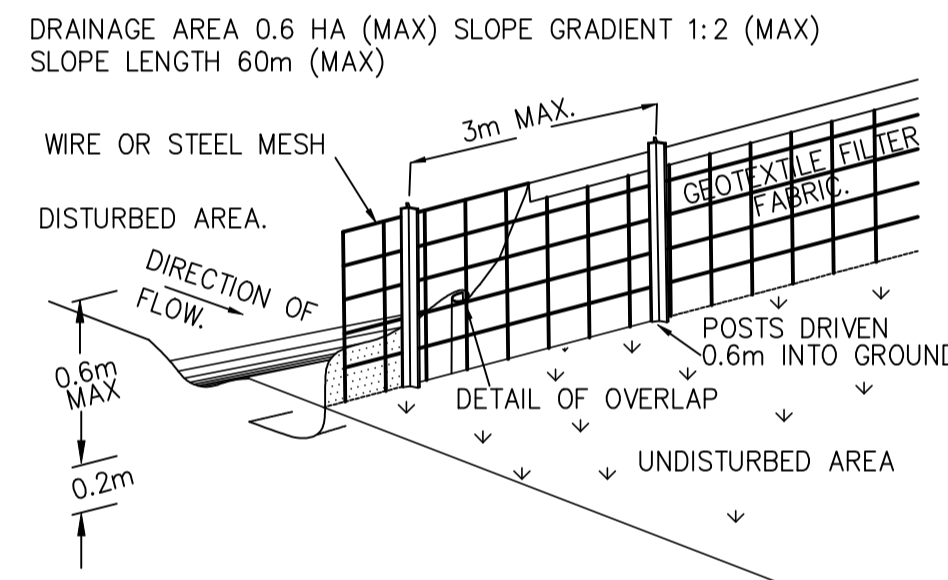
TEMPORARY DISH DRAIN
 SCALE = N.T.S.



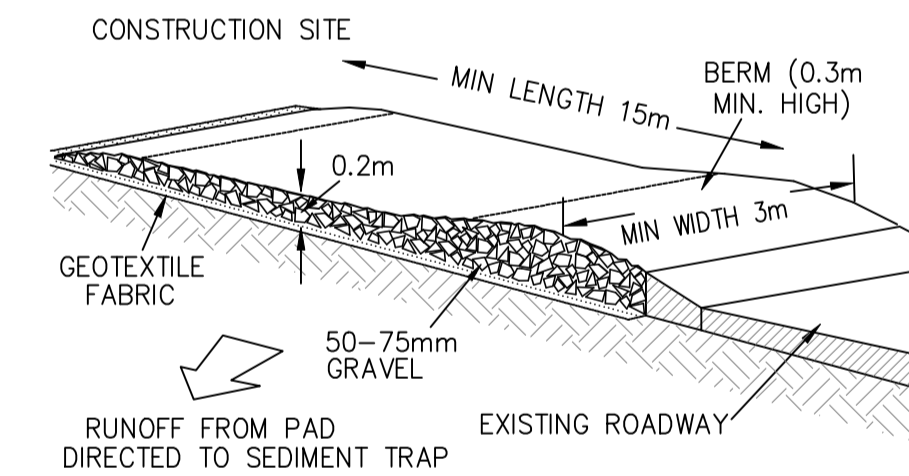
SEDIMENT TRAP SANDBAGS AT KERB INLETS
 SCALE = N.T.S.



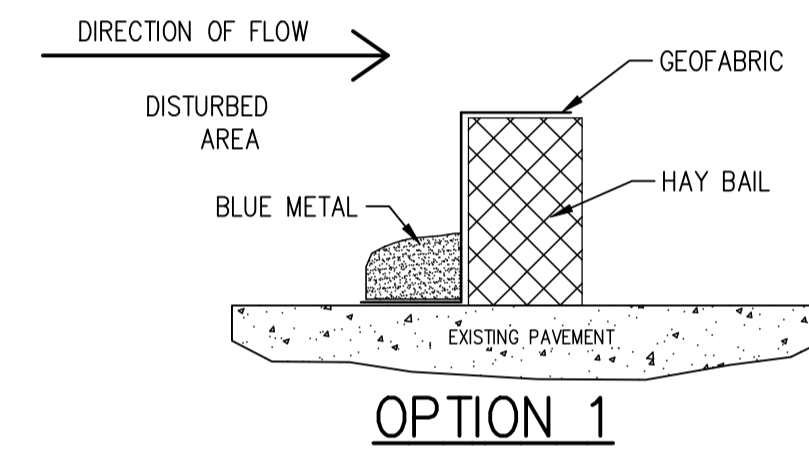
TYPICAL TEMPORARY CONSTRUCTION ENTRY & EXIT DETAIL (TYPE 2)
 NOTE: WHEEL WASH OR SPRAY MAY BE REQUIRED DURING WET WEATHER



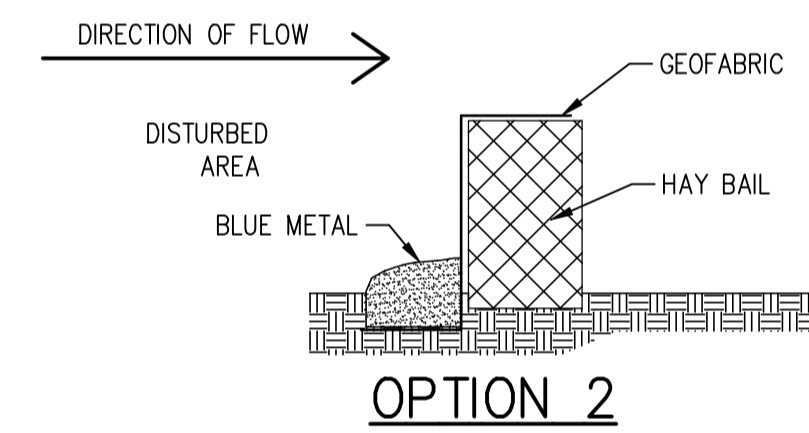
TYPICAL TEMPORARY SEDIMENT (SILT) FENCE
 NOTE:
 1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
 2. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND, 3 METRES APART.
 3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO 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 150mm OVERLAP.



TYPICAL TEMPORARY CONSTRUCTION ENTRY & EXIT DETAIL (TYPE 1)
 NOTE:
 1. STRIP TOPSOIL AND LEVEL SITE.
 2. COMPACT SUBGRADE AS REQUIRED.
 3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
 4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING ROADBASE OR 30mm AGGREGATE. MINIMUM LENGTH 15 METRES OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3m.
 5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP.
 6. OR CONSTRUCT A CATTLE GRID LOCATED AT ANY POINT WHERE TRAFFIC ENTERS OR LEAVES THE SITE.

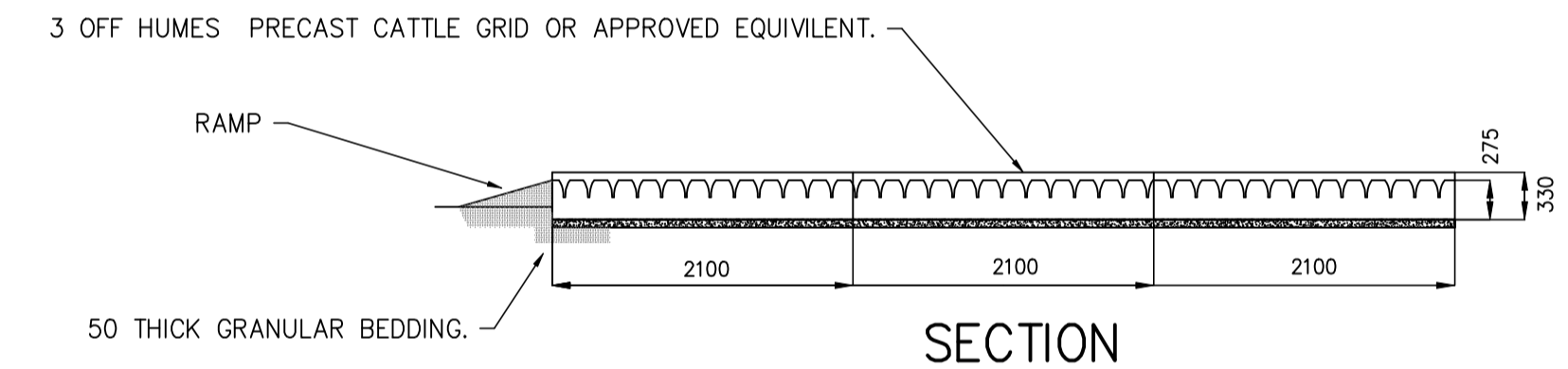
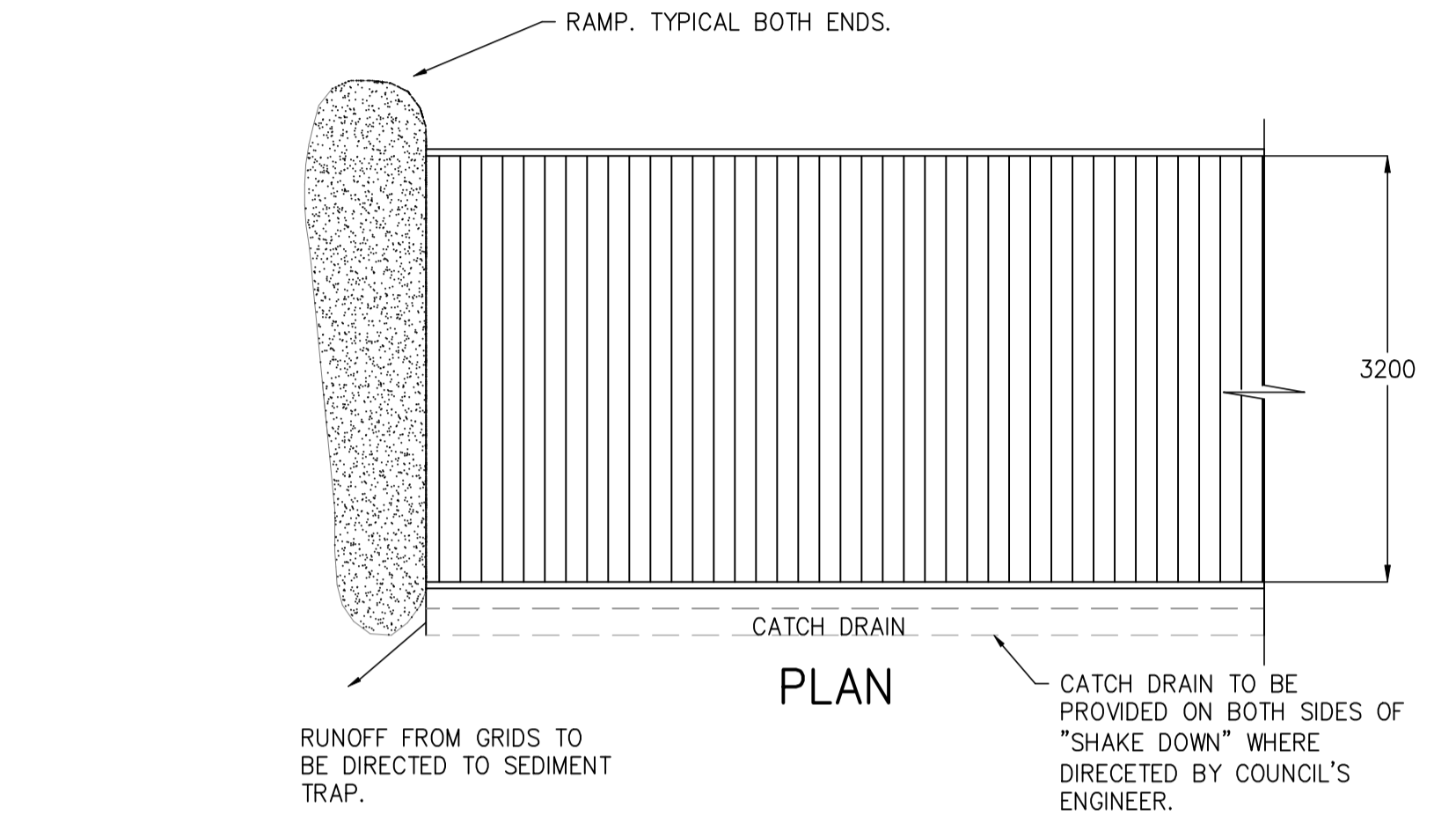


OPTION 1



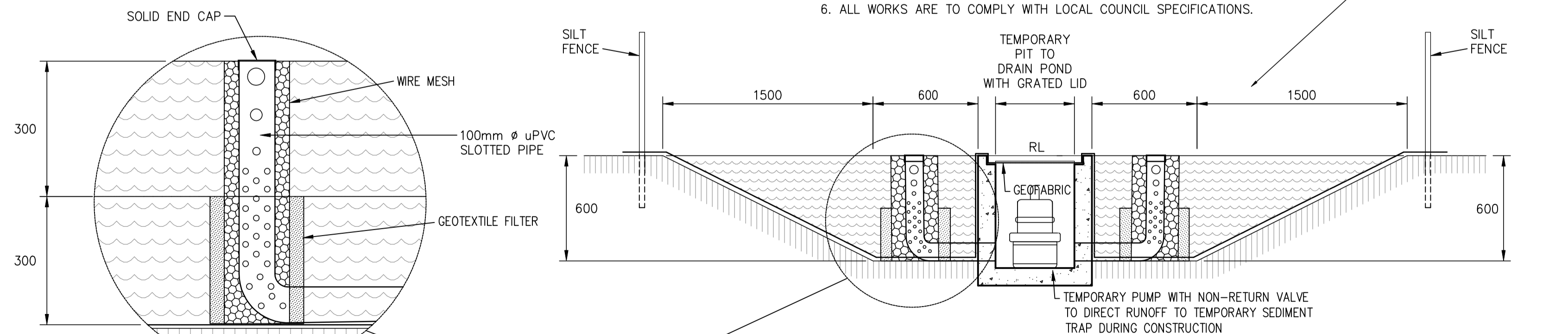
OPTION 2

REMOVABLE HAY BAIL DETAIL
 SCALE = N.T.S.



CATTLE GRID ENTRY & EXIT ALTERNATIVE
 SCALE = 1:20

NOTE:
 1. ALL EROSION AND SEDIMENT CONTROL ARE MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER.
 2. CONTRACTOR TO MINIMISE DISTURBED AREAS WHERE POSSIBLE.
 3. ALL STOCKPILES ARE TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS.
 4. DRAINAGE IS TO BE CONNECTED TO SITE STORMWATER DRAINAGE SYSTEM AS SOON AS POSSIBLE.
 5. ROADS AND FOOTPATH AREA TO BE SWEEP DAILY.
 6. ALL WORKS ARE TO COMPLY WITH LOCAL COUNCIL SPECIFICATIONS.

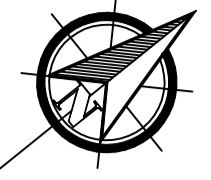


TEMPORARY SEDIMENT BASIN (SETTLING POND) TYPICAL DETAILS
 SCALE = 1:20

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A1 ORIGINAL		Issued for: DEVELOPMENT APPLICATION	Title: DESIGN	Initial: R.M.	Date: 07.04.2025		Architect: WALSH ARCHITECTS	Project and Drawing Title: 32 GOLF AVENUE, MONA VALE SEDIMENT & EROSION CONTROL PLAN DETAILS	Local Council: NORTHERN BEACHES		
Rev:	Date:	Description:	Reviewed:	Approved by: R.M. (Signature)	Checked: R.M.		11.04.2025		Client: LAXDTX 2 PTY LTD	Project Number: 240101_1SE200	Drawing ID: A



NOTES:
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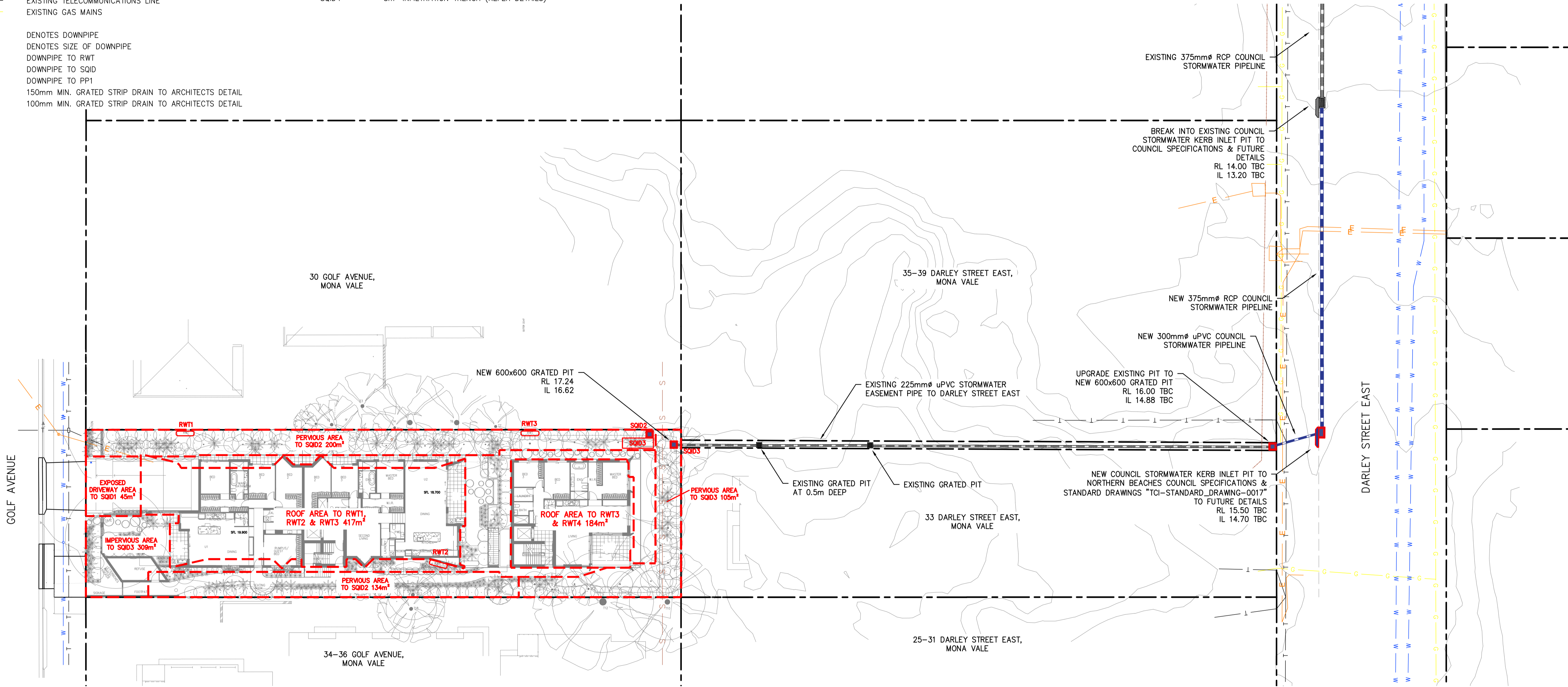
LEGEND

- STORMWATER PIT
- NEW STORMWATER PIPE
- STORMWATER PIPE FLOW DIRECTION
- STORMWATER PIPE TO RW TANK
- EXISTING STORMWATER PIPE
- FLUSH-OUT LINE
- BOUNDARY LINE
- EXISTING SEWER MAIN
- EXISTING OVERHEAD POWER LINES
- EXISTING ELECTRICITY LINE
- EXISTING WATER MAINS
- EXISTING TELECOMMUNICATIONS LINE
- EXISTING GAS MAINS
- DENOTES DOWNPIPE
- DENOTES SIZE OF DOWNPIPE
- DP1 DOWNPIPE TO RW TANK
- DP2 DOWNPIPE TO SQUID
- DP3 DOWNPIPE TO PP1
- GD1 150mm MIN. GRATED STRIP DRAIN TO ARCHITECTS DETAIL
- GD2 100mm MIN. GRATED STRIP DRAIN TO ARCHITECTS DETAIL

LEGEND

- PP1 6,000L PUMP OUT PIT
- PP2 900x900 GRATED LOWER PUMP OUT PIT TO FUTURE DETAILS
- AH1/AH2 600x600 GRATED ACCESS HATCH
- FD1 100ø/80 RAINWATER OUTLET (SPS TRUFLO)
- FD2 100ø/80 RAINWATER OUTLET WITH PLANTER ADAPTOR (SPS TRUFLO)
- O/F PROVIDE OVERFLOW SPS SCUPPER DRAIN 80mm
- RWO RAINWATER OUTLET
- RWT1-RWT3 2,000L MIN. TOTAL VOLUME RAINWATER TANKS (6,000L TOTAL)
- O/F OVERFLOW POINT - TO ARCHITECTUARL DETAILS
- FDB1 100ømm BASEMENT PERIMETER DRAIN
- DR1 100mm MIN. WIDE INTERNAL OPEN DISH DRAIN
- SQID1-SQID3 'SPEL' STORMSACK OR APPROVED EQUIVALENT
- SQID4 5m² INFILTRATION TRENCH (REFER DETAILS)

NOTE:
 EASEMENT PIPELINE ALIGNMENT AND DEPTHS HAVE BEEN ACCURATELY LOCATED - REFER REPORTS BY 'ALL LINE PLUMBING' & 'QURON PTY LTD'. PROPOSED PIPELINE, LEVELS AND SERVICES ARE BASED ON LIDAR INFORMATION OBTAINED FROM THE INTERGOVERNMENTAL COMMITTEE ON SURVEYING AND MAPPING (ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA) AND DIAL BEFORE DIG INFORMATION. DETAILED SURVEY INFORMATION AND SERVICE LOCATING IS REQUIRED PRIOR TO DETAILED DESIGN AND CONSTRUCTION DOCUMENTATION.



SITE STORMWATER CATCHMENT & EASEMENT PLAN

SCALE = 1 : 250

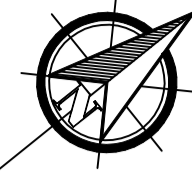
NOTE:
 THE BUILDER/CONTRACTOR SHALL LOCATE ALL EXISTING PUBLIC UTILITY SERVICES WITHIN THE SITE, FOOTPATH AREA AND ROAD RESERVE PRIOR TO THE COMMENCEMENT OF ANY WORKS. ALL LOCATIONS AND LEVELS OF SERVICES SHALL BE REPORTED TO THE STORMWATER ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORKS TO ENSURE THAT THERE ARE NO OBSTRUCTIONS IN THE LINE OF THE DRAINAGE DISCHARGE PIPES.

NOTE: PIT, PIPE & DOWNPIPE LOCATIONS ARE INDICATIVE ONLY & MAY VARY DUE TO CONSTRAINTS. IF IN DOUBT, ASK!

WARNING! CARE WHEN DIGGING AROUND TREE ROOTS. HAND DIGGING ONLY! MAY REQUIRE ARBORIST SUPERVISION.



A1 ORIGINAL		Issued for: DEVELOPMENT APPLICATION	Title:	Initial:	Date:	 STORMWATER • CIVIL • FLOOD MITIGATION ABN: 81 615 065 588 Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au	Architect:	Project and Drawing Title:	Local Council:
		Approved by:	DESIGN	R.M.	07.04.2025		WALSH ARCHITECTS	32 GOLF AVENUE, MONA VALE SITE STORMWATER CATCHMENT & EASEMENT PLAN	NORTHERN BEACHES
		Date: 11.04.25	DRAWN	S.M.	07.04.2025		Project Number:		Drawing ID:
Rev:	Date:	Description:	CHECKED	R.M.	11.04.2025		LAXDTX 2 PTY LTD	240101_1SW100	A
			APPROVED	R.M.	11.04.2025				



NOTES:
1. U.N.O REFER TO THE COVERPAGE 001 SERIES FOR DETAILED NOTES AND CALCULATIONS.
2. ALL DIMENSIONS SHALL BE VERIFIED ONSITE BY BUILDER BEFORE COMMENCING WITH WORK.

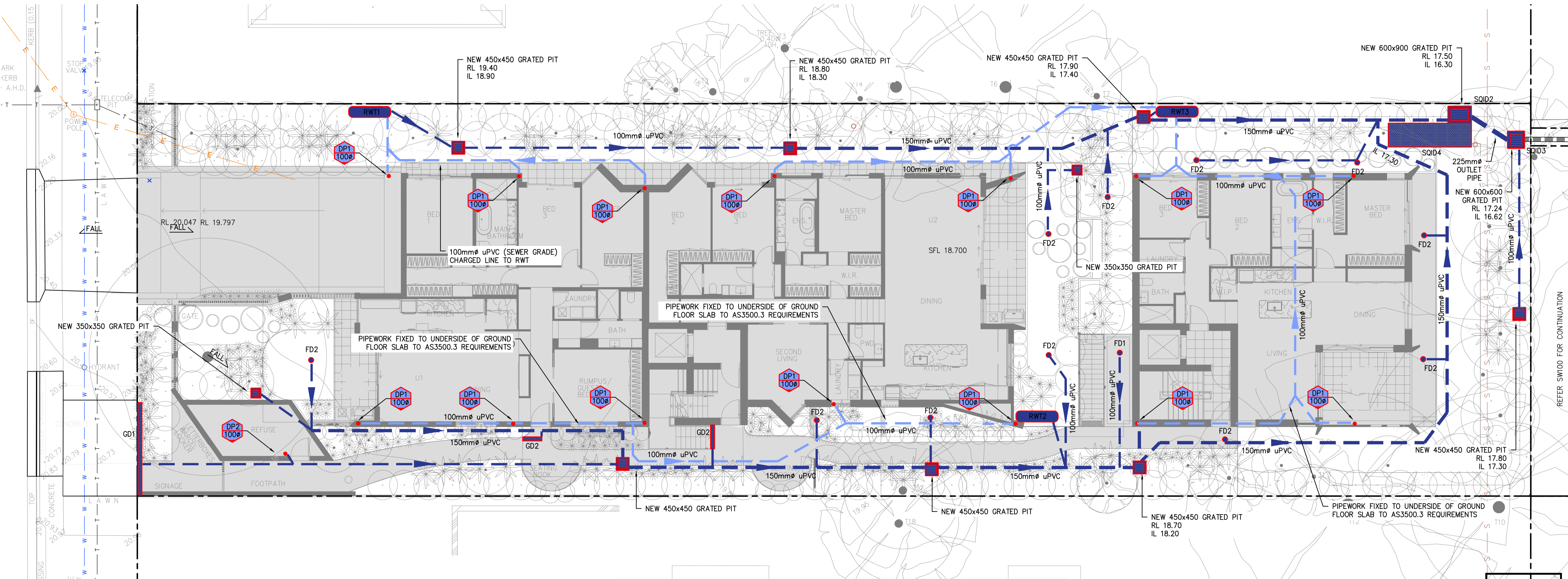
LEGEND

- STORMWATER PIT
- NEW STORMWATER PIPE
- STORMWATER PIPE FLOW DIRECTION
- STORMWATER PIPE TO RWT
- EXISTING STORMWATER PIPE
- FLUSH-OUT LINE
- BOUNDARY LINE
- EXISTING SEWER MAIN
- EXISTING OVERHEAD POWER LINES
- EXISTING ELECTRICITY LINE
- EXISTING WATER MAINS
- EXISTING TELECOMMUNICATIONS LINE
- EXISTING GAS MAINS

LEGEND

- PP1 6,000L PUMP OUT PIT
- PP2 900x900 GRATED LOWER PUMP OUT PIT TO FUTURE DETAILS
- AH1/AH2 600x600 GRATED ACCESS HATCH
- FD1 100ø/80 RAINWATER OUTLET (SPS TRUFLO)
- FD2 100ø/80 RAINWATER OUTLET WITH PLANTER ADAPTOR (SPS TRUFLO)
- O/F PROVIDE OVERFLOW SPS SCUPPER DRAIN 80mm
- RWO RAINWATER OUTLET
- RWT1-RWT3 2,000L MIN. TOTAL VOLUME RAINWATER TANKS (6,000L TOTAL)
- O/F OVERFLOW POINT - TO ARCHITECTUARL DETAILS
- FDB1 100mm BASEMENT PERIMETER DRAIN
- DR1 100mm MIN. WIDE INTERNAL OPEN DISH DRAIN
- SQID1-SQID3 'SPEL' STORMSACK OR APPROVED EQUIVALENT
- SQID4 5m² INFILTRATION TRENCH (REFER DETAILS)

- DENOTES DOWNPIPE
- DENOTES SIZE OF DOWNPIPE
- DP1 DOWNPIPE TO RWT
- DP2 DOWNPIPE TO SQD
- DP3 DOWNPIPE TO PP1
- GD1 150mm MIN. GRATED STRIP DRAIN TO ARCHITECTS DETAIL
- GD2 100mm MIN. GRATED STRIP DRAIN TO ARCHITECTS DETAIL



GROUND STORMWATER MANAGEMENT PLAN

SCALE = 1 : 100

NOTE:
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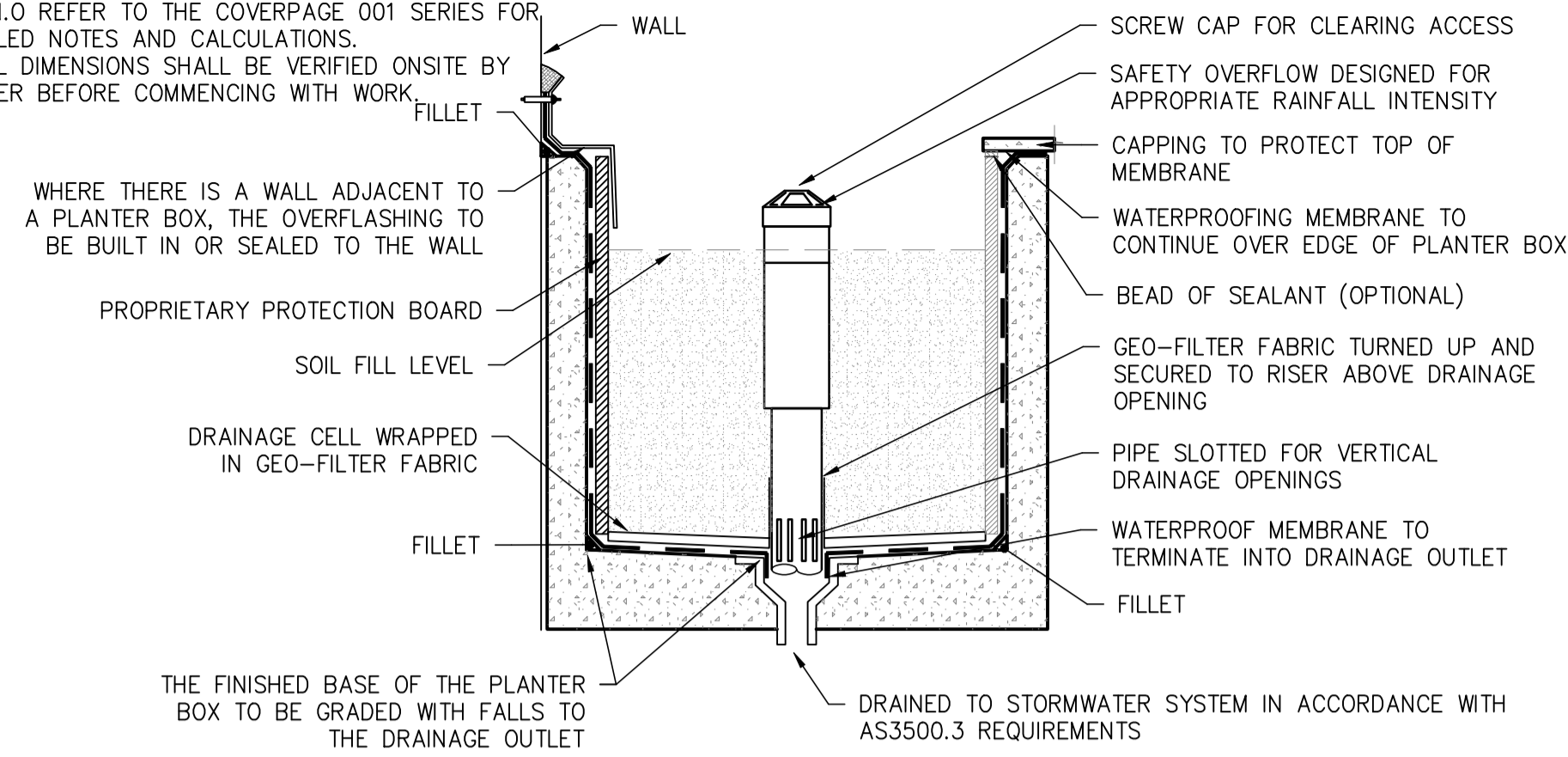
NOTE: PIT, PIPE & DOWNPIPE LOCATIONS ARE INDICATIVE ONLY & MAY VARY DUE TO CONSTRAINTS. IF IN DOUBT, ASK!

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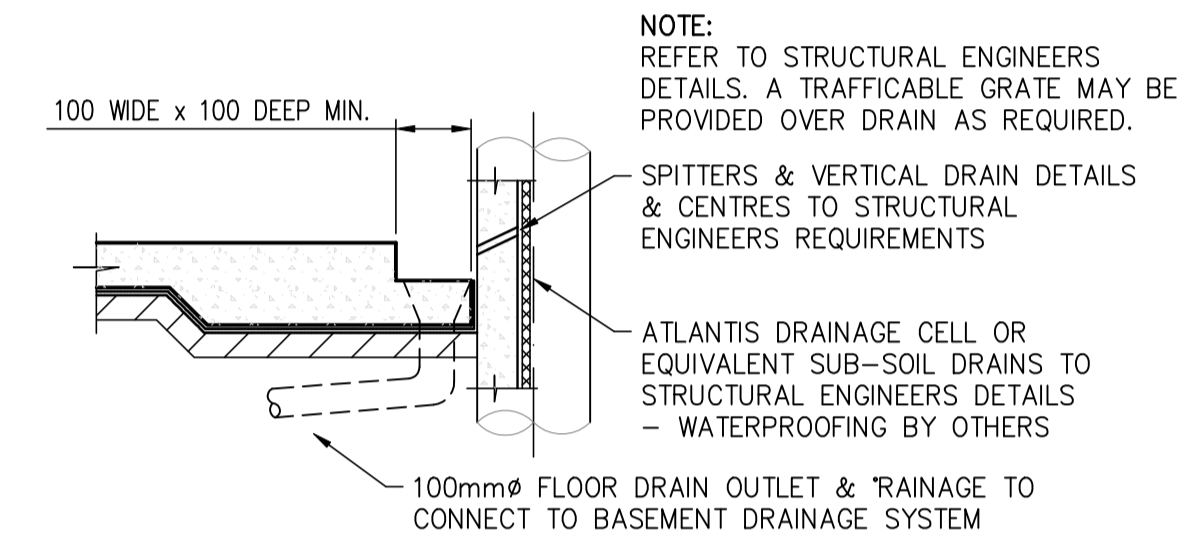
A1 ORIGINAL		Issued for: DEVELOPMENT APPLICATION	Title:	Initial:	Date:	 STORMWATER • CIVIL • FLOOD MITIGATION ABN: 81 615 065 588 Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au	Architect:	Project and Drawing Title:		Local Council:	
Rev:	Date:	Description:	Reviewed:	DESIGN R.M. 07.04.2025	DRAWN S.M. 07.04.2025		WALSH ARCHITECTS LAXDTX 2 PTY LTD	32 GOLF AVENUE, MONA VALE GROUND STORMWATER MANAGEMENT PLAN		NORTHERN BEACHES Project Number: 240101_1SW102 Drawing ID: A Issue: A	

NOTES:
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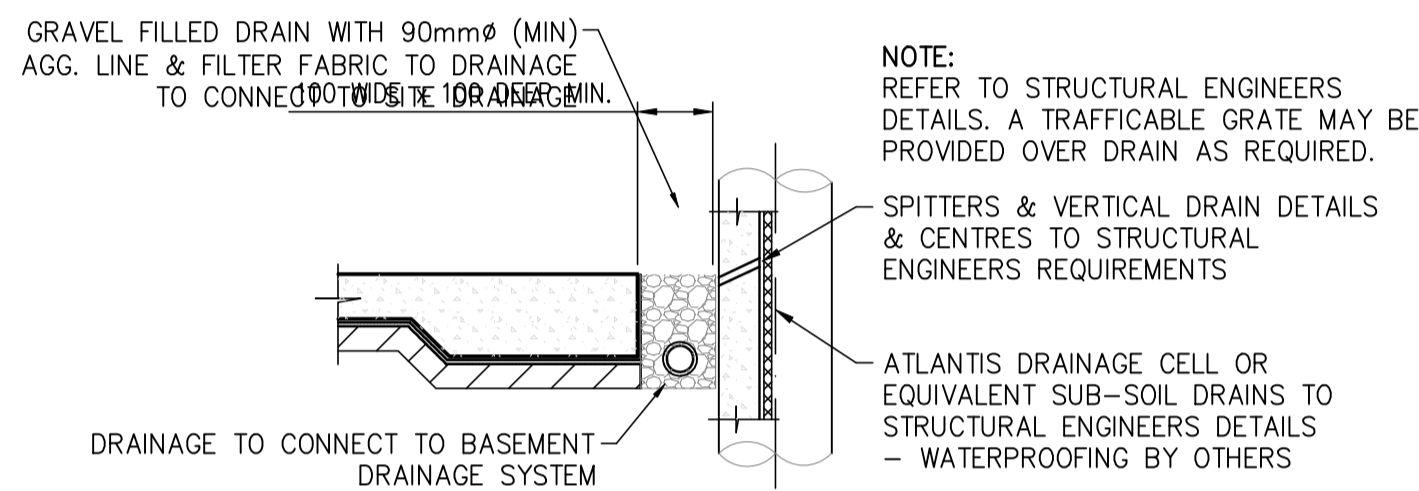


TYPICAL PLANTER BOX CONSTRUCTION
 SCALE = NTS

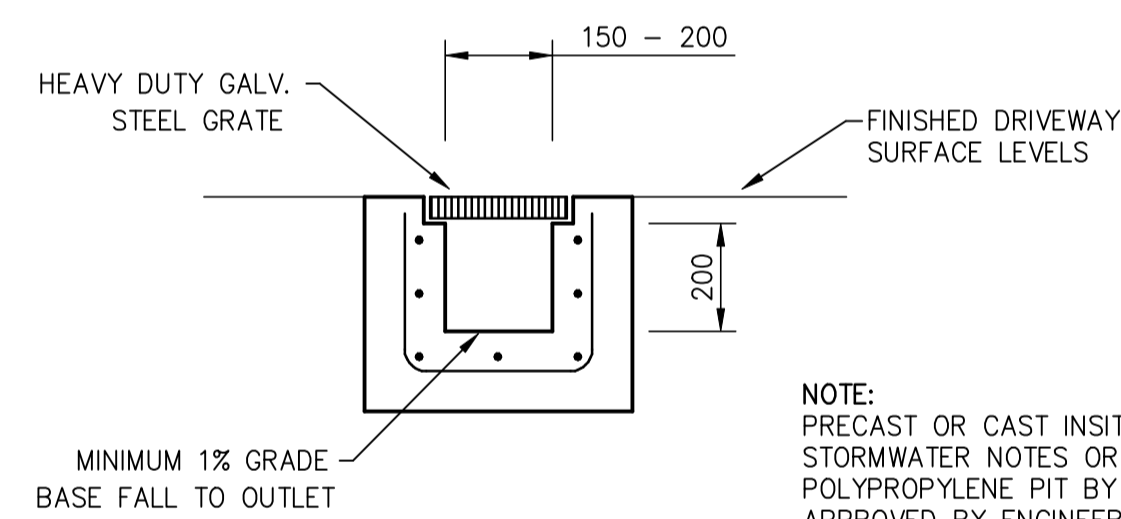
NOTE: REFER TO ARCHITECT FOR SITE SPECIFIC DETAILS.



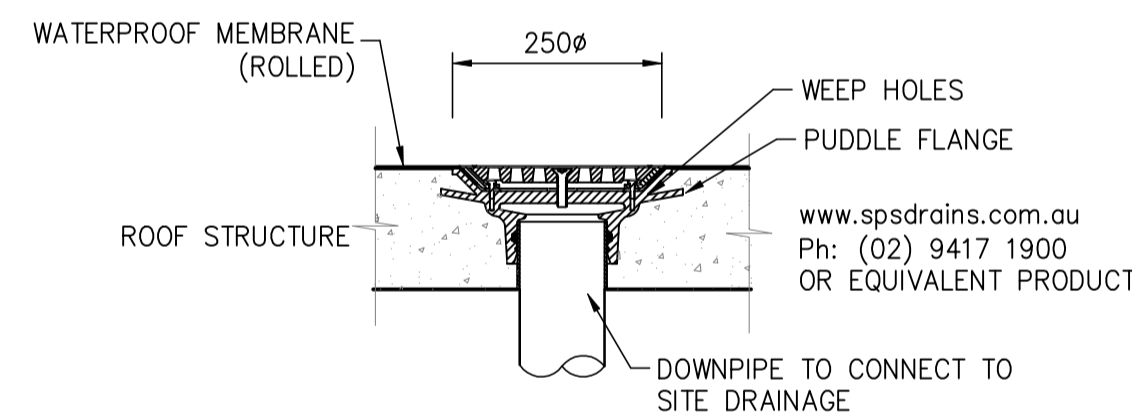
BASEMENT DRAIN (DR1) DETAIL
 SCALE = 1 : 20



BASEMENT DRAIN (DR1) ALTERNATIVE DETAIL
 SCALE = 1 : 20

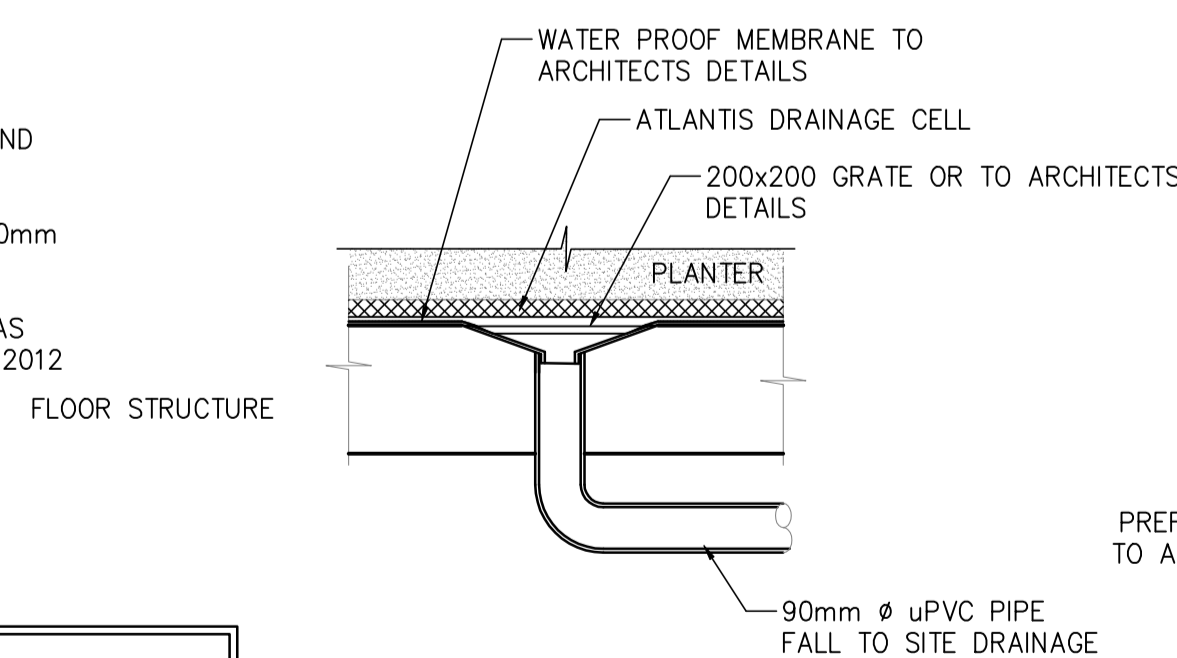


TYPICAL DRIVEWAY GRATED DRAIN (GD)
 SCALE = 1 : 20

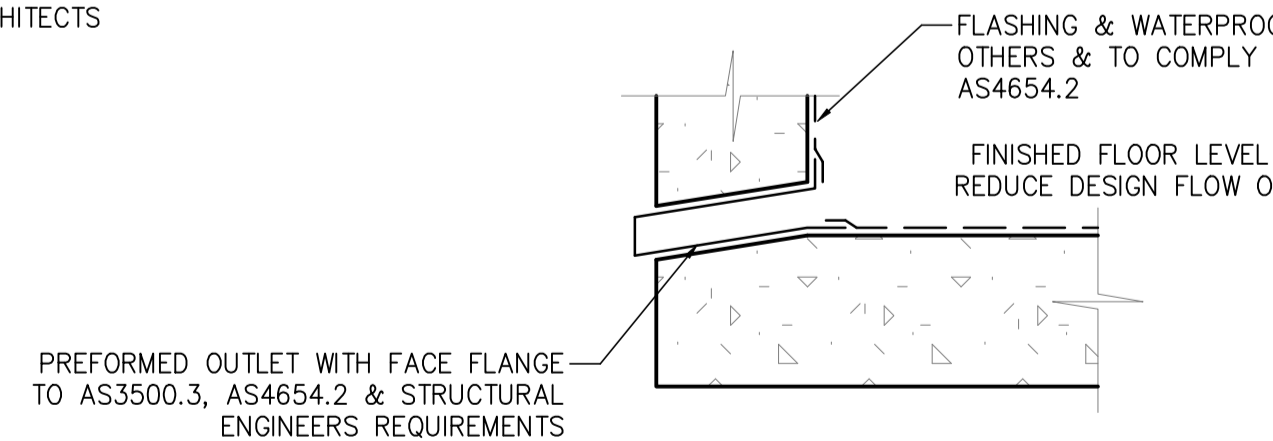


TYPICAL RAINWATER OUTLET (RWO) DETAIL
 SCALE = 1 : 20

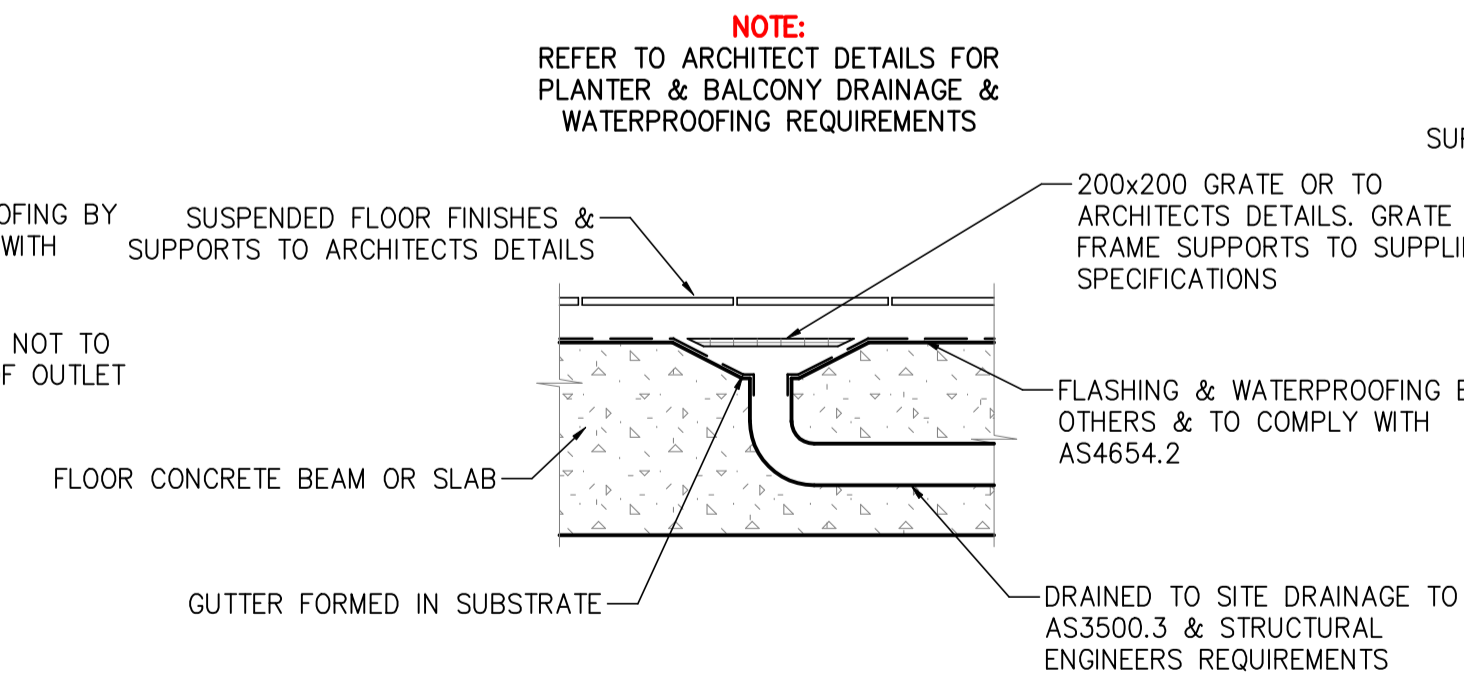
NOTE: FLOOR DRAINS TO BE INSTALLED WITHIN ALL PLANTERS AND PATIOS TO ARCHITECTS DETAILS AND AS3500.3 REQUIREMENTS. FLOOR DRAINS ARE TO DRAIN BY GRAVITY TO THE NEAREST DRAINAGE STRUCTURE AND MUST BE LOCATED AT LEAST 500mm ABOVE CONNECTION POINT. BALCONY HOB TO ARCHITECT DETAILS. ENSURE ALL BALCONIES ARE FITTED WITH 2 x 50mm SPITTER PIPES TO ACT AS OVERFLOW POINT IN ACCORDANCE WITH AS4564.2:2012 REQUIREMENTS. IF IN DOUBT, CONTACT THE ENGINEER.



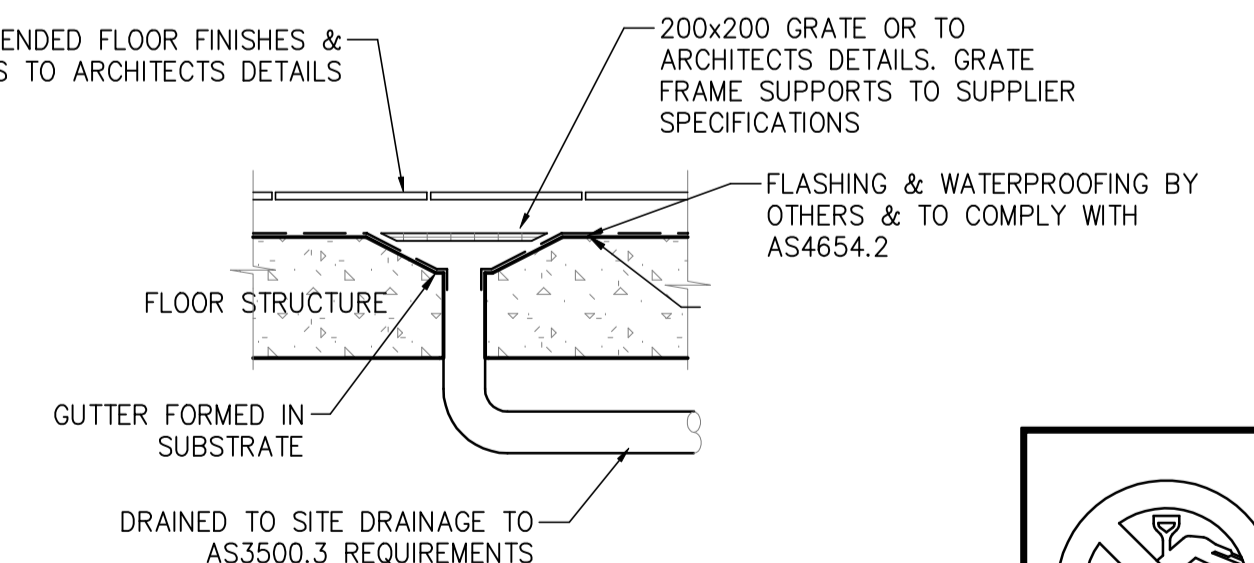
STANDARD FLOOR DRAIN
 SCALE = 1 : 20



PREFORMED OUTLET TO PARAPET OR BALCONY OVERFLOW
 NOT TO SCALE

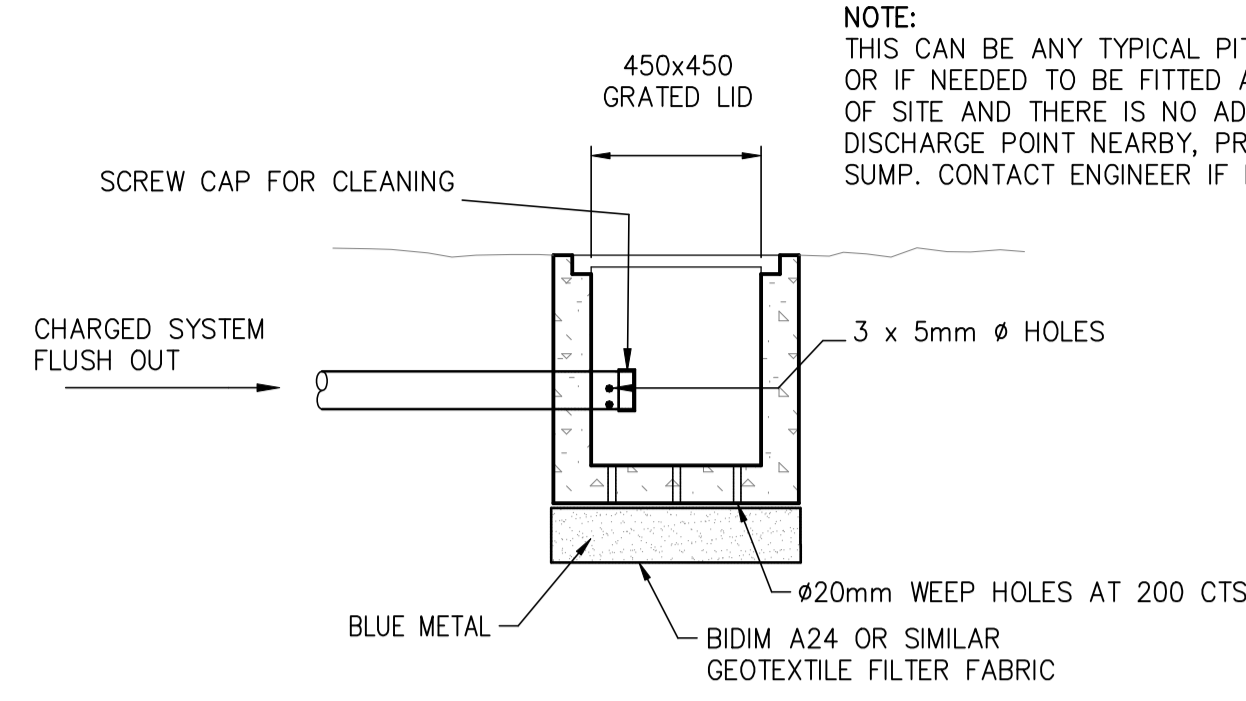


STANDARD FLOOR PATIO DRAIN
 SCALE = 1 : 20

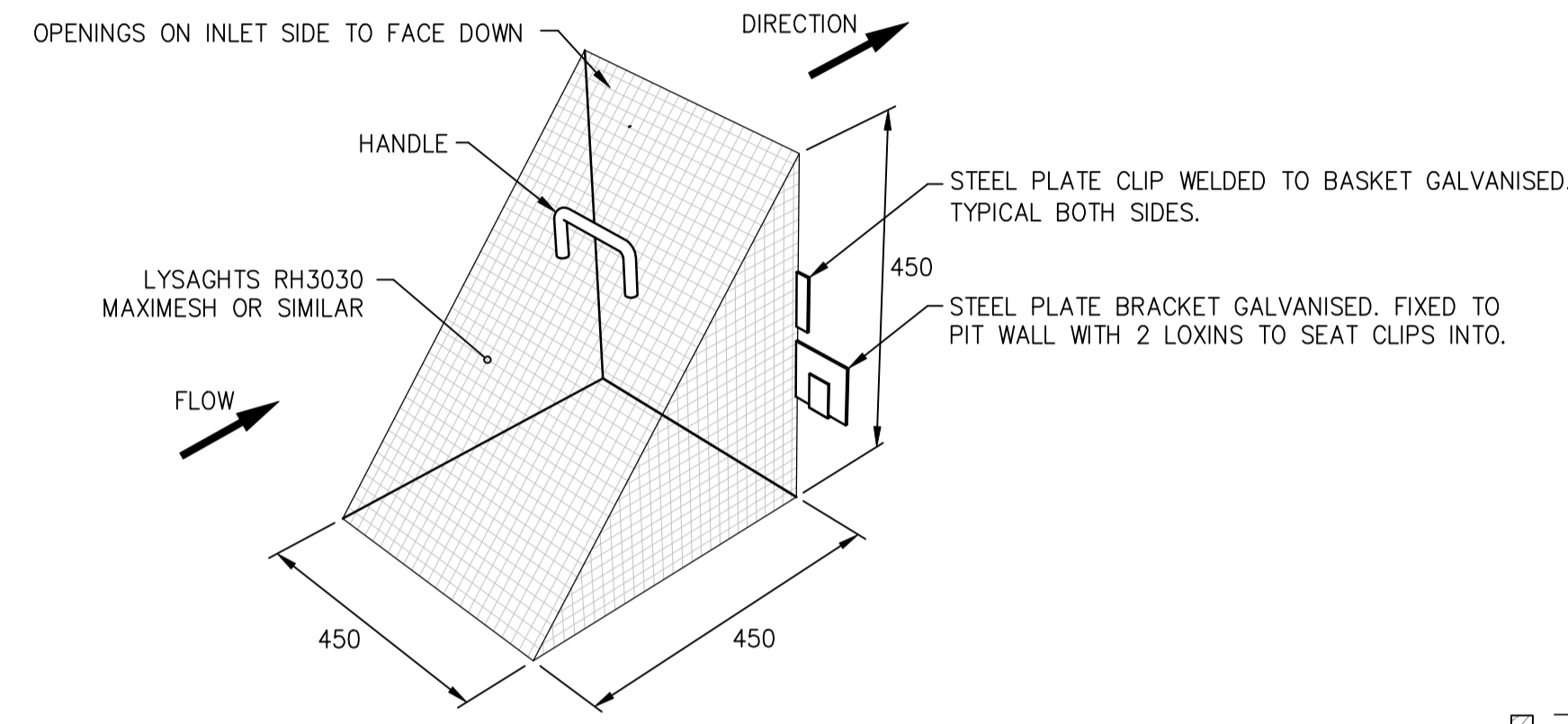


STANDARD FLOOR DRAIN (OPTION FOR BALCONIES ONLY)
 SCALE = 1 : 20

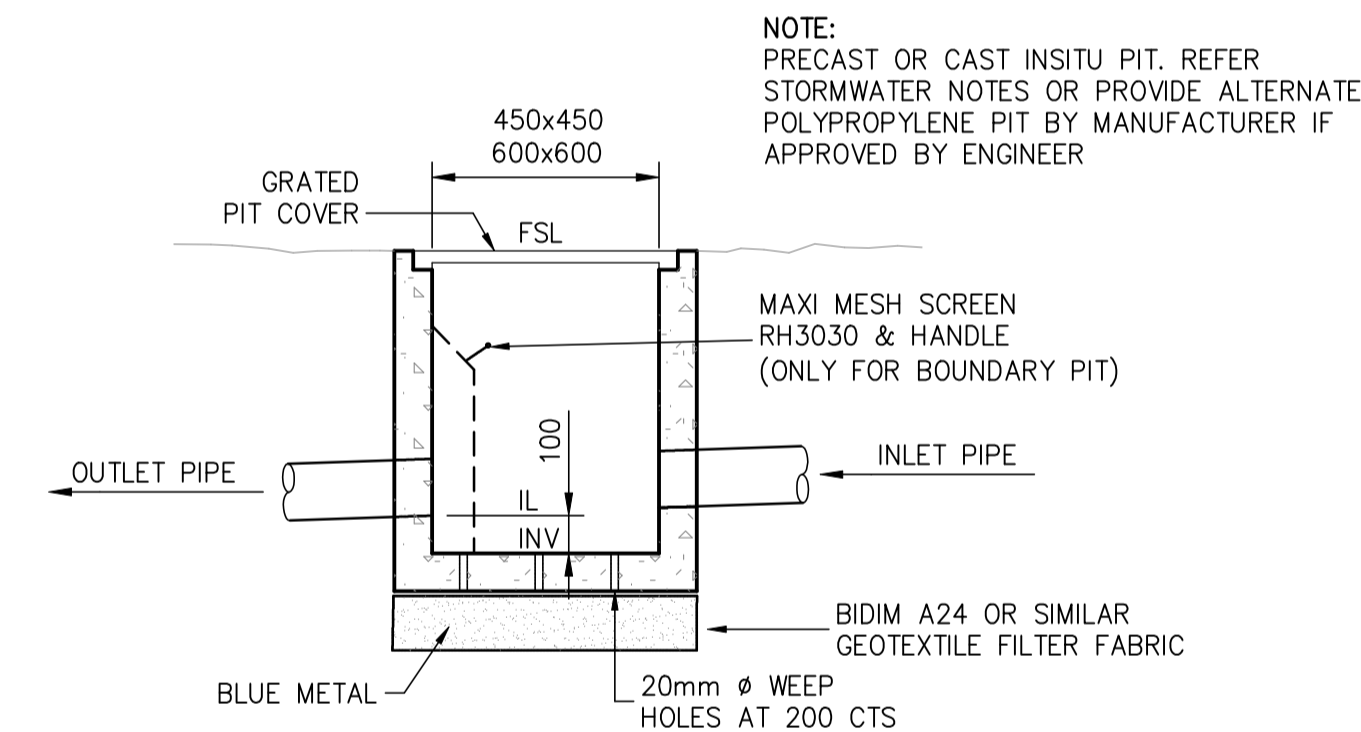
NOT FOR CONSTRUCTION



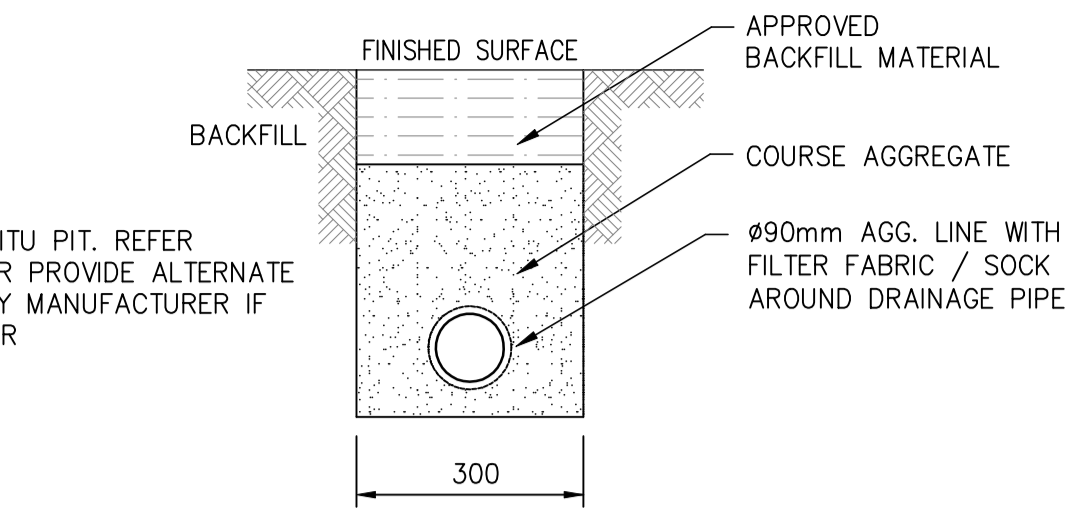
FLUSH OUT PIT DETAIL
 SCALE = 1 : 20



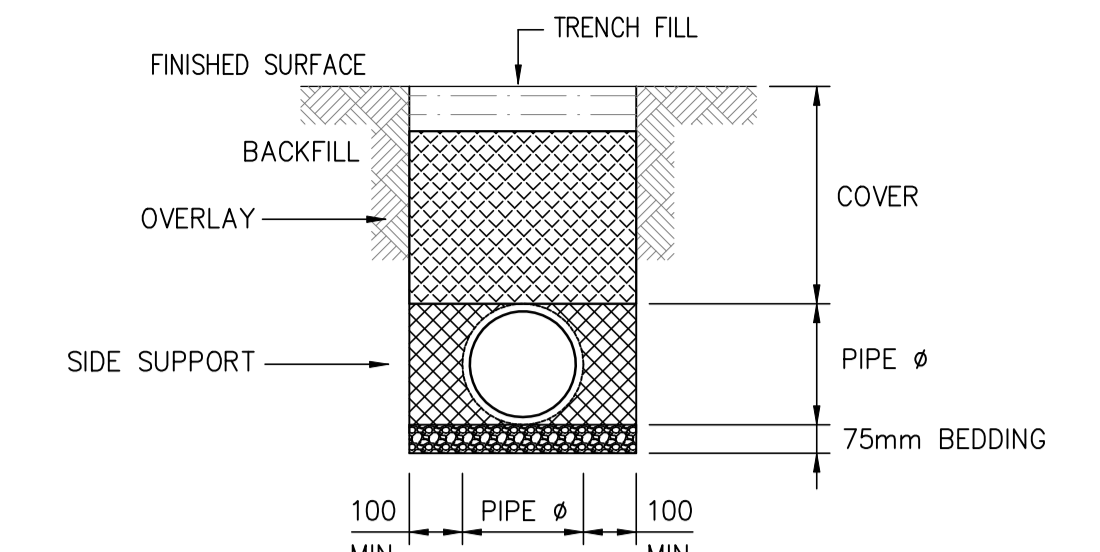
MAXI MESH SCREEN DETAIL
 SCALE = N.T.S.



TYPICAL PIT DETAIL
 SCALE = 1 : 20

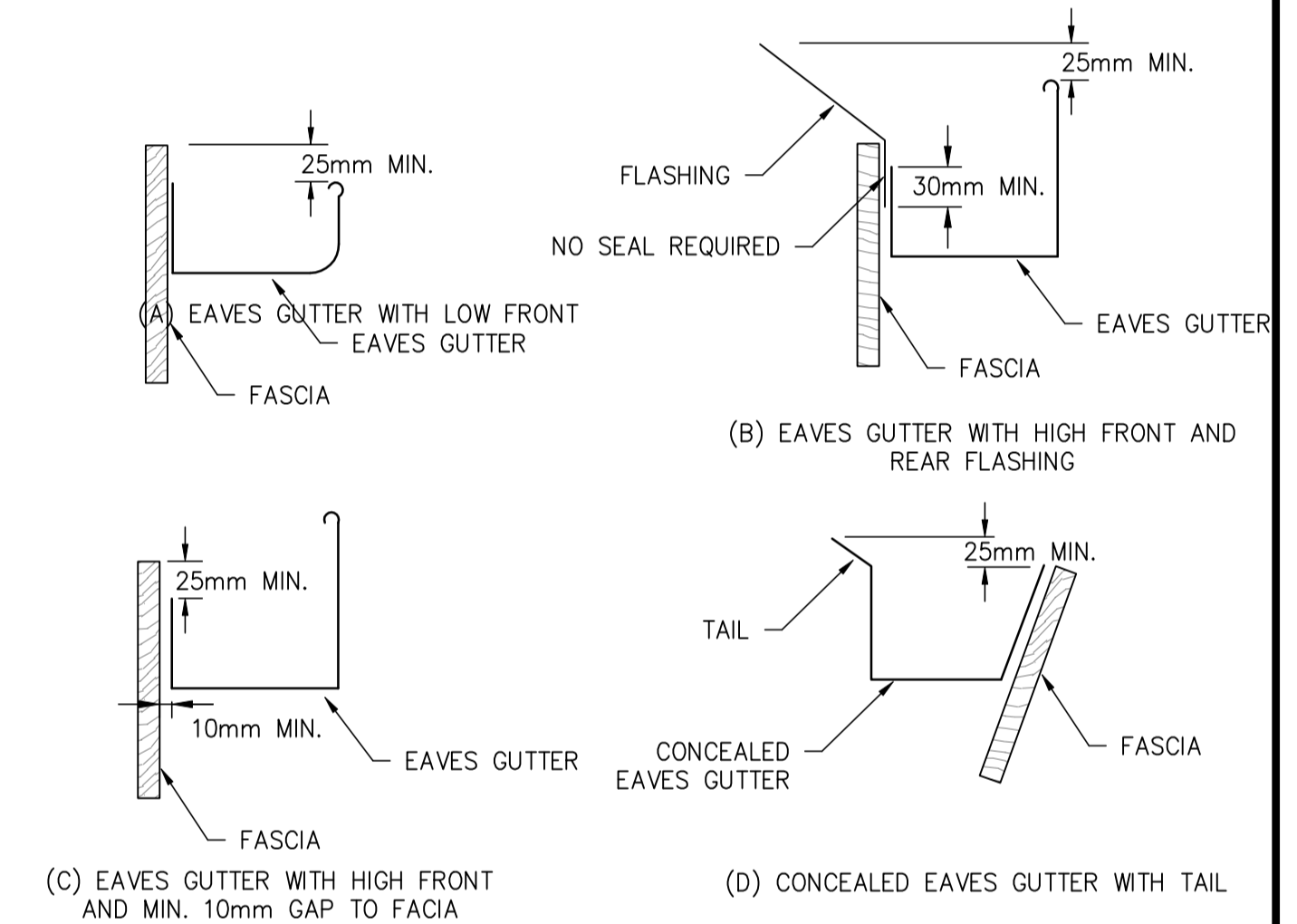


TYPICAL SUB-SOIL TRENCH DETAIL
 SCALE = N.T.S.



TYPICAL uPVC PIPE TRENCH DETAIL
 SCALE = N.T.S.

NOTE - STANDARD uPVC PIPE TRENCH: SUITABLE BEDDING TO AS2032:
 1. SAND FREE FROM ROCK OR OTHER HARD AND SHARP OBJECTS THAT WOULD BE RETAINED ON 13.2 SIEVE.
 2. CRUSHED ROCK OR GRAVEL OF APPROVED GRADING UP TO MAXIMUM SIZE OF 14mm.
 3. THE EXCAVATED MATERIAL MAY BE USED IF IT IS FREE FROM ROCK OR HARD MATTER AND BROKEN UP SO THAT IT CONTAINS NO SOIL LUMPS HAVING ANY DIMENSIONS GREATER THAN 75mm WHICH WOULD PREVENT ADEQUATE COMPACTION OF THE BEDDING.
 SIDE SUPPORT: MATERIAL FOR PIPE SUPPORT SHOULD BE ADEQUATELY TAMPED IN LAYERS OF NOT MORE THAN 150mm.
 OVERLAY: PIPE OVERLAY MATERIAL SHOULD BE LEVELED AND TAMPED IN LAYERS TO A MINIMUM HEIGHT OF 150mm ABOVE THE CROWN OF PIPE.
 COVER: FOR MIN COVER REFER TO AS3500.3:2018.



EAVES GUTTER OVERFLOW METHODS
 SCALE: 1:20

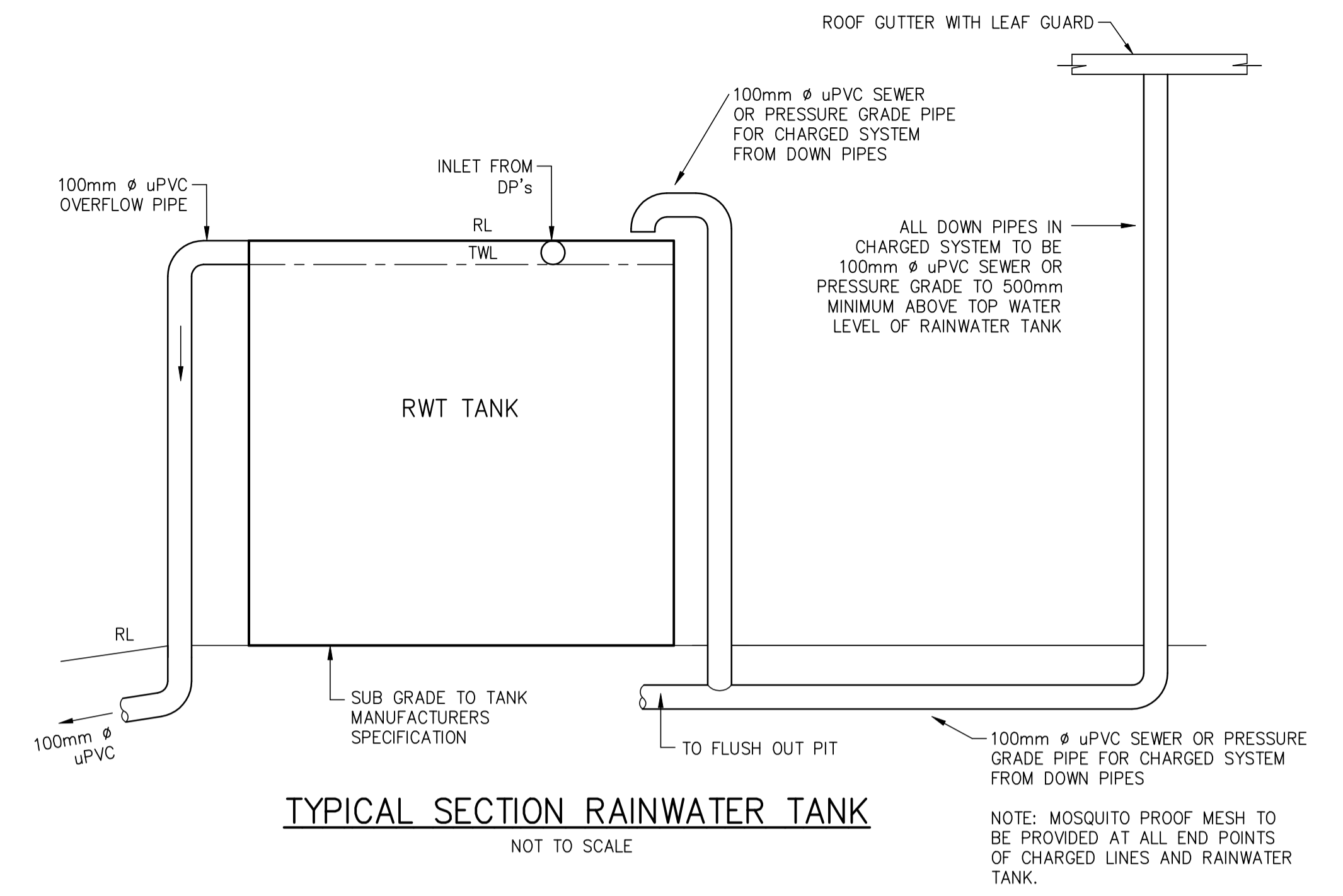
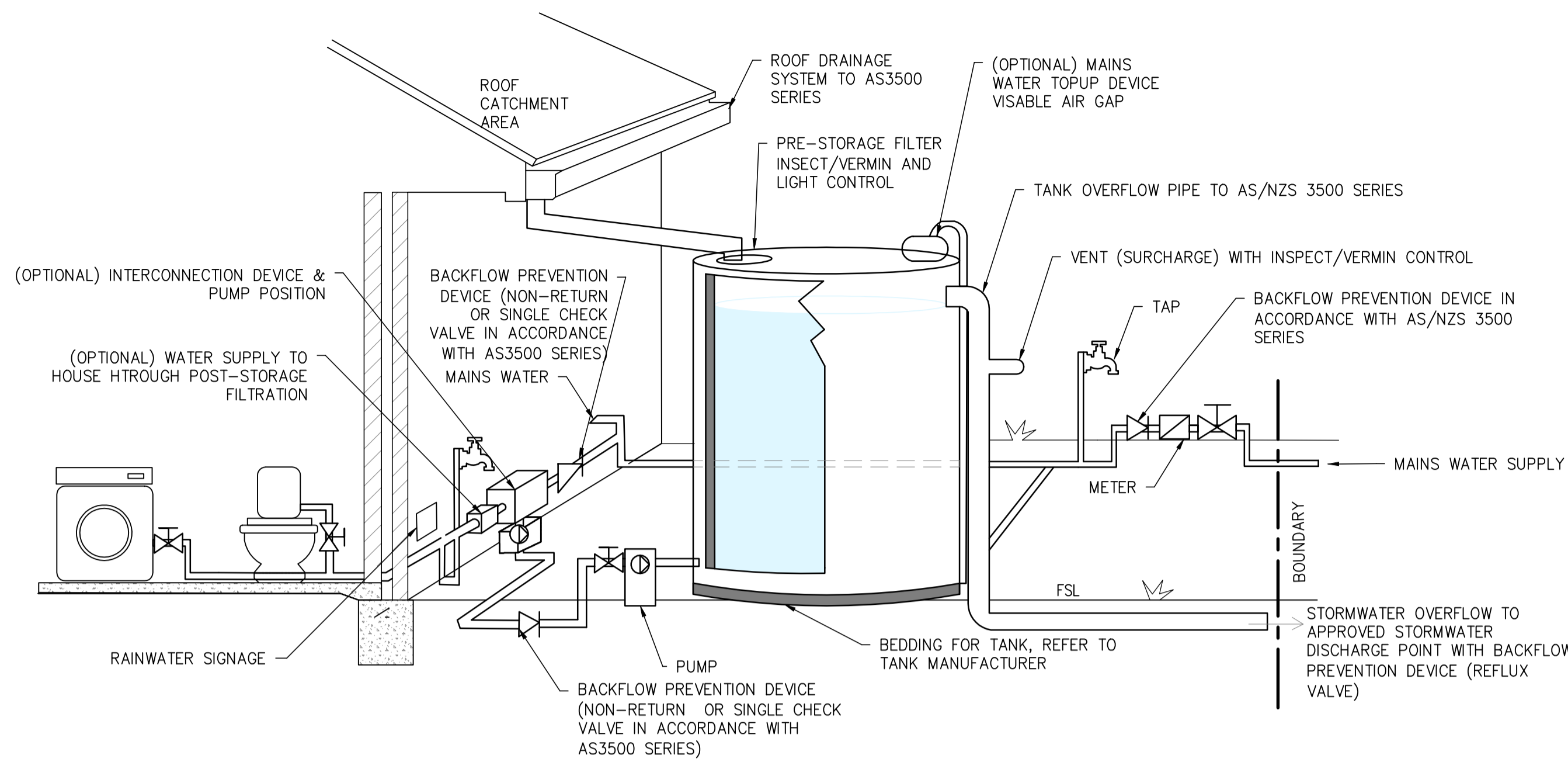
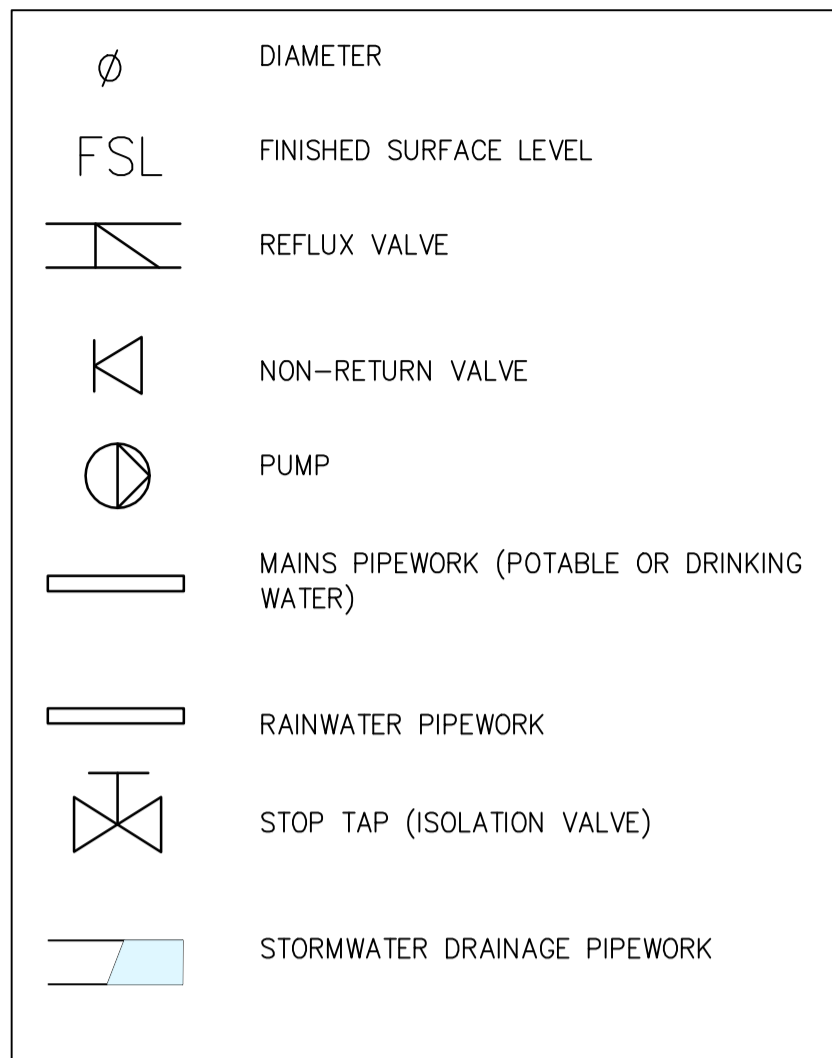
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A1 ORIGINAL		Issued for: DEVELOPMENT APPLICATION	Title: DESIGN	Initial: R.M.	Date: 07.04.2025		Architect: WALSH ARCHITECTS	Project and Drawing Title: 32 GOLF AVENUE, MONA VALE STORMWATER DRAINAGE DETAILS SHEET 1 OF 2	Local Council: NORTHERN BEACHES		
Rev:	Date:	Description:	Reviewed:	Approved by: Rhys Mikhail	Date: 11.04.25		Director Principal Engineer NER: 2570982 RPEQ: 17490 BEng (Civil) Hons MIEAust. CPEng NER RPEQ APEC InPE(Aust)		Client: LAXDTX 2 PTY LTD	Project Number: 240101_1SW200	Drawing ID: A



NOTES:
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NOT FOR CONSTRUCTION



TYPICAL ABOVE-GROUND RAINWATER TANK INSTALLATION WITH MAINS WATER TOP-UP AND RAINWATER SUPPLIED TO APPLIANCES IN THE HOUSEHOLD (HB 230-2008)



TYPICAL TANK SIGNAGE
N.T.S

TANK STRUCTURE TO BE TANKED TO BASEMENT LEVEL (MIN.) - TBC AT DETAILED DESIGN STAGE

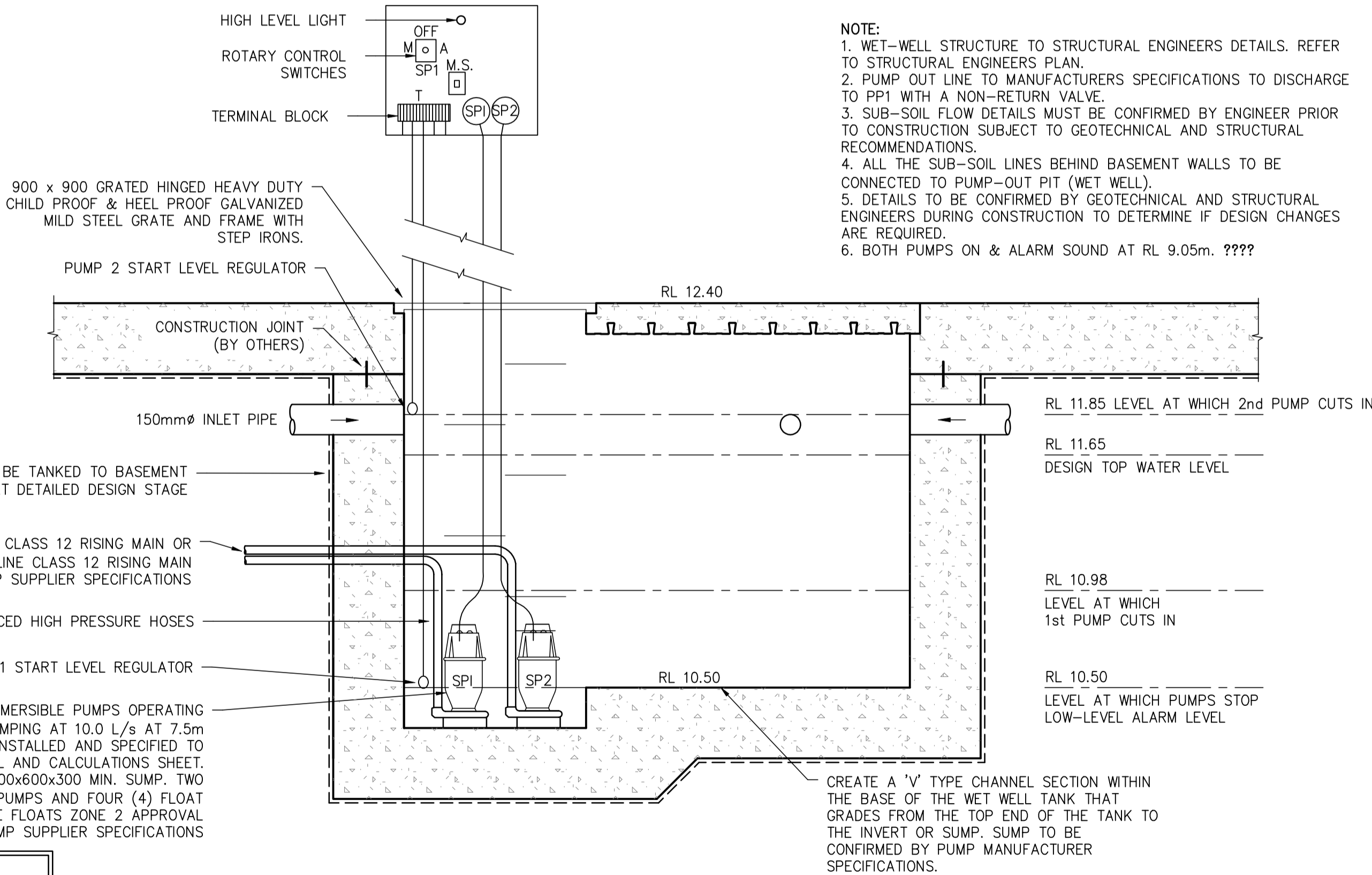
2/∅80 PUMP LINE CLASS 12 RISING MAIN OR 1/∅100 PUMP LINE CLASS 12 RISING MAIN TO FUTURE PUMP SUPPLIER SPECIFICATIONS

REINFORCED HIGH PRESSURE HOSES

PUMP 1 START LEVEL REGULATOR

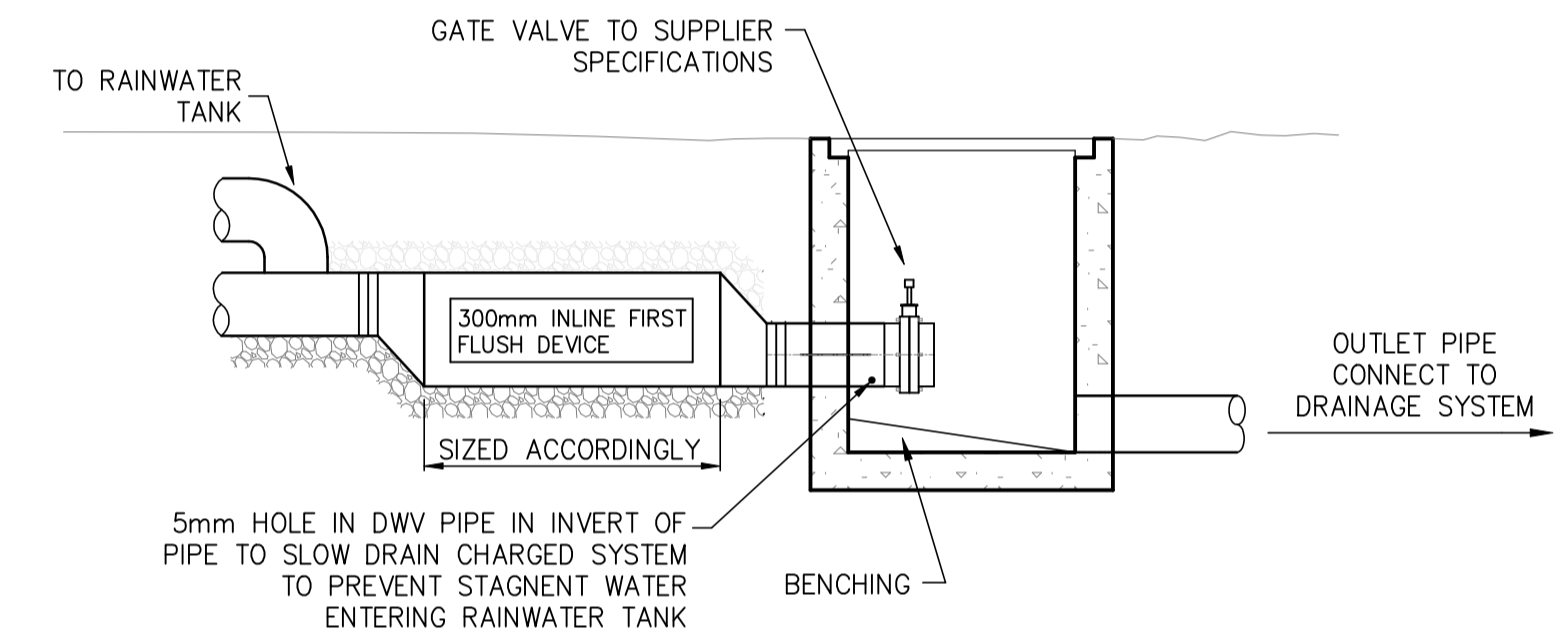
DUAL SUBMERSIBLE PUMPS OPERATING ALTERNATIVELY AND PUMPING AT 10.0 L/s AT 7.5m HEAD TO BE INSTALLED AND SPECIFIED TO MANUFACTURERS DETAIL AND CALCULATIONS SHEET. LOCATE PUMPS IN 600x600x300 MIN. SUMP. TWO (2) SUBMERSIBLE PUMPS AND FOUR (4) FLOAT SWITCHES WITH CABLE FLOATS ZONE 2 APPROVAL TO FUTURE PUMP SUPPLIER SPECIFICATIONS

NOTE TO SCALE



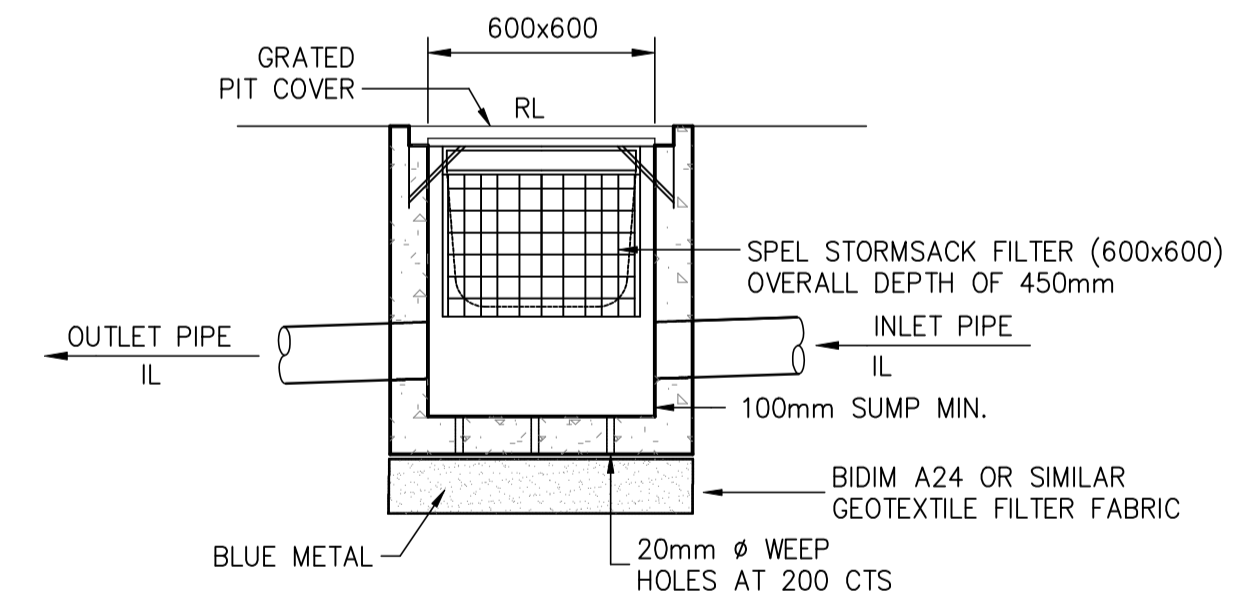
NOTE:
 1. WET-WELL STRUCTURE TO STRUCTURAL ENGINEERS DETAILS. REFER TO STRUCTURAL ENGINEERS PLAN.
 2. PUMP OUT LINE TO MANUFACTURERS SPECIFICATIONS TO DISCHARGE TO PP1 WITH A NON-RETURN VALVE.
 3. SUB-SOIL FLOW DETAILS MUST BE CONFIRMED BY ENGINEER PRIOR TO CONSTRUCTION SUBJECT TO GEOTECHNICAL AND STRUCTURAL RECOMMENDATIONS.
 4. ALL THE SUB-SOIL LINES BEHIND BASEMENT WALLS TO BE CONNECTED TO PUMP-OUT PIT (WET WELL).
 5. DETAILS TO BE CONFIRMED BY GEOTECHNICAL AND STRUCTURAL ENGINEERS DURING CONSTRUCTION TO DETERMINE IF DESIGN CHANGES ARE REQUIRED.
 6. BOTH PUMPS ON & ALARM SOUND AT RL 9.05m. ????

NOTE:
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FIRST FLUSH DETAIL - INGROUND

SCALE = 1 : 20



PITS WITH OCEANPROTECT ENVIROPOD FILTER DETAIL

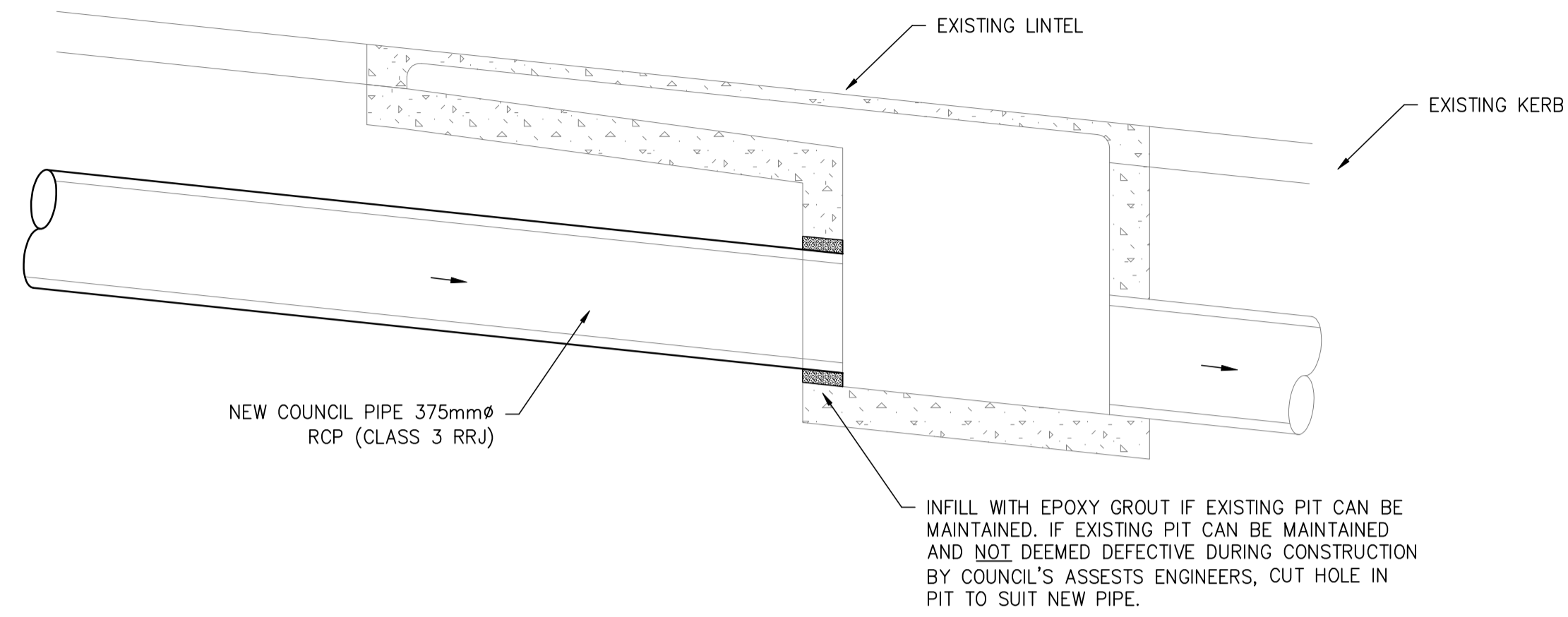
NOTE:
 1. ENVIROPODS CAN BE INSTALLED IN PITS CONSTRUCTED OF PRECAST FIBRO REINFORCED OR CAST IN-SITU CONCRETE, PLASTIC OR BRICK/BLOCKWORK.
 2. ENVIROPOD FILTERS EMPLOY DIRECT SCREENING TECHNOLOGY AND GUARANTEE REMOVAL OF DEBRIS GREATER THAN THE SCREEN OPENINGS. REMOVABLE LINERS USE ONLY MONOFILAMENT WEAVES TO REDUCE BLINDING AND HEAD LOSS AND ULTIMATELY TP PREVENT BYPASSING.
 3. ENVIROPOD FILTERS HAVE REMOVABLE LINERS IN BOTH 200µm & 1600µm SCREEN OPENINGS. THE 200µm SERIES FILTER IS A PRECISION WOVEN NYLON MONOFILAMENT WEAVE. THE 1600µm SERIES IS A MONOFILAMENT WEAVE PVC UV & HEAT STABILISED COATING TO PREVENT BURN HOLES CAUSED BY CIGARETTE BUTTS ETC.
 4. ALL ENVIROPOD FILTERS EMPLOY A RIGID GALVANISED (ALUMINIUM TYPEII)MILR STEEL CAGE TO ALLOW FOR DEEPER CAGES REDUCING TURBULANCE AND HENCE PREVENT RE-SUSPENSION OF MATERIAL. THIS ALSO RESULTS IN LARGER STORAGE CAPACITIES AND CONSEQUENTLY REDUCES MAINTENANCE REQUIREMENTS.
 5. BOTH ENVIROPOD REMOVABLE AND FIXED LINERS CAN BE CLEANED USING A VACUUM OR EDUCATIO TRUCK. REMOVABLE LINERS CAN ALSO BE CLEANED BY HAND (MANUAL METHODS). PLEASE CONSULT STORMWATER360'S OPERATIONS AND MAINTENANCE MANUAL FOR FURTHER DETAILS.
 6. ALL STANDARD ENVIROPODS ARE DESIGNED TO FIT ALL PITS RANGING FROM 350 x 350mm AND UP TO 1200 x 1200mm.
 7. FOR SIZES OR OPTIONS OUTSIDE THESE PIT SIZES CONTACT STORMWATER360 FOR FURTHER ADVICE.



A1 ORIGINAL		Issued for: DEVELOPMENT APPLICATION	Title: DESIGN	Initial: R.M.	Date: 07.04.2025	<p>STORMWATER • CIVIL • FLOOD MITIGATION</p>	Architect: WALSH ARCHITECTS	Project and Drawing Title: 32 GOLF AVENUE, MONA VALE STORMWATER DRAINAGE DETAILS SHEET 2 OF 2		Local Council: NORTHERN BEACHES	
Rev:	Date:	Description:	Reviewed:	Approved by: Rhys Mikhail	Date: 11.04.25		<p>ABN: 81 615 065 588 Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au</p> <p>The document is produced by RTS Civil Consulting Engineers Pty Ltd (RTS) solely for the benefit of and use by the client in accordance with the terms and conditions of RTS. RTS does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.</p>	Cient: LAXDTX 2 PTY LTD	Project Number: 240101_1	Drawing ID: SW201	Issue: A

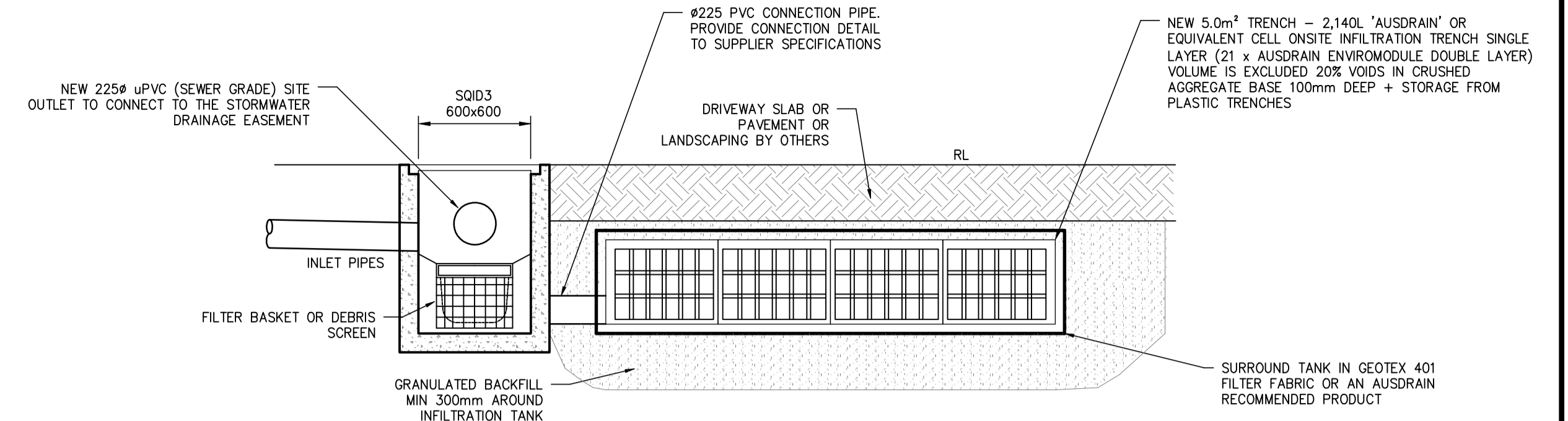
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NOT FOR CONSTRUCTION



NEW CONNECTION TO KERB INLET SECTION

SCALE = 1 : 20

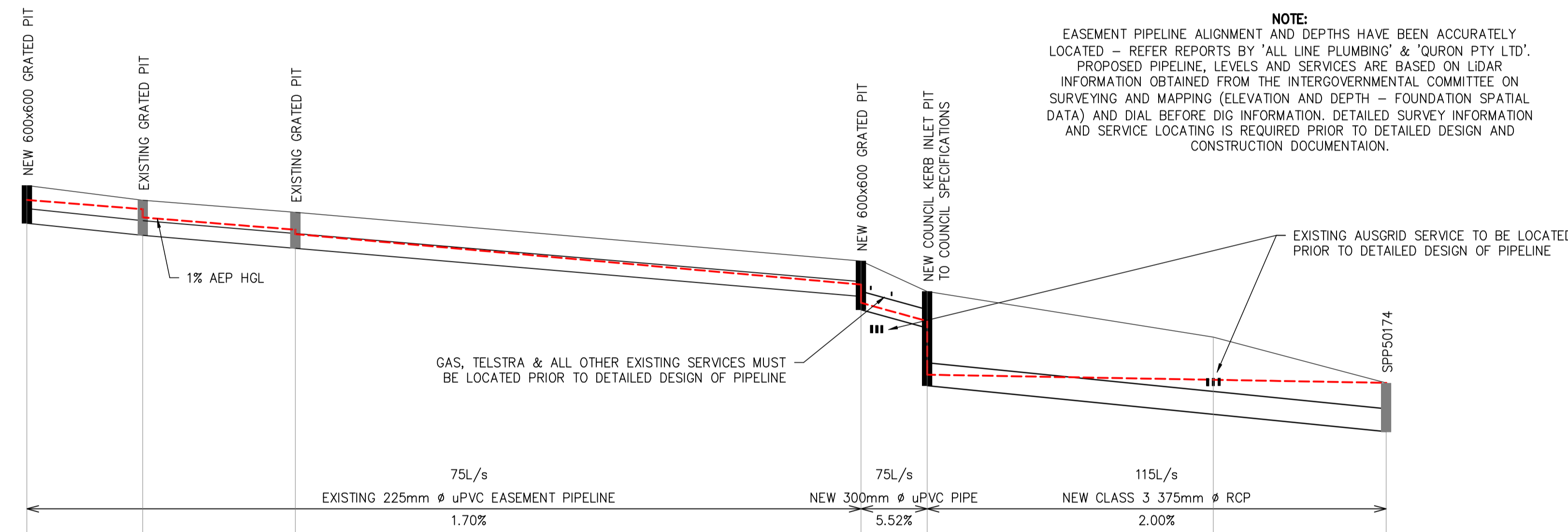


(SQID2) ONSITE INFILTRATION TRENCH

SCALE: 1:50

PIPE TRENCH NOTES

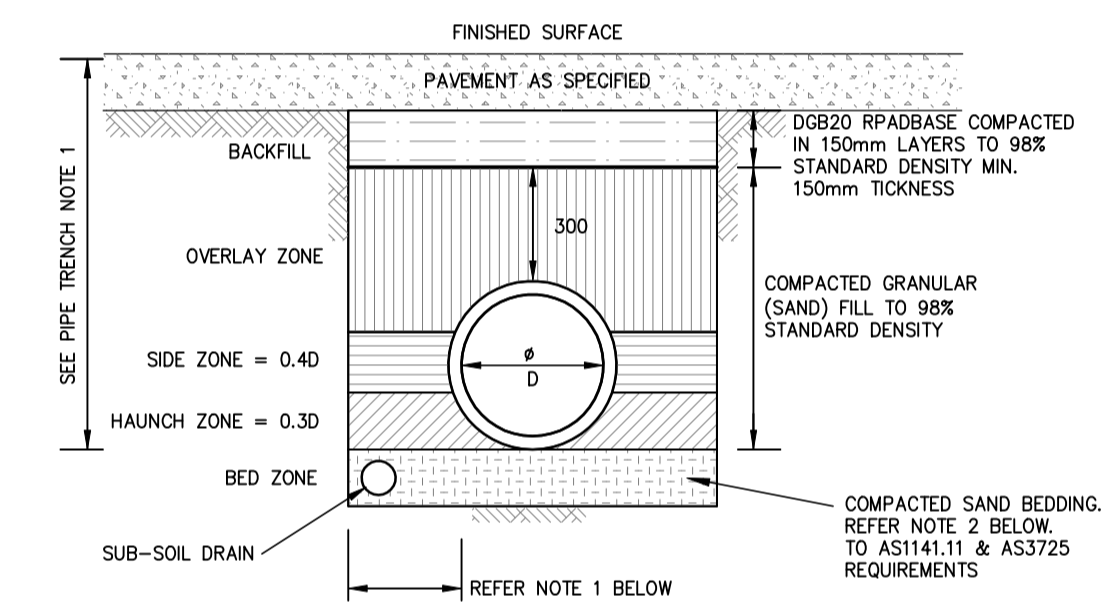
1. IN UNDERTAKING TRENCH EXCAVATION, THE CONTRACTOR SHALL PROVIDE ANY SHORING, SHEET PILING OR OTHER STABILISATION OF THE TRENCH NECESSARY TO COMPLY WITH OH&S REGULATION REQUIREMENTS. THE SIDES ARE NOT TO BE LOADED & SHALL BE KEPT CLEAR OF LOOSE MATERIAL ETC. SAFE ACCESS & EGRESS SHALL BE PROVIDED AT ALL TIMES.
2. THE TRENCH SHALL BE EXCAVATED TO A WIDTH OF 1.4 x THE EXTERNAL DIAMETER OF THE PIPE, OR TO THE EXTERNAL DIAMETER OF THE PIPE + 300mm ON EACH SIDE, WHICHEVER IS GREATER.



Datum El. 11	0	9.51	22.04	68.51	73.94	97.44	111.65
HYDRAULIC GRADE LEVEL	17.005	16.852	16.717	15.614	15.314	15.014	14.134
SURFACE LEVEL	17.24	17	16.8	16	15.5	14.75	14
INVERT LEVEL OF DRAIN	16.620	16.423	16.210	15.420	15.200	14.900	13.200
CHAINAGE	0	9.51	22.04	68.51	73.94	97.44	111.65

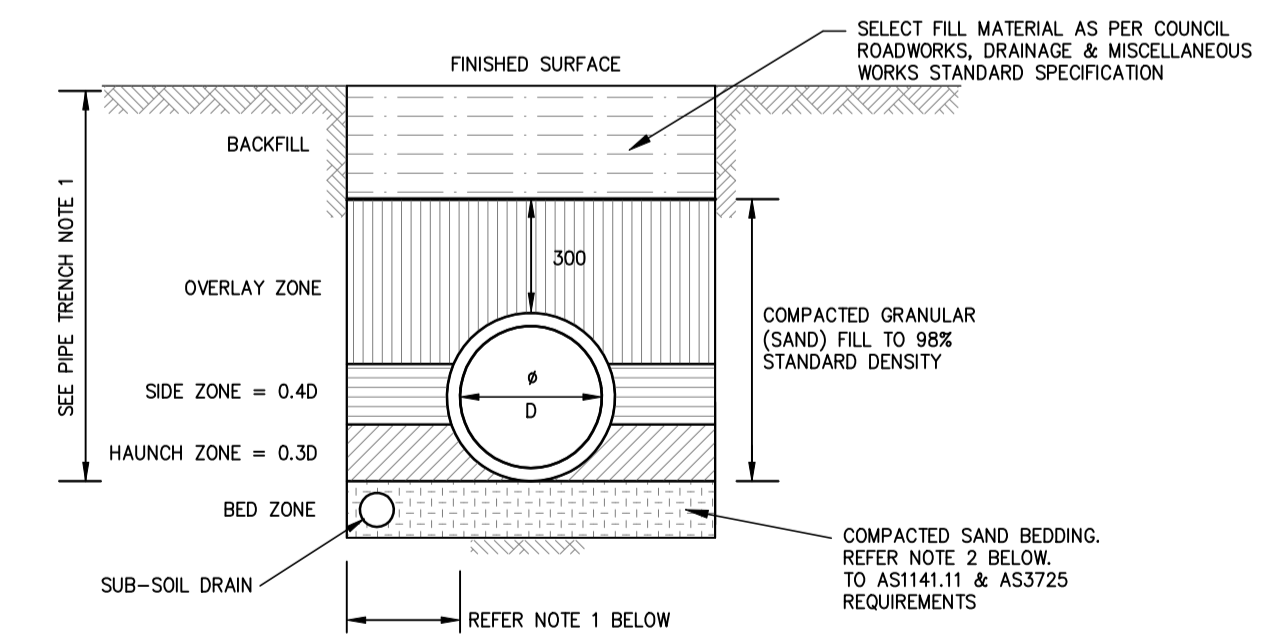
STORMWATER DRAINAGE EASEMENT PIPELINE LONGITUDINAL SECTION

SCALE = 1 : 300 (Horz.) 1 : 60 (Vert.)



TYPICAL PAVEMENT PIPELINE TRENCH DETAIL

- NOTE:**
1. $\geq 0.2D$ OR 0.3m (WHICHEVER IS GREATER)
 2. 100mm FROM PIPE $\varnothing \leq 1500$
- SCALE = N.T.S.



TYPICAL LANDSCAPED PIPELINE TRENCH DETAIL

SCALE = N.T.S.



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A1 ORIGINAL		Issued for: DEVELOPMENT APPLICATION		Title:	Initial:	Date:	 STORMWATER • CIVIL • FLOOD MITIGATION ABN: 81 615 065 588 Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au	Architect:	Project and Drawing Title:		Local Council:	
Approved by:		DESIGN R.M. 07.04.2025		DESIGN	R.M.	07.04.2025		WALSH ARCHITECTS	32 GOLF AVENUE, MONA VALE		NORTHERN BEACHES	
Date: 11.04.25		DRAWN S.M. 07.04.2025		DRAWN	S.M.	07.04.2025	The document is produced by RTS Civil Consulting Engineers Pty Ltd (RTS) solely for the benefit of and use by the client in accordance with the terms and conditions of RTS. RTS does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.	Client:	STORMWATER EASEMENT PIPELINE LONGITUDINAL SECTION		Project Number:	Drawing ID:
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