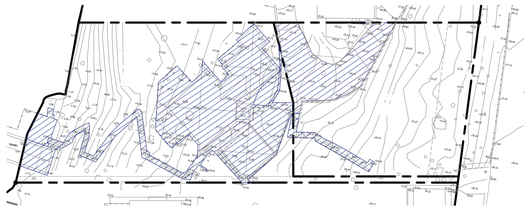
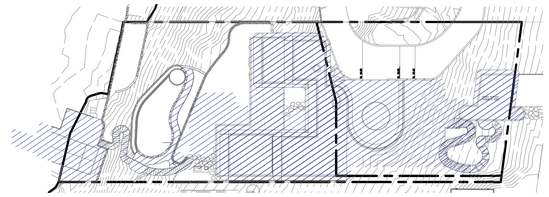
NOT FOR CONSTRUCTION



EXISTING IMPERVIOUS AREA: 566m² (32%)
SCALE = 1 : 500

CIVIL CONSULTING ENGINEERS



PROPOSED IMPERVIOUS AREA: 1231m² (69%)
SCALE = 1 : 500

PROPOSED NEW DWELLING
139–141 RIVERVIEW ROAD, AVALON BEACH

STORMWATER DRAINAGE NOTES:

1. ALL PIPES TO BE 100mm ø UNLESS NOTED OTHERWISE.
2. ALL PIPES TO BE uPVC TO AS 1254–2002 UNLESS NOTED OTHERWISE.
3. ALL PIPES TO BE LAYED AT 1 % MINIMUM GRADE UNLESS NOTED OTHERWISE.
4. 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.
5. ALL DOWN PIPES TO BE 100mm ø UNLESS NOTED OTHERWISE.
6. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT WITH WORK.
7. PROVIDE CLEANING EYES AT ALL DOWNPIPES.
8. 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.
9. ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
10. ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
11. 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.
12. ALL LEVELS SHOWN ARE TO AHD UNLESS NOTED OTHERWISE.
13. ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
14. ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
15. ALL WORKS TO BE IN ACCORDANCE WITH AS 3500.3 NATIONAL PLUMBING DRAINAGE CODE PART 3 – STORMWATER DRAINAGE.
16. 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.
17. IF NOT INDICATED ON PLANS, PROVIDE LEAF CATCHERS TO ALL DOWNPIPES.
18. ORIFICE PLATE MUST BE INSTALLED PRIOR TO INSTALLATION OF THE ROOF DRAINAGE SYSTEM AND CONNECTION OF THE SITE STORMWATER SYSTEM TO THE ONSITE DETENTION TANK.
19. EXISTING STORMWATER SYSTEM TO BE CHECKED AND UPGRADED AS REQUIRED IN ACCORDANCE WITH AS 3500.3.
20. 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.
21. CONTRACTOR TO LOCATE ALL EXISTING SERVICES PRIOR TO EXCAVATION AND NOTIFY ENGINEER OF ANY POTENTIAL CLASHES WITH THE PROPOSED DRAINAGE EASEMENT PIPE LINE.
22. ALL SUB–SOIL DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH THE STRUCTURAL AND GEOTECHNICAL REQUIREMENTS, AUSTRALIAN STANDARDS AS 3500.3 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..
23. 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.
24. 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.
25. ANY CHARGED PIPES MUST BE A MINIMUM OF 100mm (UNLESS NOTED OTHERWSIE) 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.
26. 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.
27. PREVENT ANY STORMWATER EGRESS INTO ADJACENT PROPERTIES BY CREATING PHYSICAL BARRIERS AND SURFACE DRAINAGE INTERCEPTION.
28. GUTTER GUARDS MUST BE INSTALLED ON ALL GUTTERS TO MINIMISE DEBRIS ENTERING THE SYSTEM.
29. 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 REQUIREMENTS.
30. OVERFLOW PATHS SHALL BE PROVIDED TO ALLOW FOR FLOWS IN EXCESS OF THE CAPACITY OF THE PIPE/DRAINAGE SYSTEM DRAINING THE SITE.
31. 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.
32. CONCEALED DOWNPIPES MUST BE INSTALLED IN ACCORDANCE WITH SECTION 4.5.6 OF AUSTRALIAN STANDARDS AS3500.3 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 THAT THE NOMINAL DIAMETER OF THE DOWNPIPE.
33. 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.
34. SUPPORT SYSTEMS OF DOWNPIPES OR PIPEWORK MUST BE INSTALLED IN ACCORDANCE AUSTRALIAN STANDARDS AS3500.3 REQUIREMENTS.
35. 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.
36. 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

NOTE:
THE BUILDER/CONTRACTOR SHALL LOCATE ALL EXISTING PUBLIC UTLILITY 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.

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 REQUIRMENTS FOR NON DRINKING USE ONLY AS FOLLOWS:
a) TO WATER GARDEN AREAS b) POOL TOP–UP c) TOILETS d) BASIX REQUIREMENTS.
2. THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE.
3. REFERENCES: COOMBES 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.sydneywater.com.au OR FROM LOCAL COUNCIL GUIDLINES.
5. PROVIDE A DUAL SUPPLY SYSTEM AND BACKFLOW PREVENTION SYSTEM IN ACCORDANCE WITH 'BASIX–DESIGN GUIDE FOR SINGLE DWELLINGS' BY NSW DEPARTMENT OF INFRASTRUCTURE, PLANING 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 ALTERATIVE, 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 FLUSH 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 230–200B
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 I.3 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.

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.

SEDIMENT AND EROSION CONTROL NOTES:

1. SILT FENCE AND ASSOCIATED WORKS INCLUDING INTERCEPTOR DRAIN IS TO BE INSTALLED BEFORE THE COMMENCEMENT OF ANY EXCAVATION.
2. GEOTECHNICAL ENGINEER IS TO PROVIDE SITE STABILITY REQUIREMENTS. CUTS ARE TO BE EXECUTED TO THE REQUIRED LEVEL USING CONVENTIONAL EXCAVATION MACHINERY. AS A GUIDE, 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 1.0m VERT. TO 1.7m HORIZ. (AS PER GEOTECHNICAL REPORT). ANY BATTERS GREATER THAN 1.0m VERT. TO 1.7m HORIZ. ARE TO BE ADEQUATELY SHORED IN ACCORDANCE WITH GEOTECHNICAL 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. CONTRCTOR 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 SWEPT DAILY.
10. CONSTRUCTION VEHICLES ARE TO LEAVE AND ENTER THE SITE OVER AN ALL WEATHER SURFACE CONSISTING OF COURSE CRUSHED STONE OR BLUE METAL CONSTRUCTED WITHIN THE FRONT SETBACK AREA OPPOSITE THE EXISTING FOOTPATH CROSSING UNLESS NOTED OTHERWISE.
11. EXCAVATION MACHINERY ARE TO BE UNLOADED AND LOADED UPON THIS ALL WEATHER SURFACE. CONCRETE PUMPS AND TRUCKS WILL ALSO UTILISE THE ALL WEATHER SURFACE FOR THEIR OPERATIONS.
12. MATERIALS WILL BE UNLOADED UPON THE ALL WEATHER SURFACE WITHIN THE FRONT SETBACK AREA BY MEANS OF CRANES MOUNTED ON THE BACK OF DELIVERY TRUCKS OR UNLOADED BY HAND. A MOBILE CRANE MAY BE REQUIRED DURING THE CONSTRUCTION PROCESS.
13. SOME STOCKPILING OF TOPSOIL REMOVED FROM THE BUILDING AREA MAY BE STORED ON THE SITE DURING THE CONSTRUCTION WITHIN THE PROPERTY IN AN AREA ENCLOSED WITHIN THE SEDIMENT CONTROL FENCING.
14. ALL EXCAVATED & CONSTRUCTION MATERIALS, SHED, SKIP BINS, TEMPORARY WATER CLOSETS, SPOIL AND EQUIPMENT, ETC SHALL BE KEPT WITHIN THE PROPERTY. NO VEHICLES OR MACHINES SHALL BE KEPT WITHIN THE PROPERTY. NO VEHICLES OR MACHINES SHALL STAND ON COUNICIL FOOTPATHS FOR LARGE LENGTHS OF TIME.
15. ALL RUBBISH & RECYCLABLE MATERIAL SHALL BE STOCKPILED IN WASTE BINS IN THE AREA NOMINATED ON THE SITE PLAN WITHIN THE SITE BOUNDARY. PUBLIC PROPERTY SHALL BE KEPT FREE OF RUBBISH AND RECYCLABLES AT ALL TIMES ANY WASTE MATERIALS SHALL BE REGULARLY COLLECTED FROM THE SITE AND DISPOSED OF IN AN APPROPRIATE FASHION.
16. ANY BUILDING OR DEMOLITION WORKS INVOLVING ASBESTOS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RELAVANT STANDARDS.
17. VEHICLES LEAVING THE SITE WILL DO SO VIA THE ALL WEATHER BALLAST DRIVEWAY MADE OF COURSE AGGREGATE OR SIMILLAR LOCATED WITHIN THE FRONT SETBACK AREA OF THE DEVELOPMENT. ANY DIRT OR MATERIAL DEPOSITED ON THE ROAD RESERVE OR ROADWAY IS TO BE PROMPTLY CLEANED.
18. ANY EXCAVATED AREA REQUIRING SUPPORT WILL BE UNDERTAKEN BY THE OWNER USING STRUCTURALLY APPROVED RETAINING STRUCTURES.
19. ADEQUATE SAFETY SIGNAGE MUST BE ERECTED IN A PROMINENT POSITION ON THE WORK SITE, WARNING OF UNAUTHORISED ENTRY TO WORK SITE AND INTENDING DANGERS.
20. SAFETY FENCES SHALL BE PROVIDED AROUND ALL BOUNDARIES UNLESS A CONTINUOUS STRUCTURALLY ADEQUATE FENCE PRESENTLY EXISTS. THE FENCING SHALL BE ADEQUATE TO RESTRICT PUBLIC ACCESS TO THE SITE WHEN BUILDING WORK IS NOT IN PROGRESS OR THE SITE IS UNOCCUPIED.
21. NOISE LEVELS SHALL NOT EXCEED COUNCIL REGULATION LEVELS. BUILDING AND DEMOLITION WORKS SHALL ONLY BE CARRIED OUT BETWEEN HOURS AND DAYS SPECIFIED BY COUNCIL.
22. GEOTEXTILE FABRIC SHALL BE PLACED ON THE INSIDE OF THE SITE FENCING PRIOR TO SITE DISTURBANCE TO PREVENT SEDIMENT WASHING FROM CLEARED AND DISTURBED AREAS OF THE SITE INTO THE STORMWATER SYSTEM. DURING CONSTRUCTION, UNLESS OTHERWSIE NOTED, UNCONTAMINATED RUNOFF FROM CLEARED OR DISTURBED AREAS ARE TO BE DIRECTED TO A TEMPORARY SILT ARRESTOR PIT THAT SHALL BE PROVIDED WITHIN THE SITE AT THE STREET BOUNDARY PROCESSING SITE STORMWATER BEFORE IT IS DISCHARGED TO THE STREET DRAINAGE SYSTEM OR WATERCOURSE.
23. ALL TOP SOIL STRIPPED & STOCKPILED ONSITE IS TO BE BE PLACED IN NOMINATED AREAS ON PLAN OR TO COUNCIL REQUIREMENTS. ALL DISTURBED AREAS ARE TO BE STABILISED UPON THE COMPLETION OF BUILDING WORKS.
24. ALL SEDIMENT CONTROL STRUCTURES ARE TO BE CONTINUALLY MAINTAINED DURING CONSTRUCTION AND INSPECTED FOR STRUCTURAL DAMAGE AFTER EACH RAINFALL EVENT, WITH TRAPPED SEDIMENT BEING REMOVED TO THE TOPSOIL STOCKPILE.
25. WHERE THERE IS THE POTENTIAL OF SITE EROSION TO PRODUCE EXCESSIVE SEDIMENT RUNOFF, SUITABLE GEOTEXTILE BARRIERS SHALL BE PLACED TO ALLEVIATE THE RISK ACCORDINGLY. BARE SURFACES SHALL BE KEPT MOIST TO REDUCE DUST LEVELS. GEOTEXTILE FABRIC LOCATED ON THE INSIDE OF FENCES SHALL ALSO BE UTILISED FOR DUST CONTROL WHERE NECESSARY.
26. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH:
a) LOCAL AUTHORITY REQUIREMENTS
b) EPA – POLLUTION CONTROL MANUAL FOR URBAN STORMWATER
c) LANDCOM NSW – MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION ("BLUE BOOK")
27. PRIOR TO DISCHARGE OF SITE STORMWATER, GROUNDWATER AND SEEPAGE WATER INTO COUNCIL'S STORMWATER SYSTEM, CONTRACTORS MUST UNDERTAKE WATER QUALITY TESTS IN CONJUNCTION WITH A SUITABLY QUALIFIED ENVIRONMENT CONSULTANT OUTLING THE FOLLOWING:
a) COMPLIANCE WITH THE CRITERIA OF THE AUSTRALIAN AND NEW ZEALAND GUIDELINES FOR FRESH AND MARINE WATER QUALITY (2000)
b) IF SUBJECT TO THE ENVIRONMENTAL CONSULTANTS ADVICE, PROVIDE REMEDIAL MEASURES TO IMPROVE THE QUALITY OF WATER THAT IS TO BE DISCHARGED INTO COUNCIL'S STORMWATER DRAINAGE SYSTEM. THIS SHOULD INCLUDE COMMENTS FROM A SUITABLY QUALIFIED ENVIRONMENTAL CONSULTANT CONFIRMING THE SUITABILITY OF THESE REMEDIAL MEASURES TO MANAGE THE WATER DISCHARGED FROM THE SITE INTO COUNCIL'S STORMWATER DRAINAGE SYSTEM. OUTLINING THE PROPOSED, ONGOING MONITORING, CONTINGENCY PLANS AND VALIDATION PROGRAM THAT WILL BE IN PLACE TO CONTINUALLY MONITOR THE QUALITY OF WATER DISCHARGED FROM THE SITE. THIS SHOULD OUTLINE THE FREQUENCY OF WATER QUALITY TESTING THAT WILL BE UNDERTAKEN BY A SUITABLY QUALIFIED ENVIRONMENTAL CONSULTANT.

SURVEY NOTES:

1. 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 CONSLTING ENGINEERS PTY LTD DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE.
2. SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT THE ENGINEER.
3. REFERENCE SHOULD BE MADE DIRECTLY TO THE SURVEYOR BEFORE SETTING OUT.

EXISTING UNDERGROUND SERVICES NOTES:

1. 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.
2. 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.
3. CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY.
4. CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.
5. 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.
6. CONTRACTOR IS TO CONFIRM FINDINGS FOR THE LOCAL COUNCL 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:

1. 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.
2. 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.
3. RESTORATION OF LANDSCAPING, ROADS AND PATHS SHALL BE TO COUNCIL'S REQUIREMENTS. ALL OTHER RESTORATION SHALL BE TOTHE SATISFACTION OF THE AFFECTED PARTIES.
4. WHERE WORKS ARE UNDERTAKEN ON PUBLIC ROADS, ADEQUATE TRAFFIC CONTROL AND DIRECTIONS TO MOTORISTS SHALL BE PROVIDED BY OTHERS.

DRAWING SCHEDULE:

SW001 – COVERPAGE, NOTES & CALCULATIONS SHEET 1 OF 2
SW002 – COVERPAGE, NOTES & CALCULATIONS SHEET 2 OF 2
SW100 – LOWER GROUND STORMWATER MANAGEMENT PLAN
SW101 – GROUND STORMWATER MANAGEMENT PLAN
SW102 – FIRST FLOOR STORMWATER MANAGEMENT PLAN
SW103 – SECOND FLOOR STORMWATER MANAGEMENT PLAN
SW104 – ROOF STORMWATER MANAGEMENT PLAN
SW105 – ENTRY PORTICO STORMWATER MANAGEMENT PLANS
SW200 – STORMWATER DRAINAGE DETAILS SHEET 1 OF 3
SW201 – STORMWATER DRAINAGE DETAILS SHEET 2 OF 3
SW202 – STORMWATER DRAINAGE DETAILS SHEET 3 OF 3

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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 DIAL BEFORE YOU DIG. – TEL. 1100

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

A1 ORIGINAL

Rev:	Date:	Description:	Reviewed:
A	10.12.24	STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION	R.M

Issued for: DEVELOPMENT APPLICATION
Approved by:
Date : 10.12.24
Rhys Mikhail
Director | Principal Engineer | NER: 2570082 | RPEQ: 17480
BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus)

Title:	Initial:	Date:
DESIGN	R.M	05.07.2024
DRAWN	S.M	05.07.2024
CHECKED	R.M	10.12.2024
APPROVED	R.M	10.12.2024

CIVIL CONSULTING ENGINEERS
STORMWATER • CIVIL • FLOOD MITIGATION
ABN: 81 615 065 588 Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au

Architect: CM STUDIO
Client: MMIG DEVELOPMENTS PTY LTD

Project and Drawing Title: 139–141 RIVERVIEW ROAD, AVALON BEACH COVERPAGE, NOTES & CALCULATIONS SHEET 1 OF 2

Local Council: NORTHERN BEACHES COUNCIL

Project Number:	Drawing ID:	Issue:
240601	SW001	A

NOTES:
1. U.N.O REFER TO THE COVERPAGE 001 SERIES FOR DETAILED NOTES AND CALCULATIONS.
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NOT FOR CONSTRUCTION

ONSITE DRAINAGE CALCULATIONS – NORTHERN BEACHES COUNCIL WATER MANAGEMENT POLICY (2021)	
TOTAL SITE AREA	1,783 m^2
COUNCIL ZONE AREA	Region 1
DEVELOPMENT TYPE	NEW DWELLING
TOAL SITE IMPERVIOUS AREA (EXISTING)	566 m^2 (32% IMPERVIOUS)
TOAL SITE IMPERVIOUS AREA (PROPOSED)	1,231 m^2 (69% IMPERVIOUS)
TOTAL INCREASE IN IMPERVIOUS AREA	665 m^2 > 50 m^2
RAINWATER VOLUME (BASIX) REQUIRED	10.0 m^3 IN TOTAL

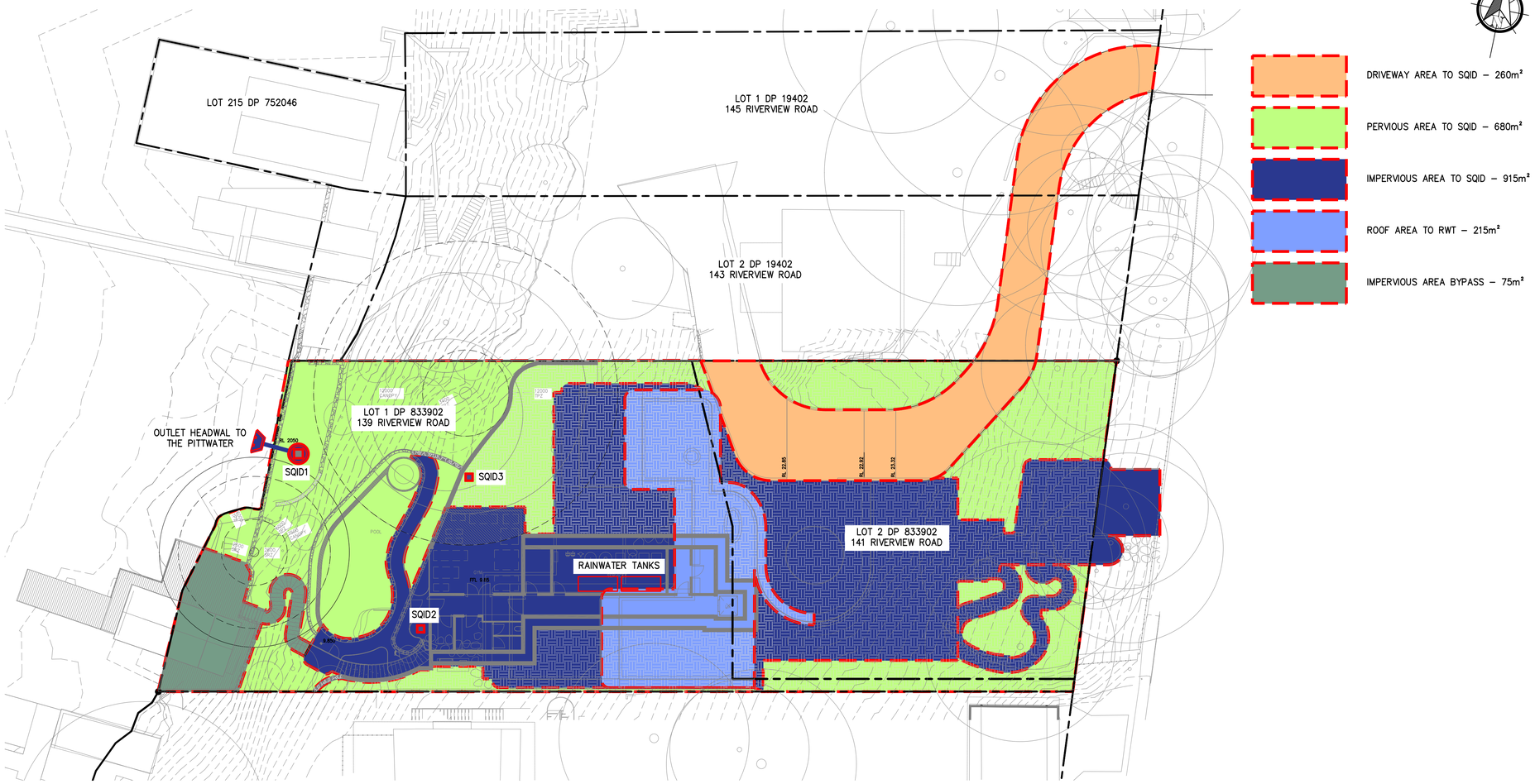
AS THE DEVELOPMENT IS LOCATED ON AND DISCHARGING INTO THE PITTWATER, ONSITE STORMWATER DETENTION (OSD) IS NOT RECOMMENDED ACCORDING TO THE INTENT OF COUNCIL'S WATER MANAGEMENT POLICY (2021).

WATER SENSITIVE URBAN DESIGN TO NORTHERN BEACHES COUNCIL: WSUD & MUSIC MODELLING GUIDLINES

WSUD MUSIC SUMMARY	% REDUCTION	TARGET
TOTAL SUSPENDED SOLIDS (TSS)	85 %	85 %
TOTAL PHOSPHOROUS (TP)	74 %	65 %
TOTAL NITROGEN (TN)	68 %	45 %
GROSS POLUTANTS (GP)	96 %	90 %

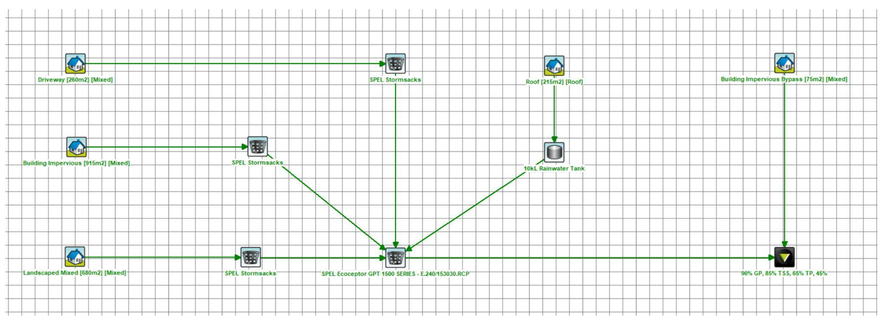
MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS AS3500.3 – TABLE 7.5.2.1

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



SITE STORMWATER CATCHMENT PLAN

SCALE = 1 : 200



MUSIC MODEL SUMMARY

Treatment Train Effectiveness - 90% GP, 85% TSS, 65% TP, 45%

	Sources	Residual Load	% Reduction
Flow (ML/yr)	2.29	2.11	7.9
Total Suspended Solids (kg/yr)	390	58.1	85.1
Total Phosphorus (kg/yr)	0.818	0.21	74.3
Total Nitrogen (kg/yr)	6.38	2.01	68.6
Gross Pollutants (kg/yr)	55.6	1.85	96.7

MUSIC CALCULATION SUMMARY

NOTE:
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DIAL 1100 BEFORE YOU DIG

A1 ORIGINAL

Rev:	Date:	Description:	Reviewed:
A	10.12.24	STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION	R.M

Issued for: DEVELOPMENT APPLICATION
Approved by:
Date : 10.12.24
Rhys Mikhail .....
Director | Principal Engineer | NER: 2570082 | RPEQ: 17480
BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus)

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Architect: CM STUDIO cm

Client: MMIG DEVELOPMENTS PTY LTD

Project and Drawing Title: 139–141 RIVERVIEW ROAD, AVALON BEACH COVERPAGE, NOTES & CALCULATIONS SHEET 2 OF 2

Local Council: NORTHERN BEACHES COUNCIL

Project Number:	Drawing ID:	Issue:
240601	SW002	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.

LEGEND

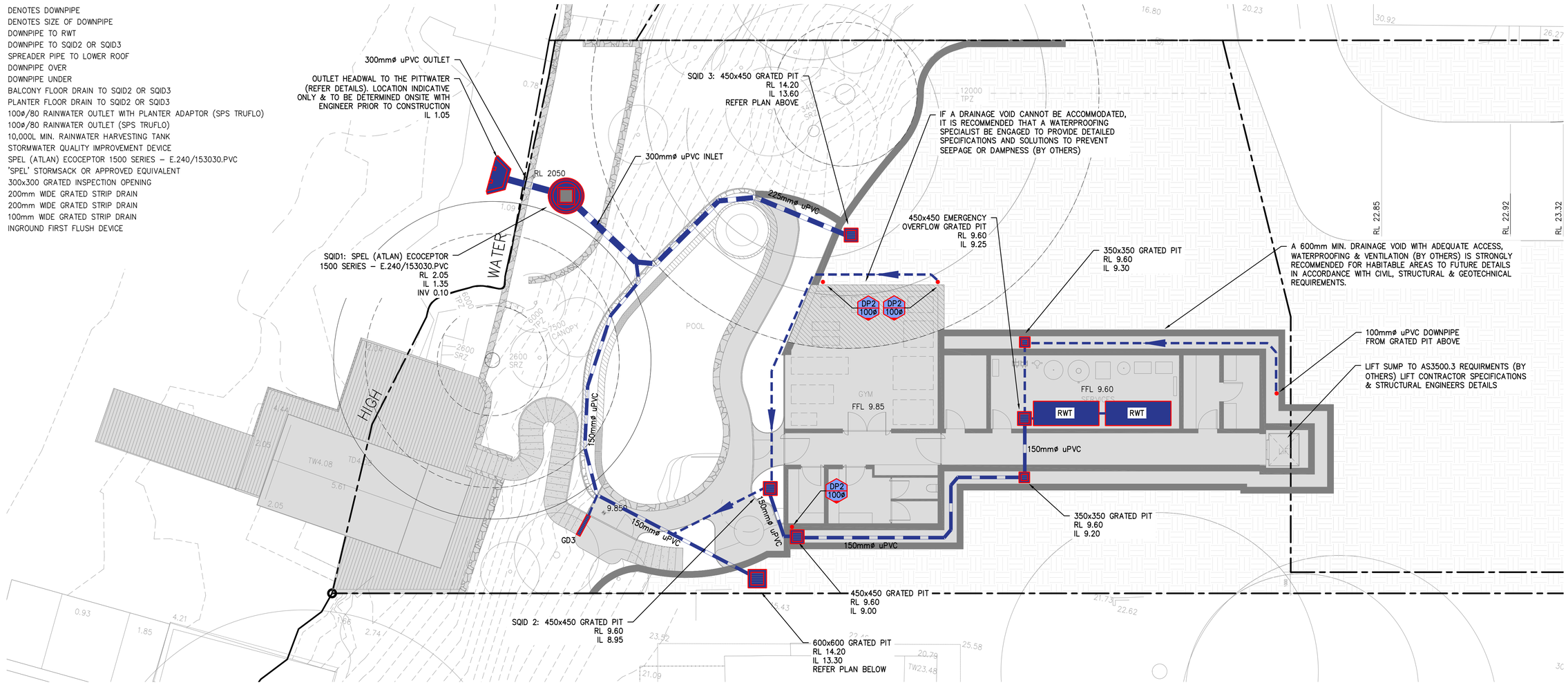
- STORMWATER PIT
- NEW STORMWATER PIPE
- STORMWATER PIPE FLOW DIRECTION
- STORMWATER PIPE TO RWT
- EXISTING STORMWATER PIPE
- FLUSH-OUT LINE
- BOUNDARY LINE
- S — EXISTING SEWER MAIN
- OHP — EXISTING OVERHEAD POWER LINES
- E — EXISTING ELECTRICITY LINE
- W — EXISTING WATER MAINS
- T — EXISTING TELECOMMUNICATIONS LINE
- G — EXISTING GAS MAINS

DP1	DENOTES DOWNPIPE
100ø	DENOTES SIZE OF DOWNPIPE
DP1	DOWNPIPE TO RWT
DP2	DOWNPIPE TO SQID2 OR SQID3
SP1	SPREADER PIPE TO LOWER ROOF
DP(O)	DOWNPIPE OVER
DP(U)	DOWNPIPE UNDER
BD1	BALCONY FLOOR DRAIN TO SQID2 OR SQID3
PD1	PLANTER FLOOR DRAIN TO SQID2 OR SQID3
PD	100ø/80 RAINWATER OUTLET WITH PLANTER ADAPTOR (SPS TRUFLO)
BD	100ø/80 RAINWATER OUTLET (SPS TRUFLO)
RWT	10,000L MIN. RAINWATER HARVESTING TANK
SQID	STORMWATER QUALITY IMPROVEMENT DEVICE
SQID1	SPEL (ATLAN) ECOCEPTOR 1500 SERIES – E.240/153030.PVC
SQID2/SQID3	'SPEL' STORMSACK OR APPROVED EQUIVALENT
IO	300x300 GRATED INSPECTION OPENING
GD1	200mm WIDE GRATED STRIP DRAIN
GD2	200mm WIDE GRATED STRIP DRAIN
GD3	100mm WIDE GRATED STRIP DRAIN
FFD	INGROUND FIRST FLUSH DEVICE

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

NOT FOR CONSTRUCTION



LOWER 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!

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

DIAL 1100 BEFORE YOU DIG

A1 ORIGINAL

Rev:	Date:	Description:	Reviewed:
A	10.12.24	STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION	R.M

Issued for: DEVELOPMENT APPLICATION
Approved by:
Date : 10.12.24
Rhys Mikhail .....
Director | Principal Engineer | NER: 2570082 | RPEQ: 17480
BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus)

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ABN: 81 615 065 588 Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au

Architect: CM STUDIO cm

Client: MMIG DEVELOPMENTS PTY LTD

Project and Drawing Title: 139–141 RIVERVIEW ROAD, AVALON BEACH LOWER GROUND STORMWATER MANAGEMENT PLAN

Local Council: NORTHERN BEACHES COUNCIL

Project Number:	Drawing ID:	Issue:
240601	SW100	A

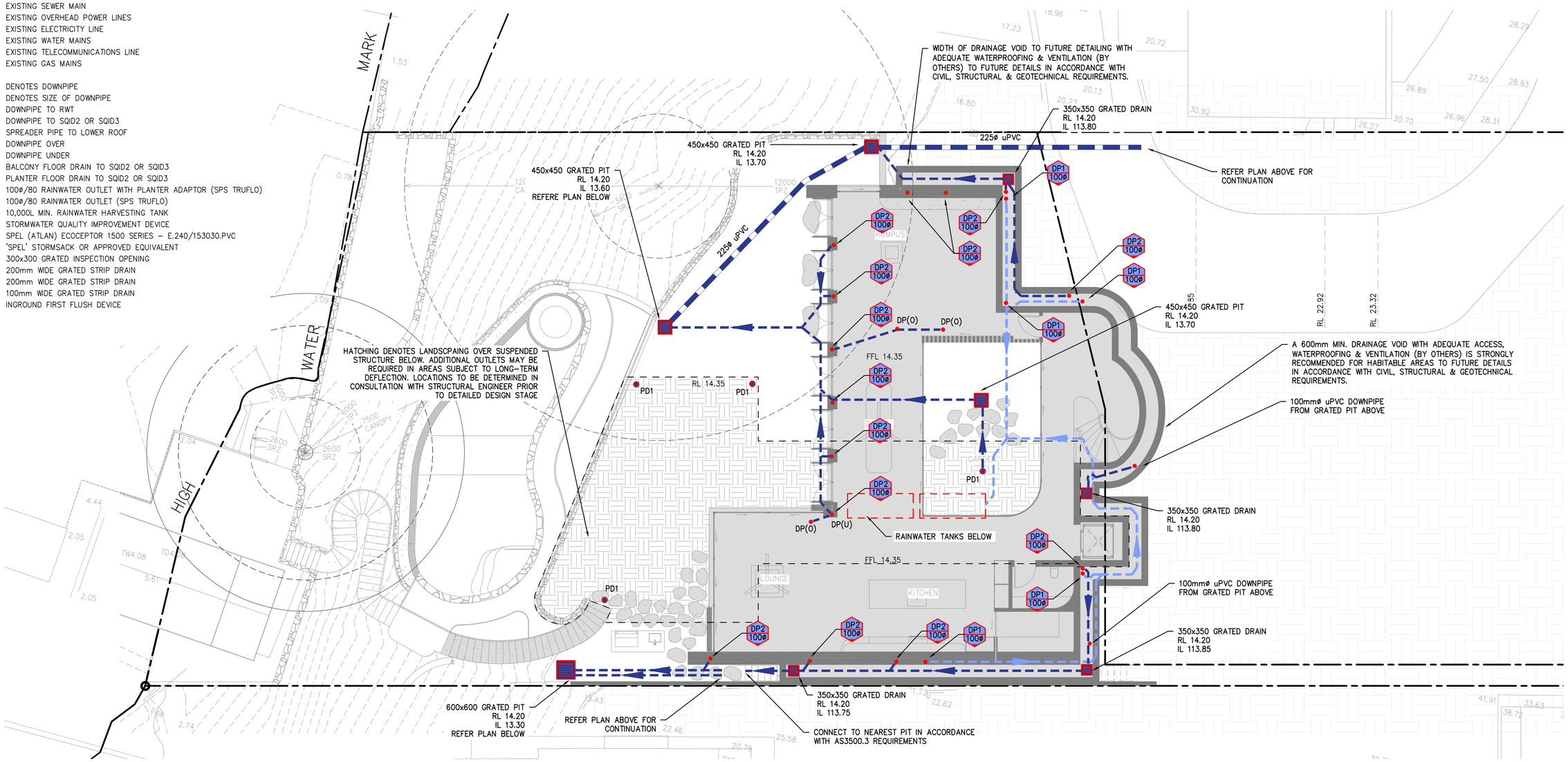
NOT FOR CONSTRUCTION

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.

LEGEND

- STORMWATER PIT
- NEW STORMWATER PIPE
- STORMWATER PIPE FLOW DIRECTION
- STORMWATER PIPE TO RWT
- EXISTING STORMWATER PIPE
- FLUSH-OUT LINE
- BOUNDARY LINE
- S — EXISTING SEWER MAIN
- OHP — EXISTING OVERHEAD POWER LINES
- E — EXISTING ELECTRICITY LINE
- W — EXISTING WATER MAINS
- T — EXISTING TELECOMMUNICATIONS LINE
- G — EXISTING GAS MAINS

DP1	DENOTES DOWNPIPE
100ø	DENOTES SIZE OF DOWNPIPE
DP1	DOWNPIPE TO RWT
DP2	DOWNPIPE TO SQID2 OR SQID3
SP1	SPREADER PIPE TO LOWER ROOF
DP(O)	DOWNPIPE OVER
DP(U)	DOWNPIPE UNDER
BD1	BALCONY FLOOR DRAIN TO SQID2 OR SQID3
PD1	PLANTER FLOOR DRAIN TO SQID2 OR SQID3
PD	100ø/80 RAINWATER OUTLET WITH PLANTER ADAPTOR (SPS TRUFLO)
BD	100ø/80 RAINWATER OUTLET (SPS TRUFLO)
RWT	10,000L MIN. RAINWATER HARVESTING TANK
SQID	STORMWATER QUALITY IMPROVEMENT DEVICE
SQID1	SPEL (ATLAN) ECOCEPTOR 1500 SERIES – E.240/153030.PVC
SQID2/SQID3	'SPEL' STORMSACK OR APPROVED EQUIVALENT
IO	300x300 GRATED INSPECTION OPENING
GD1	200mm WIDE GRATED STRIP DRAIN
GD2	200mm WIDE GRATED STRIP DRAIN
GD3	100mm WIDE GRATED STRIP DRAIN
FFD	INGROUND FIRST FLUSH DEVICE



GROUND STORMWATER MANAGEMENT PLAN

SCALE = 1 : 100

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DIAL 1100 BEFORE YOU DIG

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A	10.12.24	STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION	R.M

Issued for: DEVELOPMENT APPLICATION

Approved by:

Date : 10.12.24

Rhys Mikhail .....

Director | Principal Engineer | NER: 2570082 | RPEQ: 17480
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Architect: CM STUDIO cm

Client: MMIG DEVELOPMENTS PTY LTD

Project and Drawing Title: 139–141 RIVERVIEW ROAD, AVALON BEACH GROUND STORMWATER MANAGEMENT PLAN

Local Council: NORTHERN BEACHES COUNCIL

Project Number:	Drawing ID:	Issue:
240601	SW101	A

NOTES:
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NOT FOR CONSTRUCTION

LEGEND

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- NEW STORMWATER PIPE
- STORMWATER PIPE FLOW DIRECTION
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- EXISTING STORMWATER PIPE
- FLUSH-OUT LINE
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DP1 100ø	DENOTES DOWNPIPE
	DENOTES SIZE OF DOWNPIPE
DP1	DOWNPIPE TO RWT
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PD1	PLANTER FLOOR DRAIN TO SQID2 OR SQID3
PD	100ø/80 RAINWATER OUTLET WITH PLANTER ADAPTOR (SPS TRUFLO)
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SQID2/SQID3	'SPEL' STORMSACK OR APPROVED EQUIVALENT
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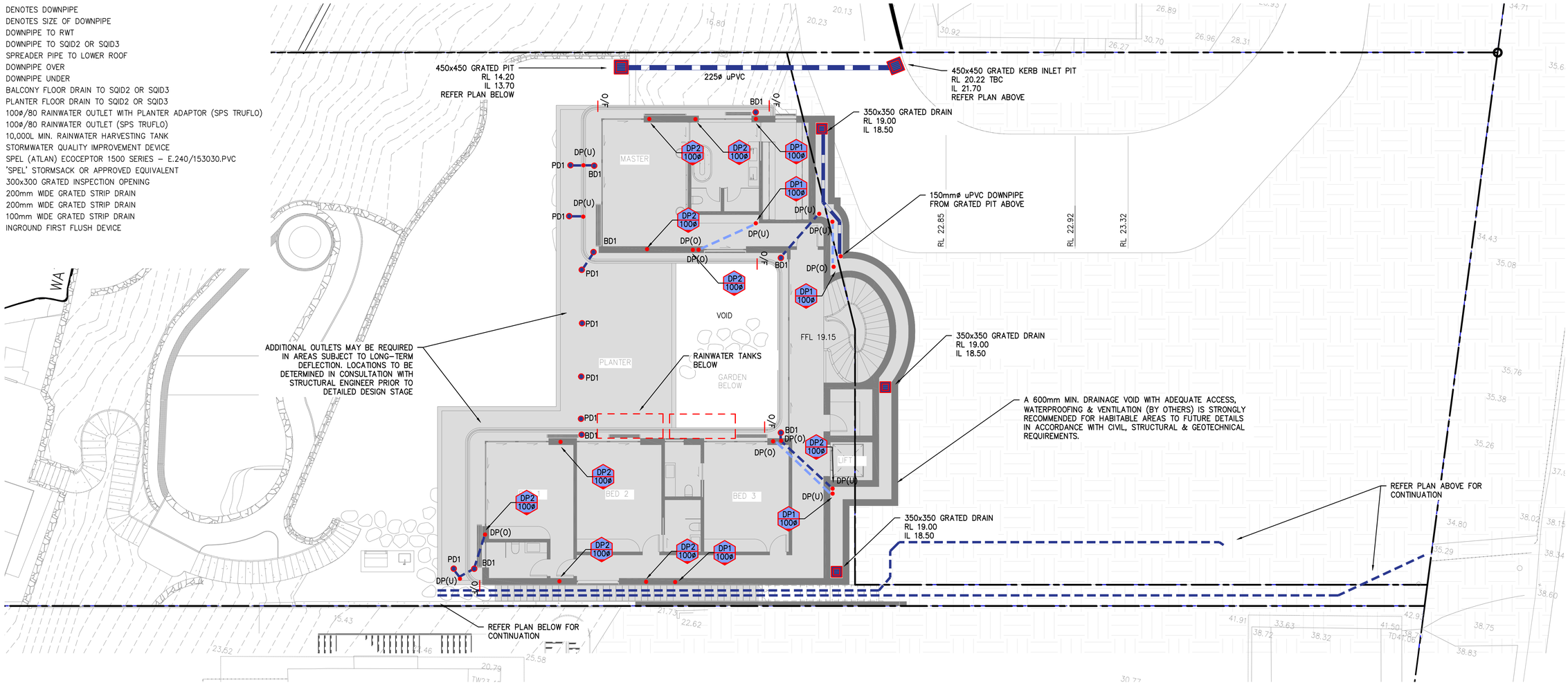
GD3	100mm WIDE GRATED STRIP DRAIN
FFD	INGROUND FIRST FLUSH DEVICE



FIRST FLOOR STORMWATER MANAGEMENT PLAN

SCALE = 1 : 100

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Architect: CM STUDIO cm

Client: MMIG DEVELOPMENTS PTY LTD

Project and Drawing Title:
139–141 RIVERVIEW ROAD, AVALON BEACH
FIRST FLOOR
STORMWATER MANAGEMENT PLAN

Local Council: NORTHERN BEACHES COUNCIL

Project Number:	Drawing ID:	Issue:
240601	SW102	A

NOTES:
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NOT FOR CONSTRUCTION

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- NEW STORMWATER PIPE
- STORMWATER PIPE FLOW DIRECTION
- STORMWATER PIPE TO RWT
- EXISTING STORMWATER PIPE
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- G — EXISTING GAS MAINS

DP1 100ø	DENOTES DOWNPIPE
	DENOTES SIZE OF DOWNPIPE
DP1	DOWNPIPE TO RWT
DP2	DOWNPIPE TO SQID2 OR SQID3
SP1	SPREADER PIPE TO LOWER ROOF
DP(O)	DOWNPIPE OVER
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BD1	BALCONY FLOOR DRAIN TO SQID2 OR SQID3
PD1	PLANTER FLOOR DRAIN TO SQID2 OR SQID3
PD	100ø/80 RAINWATER OUTLET WITH PLANTER ADAPTOR (SPS TRUFLO)
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SQID	STORMWATER QUALITY IMPROVEMENT DEVICE
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SQID2/SQID3	'SPEL' STORMSACK OR APPROVED EQUIVALENT
IO	300x300 GRATED INSPECTION OPENING
GD1	200mm WIDE GRATED STRIP DRAIN
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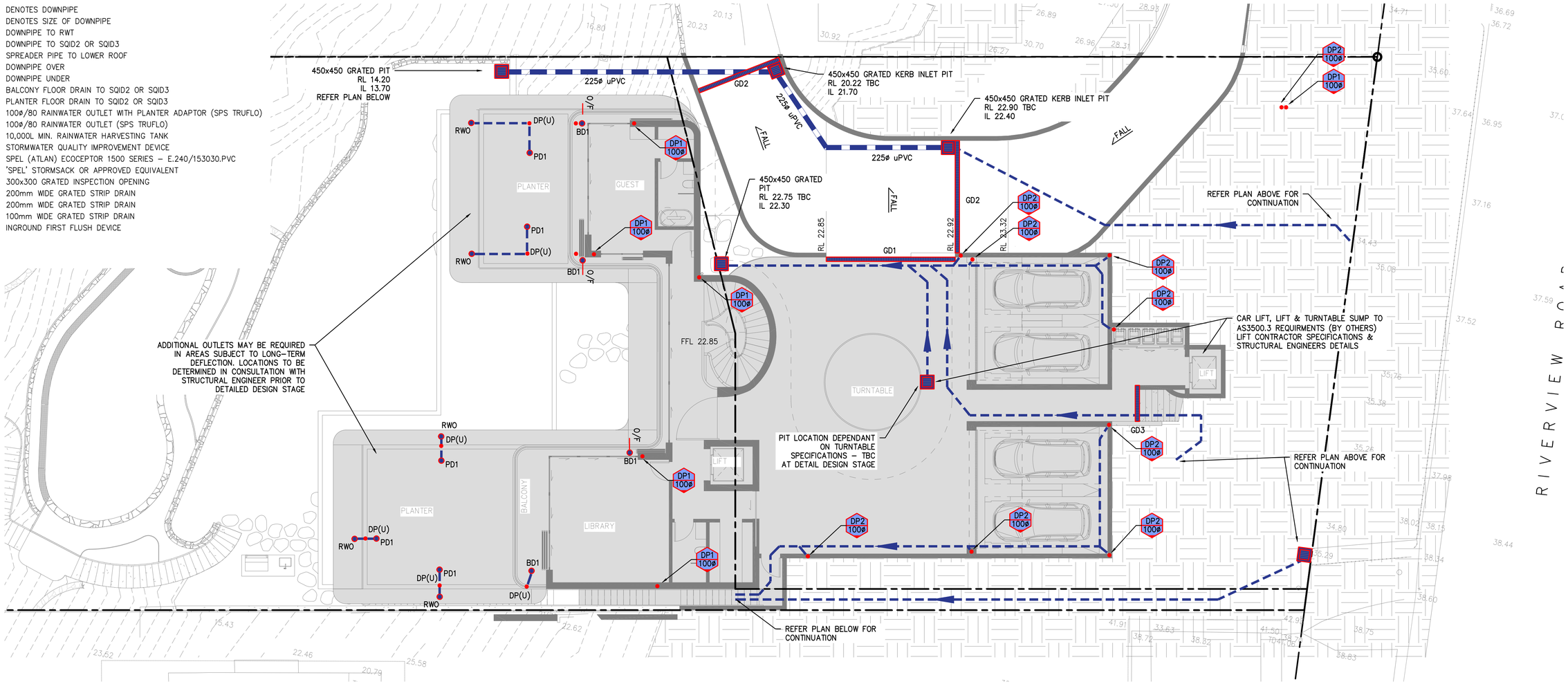
GD3	100mm WIDE GRATED STRIP DRAIN
FFD	INGROUND FIRST FLUSH DEVICE



SECOND FLOOR STORMWATER MANAGEMENT PLAN

SCALE = 1 : 100

NOTE:
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DIAL 1100 BEFORE YOU DIG

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A	10.12.24	STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION	R.M

Issued for: DEVELOPMENT APPLICATION
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Architect: CM STUDIO cm

Client: MMIG DEVELOPMENTS PTY LTD

Project and Drawing Title: 139–141 RIVERVIEW ROAD, AVALON BEACH SECOND FLOOR STORMWATER MANAGEMENT PLAN

Local Council: NORTHERN BEACHES COUNCIL

Project Number:	Drawing ID:	Issue:
240601	SW103	A

NOTES:
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NOT FOR CONSTRUCTION

LEGEND

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- STORMWATER PIPE FLOW DIRECTION
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100ø	DENOTES SIZE OF DOWNPIPE
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PD1	PLANTER FLOOR DRAIN TO SQID2 OR SQID3
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SQID2/SQID3	'SPEL' STORMSACK OR APPROVED EQUIVALENT
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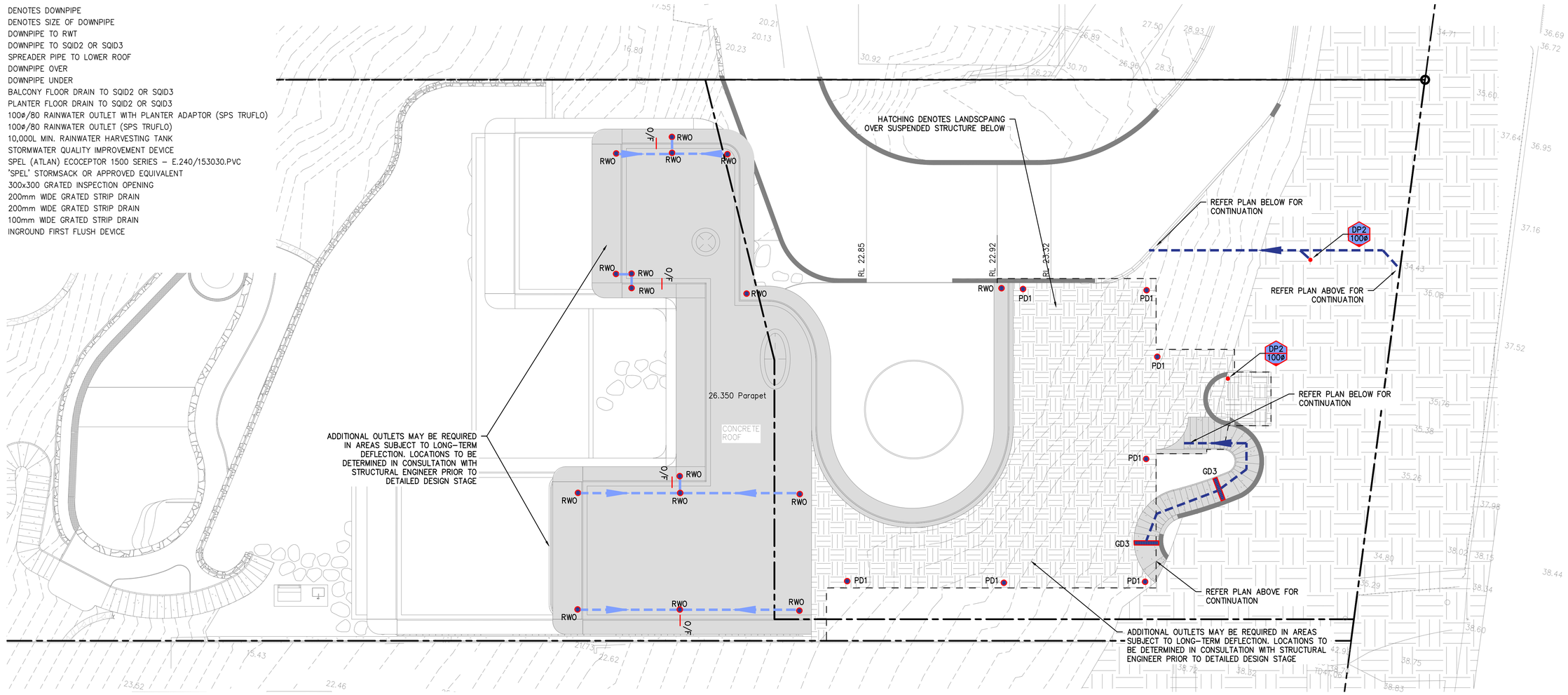
GD1	200mm WIDE GRATED STRIP DRAIN
GD2	200mm WIDE GRATED STRIP DRAIN
GD3	100mm WIDE GRATED STRIP DRAIN
FFD	INGROUND FIRST FLUSH DEVICE



ROOF STORMWATER MANAGEMENT PLAN

SCALE = 1 : 100

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

DIAL 1100 BEFORE YOU DIG

A1 ORIGINAL

Rev:	Date:	Description:	Reviewed:
A	10.12.24	STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION	R.M

Issued for: DEVELOPMENT APPLICATION

Approved by:

Date : 10.12.24
Rhys Mikhail .....
Director | Principal Engineer | NER: 2570082 | RPEQ: 17480
BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus)

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DESIGN	R.M	05.07.2024
DRAWN	S.M	05.07.2024
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RTS CIVIL CONSULTING ENGINEERS
STORMWATER • CIVIL • FLOOD MITIGATION
ABN: 81 615 065 588 Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au

Architect: CM STUDIO cm

Client: MMIG DEVELOPMENTS PTY LTD

Project and Drawing Title:
139–141 RIVERVIEW ROAD, AVALON BEACH
ROOF
STORMWATER MANAGEMENT PLAN

Local Council: NORTHERN BEACHES COUNCIL

Project Number:	Drawing ID:	Issue:
240601	SW104	A

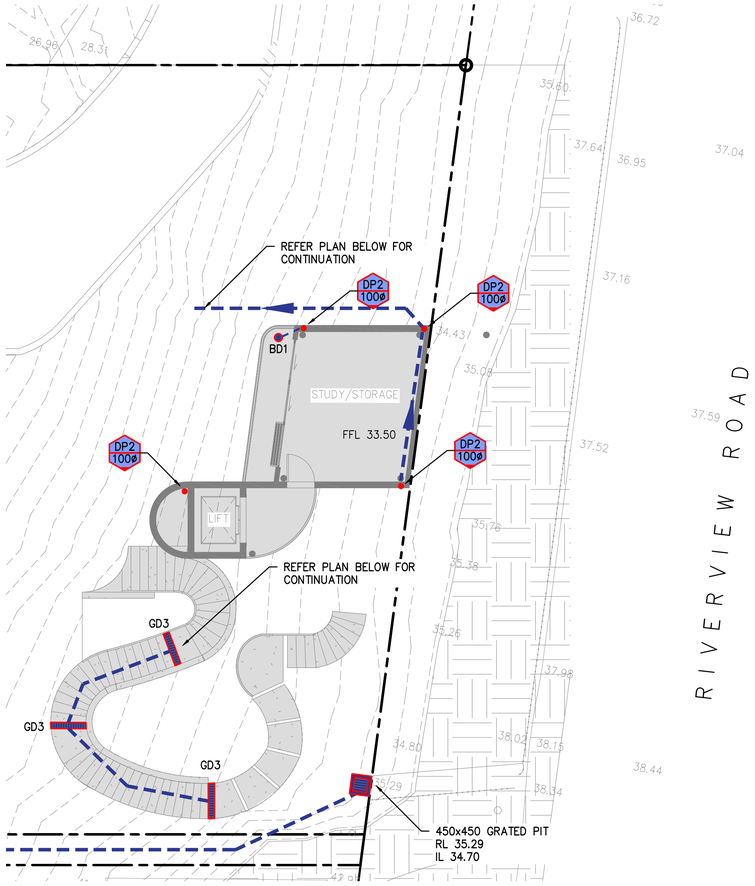
NOT FOR CONSTRUCTION

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.

LEGEND

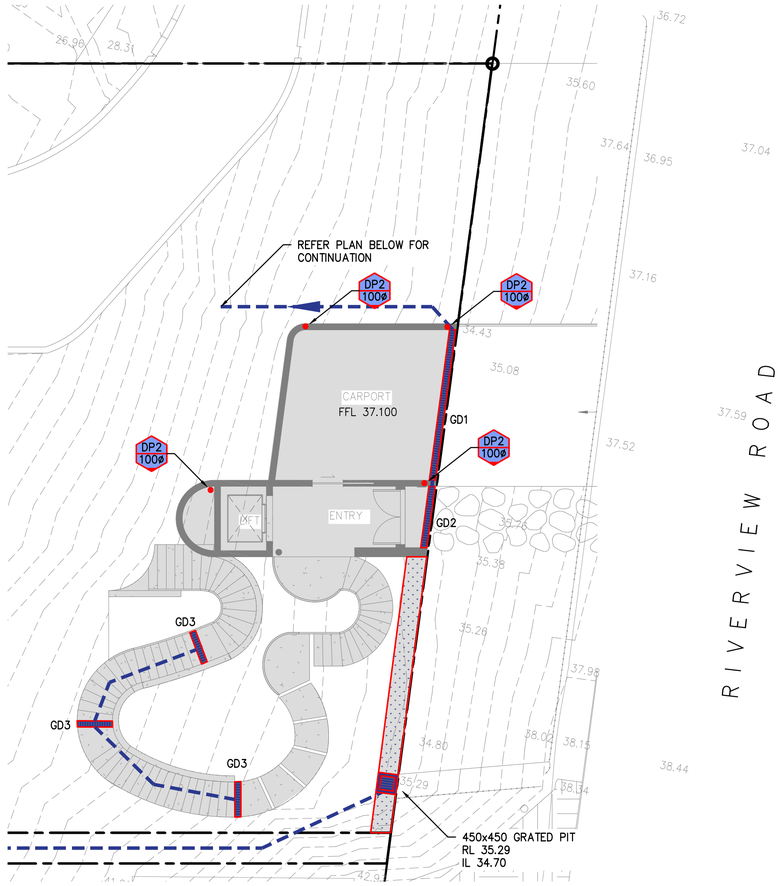
- STORMWATER PIT
- NEW STORMWATER PIPE
- STORMWATER PIPE FLOW DIRECTION
- STORMWATER PIPE TO RWT
- EXISTING STORMWATER PIPE
- FLUSH-OUT LINE
- BOUNDARY LINE
- S — EXISTING SEWER MAIN
- OHP — EXISTING OVERHEAD POWER LINES
- E — EXISTING ELECTRICITY LINE
- W — EXISTING WATER MAINS
- T — EXISTING TELECOMMUNICATIONS LINE
- G — EXISTING GAS MAINS

DP1 100ø	DENOTES DOWNPIPE
	DENOTES SIZE OF DOWNPIPE
DP1	DOWNPIPE TO RWT
DP2	DOWNPIPE TO SQID2 OR SQID3
SP1	SPREADER PIPE TO LOWER ROOF
DP(O)	DOWNPIPE OVER
DP(U)	DOWNPIPE UNDER
BD1	BALCONY FLOOR DRAIN TO SQID2 OR SQID3
PD1	PLANTER FLOOR DRAIN TO SQID2 OR SQID3
PD	100ø/80 RAINWATER OUTLET WITH PLANTER ADAPTOR (SPS TRUFLO)
BD	100ø/80 RAINWATER OUTLET (SPS TRUFLO)
RWT	10,000L MIN. RAINWATER HARVESTING TANK
SQID	STORMWATER QUALITY IMPROVEMENT DEVICE
SQID1	SPEL (ATLAN) ECOCEPTOR 1500 SERIES – E.240/153030.PVC
SQID2/SQID3	'SPEL' STORMSACK OR APPROVED EQUIVALENT
IO	300x300 GRATED INSPECTION OPENING
GD1	200mm WIDE GRATED STRIP DRAIN
GD2	200mm WIDE GRATED STRIP DRAIN
GD3	100mm WIDE GRATED STRIP DRAIN
FFD	INGROUND FIRST FLUSH DEVICE



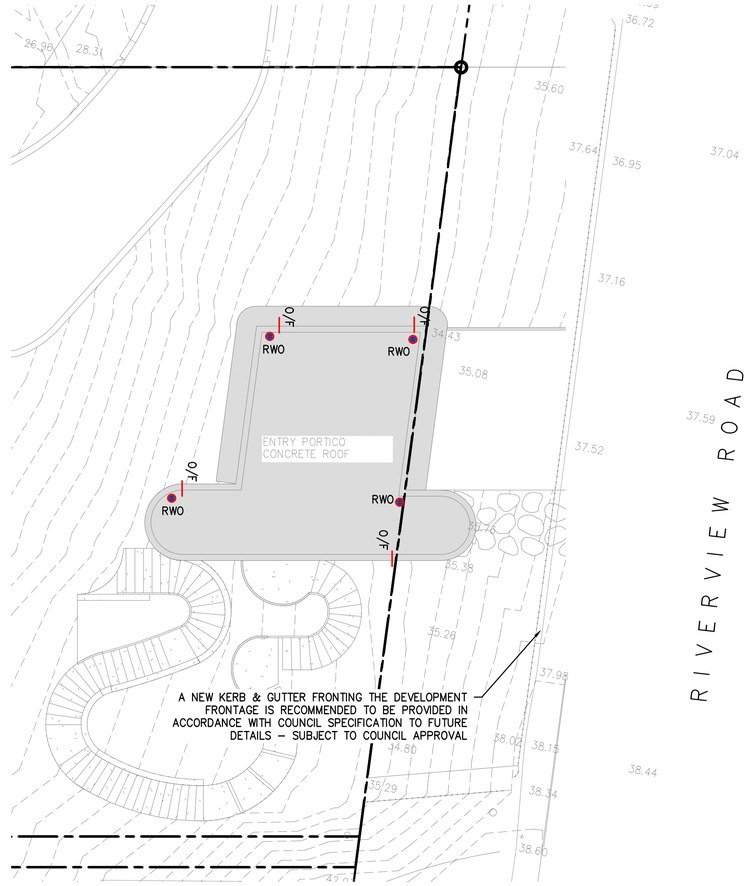
ENTRY PORTICO LOWER

SCALE = 1 : 100



ENTRY PORTICO GROUND

SCALE = 1 : 100



ENTRY PORTICO ROOF

SCALE = 1 : 100

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139–141 RIVERVIEW ROAD, AVALON BEACH
ENTRY PORTICO
STORMWATER MANAGEMENT PLANS

Local Council: NORTHERN BEACHES COUNCIL

Project Number:	Drawing ID:	Issue:
240601	SW105	A

NOTES:
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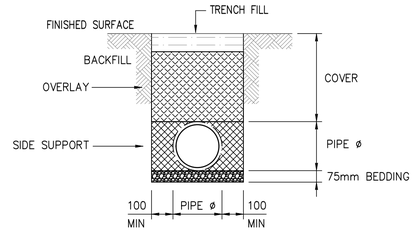
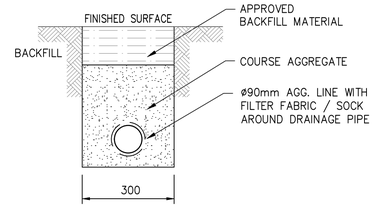
NOT FOR CONSTRUCTION

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.



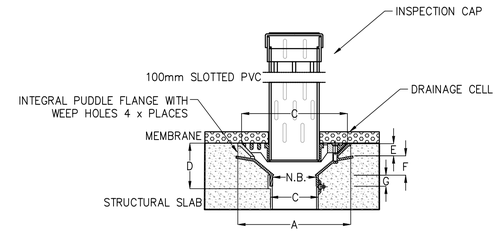
TYPICAL uPVC PIPE TRENCH DETAIL
SCALE = N.T.S.



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

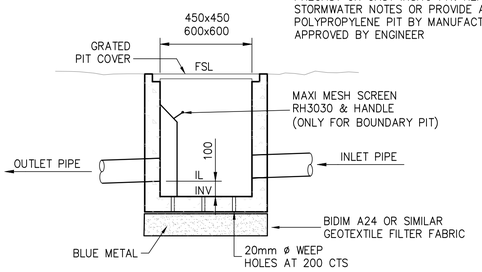
DIMENSIONS (mm)

N.B.	A	B	C	D	E	F	G
100	260	240	103	106	28	45	25

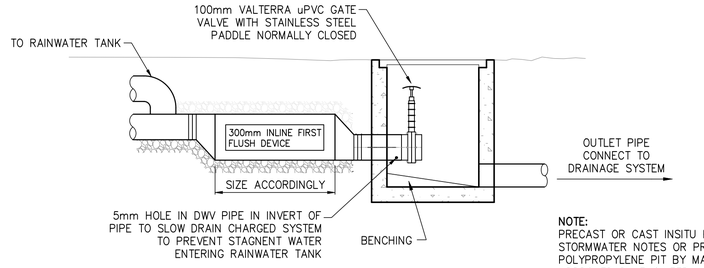


PLANTER OUTLET WITH ADAPTER
SCALE = N.T.S.

NOTE:
PRECAST OR CAST INSITU PIT. REFER STORMWATER NOTES OR PROVIDE ALTERNATE POLYPROPYLENE PIT BY MANUFACTURER IF APPROVED BY ENGINEER



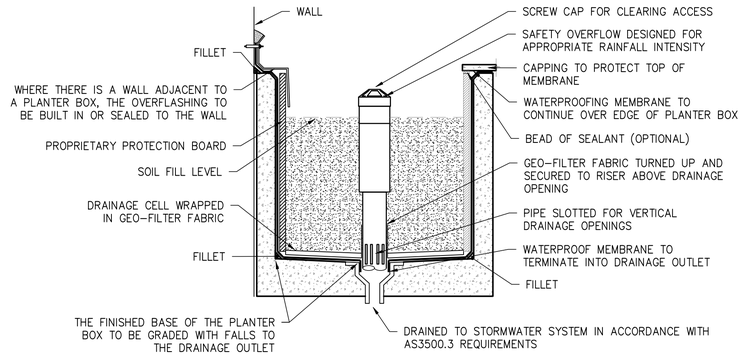
TYPICAL PIT DETAIL
SCALE = 1 : 20



FIRST FLUSH DETAIL – INGROUND
SCALE = 1 : 20

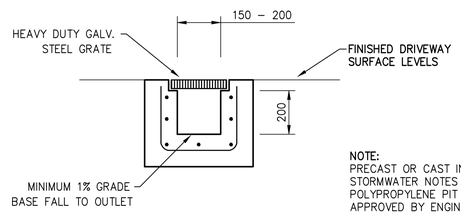
NOTE:
PRECAST OR CAST INSITU PIT. REFER STORMWATER NOTES OR PROVIDE ALTERNATE POLYPROPYLENE PIT BY MANUFACTURER IF APPROVED BY ENGINEER

NOTE:
THIS CAN BE ANY TYPICAL PIT PROVIDED OR IF NEEDED TO BE FITTED AT LOW POINT OF SITE AND THERE IS NO ADEQUATE DISCHARGE POINT NEARBY, PROVIDE 300mm SUMP. CONTACT ENGINEER IF IN DOUBT.



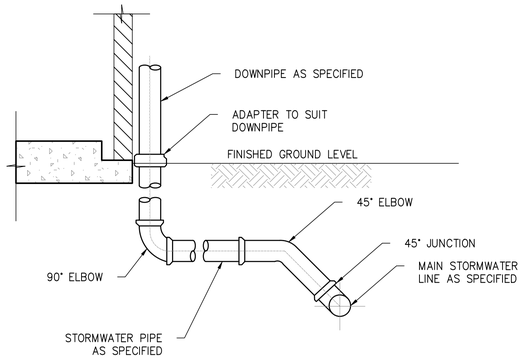
TYPICAL PLANTER BOX CONSTRUCTION
SCALE = NTS

NOTE:
REFER TO ARCHITECT FOR SITE SPECIFIC DETAILS.

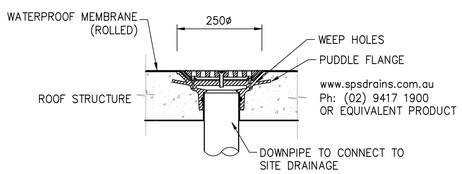


NOTE:
PRECAST OR CAST INSITU PIT. REFER STORMWATER NOTES OR PROVIDE ALTERNATE POLYPROPYLENE PIT BY MANUFACTURER IF APPROVED BY ENGINEER

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



TYPICAL DOWNPIPE CONNECTION DETAIL
SCALE = N.T.S.



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

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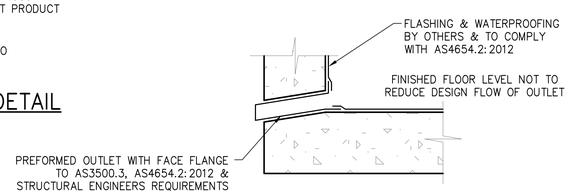
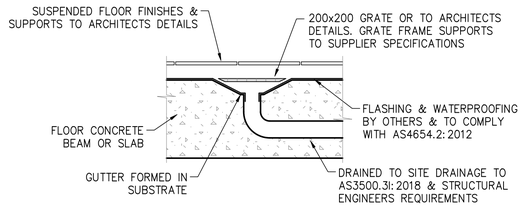
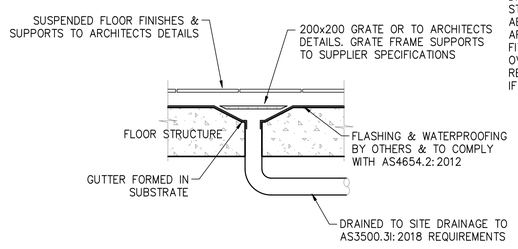


PREFORMED OUTLET TO PARAPET OR BALCONY OVERFLOW
NOT TO SCALE



STANDARD FLOOR PATIO DRAIN
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 50mmø SPITTER PIPES TO ACT AS OVERFLOW POINT IN ACCORDANCE WITH AS4564.2:2012 REQUIREMENTS.
IF IN DOUBT, CONTACT THE ENGINEER.



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

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Architect: CM STUDIO cm
Client: MMIG DEVELOPMENTS PTY LTD

Project and Drawing Title:
139–141 RIVERVIEW ROAD, AVALON BEACH
STORMWATER DRAINAGE DETAILS
SHEET 1 OF 3

Local Council: NORTHERN BEACHES COUNCIL

Project Number:	Drawing ID:	Issue:
240601	SW200	A

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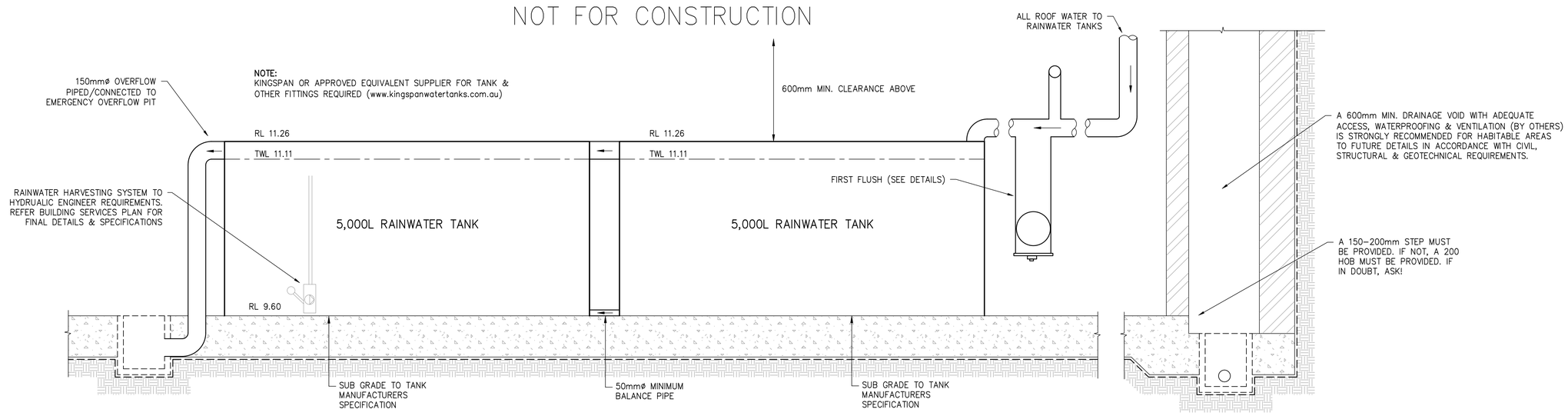
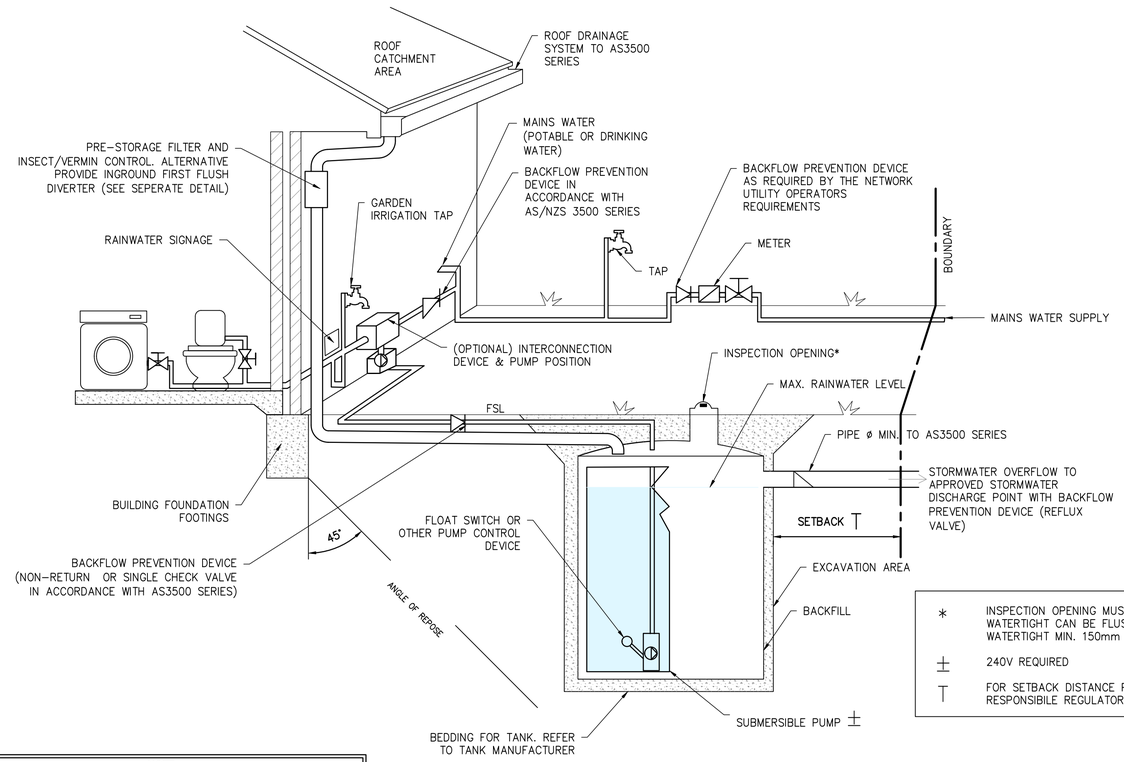
ø	DIAMETER
FSL	FINISHED SURFACE LEVEL
	REFLUX VALVE
	NON–RETURN VALVE
	PUMP
	MAINS PIPEWORK (POTABLE OR DRINKING WATER)
	RAINWATER PIPEWORK
	STOP TAP (ISOLATION VALVE)
	STORMWATER DRAINAGE PIPEWORK



TYPICAL SECTION RAINWATER TANK

NOT TO SCALE



*	INSPECTION OPENING MUST BE LOCKABLE. IF WATERTIGHT CAN BE FLUSH WITH FSL. IF NOT WATERTIGHT MIN. 150mm ABOVE FSL.
±	240V REQUIRED
⊤	FOR SETBACK DISTANCE PLEASE CONTACT RESPONSIBILE REGULATORY AUTHORITY

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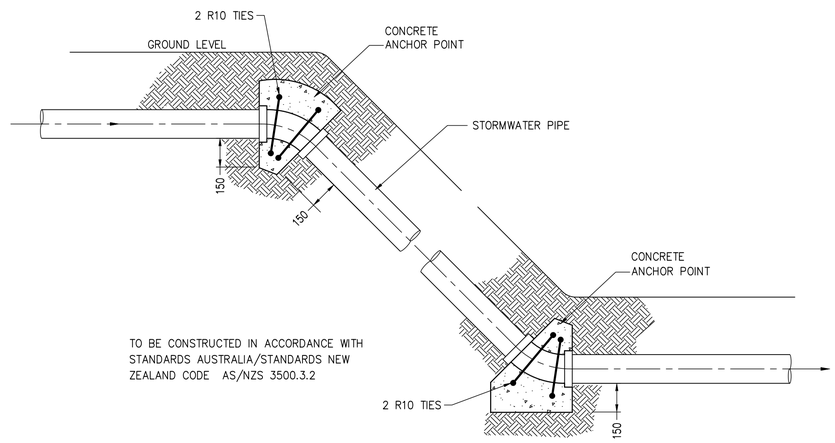
TYPICAL BELOWGROUND RAINWATER TANK INSTALLATION WITH RAINWATER SUPPLIED TO GARDEN AND APPLIANCES IN THE HOUSEHOLD (HB 230–2008)

NOT TO SCALE



ANCHOR BLOCKS TO BE LOCATED AT THE BEND OR JUNCTION AT THE TOP AND BOTTOM OF THE INCLINED SITE STORMWATER DRAIN AND AT INTERVALS NOT EXCEEDING 3.0m

CONCRETE ANCHOR POINT DETAIL FOR EARTH SLOPE GREATER THAN 1 V. TO 3 H.

SCALE = 1 : 20

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Client: MMIG DEVELOPMENTS PTY LTD

Project and Drawing Title: 139–141 RIVERVIEW ROAD, AVALON BEACH STORMWATER DRAINAGE DETAILS SHEET 2 OF 3

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240601	SW201	A

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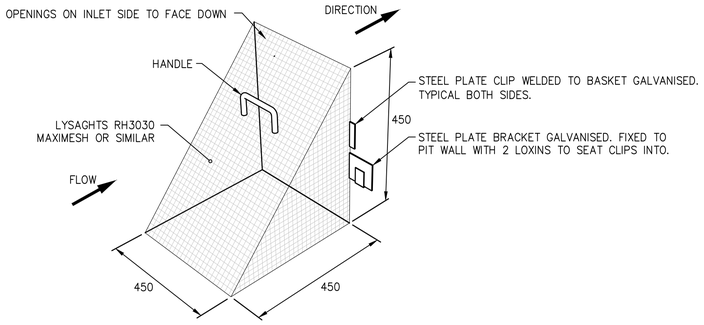
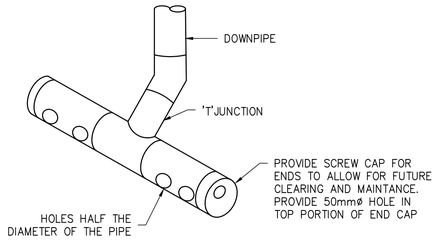


MAXI MESH SCREEN DETAIL

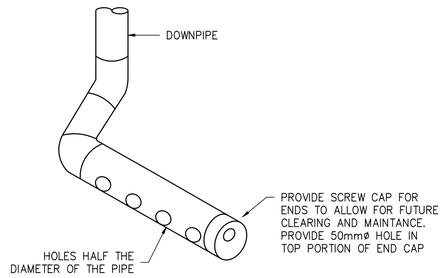
SCALE = N.T.S.



SPREADER PIPE 'SP1' DETAIL OPTION 1

SCALE = NTS

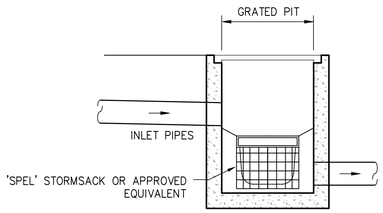
NOTE:
1. HOLE POSITIONS TO AVOID JOINTS IN ROOFING
2. WHEN DOWNPIPE IS LOCATED IN CORNER, SPREADER TO BE L-SHAPED.



SPREADER PIPE 'SP1' DETAIL OPTION 2

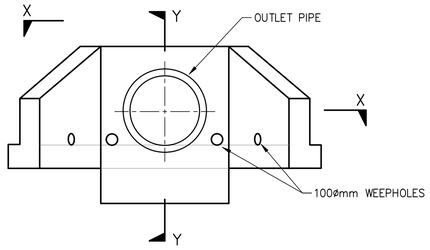
SCALE = NTS

NOTE:
1. HOLE POSITIONS TO AVOID JOINTS IN ROOFING



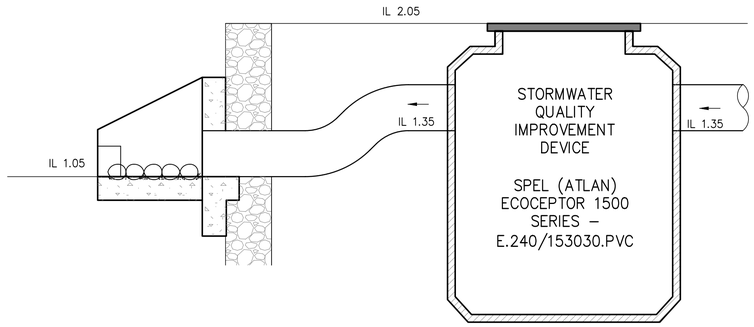
TYPICAL SQID2/3 PIT DETAIL

SCALE = 1 : 20



HEADWALL ELEVATION

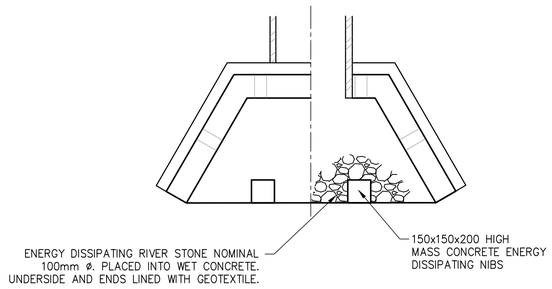
SCALE = 1 : 20



RETAINING WALLS AND STRUCTURES (BY OTHERS)

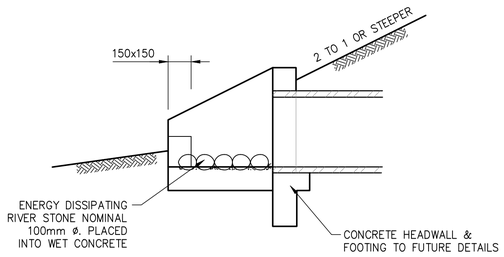
SITE STORMWATER DISCHARGE & SQID1 SECTIONAL DETAIL

SCALE 1:20



HEADWALL SECTION 'X'

SCALE = 1 : 20



HEADWALL SECTION 'Y'

SCALE = 1 : 20

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Approved by:

Date : 10.12.24

Rhys Mikhail .....

Director | Principal Engineer | NER: 2570082 | RPEQ: 17480
BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus)

Title:	Initial:	Date:
DESIGN	R.M	05.07.2024
DRAWN	S.M	05.07.2024
CHECKED	R.M	10.12.2024
APPROVED	R.M	10.12.2024

RTS CIVIL CONSULTING ENGINEERS
STORMWATER • CIVIL • FLOOD MITIGATION
ABN: 81 615 065 588 Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au

Architect: CM STUDIO cm

Client: MMIG DEVELOPMENTS PTY LTD

Project and Drawing Title:
139–141 RIVERVIEW ROAD, AVALON BEACH
STORMWATER DRAINAGE DETAILS
SHEET 3 OF 3

Local Council: NORTHERN BEACHES COUNCIL

Project Number:	Drawing ID:	Issue:
240601	SW202	A