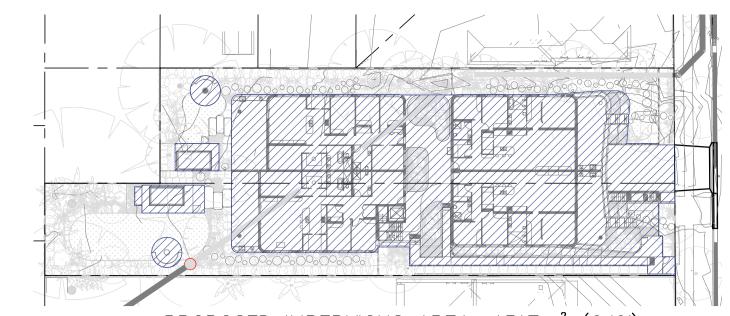


EXISTING IMPERVIOUS AREA: 928m2 (45%) SCALE = 1 : 500



CIVIL CONSULTING ENGINEERS



PROPOSED IMPERVIOUS AREA: 1317m2 (64%)

PROPOSED NEW SEPP SENIORS SCHEME DEVELOPMENT 52-54 BRIGHTON STREET, FRESHWATER

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

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: 2018 NATIONAL PLUMBING DRAINAGE CODE PART 3 — STORMWATER

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. EXISTING STORMWATER SYSTEM TO BE CHECKED AND UPGRADED AS REQUIRED IN ACCORDANCE WITH AS 3500.3: 2018. 19. 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. 20. CONTRACTOR TO LOCATE ALL EXISTING SERVICES PRIOR TO EXCAVATION AND NOTIFY ENGINEER OF ANY POTENTIAL CLASHES WITH THE PROPOSED DRAINAGE EASEMENT PIPE LINE.

21. 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. 22. 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.

23. 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.

24. 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.

25. 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. 26. PREVENT ANY STORMWATER EGRESS INTO ADJACENT PROPERTIES BY CREATING PHYSICAL BARRIERS AND SURFACE DRAINAGE INTERCEPTION.

27. GUTTER GUARDS MUST BE INSTALLED ON ALL GUTTERS TO MINIMISE DEBRIS ENTERING THE SYSTEM.

28. 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. 29. OVERFLOW PATHS SHALL BE PROVIDED TO ALLOW FOR FLOWS IN EXCESS OF THE CAPACITY OF THE PIPE/DRAINAGE SYSTEM

DRAINING THE SITE. 30. 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

31. 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 THAT THE NOMINAL DIAMETER OF THE DOWNPIPE. 32. 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.

33. SUPPORT SYSTEMS OF DOWNPIPES OR PIPEWORK MUST BE INSTALLED IN ACCORDANCE AUSTRALIAN STANDARDS AS3500.3: 2018 REQUIREMENTS.

34. 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.

35. THE FOLLOWING ABBREVIATIONS DENOTE FSL - FINISHED SURFACE LEVEL OR RL - REDUCED LEVEL

IL - INVERT LEVEL OF PIPE INV. - INVERT LEVEL OF PIT

ANY CONSTRUCTION CERTIFICATE.

CL - CENTRELINE OF ORIFICE

TWL - TOP WATER LEVEL

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.

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: 2018 - 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: 2018. 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, OR 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 PRESSUE 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: . 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

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, PROVIDEDa. 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 LAIDb. IN ACCORDANCE WITH NCC VOLUME TWO; AND

c. FOR SINGLE DWELLINGS, AS SHOWN IN FIGURE 6.2.8 OF AS3500.3

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) TOILETS c) 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.

. 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

13. NOISE EMISSIONS FROM ANY PUMPS DO NOT EXCEED 5dB(A) ABOVE AMBIENT BACKGROUND NOISE LEVEL MEASURED AT THE ALLOTMENT BOUNDARY.

ONSITE DRAINAGE CALCULATIONS - NORTHERN BEACHES COUNCIL WATER MANAGEMENT POLICY (2021)

	, ,
LOT A SITE AREA	1,037 m ²
LOT 38 SITE AREA	1,016 m ²
TOTAL SITE AREA	$2,053 \text{ m}^2 > 1,000 \text{ m}^2$
PRE-DEVELOPED IMPERVIOUS AREA	860 m² (42 %)
POST-DEVELOPED IMPERVIOUS AREA	1317 m ² (64 %)
IS PROPERTY FLOOD AFFECTED?	YES

AS THE DEVELOPMENT SITE IS IMPACTED BY OVERLAND FLOWS AND LOCATED IN CLOSE PROXIMITY TO DOWNSTREAM FLOODING, THE DEVELOPMENT SHOULD BE ONSITE STORMWATER DETENTION (OSD) IS EXEMPT. THIS HAS BEEN CONFIRMED AS AN ACCEPTABLE APPROACH IN PRINCIPLE 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)	87 %	85 %
TOTAL PHOSPHOROUS (TP)	72 %	65 %
TOTAL NITROGEN (TN)	69 %	45 %
GROSS POLUTANTS (GP)	100 %	90 %

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.

WALSH ARCHITECTS

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. 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. 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 - COVER PAGE, NOTES & CALCULATIONS

SE100 - SEDIMENT & EROSION CONTROL PLAN SE200 - SEDIMENT & EROSION CONTROL PLAN DETAILS

SW100 - SITE STORMWATER CATCHMENT PLAN, EASEMENT & FLOOD WALL PLAN

SW101 - BASEMENT STORMWATER MANAGEMENT PLAN

SW102 - GROUND STORMWATER MANAGEMENT PLAN

SW103 - LEVEL 1 & ROOF 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

www.dialbeforeyoudig.com.au EFORE YOU DIG

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

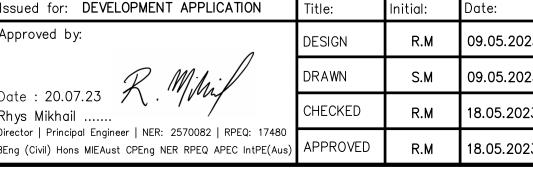
- CUT OFF EMERGENCY SERVICES DELAY PROJECT COMPLETION TIMES WHILE THE DAMAGE IS REPAIRED

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

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

A1 ORIC	SINAL		
Α	20.07.23	STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION	R.M
Rev:	Date:	Description:	Reviewed:

Approved by: Rhys Mikhail Director | Principal Engineer | NER: 2570082 | RPEQ: 1748 BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Au





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Architect:

CONTACT ENGINEER.

52-54 BRIGHTON STREET, FRESHWATER COVERPAGE, NOTES & CALCULATIONS

Project and Drawing Title:

Local Council:

NORTHERN BEACHES

Project Number: Drawing ID:

SEDIMENT AND EROSION CONTROL NOTES:

I. 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 **FXCAVATION.**

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 FOUIPMENT, FTC 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.

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.

EROSION CONTROL NOTES:

1. SILT FENCE AND ASSOCIATED WORKS INCLUDING INTERCEPTOR DRAIN IS TO BE INSTALLED BEFORE THE COMMENCEMENT OF ANY EXCAVATION.

THE TEMPORARY SEDIMENTATION BASIN IS TO BE LOCATED AT THE

IS NOT CLEAR (ie SEDIMENT GRATER THAT 50mg/L) PRIOR TO

EXISTING 600mmø AND 675mmø COUNCIL PIPELINES TO BE

MADE REDUNDANT & UPGRADED IN ACCORDANCE WITH COUNCIL

INDICATIVE ONLY.

REQUIREMENTS

DISCHARGING FROM TEMPORARY PUMP. FOR RATES & AGENTS SEE

APPENDIX E OF NSW DEPARTMENT OF HOUSING "MANAGING URBAN

STORMWATER OF SOILS & CONSTRUCTION". (REFER DETAILS) LOCATION

LOWEST POINT OF THE BASEMENT AT ALL TIMES. LOCATION MAY CHANGE

24 HOURS AFTER CONCLUSION OF EACH STORM OR WHEN SUSPENDED

SOLIDS ARE LESS THAN 50mg/L. FLOCCULATION TO BE USED IF WATER

DURING CONSTRUCTION PHASES. FLOATING INLET PUMP TO BE ACTIVATED

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. 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.

WARNING!

SITE SEDIMENT & EROSION CONTROL PLAN

SCALE = 1 : 200

NOT FOR CONSTRUCTION

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.

-STARR PICKET TO HOLD HAY BAIL AND GEOFABRIC — BOUNDARY DIRECTION OF FLOW - GEOFABRIC DISTURBED AREA -HAY BAIL OR SILT FENCE NGL VARIES PROPOSED BOUNDARY PIT -

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.



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.

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.

BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Au

A1 ORIGINAL Approved by: 20.07.23 STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION Rhys Mikhail Rev: Date: Description: Reviewed:

Issued for: DEVELOPMENT APPLICATION R.M DESIGN 20.07.202 S.M 20.07.202 DRAWN CHECKED R.M 20.07.2023 Director | Principal Engineer | NER: 2570082 | RPEQ: 1748 APPROVED



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Architect: WALSH ARCHITECTS

LAXLAND 3 PTY LTD

52-54 BRIGHTON STREET, FRESHWATER SEDIMENT & EROSION CONTROL PLAN

Project and Drawing Title:

TEMPORARY SILT FENCE

PROVIDE SANG BAGS &

STREET DRAINAGE PITS

TEMPORARY SILT FENCE

TO SITE BOUNDARY

INLET PROTECTION TO ALL

TEMPORARY OUTLET TO CONNECT

TO AN EXISTING COUNCIL PIT OR

DURING CONSTRUCTION ONLY

KERB & GUTTER AS LAST RESORT

INDICATIVE LOCATION OF STORAGE/LAYDOWN/STOCKPILE

AREA WITH SEDIMENT FENCING PLACED DOWNSTREAM.

LAYDOWN MAY BE RELOCATED TO SUIT CIVIL

TEMPORARY CONSTRUCTION SITE ACCESS.

ACCESS RAMP AND GRADES BY OTHERS.

CONTRACTOR/BUILDER REQUIREMENTS

TO SITE BOUNDARY

TEMPORARY SILT FENCE

TO SITE BOUNDARY

RIDGE 15.32

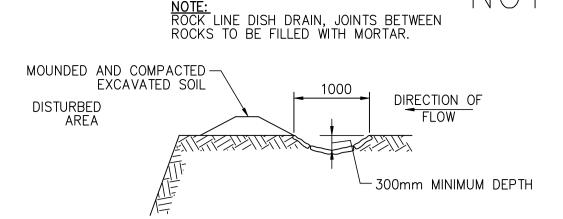
RL 9.600

Local Council:

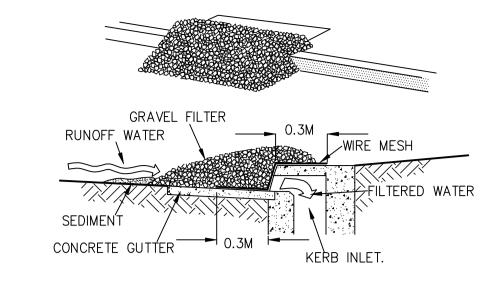
NORTHERN BEACHES

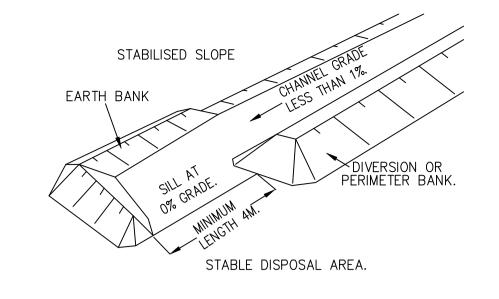
Project Number: Drawing ID: 230203

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

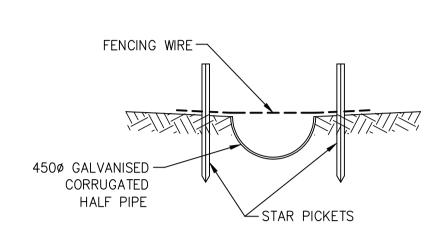




GRAVEL KERB INLET SEDIMENT TRAP

SCALE = N.T.S.

TYPICAL SPREADER DETAIL SCALE = N.T.S.



SLOPE LENGTH 60m (MAX)

TO THE CONTOURS OF THE SITE.

4. BACKFILL TRENCH OVER BASE OF FABRICA

APART.

SOLID END CAP-

WIRE OR STEEL MESH

DISTURBED AREA.

TEMPORARY DISH DRAIN SCALE = N.T.S.

DRAINAGE AREA 0.6 HA (MAX) SLOPE GRADIENT 1:2 (MAX)

TYPICAL TEMPORARY SEDIMENT (SILT) FENCE

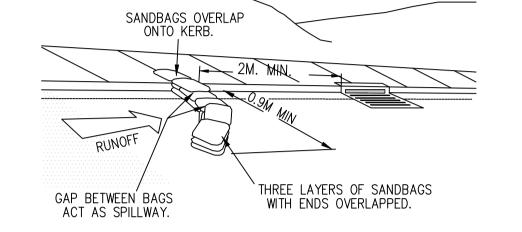
1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL

2. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND, 3 METRES

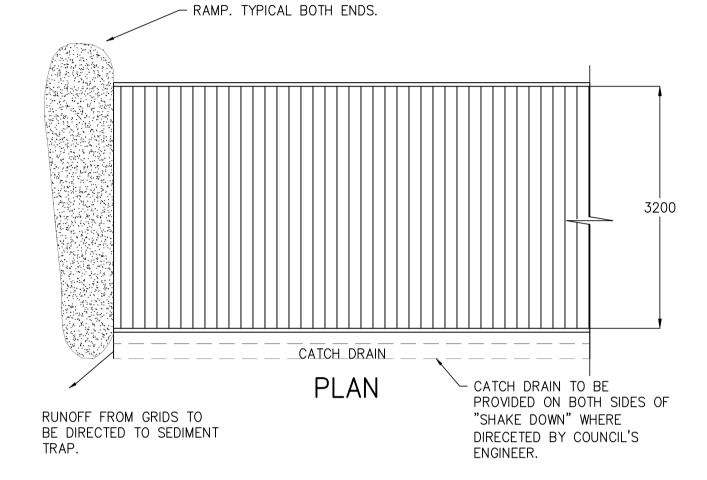
3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.

5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.

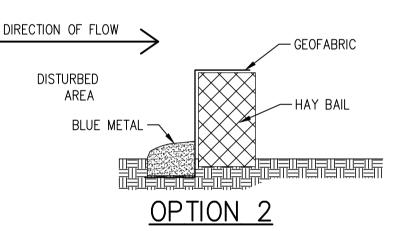
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm



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



DISTURBED AREA EXISTING PAVEMENT OPTION DIRECTION OF FLOW



SCALE = N.T.S.

REMOVABLE HAY BAIL DETAIL

2100 2100 2100 50 THICK GRANULAR BEDDING. **SECTION**

CATTLE GRID ENTRY & EXIT ALTERNATIVE SCALE = 1:20

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.

SCALE = 1:20

5. ROADS AND FOOTPATH AREA TO BE SWEPT DAILY. 6. ALL WORKS ARE TO COMPLY WITH LOCAL COUNCIL SPECIFICATIONS. **TEMPORARY** FENCE — — FENĊE PIT TO DRAIN POND WITH GRATED LID 2400 2400 -100mm ø uPVC SLOTTED PIPE 600 GEOTEXTILE FILTER TEMPORARY PUMP WITH NON-RETURN VALVE TO DIRECT RUNOFF TO TEMPORARY SEDIMENT TRAP DURING CONSTRUCTION TEMPORARY SEDIMENT BASIN (SETTLING POND) TYPICAL DETAILS

3 OFF HUMES PRECAST CATTLE GRID OR APPROVED EQUIVILENT

1. EXCAVATE AREA APPROX. 3.3m WIDE BY 2.2m LENGTH. THE FLOOR OF THE EXCAVATION MUST BE FLAT, WITHOUT HIGH POINTS. AN EXCAVATED DEPTH OF 100mm ACCOMODATES A BEDDING LAYER 50mm THICK AND GRID SET DOWN OF 50mm. THE LATTER MINIMISES SILT UP OF GRID AND SLOWS DOWN TRAFFIC.

2. BEDDING MATERIAL SHALL BE SAND OR OTHER SUITABLE APPROVED MATERIAL. BEDDING MATERIAL SHALL BE EVENLY RAKED OVER FLOOR OR EXCAVATION TO A DEPTH SLIGHTLY MORE THAN 50mm. ENSURE BEDDING IS LEVEL IN BOTH DIRECTIONS.

3. LOWER CATTLE GRID ONTO THE PREPARED BASE. ENSURE THAT NO PART OF THE UNIT IS SITTING ON ANY HIGH POINTS.

4. BACKFILL AND COMPACT AROUND GRID. GRADE EXCAVATED ROAD MATERIAL UP TO GRID EACH SIDE TO FORM A RAMP. IF DEPRESSIONS OCCUR ON THESE RAMPS WITH USE. ADD ADDITIONAL MATERIAL.

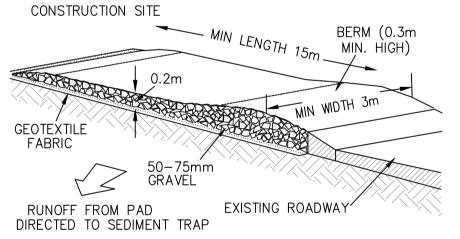


MIN LENGTH 7.0m Nom WIDTH CATTLE GRID SET 300mm ABOVE GROUND RUNOFF FROM PAD DIRECTED TO SEDIMENT TRAP

MIN LENGTH 5.0m

NOTE: WHEEL WASH OR SPRAY MAY BE REQUIRED DURING WET WEATHER

TYPICAL TEMPORARY CONSTRUCTION ENTRY & EXIT DETAIL (TYPE 2)



NOTE: WHEEL WASH OR SPRAY MAY BE REQUIRED DURING WET WEATHER. GRAVEL SHALL BE CLEANED/REMOVED WHEN THE EXPOSED HEIGHT OF THE GRAVEL IS LESS THAN 30mm.

TYPICAL TEMPORARY CONSTRUCTION ENTRY & EXIT DETAIL (TYPE 1)

- 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 OF LEAVES THE SITE.

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.

A1 ORIGINAL Issued for: DEVELOPMENT APPLICATION Approved by: R.M DESIGN DRAWN S.M 20.07.23 STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION CHECKED R.M Rhys Mikhail Director | Principal Engineer | NER: 2570082 | RPEQ: 17480 Rev: Date: Description: Reviewed: APPROVED BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus

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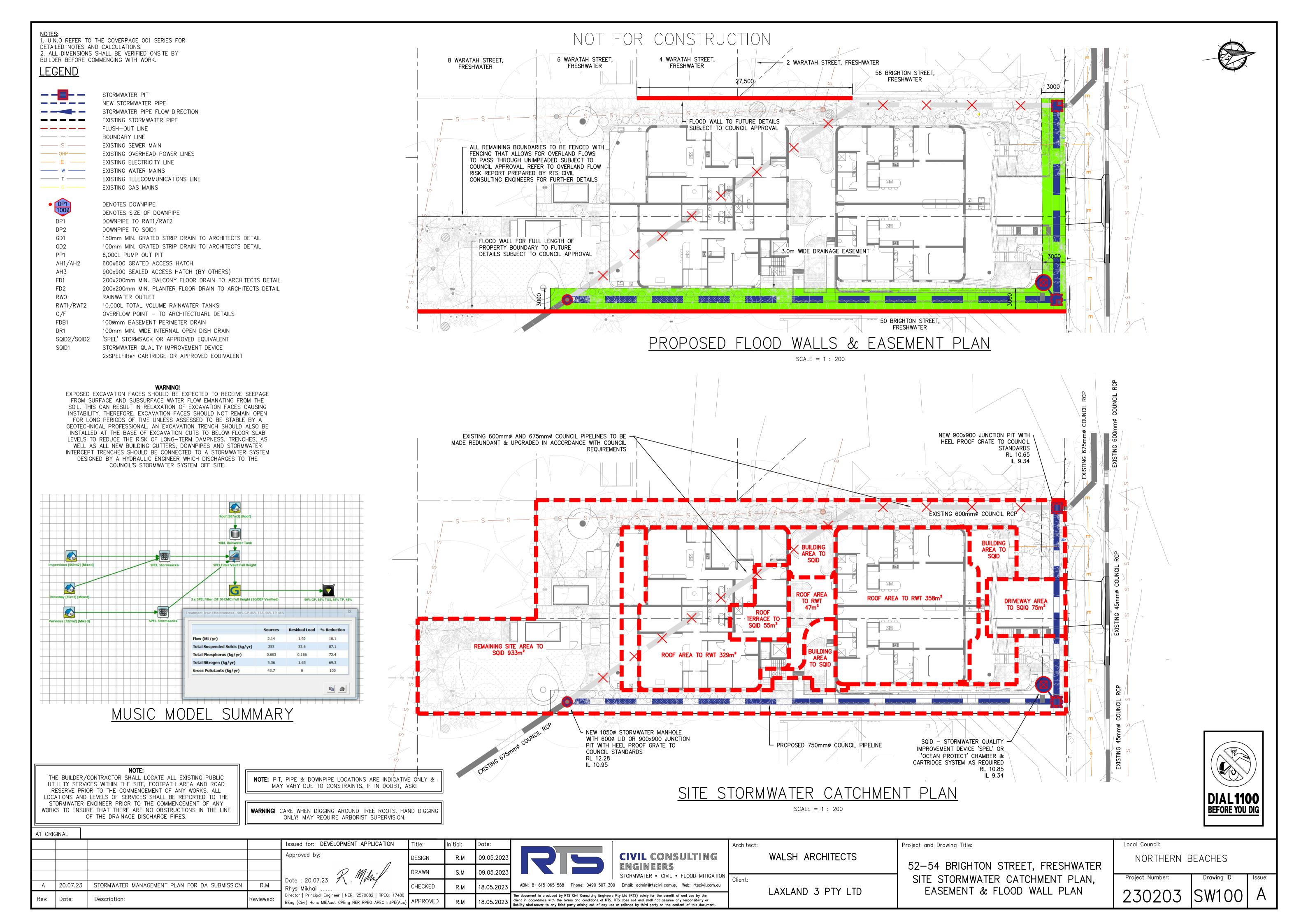
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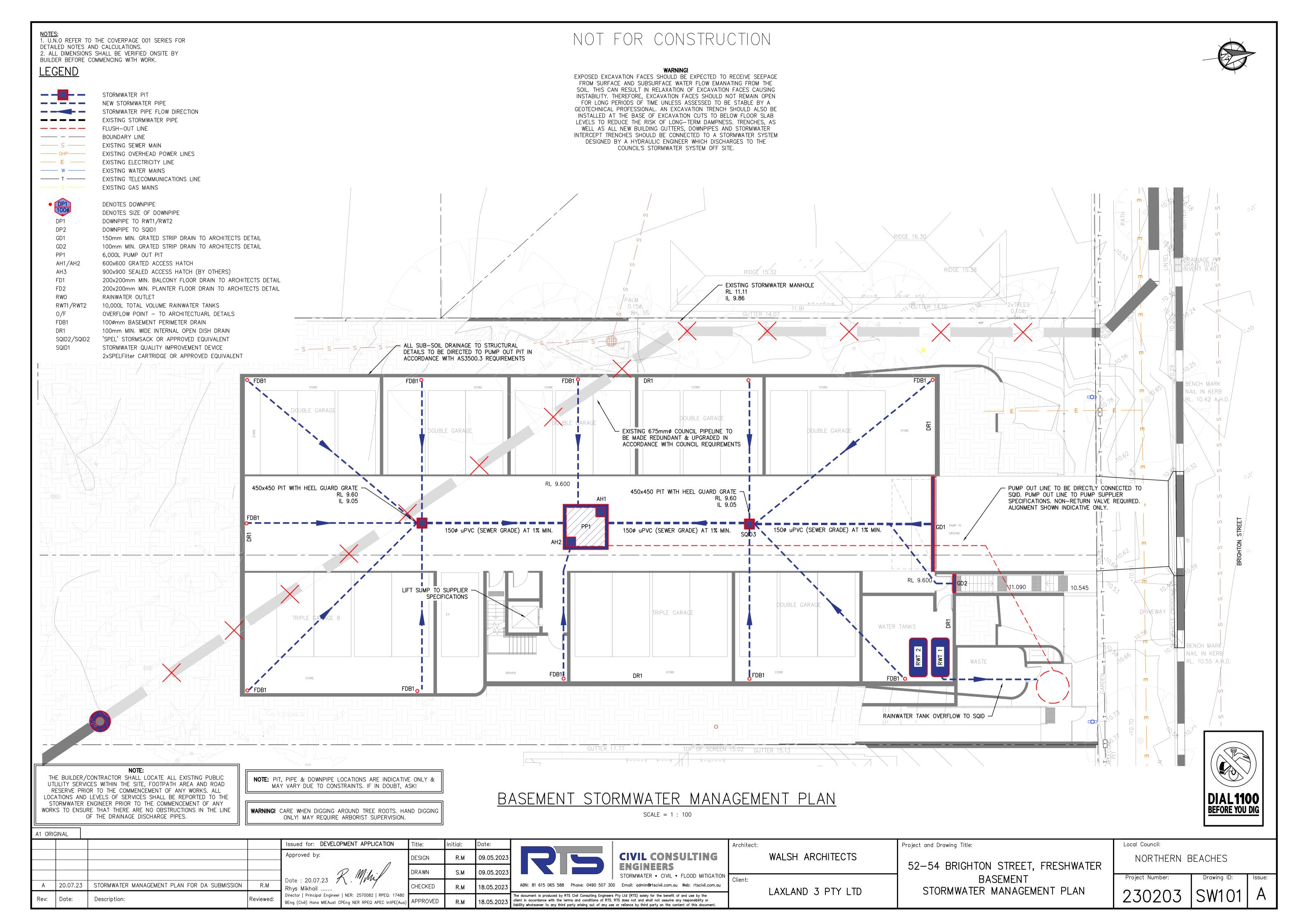
52-54 BRIGHTON STREET, FRESHWATER SEDIMENT & EROSION CONTROL PLAN DETAILS

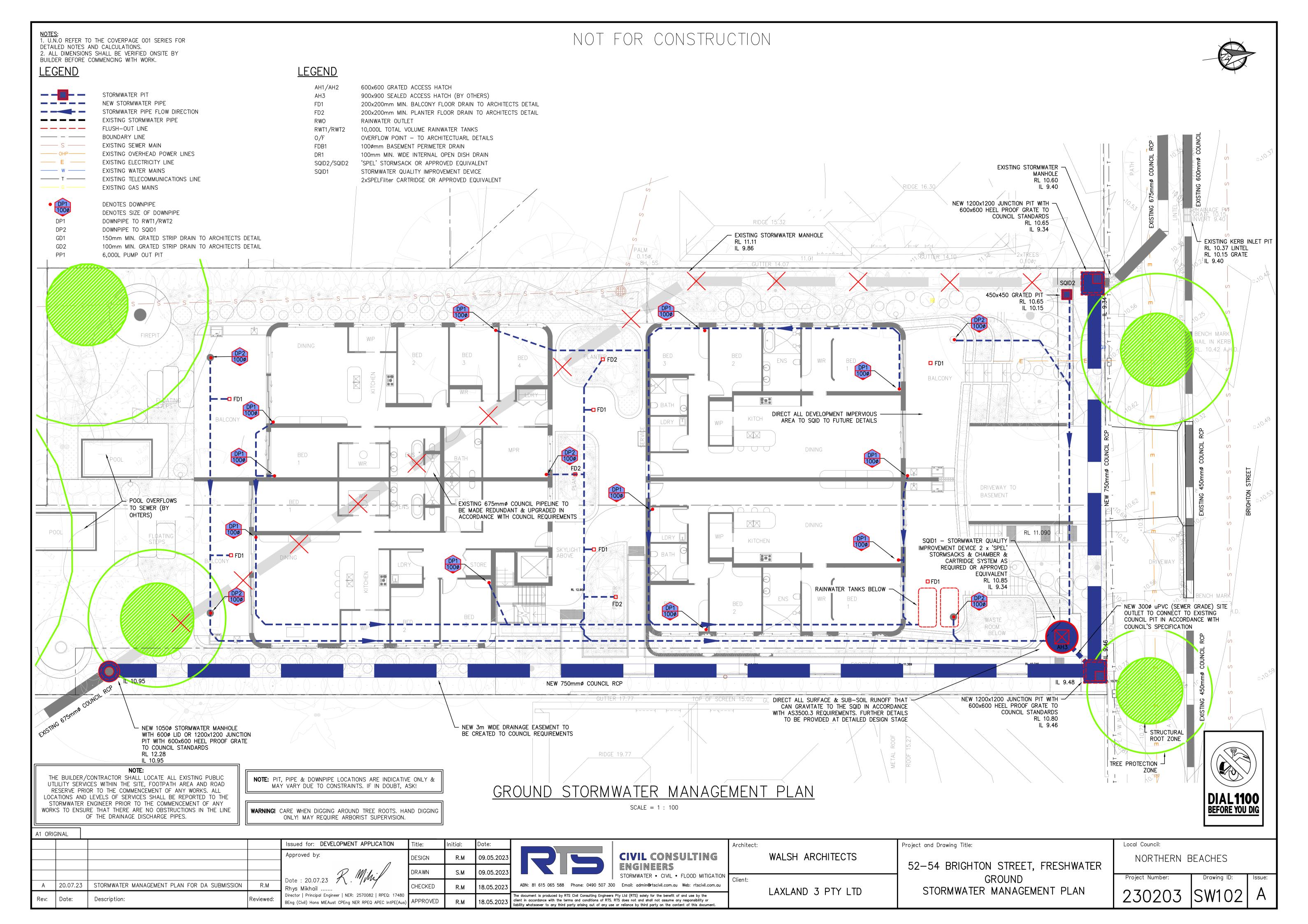
Project and Drawing Title:

Local Co	ouncil:	
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Project Number: Drawing ID: 230203



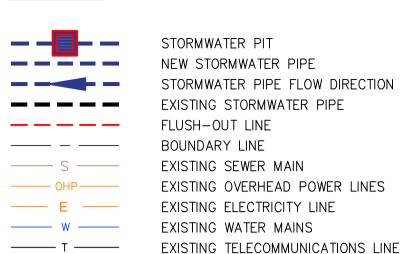




NOT FOR CONSTRUCTION



LEGEND



DENOTES DOWNPIPE DENOTES SIZE OF DOWNPIPE DP1 DOWNPIPE TO RWT1/RWT2 DP2 DOWNPIPE TO SQID1

EXISTING GAS MAINS

GD1 150mm MIN. GRATED STRIP DRAIN TO ARCHITECTS DETAIL GD2 100mm MIN. GRATED STRIP DRAIN TO ARCHITECTS DETAIL

PP1 AH1/AH2

AH3 900x900 SEALED ACCESS HATCH (BY OTHERS)

FD1 200x200mm MIN. BALCONY FLOOR DRAIN TO ARCHITECTS DETAIL 200x200mm MIN. PLANTER FLOOR DRAIN TO ARCHITECTS DETAIL

RWT1/RWT2 10,000L TOTAL VOLUME RAINWATER TANKS O/F FDB1 100ømm BASEMENT PERIMETER DRAIN DR1 100mm MIN. WIDE INTERNAL OPEN DISH DRAIN SQID2/SQID2 'SPEL' STORMSACK OR APPROVED EQUIVALENT SQID1 STORMWATER QUALITY IMPROVEMENT DEVICE

6.000L PUMP OUT PIT 600x600 GRATED ACCESS HATCH

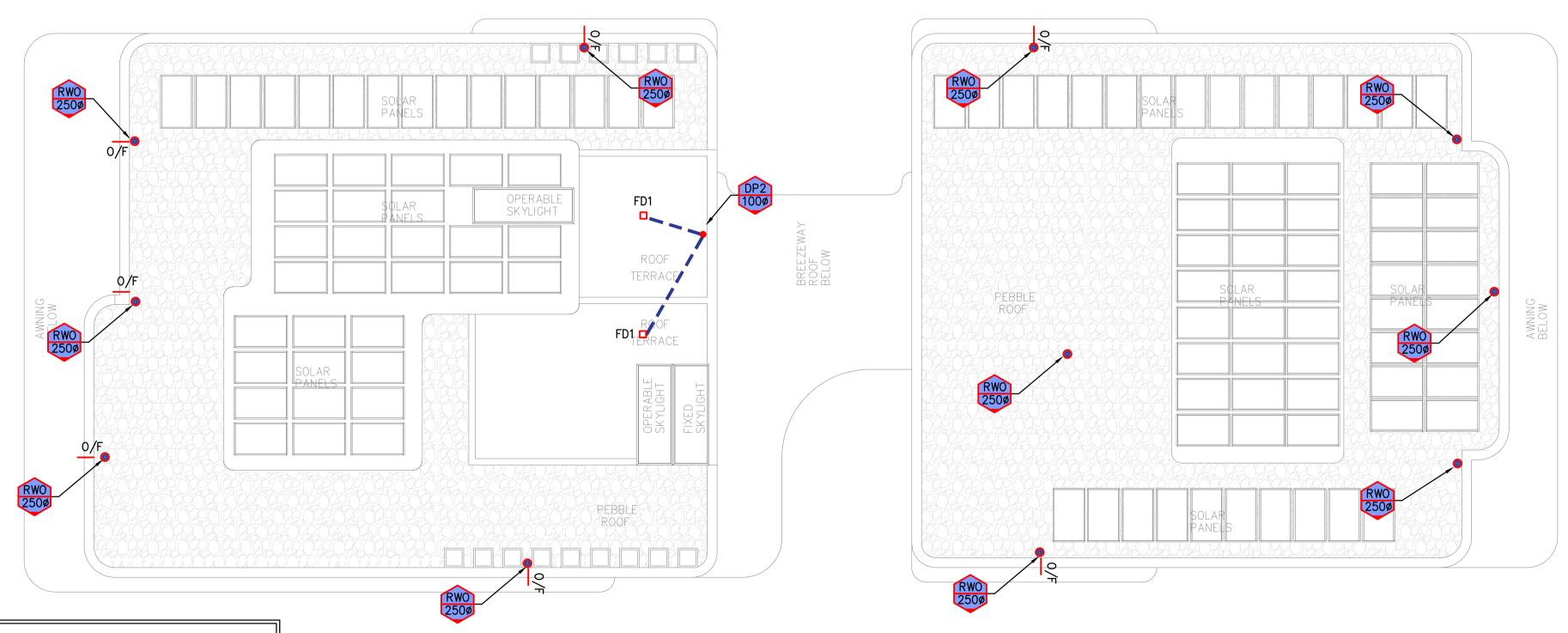
FD2 RWO RAINWATER OUTLET

OVERFLOW POINT - TO ARCHITECTUARL DETAILS 2xSPELFilter CARTRIDGE OR APPROVED EQUIVALENT

TERRACE, BALCONY & PLANTER DRAINAGE TO ARCHITECT DETAILS & AS4654.2 & TO CONNECT TO SITE DRAINAGE IN ACCORDANCE WITH AS3500.3 BED BALCONY DINING TERRACE, BALCONY & PLANTER DRAINAGE TO ARCHITECT DETAILS & AS4654.2 & TO CONNECT TO SITE DRAINAGE IN ACCORDANCE WITH AS3500.3 BALCONY BED BALCONY**FD1** TERRACE, BALCONY & PLANTER ABOVE DRAINAGE TO ARCHITECT DETAILS & AS4654.2 & TO CONNECT TO SITE DRAINAGE IN ACCORDANCE WITH AS3500.3

STORMWATER MANAGEMENT PLAN

SCALE = 1 : 100



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

STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION

20.07.23

Description:

Date:

Rev:

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.

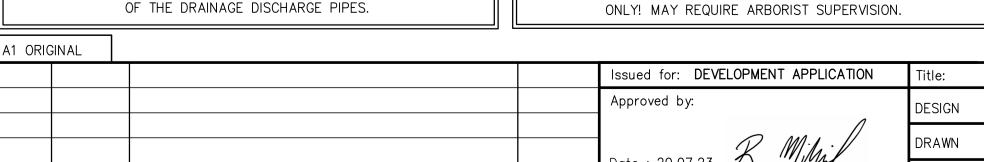
Director | Principal Engineer | NER: 2570082 | RPEQ: 17480

BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus

Rhys Mikhail

ROOF STORMWATER MANAGEMENT PLAN

SCALE = 1 : 100



Reviewed:

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.05.2023	
.05.2023	
05.2023	ABN: 81 615 065 588

S.M

R.M

CHECKED

APPROVED

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Architect:		
	WALSH	ARCHITECT

52-54 BRIGHTON STREET, FRESHWATER LEVEL 1 & ROOF STORMWATER MANAGEMENT PLAN

Project and Drawing Title:

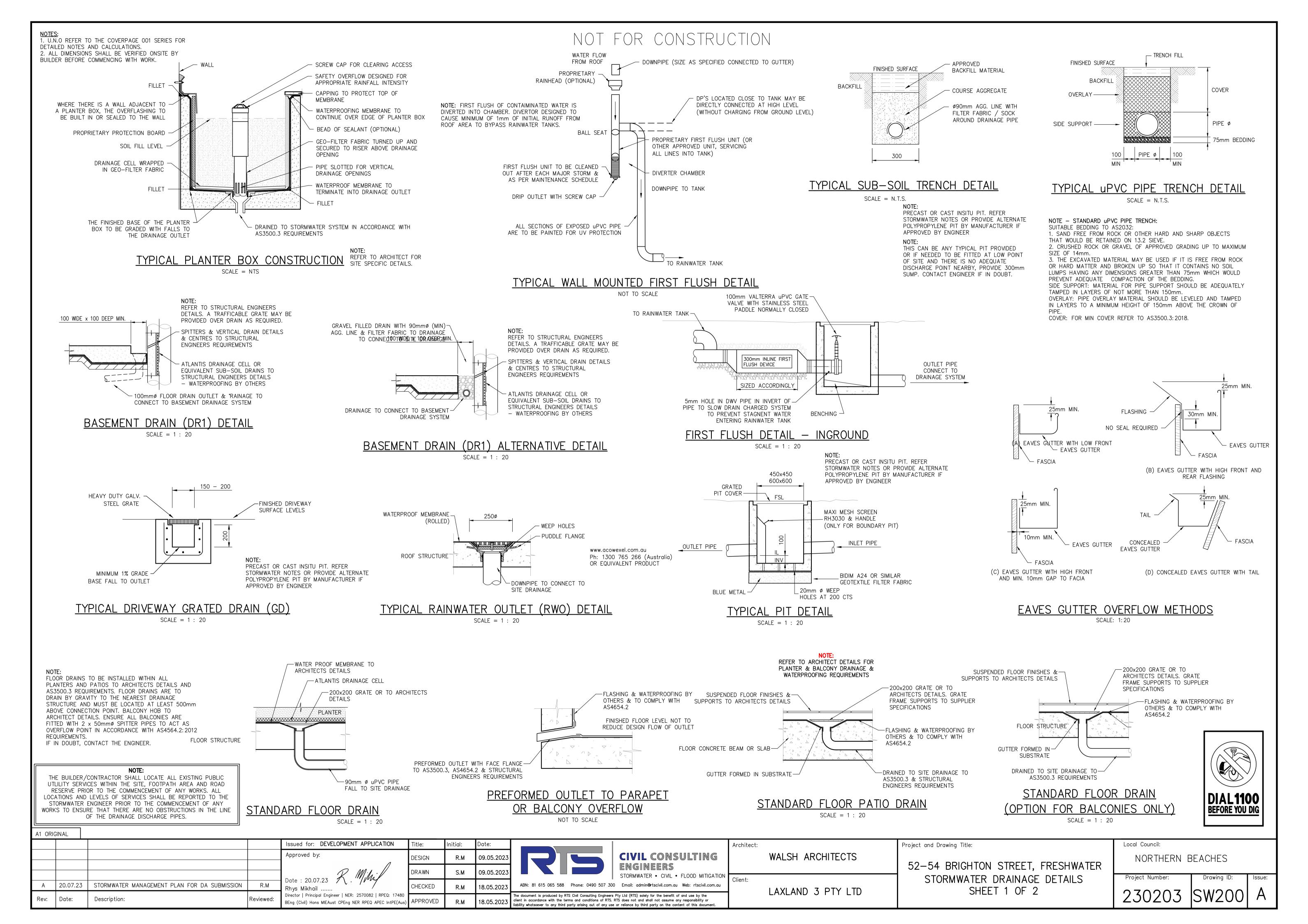
Local Council:
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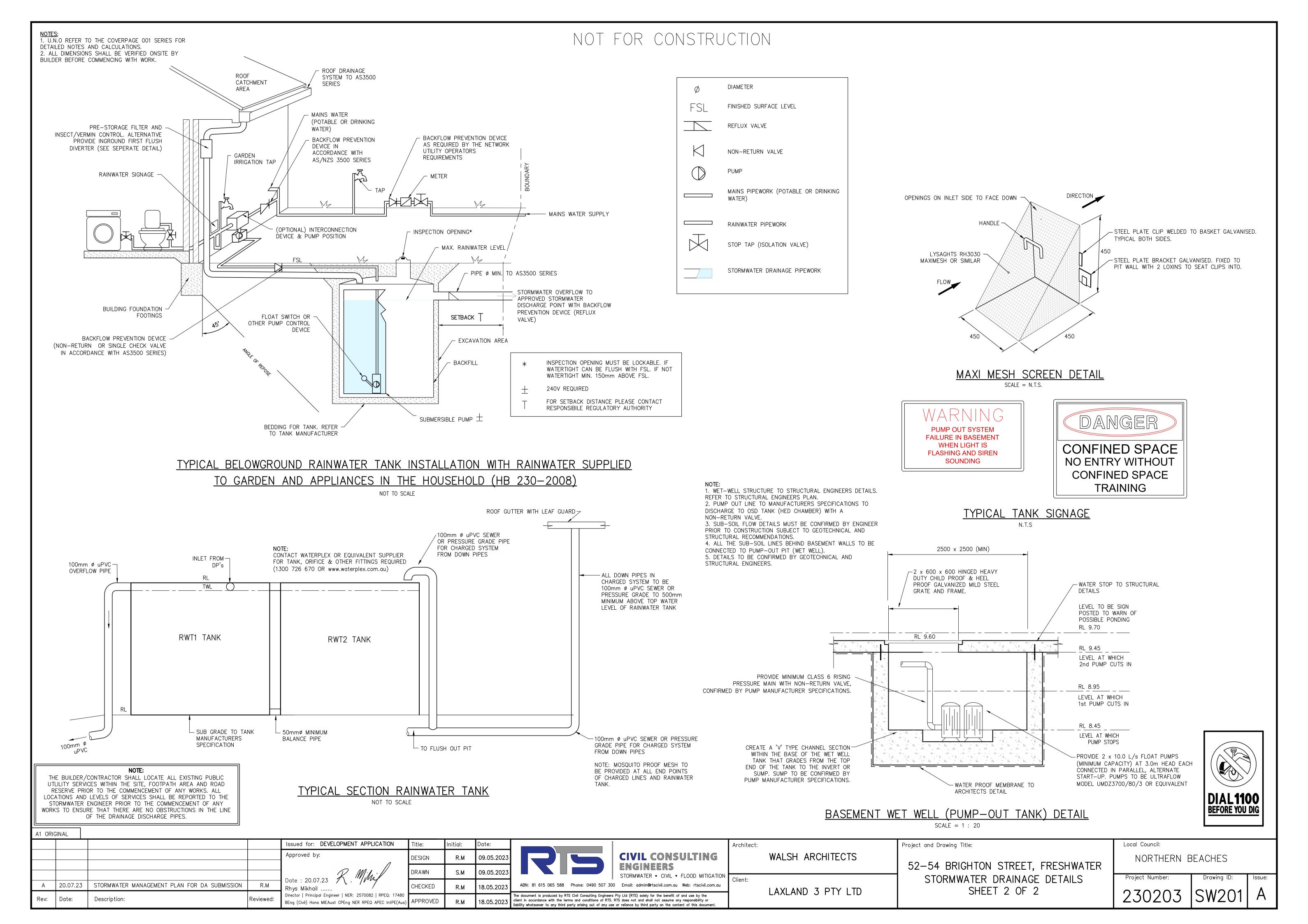
NORTHERN BEACHES

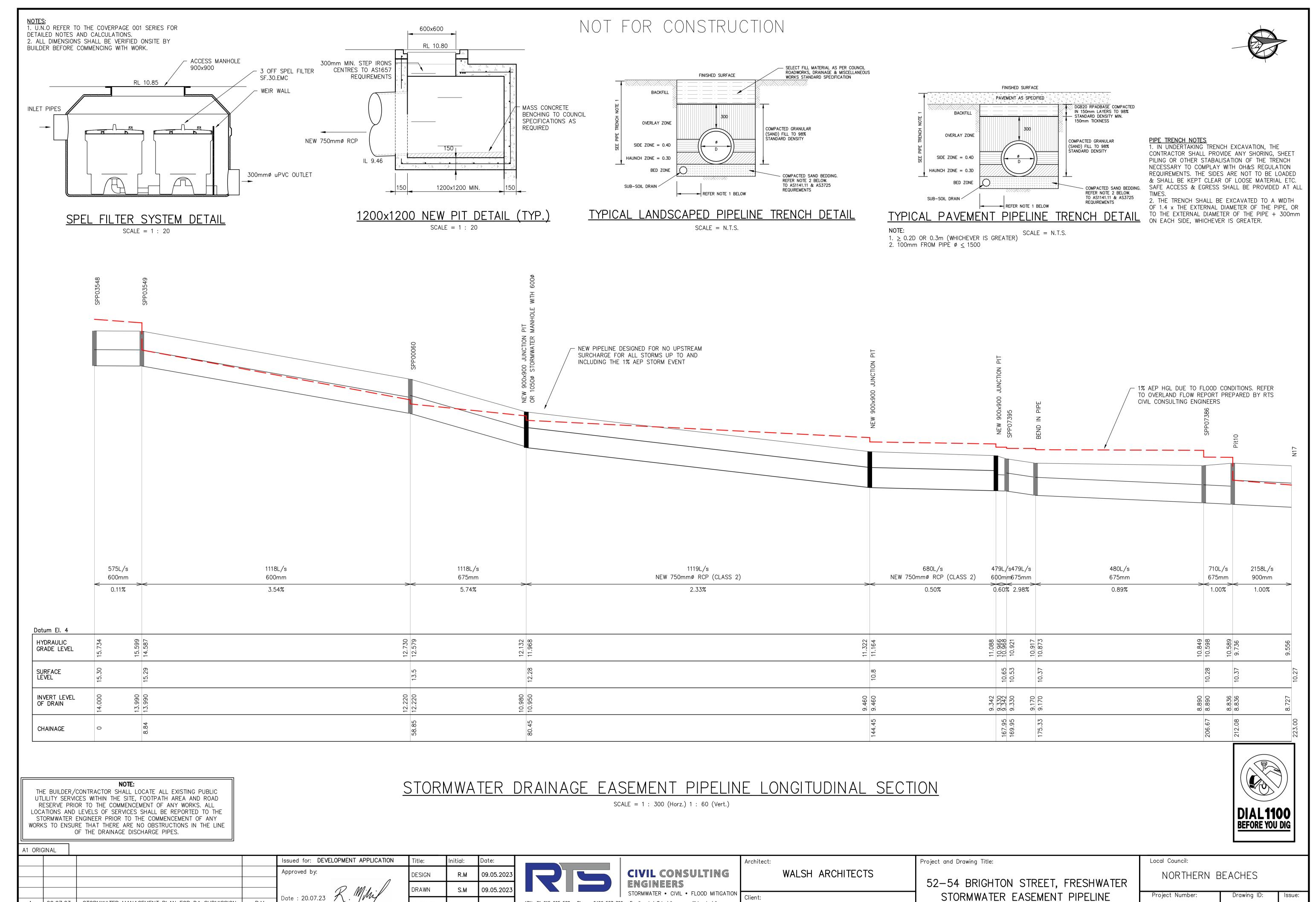
Project Number: Drawing ID: 230203

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LAXLAND 3 PTY LTD







20.07.23

Description:

Date:

Rev:

STORMWATER MANAGEMENT PLAN FOR DA SUBMISSION

CHECKED

APPROVED

Director | Principal Engineer | NER: 2570082 | RPEQ: 17480

BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus

Reviewed:

R.M

18.05.2023

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