

EXISTING IMPERVIOUS AREA: 577m² (50%) SCALE = 1 : 500

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

6. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT WITH

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

8. ALL PITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER. CAST INSITU PITS TO HAVE 150mm THICK

9. ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.

13. ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.

10. ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.

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

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

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

18. EXISTING STORMWATER SYSTEM TO BE CHECKED AND UPGRADED AS REQUIRED IN ACCORDANCE WITH AS 3500.3: 2018.

ROOT SYSTEM, HAND DIGGING OF TRENCHES MAY BE NECESSARY, REFER ARBORISTS REPORT WHERE REQUIRED.

DISCHARGE ONLY. DO NOT CONNECT SUB-SOIL PIPES TO AREAS WITH HIGHER SURFACE LEVELS U.N.O..

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

EXCAVATION OF TRENCHES, ARE TO BE PROVIDED IN ACCORDANCE WITH AS 3500.3: 2018.

POINT U.N.O AND BE CONSTRUCTED IN ACCORDANCE WITH AS3500.3: 2018 REQUIREMENTS.

OF A CONCEALED DOWNPIPE SHALL BE LOCATED ABOVE THE LEVEL OF THE FLOOR.

19. CARE SHOULD BE TAKEN WHEN UNDERTAKING WORKS IN THE VICINITY OF SELECTED TREES NOT TO DISTURB THE TREE

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

22. ALL PIPES SHOWN ARE INDICATIVE ONLY AND MINIMUM CLEARANCES FROM THE EXTERNAL WALLS OF BUILDINGS. FOR THE

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

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

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

28. ALL SUB-SOIL DRAINAGES. STRIP DRAINS AND DRAINAGE PITS SHALL DISCHARGE TO THE ESTABLISHED SITE DISCHARGE

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

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

AS3500.3: 2018 REQUIREMENTS. BUILDER TO ENSURE LOCATIONS DO NOT RESTRICT NORMAL OPERATION OF DOORS, WINDOWS.

STRUCTURE, ARE PROTECTED FROM MECHANICAL DAMAGE, AT LEAST 100mm CLEAR OF ANY ELECTRICAL CABLE OR GAS PIPE.

OPENINGS ARE REQUIRED FOR TESTING AND MAINTENANCE PURPOSES, INSPECTION OPENINGS SHALL HAVE A NOMINAL SIZE OF

32. WHERE A DOWNPIPE IS CONNECTED TO A SITE STORMWATER DRAIN LOCATED BELOW A SLAB-ON-GROUND. THE CONNECTION

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

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

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

33. SUPPORT SYSTEMS OF DOWNPIPES OR PIPEWORK MUST BE INSTALLED IN ACCORDANCE AUSTRALIAN STANDARDS

31. CONCEALED DOWNPIPES MUST BE INSTALLED IN ACCORDANCE WITH SECTION 4.5.6 OF AUSTRALIAN STANDARDS

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

THAT IMPEDE THE NATURAL FLOW OF GROUNDWATER. THIS MAY ALSO INVOLVE TRENCHING INTO THE CLAY OR ROCK SUBGRADE

20. CONTRACTOR TO LOCATE ALL EXISTING SERVICES PRIOR TO EXCAVATION AND NOTIFY ENGINEER OF ANY POTENTIAL CLASHES

STORMWATER DRAINAGE NOTES:

5. ALL DOWN PIPES TO BE 100mm Ø UNLESS NOTED OTHERWISE

REINFORCED WITH N12 AT 250 EACH WAY UNLESS NOTED OTHERWISE.

14. ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.

TO DIRECT GROUNDWATER AWAY FROM STRUCTURES.

WITH THE PROPOSED DRAINAGE EASEMENT PIPE LINE.

CAN BE DRAINED TO AN ONSITE DISPERSAL SYSTEM.

NOT LESS THAT THE NOMINAL DIAMETER OF THE DOWNPIPE.

FSL - FINISHED SURFACE LEVEL OR RL - REDUCED 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.

REQUIRED.

DRAINAGE INTERCEPTION.

ANY CONSTRUCTION CERTIFICATE.

AS3500.3: 2018 REQUIREMENTS.

IL — INVERT LEVEL OF PIPE

CL - CENTRELINE OF ORIFICE

INV. - INVERT LEVEL OF PIT

TWL - TOP WATER LEVEL

25mm ABOVE THE TOP OF THE FASCIA

35. THE FOLLOWING ABBREVIATIONS DENOTE:

DRAINING THE SITE.

UNTIL COMPLETION AND STABILIZATION OF THE SITE TO COUNCIL SATISFACTION.

12. ALL LEVELS SHOWN ARE TO AHD UNLESS NOTED OTHERWISE.

17. IF NOT INDICATED ON PLANS, PROVIDE LEAF CATCHERS TO ALL DOWNPIPES.

1. ALL PIPES TO BE 100mm Ø UNLESS NOTED OTHERWISE.

GRANULAR MATERIAL AS SPECIFIED.

7. PROVIDE CLEANING EYES AT ALL DOWNPIPES

CIVIL CONSULTING ENGINEERS

PROPOSED NEW SEPP SENIORS SCHEME DEVELOPMENT

18 ALEXANDER STREET, COLLAROY

LOT 8 SITE AREA

LOT 9 SITE AREA

TOTAL SITE AREA

PRE-DEVELOPED IMPERVIOUS AREA

PRE DEVELOPMENT SITE DISCHARGE

RAINWATER TANK DETAILS

5 YR

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) BASIX REQUIREMENTS. 2. THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER

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

'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 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.

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.

ONSITE DRAINAGE CALCULATIONS - NORTHERN BEACHES COUNCIL WATER MANAGEMENT POLICY (2020)

581 m²

 575 m^2

 $1.042 \text{ m}^2 > 1.000 \text{ m}^2$

 $577 \text{ m}^2 (50 \%)$

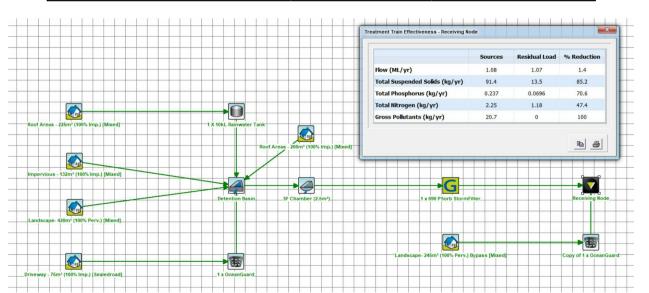
POST-DEVELOPED IMPERVIOUS AREA	692 m² (60 %)
IS PROPERTY FLOOD AFFECTED?	LOT 8 (NO) LOT 9 (YES)
STREAMLINE METHOD: (TECHNICAL SPECIF	FICATION SECTION 9.3.2.3):
MINIMUM SITE STORAGE REQUIREMENT	$0.02 \text{ m}^3/\text{ m}^2$
ONSITE DETENTION REQUIRED	23.1 m ³
MAXIMUM PERMISSIBLE SITE DISCHARGE	0.04 L $/$ m 2
PERMISSIBLE SITE DISCHARGE (PSD)	46.2 L / s
ONSITE DETENTION REQUIRED (LOT 8)	11.6 m ³
ONSITE DETENTION REQUIRED (LOT 9)	0 m ³
MAXIMUM DISCHARGE TO KERB	N/A - BELOWGROUND CONNECTION
DEVELOPMENT REGION LOCATION	REGION 2
DRAINS SUMMARY CALCULATIONS:	

100 YR	59 I/s
POST DEVELOPMENT SITE DISCHARGE	
5 YR	30 l/s (22 L/s FROM OSD)
100 YR	46 I/s (33 L/s FROM OSD)
ONSITE DETENTION DETAILS	
DRAINS OSD CALCULATED	10.3 m ³
OSD REDUCED BY BASIX	0 m ³
ORIFICE SIZE	140 mm ø
TYPE OF CONTROL	BELOWGROUND TANK
DEPTH TO ORIFICE	0.9 m
OVERFLOW TO STREET	YES
PROPOSED OSD VOLUME	11.6 m ³ (NOTE: 10.3 m ³ REQUIRED)

32 l/s

 $10.0 \, \text{m}^{3}$ VOLUME OF RAINWATER (BASIX) WATER SENSITIVE URBAN DESIGN TO NORTHERN BEACHES COUNCIL: WSUD & MUSIC MODELLING GUIDLINES

WSUD MUSIC SUMMARY	% REDUCTION	TARGET
TOTAL SUSPENDED SOLIDS (TSS)	86 %	85 %
TOTAL PHOSPHOROUS (TP)	71 %	65 %
TOTAL NITROGEN (TN)	47 %	45 %
GROSS POLUTANTS (GP)	100 %	90 %



SCALE = 1 : 500STORMWATER PUMP-OUT AND 'WET WELL' NOTES:

PROPOSED IMPERVIOUS AREA: 692m² (60%)

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

4. THÉ 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

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 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.

DRAWING SCHEDULE:

DEPTH) DURING A MAJOR STORM EVENT.

CP100 - COVER PAGE, NOTES & CALCULATIONS CP101 - COVERPAGE, NOTES & CALCULATIONS CONT. SW100 - BASEMENT STORMWATER MANAGEMENT PLAN

SW101 - UNDERCROFT STORMWATER MANAGEMENT PLAN SW102 - LEVEL 1, LEVEL 2 & ROOF STORMWATER MANAGEMENT PLAN

SW200 - STORMWATER DRAINAGE DETAILS SW201 - STORMWATER DRAINAGE DETAILS CONT SW202 - STORMWATER DRAINAGE DETAILS CONT.

SE100 - SEDIMENT & EROSION CONTROL PLAN SE200 - SEDIMENT & EROSION CONTROL PLAN DETAILS CW100 - CIVIL DRIVEWAY ACCESS PLAN

CW200 - DRIVEWAY LONGITUDINAL SECTIONS CW201 - BOUNDARY & FOOTPATH LONGSECTION



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 10.09.21

Rev:

STORMWATER & CIVIL ACCESS PLAN FOR DA SUBMISSION Date: Reviewed: Description:

Director | Principal Engineer | NER: 2570082 | RPEQ: 1748

Issued for: DEVELOPMENT APPLICATION

Approved by:

Rhys Mikhail

DESIGN DRAWN CHECKED APPROVED BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Au





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 The document is produced by RTS Civil Consulting Engineers Pty Ltd (RTS) solely for the benefit of and use by the

Architect: WALSH ARCHITECTS

LAXLAND GROUP PTY LTD

Project and Drawing Title:

18 ALEXANDER STREET, COLLAROY COVERPAGE, NOTES & CALCULATIONS

NORTHERN BEACHES COUNCIL

Project Number:

210804

Drawing ID: Issue:



EARTHWORKS NOTES:

BUILDER BEFORE COMMENCING WITH WORK.

1. ORIGIN OF LEVELS: REFER TO SURVEYORS DRAWINGS

2. STRIP ALL TOPSOIL / ORGANIC MATERIAL (50mm NOMINAL) FROM CONSTRUCTION AREA AND REMOVE FROM SITE OR STOCK PILE AS DIRECTED BY SUPERINTENDENT. 3. EXCAVATED MATERIAL TO BE USED AS STRUCTURAL FILL PROVIDED THE PLACEMENT MOISTURE CONTENT OF THE

MATERIAL IS +/-2% OF THE OPTIMUM MOISTURE CONTENT. 4. WHERE REQUIRED, COMPACT FILL AREAS AND SUBGRADE TO NOT LESS THAN:

LOCATION	STANDARD DRY DENSITY (AS 1289 E 5.1.1.)
UNDER BUILDING SLABS ON GROUND	98 - 102%
UNDER ROADS, FOOTWAYS AND CARPARKS	98 - 102%
LANDSCAPED AREAS UNLESS NOTED OTHERWISE	98 - 102%

5. BEFORE PLACING FILL, PROOF ROLL NON-EXPOSED SUBGRADE WITH A 12 TONNE (MIN) DEADWEIGHT SMOOTH DRUM VIBRATORY ROLLER TO DETECT THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 2mm MOVEMENT UNDER

6. FREQUENCY OF COMPACTION TESTING SHALL BE NOT LESS THAN: -1 TEST PER 200m3 OF FILL PLACED PER 150mm LAYER OF FILL

3 TESTS PER LAYER

1 TEST PER 1,000m² OF EXPOSED SUBGRADE

WHICHEVER REQUIRES THE MOST TESTS. TESTING SHALL BE "LEVEL 1" TESTING IN ACCORDANCE WITH AS

3798-2007 U.N.O BY COUNCIL OR THE GEOTECHNICAL INSPECTION & TESTING AUTHORITY (GITA). 7. ALL TESTING OF EARTHWORKS SHALL BE DONE AT THE CONTRACTORS EXPENSE U.N.O. 8. SHALL A SUB-GRADE PROOF ROLL INSPECTION FAIL, OR ADDITIONAL INSPECTIONS BE REQUIRED FOR ANY OTHER

REASON, THE CONTRACTOR WILL WEAR THE COSTS OF ANY SUBSEQUENT RE-INSPECTIONS U.N.O. 9. FILLING TO BE PLACED AND COMPACTED IN MAXIMUM 200mm LAYERS TO GEOTECHNICAL APPROVAL

10. AFTER CLEARING, GRUBBING AND STRIPPING, NO FILLING SHALL TAKE PLACE TO EXPOSED SUBGRADE UNTIL THE AREA HAS BEEN PROOF ROLLED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER AND APPROVAL GIVEN IN WRITING THAT FILLING CAN PROCEED. WEAK SOILS ARE TO BE REMOVED AND REPLACED WITH COMPACTED FILL AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

11. WHERE GROUNDWATER DISCHARGE OCCURS IN BULK EXCAVATIONS OR CUT FACES, SUBSOIL DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE SITE SUPERINTENDENT / GEOTECHNICAL ENGINEERS INSTRUCTIONS TO DIRECT DISCHARGE WATER TO THE NEAREST STORMWATER / SEDIMENTATION CONTROL DEVICE. THE SUBSOIL DRAINAGE MUST BE INSTALLED AS SOON AS PRACTICALLY POSSIBLE AFTER EXCAVATION. SUBSOIL DRAINAGE SHALL ALSO BE INSTALLED AT LOW POINTS IN THE FINISHED EARTHWORK PROFILE IN ACCORDANCE WITH THE SITE SUPERINTENDENT / GEOTECHGEOTECHNICAL ENGINEERS INSTRUCTIONS.

12. ENSURE TEMPORARY DIVERSION CHANNELS ARE CONSTRUCTED AROUND STOCKPILED MATERIALS AND DISTURBED AREAS GENERALLY AS DETAILED. 13. THE CONTRACTOR SHALL ALLOW FOR AND COORDINATE ALL MONITORING AND MAINTENANCE REQUIREMENTS IN

RELATION TO SOIL AND GROUNDWATER CONDITIONS DURING CONSTRUCTION. 14. CIVIL CONTRACTOR IS RESPONSIBLE FOR CALCULATING BULK EARTHWORKS VOLUMES AND MUST CONFIRM QUANTITIES PRIOR TO CONSTRUCTION. BULK EARTHWORKS ARE ESTIMATED & ASSUMED ONLY, NO DETAILED DESIGN

HAS BEEN UNDERTAKEN U.N.O.. 15. ANY DAMAGE TO EXISTING ROADWAYS OR SERVICES WILL BE RECTIFIED BY THE CONTRACTOR AS HIS EXPENSE. 16. ALL ENVIRONMENTAL MEASURE INCLUDING VEGETATION PROTECTION AND EROSION AND SEDIMENT CONTROL SHALL BE IN PLACE PRIOR TO THE COMMENEMENT OF ANY WORK. ALL REMOVAL AND WORKS ASSOCIATED WITH VEGETATION MUST BE IN ACCORDANCE WITH THE COUNCIL APPROVED ARBORISIT REPORT.

17. IT IS THE CONTRACTORS RESPONSIBILTY TO ENSURE THAT THE SITE WORKS DO NOT COMPROMISE / UNDERMINE OR PLACE ADDITIONAL SURCHARGE ON AN EXISTING STRUCTURES. 18. BATTER ANGLES MUST COMPLY WITH LOCAL ATHORITY REQUIREMENTS AND SHALL BE PROTECTED FROM EROSION.

19. EARTHWORKS EXTENT SHOWN IS FOR THE PROPOSED DEVELOPMENT AREA ONLY. 20. FOLLOWING THE INSPECTION OF SUBGRADE, THE ENGINEER (OR COUNCIL ENGINEER) MAY REQUIRE THE

FILL BATTERS SHOULD BE OVERFILLED BY NOT LESS THAN 0.5m, THEN CUT BACK TO PROFILE.

CONSTRUCITION OF SUB SOIL DRAINS (TO COUNCIL/ENGINEERS SPECIFICATIONS) TO DISCHARGE TO APPROVED OUTLETS AS DETERMINED ONSITE. 21. IMPORTED FILL MUST HAVE A SOAKED CBR NOT LESS THAN 15%, AND A MAXIMUM AGGREGATE SIZE NOT GREATER THAN 50mm, MAXIMUM LIQUID LIMIT = 40; MAXIMUM P.I. = 15; MAXIMUM P.I. x % PASSING 425um = 450.

22. FILL UNDER BUILDING PLATFORMS TO BE CONTROLLED FILL PLACED IN ACCORDANCE WITH AS3798 & AS2870.

23. FILL NOT UNDER BUILDING PLATFORMS OR ROAD PAVEMENTS TO BE COMPACTED IN LAYERS NOT EXCEEDING 300mm & 95% STANDARD MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289. 24. FILL BATTERS SHOULD BE OVERFILLED BY NOT LESS THAN 0.5m, THEN CUT BACK TO PROFILE 25. BACK FILLING FOR SERVICE TRENCHES SHOULD USE GOOD QUALITY MATERIAL FREE OF ORGANIC MATERIAL. THE BACK FILL SHOULD BE PLACED IN UNIFORM LAYERS OVER THE FULL WIDTH OF THE EXCAVATIONS WITH THE LAYERS NOT EXCEEDING 200mm THICKNESS, LOOSELY PLACED. THE BACK-FILL MATERIAL SHOULD BE COMPACTED TO

SHOULD BE UNDERTAKEN WHEN BACKFILLING. 26. BACK FILLING FOR SERVICE TRENCHES UNDER ROADWAYS SHALL BE WITH A QUALITY MATERIAL OF NOT LESS THAN CBR 15% (SOAKED) TO THE UNDERSIDE OF PAVEMENT, COMPACTED AT OPTIMUM MOISTURE CONTENT TO ACHIEVE 98% MODIFIED MAXIMUM DRY DENSITY

SPECIFICATIONS OUTLINED ABOVE FOR INSITU OR IMPORTED MATERIAL. BENCHING OF BATTERED EXCAVATIONS

27. DEPRESSIONS FORMED BY REMOVAL OF VEGETATION, UNDERGROUND ELEMENTS ETC. SHOULD HAVE ALL DISTURBED WEAKENED SOIL CLEANED OUT AND BE BACKFILLED WITH COMPACTED SELECT MATERIAL. THIS IS OF PARTICULAR IMPORTANCE FOLLOWING THE REMOVAL OF ANY EXISTING STRUCTURES AND FOUNDATIONS. 28. IF IN DOUBT, ASK!

KERB AND GUTTER NOTES

1. CLEAR ORGANIC MATERIAL AND TOPSOIL UNDER PROPOSED PAVEMENT.

2. ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25 MPa U.N.O IN REINFORCED CONCRETE

2. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON 100mm GRANULAR

BASECOURSE COMPACTED TO MINIMUM 95% MODIFIED DRY DENSITY (AS 1289 5.2.1). 3. EXPANSION JOINTS (EJ) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS.

4. WEAKENED PLANE JOINTS (WPJ) TO BE MIN 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS. 5. BROOMED FINISH TO ALL RAMPED AND VEHICULAR CROSSINGS. ALL OTHER KERBING OR DISH DRAINS TO

BE STEEL FLOAT FINISHED. 6. IN THE REPLACEMENT OF KERB AND GUTTER :-

A1 ORIGINAL

(a) EXISTING ROAD PAVEMENT IS TO BE SAWCUT ALONG THE LIP OF GUTTER. UPON COMPLETION OF THE NÉW KERB AND GUTTER NEW BASECOURSE AND SURFACE TO BE LAID 900mm WIDE U.N.O.

(b) EXISTING ALLOTMENT DRAINAGE PIPES TO STORMWATER MANAGEMENT PLAN. (c) EXISTING KERB AND GUTTER IS TO BE COMPLETELY REMOVED AND A NEW KERB AND GUTTER IS TO BE CONSTRUCTED AS SHOWN.

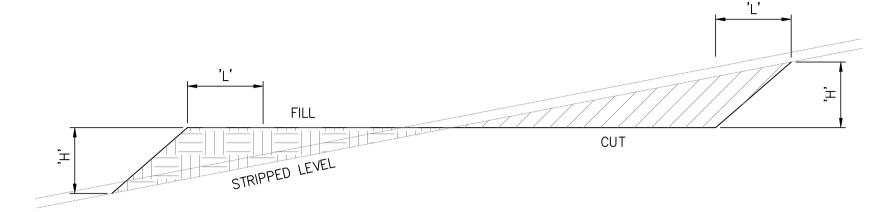
7. ALL REINFORCEMENT SHALL BE SUPPORTED ON PLASTIC TIPPED WIRE CHAIRS, OR APPROVED PLASTIC CHAINS AT 800mm MAXIMUM CENTRES BOTH WAYS. CHAIRS SHALL HAVE SUITABLE BEARING PLATES ARRANGED AND SECURED TO PREVENT SINKING INTO THE MATERIAL OR MEMBRANE BELOW.

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.

EARTHWORKS TECHNICAL NOTES & SPECIFICATIONS:

BATTER ANGLES FOR EMBANKMENTS:

IT IS THE BUILDERS RESPONSIBILITY TO ENSURE THAT THE SITE WORKS DO NOT UNDERMINE OR PLACE ADDITIONAL SURCHARGE ON ANY EXISTING STRUCTURES, ONSITE OR ADJACENT. IF THIS CAN NOT BE ACHIEVED RTS CIVIL CONSULTING ENGINEERS MUST BE CONTACTED PRIOR TO ANY SITE WORKS BEING UNDERTAKEN. BATTER ANGLES MUST COMPLY WITH LOCAL GOVERNMENT REQUIREMENTS AND ARE TO CONFORM AS FOLLOWS (FIGURE 1).



SLOPE = H:L	MATERIAL TYPE	STABLE	SAND	SILT	CL	AY	COET COULC
H < 2.0 m L	(REFER GEOTECH ENG.)	ROCK			FIRM CLAY	SOFT CLAY	SOFT SOILS
EMBANKMENT SLOPES	COMPACTED FILL	1:1	1:3	1: 4	1: 2	N/A	N/A
(HEIGHT LENGTH)	CUTTING	N/A	1: 3	1: 4	1: 2	1: 3	N/A

NOTE: RETAINING WALLS OR OTHER FORMS OF SOIL RETAINING METHODS MUST BE ADOPTED WHERE THE SLOPE RATIO IS GREATER THAN THAT INDICATED IN THE TABLE ABOVE. REFER TO GEOTECHNICAL REORT FOR TREATMENT OF UNSTABLE MATERIAL. ALL BATTER ANGLES APPROXIMATE ONLY AND ARE TO BE CONFIRMED BY GEOTECHNICAL AND CIVIL ENGINEER.

FILL MATERIAL AND COMPACTION:

ORGANIC MATERIAL, HIGHLY REACTIVE CLAYS AND LARGE ROCKS ARE NOT SUITABLE FOR USE AS FILL. THE FILL IS TO BE SPREAD IN 150mm LAYERS AND EXTENSIVELY TRACK ROLLED WITH A DROTT. ALL EARTHWORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE FULL REQUIREMENTS OF AS3798, GUIDELINES FOR EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS.

NOTE: IN THE INSTANCES WHERE BY SIGNIFICANT LEVELS OF FILLING ARE OBSERVED, THERE WILL ALWAYS REMAIN THE POSIBILITY OF TILT AS A RESULT OF DIFFERENTIAL SETTLEMENT IN THE FILL. AUSTRALIAN STANDARD (AS2870-2011) DOES NOT CATER FOR TILTING OF SLABS AS A RESULT OF DIFFERENTIAL SETTLEMENT WITHIN CERTIFIED NOR DOÈS THE AUSTRÁLIAN STANDARD ADDRESS THE POSSIBLE OCCURRENCE WHEN SHALLOW FOUNDATIONS ARE ADOPTED.

DRAINAGE:

THE EXTERNAL FINISHED SURFACE SURROUNDING THE DWELLINGS MUST BE DRAINED TO MOVE SURFACE WATER AWAY FROM THE BUILDING AND GRADED TO GIVE A SLOPE OF NOT LESS THAN 50 MM OVER THE FIRST 1 M AWAY FROM THE BUILDING.

FOOTPATH AND PAVEMENT NOTES

1. ALL PAVEMENTS TO BE IN ACCORDANCE WITH THE CURRENT PAVEMENT REQUIREMENTS FOR COUNCIL CIVIL WORKS SPECIFICATIONS. 2. COMPACTION AND TESTING OF EACH PAVEMENT LAYER TO BE IN ACCORDANCE WITH THE CURRENT PAVEMENT

REQUIREMENTS FOR COUNCIL CIVIL WORKS SPECIFICATIONS. 3. GEOTECHNICAL CBR VALUES TO BE OBTAINED ON SITE AND CIVIL ENGINEER TO ADJUST PAVEMENT DESIGN TO

4. UNLESS NOTED OTHERWISE, ALL SUB BASE TO CONTAIN 3% CEMENT BY DRY WEIGHT AND TO BE COMPACTED TO AT LEAST 98% OF MMDD. AT A MOISTURE CONTENT BETWEEN MOMC AND 3% DRY OF MOMC. ALL SUB BASE TO ACHIEVE AN ELASTIC MODULUS OF 3500MPa.

5. ALTERNATIVE PAVEMENT MATERIALS TO BE CONFIRMED BY LOCAL COUNCIL. 6. ALL PEDESTRIAN PAVEMENTS ARE TO BE JOINTED AS FOLLOWS. (U.N.O)

7. EXPANSION JOINTS (EJ) ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND

ELSEWHERE AT MAX. 6.0m CENTRES.

8. WEAKENED PLANE JOINTS (WPJ) ARE TO BE LOCATED AT A MAX. SPACING OF 1.5 x WIDTH OF THE PAVEMENT. 9. WHERE POSSIBLE JOINTS SHOULD BE LOCATED TO MATCH KERBING AND OR ADJACENT PAVEMENT JOINTS. 10. PEDESTRIAN PAVEMENT JOINT DETAIL.

		В	KERB	OF	CE	FA	
>	WPJ	G	EJ	WPJ		WPJ	E
			1.5 x W	m MAX	6.0		

EROSION CONTROL NOTES:

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

2. CUTS TO BE EXECUTED TO THE REQUIRED LEVEL USING CONVENTIONAL EXCAVATION MACHINERY. INITIALLY THE DEPTH OF FILL/CLAY IS TO BE ESTABLISHED TO ENSURE NEIGHBOURING PROPERTIES ARE NOT ADVERSELY AFFECTED. EARTH BATTERS TO BE A MAXIMUM SLOPE OF 1.0 m VERT. TO 1.7 m HORIZ. (AS PER GEOTECHNICAL REPORT). ANY BATTERS GREATER THAN 1.0 m VERT. TO 1.7 m HORIZ. ARE TO BE ADEQUATELY

SHORED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS. 3. ANY PERMANENT RETAINING STRUCTURE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS.

4. ALL PERMANENT RETAINING STRUCTURES ARE TO BE COMPLETED WITH MINIMUM DELAY FOLLOWING EXCAVATION.

5. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE

MANAGER. 6. CONTRCTOR TO MINIMISE DISTURBED AREAS.

APPROVED

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

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.

CONCRETE NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

2. CONCRETE QUALITY ALL REQUIREMENTS OF THE CURRENT ACSE CONCRETE SPECIFICATION DOCUMENT 1 SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

ELEMENT	AS 3600 F'c MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG SIZE
VEHICULAR BASE	32	60	20
KERBS, PATHS, AND PITS	25	80	20
RETAINING WALLS	32	80	20

- CEMENT TYPE SHALL BE (ACSE SPECIFICATION) TYPE SL - PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH

AS 1379. 3. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY AIKEN DESIGN & CONSULTING.

4. CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE 40mm TOP AND 70mm FOR EXTERNAL EDGES UNLESS NOTED OTHERWISE.

5. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS. PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1m CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.

6. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED AND CURED IN ACCORDANCE WITH R.T.A. SPECIFICATION

7. REINFORCEMENT SYMBOLS:

N DENOTES GRADE 500 N BARS TO AS 4671 GRADE N R DENOTES 250 R HOT ROLLED PLAIN BARS TO AS 4671

SL DENOTES COLD-DRAWN WIRE REINFORCING FABRIC TO AS 4671

NUMBER OF BARS IN GROUP _ _ BAR GRADE AND TYPE

17N20-250 NOMINAL BAR SIZE IN mm L SPACING IN mm

THE FIGURE FOLLOWING THE FABRIC SYMBOL IS THE REFERENCE NUMBER FOR FABRIC TO AS 4671.

8. FABRIC SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING DETAIL:

MIN 25 ___ /—LAP TWO WIRES

INSPECTIONS BY ENGINEER

48 HOURS NOTICE IS REQUIRED BEFORE ANY SITE INSPECTION. ANY STRUCTURAL ELEMENT NOT INSPECTED BY RTS CIVIL WILL NOT BE CERTIFIED BY RTS CIVIL CONSULTING ENGINEERS PTY LTD.

1. BEARING STRATA OF ALL FOOTINGS PRIOR TO CONCRETE POUR BY GEOTECHNICAL ENGINEER.

2. ANY REINFORCEMENT PRIOR TO CONCRETE POUR.

3. TIMBER AND STEEL FRAMING PRIOR TO CLADDING OR LINING.

4. STEEL LINTELS AFTER INSTALLATION.

5. CONTACT YOUR PCA (PRINCIPAL CERTIFYING AUTHORITY) AS TO REQUIREMENTS FOR MANDATORY CRITICAL STAGE INSPECTIONS IN ACCORDANCE WITH REVISED EP&A ACT REGULATIONS EFFECTIVE JULY 1, 2004. 6. INSPECTION BY GEOTECHNICAL ENGINEER OVER 1.5m OF VERTICAL CUT THROUGH

SANDSTONE BED ROCK TO PERMIT IDENTIFICATION OF DEFECTS AND REMEDIAL MEASURES INITIATED.

b. FOLLOWING JOINING OF PIPES AND CONNECTION TO COUNCIL'S STORMWATER SYSTEM.

7. SCHEDULE OF CONSTRUCTION STAGES REQUIRING INSPECTION: a. FOLLOWING PLACEMENT OF PIPE BEDDING MATERIAL. CONFIRM TRENCH/PIPE LOCATION, ADEQUACY OF DEPTH OF COVER, BEDDING MATERIAL AND DEPTH.

c. FOR ON-SITE DETENTION SYSTEMS: -(i) FOLLOWING SET OUT OF DETENTION TANK/AREA TO CONFIRM AREA AND VOLUME

(ii) FOLLOWING PLACEMENT OF WEEP-HOLES, ORIFICE AND/OR WEIR FLOW CONTROL, OUTLET SCREEN AND OVEFLOW PROVISION.

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

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.

MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS AS3500.3: 2018 - TABLE 7.5.2.1 MINIMUM INTERNAL DIMENSIONS (mm) DEPTH TO RECTANGULAR CIRCULAR INVERT OF OUTLET Width Length Diameter Ø < 450 350 350 < 600 450 450 600 > 600 < 900 600 600 900 > 900 ≤ 1200 600 900 1000 1000 > 1200 900 900

STORMWATER PUMPOUT (WET WELL) CALCULATIONS TO AS3500.3

PROVIDE TWO CENTRIFUGAL DRAINAGE SUMP PUMPS WITH SINGLE-PHASE ELECTRIC MOTOR CAPABLE OF DISCHARGING 10.0 L/S EACH AGAINST A TOTAL HEAD OF (3.0m) WITH 10 STARTS PER HOUR MAXIMUM. CLASS 1 ZONE 2 CERTIFIED PUMPS FOR HAZARDOUS AREAS ARE REQUIRED SWITCHING SHALL PROVIDE FOR ALTERNATIVE OPERATION OF THE PUMPS, HIGH LEVEL SWITCH ON/OFF, 2ND PUMP, AND A RED LIGHT ALARM PLACED PERMANENTLY IN THE BASEMENT AREA ACTIVATED BY HIGH LEVEL SWITCH ON. FINAL PUMP OUT VOLUME AND PUMP DUTY IS SUBJECT TO DETAILED GEOTECHNICAL INFORMATION OBTAINED DURING EARTHWORKS AND EXCAVATION.

REQUIRED VOLUME:

 $= 3.00 \text{ m}^3$

AREA DRAINING TO THE PUMPOUT PIT = 100 m^2 (DRIVEWAY & SOME HARDSTAND RUNOFF) ADDITIONAL AREA TO PUMPOUT PIT = 300 m^2 (SUB-SOIL AREA RUNOFF RETAINING WALLS) STORAGE MUST BE PROVIDED FOR THE 2HR DURATION 100 YEAR ARI STORM:

 $Q = F \times C \times I \times A$ $= 1/3600 \times 0.9 \times 44.2 \times 155$ = 1.11 L/sVOLUME ACCUMULATED (100 YEAR ARI, 5 HOUR STORM): $= (1.11L/s \times 2hrs \times 3600s)/1000$ $= 7.96 \text{ m}^3$ **VOLUME PUMPED IN 30 MINS:** WET WELL STORAGE CAPACITY $- PC_{30} = 0.00$ $= (10.0L/s \times 0.5hrs \times 3600s)/1000$ $= 18.00 \text{ m}^{3}$ (MIN.) = 3.00**VOLUME PUMPED IN 5 MINS:** $= (10.0L/s \times 0.083hrs \times 3600s)/1000$ 3.00 $= 2.99 \text{ m}^3$ VOLUME ESTIMATE FROM SUB-SOIL (1% x AREA IN m 3) = 6.00 $V_{SUB-SOIL} = (300 \text{ m}^2 \text{x} 1\%)$

WET-WELL VOLUME AND SPECIFICATIONS TO BE CONFIRMED PRIOR TO CONSTRUCTION IN ACCORDANCE WITH FUTURE GEOTECHNICAL AND STRUCTURAL REQUIREMENTS.



Issued for: DEVELOPMENT APPLICATION Initial: Approved by: DESIGN S.M DRAWN 10.09.21 STORMWATER & CIVIL ACCESS PLAN FOR DA SUBMISSION R.M CHECKED R.M Rhys Mikhail Director | Principal Engineer | NER: 2570082 | RPEQ: 1748 Rev: Date: Description: Reviewed:





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LAXLAND GROUP PTY LTD

Architect:

WALSH ARCHITECTS 18 ALEXANDER STREET, COLLAROY COVERPAGE, NOTES & CALCULATIONS CONT.

Project and Drawing Title:

NORTHERN BEACHES COUNCIL

- 100mm OUTLET AT BASE OF

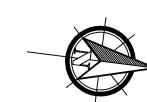
- 0.6m x 0.6m HIGH EARLY

DISCHARGE CHAMBER (HED)

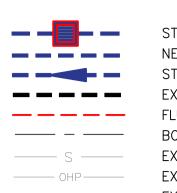
0.6m x 0.6m x 0.2m DEEP OUTLET SUMP WITH 4xø20mm

HED CHAMBER WITH

NON-RETURN VALVE



LEGEND



DP2

STORMWATER PIT NEW STORMWATER PIPE STORMWATER PIPE FLOW DIRECTION EXISTING STORMWATER PIPE FLUSH-OUT LINE BOUNDARY LINE

EXISTING OVERHEAD POWER LINES EXISTING WATER MAINS EXISTING TELECOMMUNICATIONS LINE

EXISTING GAS MAINS

____ G ____ DENOTES DOWNPIPE DENOTES SIZE OF DOWNPIPE DP1 100¢ DOWNPIPE TO RWT

DP3 100¢ DOWNPIPE TO CONNECT TO SITE DRAINAGE FD1 200 x 200 BALCONY FLOOR DRAIN TO ARCHITECTS DETAIL FD2 200 x 200 PLANTER FLOOR DRAIN TO ARCHITECTS DETAIL FD3 200 x 200 PEBBLE PLANTER FLOOR DRAIN TO ARCHITECTS DETAIL

OSD 11,600L ONSITE DETENTION TANK

100¢ DOWNPIPE TO OSD

HED 600 x 600 MIN. HIGH EARLY DISCHARGE CHAMBER

RWT 2 x 5,000L RAINWATER TANKS RWO 250¢ RAINWATER OUTLET

EG1 STANDARD EAVES GUTTER TO ARCHITECTS DETAIL GD1 150mm MIN. GRATED STRIP DRAIN TO ARCHITECTS DETAIL GD2 100mm MIN. GRATED STRIP DRAIN TO ARCHITECTS DETAIL

PP 6,000L PUMP OUT PT

DR1 POSSIBLE PERIMETER BASEMENT DRAIN TO STRUCTURAL DETAILS AH1-AH2 600x600mm GRATED LID ACCESS HATCH HEEL GUARD GRATE

AH3-AH4 600x600mm GRATED LID ACCESS HATCH AH5 600x600mm SEALED LID ACCESS HATCH

SQID STORMWATER QUALITY IMPROVEMENT DEVICE - 2.5m2 CHAMBER MIN. SQID1 690mm STORMFILTER BY OCEAN PROTECT OR EQUIVALENT WITHIN PP SQID2 OCEANGUARD FILTER BY OCEAN PROTECT OR EQUIVALENT WITHIN PP SQID3 450x450 PIT WITH OCEANGUARD FILTER BY OCEAN PROTECT OR EQUIVALENT

EXISTING SEWER MAIN

WEEP HOLES MIN. 1 x 690mm STORMFILTER CARTRIDGE FILTRATION UNITS TO STORMFILTER TO OCEAN PROTECT SPECIFICATIONS. RL 9.15m LIGHT WEIGHT STEEL FRAME BASE TO ACHIEVE CLEARANCE.

⁺ RL 9.15m

RL 9.15m +

OSD TANK LID PLAN

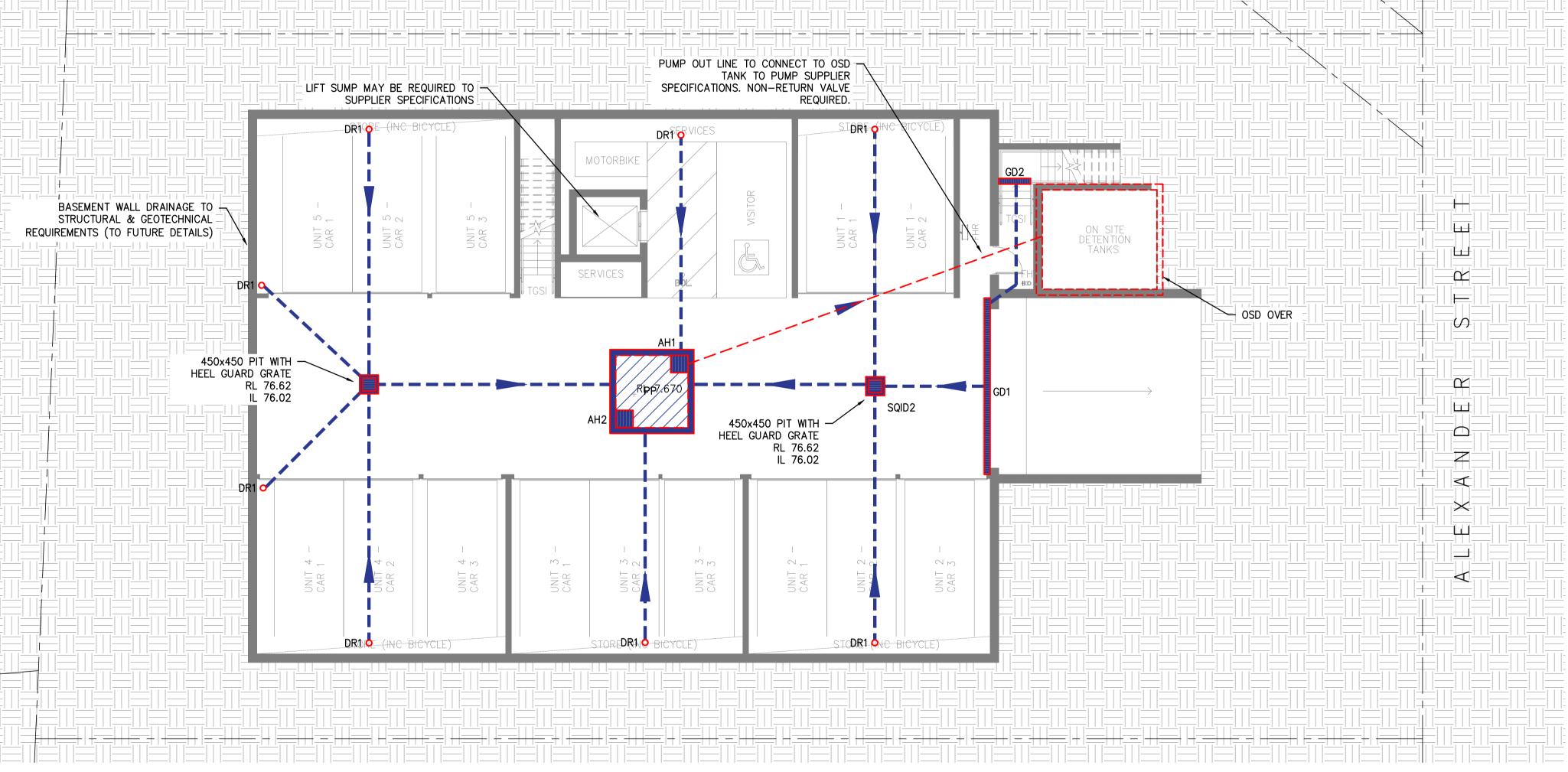
SCALE = 1 : 50

RL 9.10m +

3770

OSD TANK BASE PLAN

SCALE = 1 : 50



BASEMENT STORMWATER MANAGEMENT PLAN

SCALE = 1 : 100



10.09.21

Description:

Date:

Rev:

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 & CIVIL ACCESS PLAN FOR DA SUBMISSION

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

ONLY! MAY REQUIRE ARBORIST SUPERVISION.

IG! CARE WHEN DIGGING AROUND TREE ROOTS. HAND DIGGING

STORMWATER ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORKS TO ENSURE THAT THERE ARE NO OBSTRUCTIONS IN THE LINE OF THE DRAINAGE DISCHARGE PIPES.		
ORIGINAL		
	Issued for: DEVELOPMENT APPLICATION	Title
	Approved by:	DES

R.M

Reviewed:

Rhys Mikhail

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

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

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03.09.2021

03.09.2021

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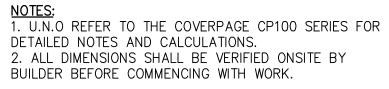


t:	Project and Drawing Title:
WALSH ARCHITECTS	18 ALEXANDER
	BA
LAXLAND GROUP PTY LTD	STORMWATER

ALEXANDEF	STREET, COLLAROY
BA	ASEMENT
ORMWATER	MANAGEMENT PLAN

Local Council:		
NORTHERN	BEACHES CO	JNCIL
Project Number:	Drawing ID:	Issue:

Project Number:	Drawing ID:	Issue:
210804	SW100	Α



LEGEND

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

EXISTING GAS MAINS DENOTES DOWNPIPE DENOTES SIZE OF DOWNPIPE 100ø DOWNPIPE TO RWT DP1 DP2 100¢ DOWNPIPE TO OSD

DP3 100¢ DOWNPIPE TO CONNECT TO SITE DRAINAGE 200 x 200 BALCONY FLOOR DRAIN TO ARCHITECTS DETAIL FD1 FD2 200 x 200 PLANTER FLOOR DRAIN TO ARCHITECTS DETAIL FD3 200 x 200 PEBBLE PLANTER FLOOR DRAIN TO ARCHITECTS DETAIL OSD 11,600L ONSITE DETENTION TANK

HED 600 x 600 MIN. HIGH EARLY DISCHARGE CHAMBER RWT 2 x 5,000L RAINWATER TANKS RWO 250¢ RAINWATER OUTLET

EG1 STANDARD EAVES GUTTER TO ARCHITECTS DETAIL GD1 150mm MIN. GRATED STRIP DRAIN TO ARCHITECTS DETAIL GD2 100mm MIN. GRATED STRIP DRAIN TO ARCHITECTS DETAIL

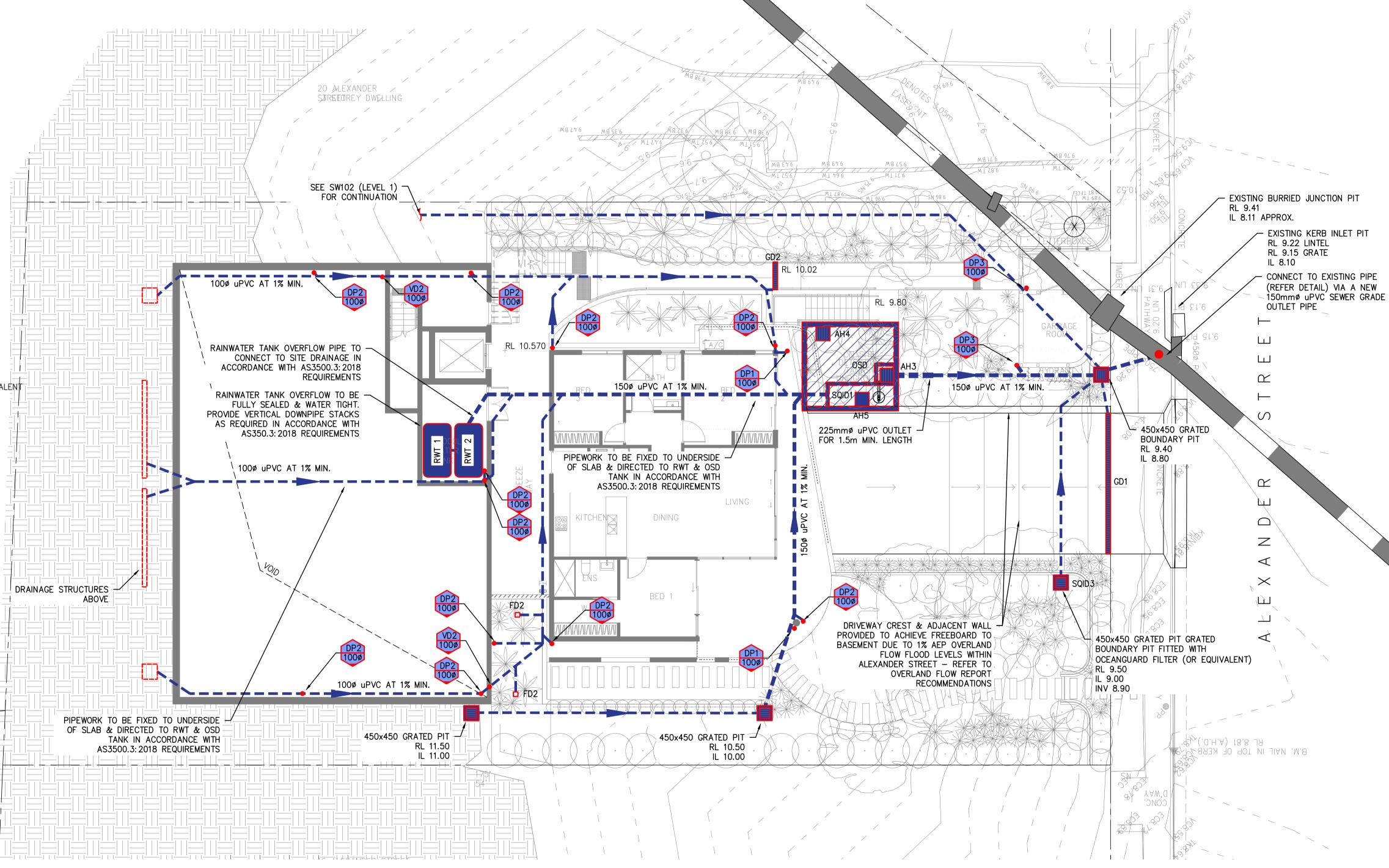
PP 6,000L PUMP OUT PT DR1 POSSIBLE PERIMETER BASEMENT DRAIN TO STRUCTURAL DETAILS AH1-AH2600x600mm GRATED LID ACCESS HATCH HEEL GUARD GRATE

AH3-AH4 600x600mm GRATED LID ACCESS HATCH 600x600mm SEALED LID ACCESS HATCH AH5

SQID STORMWATER QUALITY IMPROVEMENT DEVICE - 2.5m2 CHAMBER MIN. SQID1 690mm STORMFILTER BY OCEAN PROTECT OR EQUIVALENT WITHIN PP SQID2 OCEANGUARD FILTER BY OCEAN PROTECT OR EQUIVALENT WITHIN PP

SQID3 450x450 PIT WITH OCEANGUARD FILTER BY OCEAN PROTECT OR EQUIVALENT NOT FOR CONSTRUCTION





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

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

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.

Description:

A1 ORIGINAL

Rev: Date:

UNDERCROFT STORMWATER MANAGEMENT PLAN

SCALE = 1 : 100



1			
Α	10.09.21	STORMWATER & CIVIL ACCESS PLAN FOR DA SUBMISSION	R.M

Reviewed:

Issued for: DEVELOPMENT APPLICATION Approved by: 03.09.2021 03.09.2021 DRAWN S.M CHECKED R.M 08.09.2021 Rhys Mikhail Director | Principal Engineer | NER: 2570082 | RPEQ: 17480 APPROVED BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus



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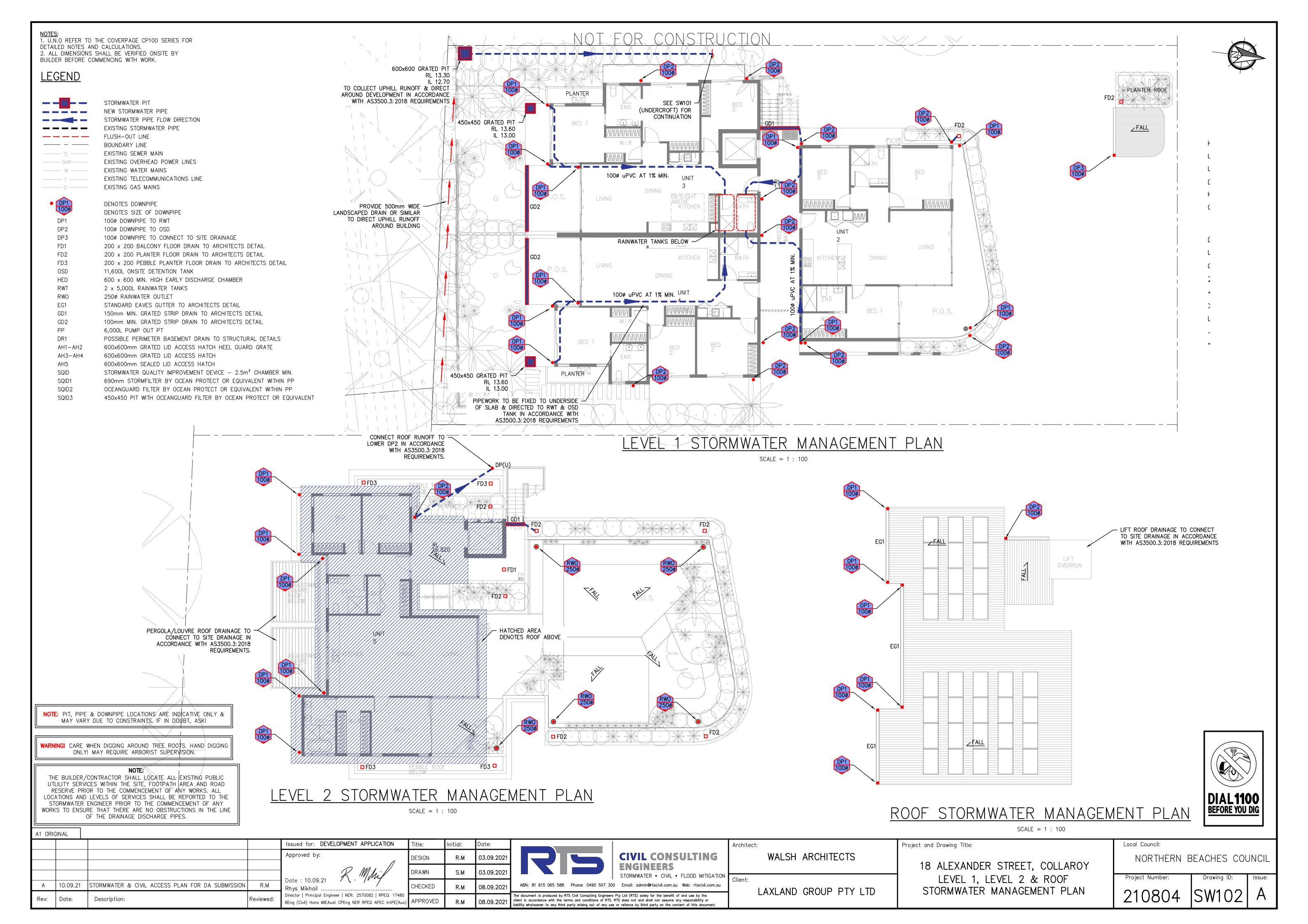
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Client:				
	LAXLAND	GROUP	PTY LTD)

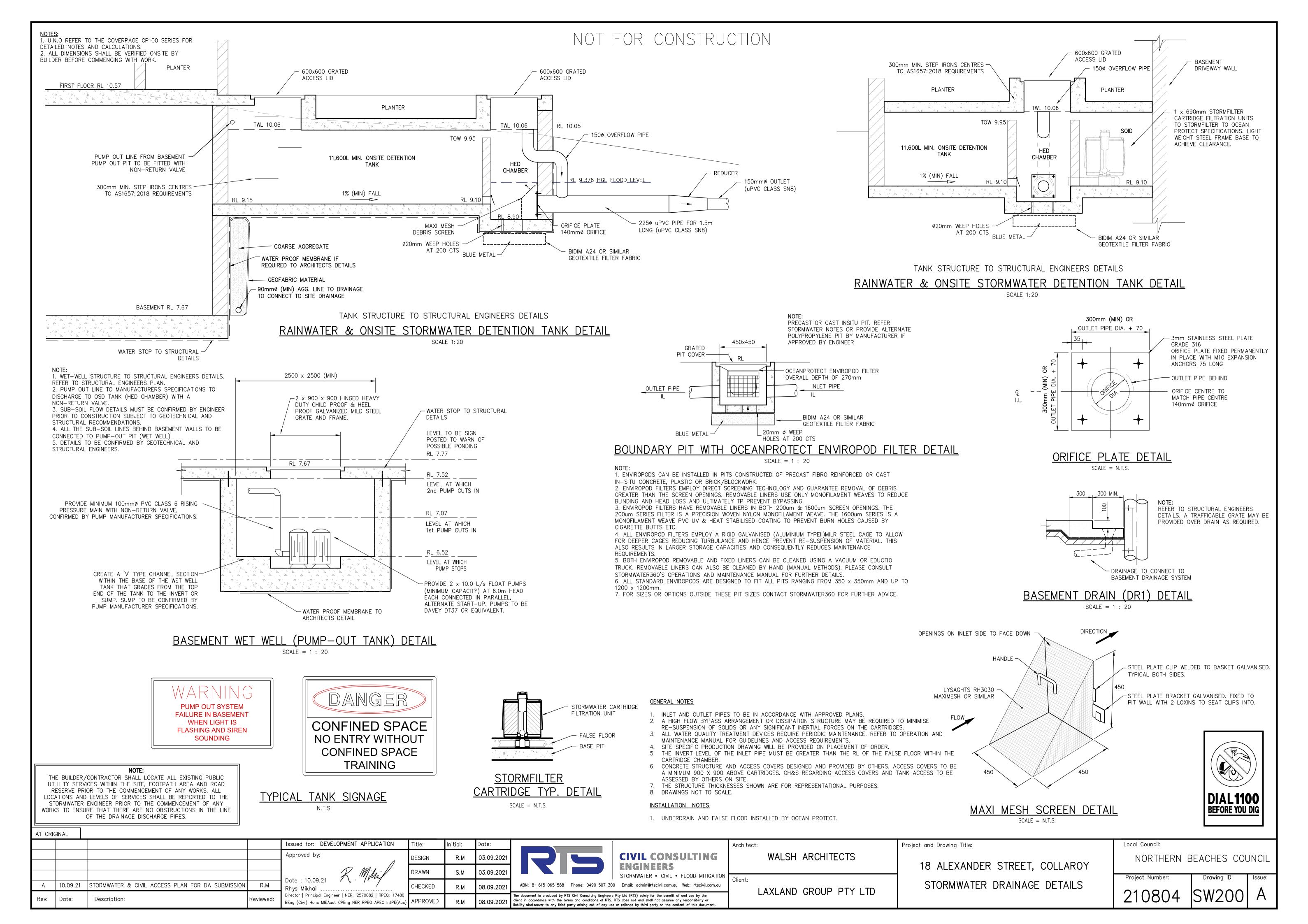
18 ALEXANDER	STREET, C	OLLARO`
UND	ERCROFT	
STORMWATER I	MANAGEMEN	NT PLAN

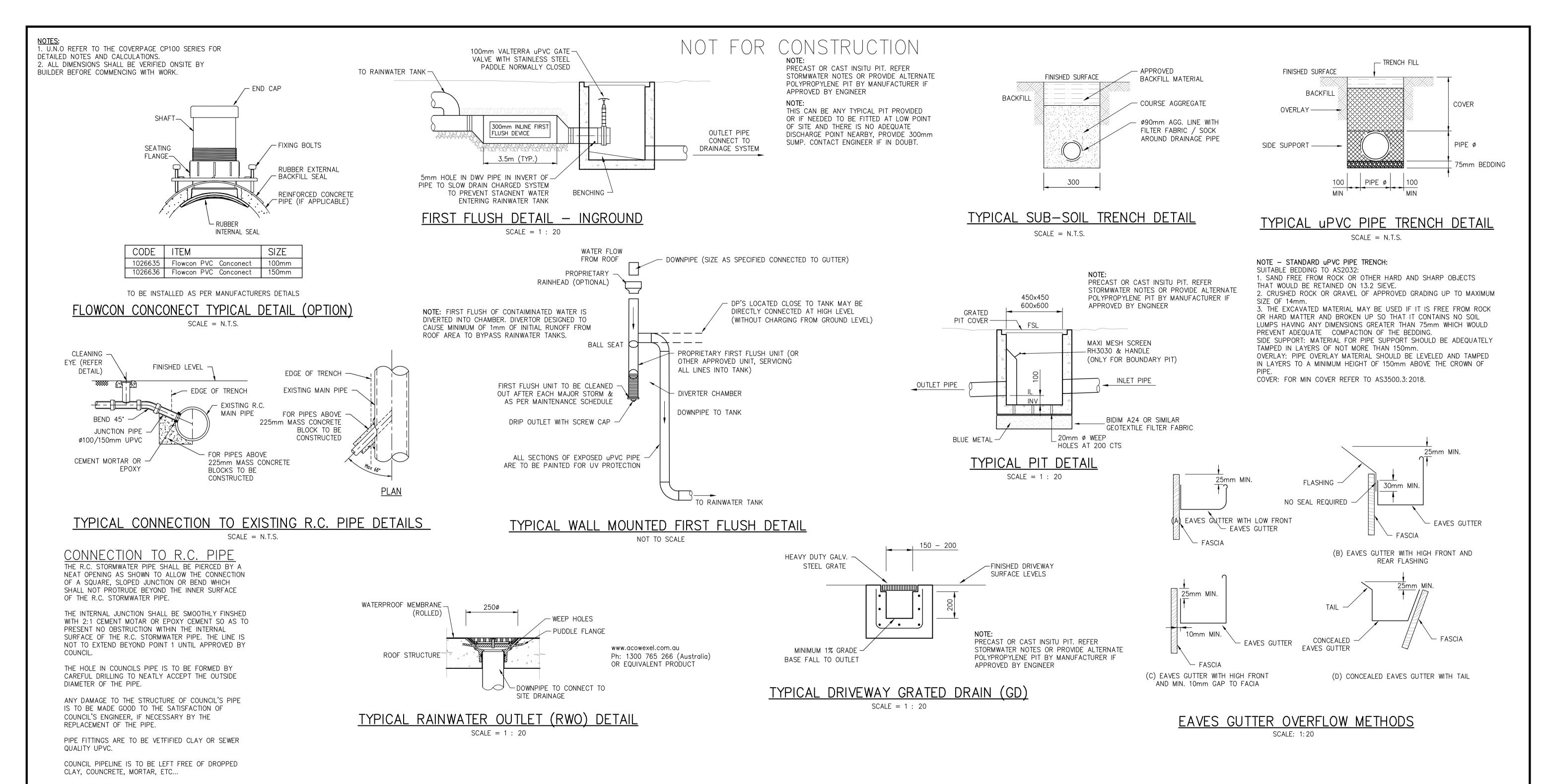
Project and Drawing Title:

Local Council:		
NORTHERN	BEACHES	COUNCIL

Project Number:	Drawing ID:	Issue:
210804	SW101	Α







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 THE BUILDER/CONTRACTOR SHALL LOCATE ALL EXISTING PUBLIC UTLILITY SERVICES WITHIN THE SITE, FOOTPATH AREA AND ROAD ABOVE CONNECTION POINT. IF IN DOUBT, RESERVE PRIOR TO THE COMMENCEMENT OF ANY WORKS. ALL CONTACT THE ENGINEER.

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.

WATER PROOF MEMBRANE TO ARCHITECTS DETAILS ATLANTIS DRAINAGE CELL - 200x200 GRATE FLOOR FINISHES TO OR TO ARCHITECTS 200x200 GRATE OR TO ARCHITECTS DETAILS -DETAILS ARCHITECTSDETAILS PLANTER FLOOR STRUCTURE FLOOR STRUCTURE 90mm ø uPVC PIPE 90mm ø uPVC PIPE FALL TO SITE DRAINAGE FALL TO SITE DRAINAGE STANDARD FLOOR DRAIN

STANDARD FLOOR PATIO DRAIN SCALE = 1 : 20

- 200x200 GRATE FLOOR FINISHES TO -OR TO ARCHITECTS ARCHITECTS DETAIL DETAILS FLOOR CONCRETE 50mm ø uPVC PIPE BEAM OR SLAB-FALL TO DOWN PIPES

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

Project and Drawing Title:



A1 ORIG	JINAL						
				Issued for: DEVELOPMENT APPLICATION	Title:	Initial:	Date:
				Approved by:	DESIGN	R.M	03.09.2021
					DRAWN	S.M	03.09.2021
Α	10.09.21	STORMWATER & CIVIL ACCESS PLAN FOR DA SUBMISSION	R.M	Kitys Mikitali	CHECKED	R.M	08.09.2021
Rev:	Date:	Description:	Reviewed:	Director Principal Engineer NER: 2570082 RPEQ: 17480 BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus)	APPROVED	R.M	08.09.2021

R	CIVIL CONSULTING ENGINEERS STORMWATER • CIVIL • FLOOD MITIGAT

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SCALE = 1 : 20

Architect: WALSH ARCHITECTS

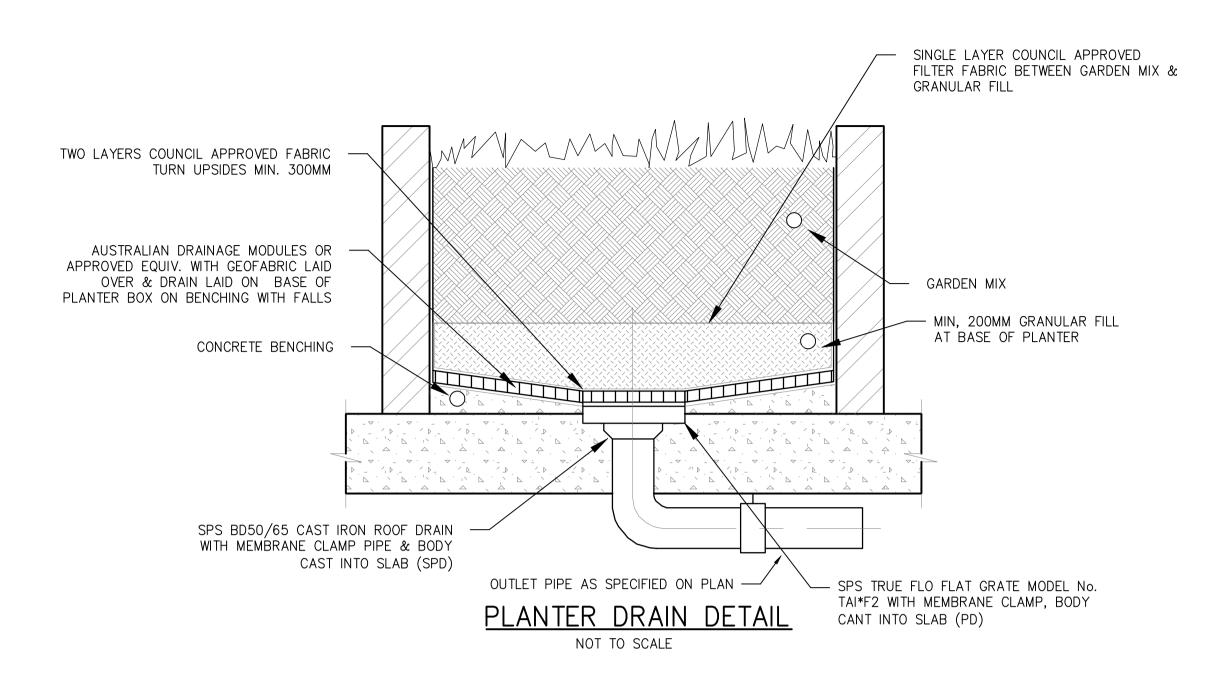
LAXLAND GROUP PTY LTD

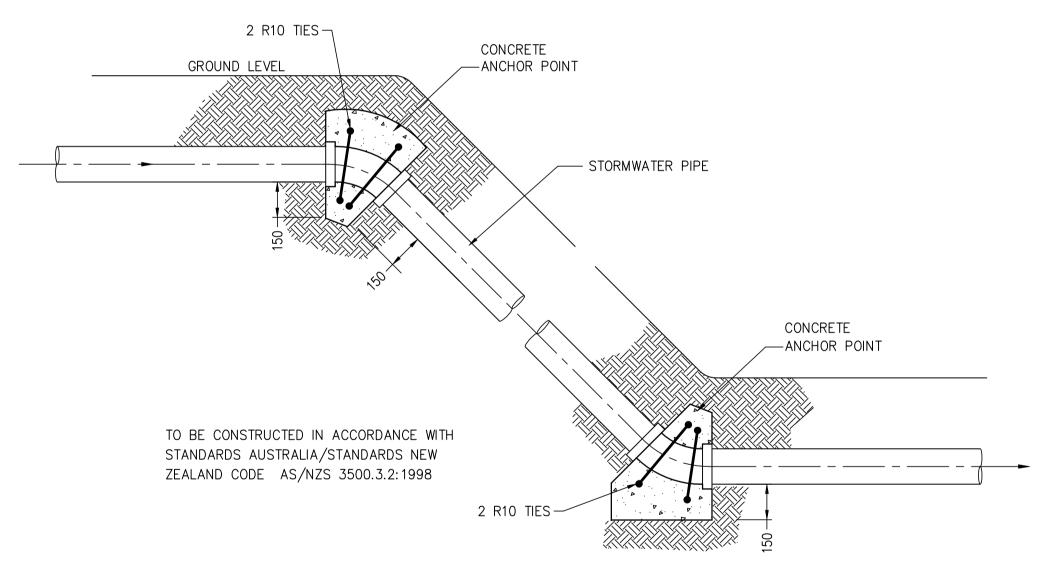
Client:

18 ALEXANDER STREET, COLLAROY STORMWATER DRAINAGE DETAILS CONT.

Local Council:		
NORTHERN	BEACHES	COUNCIL
	ė .	•

1. U.N.O REFER TO THE COVERPAGE CP100 SERIES FOR DETAILED NOTES AND CALCULATIONS. 2. ALL DIMENSIONS SHALL BE VERIFIED ONSITE BY BUILDER BEFORE COMMENCING WITH WORK.





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

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.

> 9.2021 9.2021 08.09.2021

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STORMWATER • CIVIL • FLOOD MITIGATION Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au The document is produced by RTS Civil Consulting Engineers Pty Ltd (RTS) solely for the benefit of and use by the

Architect: WALSH ARCHITECTS

COLOUR & SEDIMENT FROM HARVESTED WATER-

ELECTRICAL JUNCTION BOX

POWER SUPPLY TO

FLOAT SWITCH

SUBMERSIBLE PUMP &

OR WATERPROOF POWER POINT

Project and Drawing Title:

18 ALEXANDER STREET, COLLAROY

Local Council:

NORTHERN BEACHES COUNCIL

Drawing ID:

DIAL 1100 BEFORE YOU DIG

10.09.21 Rev: Date: Description: client in accordance with the terms and conditions of RTS. RTS does not and shall not assume any responsibility or BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus) APPROVED liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document

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STORMWATER DRAINAGE DETAILS CONT.

Project Number: 210804

100mm ø uPVC SEWER OR LOW POINT IN THE SYSTEM WITHIN A PIT THAT CAN BE PRESSURE GRADE DRAINED TO AN ONSITE INFILTRATION SYSTEM AIR VENT WITH -FULLY WATERTIGHT SYSTEM IN ACCORDANCE — INSECT/VERMIN WITH AUSTRALIAN STANDARDS HB 230-2008 CONTROL - RAINWATER TANK DESIGN & INSTALLATION HANDBOOK FLOOR STRUCTURE TO STRUCTURAL ENGINEERS DETAILS TO SITE DRAINAGE IN ACCORDANCE WITH AS3500.3: 2018 REQUIREMENTS - 100mm ø uPVC SEWER OR PRESSURE GRADE PIPE FOR CHARGED SYSTEM FROM DOWN PIPES NOTE: MOSQUITO PROOF MESH TO BE PROVIDED AT ALL END POINTS OF CHARGED LINES AND RAINWATER RWT TANK RWT TANK — SUB GRADE TO TANK MANUFACTURERS SPECIFICATION FULLY WATERTIGHT RAINWATER TANK DETAIL NOT TO SCALE

ALL CHARGED SYSTEM PIPES MUST BE A MINIMUM OF

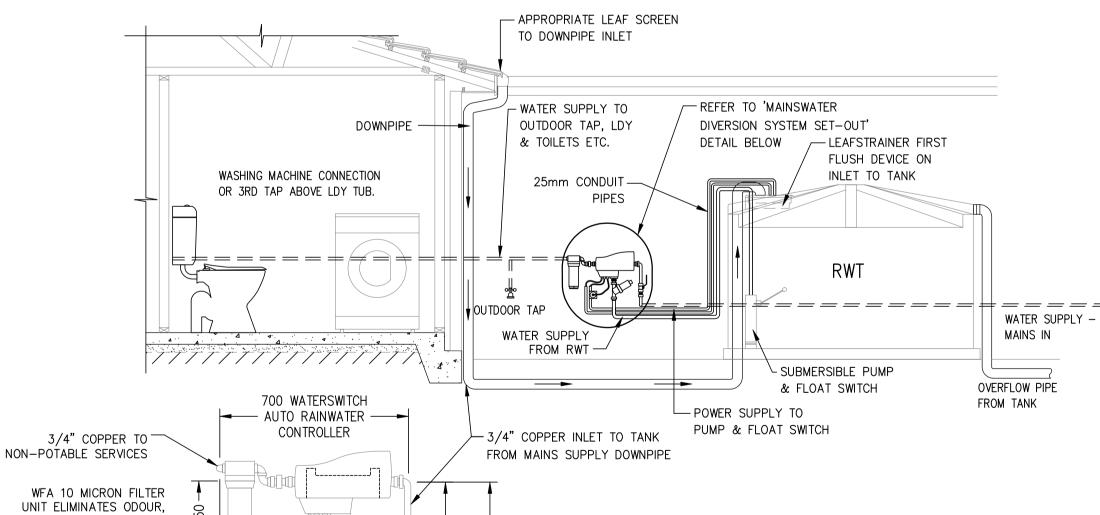
100mm WITH ALL JOINTS SOLVENT WELDED. A CLEANING

EYE, OR FLUSH OUT POINT, MUST BE PROVIDED AT THE

MAINSWATER DIVERSION SYSTEM SET-OUT: BUILDERS PLEASE USE THE FOLLOWING GUIDES FOR THE PROVISION OF INTERNAL CONNECTIONS TO THE MAINS WATER DIVERSION SYSTEM MOUNTING ON EXTERNAL WALL. THE POSITIONING OF THE UNIT MUST BE WITHIN 6 METRES OF THE TANK POSITION. COPPER CONNECTIONS MUST BE AT LEAST 60mm PROUD OF BRICKWORK OR RENDERED FINISH. PROVIDE A LOOPED CONNECTION SO THAT THE BUILDER'S PLUMBER CAN PRESSURE TEST LINES PRIOR TO MAINS WATER DIVERTER INSTALLATION.

— ALL DOWN PIPES IN

CHARGED SYSTEM TO BE



ROOF GUTTER WITH LEAF GUARD -

FIRST FLUSH DEVICE ON INLET TO TANK **LEAFSTRAINER**

TYPICAL MAINSWATER DIVERSION SYSTEM SET-OUT

WATER SUPPLY FROM RAINWATER TANK

A1 ORIGINAL

		Issued for: DEVE I	LOPMENT APPLICATION	Title:	Initial:	Date:
		Approved by:	2	DESIGN	R.M	03.09.2
			R Millis	DRAWN	S.M	03.09.2
STORMWATER & CIVIL ACCESS PLAN FOR DA SUBMISSION	R.M	Date : 10.09.21 Rhys Mikhail	, (· / / /	CHECKED	R.M	08.09.2
Description:	Reviewed:		eer NER: 2570082 RPEQ: 17480			

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.

'. 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

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

DISTURBANCE TO PREVENT SEDIMENT WASHING FROM CLEARED AND DISTURBED AREAS OF THE SITE INTO

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)

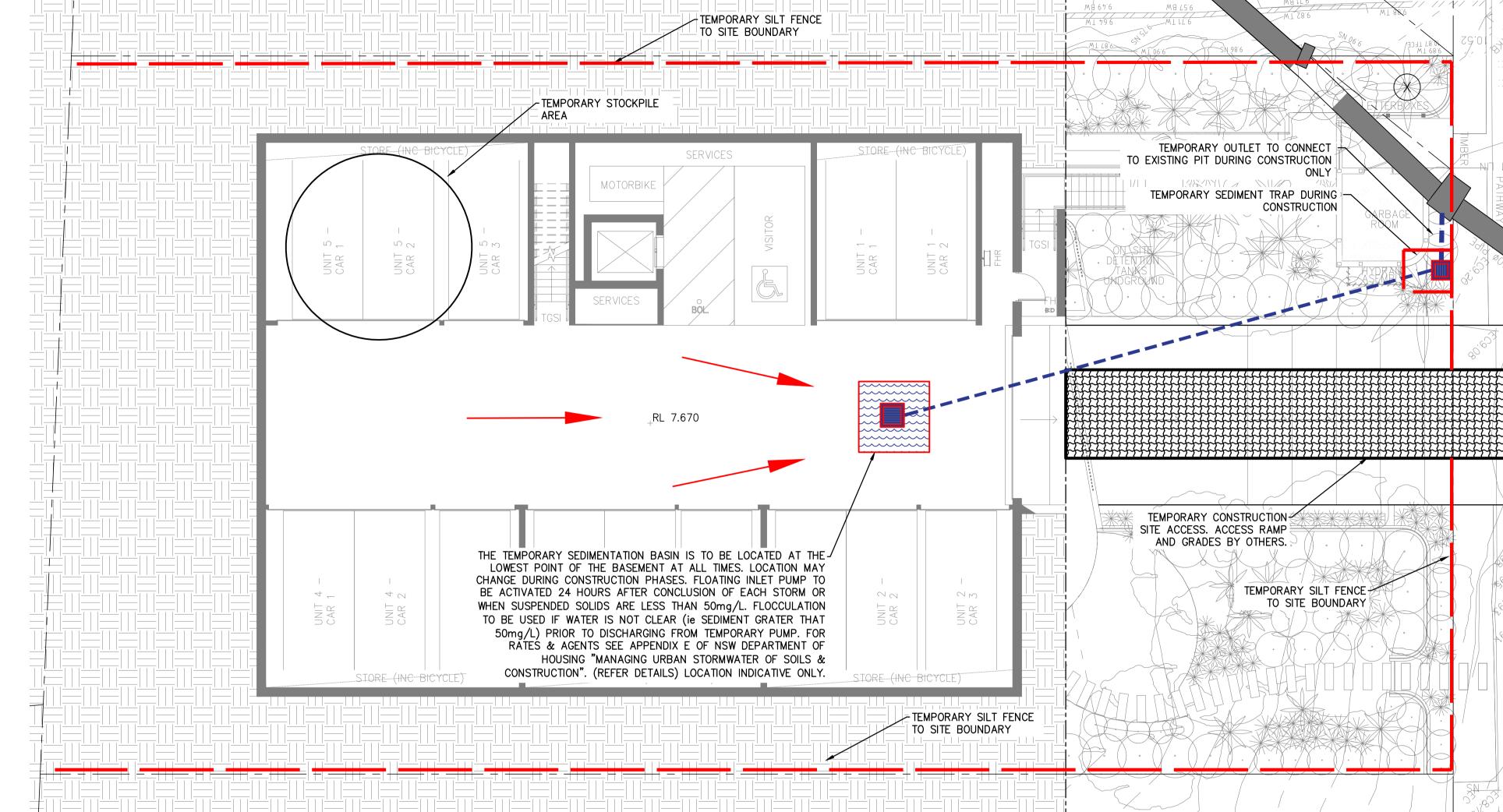
b) IF SUBJECT TO THE ENVIRONMENTAL CONSULTANTS ADVICE, PROVIDE REMEDIAL MEASURES TO IMPROVE THE QUALITY OF WATER THAT IS TO BE DISCHARGED INTO COUNCIL'S STORMWATER DRAINAGE SYSTEM. THIS SHOULD INCLUDE COMMENTS FROM A SUITABLY QUALIFIED ENVIRONMENTAL CONSULTANT CONFIRMING THE SUITABILITY OF THESE REMEDIAL 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.

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.

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.

NOT FOR CONSTRUCTION



SITE SEDIMENT & EROSION CONTROL PLAN

SCALE = 1 : 100

EROSION CONTROL NOTES:

1. SILT FENCE AND ASSOCIATED WORKS INCLUDING INTERCEPTOR DRAIN IS TO BE INSTALLED BEFORE THE COMMENCEMENT OF ANY EXCAVATION. 2. CUTS TO BE EXECUTED TO THE REQUIRED LEVEL USING CONVENTIONAL EXCAVATION

MACHINERY, INITIALLY THE DEPTH OF FILL/CLAY IS TO BE ESTABLISHED TO ENSURE NEIGHBOURING PROPERTIES ARE NOT ADVERSELY AFFECTED. EARTH BATTERS TO BE A MAXIMUM SLOPE OF 1.0 m VERT. TO 1.7 m HORIZ. (AS PER GEOTECHNICAL REPORT). ANY BATTERS GREATER THAN 1.0 m VERT. TO 1.7 m HORIZ. ARE TO BE ADEQUATELY SHORED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS.

ENGINEERS DETAILS AND INSTRUCTIONS. 4. ALL PERMANENT RETAINING STRUCTURES ARE TO BE COMPLETED WITH MINIMUM DELAY FOLLOWING EXCAVATION.

3. ANY PERMANENT RETAINING STRUCTURE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE

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.

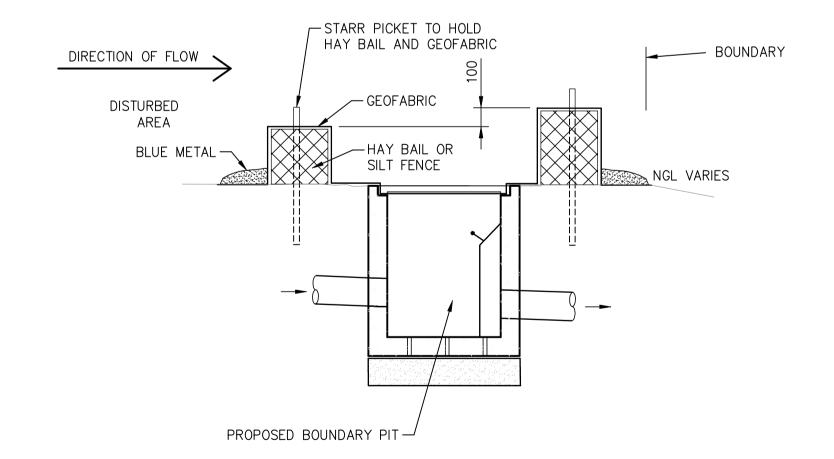
9. ROADS AND FOOTPATH TO BE SWEPT DAILY.

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

S.M

R.M



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.

TEMPORARY OUTLET TO CONNECT

TEMPORARY SEDIMENT TRAP DURING

TEMPORARY CONSTRUCTION

TEMPORARY SILT FENCE #

TO SITE BOUNDARY

SITE ACCESS. ACCESS RAMP

AND GRADES BY OTHERS.

CONSTRUCTION

TO EXISTING PIT DURING CONSTRUCTION

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.



-PROVIDE SANG BAGS &

INLET PROTECTION TO

ALL STREET DRAINAGE

A1 ORIGINAL

711 01110	9111712		
Α	10.09.21	STORMWATER & CIVIL ACCESS PLAN FOR DA SUBMISSION	R.M
Rev:	Date:	Description:	Reviewed:

Issued for: DEVELOPMENT APPLICATION Approved by: DESIGN DRAWN CHECKED Rhys Mikhail Director | Principal Engineer | NER: 2570082 | RPEQ: 1748 APPROVED BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Au

DELAY FOLLOWING EXCAVATION.



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 LAXLAND GROUP PTY LTD

Architect:

WALSH ARCHITECTS

Project and Drawing Title:

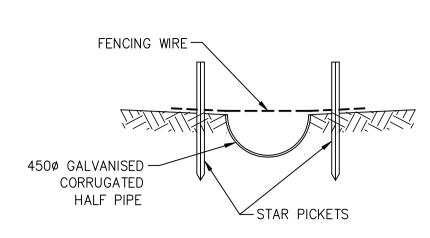
18 ALEXANDER STREET, COLLAROY SEDIMENT & EROSION CONTROL PLAN NORTHERN BEACHES COUNCIL

PL 8.81 (A.H.D.)

B.M. NAIL IN TOP OF KERB 2

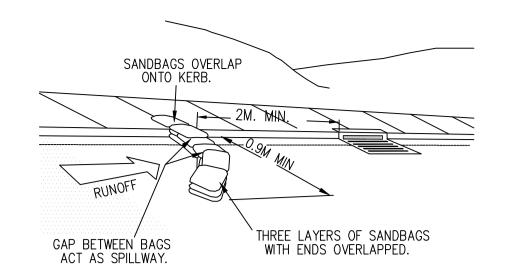
ROCK LINE DISH DRAIN, JOINTS BETWEEN ROCKS TO BE FILLED WITH MORTAR. MOUNDED AND COMPACTED -EXCAVATED SOIL DIRECTION OF FLOW DISTURBED AREA -300mm MINIMUM DEPTH

<u>CATCH DRAIN - ROCK LINED</u> SCALE = N.T.S.

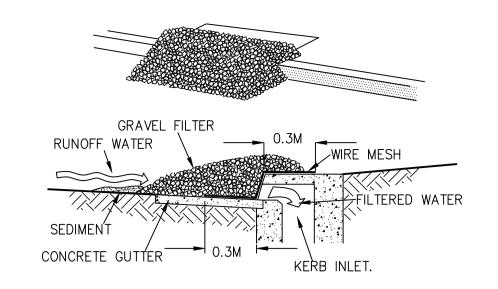


TEMPORARY DISH DRAIN SCALE = N.T.S.

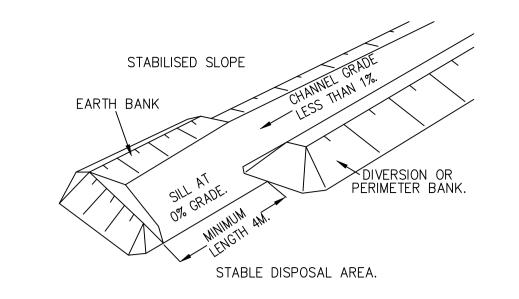
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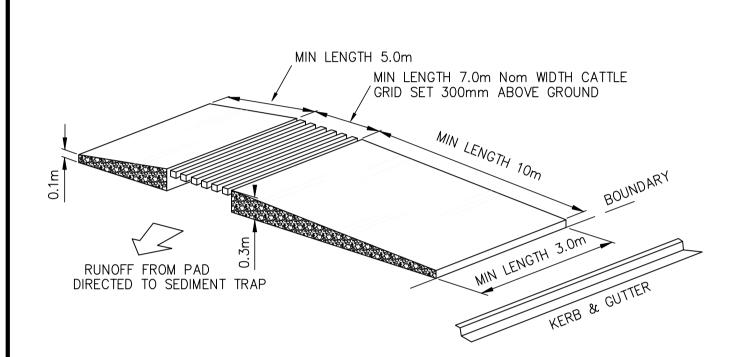
SEDIMENT TRAP SANDBAGS AT KERB INLETS SCALE = N.T.S.



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

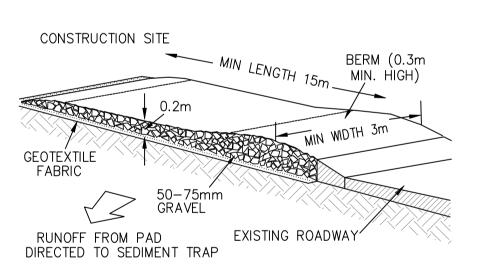


TYPICAL SPREADER DETAIL SCALE = N.T.S.



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

TYPICAL TEMPORARY CONSTRUCTION ENTRY & EXIT DETAIL (TYPE 2)



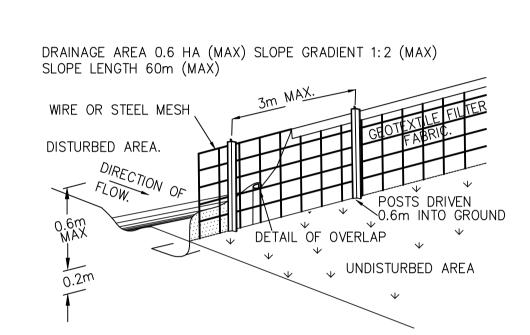
NOTE: WHEEL WASH OR SPRAY MAY BE REQUIRED DURING WET WEATHER. GRAVEL SHALL BE CLEANED/REMOVED WHEN THE EXPOSED HEIGHT OF THE GRAVEL IS LESS THAN 30mm.

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.

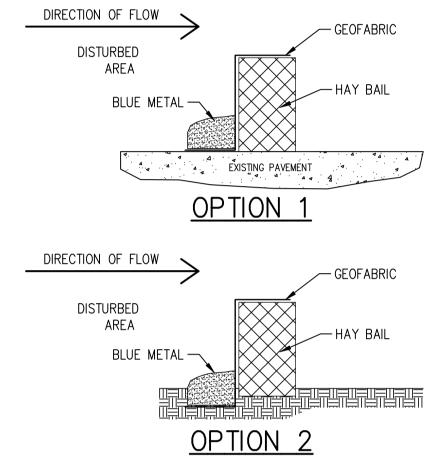
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TYPICAL TEMPORARY SEDIMENT (SILT) FENCE

1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE. 2. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND, 3 METRES

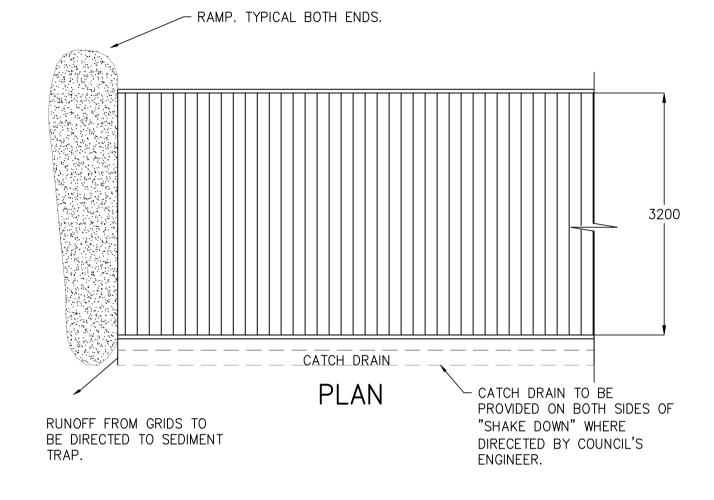
3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED. 4. BACKFILL TRENCH OVER BASE OF FABRIC. 5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES or AS RECOMMENDED BY GEOTEXTILE MANUFACTURER. 6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.

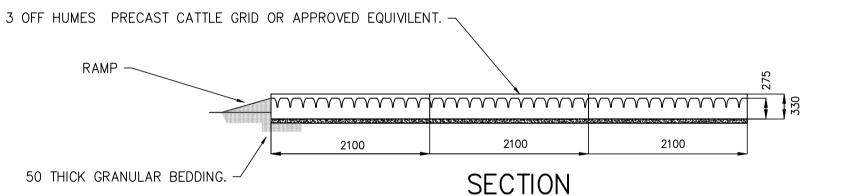


REMOVABLE HAY BAIL DETAIL SCALE = N.T.S.

1. ALL EROSION AND SEDIMENT CONTROL ARE MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER. 2. CONTRACTOR TO MINIMISE DISTURBED AREAS WHERE POSSIBLE. 3. ALL STOCKPILES ARE TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS. 4. DRAINAGE IS TO BE CONNECTED TO SITE STORMWATER DRAINAGE

SYSTEM AS SOON AS POSSIBLE 5. ROADS AND FOOTPATH AREA TO BE SWEPT DAILY. 6. ALL WORKS ARE TO COMPLY WITH LOCAL COUNCIL SPECIFICATIONS.



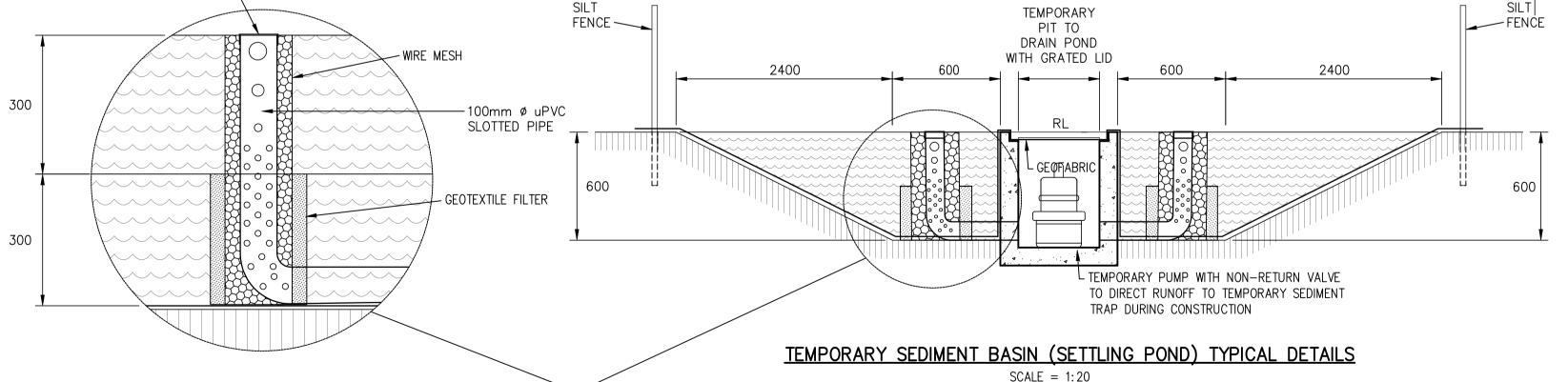


CATTLE GRID ENTRY & EXIT ALTERNATIVE

SCALE = 1:20

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.





A1 ORIG	GINAL						
				Issued for: DEVELOPMENT APPLICATION	Title:	Initial:	Date:
				Approved by:	DESIGN	R.M	03.09.2021
					DRAWN	S.M	03.09.2021
Α	10.09.21	STORMWATER & CIVIL ACCESS PLAN FOR DA SUBMISSION	R.M	Date: 10.09.21 / \ . ///// Rhys Mikhail	CHECKED	R.M	08.09.2021
Rev:	Date:	Description:	Reviewed:	Director Principal Engineer NER: 2570082 RPEQ: 17480 BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus)	APPROVED	R.M	08.09.2021



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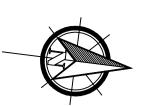
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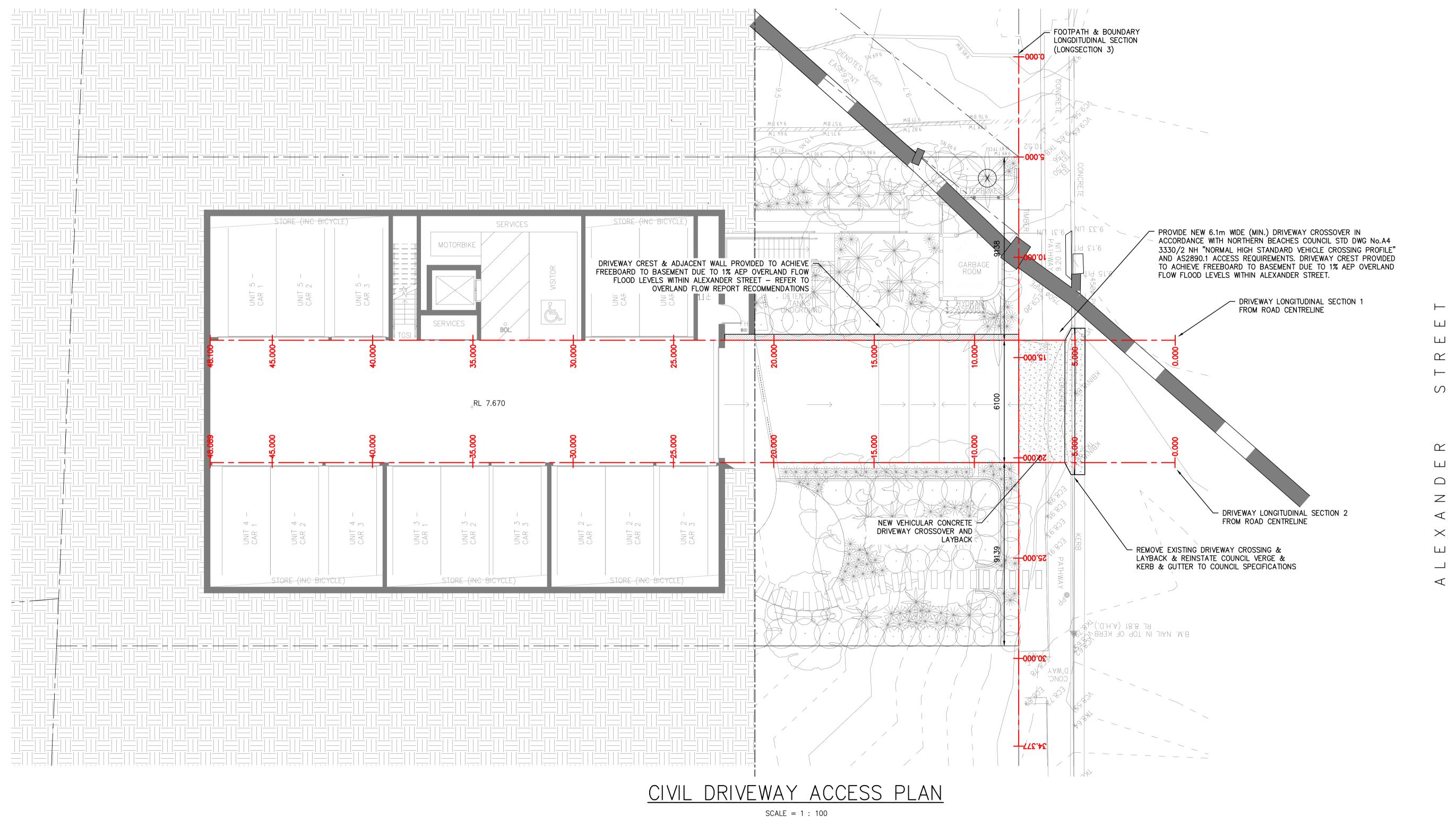
Architect: WALSH ARCHITECTS

18 ALEXANDER STREET, COLLAROY SEDIMENT & EROSION CONTROL LAXLAND GROUP PTY LTD PLAN DETAILS

Project and Drawing Title:

NORTHERN BEACHES COUNCIL





NOTE:

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= 1.100



A1 ORIO	GINAL					
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				DRAWN	S.M	03.09.2021
Α	10.09.21	STORMWATER & CIVIL ACCESS PLAN FOR DA SUBMISSION	Date: 10.09.21	CHECKED	R.M	08.09.2021
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RIS	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

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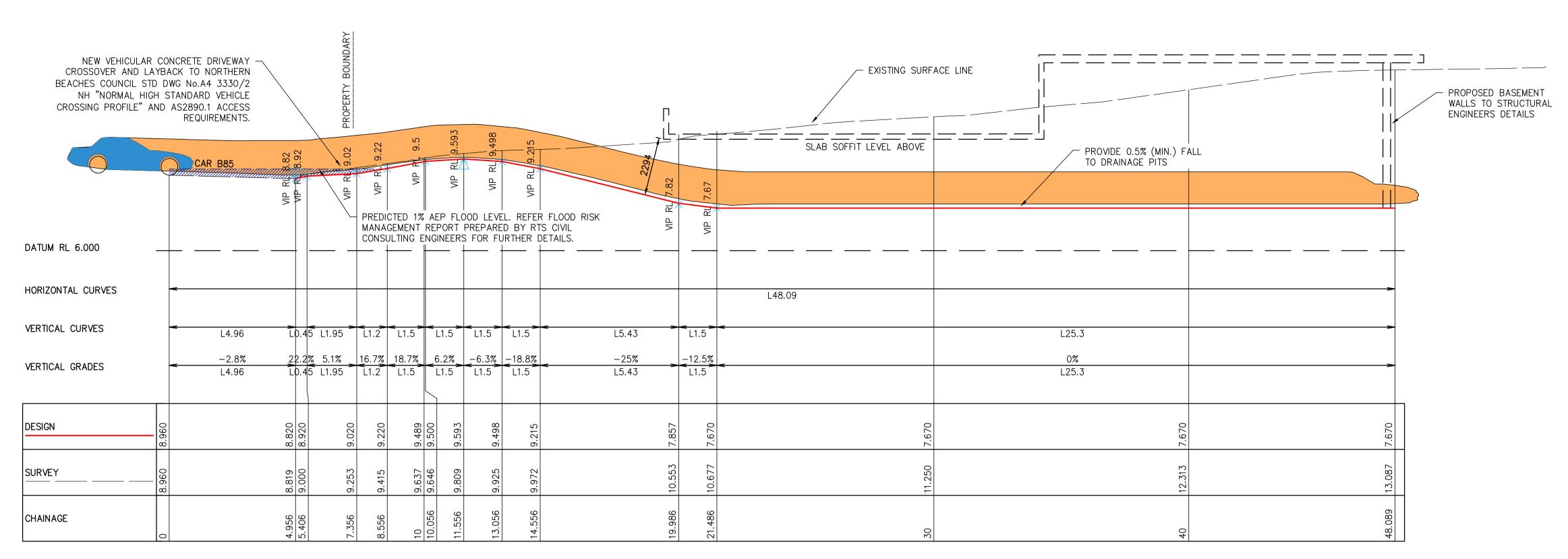
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Architect:

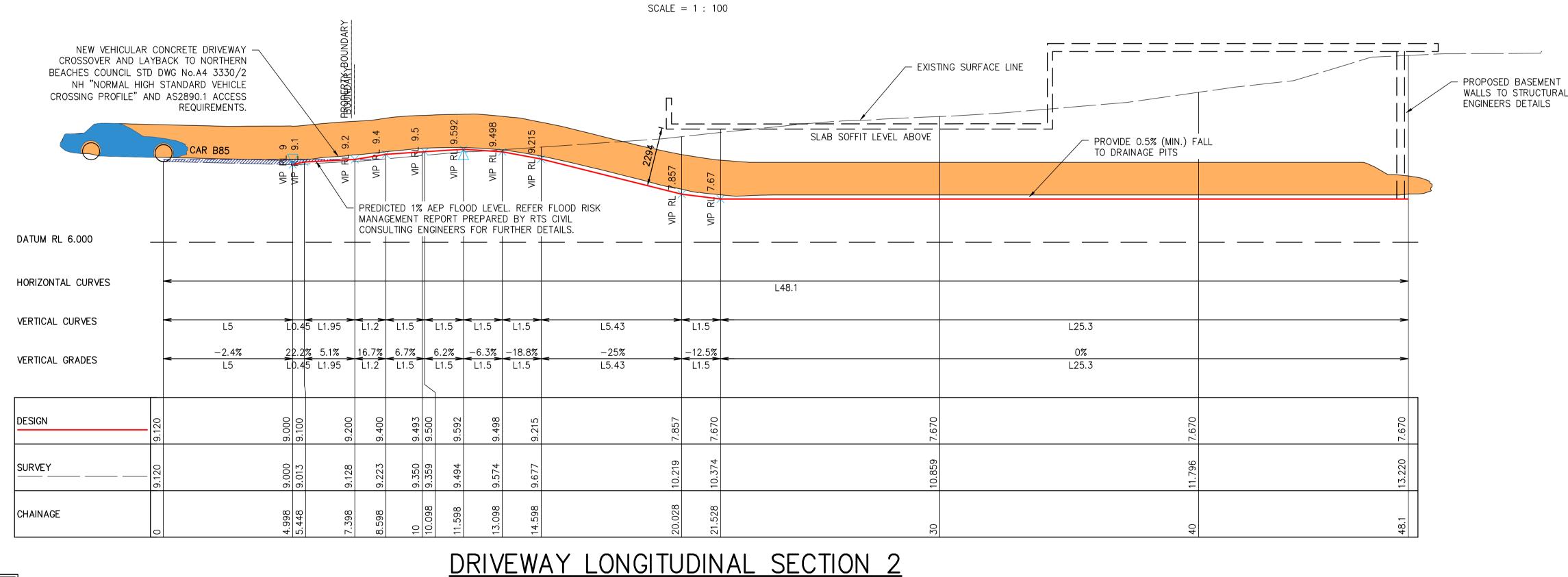
18 ALEXANDER STREET, COLLAROY CIVIL DRIVEWAY ACCESS PLAN

Project and Drawing Title:

Local Council:			
NORTHERN	BEACHES	COL	JNCI
Project Number	Drawing IF	١٠	locus



DRIVEWAY LONGITUDINAL SECTION 1



NOTE:

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NOTE:

ALL FILLING ONSITE TO BE LEVEL 1
COMPACTED FILL AS PER AS1289 UNLESS
NOTED OTHERWISE (NOTE TYPE 2 TESTING
MAY ONLY BE USED FOR INDIVIDUAL
RESIDENTIAL LOTS ONLY.

NOTE:

ANY DAMAGE TO EXISTING ROADWAYS WILL
BE RECTIFIED BY THE CONTRACTOR AT HIS
EXPENSE. EXACT 'AS CONSTRUCTED'
LOCATION OF SERVICES ARE TO BE
LOCATED PRIOR TO CONSTRUCTION.

NOTE:

RETAINING WALLS TO BE WHOLLY
CONTAINED WITHIN PROPERTY BOUNDARY
INCLUDING SUBSOIL DRAINAGE AS
REQUIRED.

SCALE = 1 : 100

NOTE:

CONTRACTOR TO CONFIRM SOIL TYPE AND ACCEPTABLE
TEMPORARY BATTER ANGLE WITH GEOTECHNICAL
ENGINEER PRIOR TO UNDERTAKING EARTHWORKS.

Architect:

NOTE:

CONTRACTOR MUST PROTECT ALL

SERVICES TRAVERSING OR ADJACENT TO

THE DEVELOPMENT SITE AT ALL TIMES.

Project and Drawing Title:

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				Issued for: DEVELOPMENT APPLICATION	Title:	Initial:	Date:
				Approved by:	DESIGN	R.M	03.09.202
					DRAWN	S.M	03.09.202
Α	10.09.21	STORMWATER & CIVIL ACCESS PLAN FOR DA SUBMISSION	R.M	Date: 10.09.21 / \ . ////// Rhys Mikhail	CHECKED	R.M	08.09.202
Rev:	Date:	Description:	Reviewed:	Director Principal Engineer NER: 2570082 RPEQ: 17480 BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus)	APPROVED	R.M	08.09.202

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CIVIL CONSULTING
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STORMWATER • CIVIL • FLOOD MITIGATION
Phone: 0490 507 300 Email: admin@rtscivil.com.au Web: rtscivil.com.au

Client:

Client:					
	LAXLAND	GROUP	PTY	LTD	

WALSH ARCHITECTS

18 ALEXANDER STREET, COLLAROY DRIVEWAY LONGITUDINAL SECTIONS

Local Council:		
NORTHERN	BEACHES	COUN

Project Number: Drawing ID: Issue: 210804 CW200 A

NOTES:

1. U.N.O REFER TO THE COVERPAGE CP100 SERIES FOR DETAILED NOTES AND CALCULATIONS.

2. ALL DIMENSIONS SHALL BE VERIFIED ONSITE BY BUILDER BEFORE COMMENCING WITH WORK.

NOTE:

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NOTE:

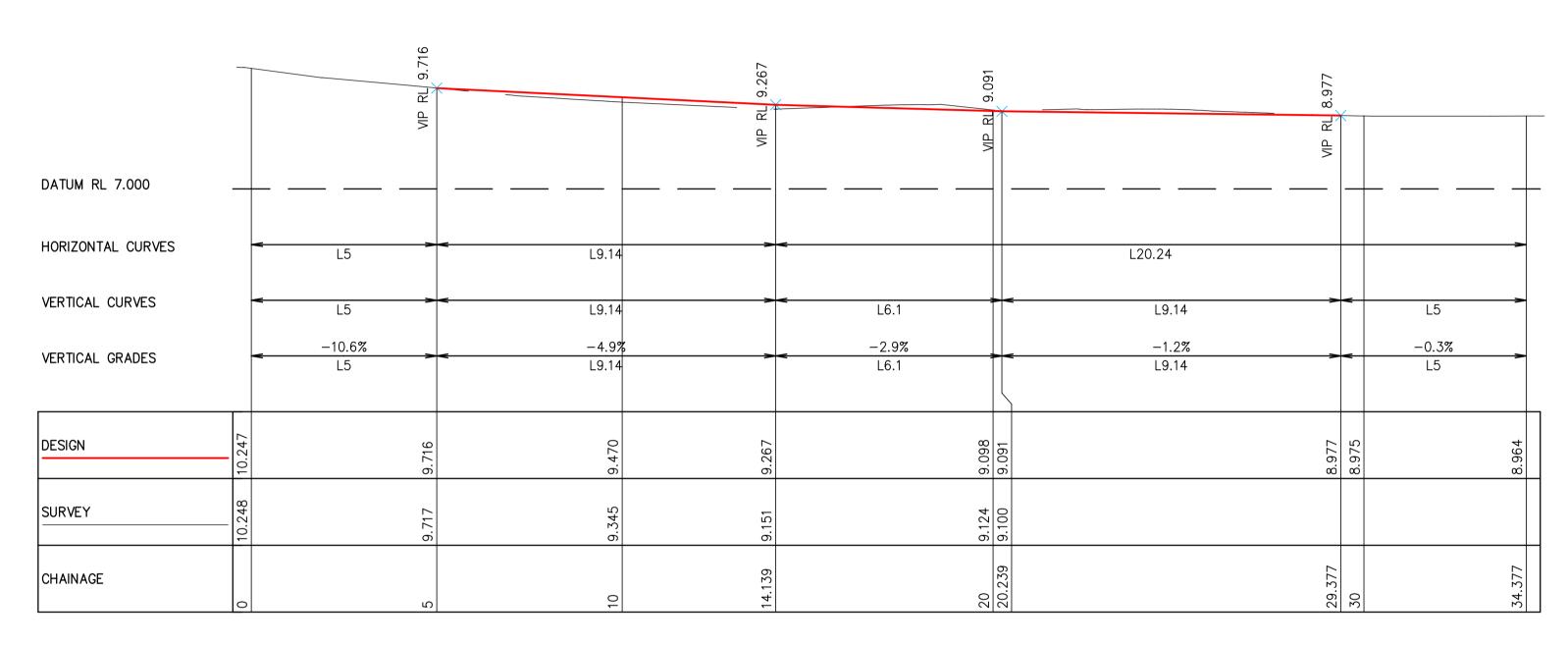
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FOOTPATH & BOUNDARY LONGITUDINAL SECTION

SCALE = 1 : 50



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					Approved by:	DESIGN	R.M	03.09.2021		CIVIL CONSULTING	WALSH ARCHITECTS	
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	А	10.09.21	STORMWATER & CIVIL ACCESS PLAN FOR DA SUBMISSION	1 011	Date : 10.00.21	CHECKED	R.M	08.09.2021	ABN: 81 615 065 588 Phone: 0490 507 30	" 00 Email: admin@rtscivil.com.au Web: rtscivil.com.au	Client: LAXLAND GROUP PTY LTE	ח
	Rev:	Date:	Description:	Reviewed:	Director Principal Engineer NER: 2570082 RPEQ: 17480 BEng (Civil) Hons MIEAust CPEng NER RPEQ APEC IntPE(Aus)	APPROVED	R.M	08.09.2021	The document is produced by RTS Civil Consulting Engineer client in accordance with the terms and conditions of RTS liability whatsoever to any third party arising out of any us	rs Pty Ltd (RTS) solely for the benefit of and use by the . RTS does not and shall not assume any responsibility or se or reliance by third party on the content of this document.	T LAXLAND GROOF FIT LIL	J

Project and Drawing Title:
18 ALEXANDER STREET, COLLAROY
FOOTPATH & BOUNDARY
LONGDITUDINAL SECTION

Local Council:		
NORTHERN (BEACHES COL	JNCIL
Project Number:	Drawing ID:	Issue:
210804	CW201	Α