MIXED-USED DEVELOPMENT 1102 BARRENJOEY ROAD PALM BEACH NSW 2108

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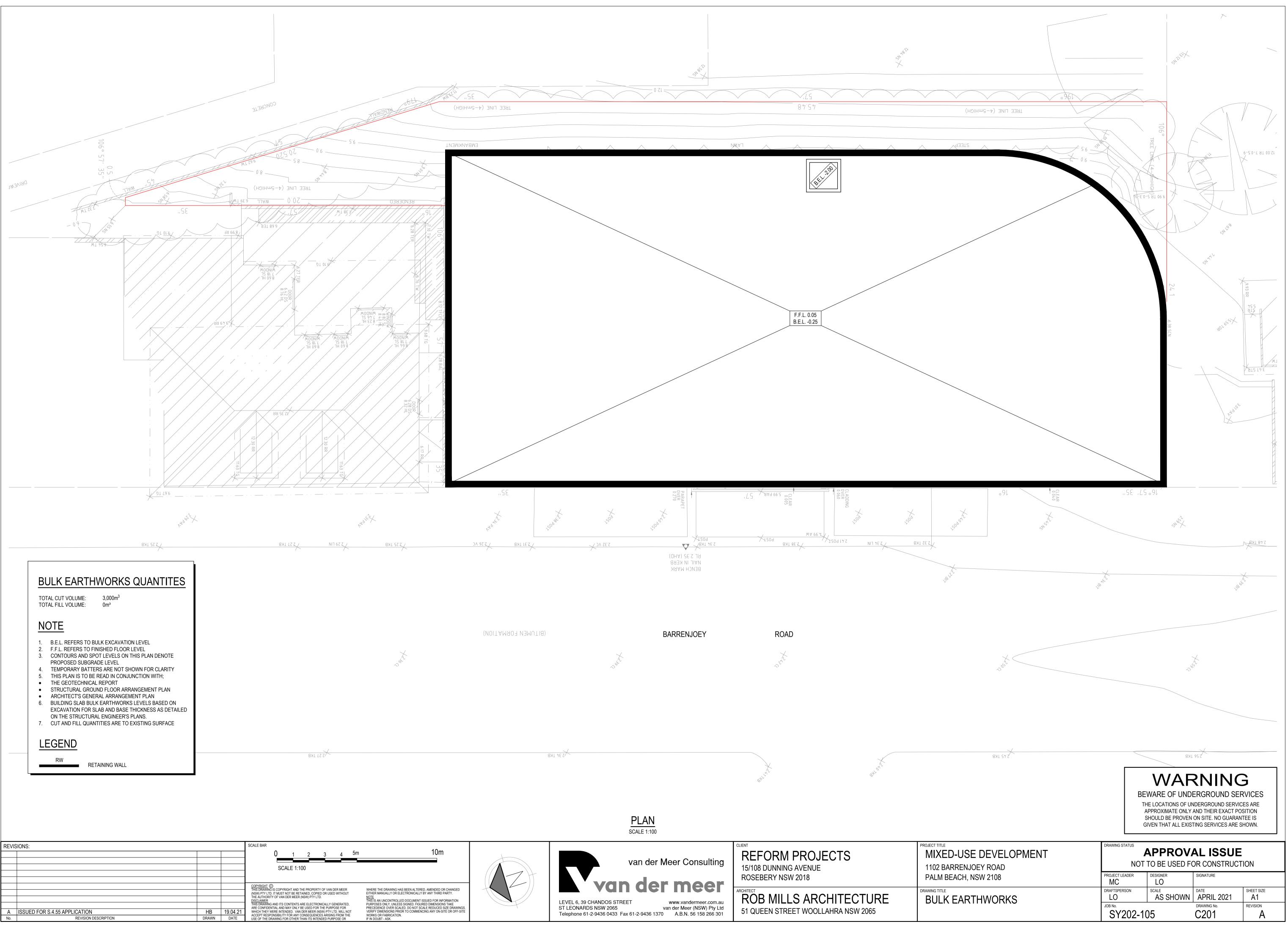
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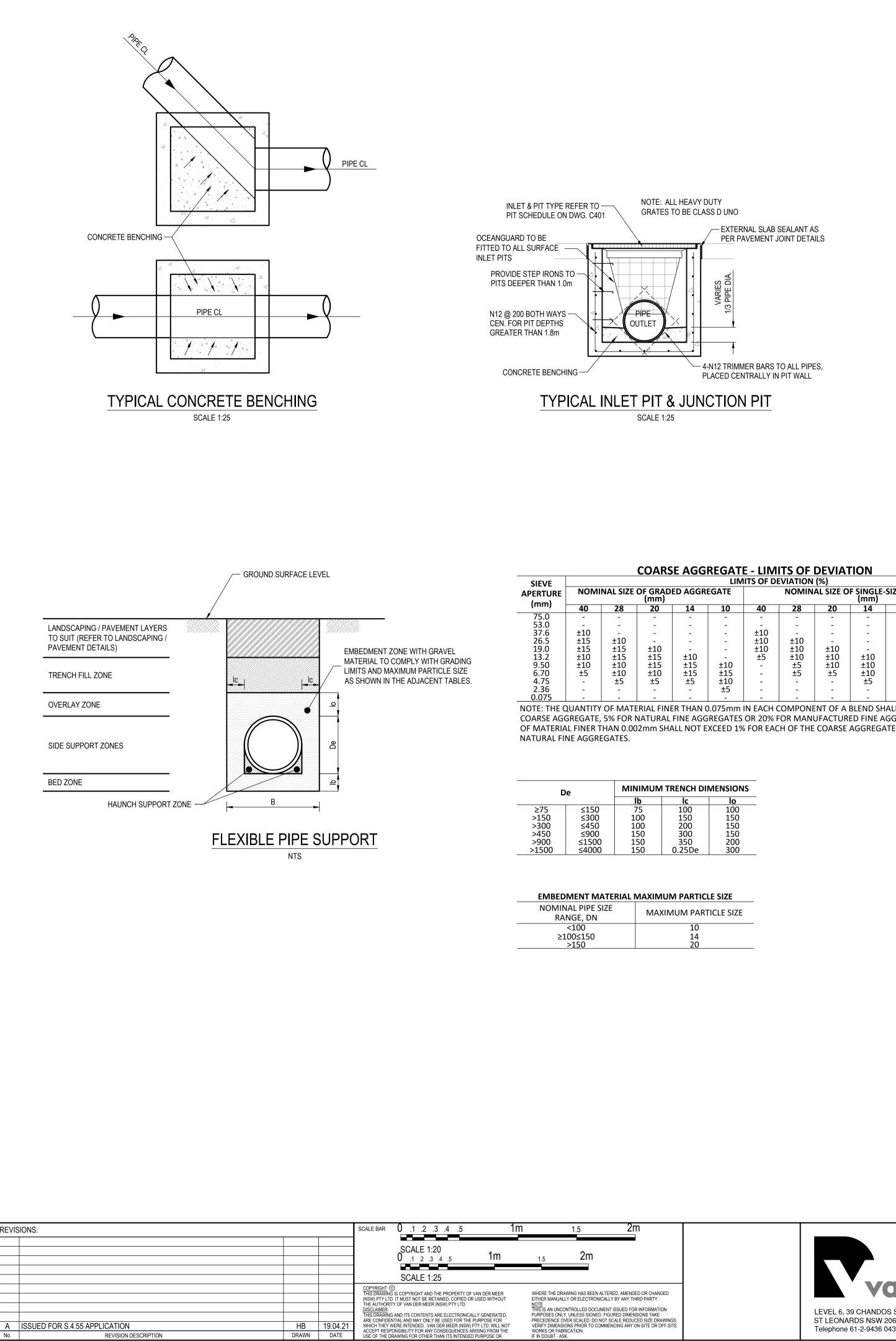


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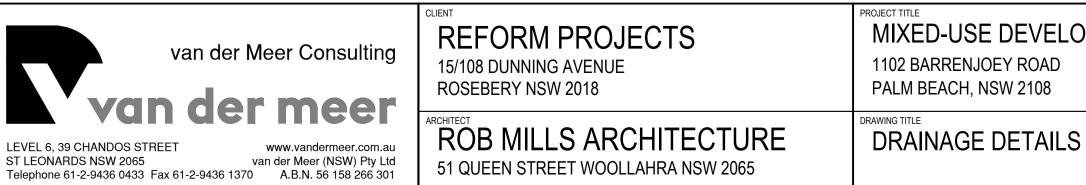
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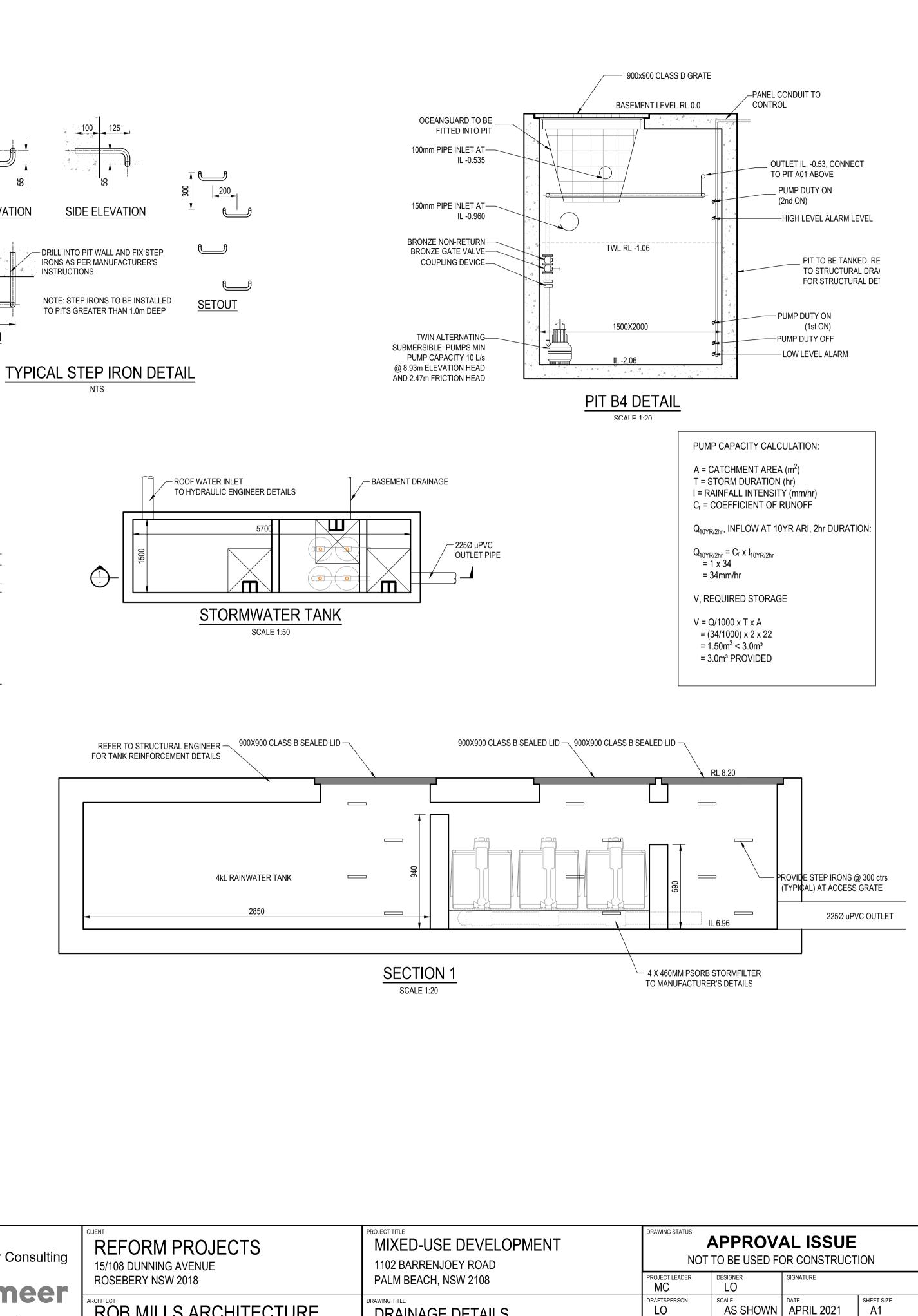
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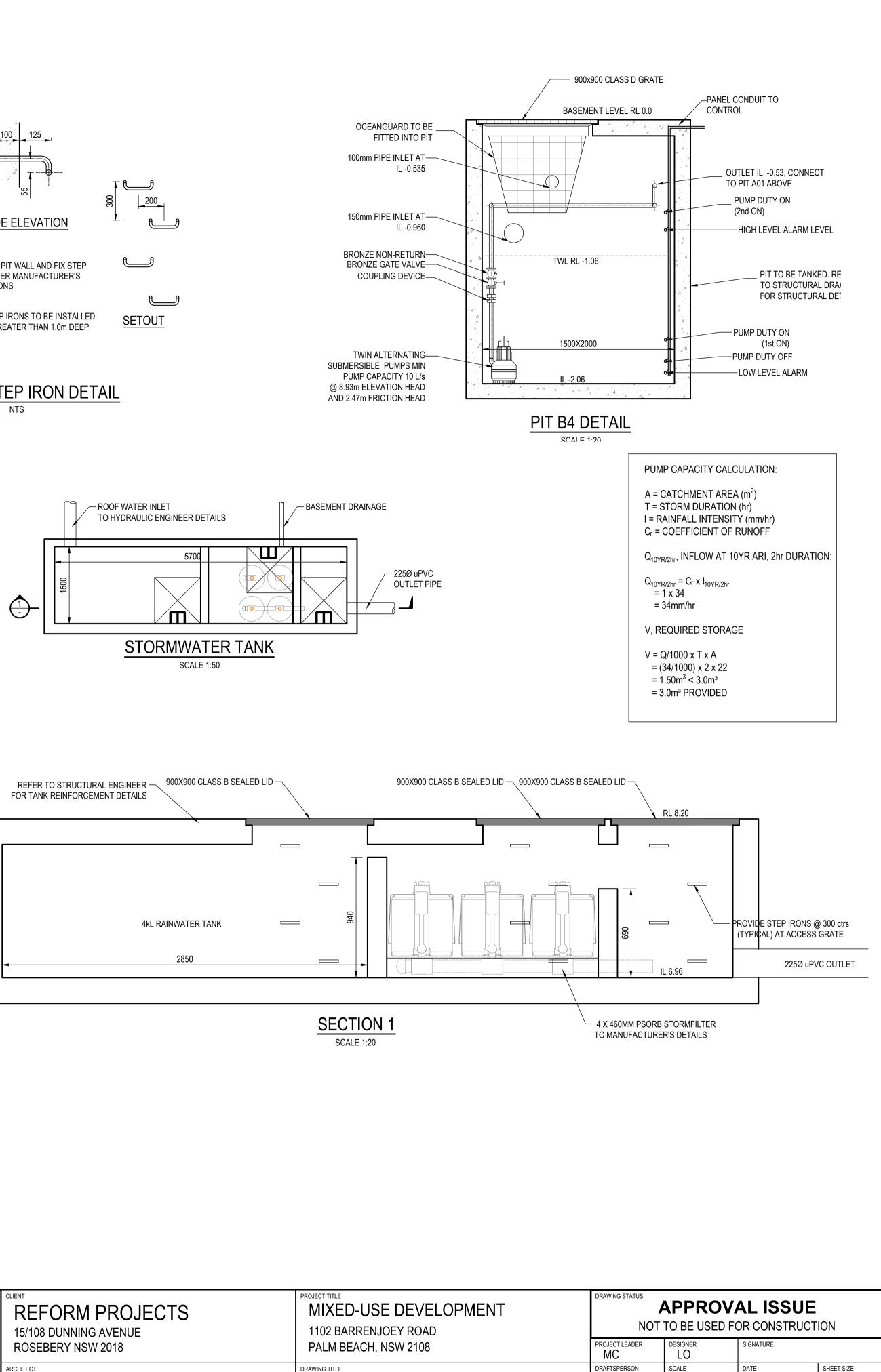
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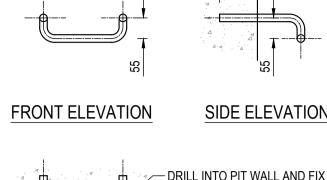
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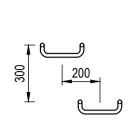
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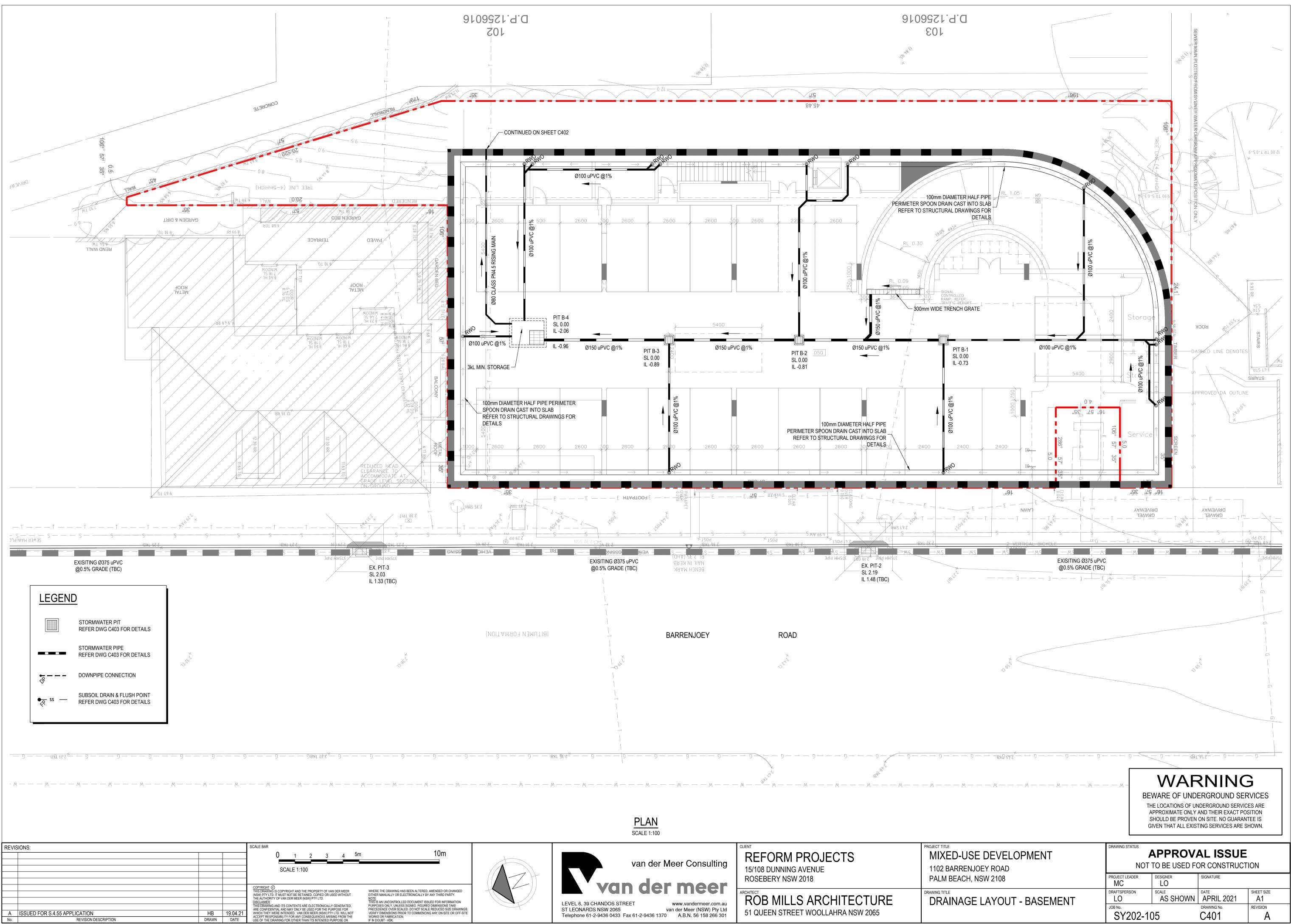
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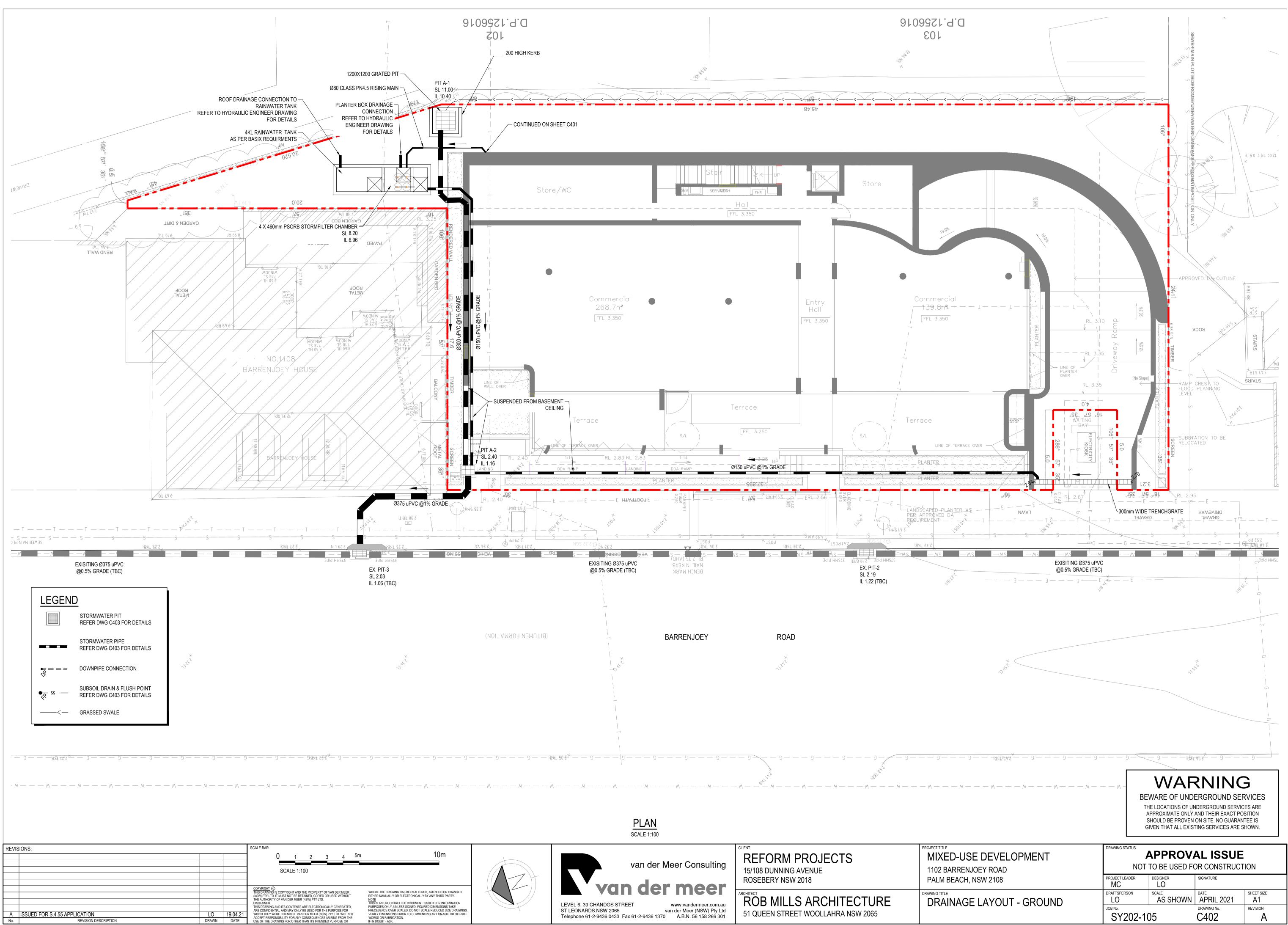


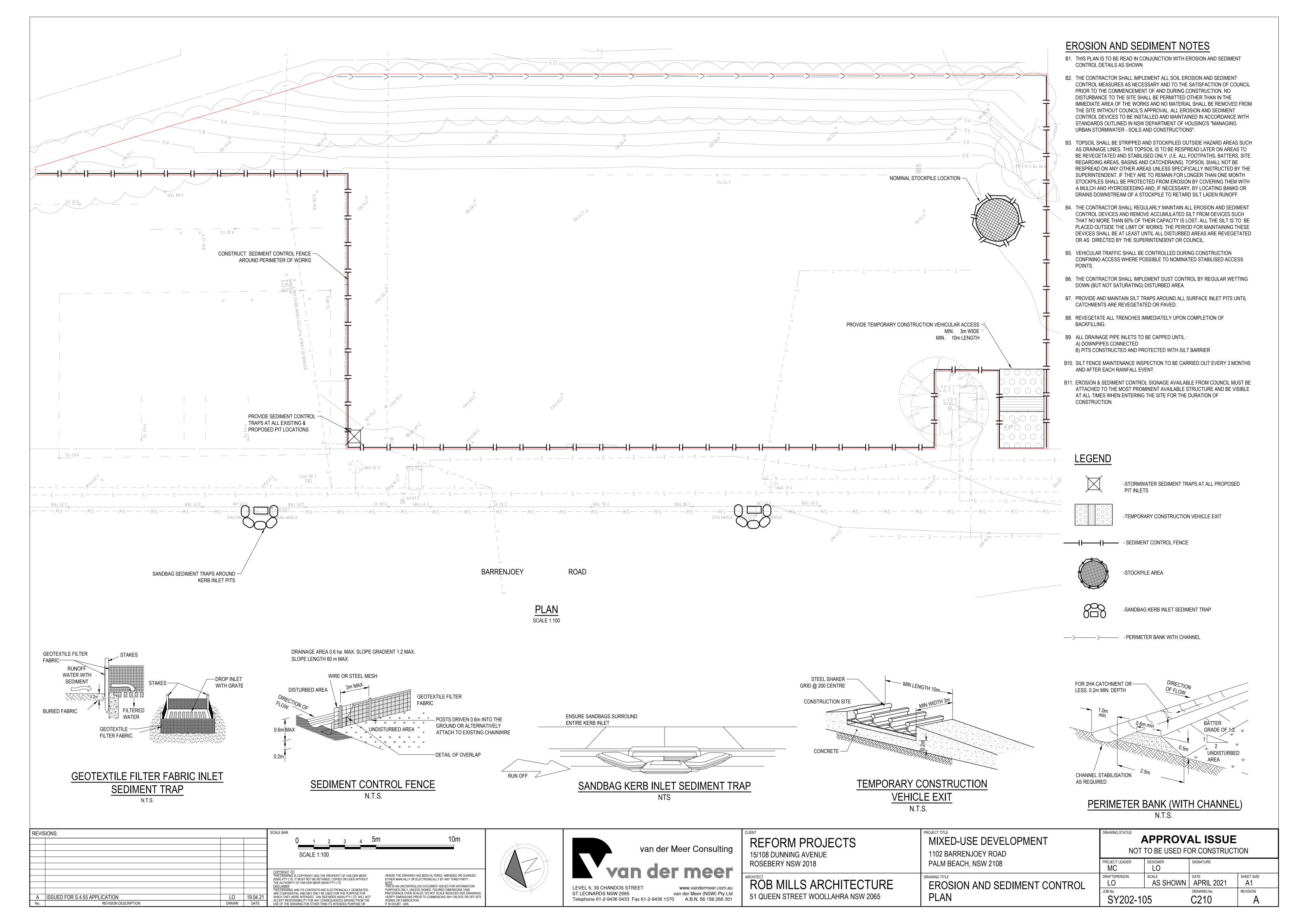
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PLAN











Appendix 16 – On-site Detention Checklist

This checklist is to be used to determine the on-site stormwater disposal requirement for developments and must be completed and included with the submission of any development application for these works. Please read this form carefully for its notes, guidelines, definition and relevant policies.

For assistance and support, please contact Council's Development Engineering and Certification team on 1300 434 434.

Part 1 Location of the Property					
House Humber 1102 Legal Property Description					
Street	Barrenjoey Road	Lot	11		
Suburb	Palm Beach	Section	null		
Postcode	Postcode 2108 DP 1207743				

Part 2 Site Details

Northern Beaches Stormwater Regions (refer to Map 2 of Northern Beaches Council's Water Management for Development policy)	1	Total Site Area	1158m2
Pre-Development Impervious Area	807m2 /		
Is the site of the development located with referred to Council's Local Environmental	Yes 🗹 No 🗆		
If yes, On-site stormwater Detention syste to part 5 of this checklist If no, please proceed to part 3 of this chec			

Part 3: Northern Beaches Stormwater Regions

(refer to Map 2 of Northern Beaches Council's Water Management for Development policy)

If the site of the development located within Region 1, please proceed to the part 4.1 of this checklist

If the site of the development located within Region 2, please proceed to the part 4.2 of this checklist

If the site of the development located within Region 3, please proceed to the part 4.3 of this checklist

If the site of the development located within Region 4, please refer to Council's Warriewood Valley Water Management Specification.



Part 4 Determination of OSD Requirements

Part 4.1 Northern Beaches Stormwater Region 1 Is the additional impervious area of the development more than 50 m² on a Yes □ No □ cumulative basis since February 1996? If yes, OSD is required and please refer to section 9.3.1 of Council's Water-Management for Development Policy If no, OSD is not required and please proceed to the part 5 of this checklist Part 4.2 Northern Beaches Stormwater Region 2 Part 4.2.1 Description of Work Residential Nat building, commercial, industrial, multiple occupancy development and subdivisions resulting in the creation of three lots or more, will require OSD in all case. Please provide a design in accordance with the section 9.3.2 of Council's Water Management for Development Policy. Any single residential suilding development, please proceed to part 4.2.2 of this precklist. Part 4.2.2 Exemption Is the site area less than 450m²? Yes 🗆 No 🗆 Does the site of the development drain directly to the ocean without the need Yes 🗆 No 🗆 to pass through a drainage control structure such as pipe, bridge, culvert, kerb and gutter or natural drainage system? Yes □ No □ Is it an alternation and addition development to the existing dwellings? If yes to any of the above questions, OSD is not required. If no to all the above questions, proceed to part 4.2.3 Part 4.2.3 Determination of OSD Requirements Calculation m² a) Site area m² x 0.40 (40%) = b) Post- development impervious area = m² OSD will not be required when (a) is greater than (b) No 🗆 Is OSD required for this development (tick one only) Yes 🗋 If yes, provide a design in accordance with the section 9.3.2 of Council's Water Management for Development Policy. If no, OSD is not required and please proceed to part 5 of this checklist.



Part 4.3 Northern Beaches Stormwater Region 3

Part 4,3.1 Stormwater Zone

In the region, the method of stormwater control to be applied shall depend on the location of the site. Please refer to Map 3 of Northern Beaches Council's Water Management for Development policy.

If the site of the development located within stormwater zone 1, please proceed to the part 4.3.2 of this checklist

If the site of the development located within stormwater zone 2, please provide a design in accordance with the section 9.3.3.3 of Council's Water Management for Development Policy.

If the site of the developmen Nocated within stormwater zone 3, please provide a design in accordance with the section 9.3.3.4 of Council's Water Management for Development Policy.

If the site of the development located within stormwater zone 4, please provide a design in accordance with the section 9.3.3.5 of Council's Water Management for Development Policy.

Part 4.3.2 Determination of OSD requirements in Stormwater Zone 1

Part 4.3.2.1 For A New Building						
1) Exemption	a) Is the site area less than 400? Yes □ No □ b) Is the post-development impervious area less than 190 m²? Yes □ No □ Yes □ No □					
	If yes to both questions, OSD is not required. If no to any of the above questions, please process to calculation					
2) Calculation	Calculation a) Site aream ² x 0.35 =m ² + 50 =m ² b) Post- development impervious aream ²					
	OSD will not be required when (b) is less than 250 m ² and (a) is greater than (b) Is OSD required for this development? Yes \Box No \Box If yes, provide a design in accordance with the section 9.3.3.2 of Council's Water Management for Development Policy. If no, OSD is not required and please proceed to part 5.					
Part 4.3.2.2 For A	Part 4.3.2.2 For Alterations and Additions					
	If the current impervious area of the site is more than 60% of the site area, OSD will be required. Alternatively, please proceed to the next calculation section.					
1) Calculation	tion Is the post development impervious area increased by less than 50 m ² ? Yes \Box No \Box Is the post development impervious area less than 60% of the site area? Yes \Box No \Box					
	If yes to both questions, OSD is not required. If no to any of the above questions, provide a design in accordance with section 9.3.3.2 of Council's Water Management for Development Policy					



1

Part 5 Disposal of Stormwater		
Does the site fall naturally towards the street?	Yes 🗹 No 🗆	
If yes, provide a design in accordance with section 5.1 of Co Policy. If no, provide a design in accordance with section 5.5 of Cou Policy.		

Definitions	
Designed to help you fill out this application	Site area: This refers to the area of the land bounded by its existing or proposed boundaries. Impervious area: This refers to driveways, parking spaces, pathways, paved areas, hardstand areas, roofed areas, garages and outbuildings. Pre Development Impervious area: This refers all impervious areas of the site before the development. Post Development Impervious areas: This refers all the impervious areas within the site after the development is completed.

GENERAL NOTES

- G1. ALL LEVELS SHALL BE OBTAINED FROM ESTABLISHED BMS OR SSM.
- G2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
- G3. ALL WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH COUNCIL'S SPECIFICATIONS AND THE DIRECTIONS OF THE SUPERINTENDENT.
- G4. DIMENSIONS MUST NOT BE SCALED FROM DRAWINGS.
- G5. CONTRACTOR TO ENSURE THAT ALL ROADWORKS ARE SMOOTHLY TRANSITIONED TO EXISTING LEVELS FREE FROM ABRUPT CHANGES
- G6. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR. FURTHER, THE LOCATION OF RECOVERY MARKS SHOULD BE VERIFIED AND CONFIRMED BY THE CONTRACTOR AND ANY DISCREPANCIES SHOULD BE CLARIFIED IN WRITING WITH THE SUPERINTENDENT PRIOR TO THE COMMENCEMENT OF WORK.
- G7. AT COMPLETION OF WORKS ALL ADJOINING DISTURBED AREAS ARE TO BE REINSTATED TO THE "AS FOUND" CONDITION.
- G8. THE CONTRACTOR SHALL ENSURE ALL AREAS DRAIN WITH A MINIMUM FALL OF 1% (1:100) GRADE TO OUTLETS UNLESS INDICATED OTHERWISE. NO WORKS SHALL CAUSE PONDING OF STORMWATER ON UPSTREAM PROPERTIES OR CONCENTRATE RUNOFF ONTO DOWNSTREAM PROPERTIES.
- G9. THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED LANDSCAPE, ARCHITECTURAL, ELECTRICAL, RETICULATION, WATER & SEWER DRAWINGS AND SPECIFICATIONS AND OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED.
- G10. THE CONTRACTOR SHALL ENSURE THAT ALL PAVEMENTS GRADE EVENLY BETWEEN NOMINATED RL'S ON PLAN AND NO POND OF WATER OCCURS.
- G11. ALL DIMENSIONS ARE IN METERS UNLESS STATED OTHERWISE. ALL LEVELS ARE EXPRESSED IN METERS.
- G12. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURING NO PART SHALL BE OVERSTRESSED UNDER CONSTRUCTION ACTIVITIES.
- G13. WORKMANSHIP AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RELEVANT CURRENT S.A.A. CODES INCLUDING ALL AMENDMENTS, AND THE LOCAL STATUTORY AUTHORITIES, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- G14 THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE ENGINEER BUT IS NOT AN AUTHORIZATION FOR AN EXTRA. ANY EXTRAS INVOLVED MUST BE TAKEN UP WITH THE SUPERINTENDENT BEFORE THE WORK COMMENCES.
- G15 THE CONTRACTOR IS TO EMPLOY A QUALIFIED GEOTECHNICAL ENGINEER AS REQUIRED FOR ALL GEOTECHNICAL ASPECTS OF THE BUILDING WORKS. REFER TO FOUNDATION, GROUNDWORKS AND RETENTION/SHORING NOTES. REFER ALSO TO THE GEOTECHNICAL REPORT FOR THIS PROJECT.

SUBGRADE PREPARATION

- RW1. REMOVE ALL VEGETATION, TOPSOIL AND DELETERIOUS MATERIAL FROM AREA OF PROPOSED BUILDING PLATFORM AND PAVEMENTS.
- RW2. PROOF ROLL EXPOSED SUB GRADE TO ACHIEVE A MINIMUM COMPACTION OF 98% STANDARD MAXIMUM DRY DENSITY (SMDD), DETERMINED BY THE STANDARD COMPACTION TEST IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARD 1289.5.1.1.
- RW3. REMOVE ANY SOFT, HEAVING, WET OR UNSTABLE AREAS IDENTIFIED DURING PROOF ROLLING AND REPLACE USING SELECT IMPORTED FILL COMPACTED IN LAYERS NOT EXCEEDING 200mm MEASURED LOOSE TO ACHIEVE A MINIMUM 98% STANDARD MAXIMUM DRY DENSITY.
- RW4. NOTE THAT THE SITE IS UNDERLAIN BY EXISTING SERVICES AND COMPACTION UTILISING VIBRATION MAY NOT BE SUITABLE IN THE VICINITY OF UNDERGROUND SERVICES.
- RW5. ANY FILL REQUIRED TO RAISE LEVELS TO BULK EARTHWORKS TO WITHIN 50mm OF NOMINATED LEVELS IS TO BE APPROVED GRANULAR MATERIAL COMPACTED IN LAYERS NOT EXCEEDING 300mm MEASURED LOOSE TO 98% STANDARD MAXIMUM DRY DENSITY WITHIN 2% OF STANDARD OPTIMUM MOISTURE CONTENT (SOMC).
- RW6. THE CONTRACTOR IS TO PROVIDE CERTIFICATION TO THE EFFECT THAT EARTHWORKS COMPACTION TO 98% STANDARD MAXIMUM DRY DENSITY, (AS 1289 E1.1, E4.1) HAS BEEN ACHIEVED, UNLESS OTHERWISE AGREED IN WRITING BY SITE SUPERINTENDENT.
- RW7. THE CONTRACTOR IS TO PROVIDE TO THE SITE SUPERINTENDENT A SURVEY CONFIRMATION FROM A REGISTERED SURVEYOR. CONFIRMING BULK EARTHWORKS LEVELS AS WITHIN +/-50mm OF LEVELS NOMINATED.
- RW8. SUBGRADE REPLACEMENT MATERIAL IS TO CONSIST OF CLEAN, UNCONTAMINATED, WELL-GRADED MATERIAL WITH A MAXIMUM PARTICLE SIZE OF 75mm, WITH 80% LESS THAN 20mm, AND A SOAKED C.B.R. GREATER THAN 10% AND A PLASTICITY INDEX LESS THAN 12.
- RW9. BACK FILLING FOR SERVICE TRENCHES AND REMOVED SERVICES OR PITS OR FOUNDATIONS IS TO USE APPROVED WELL-GRADED GRANULAR MATERIAL WITH MINIMUM VOIDS, (EITHER SELECT INSITU OR IMPORTED FILL), COMPACTION AS SPECIFIED ABOVE.
- RW10. ALL EARTHWORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AS3798-1996: **GUIDELINES ON EARTHWORKS FOR COMMERCIAL & RESIDENTIAL** DEVELOPMENTS.

GENERAL EARTHWORKS

- E1. THE SITE OF THE WORKS SHALL BE PREPARED BY STRIPPING ALL EXISTING TOPSOIL, FILL AND VEGETATION.
- E2. COMPACT SUBGRADE TO 98% OF THE STANDARD MAXIMUM DRY DENSITY WHEN TESTED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS 1289 TESTS E.1.1. OR E.1.2. THE EXPOSED SUBGRADE SHOULD BE PROOF ROLLED TO DETECT ANY SOFT OR WET AREAS WHICH SHOULD BE LOCALLY EXCAVATED AND BACK FILLED WITH SELECTED MATERIAL. THE BACK FILLING MATERIAL SHALL BE IMPORTED GRANULAR FILL OF LOW PLASTICITY, PREFERABLY CRUSHED SANDSTONE, AND TO BE PLACED IN LAYERS NOT EXCEEDING 300mm LOOSE THICKNESS AND COMPACTED TO 98% OF STANDARD MAXIMUM DRY DENSITY WITHIN 2% OF STANDARD OPTIMUM MOISTURE CONTENT. SITE WORKS ARE TO BE BATTERED TO ADJACENT PROPERTY LEVELS.
- E3. NO STORMWATER IS TO POND ON ADJOINING PROPERTIES. THE SITE SHALL BE GRADED AND DRAINED SO THAT STORMWATER WILL BE DIRECTED AWAY FROM THE BUILDING PLATFORM. STORMWATER DRAINAGE SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION. ALL STORMWATER RUNOFF SHALL BE GRADED AWAY FROM THE DWELLING AND DISPOSED OF VIA SURFACE CATCHDRAINS AND STORMWATER COLLECTION PITS.
- E4. ENSURE ALL RETAINING WALLS ARE CONSTRUCTED WITH ADEQUATE SUBSOIL DRAINAGE.

GROUND WORKS & EXCAVATION

- GW1. ALL GROUND WORKS & EXCAVATION SHALL BE IN ACCORDANCE WITH GEOTECHNICAL REPORT.
- GW2. SEPARATE AND REMOVE ALL TOPSOIL, NON SOIL MATERIAL, CONCRETE, VEGETATION, BRICKBATS, TIMBER, ROOT AFFECTED SOIL AND EXISTING FILL. STORE TOPSOIL IF REQUIRED.
- GW3. ALL EXCAVATIONS SHALL BE FINISHED CLEAN AND HORIZONTAL AND SHALL NOT UNDERMINE FOOTINGS. WALLS etc...
- GW4. PROOF ROLL WITH AN 8 TONNE ROLLER, REPLACE ANY SOFT MATERIAL WITH APPROVED FILL AND RE-COMPACT. GEOTECHNICAL ENGINEER TO APPROVE.
- GW5. THE FILL IS TO BE PLACED AND COMPACTED IN LAYERS OF MAXIMUM LOOSE THICKNESS 300mm
- GW6. TOP LAYER OF PAVED AREAS TO BE COMPACTED TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY. GEOTECHNICAL ENGINEER TO VERIFY.
- GW7. ALL PERMANENT EMBANKMENTS TO BE COMPACTED IN 200 mm LAYERS AS PER NOTE GW6 AND AT A MAXIMUM SLOPE OF 1 VERTICAL TO 2.5 HORIZONTAL UNLESS NOTED OTHERWISE. SHOULD DRAINAGE BE REQUIRED THEN SUBMIT DETAILS TO THE ENGINEER.
- GW8. ALL GROUND WORKS SHALL BE TESTED BY AN APPROVED GEOTECHNICAL ENGINEER TO A LEVEL 1 STANDARD IN ACCORDANCE WITH AS 3798 - 1996.
- GW9. ALL EXCAVATIONS TO BE INSPECTED AT REGULAR INTERVALS BY A GEOTECHNICAL ENGINEER.
- GW10. REFER TO ARCHITECTURAL DRAWINGS TO CONFIRM SETOUT OF BUILDINGS, CARPARKS ETC.
- GW11. THE LEVELS SHOWN ARE ONLY RELEVANT TO THE PLAN UPON WHICH THEY ARE SHOWN.
- GW12. ALL CONTOURS AND LEVELS USED TO PRODUCE EARTHWORK DETAILS HAVE BEEN BASED ON SURVEYOR AND ARCHITECTS SURVEY INFORMATION.
- GW13. ALL FINISHED FLOOR LEVELS ARE TO BE CONFIRMED BY ARCHITECT.
- GW14. ALL EXISTING SERVICES ARE TO BE CAPPED OFF PRIOR TO ANY WORKS.
- GW15. A PRE-CONSTRUCTION MEETING SHALL BE HELD BETWEEN THE CONTRACTOR, THE GEOTECHNICAL ENGINEER, AND THE EARTHWORKS CONTRACTOR TO UNDERSTAND POTENTIAL DIFFICULTIES AND TO ORGANISE TESTING PROCEDURES. THE CONTRACTOR SHALL CONFIRM TO THE ENGINEER THAT THE MEETING HAS BEEN HELD.

DRAINAGE NOTES

- D1. PIT LEVELS SHOWN ON STORMWATER DRAINAGE PLANS ARE FOR INFORMATION. EXACT PIT LEVELS TO BE ADJUSTED TO SUIT FALLS IN PAVEMENT/LANDSCAPED AREA.
- D2. PITS GREATER THAN 1.2m DEEP TO BE FITTED WITH STEP IRONS.
- D3. DRAINAGE PIPES SHALL BE BACKFILLED WITH COMPACTED CLEAN SHARP SAND TO 200 ABOVE PIPE OBVERT. ADDITIONAL BACKFILL UNDER ROADS SHALL CONSIST OF CLASS 2 F.C.R. MATERIAL COMPACTED IN 200mm LAYERS TO 98% SMDD. UNDER LANDSCAPED AREAS ADDITIONAL BACKFILL SHALL CONSIST OF GRANULAR MATERIAL COMPACTED IN 200mm LAYERS TO 95% SMDD. A 3m LENGTH OF 100 Ø SLOTTED AGRICULTURAL LINE SURROUNDED BY GEOTECH STOCKING SHALL BE PROVIDED ON THE UPSTREAM SIDE OF ALL PITS.
- D4. CONCRETE STORMWATER PIPES TO BE CLASS '3' UNDER ROADS AND CLASS '2' IN NON-TRAFFICED AREAS. ALL PIPES GREATER THAN 300Ø ARE TO BE RUBBER RING JOINTS U.N.O. UPVC PIPE TO BE CLASS SN8 UNO.
- D5. CONCRETE PITS GREATER THAN 1.0m DEEP TO BE REINFORCED WITH N12-200 EACH WAY CENTRED, MIN. 300 LAP, CONCRETE - F'c 25MPa
- D6. 150Ø, 225Ø & 300Ø uPVC PIPES TO BE SEWER GRADE PIPE UNDER TRAFFICABLE PAVEMENT. MIN. 400 COVER UNDER NON-TRAFFICABLE PAVEMENT.
- D7. PIT COVERS & GRATED DRAINS IN TRAFFICABLE PAVEMENT TO BE AS 3996 CLASS D "HEAVY DUTY" & IN NON-TRAFFICABLE AREAS TO BE AS 3996 CLASS C "LIGHT DUTY".
- D8. GPT UNITS TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- D9. MAINTENANCE OF GPT UNITS TO BE INCORPORATED IN THE BUILDING ENVIRONMENTAL MANAGEMENT PLAN & MUST BE SUPPLEMENTED WITH A REGULAR ROAD SWEEPING PROGRAM.

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UTILITY SERVICES

 S1. CONDUITS TO BE PROVIDED FOR WATER AND ENERGY AUTHORITIES. TELSTRA AND OTHER SERVICES AS REQUIRED.

S2. THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THESE DRAWING'S HAVE BEEN PLOTTED FROM SURVEY AND 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.

- S3 VAN DER MEER CANNOT GUARANTEE THAT 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 ARISING FROM ANY CAUSE WHATSOEVER.
- S4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- S5. CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ON SITE INCLUDING HAND EXCAVATION WHERE NECESSARY.
- S6. CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION OR FUTURE WORKS.
- S7. 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.
- TELSTRA DUTY OF CARE NOTE

TELSTRA'S PLANS SHOW ONLY THE PRESENCE OF CABLES AND PLANT. THEY ONLY SHOW THEIR POSITION RELATIVE TO ROAD BOUNDARIES, PROPERTY FENCES ETC. AT THE TIME OF INSTALLATION AND TELSTRA DOES NOT WARRANT OR UPHOLD THAT SUCH PLANS ARE ACCURATE THEREAFTER DUE TO CHANGES THAT MAY OCCUR OVER TIME. DO NOT ASSUME DEPTH OR ALIGNMENT OF CABLES OR PLANT AS THESE VARY SIGNIFICANTLY.

THE CONTRACTOR HAS A DUTY OF CARE WHEN EXCAVATING NEAR TELSTRA CABLES AND PLANT. BEFORE USING MACHINE EXCAVATORS TELSTRA PLANT MUST FIRST BE PHYSICALLY EXPOSED BY SOFT DIG POT HOLING TO IDENTIFY IT'S LOCATION. TELSTRA WILL SEEK COMPENSATION FOR DAMAGES CAUSED TO IT'S PROPERTY AND LOSSES CAUSED TO TELSTRA AND IT'S CUSTOMERS.

ELECTRICAL & GAS NETWORK: A MINIMUM OF 30 DAYS PRIOR TO COMMENCEMENT OF EXCAVATION WORKS THE SUBCONTRACTOR MUST CONTACT DIAL BEFORE YOU DIG.

- **RETAINING WALL GENERAL**
- GR1. BASE MATERIAL SHALL BE COMPACTED TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY (SMDD) WITHIN 2% OF STANDARD OPTIMUM MOISTURE CONTENT (SMOC) DETERMINED BY THE STANDARD COMPACTION TEST IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARD 1289.5.1.1. MINIMUM ALLOWABLE BEARING PRESSURE OF 150 kPa. GEOTECHNICAL ENGINEER EMPLOYED BY CONTRACTOR TO INSPECT AND CONFIRM.
- GR2. DRAINAGE MATERIAL WITHIN AND IMMEDIATELY BEHIND THE WALL SHALL BE 12-20mm CLEAN AGGREGATE, DRAINAGE MATERIAL TO EXTEND A MINIMUM 300 mm BEHIND WALL. COMPACT DRAINAGE MATERIAL. ALTERNATIVELY, USE NO FINES CONCRETE, AS FOLLOWS:-
 - CONCRETE STRENGTH N15.
 - 210kg/m3 PORTLAND CEMENT MAXIMUM AGGREGATE SIZE 20 mm.
 - W/C RATIO 0.45 TO 0.55. DENSITY 1600 TO 2000 kg/m3.
- GR3. INFILL SOIL SHALL BE CLASS 1 CONTROLLED FILL TO AS4678, OR AS SPECIFIED ON THE DRAWINGS. UNSUITABLE SOILS, SUCH AS HEAVY CLAYS OR ORGANIC SOILS WITH HIGH PLASTICITY, SHALL NOT BE USED IN THE REINFORCED SOIL MASS.
- GR4. SPREAD BACKFILL IN UNIFORM LIFTS OF 200 mm UNCOMPACTED THICKNESS. COMPACT TO MINIMUM 95% OF SMDD. COMPACTION WITHIN 1.0 m BEHIND THE WALL SHALL BE ACCOMPLISHED BY USING A HAND-OPERATED PLATE COMPACTOR AND SHALL BEGIN BY RUNNING THE PLATE DIRECTLY ON THE BLOCK, THEN COMPACTING IN PARALLEL PATHS, PROGRESSIVELY AWAY FROM THE WALL FACE.
- GR5. WHERE ROADWAYS OR BUILDING STRUCTURES ARE LOCATED ABOVE THE REINFORCED ZONE, COMPACT TO 98% SMDD WITHIN 2% OF SOMC DETERMINED BY THE STANDARD COMPACTION TEST IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARD 1289.5.1.1. COMPACTION TESTING SHALL BE TAKEN AT 1.2 m BEHIND THE WALL.

PAVEMENT

- F1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS.
- F2. PAVEMENT MATERIAL SHALL CONSIST OF APPROVED OR RIPPED SANDSTONE. NATURAL GRAVEL OR FINE CRUSH ROCK AS PER COUNCIL SPECIFICATION.
- F3. PAVEMENT MATERIALS SHALL BE SPREAD IN LAYERS NOT EXCEEDING 150mm AND NOT LESS THEN 75mm COMPACTED THICKNESS. PAVEMENT MATERIALS SHALL BE SIZED AND OF A STANDARD OUTLINED IN AS1141.
- F4. CRUSHED OR RIPPED SANDSTONE SHALL BE MINUS 75mm NOMINAL SIZE DERIVED FROM SOUND. CLEAN SANDSTONE FREE FROM OVERBURDEN. CLAY SEAMS, SHALE AND OTHER DELETERIOUS MATERIAL.
- F5. PAVEMENT MATERIALS SHALL BE COMPACTED BY SUITABLE MEANS TO SATISFY THE FOLLOWING MINIMUM SPECIFICATIONS (AS PER AS1289.52)

DESCRIPTION	MODIFIED DENSITY RATIO
SUB-BASE	98% MDD
BASE COURSE	98% MDD
ASPHALTIC CONCRETE	97% MDD

AND SUBJECT TO COUNCIL'S CONSTRUCTION SPECIFICATION.

F6. TESTING FOR EACH LAYER SHALL BE UNDERTAKEN BY A N.A.T.A. REGISTERED LABORATORY IN ACCORDANCE WITH AS1289, AT NOT MORE THAN 50m INTERVALS AND A MINIMUM OF TWO PER LAYER. FURTHER FREQUENCY OF TESTING SHALL BE NO LESS THAN THAT REQUIRED BY AS3978-1996.

REINFORCED CONCRETE BLOCKWORK

M1. CONCRETE BLOCKS SHALL BE BORAL 'CORE FILL BLOCKS'. DOUBLE-U TYPE. OR SIMILAR APPROVED.

M2. MINIMUM DURABILITY REQUIREMENTS:		NTS:		
		SALT ΑΤΤΑCK	MORTAR	

LOCATION	SALT ATTACK RESISTANCE GRADE OF MASONRY UNIT	MORTAR CLASS	DURABILITY CLASS OF WALL TIES AND BUILT-IN COMPONENTS
INTERIOR MASONRY	GENERAL PURPOSE	M3	R3
EXTERIOR MASONRY ABOVE DAMP PROOF COURSE	GENERAL PURPOSE	M3	R3
BELOW DAMP PROOF COURSE OR IN CONTACT WITH GROUND	EXPOSURE	M4	R4

M3. MINIMUM STRENGTH REQUIREMENTS

ELEMENT	STRENGTH OF MASONRY UNIT	MORTAR CLASS #			
CONCRETE BLOCKWORK (REINF)	ťuc = 15 MPa	M3			
# UNLESS A HIGHER CLASSIFICATION IS REQUIRED FOR DURABILITY					

- (REFER NOTE M2). M4. LAY BOTTOM COURSE OF BLOCKS ON FULL MORTAR BED.
- ALL PERPENDS SHALL BE FILLED WITH MORTAR, EXCEPT WEEPHOLES. M5. ALL CORES SHALL BE GROUTED UNLESS NOTED OTHERWISE
- M6. GROUT FOR CORE FILLING SHALL BE IN ACCORDANCE WITH AS3600 WITH THE FOLLOWING PROPERTIES
 - STRENGTH GRADE S20 MAX. AGGREGATE SIZE 10mm
 - SLUMP 230mm ± 25mm MIN. CEMENT CONTENT 300 kg/m³
- M7. PROVIDE VERTICAL CONTROL JOINTS IN MASONRY WALLS AS

FOLLOWS.					
WALL TYPE	JOINT WIDTH	MAX JOINT SPACING			
CONCRETE BLOCKWORK (REINF)	15mm	12m			
AT CORNERS, CONTROL JOINTS SHALL BE WITHIN HALF THE SPECIFIED					

JOINTS SPACING FROM THE CORNER. JOINTS SHALL BE SEALED WITH AN APPROVED FLEXIBLE SEALANT. PROVIDE JOINTS TO MATCH JOINTS IN SUPPORTING SLABS.

M8. PROVIDE CLEANOUT OPENINGS AT THE BASE OF ALL REINFORCED CORES AND REMOVE ALL MORTAR PROTRUSIONS BEFORE GROUTING

ADDITIONAL CLEANOUT OPENINGS SHALL BE PROVIDED ABOVE EACH HORIZONTAL POUR BREAK.

- M9. MAXIMUM HEIGHT OF POUR FOR GROUTING SHALL NOT EXCEED 3.6m FOR 190 BLOCKWORK, AND 0.8m FOR 140 BLOCKWORK. STOP POUR 50mm BELOW TOP OF BLOCK TO PROVIDE KEY FOR SUBSEQUENT POUR.
- M10. GROUT SHALL BE THOROUGHLY COMPACTED IN THE CORES BY RODDING OR MECHANICAL VIBRATION.



REFORM PROJECTS 15/108 DUNNING AVENUE **ROSEBERY NSW 2018**

ROB MILLS ARCHITECTURE 51 QUEEN STREET WOOLLAHRA NSW 2065

MIXED-USE D 1102 BARRENJOEY PALM BEACH. NSW

DRAWING TITLE STANDARD N

CONCRETE

- C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 AND OTHER RELEVANT AUSTRALIAN STANDARDS.
- CONCRETE SHALL BE SUPPLIED BY AN APPROVED MANUFACTURER IN C2. ACCORDANCE WITH AS1379.

C3. CONCRETE SHALL HAVE THE FOLLOWING PARAMETERS:

ELEMENT	(mm)	AGGREGATE	(MPa)	OTHER REQ
EXTERNAL VEHICLE SLAB	+ 80	20	N32	(1)

- DENOTES SLUMP AT PLANT DENOTES MAXIMUM BASE SHRINKAGE STRAIN 600 x 10 ⁻⁶ AT 56 DAYS (TO AS 1012 PART 13)
- SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED C4. FINISHES.
- C5. BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE SLAB THICKNESS, IF ANY
- HOLES, CHASES OR EMBEDMENT ITEMS, INCLUDING PIPES AND CONDUITS C6. SHALL NOT BE PLACED IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- C7. CONDUITS, PIPES AND LIKE SHALL NOT BE PLACED WITHIN THE CONCRETE COVER, NOR DISPLACE THE REINFORCEMENT LAYERS.
- CONSTRUCTION JOINTS (CJ) SHALL BE PROPERLY FORMED AND USED ONLY C8. WHERE SHOWN OR SPECIFICALLY APPROVED BY THE ENGINEER. ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY SCABBLED.
- THE MAXIMUM HEIGHT OF POUR FOR CONCRETE ELEMENTS SHALL BE 3.0m C9. UNLESS METHOD OF PLACEMENT HAS BEEN APPROVED BY THE ENGINEER. COLUMNS SHALL NOT BE POURED WITH THE SLAB OVER.
- C10. CONCRETE SHALL BE THOROUGHLY COMPACTED IN THE FORMS BY MEANS OF MECHANICAL VIBRATION.
- C11. WHEN THE SHADE TEMPERATURE EXCEEDS 35°C, THE EXPOSED SURFACE OF CONCRETE SHALL BE SPRAYED WITH A FINE FILM OF APPROVED ALIPHATIC ALCOHOL DURING CONCRETE PLACEMENT AND FINISHING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ENSURING ADEQUATE SUPPLY OF ALIPHATIC ALCOHOL ON SITE BEFORE COMMENCING CONCRETE WORK.
- C12. CURING OF CONCRETE SHALL COMMENCE WITHIN 2 HOURS OF FINISHING OPERATIONS AND SHALL BE MAINTAINED FOR A MINIMUM OF 7 DAYS USING AN APPROVED PROPRIETARY CURING COMPOUND IN ACCORDANCE WITH AS 3799 AND COMPATIBLE WITH THE PROPOSED FINISH OR CONTINUOUS PONDING WITH POTABLE WATER. THE CONTRACTOR TO SUBMIT PROPOSED CURING PROCEDURE FOR APPROVAL OF THE ENGINEER.
- C13. ALL CONCRETE DELIVERED TO SITE SHALL BE SUBJECT TO PROJECT ASSESSMENT IN ACCORDANCE WITH AS 1379.
- C14. THE CONTRACTOR SHALL NOMINATE A CONCRETE DELIVERY SUPERVISOR WHO SHALL BE A SUITABLE EXPERIENCED PERSON FOR THE APPROVAL OF THE ENGINEER. TO MONITOR THE DELIVERY AND PLACING OF THE CONCRETE FOR EACH POUR ON THE PROJECT. IN ADDITION, THE MANUFACTURER SHALL SAMPLE AND TEST FOR DRYING SHRINKAGE EACH TYPE OF CONCRETE SUPPLIED, AT LEAST EVERY MONTH DURING THE COURSE OF THE PROJECT OR FOR EVERY 1000 CUBIC METRES PLACED. NATA TEST CERTIFICATES SHALL BE FORWARDED TO THE ENGINEER. THE RESULTS OF THESE TESTS SHALL ALSO BE KEPT ON SITE.
- C15. ALL CONCRETE ELEMENTS TO HAVE B2 EXPOSURE CLASSIFICATION.

C16. CONCRETE SAMPLES AND TESTS

ARRANGE FOR A NATA REGISTERED TESTING LABORATORY TO TAKE SAMPLES OF AND TEST CONCRETE FOR COMPRESSION, FLEXURAL TENSILE STRENGTH (SLABS ON GROUND ONLY) AND SLUMP.

COMPRESSION TEST SAMPLES SHALL CONSIST OF 3 STANDARD CYLINDERS (4 STANDARD CYLINDERS FOR POST-TENSIONED CONCRETE), TESTED FOR COMPRESSIVE STRENGTH AS FOLLOWS:

ONE (1) CYLINDER AT 3 DAYS FOR POST-TENSIONED CONCRETE ONLY. ONE (1) CYLINDER AT 7 DAYS. TWO (2) CYLINDERS AT 28 DAYS.

THE MINIMUM NUMBER OF DAILY SAMPLES SHALL BE AS FOLLOWS:

IN COLUMNS/WALLS: 1 SAMPLE PER TRUCK

ALL OTHER CONCRETE OF ANY ONE TYPE AS FOLLOWS:

I IRUCK PER	DAT	- I SAMPLE	
2 TO 5 TRUCH	(S PER DAY	- 2 SAMPLES	
6 TO 10 TRUC	KS PER DAY	- 3 SAMPLES	
10 TO 20 TRU	CKS PER DAY	- 4 SAMPLES	
FOR EACH AD	DITIONAL 10 TF	RUCKS PER DAY,	1 SAMPLE.
CI LIMD.			

¹ SAMPLE PER TRUCK AT TIME OF POURING.

EVELOPMENT ROAD	DRAWING STATUS APPROVAL ISSUE NOT TO BE USED FOR CONSTRUCTION				
2108	PROJECT LEADER	DESIGNER LO	SIGNATURE		
OTES	DRAFTSPERSON	SCALE	APRIL 2021	SHEET SIZE	
	JOB NO. SY202-1	05	DRAWING No.		

C17. REFER TO TYPICAL STRIPPING AND PROPPING DETAIL.