PROPOSED BUILDING 2

2 Bowman Rd, Moss Vale

CONCEPT STORMWATER / CIVIL WORKS

GENERAL NOTES

G1. THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL DRAWINGS AND SPECIFICATIONS AND OTHER WRITTEN INSTRUCTIONS THAT MAY BE ISSUED.
G2. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THE DRAWINGS. REFER ARCHITECTS DRAWINGS FOR ALL DIMENSIONS.
G3. REFER ANY DISCREPANCY TO THE ENGINEER/ARCHITECT.
G4. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE APPROPRIATE SAA SPECIFICATIONS OR CODE AND WITH THE REQUIREMENTS OF THE RELEVANT LOCAL AUTHORITY.
G5. THE ALIGNMENT AND LEVEL OF ALL SERVICES SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL CONFIRM THE POSITION AND LEVEL OF ALL SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED AT THE CONTRACTORS EXPENSE.
G6. NO WORKS ARE TO COMMENCE UNTIL THE REQUIRED TREE REMOVAL PERMITS HAVE BEEN GRANTED BY RELEVANT LOCAL AUTHORITY, AND THE APPROPRIATE NOTICE OF INTENTION TO COMMENCE GIVEN.
G7. ALL SERVICES, OR CONDUITS FOR SERVICING SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF PAVEMENT CONSTRUCTION.
G8. SUBSOIL DRAINAGE, COMPRISING 100 AGRICULTURE PIPE IN GEO-STOCKING TO BE PLACED AS SHOWN AND AS MAY BE DIRECTED BY THE SUPERINTENDENT. SUBSOIL DRAINAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.
G9. NO WORK IS PERMITTED WITHIN ADJOINING PROPERTIES WITHOUT WRITTEN PERMISSION FROM THE OWNERS OR RESPONSIBLE AUTHORITY.

DRAINAGE NOTES

D1. ALL DRAINAGE OUTLET LEVELS SHALL BE CONFIRMED ON SITE, PRIOR TO CONSTRUCTION COMMENCING.
D2. ALL PIPES WITHIN THE PROPERTY TO BE MIN. 100 DIA UPVC @ 1% MIN. GRADE, UNO.
D3. ALL PITS WITHIN THE PROPERTY ARE TO BE FITTED WITH "WELDLOK" OR APPROVED EQUIVALENT GRATES:
- LIGHT DUTY FOR LANDSCAPED AREAS
- HEAVY DUTY WHERE SUBJECTED TO VEHICULAR TRAFFIC
D4. PITS WITHIN THE PROPERTY MAY BE CONSTRUCTED AS:
1) PRECAST STORMWATER PITS
2) CAST INSITU MASS CONCRETE
3) CEMENT RENDERED 230mm BRICKWORK
SUBJECT TO THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.
D5. ENSURE ALL GRATES TO PITS ARE SET BELOW FINISHED SURFACE LEVEL WITHIN THE PROPERTY. TOP OF PIT RL'S ARE APPROXIMATE ONLY AND MAY BE VARIED SUBJECT TO APPROVAL OF THE ENGINEER. ALL INVERT LEVELS ARE TO BE ACHIEVED.
D6. ANY PIPES BENEATH RELEVANT LOCAL AUTHORITY ROAD TO BE RUBBER RING JOINTED RCP, UNO.
D7. ALL PITS IN ROADWAYS ARE TO BE FITTED WITH HEAVY DUTY GRATES WITH LOCKING BOLTS AND CONTINUOUS HINGE.
D8. PROVIDE STEP IRONS TO STORMWATER PITS GREATER THAN 1200 IN DEPTH.
D9. TRENCH BACK FILL IN ROADWAYS SHALL COMPRISE SHARP, CLEAN GRANULAR BACK FILL IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY SPECIFICATION TO NON-TRAFFICABLE AREAS TO BE COMPACTED BY RODDING AND TAMPING USING A FLAT PLATE VIBRATOR.
D10. WHERE A HIGH EARLY DISCHARGE (HED) PIT IS PROVIDED ALL PIPES ARE TO BE CONNECTED TO THE HED PIT, UNO.
D11. DOWN PIPES SHALL BE A MINIMUM OF DN100 SW GRADE UPVC OR 100X100 COLORBOND/ZINCALUME STEEL, UNO.
D12. COLORBOND OR ZINCALUME STEEL BOX GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150 DEEP.
D13. EAVES GUTTERS SHALL BE A MINIMUM OF 125 WIDE X 100 DEEP (OR OF EQUIVALENT AREA) COLORBOND OR ZINCALUME STEEL, UNO.
D14. SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM, UNO.

EARTHWORKS NOTES

E1. THE EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT.
E2. THE SITE OF THE WORKS SHALL BE PREPARED BY STRIPPING ALL EXISTING TOPSOIL, FILL AND VEGETATION.
E3. SUBGRADE SHALL BE COMPACTED UNTIL A DRY DENSITY HAS BEEN ACHIEVED OF NOT LESS THAN 100% OF THE STANDARD MAXIMUM DRY DENSITY WHEN TESTED IN ACCORDANCE WITH AS 1289 TESTS E 1.1. OR E 1.2.
E4. 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.
E5. THE BACK FILLING MATERIAL SHALL BE IMPORTED GRANULAR FILL OF LOW PLASTICITY, PREFERABLY CRUSHED SANDSTONE, OR AN APPROVED FILL MATERIAL COMPLYING WITH AN EPA RESOURCE RECOVERY ORDER AND TO BE PLACED IN LAYERS NOT EXCEEDING 150 LOOSE THICKNESS AND COMPACTED TO 98% OF STANDARD DRY DENSITY AT A MOISTURE CONTENT WITHIN 2% OF OPTIMUM.
E6. SITE WORKS ARE TO BE BATTERED TO ADJACENT PROPERTY LEVELS.
E7. STORMWATER MUST NOT BE CONCENTRATED ON TO AN ADJACENT PROPERTY.
E8. AT NO TIME DURING OR AFTER CONSTRUCTION IS STORMWATER TO BE PONDED ON ADJOINING PROPERTIES.
E9. THE SITE SHALL BE GRADED AND DRAINED SO THAT STORMWATER WILL BE DIRECTED AWAY FROM THE BUILDING PLATFORM.
E10. STORMWATER DRAINAGE SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION. ALL STORMWATER RUNOFF SHALL BE GRADED AWAY FROM THE SITE WORKS AND DISPOSED OF VIA SURFACE CATCHDRAINS AND STORMWATER COLLECTION PITS.
E11. ALL SURFACE CATCH DRAINS SHALL BE GRADED AT 1% (1 IN 100) MINIMUM. THE GROUND SHALL GRADE AWAY FROM ANY DWELLING AT 5% (1 IN 20) FOR THE FIRST METRE THEN AT 2.5% (1 IN 40).
E12. WHERE A CUT FILL PLATFORM IS USED THERE SHALL BE A MINIMUM BERM 1000 WIDE TO THE PERIMETER OF THE SITE WORKS WHICH SHALL BE SUPPORTED BY BATTERS OF 3:1 IN FILL.
E13. ANY VERTICAL OR NEAR VERTICAL PERMANENT EXCAVATION (CUT) DEEPER THAN 600 IN MATERIAL OTHER THAN ROCK SHALL BE ADEQUATELY RETAINED OR BATTERED AT A MINIMUM OF 3:1.
E14. WHERE BATTERS CANNOT BE PROVIDED TO SUPPORT THE CUT OR FILL, THEY SHALL BE ADEQUATELY RETAINED.
E15. RETAINING WALLS ARE TO BE CONSTRUCTED WITH ADEQUATE SUBSOIL DRAINAGE.

CONCRETE PAVEMENT

C1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS.
C2. PROVIDE JOINTING AT MINIMUM 6000 MAX. INTERVALS OR AS OTHERWISE SPECIFIED IN THE DRAWINGS.
C3. CONCRETE SHALL COMPRISE A MIN. COMPRESSIVE STRENGTH OF 32MPa AT 28 DAYS IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY SPECIFICATION, UNO.
C4. ANY SUB-BASE MATERIAL SHALL BE COMPACTED AS OUTLINED IN EARTHWORKS.
C5. CONCRETE KERB AND GUTTER SHALL COMPRISE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa, UNO.
C6. CONCRETE WORKS ARE TO BE CURED BY ONE OF THE FOLLOWING MEANS:
i) WETTING TWICE DAILY FOR THE FIRST THREE DAYS;
ii) USING AN APPROVED CURING COMPOUNDED FOR A MINIMUM OF 7 DAYS COMMENCING IMMEDIATELY AFTER POURING.

FLEXIBLE PAVEMENT NOTES

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 THE RELEVANT COUNCIL AUTHORITY SPECIFICATION.
F3. PAVEMENT MATERIALS SHALL BE SPREAD IN LAYERS NOT EXCEEDING 150 AND NOT LESS 75 COMPACTED THICKNESS.
F4. PAVEMENT MATERIALS SHALL BE SIZED AND OF A STANDARD OUTLINED IN AS1141.
F5. CRUSHED OR RIPPED SANDSTONE SHALL BE MINUS 75 NOMINAL SIZE DERIVED FROM SOUND, CLEAN SANDSTONE FREE FROM OVERBURDEN, CLAY SEAMS, SHALE AND OTHER DELETERIOUS MATERIAL.
F6. PAVEMENT MATERIALS SHALL BE COMPACTED BY SUITABLE MEANS TO SATISFY THE FOLLOWING MINIMUM SPECIFICATIONS (AS PER AS1289.2)

DESCRIPTION	MEDIUM DENSITY RATIO
SUB-BASE	98% MOD
BASE COURSE	98% MOD
ASPHALTIC CONCRETE	97% MOD

AND SUBJECT TO THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.

F7. 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.

PAVED AREAS NOTES

A1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS.
A2. ALL PAVERS ARE TO BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
A3. TRAFFICABLE AREAS:
SUB-BASE TO BE 150 COMPACTED THICKNESS DGS75.
SUB-BASE TO BE SUITABLY COMPACTED TO MEDIUM DENSITY 98% MOD.
SUB-BASE TO EXTEND AT LEAST 200 BEYOND PAVED SURFACE.
PAVERS TO BE 80 THICK INTERLOCKING PAVERS ON 50 SAND BEDDING.
A4. NON TRAFFICABLE AREAS:
SUB BASE AS PER TRAFFICABLE AREAS
PAVERS TO BE 60 INTERLOCKING PAVERS ON 50 SAND BEDDING (UNO).

EROSION AND SEDIMENT NOTES

B1. THIS PLAN TO BE READ IN CONJUNCTION WITH EROSION AND SEDIMENT CONTROL DETAILS AS ATTACHED.
B2. THE CONTRACTOR SHALL IMPLEMENT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY AND TO THE SATISFACTION OF THE RELEVANT LOCAL AUTHORITY PRIOR TO THE COMMENCEMENT OF AND DURING CONSTRUCTION. NO DISTURBANCE TO THE SITE SHALL BE PERMITTED OTHER THAN IN THE IMMEDIATE AREA OF THE WORKS AND NO MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT THE RELEVANT LOCAL AUTHORITY APPROVAL. ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH STANDARDS OUTLINED IN NSW DEPARTMENT OF HOUSING'S "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTIONS".
B3. TOPSOIL SHALL BE STRIPPED AND STOCKPILED OUTSIDE HAZARD AREAS SUCH AS DRAINAGE LINES. THIS TOPSOIL SHALL BE RESPREAD LATER ON AREAS TO BE REVEGETATED AND STABILISED ONLY, (I.E. ALL FOOTPATHS, BATTERS, SITE REGARDING AREAS, BASINS AND CATCHDRAINS). TOPSOIL SHALL NOT BE RESPREAD ON ANY OTHER AREAS UNLESS SPECIFICALLY INSTRUCTED BY THE SUPERINTENDENT. IF THEY ARE TO REMAIN FOR LONGER THAN ONE MONTH STOCKPILES SHALL BE PROTECTED FROM EROSION BY COVERING THEM WITH A MULCH AND HYDROSEEDING AND, IF NECESSARY, BY LOCATING BANKS OR DRAINS DOWNSTREAM OF A STOCKPILE TO RETARD SILT LADEN RUNOFF.
B4. THE CONTRACTOR SHALL REGULARLY MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES AND REMOVE ACCUMULATED SILT FROM SUCH DEVICES SUCH THAT MORE THAN 60% OF THEIR CAPACITY IS LOST. ALL THE SILT IS TO BE PLACED OUTSIDE THE LIMIT OF WORKS. THE PERIOD FOR MAINTAINING THESE DEVICES SHALL BE AT LEAST UNTIL ALL DISTURBED AREAS ARE REVEGETATED AND FURTHER AS MAY BE DIRECTED BY THE SUPERINTENDENT OR COUNCIL.
B5. LAY TURF STRIP (MIN 300 WIDE) ON 100 TOPSOIL BEHIND ALL KERB WITH 1000 LONG RETURNS EVERY 6000 AND AROUND STRUCTURES IMMEDIATELY AFTER BACKFILLING AS PER THE RELEVANT LOCAL AUTHORITY SPECIFICATION.
B6. THE CONTRACTOR SHALL GRASS SEED ALL DISTURBED AREAS WITH AN APPROVED MIX AS SOON AS PRACTICABLE AFTER COMPLETION OF EARTHWORKS AND REGRADING.
B7. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING CONSTRUCTION CONFINING ACCESS WHERE POSSIBLE TO NOMINATED STABILISED ACCESS POINTS.
B8. WHEN ANY DEVICES ARE TO BE HANDED OVER TO COUNCIL THEY SHALL BE IN CLEAN AND STABLE CONDITION.
B9. THE CONTRACTOR SHALL IMPLEMENT DUST CONTROL BY REGULAR WETTING DOWN (BUT NOT SATURATING) DISTURBED AREA.
B10. PROVIDE AND MAINTAIN SILT TRAPS AROUND ALL SURFACE INLET PITS UNTIL CATCHMENT IS REVEGETATED OR PAVED.
B11. REVEGETATE ALL TRENCHES IMMEDIATELY UPON COMPLETION OF BACKFILLING.
B12. ALL DRAINAGE PIPE INLETS TO BE CAPPED UNTIL:
- DOWNPIPES CONNECTED
- PITS CONSTRUCTED AND PROTECTED WITH SILT BARRIER

CONCRETE STRUCTURES NOTES

S1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
S2. CONCRETE COMPONENTS AND QUALITY SHALL BE AS FOLLOWS, UNO:

ELEMENT	SLUMP mm	MAX. SIZE AGG. mm	CEMENT TYPE	f'c AT 28 DAYS - MPa	ADMIXTURE
FOOTINGS	80	20	A	25	-
PIERS & CAPS	80	20	A	25	-
SLABS ON GROUND	80	20	A	32	-
SUSPENDED SLABS	80	20	A	32	-
PITS	80	20	A	25	-

S3. MINIMUM CLEAR CONCRETE COVER TO REINFORCEMENT INCLUDING TIES AND STIRRUPS SHALL BE AS FOLLOWS UNO.

EXPOSURE CLASSIFICATION	MINIMUM COVER (mm)				
	CONCRETE STRENGTH (f'c)				
	20 MPa	25 MPa	32 MPa	40 MPa	>50 MPa
A1	20	20	20	20	20
A2	(50)	30	25	20	20
B1	-	(60)	40	30	25
B2	-	-	(65)	45	35
C	-	-	-	(70)	50

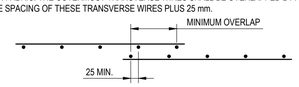
FOR BRACKETED FIGURES REFER TO AS 3600 CURRENT EDITION TABLE 4.10.3.2

S4. MINIMUM COVER FOR FIRE RESISTANCE LEVEL (FRL) SHALL BE AS FOLLOWS;

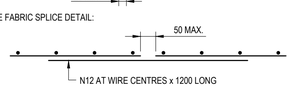
MINIMUM ELEMENT WIDTH OR THICKNESS / MIN COVER (mm)				
FRL	BEAM	SLAB	COLUMN	WALL
60	125 / 30	80 / 20	200 / 20	80 / 20
90	150 / 45	100 / 25	250 / 35	100 / 35
120	200 / 55	120 / 30	300 / 45	120 / 40
180	240 / 70	150 / 45	400 / 60	150 / 45
240	270 / 80	170 / 55	450 / 70	170 / 50

NOTE : 1. REFER TO AS 3600 CURRENT EDITION FOR REDUCED COVERS IF GREATER ELEMENT THICKNESSES ARE ADOPTED FOR BEAMS & COLUMNS.
2. COVER IS MEASURED TO THE MAIN REINFORCEMENT

S5. COVER TO REINFORCEMENT SHALL BE OBTAINED BY THE USE OF APPROVED BAR CHAIRS. ALL CHAIRS SHALL BE SPACED AT 1000 CTS MAXIMUM.
S6. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED. VIBRATORS SHALL NOT BE USED TO SPREAD CONCRETE.
S7. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
S8. NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
S9. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO APPROVAL OF THE ENGINEER. ALL CONSTRUCTION JOINTS SHALL BE SCABBLED OVER THE WHOLE FACE AND ANY UNSOUND MATERIAL REMOVED.
S10. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY; IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
S11. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN OR AS APPROVED BY THE ENGINEER. WHERE THE LAP LENGTH IS NOT SHOWN IT SHALL BE SUFFICIENT TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT AS SPECIFIED IN AS3600. COGS AND HOOKS SHALL BE STANDARD UNLESS SHOWN OTHERWISE.
S12. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER.
S13. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER.
S14. REINFORCEMENT SYMBOLS:
N - DENOTES DEFORMED GRADE 500 NORMAL DUCTILITY REINFORCING BARS TO AS/NZS 4671.
R - DENOTES PLAIN ROUND GRADE 250 NORMAL DUCTILITY REINFORCING BARS TO AS/NZS 4671.
SL - DENOTES DEFORMED GRADE 500 LOW DUCTILITY REINFORCING MESH TO AS/NZS 4671.
RL - DENOTES DEFORMED GRADE 500 LOW DUCTILITY REINFORCING MESH TO AS/NZS 4671.
L--TM - DENOTES DEFORMED GRADE 500 LOW DUCTILITY TRENCH MESH TO AS/NZS 4671.
S15. ALL REINFORCING FABRIC SHALL COMPLY WITH AS1303 AND AS1304 AND SHALL BE SUPPLIED IN FLAT SHEETS.
S16. SPLICES IN FABRIC: THE OUTERMOST TRANSVERSE WIRES SHALL BE OVERLAPPED BY AT LEAST THE SPACING OF THESE TRANSVERSE WIRES PLUS 25 mm.



ALTERNATIVE FABRIC SPLICE DETAIL:



S17. EXPOSED CORNERS SHALL BE 20 mm CHAMFERED UNO.
S18. ALL REINFORCEMENT SHALL BE INSPECTED BY THE SUPERINTENDENT OR ENGINEER PRIOR TO PLACING CONCRETE.
S19. ALL SLAB CONCRETE TO BE CURED IN AN APPROVED MANNER FOR A MINIMUM OF 7 DAYS.
S20. ALL FORMWORK AND PROPS FOR SLABS AND BEAMS SHALL BE REMOVED BEFORE CONSTRUCTION OF ANY MASONRY WALLS OR PARTITIONS ON THE FLOOR.
S21. ALL ABBREVIATIONS ARE IN ACCORDANCE WITH AS1100.
S22. FORMWORK SHALL NOT BE STRIPPED UNTIL CONCRETE HAS ACHIEVED A MINIMUM STRENGTH OF 20 MPa. THE CONCRETE SLAB AND BEAMS SHALL BE TEMPORARILY BACK PROPPED UNTIL THE CONCRETE HAS ACHIEVED 28 DAY STRENGTH AND ANY PROPPING TO HIGHER LEVEL FORMS HAVE BEEN REMOVED.
S23. WHERE A SUSPENDED SLAB IS TO BE SUPPORTED OFF A SUSPENDED SLAB BELOW, WRITTEN APPROVAL SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO ANY SITE WORKS.

MASONRY

M1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3700.

M2. THE DESIGN STRENGTH OF MASONRY SHALL BE AS FOLLOWS U.N.O. :

EXPOSURE CLASSIFICATION T0 AS 3600	MASONRY COMPRESSIVE STRENGTH MPa (f'm)	MASONRY SALT RESISTANCE GRADE	DURABILITY CLASSIFICATION OF BUILT IN COMPONENTS	MORTAR MIX	
				GP PORTLAND CEMENT : LIME : SAND	f'c MPa
A1 / A2	> 6.3	General Purpose	R3 (Galvanised)	1.0 : 1.0 : 6.0	2.8
B1	> 6.3	General Purpose	R3 (Galvanised)	1.0 : 1.0 : 6.0	2.8
B2	> 6.7	Exposure	R4 (Stainless)	1.0 : 0.5 : 4.5	2.8

M3. ALL MASONRY WALLS SUPPORTING SLABS AND BEAMS SHALL HAVE A PRE-GREASED TWO LAYER GALVANISED STEEL SLIP JOINT BETWEEN CONCRETE AND MASONRY.

M4. ALL MASONRY WALLS SUPPORTING OR SUPPORTED BY CONCRETE FLOORS SHALL BE PROVIDED WITH VERTICAL JOINTS TO MATCH ANY CONTROL JOINTS IN THE CONCRETE.

M5. NON LOAD BEARING WALLS SHALL BE SEPARATED FROM CONCRETE ABOVE BY 20 mm THICK CLOSED CELL POLYETHYLENE STRIP.

M6. MASONRY SHALL BE ARTICULATED IN ACCORDANCE WITH TECHNICAL NOTE 61 FROM THE CEMENT AND CONCRETE ASSOCIATION OF AUSTRALIA. VERTICAL CONTROL JOINTS SHALL NOT EXCEED 5 METRES MAXIMUM CENTRES, AND 4 METRES MAXIMUM FROM CORNERS IN MASONRY WALLS, AND BETWEEN NEW & EXISTING BRICKWORK.

M7. MASONARY RETAINING WALLS ARE TO BE BACKFILLED WITH EITHER OF THE FOLLOWING MATERIAL:
- COARSE GRAINED SOIL WITH LOW SILT CONTENT
- RESIDUAL SOIL CONTAINING STONES
- FINE SILTY SAND
- GRANULAR MATERIALS WITH LOW CLAY CONTENT

BLOCKWORK

B1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700.

B2. REINFORCED CONCRETE BLOCKWORK SHALL COMPLY WITH THE FOLLOWING, UNO:
- BLOCKS : GRADE 15 CONFORMING TO AS1500.
- MORTAR : 1 CEMENT / 0.25 LIME / 3 SAND.
- PROVIDE CLEANOUT HOLES AT BASE OF WALL & ROD CORE HOLES TO REMOVE PROTRUDING MORTAR FINS.
- CORE FILLING : f'c = 20 MPa. 10 AGG, 230 SLUMP +/- 30 mm.
- COVER : 55 mm MIN. FROM OUTSIDE OF BLOCKWORK.

B3. BACKFILL TO RETAINING WALLS TO BE FREE DRAINING GRANULAR MATERIAL, UNO. PROVIDE SUBSOIL DRAIN BEHIND WALL AND AT WEEP HOLES.

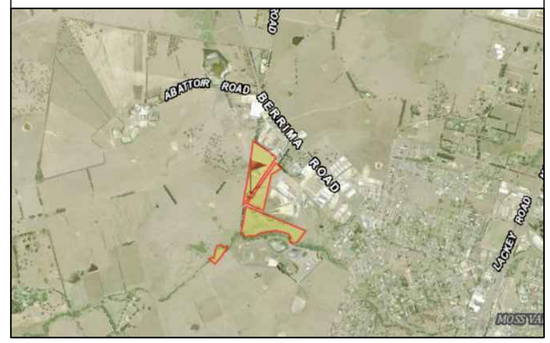
B4. VERTICAL CONTROL JOINTS SHALL BE PROVIDED AT 10 m MAX. CENTRES.

B5. NO ADMIXTURES SHALL BE USED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

STANDARD LINE TYPES AND SYMBOLS:

PROPOSED KERB & GUTTER
EXISTING KERB & GUTTER
PROPOSED BELOW GROUND PIPELINE
PROPOSED SUSPENDED PIPELINE
EXISTING PIPELINE
SUBSOIL DRAINAGE LINE
PROPOSED KERB INLET PIT
EXISTING KERB INLET PIT
PROPOSED JUNCTION OR INLET PIT
EXISTING JUNCTION OR INLET PIT
DESIGN CENTRELINE
EXISTING EDGE OF BITUMEN
TELECOMUNICATION CONDUIT
GAS MAIN
WATER MAIN
SEWER MAIN
UNDERGROUND ELECTRICITY CABLES
PERMANENT MARK & S.S.M.
BENCH MARK, SURVEY STATION

LOCATION PLAN



SCHEDULE OF DRAWINGS

FOR DA APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES
A1 ORIGINAL SIZE

REVISION	DATE	AMENDMENT DESCRIPTION
E	19.03.24	ISSUED FOR DA APPROVAL
D	28.07.23	ISSUED FOR DA APPROVAL
C	30.06.23	ISSUED FOR DA APPROVAL
B	14.06.23	ISSUED FOR DA APPROVAL
A	19.05.23	ISSUED FOR DA APPROVAL

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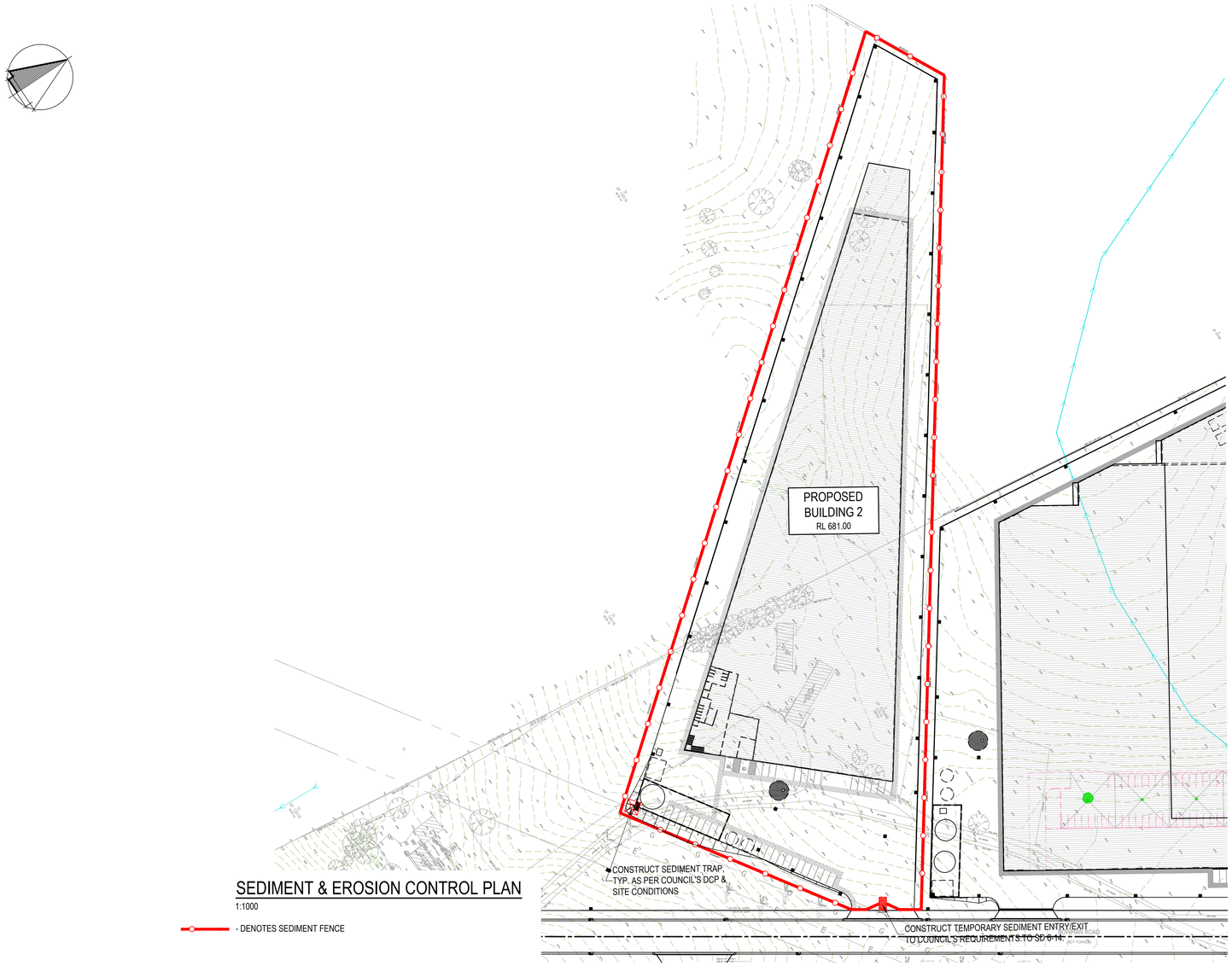
305/12 Century Cct
Norwest Central
NORWEST NSW 2153
Phone : (02) 9894 8500
info@eclipseconsulting.com.au
www.eclipseconsulting.com.au

PROPOSED BUILDING 2
2 Bowman Rd, Moss Vale
For SAAS Aus Pty Ltd

GENERAL NOTES

DESIGN	DRAWN	DATE	PROJECT No.
SWH	RCL	JAN 2023	10530
CHECKED	APPROVED	SCALE	DRG No.
		-	C201 - E



SEDIMENT & EROSION CONTROL PLAN

1:1000

- DENOTES SEDIMENT FENCE

SEDIMENT AND EROSION CONTROL NOTES

SEDIMENT AND EROSION CONTROL SHALL BE EFFECTIVELY MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION AND SHALL NOT BE REMOVED UNTIL THE SITE HAS BEEN STABILISED OR LANDSCAPED TO THE SUPERINTENDENT'S SATISFACTION.

A SINGLE ALL WEATHER ACCESS WAY WILL BE PROVIDED AT THE FRONT OF THE PROPERTY CONSISTING OF 50-75 AGGREGATE OR SIMILAR MATERIAL AT A MINIMUM THICKNESS OF 150 LAID OVER NEEDLE-PUNCHED GEOTEXTILE FABRIC AND CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.

THE CONTRACTOR SHALL ENSURE THAT NO SPOIL OR FILL ENCROACHES UPON ADJACENT AREAS FOR THE DURATION OF WORKS.

THE CONTRACTOR SHALL ENSURE THAT KERB INLETS AND DRAINS RECEIVING STORMWATER SHALL BE PROTECTED AT ALL TIMES DURING DEVELOPMENT. KERB INLET SEDIMENT TRAPS SHALL BE INSTALLED ALONG THE IMMEDIATE VICINITY ALONG THE STREET FRONTAGE.

ALL TOPSOIL STRIPPED FROM THE SITE AND STOCKPILED DOES NOT INTERFERE WITH DRAINAGE LINES AND STORMWATER INLETS AND WILL BE SUITABLY COVERED WITH AN IMPERVIOUS MEMBRANE MATERIAL AND SCREENED BY SEDIMENT FENCING.

SOIL CONSERVATION NOTE:

PRIOR TO COMMENCEMENT OF CONSTRUCTION PROVIDE 'SEDIMENT FENCE,' 'SEDIMENT TRAP' AND WASHOUT AREA TO ENSURE THE CAPTURE OF WATER BORNE MATERIAL GENERATED FROM THE SITE.

MAINTAIN THE ABOVE DURING THE COURSE OF CONSTRUCTION, AND CLEAR THE 'SEDIMENT TRAP AFTER EACH STORM.

SEDIMENT TRAP
1000 x 1000 WIDE 500 DEEP PIT, LOCATED AT THE LOWEST POINT TO THE TRAP SEDIMENT AND IN ACCORDANCE WITH LOCAL COUNCIL'S DCP AND SITE CONDITIONS.

SEDIMENT FENCE

PROVIDE 'SEDIMENT FENCE ON DOWN SLOPE BOUNDARY AS SHOWN ON PLAN. FABRIC TO BE BURIED BELOW GROUND AT LOWER EDGE.
REFER TO SD 6-8

BUILDING MATERIAL STOCKPILES

ALL STOCKPILES OF BUILDING MATERIAL SUCH AS SAND AND SOIL MUST BE PROTECTED TO PREVENT SCOUR AND EROSION.

THEY SHOULD NEVER BE PLACED IN THE STREET GUTTER WHERE THEY WILL WASH AWAY WITH THE FIRST RAINSTORM.
REFER TO SD 4-1

GENERAL NOTES

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS ARE IN MILLIMETRES & ALL LEVELS ARE IN METRES, UNO (UNLESS NOTED OTHERWISE).

NO DIMENSION SHALL BE OBTAINED BY SCALING THE DRAWINGS.

ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORK.

DURING EXCAVATION WORK THE STRUCTURE SHALL BE MAINTAINED IN A STABLE AND NO PART SHALL BE OVERSTRESSED.

ALL WORK IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE SPECIFICATION.

EXISTING SERVICES WHERE SHOWN HAVE BEEN PLOTTED FROM SUPPLIED DATA AND SUCH THEIR ACCURACY CAN NOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK.

ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACK FILLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCIL.

ALL TRENCH BACK FILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.

ON COMPLETION OF STORMWATER INSTALLATION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS, UNLESS DIRECTED OTHERWISE.

CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS UNLESS DIRECTED OTHERWISE.

STORMWATER DRAINAGE

THE STORMWATER DRAINAGE DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500.3 - 1990 "STORMWATER DRAINAGE" & AS/NZS 3500.3.2-1998 "STORMWATER DRAINAGE - ACCEPTABLE SOLUTIONS".

ANY VARIATIONS TO THE NOMINATED LEVELS SHALL BE REFERRED TO ENGINEER IMMEDIATELY.

ANY VARIATIONS TO SPECIFIED PRODUCTS OR DETAILS SHALL BE REFERRED TO THE ENGINEER FOR APPROVAL.

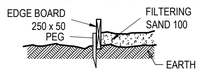
DOWN PIPES SHALL BE A MINIMUM OF DN100 SW GRADE UPVC OR 100X100 COLORBOND/ZINCALUME STEEL, UNO.

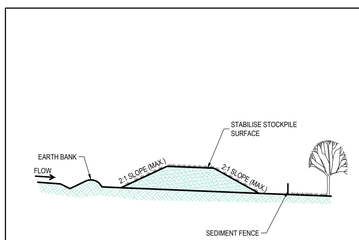
BOX COLORBOND OR ZINCALUME STEEL. GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150 DEEP.

EAVES GUTTERS SHALL BE A MINIMUM OF 125 WIDE X 100 DEEP (OR OF EQUIVALENT AREA) COLORBOND OR ZINCALUME STEEL.

SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.

WASHOUT AREA
TO BE 1800 x 1800 ALLOCATED FOR THE WASHING OF TOOL & EQUIPMENT.

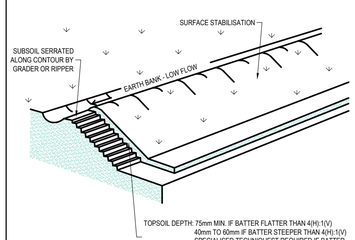




CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2 METRES DOWNSLOPE.

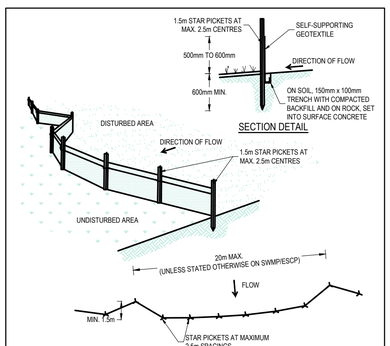
STOCKPILES — SD 4-1



CONSTRUCTION NOTES

1. SCARIFY THE GROUND SURFACE ALONG THE LINE OF THE CONTOUR TO A DEPTH OF 50mm TO 100mm TO BREAK UP ANY HARDSETTING SURFACES AND TO PROVIDE A GOOD BOND BETWEEN THE RESPREAD MATERIAL AND SUBSOIL.
2. ADD SOIL AMELIORANTS AS REQUIRED BY THE ESCP OR SWMP.
3. RIP TO A DEPTH OF 300mm IF COMPACTED LAYERS OCCUR.
4. WHERE POSSIBLE, REPLACE TOPSOIL TO A DEPTH OF 40 TO 60mm ON LANDS WHERE THE SLOPE EXCEEDS 4(H):1(V) AND TO AT LEAST 75mm ON LOWER GRADIENTS.

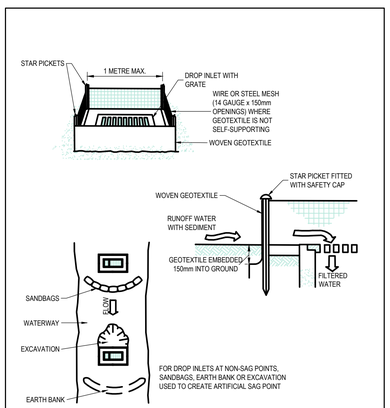
REPLACING TOPSOIL — SD 4-2



CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

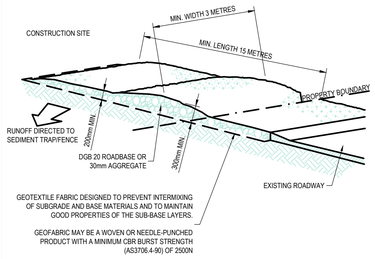
SEDIMENT FENCE — SD 6-8



CONSTRUCTION NOTES

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER — SD 6-12



CONSTRUCTION NOTES

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

STABILISED SITE ACCESS — SD 6-14

FOR DA APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

A1 ORIGINAL SIZE

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A	19.05.23	ISSUED FOR DA APPROVAL

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www.eclipseconsulting.com.au

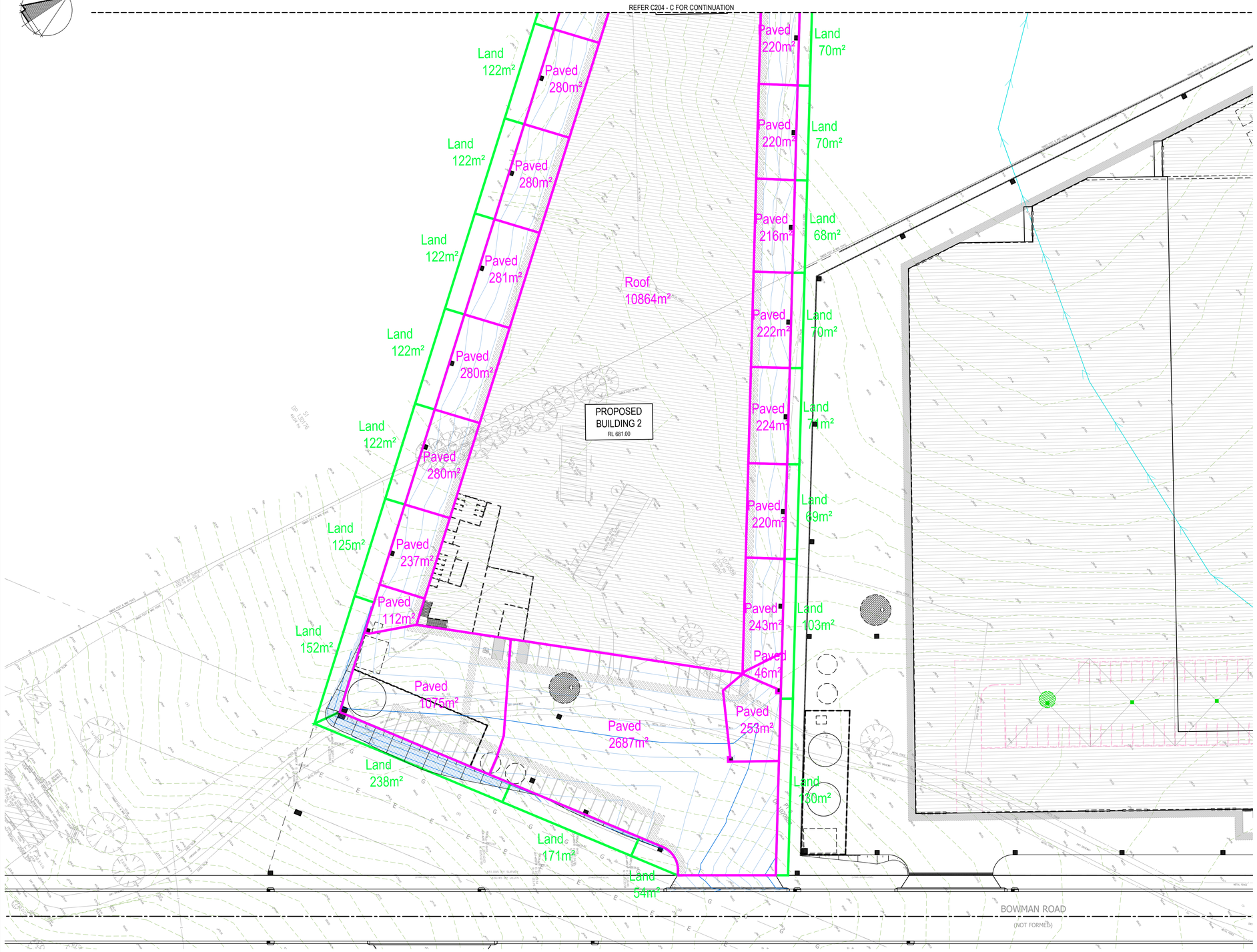
PROPOSED BUILDING 2

2 Bowman Rd, Moss Vale

For SAAS Aus Pty Ltd

SEDIMENT AND EROSION CONTROL PLAN

DESIGN	DRAWN	DATE	PROJECT No.
SWH	RCL	JAN 2023	10530
CHECKED	APPROVED	SCALE 1:500	DRG No. C202 - E



STORMWATER CATCHMENT AREA PLAN PART 1 OF 2

1:500

- DENOTES STORMWATER CATCHMENT AREA BOUNDARY (IMPERVIOUS)
- DENOTES STORMWATER CATCHMENT AREA BOUNDARY (PERVIOUS)

TOTAL SITE CATCHMENT AREA	= 24,558 m²
ROOF AREA	= 11,234 m²
PAVEMENT AREA	= 10,262 m²
LANDSCAPE AREA	= 3,062 m²

- DENOTES EXISTING SURVEY CONTOUR
- DENOTES NEW SURFACE LEVEL CONTOUR (MAJOR)
- DENOTES NEW SURFACE LEVEL CONTOUR (MINOR)

FOR DA APPROVAL

NOT TO BE USED FOR CONSTRUCTION PURPOSES

A1 ORIGINAL SIZE

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REVISION	DATE	AMENDMENT DESCRIPTION

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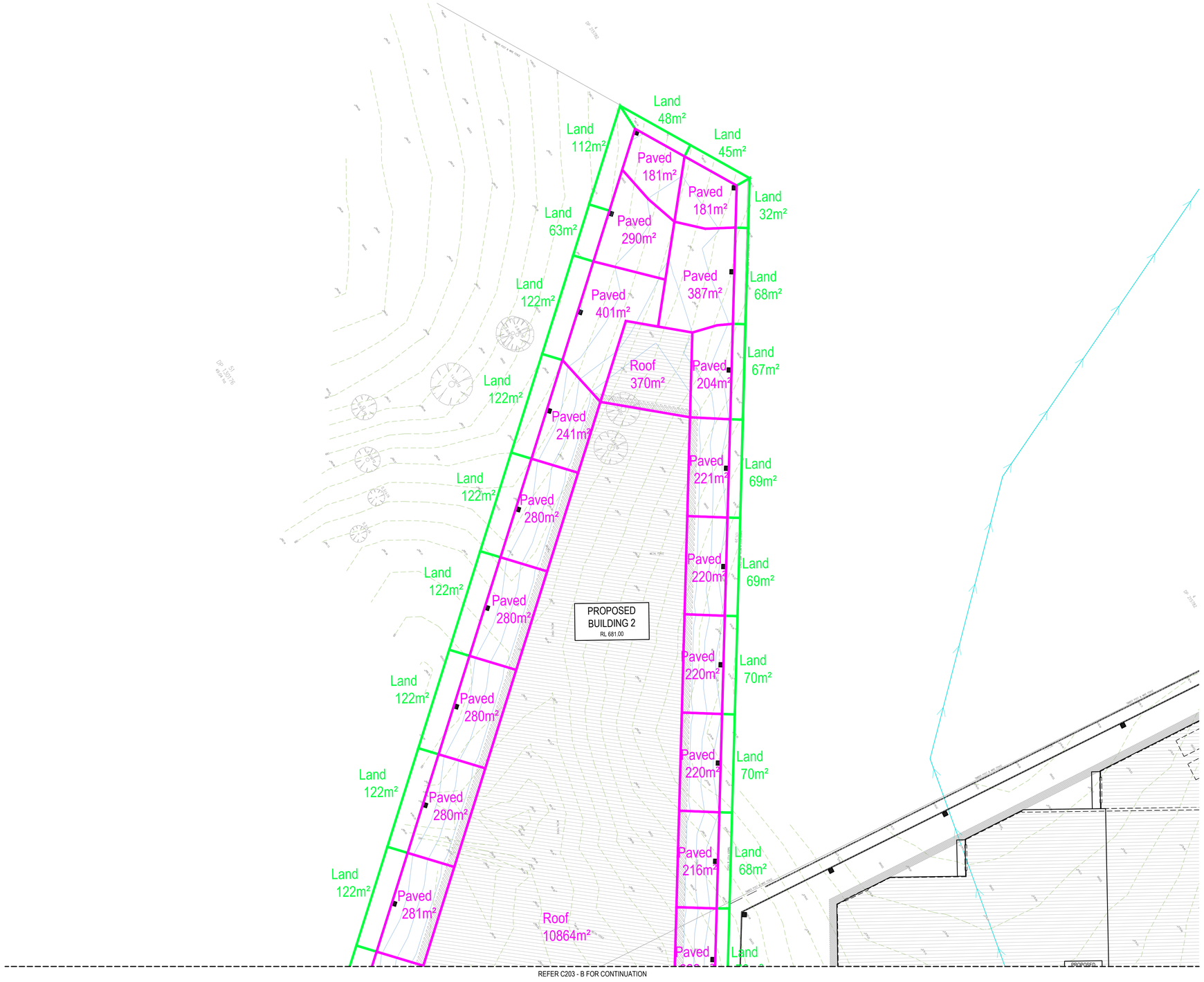
For SAAS Aus Pty Ltd

STORMWATER CATCHMENT AREA PLAN PART 1 OF 2

DESIGN	DRAWN	DATE	PROJECT No.
SWH	RCL	JAN 2023	10530
CHECKED	APPROVED	SCALE	DRG No.
		1:500	C203 - E



STORMWATER DRAINAGE STRATEGY

- ALL GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 1:20 YEAR ARI STORM EVENT.
- BOX GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 1:100 YEAR ARI STORM EVENT.
- ALL PITS & PIPES ARE DESIGNED TO ACCEPT A 1:20 YEAR ARI STORM EVENT.
- DESIGN RAINFALL INTENSITIES:
  1:20 YEAR, 5 MIN = 153 mm/hr
  1:100 YEAR, 5 MIN = 209 mm/hr
- ALL PIPES MUST HAVE A MIN. 1.0% FALL, UNO.
- THE FOLLOWING SQIDs HAVE BEEN DESIGNED FOR THIS DEVELOPMENT
  - RAINWATER TANK
  - HUMECEPTOR - CLASS 2
  - HUMEFILTER - UPT
  - HUMEGARD
  - DETENTION TANK

STORMWATER CATCHMENT AREA PLAN PART 2 OF 2

1:500

- DENOTES STORMWATER CATCHMENT AREA BOUNDARY (IMPERVIOUS)
- DENOTES STORMWATER CATCHMENT AREA BOUNDARY (PERVIOUS)

TOTAL SITE CATCHMENT AREA = 24,558 m²

ROOF AREA = 11,234 m²
PAVEMENT AREA = 10,262 m²
LANDSCAPE AREA = 3,062 m²

- DENOTES EXISTING SURVEY CONTOUR
- DENOTES NEW SURFACE LEVEL CONTOUR (MAJOR)
- DENOTES NEW SURFACE LEVEL CONTOUR (MINOR)

FOR DA APPROVAL

NOT TO BE USED FOR CONSTRUCTION PURPOSES

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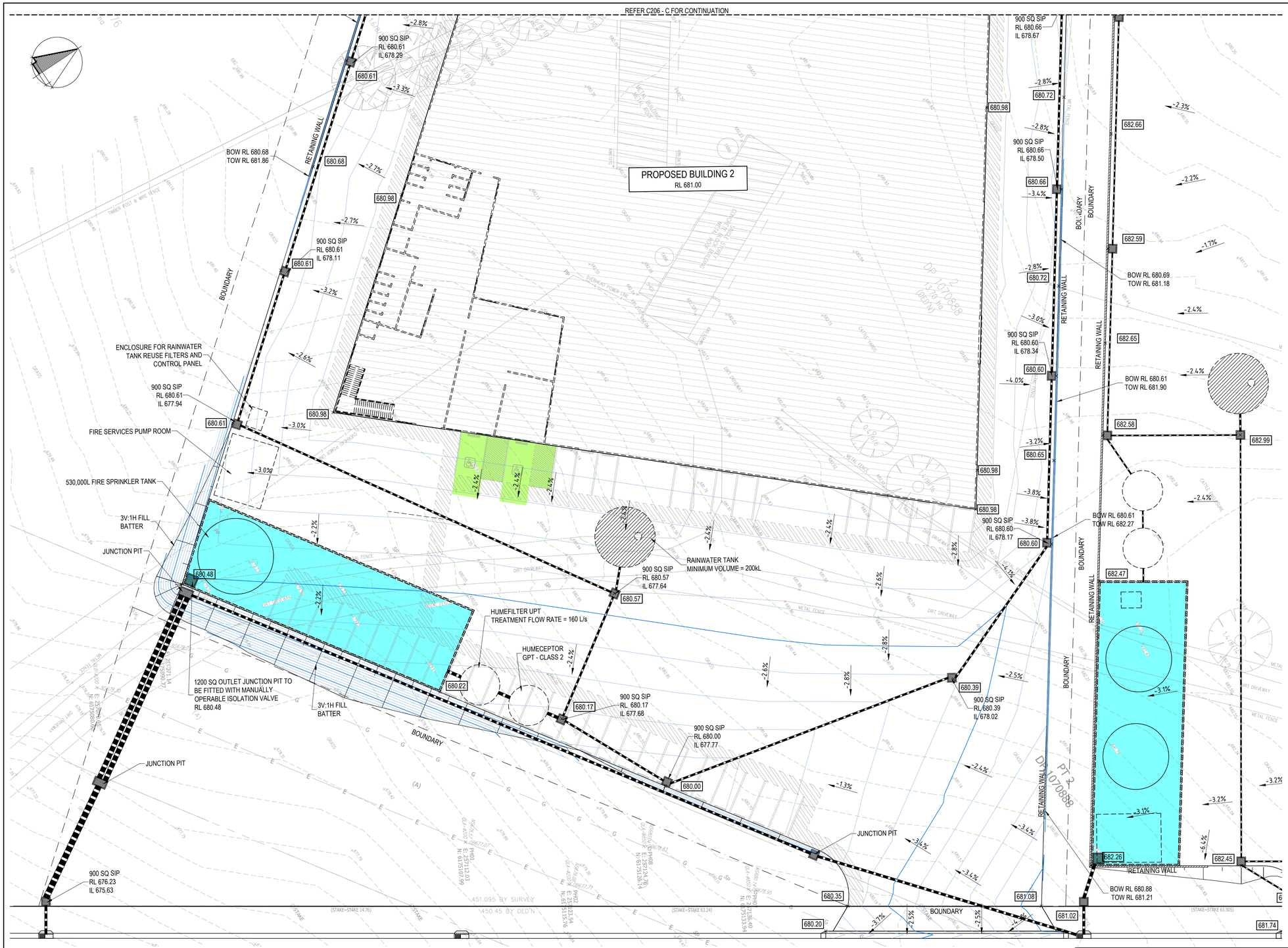
STORMWATER CATCHMENT AREA PLAN PART 2 OF 2

DESIGN	DRAWN	DATE	PROJECT No.
SWH	RCL	JAN 2023	10530
CHECKED	APPROVED	SCALE	DRG No.
		1:500	C204 - E



STORMWATER DRAINAGE PLAN PART 1 OF 2

1:250

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH) STORMWATER DRAINAGE PIPE, UNO.
ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO.
FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES TO BUILDER'S DETAIL.
MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500
THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:

SIP = SURFACE INLET PIT (NO LINTEL)
DP = Ø150 DOWNPIPE
X 100.00 = PROPOSED FINISHED SURFACE LEVEL
= DENOTES DISABLED PARKING BAY AT 2.5% MAX. GRADE

STORMWATER DRAINAGE STRATEGY

- ALL GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 1:20 YEAR ARI STORM EVENT.
- BOX GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 1:100 YEAR ARI STORM EVENT.
- ALL PITS & PIPES ARE DESIGNED TO ACCEPT A 1:20 YEAR ARI STORM EVENT.
- DESIGN RAINFALL INTENSITIES:
  1:20 YEAR, 5 MIN = 153 mm/hr
  1:100 YEAR, 5 MIN = 209 mm/hr
- ALL PIPES MUST HAVE A MIN. 1.0% FALL, UNO.
- THE FOLLOWING SQIDs HAVE BEEN DESIGNED FOR THIS DEVELOPMENT
  - RAINWATER TANK
  - HUMECEPTOR - CLASS 2
  - HUMEFILTER - UPT
  - HUMEGARD
  - DETENTION TANK

REUSE ANALYSIS

A RAINWATER REUSE ANALYSIS HAS BEEN CONDUCTED TO EVALUATE THE PERFORMANCE OF RAINWATER TANKS IN REDUCING POTABLE WATER DEMAND.

RETENTION DESIGN

DAILY (9AM) RAINFALL RECORD: 068239 (2001-2023)

ROOF AREA	= 11234 m²
RAINFALL INTERCEPTION DEPTH	= 10 mm
MINIMUM RAINWATER TANK VOLUME	= 112.34 kL
RAINWATER TANK VOLUME	= 120 kL
REUSE DEMANDS:	
TOILETS	= 0.7 kL/day
IRRIGATION FOR LANDSCAPING	= 1224.8 kL/yr
DAILY DEMAND	= 4.06 kL/day
RAINWATER TANK CATCHMENT AREA	= 11234 m²
DESIGN RAINWATER TANK VOLUME	= 120 kL
REUSE DEMAND MET	= 92.41%
OVERFLOW FREQUENCY	= 15.28%

DETENTION DESIGN

A DRAINS MODEL HAS BEEN PREPARED TO EVALUATE THE PERFORMANCE OF THE DETENTION SYSTEM.

ANTECEDENT MOISTURE CONDITION DETERMINED FROM RAINFALL RECORD 068239 (2001-2023)	= 3.16
SOIL TYPE	= 3
TIME OF CONCENTRATION (t_c)	= 5 min.
ORIFICE DIAMETER	= 375 mm
INTERNAL WEIR HEIGHT	= 1600 mm
AREA	= 175 m²
DETENTION VOLUME REQUIRED	= 287.9 m³
DETENTION VOLUME PROVIDED	= 350 m³

PRE & POST DEVELOPMENT FLOWS

RAINFALL EVENT	50%	20%	10%	5%	2%	1%
PRE-DEVELOPMENT FLOW (L/s)	244	522	689	820	1029	1174
POST-DEVELOPMENT FLOW (L/s)	235	353	413	627	843	1065
STORAGE VOLUME REQUIRED (m³)	141.7	203.4	250.3	287.9	302.1	316.3

WATER QUALITY DESIGN SUMMARY

A MUSIC MODEL HAS BEEN PREPARED TO DETERMINE THE EFFECTIVENESS OF SQIDs AT REDUCING POLLUTANT LOADS ON THIS SITE. SOURCE NODE PARAMETERS HAVE BEEN ADOPTED FROM "USING MUSIC IN SYDNEY DRINKING WATER CATCHMENT - FEBRUARY 2023" SYDNEY CATCHMENT AUTHORITY CLIMATE ZONE = ZONE 3

TREATMENT TRAIN EFFECTIVENESS

	PRE-DEV SOURCES	POST-DEV SOURCES	PRE-DEV RESIDUAL LOAD	POST-DEV RESIDUAL LOAD	% REDUCT. FROM POSTDEV SOURCES	%REDUCT. FROM PREDEV RESIDUAL
FLOW (ML/yr)	20.246	61.538	20.246	57.171	7.098	-183
TOTAL SUSPENDED SOLIDS (kg/yr)	3240.704	7164.57	3240.704	1438.144	79.927	57
TOTAL PHOSPHORUS (kg/yr)	9.469	15.417	9.469	5.043	67.287	46
TOTAL NITROGEN (kg/yr)	65.871	135.17	65.871	61.131	54.775	8
GROSS POLLUTANTS (kg/yr)	104.097	1544.347	104.097	17.302	98.88	83

FOR DA APPROVAL

NOT TO BE USED FOR CONSTRUCTION PURPOSES

A1 ORIGINAL SIZE

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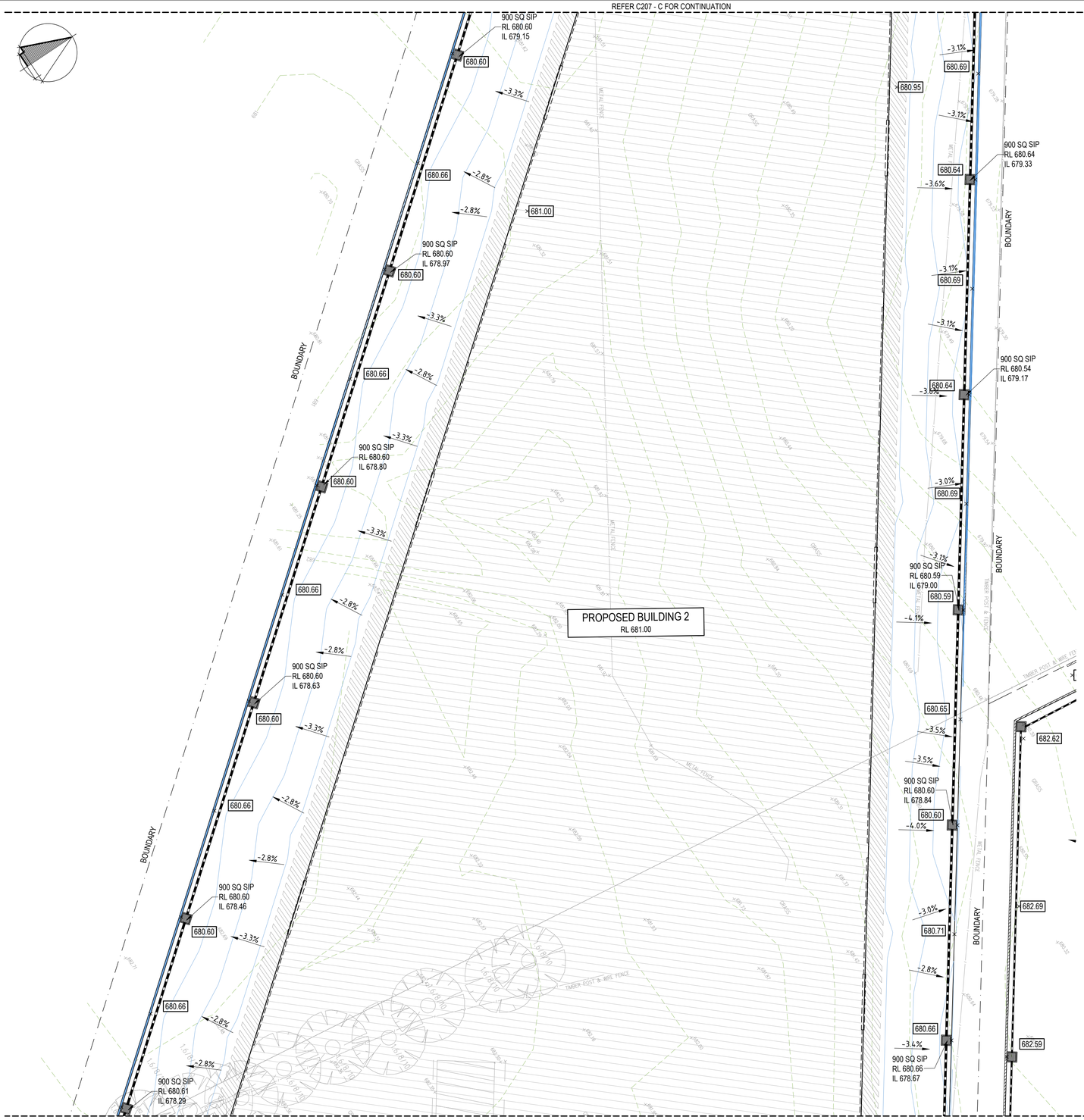
PROPOSED BUILDING 2

2 Bowman Rd, Moss Vale
For SAAS Aus Pty Ltd

STORMWATER DRAINAGE PLAN PART 1 OF 3

DESIGN	DRAWN	DATE	PROJECT No.
SWH	RCL	JAN 2023	10530
CHECKED	APPROVED	SCALE	DRG No.
		1:500	C205 - E



STORMWATER DRAINAGE PLAN PART 2 OF 3

1:250

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH) STORMWATER DRAINAGE PIPE, UNO.
ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO.
FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES TO BUILDER'S DETAIL,
MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500
THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:

SIP = SURFACE INLET PIT (NO LINTEL)
DP = Ø150 DOWNPIPE
X 100.00 = PROPOSED FINISHED SURFACE LEVEL

= DENOTES DISABLED PARKING BAY AT 2.5% MAX. GRADE

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  - HUMEFILTER - UPT
  - HUMEGARD
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REUSE ANALYSIS

A RAINWATER REUSE ANALYSIS HAS BEEN CONDUCTED TO EVALUATE THE PERFORMANCE OF RAINWATER TANKS IN REDUCING POTABLE WATER DEMAND.

RETENTION DESIGN

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RAINWATER TANK VOLUME	= 120 kL
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AREA	= 175 m²
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SYDNEY CATCHMENT AUTHORITY CLIMATE ZONE = ZONE 3

TREATMENT TRAIN EFFECTIVENESS

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TOTAL NITROGEN (kg/yr)	65.871	135.17	65.871	61.131	54.775	8
GROSS POLLUTANTS (kg/yr)	104.097	1544.347	104.097	17.302	98.88	83

FOR DA APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

A1 ORIGINAL SIZE

REVISION	DATE	AMENDMENT DESCRIPTION
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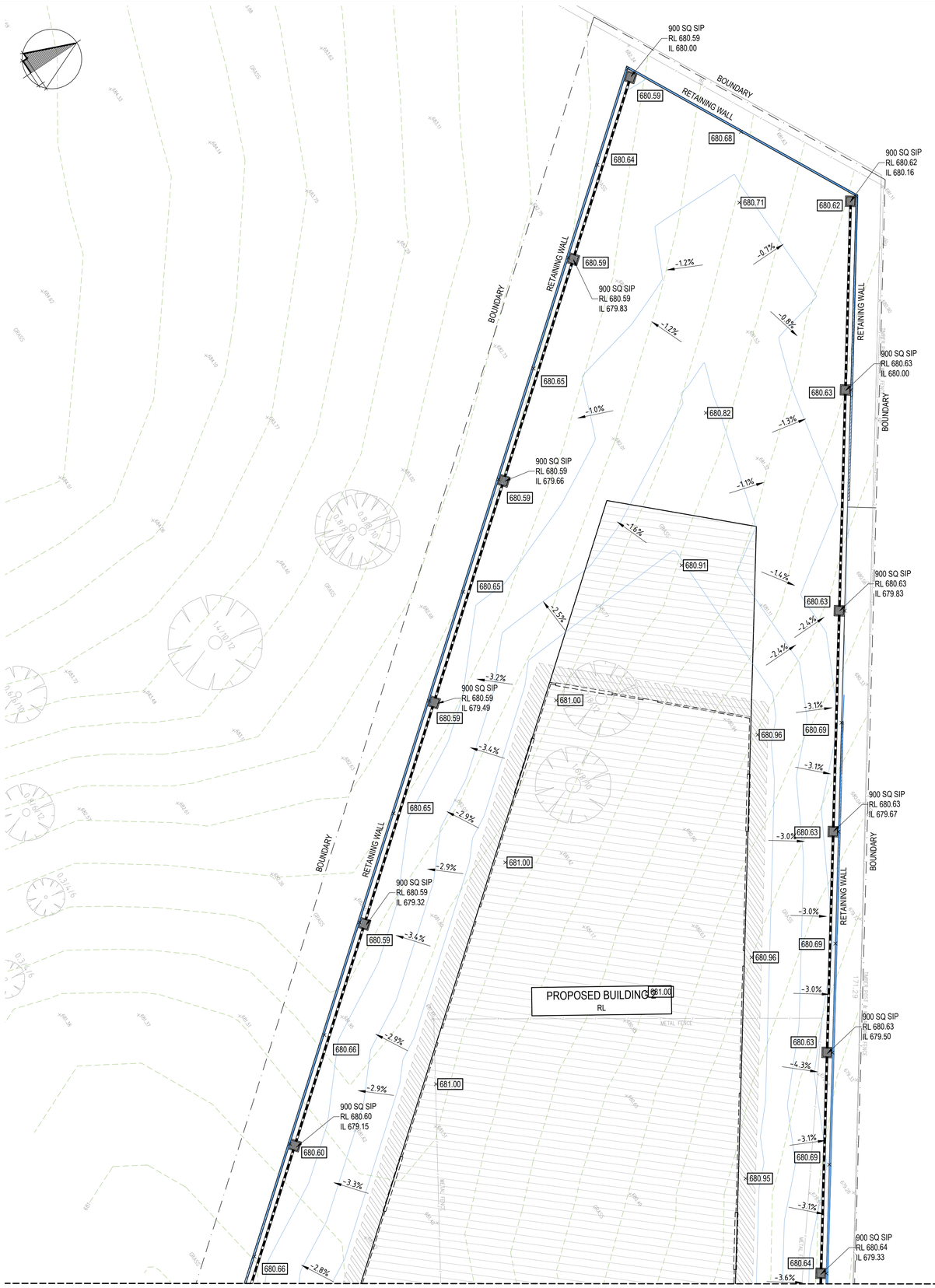
PROPOSED BUILDING 2

2 Bowman Rd, Moss Vale
For SAAS Aus Pty Ltd

STORMWATER DRAINAGE PLAN PART 2 OF 3

DESIGN	DRAWN	DATE	PROJECT No.
SWH	RCL	JAN 2023	10530
CHECKED	APPROVED	SCALE	DRG No.
		1:500	C206 - E



REFER C206 - B FOR CONTINUATION

STORMWATER DRAINAGE PLAN PART 3 OF 3

1:250

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH) STORMWATER DRAINAGE PIPE, UNO.
ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO.
FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES TO BUILDER'S DETAIL,
MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500
THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:

SIP = SURFACE INLET PIT (NO LINTEL)
DP = Ø150 DOWNPIPE
X [100.00] = PROPOSED FINISHED SURFACE LEVEL

= DENOTES DISABLED PARKING BAY AT 2.5% MAX. GRADE

STORMWATER DRAINAGE STRATEGY

- ALL GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 1:20 YEAR ARI STORM EVENT.
- BOX GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 1:100 YEAR ARI STORM EVENT.
- ALL PITS & PIPES ARE DESIGNED TO ACCEPT A 1:20 YEAR ARI STORM EVENT.
- DESIGN RAINFALL INTENSITIES:
  1:20 YEAR, 5 MIN = 153 mm/hr
  1:100 YEAR, 5 MIN = 209 mm/hr
- ALL PIPES MUST HAVE A MIN. 1.0% FALL, UNO.
- THE FOLLOWING SQIDs HAVE BEEN DESIGNED FOR THIS DEVELOPMENT
  - RAINWATER TANK
  - HUMECEPTOR - CLASS 2
  - HUMEFILTER - UPT
  - HUMEGARD
  - DETENTION TANK

REUSE ANALYSIS

A RAINWATER REUSE ANALYSIS HAS BEEN CONDUCTED TO EVALUATE THE PERFORMANCE OF RAINWATER TANKS IN REDUCING POTABLE WATER DEMAND.

RETENTION DESIGN

DAILY (9AM) RAINFALL RECORD: 068239 (2001-2023)

ROOF AREA	= 11234 m²
RAINFALL INTERCEPTION DEPTH	= 10 mm
MINIMUM RAINWATER TANK VOLUME	= 112.34 kL
RAINWATER TANK VOLUME	= 120 kL
REUSE DEMANDS:	
TOILETS	= 0.7 kL/day
IRRIGATION FOR LANDSCAPING	= 1224.8 kL/yr
DAILY DEMAND	= 4.06 kL/day
RAINWATER TANK CATCHMENT AREA	= 11234 m²
DESIGN RAINWATER TANK VOLUME	= 120 kL
REUSE DEMAND MET	= 92.41%
OVERFLOW FREQUENCY	= 15.28%

DETENTION DESIGN

A DRAINS MODEL HAS BEEN PREPARED TO EVALUATE THE PERFORMANCE OF THE DETENTION SYSTEM.

ANTECEDENT MOISTURE CONDITION DETERMINED FROM RAINFALL RECORD 068239 (2001-2023)	= 3.16
SOIL TYPE	= 3
TIME OF CONCENTRATION (t_c)	= 5 min.
ORIFICE DIAMETER	= 375 mm
INTERNAL WEIR HEIGHT	= 1600 mm
AREA	= 175 m^2
DETENTION VOLUME REQUIRED	= 287.9 m^3
DETENTION VOLUME PROVIDED	= 350 m^3

PRE & POST DEVELOPMENT FLOWS

RAINFALL EVENT	50%	20%	10%	5%	2%	1%
PRE-DEVELOPMENT FLOW (L/s)	244	522	689	820	1029	1174
POST-DEVELOPMENT FLOW (L/s)	235	353	413	627	843	1065
STORAGE VOLUME REQUIRED (m^3)	141.7	203.4	250.3	287.9	302.1	316.3

WATER QUALITY DESIGN SUMMARY

A MUSIC MODEL HAS BEEN PREPARED TO DETERMINE THE EFFECTIVENESS OF SQIDs AT REDUCING POLLUTANT LOADS ON THIS SITE. SOURCE NODE PARAMETERS HAVE BEEN ADOPTED FROM "USING MUSIC IN SYDNEY DRINKING WATER CATCHMENT - FEBRUARY 2023"
SYDNEY CATCHMENT AUTHORITY CLIMATE ZONE = ZONE 3

TREATMENT TRAIN EFFECTIVENESS

	PRE-DEV SOURCES	POST-DEV SOURCES	PRE-DEV RESIDUAL LOAD	POST-DEV RESIDUAL LOAD	% REDUCT. FROM POSTDEV SOURCES	%REDUCT. FROM PREDEV RESIDUAL
FLOW (ML/yr)	20.246	61.538	20.246	57.171	7.098	-183
TOTAL SUSPENDED SOLIDS (kg/yr)	3240.704	7164.57	3240.704	1438.144	79.927	57
TOTAL PHOSPHORUS (kg/yr)	9.469	15.417	9.469	5.043	67.287	46
TOTAL NITROGEN (kg/yr)	65.871	135.17	65.871	61.131	54.775	8
GROSS POLLUTANTS (kg/yr)	104.097	1544.347	104.097	17.302	98.88	83

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STORMWATER DRAINAGE PLAN PART 3 OF 3

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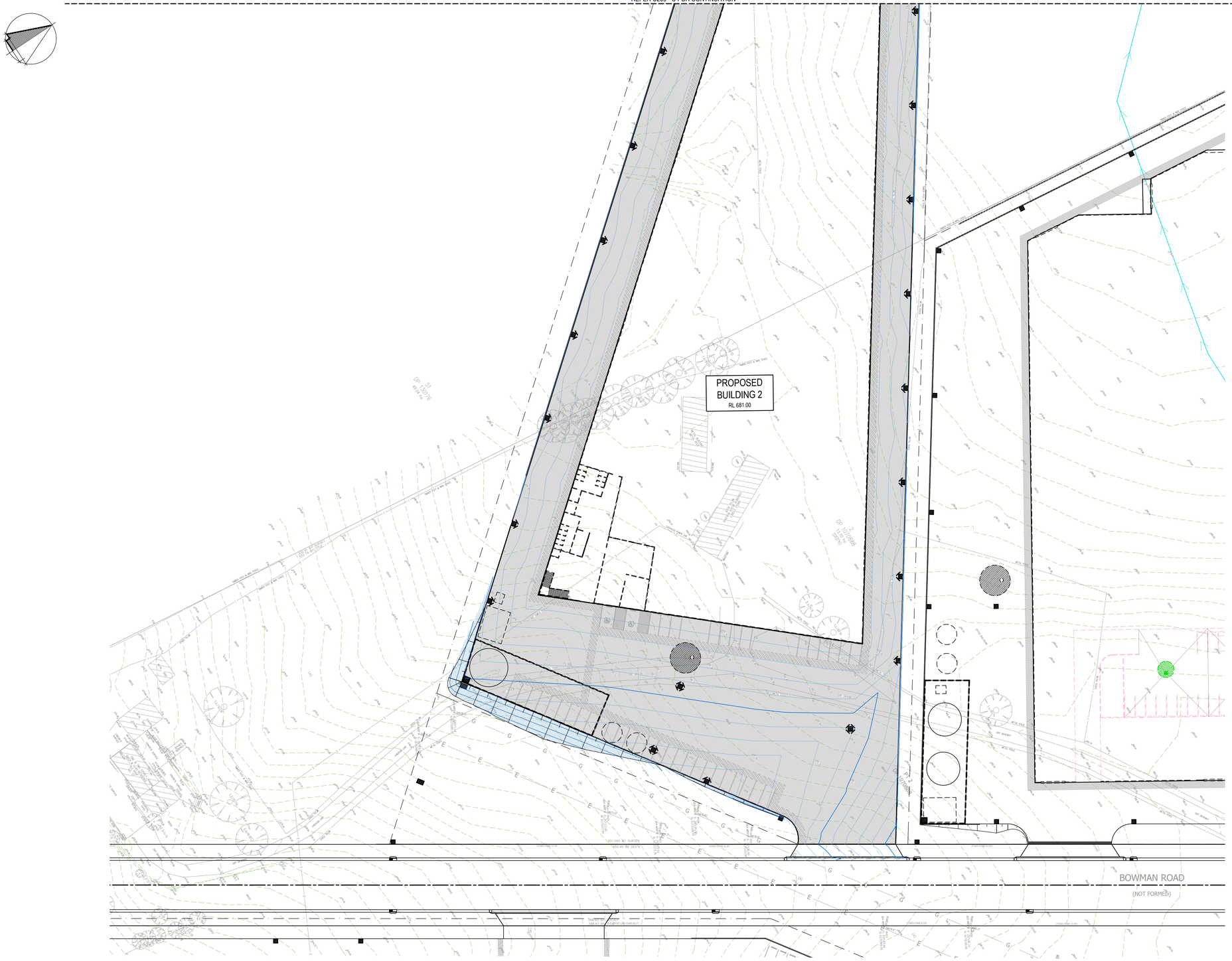
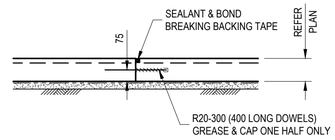
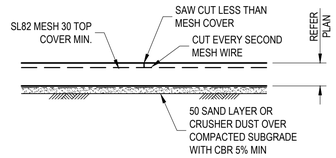
REFER C209 - C FOR CONTINUATION





CONSTRUCTION JOINT (C.J.) DETAIL

1:20



SAWN JOINT (S.J.) DETAIL

1:20

EXTERNAL PAVEMENT LAYOUT PLAN PART 1 OF 2

1:500

DENOTES **150 THICK SLAB** WITH **SL82 MESH TOP** THROUGHOUT
CONCRETE STRENGTH = **32 MPa**

2-N12 (75 SPACING 1200 LONG) TRIMMERS TOP SHALL BE LOCATED 50 FROM ALL RE-ENTRANT CORNERS, TYPICAL U.N.O.

REINFORCEMENT COVER TO GROUND FLOOR SLAB SHALL BE AS FOLLOWS:
- 40mm - TO UNPROTECTED GROUND
- 40mm - EXTERNAL EXPOSURE
- 30mm - TO A MEMBRANE IN CONTACT WITH GROUND
- 30mm - INTERNAL EXPOSURE

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EXTERNAL PAVEMENT PLAN AND DETAILS PART 1 OF 2

DESIGN	DRAWN	DATE	PROJECT No.
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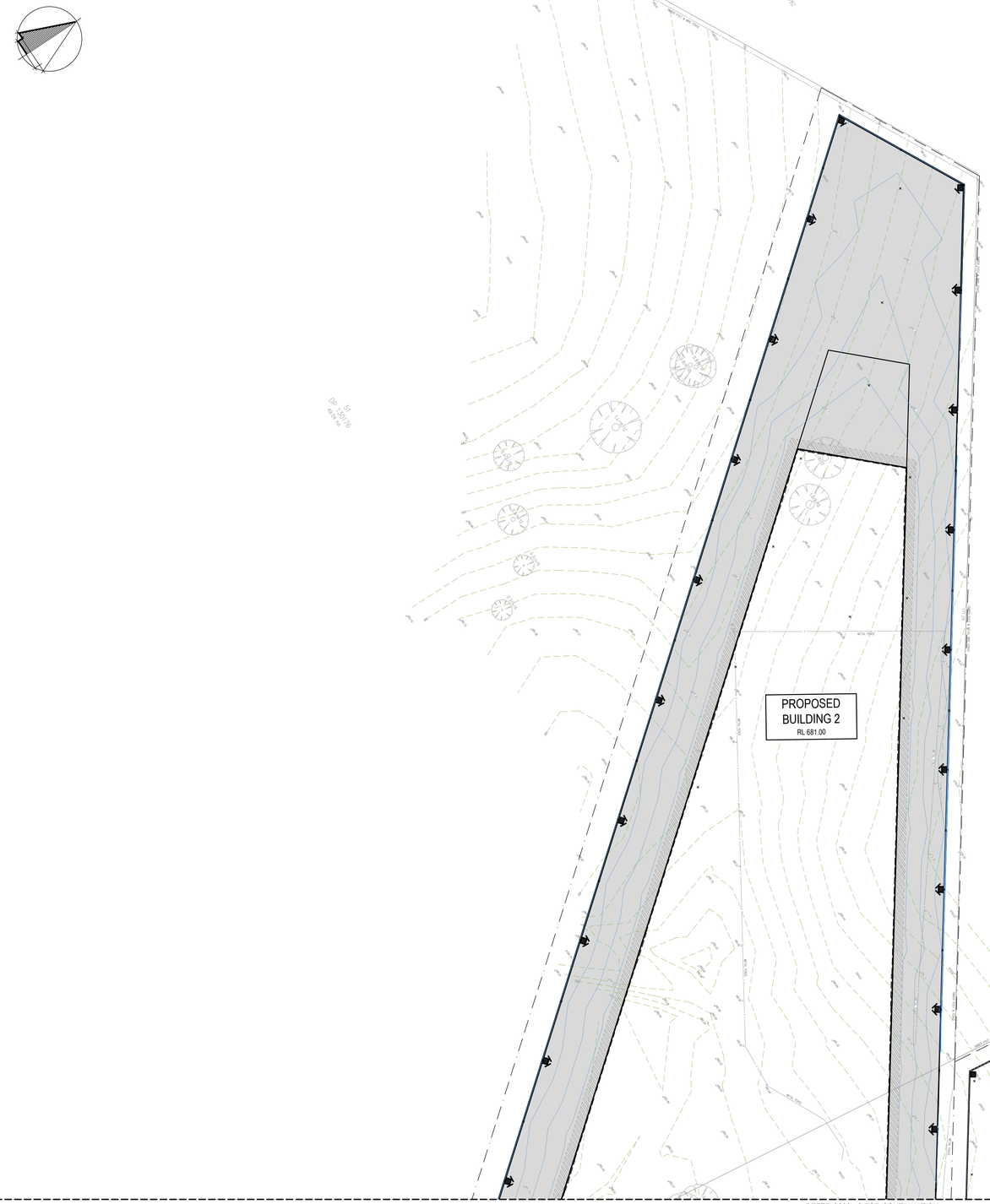
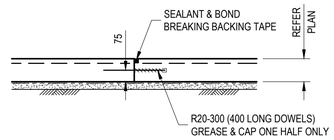
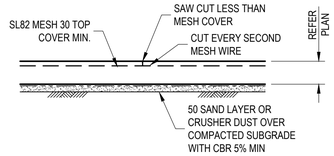
		1:500	C208 - E





CONSTRUCTION JOINT (C.J.) DETAIL

1:20



SAWN JOINT (S.J.) DETAIL

1:20

REFER C206 - C FOR CONTINUATION

EXTERNAL PAVEMENT LAYOUT PLAN PART 2 OF 2

1:500

DENOTES **150 THICK SLAB** WITH **SL82 MESH TOP** THROUGHOUT
CONCRETE STRENGTH = **32 MPa**

2-N12 (75 SPACING 1200 LONG) TRIMMERS TOP SHALL BE LOCATED 50 FROM ALL RE-ENTRANT CORNERS, TYPICAL U.N.O.

REINFORCEMENT COVER TO GROUND FLOOR SLAB SHALL BE AS FOLLOWS:
- 40mm - TO UNPROTECTED GROUND
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For SAAS Aus Pty Ltd

EXTERNAL PAVEMEENT PLAN AND DETAILS PART 2 OF 2

DESIGN	DRAWN	DATE	PROJECT No.
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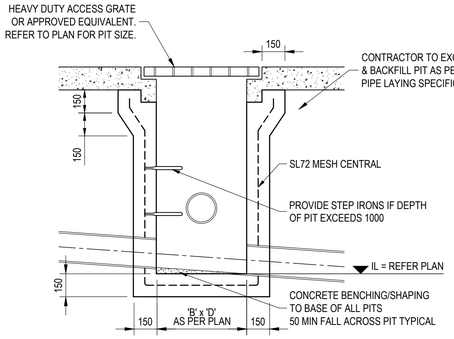
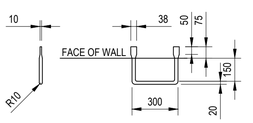
		1:500	C209 - E



TYPICAL SURFACE INLET PIT DETAIL

1:20

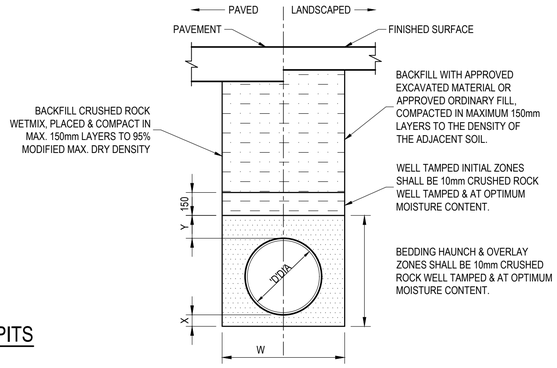
TYPICAL FOR ALL PITS IN DRIVEWAY/CARPARK AREAS.



STEP IRONS FOR DRAINAGE PITS
NOTE:
1. FIRST RUNG 150mm DOWN FROM TOP, THEN SPACED AT 300 CENTRES.
2. STEP IRON MATERIAL, 20m DIAMETER MILD STEEL, HEAVY GALVANISED.

STEP IRONS FOR DRAINAGE PITS

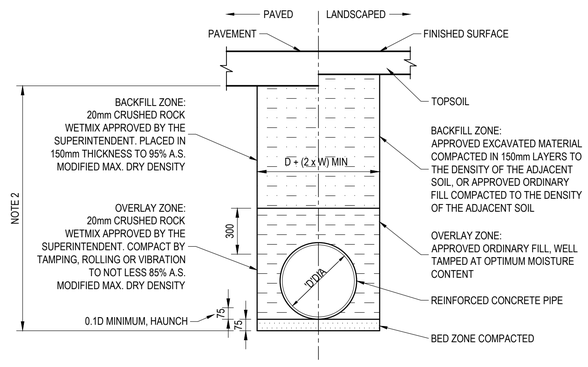
1:20



NOTE:
1 REFER TO PIPE LAYING SPECIFICATIONS FOR DETAILS.

PIPE DIA 'D'	W	X MIN	Y
100-150	300	75	75
225-300	600	75	75

UPVC PIPE



NOTE:
1 REFER TO PIPE LAYING SPECIFICATION FOR DETAILS.
2 BACKFILL OVERLAY & BEDDING ZONES 20mm CRUSHED ROCK COMPACT BY TAMPING ROLLING OR VIBRATION TO NOT LESS THAN 85% A.S. STD. MAX. DRY DENSITY.

D	W
150-300	150
375-750	300
+750	600

REINFORCED CONCRETE PIPE

TYPICAL PIPE LAYING DETAIL

1:20

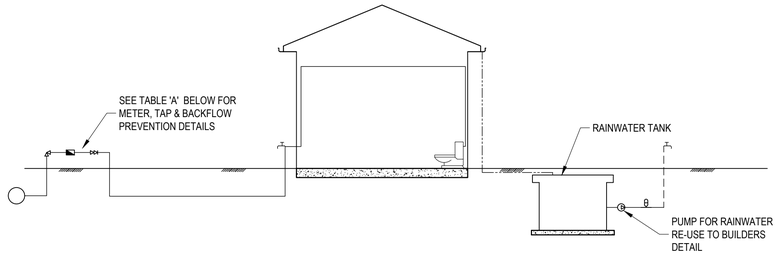


TABLE A

RAINWATER TANK LOCATION	METER SIZE (mm)	TYPE OF TAP	TYPE OF BACKFLOW PREVENTION
ABOVE GROUND	20	BALL VALVE	DUAL CHECK VALVE (COMBINED WITH METER)
	25	BALL VALVE	DUAL CHECK VALVE
	≥ 32	BALL VALVE	DUAL CHECK VALVE
BELOW GROUND	20	BALL VALVE	TESTABLE DOUBLE CHECK VALVE
	25	BALL VALVE	TESTABLE DOUBLE CHECK VALVE
	≥ 32	BALL VALVE	TESTABLE DOUBLE CHECK VALVE

LEGEND

- PRESSURE VESSEL
- METER
- BALL VALVE RIGHT ANGLE TYPE
- DUAL CHECK VALVE
- PUMP
- GARDEN TAP
- DRINKING WATER SUPPLY PIPES
- RAINWATER SUPPLY PIPES
- DOWN PIPES

DIAGRAM NOTES:
DRAWING TO BE READ IN CONJUNCTION WITH SYDNEY WATER PLUMBING REQUIREMENTS

1. FOR TANKS 10,000 LITRES OR LESS, COUNCIL DEVELOPMENT CONSENT IS NOT REQUIRED, IF THEIR CONDITIONS FOR INSTALLATION ARE FOLLOWED.
2. FOR TANKS GREATER THAN 10,000 LITRES COUNCIL DEVELOPMENT CONSENT IS GENERALLY REQUIRED.
3. FOR TANKS MORE THAN 10,000 LITRES APPROVAL IS REQUIRED FOR BUILDING OVER SEWERS.
4. SYDNEY WATER'S APPROVAL IS REQUIRED FOR ANY TOP UP FROM DRINKING WATER SUPPLY, REGARDLESS OF TANK SIZE. NO DIRECT CONNECTION IS ALLOWED BETWEEN THE
5. DRINKING WATER SUPPLY AND THE RAINWATER TANK SUPPLY.
6. RAINWATER PIPEWORK IS SHOWN ON THE DIAGRAM AS SUPPLYING EXTERNAL RAINWATER USES.
7. ANY DESIGNED ACCESS LID INTO RAINWATER RE-USE TANK IS TO HAVE A LOCKABLE LID. IF THE LID IS DESIGNED TO BE ACCESSED BY A MAINTENANCE PERSON, IT MUST BE AT LEAST 600 mm x 900 mm IN SIZE.
8. MAINS WATER TO BYPASS TO TANK (BY PLUMBER) FOR LOW TANK STORAGE.

DUAL DRINKING WATER & RAINWATER SUPPLY DIAGRAM

NTS
THE RAINWATER TANK SHALL BE INSTALLED WITH A FIRST FLUSH DEVICE TO SUPPLIERS DETAILS

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STORMWATER DETAILS SHEET 1 OF 3

DESIGN	DRAWN	DATE	PROJECT No.
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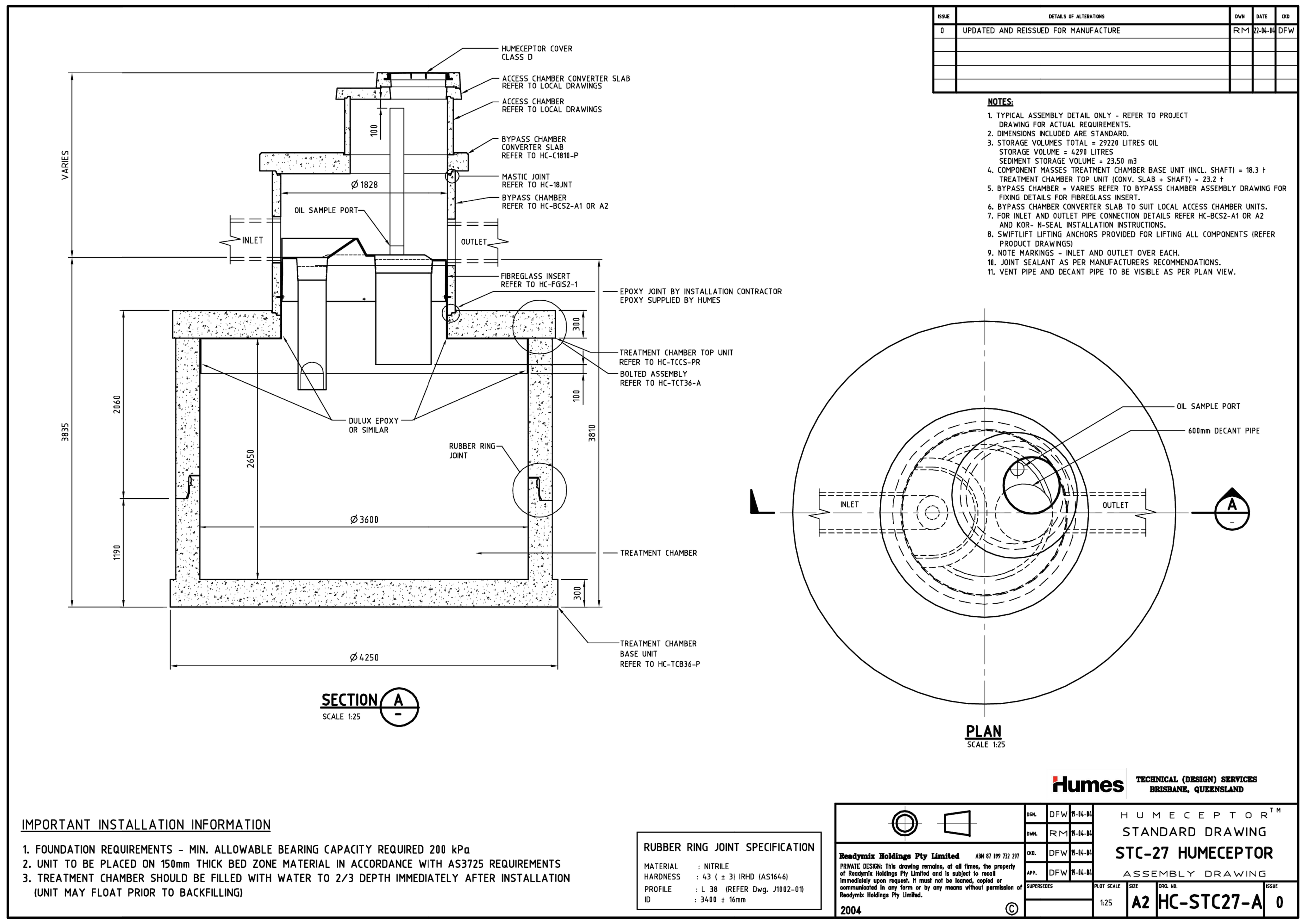
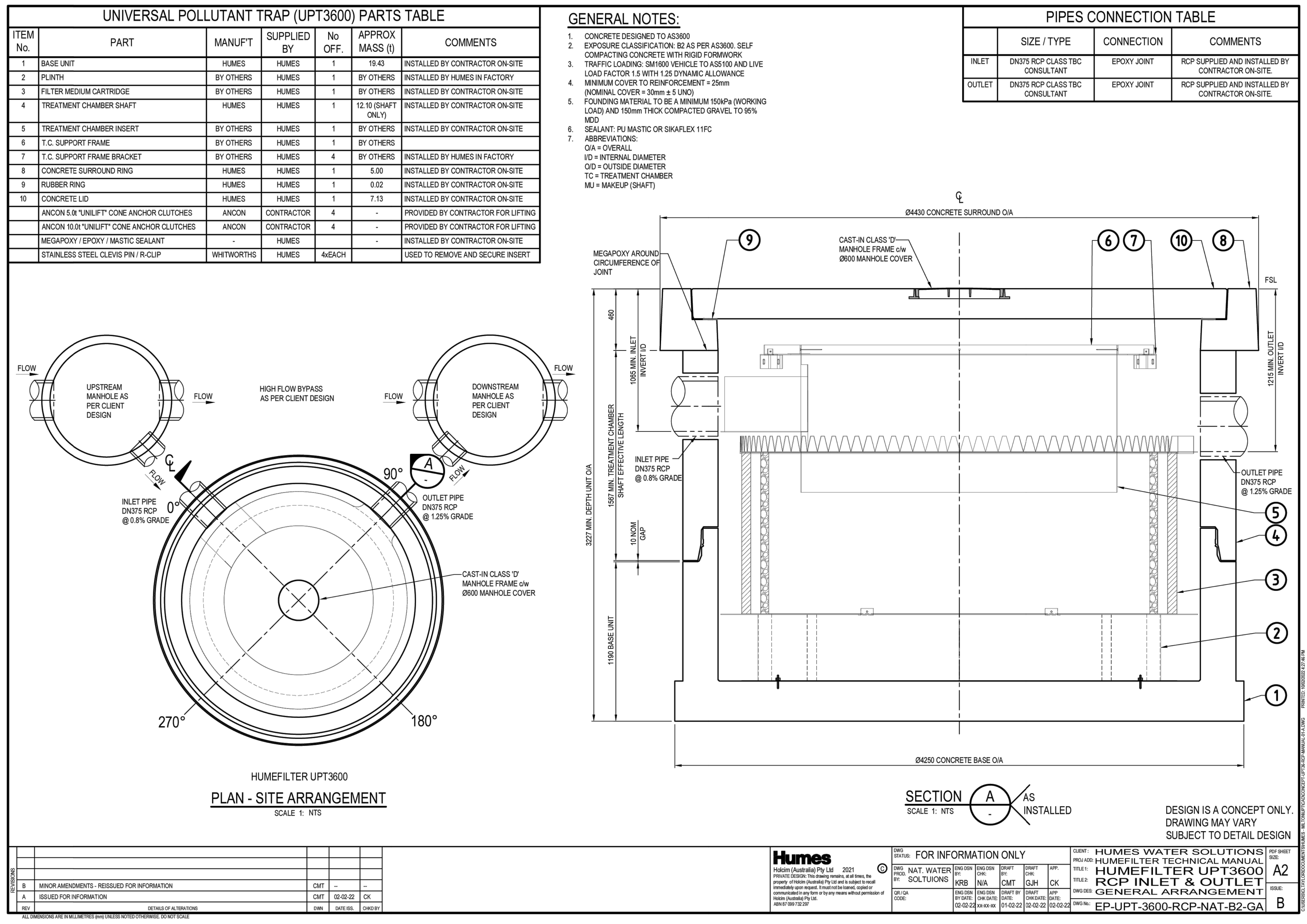
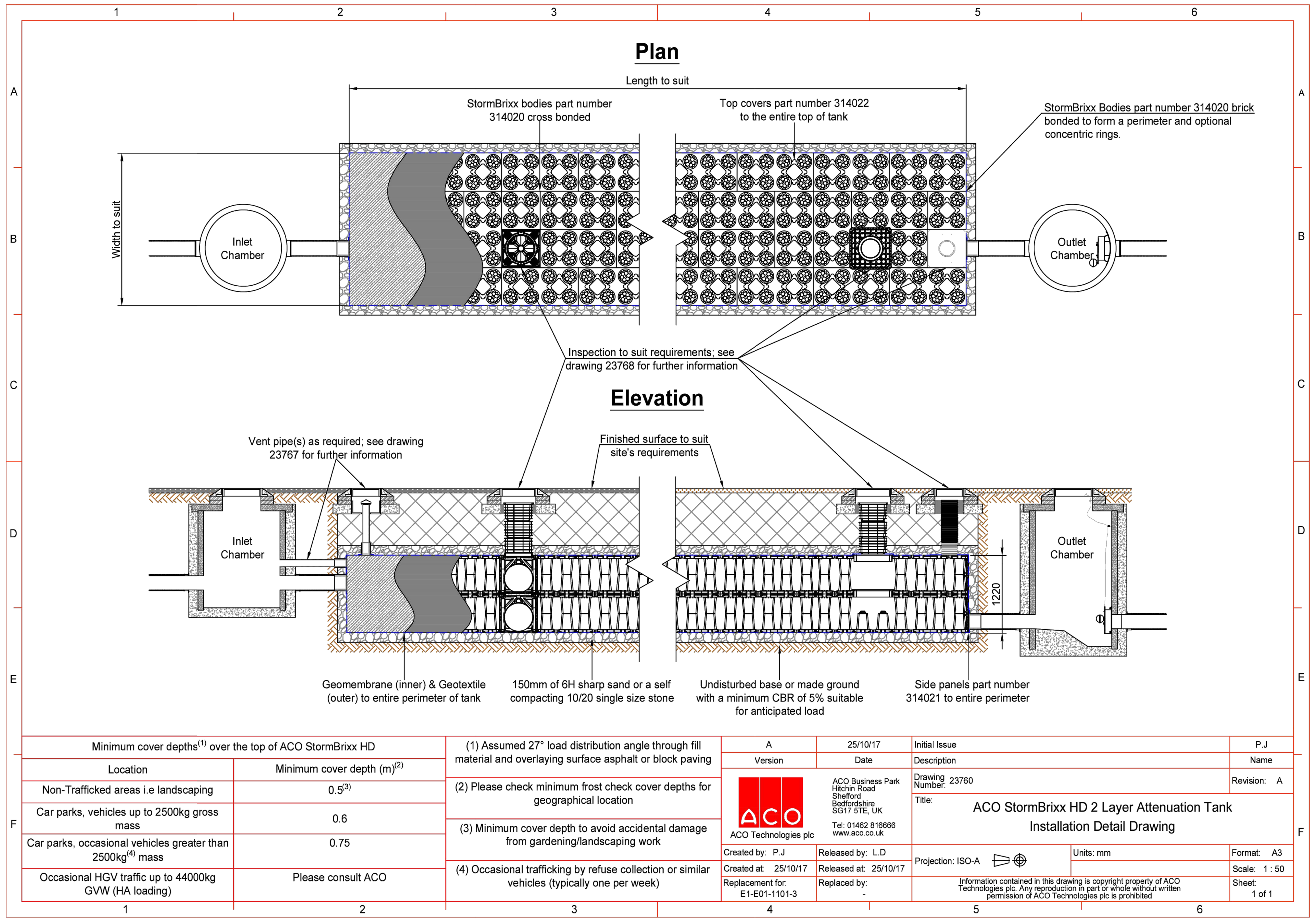
		1:20	C210 - E


HUMECEPTOR COVER CLASS D
ACCESS CHAMBER CONVERTER SLAB REFER TO LOCAL DRAWINGS
ACCESS CHAMBER REFER TO LOCAL DRAWINGS
BYPASS CHAMBER CONVERTER SLAB REFER TO HC-C1818-P
MASTIC JOINT REFER TO HC-18JNT
BYPASS CHAMBER REFER TO HC-BCS2-A1 OR A2
FIBREGLASS INSERT REFER TO HC-FGIS2-1
EPOXY JOINT BY INSTALLATION CONTRACTOR EPOXY SUPPLIED BY HUMES
TREATMENT CHAMBER TOP UNIT REFER TO HC-TCCS-PR
BOLTED ASSEMBLY REFER TO HC-TCT36-A
TREATMENT CHAMBER
TREATMENT CHAMBER BASE UNIT REFER TO HC-TCB36-P
OIL SAMPLE PORT
INLET
OUTLET
DULUX EPOXY OR SIMILAR
RUBBER RING JOINT
VARIES
Ø1828
Ø3600
Ø4250
SECTION A
SCALE 1:25
PLAN
SCALE 1:25
600mm DECANT PIPE
NOTES:
1. TYPICAL ASSEMBLY DETAIL ONLY - REFER TO PROJECT DRAWING FOR ACTUAL REQUIREMENTS.
2. DIMENSIONS INCLUDED ARE STANDARD.
3. STORAGE VOLUMES TOTAL = 29220 LITRES OIL STORAGE VOLUME = 4290 LITRES SEDIMENT STORAGE VOLUME = 23.50 m3
4. COMPONENT MASSES TREATMENT CHAMBER BASE UNIT (INCL. SHAFT) = 18.3 t TREATMENT CHAMBER TOP UNIT (CONV. SLAB + SHAFT) = 23.2 t
5. BYPASS CHAMBER + VARIES REFER TO BYPASS CHAMBER ASSEMBLY DRAWING FOR FIXING DETAILS FOR FIBREGLASS INSERT.
6. BYPASS CHAMBER CONVERTER SLAB TO SUIT LOCAL ACCESS CHAMBER UNITS.
7. FOR INLET AND OUTLET PIPE CONNECTION DETAILS REFER HC-BCS2-A1 OR A2 AND HCR- N-SEAL INSTALLATION INSTRUCTIONS.
8. SWIFTLIFT LIFTING ANCHORS PROVIDED FOR LIFTING ALL COMPONENTS (REFER PRODUCT DRAWINGS)
9. NOTE MARKINGS - INLET AND OUTLET OVER EACH.
10. JOINT SEALANT AS PER MANUFACTURERS RECOMMENDATIONS.
11. VENT PIPE AND DECANT PIPE TO BE VISIBLE AS PER PLAN VIEW.
UPDATED AND REISSUED FOR MANUFACTURE
IMPORTANT INSTALLATION INFORMATION
1. FOUNDATION REQUIREMENTS - MIN. ALLOWABLE BEARING CAPACITY REQUIRED 200 kPa
2. UNIT TO BE PLACED ON 150mm THICK BED ZONE MATERIAL IN ACCORDANCE WITH AS3725 REQUIREMENTS
3. TREATMENT CHAMBER SHOULD BE FILLED WITH WATER TO 2/3 DEPTH IMMEDIATELY AFTER INSTALLATION (UNIT MAY FLOAT PRIOR TO BACKFILLING)
RUBBER RING JOINT SPECIFICATION
MATERIAL : NITRILE
Humes
STANDARD DRAWING
STC-27 HUMECEPTOR
ASSEMBLY DRAWING
HC-STC27-A


UNIVERSAL POLLUTANT TRAP (UPT3600) PARTS TABLE
GENERAL NOTES:
PIPES CONNECTION TABLE
UPSTREAM MANHOLE AS PER CLIENT DESIGN
DOWNSTREAM MANHOLE AS PER CLIENT DESIGN
HIGH FLOW BYPASS AS PER CLIENT DESIGN
FLOW
INLET PIPE DN375 RCP @ 0.8% GRADE
OUTLET PIPE DN375 RCP @ 1.25% GRADE
CAST-IN CLASS 'D' MANHOLE FRAME c/w Ø600 MANHOLE COVER
HUMEFILTER UPT3600
PLAN - SITE ARRANGEMENT
SECTION A AS INSTALLED
Ø4250 CONCRETE BASE O/A
DESIGN IS A CONCEPT ONLY. DRAWING MAY VARY SUBJECT TO DETAIL DESIGN
Humes
FOR INFORMATION ONLY
HUMEFILTER UPT3600
RCP INLET & OUTLET
GENERAL ARRANGEMENT
EP-UPT-3600-RCP-NAT-B2-GA


Plan
Length to suit
StormBrixx bodies part number 314020 cross bonded
Top covers part number 314022 to the entire top of tank
StormBrixx Bodies part number 314020 brick bonded to form a perimeter and optional concentric rings.
Width to suit
Inlet Chamber
Outlet Chamber
Inspection to suit requirements; see drawing 23768 for further information
Elevation
Vent pipe(s) as required; see drawing 23767 for further information
Finished surface to suit site's requirements
1220
Geomembrane (inner) & Geotextile (outer) to entire perimeter of tank
150mm of 6H sharp sand or a self compacting 10/20 single size stone
Undisturbed base or made ground with a minimum CBR of 5% suitable for anticipated load
Side panels part number 314021 to entire perimeter
Minimum cover depths(1) over the top of ACO StormBrixx HD
Location | Minimum cover depth (m)(2)
Non-Trafficked areas i.e landscaping | 0.5(3)
Car parks, vehicles up to 2500kg gross mass | 0.6
Car parks, occasional vehicles greater than 2500kg(4) mass | 0.75
Occasional HGV traffic up to 44000kg GVW (HA loading) | Please consult ACO
(1) Assumed 27° load distribution angle through fill material and overlaying surface asphalt or block paving
(2) Please check minimum frost check cover depths for geographical location
(3) Minimum cover depth to avoid accidental damage from gardening/landscaping work
(4) Occasional trafficking by refuse collection or similar vehicles (typically one per week)
ACO Technologies plc
Drawing Number: 23760
Title: ACO StormBrixx HD 2 Layer Attenuation Tank Installation Detail Drawing
Scale: 1 : 50

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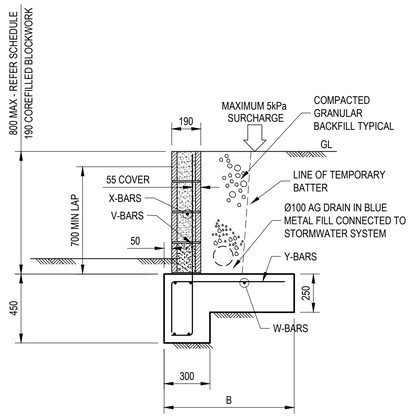
PROPOSED BUILDING 2

2 Bowman Rd, Moss Vale

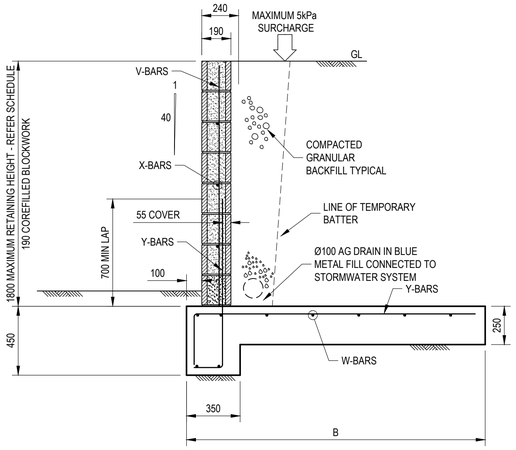
For SAAS Aus Pty Ltd

STORMWATER DETAILS SHEET 2 OF 3

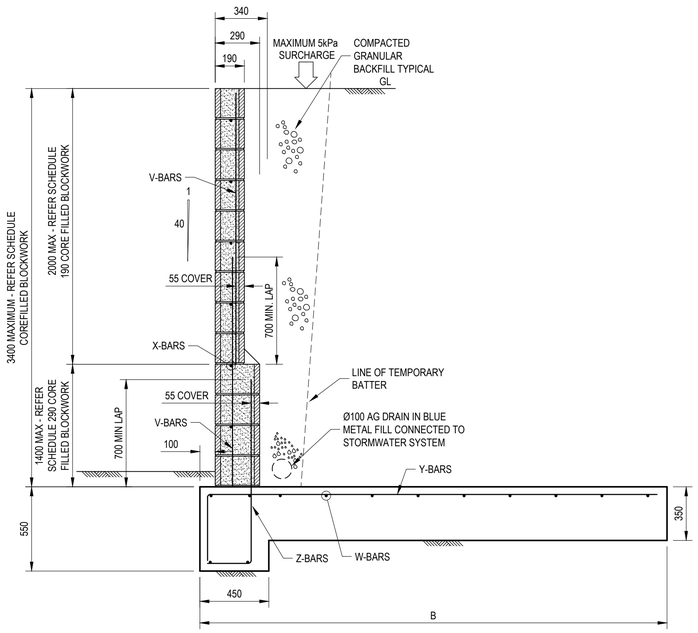
DESIGN	DRAWN	DATE	PROJECT No.
SWH	RCL	JAN 2023	10530
CHECKED	APPROVED	SCALE	DRG No.
		-	C211 - E



400 to 800 HIGH RETAINING HEIGHT					
HEIGHT	B	V-BARS	W-BARS	X-BARS	Y-BARS
400	650	N12-400	N12-300	N12-400	N12-400
600	850	N12-400	N12-300	N12-400	N12-400
800	1150	N12-400	N12-300	N12-400	N12-400



800 to 1800 HIGH RETAINING HEIGHT					
HEIGHT	B	V-BARS	W-BARS	X-BARS	Y-BARS
800	1150	N12-400	N12-300	N12-400	N12-400
1000	1350	N12-400	N12-300	N12-400	N12-400
1200	1550	N12-400	N12-300	N12-400	N12-400
1400	1750	N16-400	N12-300	N12-400	N16-400
1600	1950	N16-400	N12-300	N12-400	N16-400
1800	2150	N16-400	N16-300	N16-400	N16-200



2000 to 3400 HIGH RETAINING HEIGHT								
HEIGHT	B	HEIGHT OF BLOCKWORK		V-BARS	W-BARS	X-BARS	Y-BARS	Z-BARS
		190 mm	290 mm					
2000	2450	1200	800	N16-400	N16-300	N12-400	N16-200	N16-200
2200	2650	1400	800	N16-400	N16-300	N12-400	N16-200	N16-200
2400	2850	1600	800	N16-400	N16-300	N12-400	N16-200	N16-200
2600	3050	1800	800	N16-400	N16-300	N12-400	N16-200	N16-200
2800	3250	1800	1000	N16-400	N16-300	N12-400	N16-200	N16-200
3000	3450	1800	1200	N16-400	N16-300	N16-400	N16-200	N16-200
3200	3650	1800	1400	N20-400	N16-300	N16-400	N20-200	N20-200
3400	3850	1800	1600	N20-400	N16-300	N16-400	N20-200	N20-200

TYPICAL EXTERNAL BLOCKWORK RETAINING WALL DETAILS

1:20

FOR DA APPROVAL

NOT TO BE USED FOR CONSTRUCTION PURPOSES

A1 ORIGINAL SIZE

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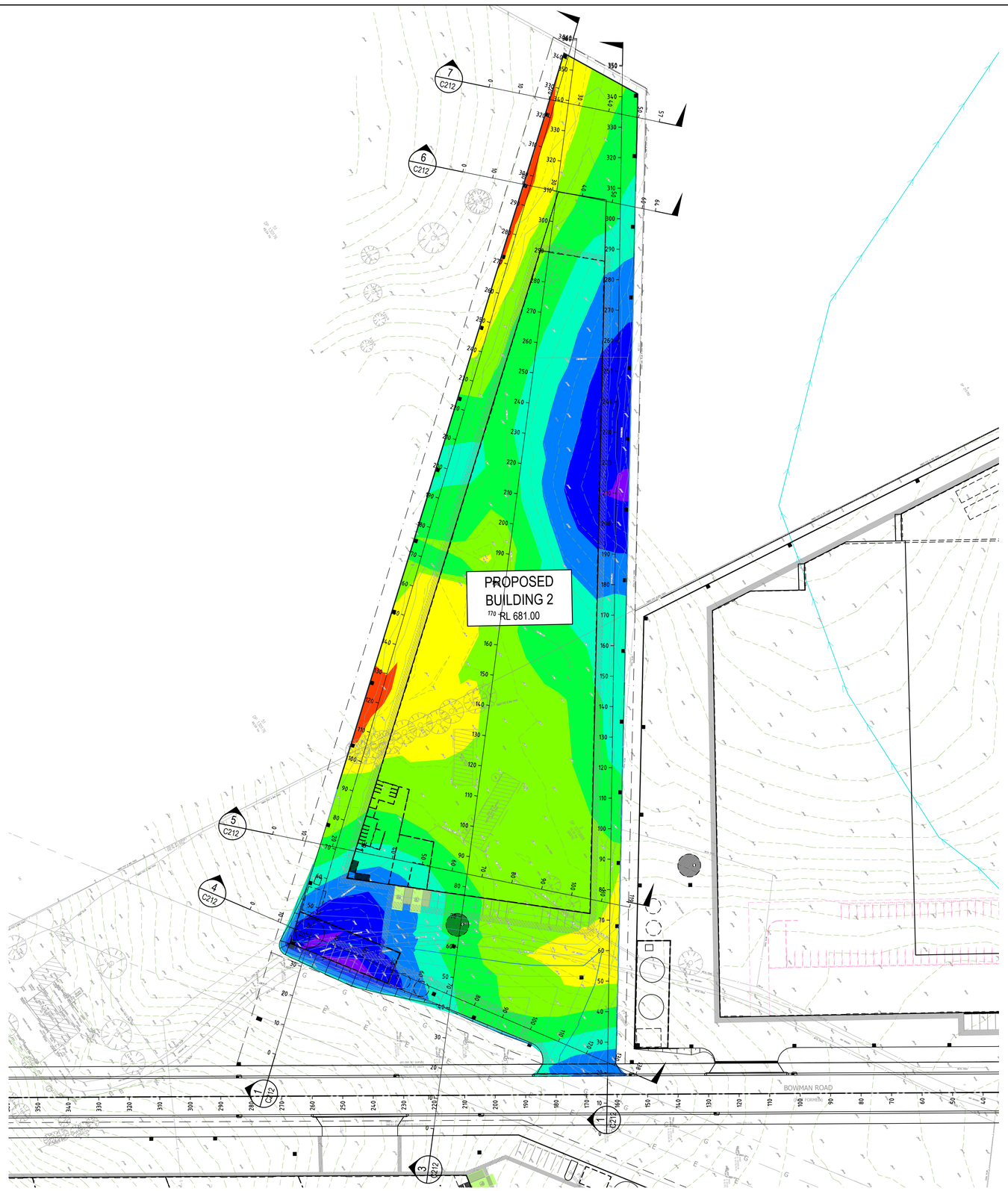
For SAAS Aus Pty Ltd

STORMWATER DETAILS SHEET 3 OF 3

DESIGN	DRAWN	DATE	PROJECT No.
SWH	RCL	JAN 2023	10530
CHECKED	APPROVED	SCALE	DRG No.
		1:20	C212 - E



BULK EARTHWORKS CUT AND FILL PLAN

1:750

Surface Analysis: Elevation Ranges			
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)
1		-3.000	-2.500
2		-2.500	-2.000
3		-2.000	-1.500
4		-1.500	-1.000
5		-1.000	-0.500
6		-0.500	0.000
7		0.000	0.500
8		0.500	1.000
9		1.000	1.500

CUT
FILL

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
bulk earthworks cut and fill - Building 2 - proposed surface less 200mm	1.000	1.000	22014.666sq.m	18702.707 Cu. M.	1881.507 Cu. M.	16821.200 Cu. M.<Cut>
Totals			22014.666sq.m	18702.707 Cu. M.	1881.507 Cu. M.	16821.200 Cu. M.<Cut>

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PROPOSED BUILDING 2

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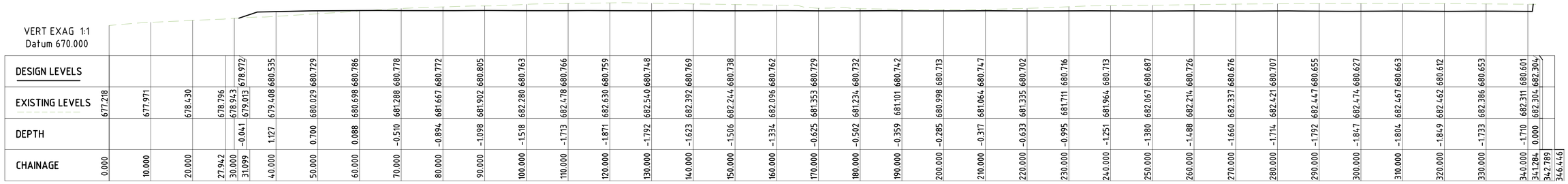
BULK AND EARTHWAORKS CUT AND FILL PLAN

DESIGN	DRAWN	DATE	PROJECT No.
SWH	RCL	JAN 2023	10530
CHECKED	APPROVED	SCALE	DRG No.
		1:750	C213 - E



VERT EXAG 1:1
Datum 670.000

DESIGN LEVELS						678.972	680.535	680.729	680.786	680.778	680.772	680.805	680.763	680.766	680.759	680.748	680.769	680.738	680.762	680.729	680.732	680.742	680.713	680.747	680.702	680.716	680.713	680.687	680.726	680.676	680.707	680.655	680.627	680.663	680.612	680.653	680.601	682.304		
EXISTING LEVELS	677.218	677.971	678.430	678.796	678.943	679.013	679.408	680.029	680.698	681.288	681.667	681.902	682.280	682.478	682.630	682.540	682.392	682.244	682.096	681.353	681.234	681.101	680.998	681.064	681.335	681.711	681.964	682.067	682.214	682.337	682.421	682.447	682.474	682.467	682.462	682.386	682.311	682.304		
DEPTH						-0.041	1.127	0.700	0.088	-0.510	-0.894	-1.098	-1.518	-1.713	-1.871	-1.792	-1.623	-1.506	-1.334	-0.625	-0.502	-0.359	-0.285	-0.317	-0.633	-0.995	-1.251	-1.380	-1.488	-1.660	-1.714	-1.792	-1.847	-1.804	-1.849	-1.733	-1.710	0.000		
CHAINAGE	0.000	10.000	20.000	27.942	30.000	31.099	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000	310.000	320.000	330.000	340.000	341.284	342.789	346.446

SECTION ① C213

1:500

VERT EXAG 1:1
Datum 670.000

DESIGN LEVELS						680.143	680.075	680.321	680.564	680.806	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	680.856	680.755	680.729	680.686	680.685	680.633	682.220			
EXISTING LEVELS	678.329	678.595	679.069	679.689	679.872	680.159	680.230	680.651	681.108	681.370	681.663	681.957	682.103	682.197	682.205	682.253	682.254	682.173	682.071	682.000	681.876	681.924	681.672	681.387	681.273	681.113	681.161	681.229	681.352	681.476	681.624	681.762	681.901	682.018	682.109	682.184	682.205	682.216	682.220			
DEPTH						-0.016	-0.155	-0.329	-0.544	-0.564	-0.663	-0.957	-1.103	-1.197	-1.205	-1.253	-1.254	-1.173	-1.071	-1.000	-0.876	-0.924	-0.672	-0.387	-0.273	-0.113	-0.161	-0.229	-0.352	-0.476	-0.624	-0.762	-1.045	-1.262	-1.381	-1.498	-1.520	-1.583	0.000			
CHAINAGE	0.000	10.000	20.000	30.000	32.729	38.525	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000	310.000	320.000	330.000	340.000	350.000	353.895	356.915	360.000	360.435

SECTION ② C213

1:500

VERT EXAG 1:1
Datum 670.000

DESIGN LEVELS			680.833	680.910	680.879	680.708	680.608	680.560	680.724	680.739	680.726	680.809	680.772	680.794	680.780	680.781	680.783	680.747	680.779	680.748	680.786	680.782	680.786	680.800	680.789	680.820	680.816	680.827	680.829	680.801	680.812	680.706	680.735	680.689	680.705	680.662	681.502			
EXISTING LEVELS	680.855	680.630	680.511	680.527	680.825	681.428	681.968	682.223	682.181	682.002	681.830	681.488	681.289	681.121	681.019	680.991	680.999	680.944	680.735	680.459	680.117	679.711	679.563	679.661	679.709	679.774	679.910	680.084	680.297	680.520	680.776	680.983	681.109	681.238	681.355	681.462	681.502			
DEPTH			0.322	0.383	0.054	-0.720	-1.360	-1.663	-1.457	-1.262	-1.104	-0.679	-0.517	-0.327	-0.238	-0.210	-0.217	-0.196	0.044	0.288	0.669	1.071	1.223	1.140	1.080	1.046	0.906	0.743	0.532	0.281	0.036	-0.276	-0.374	-0.549	-0.650	-0.800	0.000			
CHAINAGE	0.000	10.000	18.895	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000	310.000	320.000	330.000	340.000	343.869	347.054	350.000	350.312

SECTION ③ C213

1:500

VERT EXAG 1:1
Datum 670.000

DESIGN LEVELS				679.601	680.560	680.484	680.407	680.330	680.254	680.188	680.115	680.114	680.239	680.405	680.740	681.049	681.055	
EXISTING LEVELS	679.599	679.666	679.839	679.770	679.532	679.344	679.314	679.488	679.920	680.350	680.649	680.805	680.799	680.681	680.544	680.607	680.634	680.746
DEPTH				-0.169	1.028	1.140	1.093	0.843	0.334	-0.163	-0.534	-0.691	-0.560	-0.276	0.196	0.442	0.421	
CHAINAGE	0.000	1.569	10.000	13.117	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	131.661	137.561

SECTION ④ C213

1:500

A1 ORIGINAL SIZE

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REVISION	DATE	AMENDMENT DESCRIPTION

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PROPOSED BUILDING 2

2 Bowman Rd, Moss Vale
For SAAS Aus Pty Ltd

SITE CROSS SECTONS

DESIGN SWH	DRAWN RCL	DATE JAN 2023	PROJECT No. 10530
CHECKED	APPROVED	SCALE 1:750	DRG No. C214 - E

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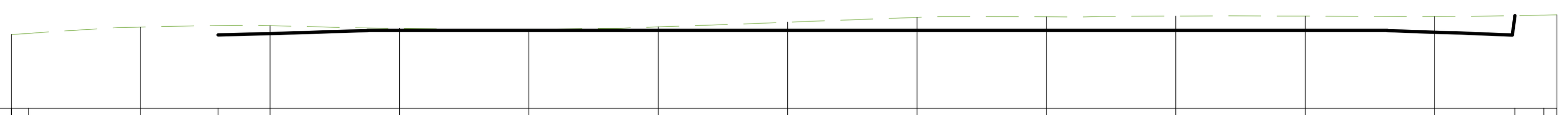
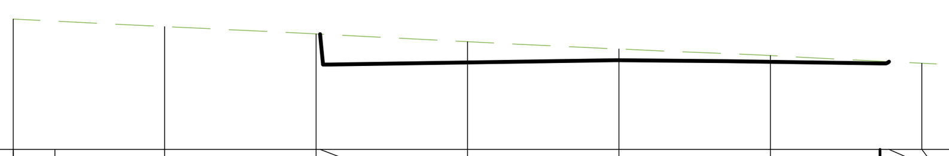


VERT EXAG 1:1
Datum 675.000

DESIGN LEVELS				680.642	680.743	681.000	681.000	681.000	681.000	681.000	681.000	681.000	681.000	680.847	682.129		
EXISTING LEVELS	680.669	680.762	681.247	681.360	681.354	681.148	681.078	681.263	681.623	681.991	682.043	682.094	682.088	682.059	682.129	682.167	682.184
DEPTH				-0.719	-0.611	-0.148	-0.078	-0.263	-0.623	-0.991	-1.043	-1.094	-1.088	-1.212	0.000		
CHAINAGE	0.000	1.339	10.000	15.978	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	116.210	118.450	119.460

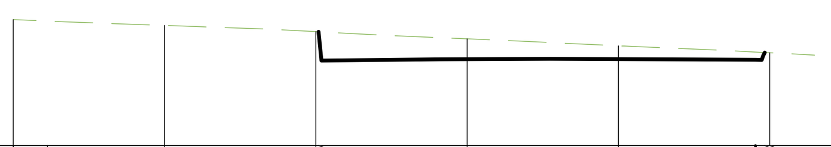
SECTION 5 / C213
1:500



VERT EXAG 1:1
Datum 675.000

DESIGN LEVELS					682.592	680.733	680.879	680.769	680.668	680.781		
EXISTING LEVELS	683.587	683.451	683.090	682.606	682.592	682.094	681.618	681.181	680.809	680.781	680.676	
DEPTH					0.000	-1.362	-0.739	-0.412	-0.141	0.000		
CHAINAGE	0.000	2.743	10.000	20.000	20.261	30.000	40.000	50.000	57.236	57.832	60.000	64.424

SECTION 6 / C213
1:500



VERT EXAG 1:1
Datum 675.000

DESIGN LEVELS					682.521	680.709	680.713	680.665	681.150		
EXISTING LEVELS	683.327	683.228	682.940	682.530	682.521	682.058	681.593	681.183	681.150	681.133	
DEPTH					0.000	-1.349	-0.881	-0.518	0.000		
CHAINAGE	0.000	2.259	10.000	20.000	20.172	30.000	40.000	49.055	49.666	50.000	56.922

SECTION 7 / C213
1:500

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SITE CROSS SECTONS

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