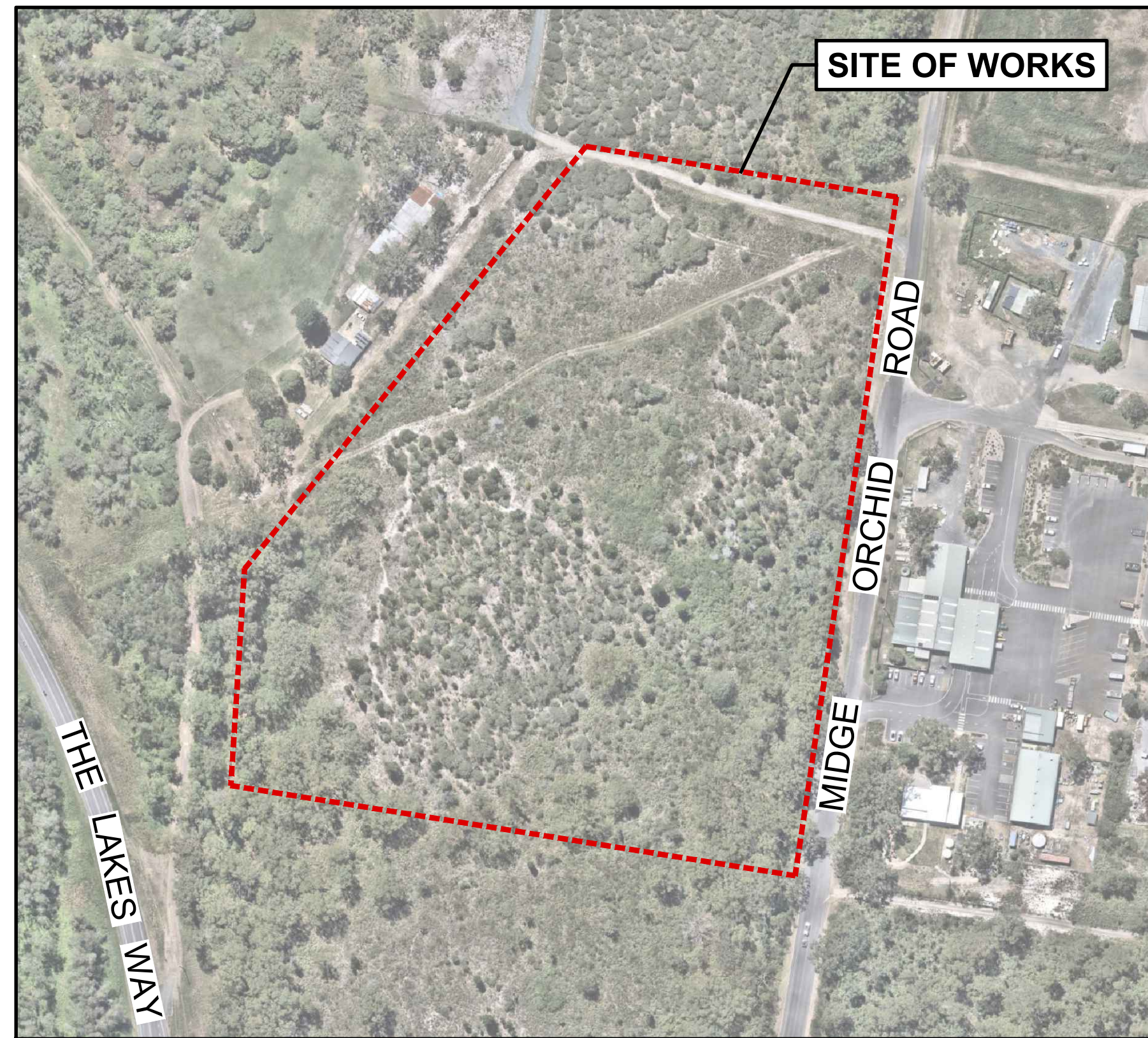




(SOURCE: NEARMAP FEB 2025)

FOR INFORMATION ONLY

FOR INFORMATION ONLY

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100mmC

150mmD

200mmE

250mmF

300mmG

350mmH

400mmI

450mmJ

500mmK

550mmL

600mmM

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700mmO

750mmP

11

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1

LEGEND - CIVIL

DESCRIPTION	PROPOSED	EXISTING
LIMIT OF CONSTRUCTION		
CIVIL WORKS BOUNDARY		
SITE WORKS BOUNDARY		
DESIGN CONTOUR - MAJOR		
DESIGN CONTOUR - MINOR		
MASONRY RETAINING WALL		
ROCK RETAINING WALL		
FENCE		
LOCKABLE GATE		
BOLLARD		
GUIDE POST		
SITE FENCE		
GUARD RAIL		
BATTER (EARTHWORKS)		
CENTRELINE / CHAINAGE		
KERB LINE		
KERB LINE (FUTURE)		
KERB RETURN LABEL		
SURFACE LEVEL		
VEHICULAR CROSSING		
DRIVEWAY		

LEGEND - DRAINAGE

DESCRIPTION	PROPOSED	EXISTING	FUTURE	TEMPORARY
SUBSOIL DRAINAGE LINE				
SUBSOIL DRAINAGE FLUSHING POINT				
STORMWATER DRAINAGE LINE				
RCBC CULVERT LINE				
FLOW DIRECTION AND PIPE SIZE				
STUB, CAP AND BURY FOR FUTURE CONNECTION				
TEMPORARILY BLOCK PIPE				
STRUCTURAL STORMWATER PIT (LINTEL/GRATE VARIABLE)				
STORMWATER PIT - ONGRADE				
STORMWATER PIT - SAG				
STORMWATER PIT - SURFACE INLET				
STORMWATER PIT - JUNCTION PIT				
STORMWATER PIT LABEL (DRAINAGE LINE No. \ DRAINAGE PIT No.)				
CONCRETE HEADWALL WITH RIPRAP SCOUR PROTECTION				
STACKED ROCK HEADWALL WITH RIPRAP SCOUR PROTECTION				
OVERLAND FLOW PATH				
CATCHMENT DIRECTION				
EARTHBANK (LOW FLOW)				
SWALE				
ROOF WATER OUTLET TO KERB				
ROOF WATER OUTLET TO REAR OF PIT				
BASIN FENCE				
BASIN BIO FILTER				

LEGEND - SERVICES

DESCRIPTION	PROPOSED	EXISTING	FUTURE
O/H ELECTRICAL LINE			
ELECTRICAL LINE			
ELECTRICAL PILLAR			
STREET LIGHT			
POWER POLE			
ELECTRICAL SUBSTATION			
WATER LINE			
WATER HYDRANT			
WATER STOP VALVE			
RECYCLE WATER			
COMMUNICATION LINE			
GAS LINE			
SEWER LINE			
SEWER RISING MAIN			
SEWER LINE CONCRETE ENCASED			
SEWER MAINTENANCE HOLE			
SEWER MAINTENANCE CHAMBER			
SEWER MS/TMS			
NBN LINE			
TELECOMS LINE			
FIBRE OPTIC LINE			
COMBINED SERVICES TRENCH			

LEGEND - PAVEMENT

DESCRIPTION	PROPOSED	EXISTING
ROAD		
TEMPORARY		
FOOTPATH		

LEGEND - SURVEY

DESCRIPTION	PROPOSED	EXISTING
TREES		
EXISTING TREES TO BE REMOVED (IN ACCORDANCE WITH ARBORIST REPORT)		
EXISTING TREES TO BE RETAINED AND PROTECTED. (IN ACCORDANCE WITH ARBORIST REPORT)		
TPZ - (TREE PROTECTION ZONE)		
SRZ - (STRUCTURAL ROOT ZONE)		

ABBREVIATIONS

RKG	ROLL KERB AND GUTTER
K&G	KERB AND GUTTER
KO	KERB ONLY
ES	EDGE STRIP
DD	DISH DRAIN
PR	PRAM RAMP
VC	VEHICULAR CROSSING
RW	RETAINING WALL
S.G.G.P.	STANDARD GRATED GULLY PIT
G.S.I.P.	GRATED SURFACE INLET PIT
JP	JUNCTION PIT
HW	HEADWALL
GPT	GROSS POLLUTANT TRAP
TOW	TOP OF WALL
BOW	BOTTOM OF WALL
TFSL	TOP FINISHED SURFACE LEVEL
BFSL	BOTTOM FINISHED SURFACE LEVEL
BEW	BULK EARTHWORKS
RCP	STEEL REINFORCED CONCRETE PIPE
RRJ	RUBBER RING JOINT
C1 or C2	PIPE CLASS
MH	MAINTENANCE HOLE
MS	MAINTENANCE SHAFT
TMS	TERMINAL MAINTENANCE SHAFT
RP	RODDING POINT
HYD	HYDRANT
SV	STOP VALVE
SAG	LOW POINT
CREST	HIGH POINT
PP	POWER POLE

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WATER HYDRANT			
WATER STOP VALVE			
RECYCLE WATER			
COMMUNICATION LINE			
GAS LINE			
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SEWER RISING MAIN			
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NBN LINE			
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LEGEND - PAVEMENT

DESCRIPTION	PROPOSED	EXISTING
ROAD		
TEMPORARY		
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LEGEND - SURVEY

DESCRIPTION	PROPOSED	EXISTING
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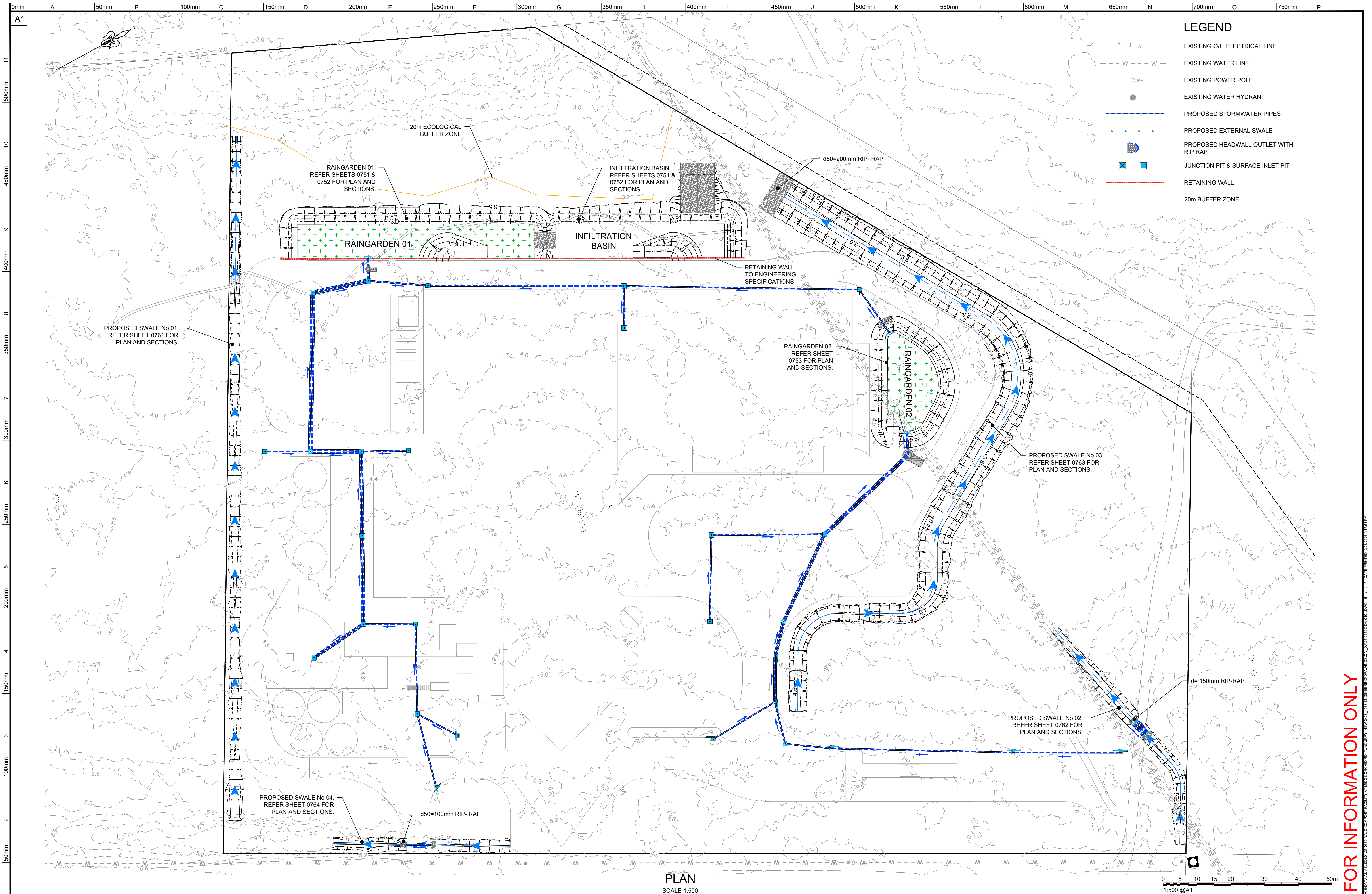
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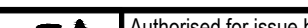
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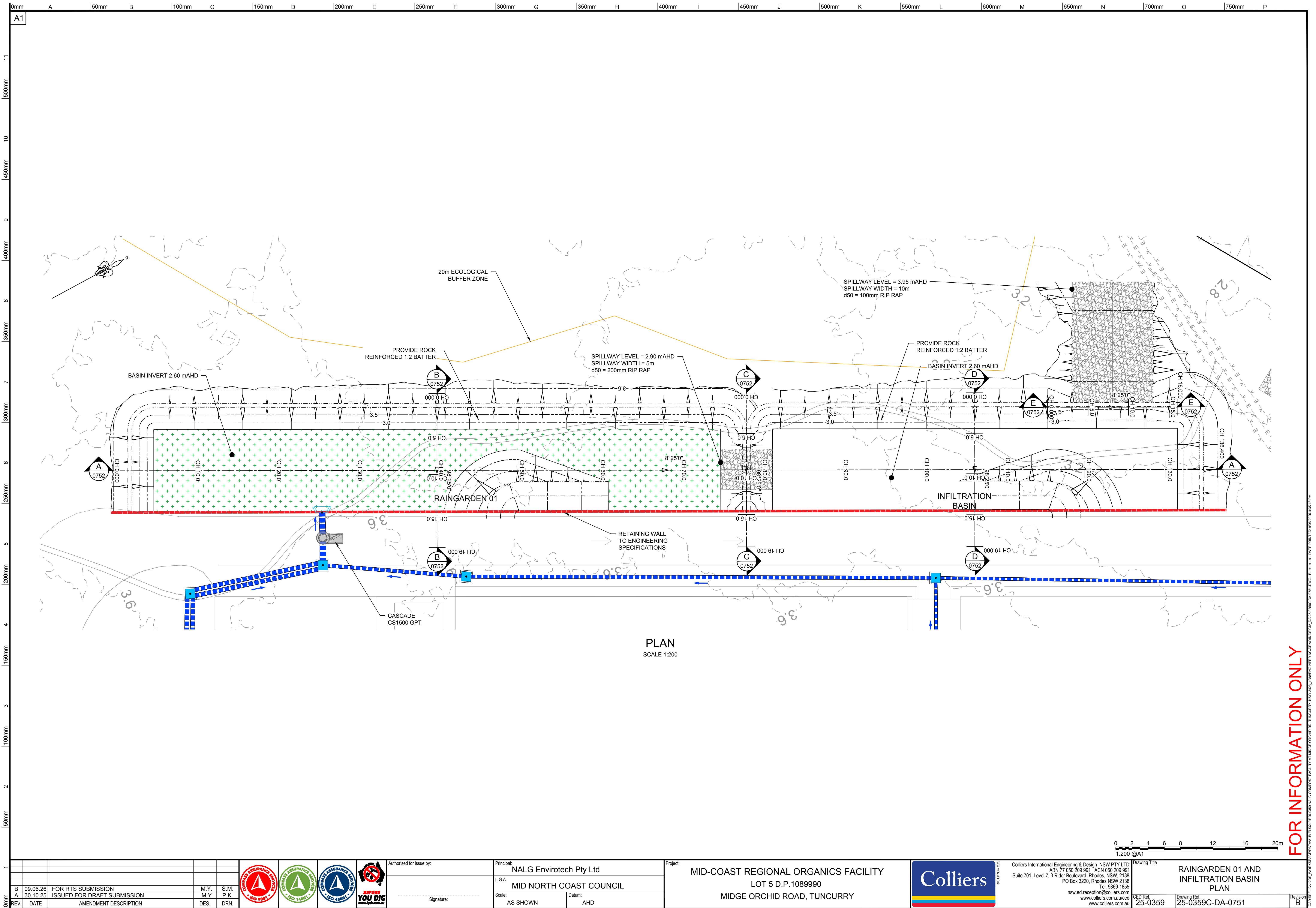
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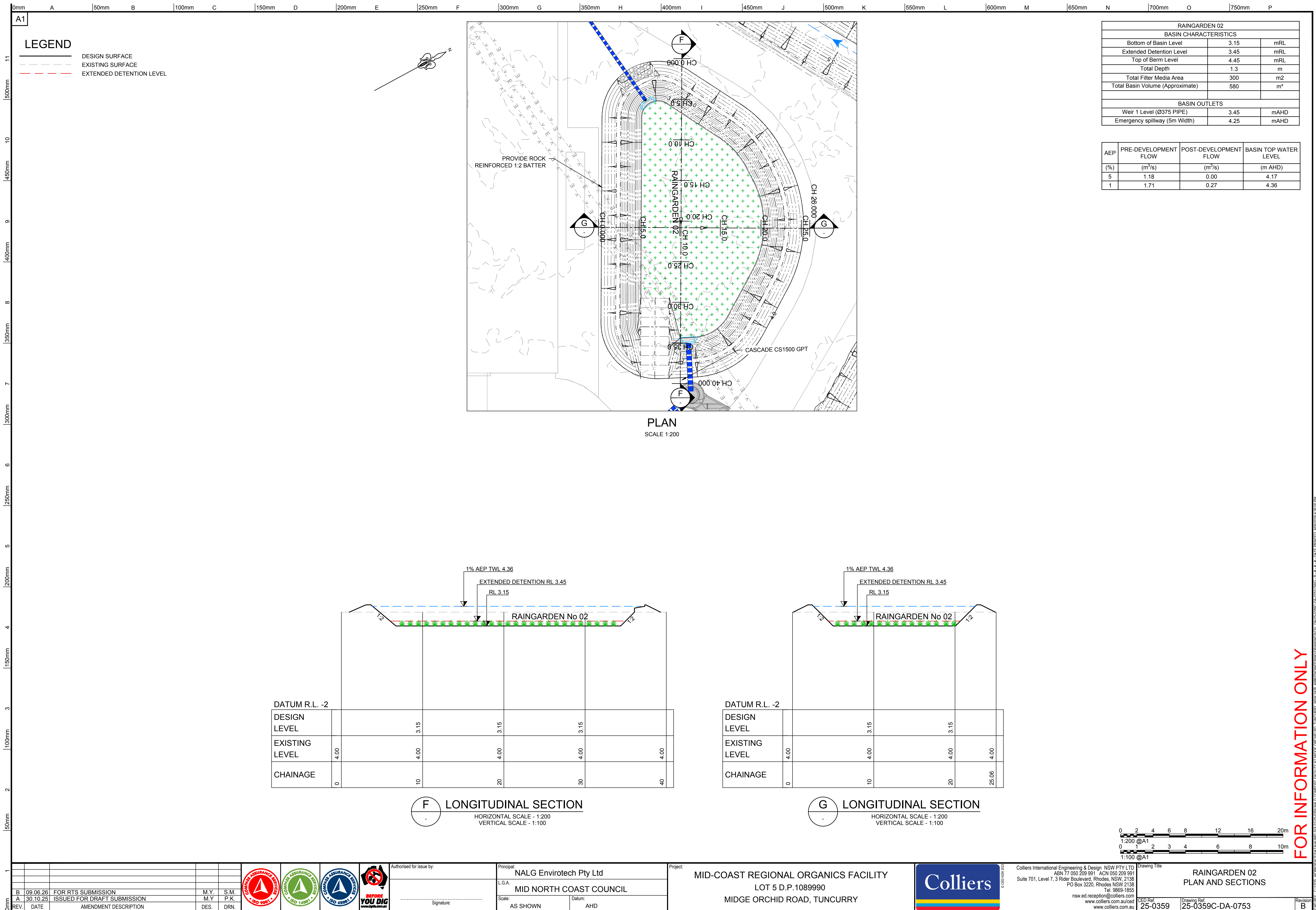


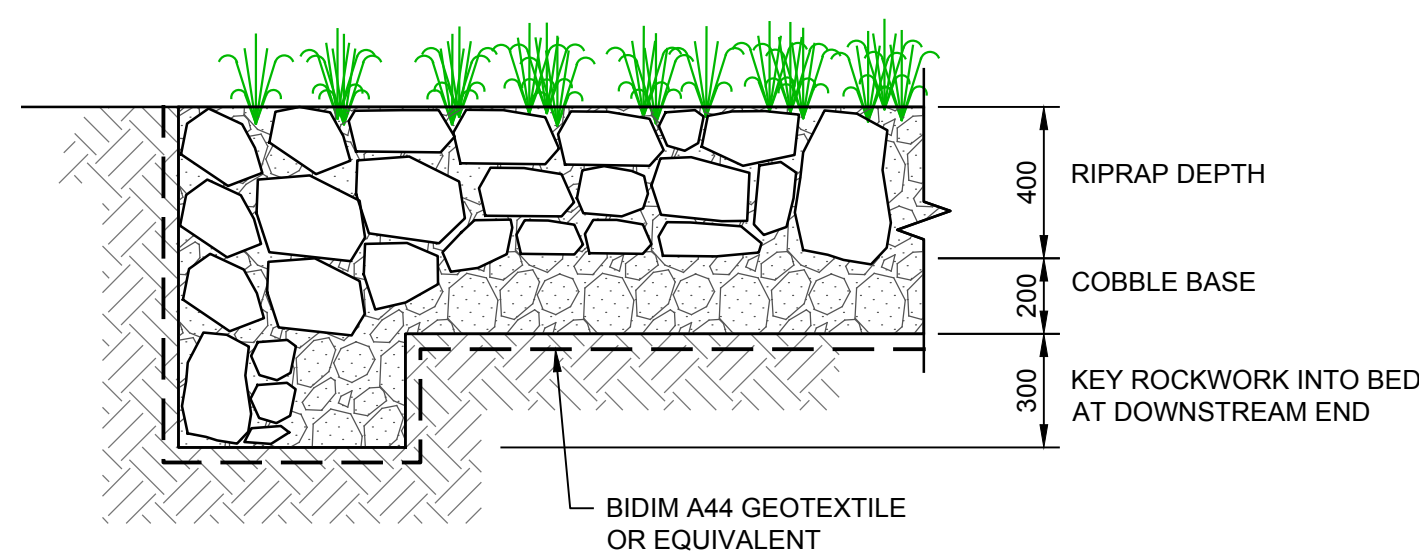
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										L.G.A. MID NORTH COAST COUNCIL				LOT 5 D.P.1089990					
B		09.06.26		FOR RTS SUBMISSION		M.Y.		S.M.				Scale: AS SHOWN		Datum: AHD					
A		30.10.25		ISSUED FOR DRAFT SUBMISSION		M.Y.		P.K.											
REV.		DATE		AMENDMENT DESCRIPTION		DES.		DRN.											

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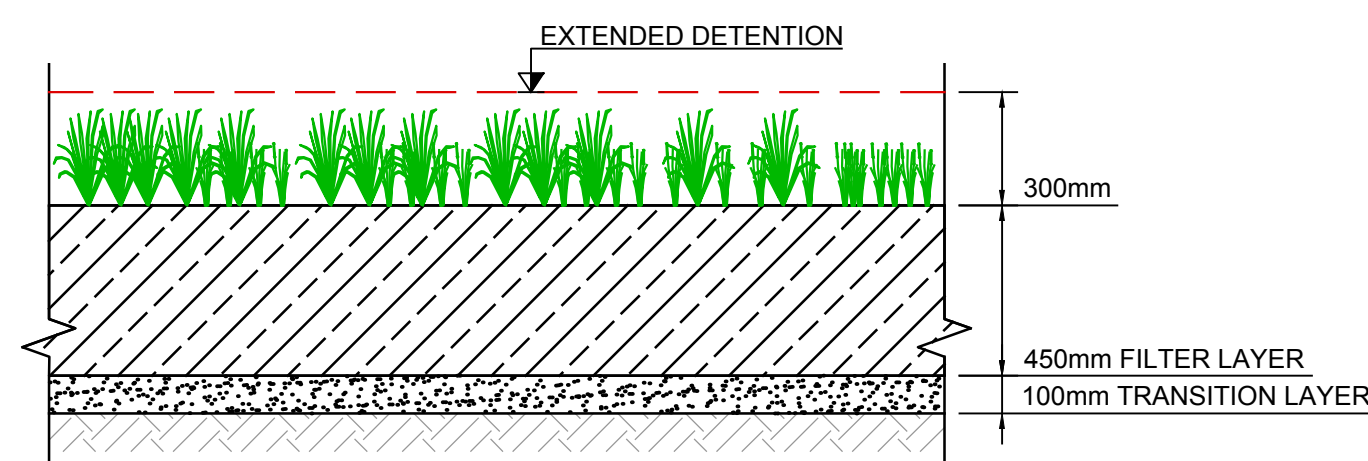
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RIPRAP DETAILS (TYP.)

SCALE 1:10



RAINGARDEN BIO-RETENTION FILTER PROFILE (TYP.)

ROCK RIPRAP SPECIFICATIONS

1. ALL RIPRAP MUST CONSIST OF ANGULAR RUN-OF-QUARRY DURABLE ROCK PLACED OVER A 200mm LAYER OF ANGULAR COBBLES D₅₀=200mm MIXED WITH GRAVEL D₅₀=10mm.
2. ALL ROCK IS TO BE A HARD DURABLE ROCK WITH A POINT INDEX LOAD I₅₀ GREATER THAN 1.0MPa AS DETERMINED IN ACCORDANCE WITH AS4133.4.1 -2007
3. RIPRAP IS TO BE PLACED BY HAND AND CROW-BARRED INTO PLACE TO ENSURE FIT WITH MINIMUM VOIDS.
4. ALL ROCK AND COBBLES TO BE PACKED WITH TOPSOIL. GAPS IN RIPRAP TO BE PLANTED AS SPECIFIED IN LANDSCAPING PLANS
M50 - 60kg (NOM 300MD)
M15 - 25kg
100 - 120kg
5. BASE OF RIPRAP TO BE LINED WITH GEOTEXTILE FABRIC (BIDIM A44)
6. ROCK SIZE D₅₀ 250mm
D_{max} = 400mm

BIORETENTION NOTES

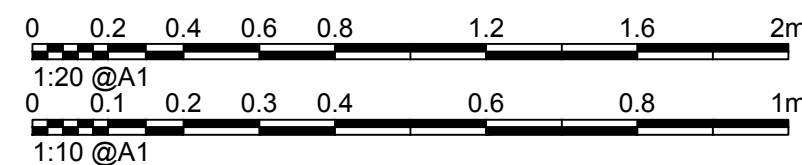
1. A 100mm THICK COARSE SAND TRANSITION LAYER IS TO BE INSTALLED ON THE GRAVEL DRAINAGE LAYER TO COMPLY WITH THE FOLLOWING PARTICLE SIZE DISTRIBUTION:
 - 1.4mm - 100% PASSING
 - 1.0mm - 80% PASSING
 - 0.7mm - 44% PASSING
 - 0.5mm 8.5% PASSING
 2. FILTER MEDIA IS TO BE FREE OF RUBBISH AND DELETERIOUS MATERIAL AND LIGHTLY COMPACTED ONLY (TO 90% STANDARD COMPACTION)
 3. FILTER MEDIA SATURATED HYDRAULIC CONDUCTIVITY TO BE 180mm/hr. PERMEABILITY IS TO BE TESTED USING THE A.S.4419 (LATEST EDITION) (SOILS FOR LANDSCAPING AND GARDEN USE) METHODS (APPENDIX H)
 4. FILTER MEDIA PARTICLE SIZE DISTRIBUTION IS TO BE AS FOLLOWS:
 - CLAY 2-4% (<0.002 mm)
 - SILT 4-8% (0.002-0.05mm)
 - VERY FINE SAND 5-10% (0.05-0.1mm)
 - FINE SAND 10-30% (0.1-0.5mm)
 - MEDIUM SAND 40-70% (0.5-1.0mm)
 - COARSE SAND 7-10% (1.0-2.0mm)
 - FINE GRAVEL <3% (2.0-3.4mm)
- THE COMBINED PERCENTAGE OF CLAY & SILT MAY NOT EXCEED 12% UNDER ANY CIRCUMSTANCES.
5. FILTER MEDIA IS TO COMPLY WITH A.S.4419 (LATEST EDITION), INCLUDING TESTING REQUIREMENTS AND THE FOLLOWING:
 - a. BULK DENSITY - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' > 0.7 kg/L
 - b. ORGANIC MATTER CONTENT - BETWEEN 3 AND 10%
 - c. WETTABILITY - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' > 5 mm/min.
 - d. pH - 5.5 - 7.5 (pH 1.5 IN WATER)
 - e. ELECTRICAL CONDUCTIVITY (EC) AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' < 1.20 ds/m
 - f. PHOSPHOROUS - < 5 mg/kg
 - g. NITROGEN DRAWDOWN (NDI) AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' > 0.5 NDI 150
 - h. TOXICITY - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS'
 - i. DISPERSIBILITY - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' CATEGORY 1 OR 2
 - j. PERMEABILITY - SATURATED HYDRAULIC CONDUCTIVITY 80mm/hr $\pm$ 20% AT 90% STANDARD COMPACTION
 - k. TEXTURE - SANDY LOAM
 - l. LARGE PARTICLES - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS'
 6. ESTABLISHMENT OF BIO-RETENTION SYSTEM IN ACCORDANCE WITH CONSTRUCTION & ESTABLISHMENT GUIDELINES: SWALES, BIO-RETENTION SYSTEMS & WETLANDS (WATER BY DESIGN 2010).

EARTHWORKS - BASINS

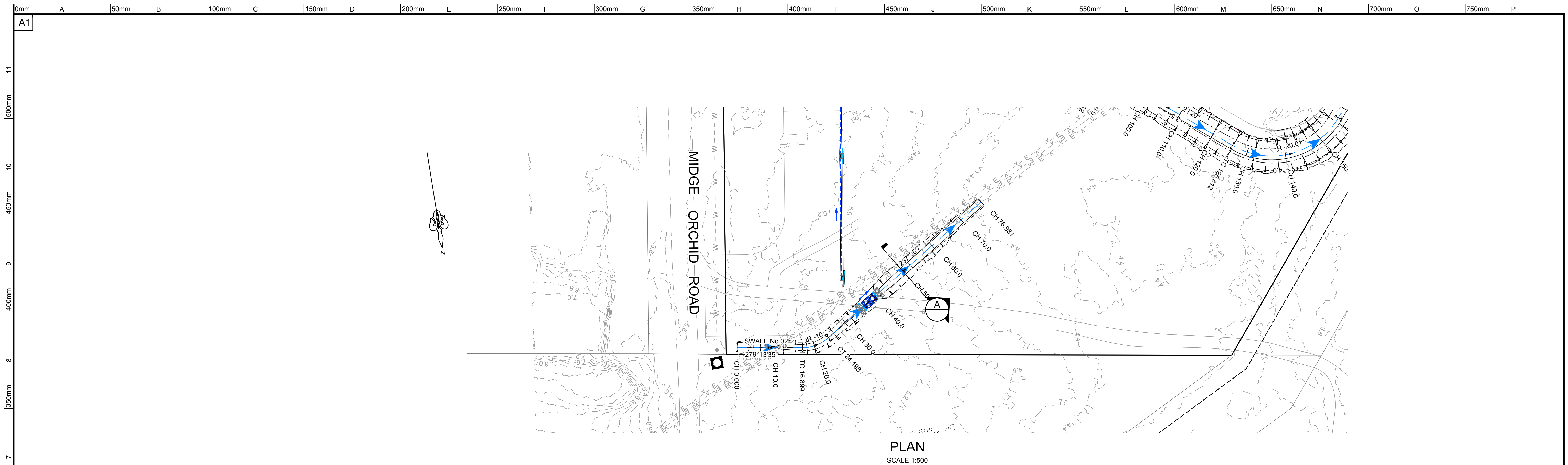
1. THE CONTRACTOR SHALL PROVIDE PROPER FENCING, GUARDING & LIGHTING AND OBSERVATION OF ALL EARTHWORKS, TEMPORARY ROADWAYS, FOOTWAYS, GUARDS & FENCES AS MAY BE RENDERED NECESSARY FOR THE ACCOMMODATION AND PROTECTION OF PEDESTRIANS, VEHICLES, ANIMALS & THE PUBLIC
2. ALL EARTHWORKS SHALL BE CARRIED OUT IN THE LOCATIONS SHOWN AND TO THE LEVELS, WIDTHS AND BATTER SLOPES INDICATED ON THE DRAWINGS
3. EXCAVATED MATERIAL NOT MEETING THE SPECIFICATIONS FOR FILL MATERIAL SHALL BE DISPOSED OFF SITE IN AN APPROPRIATE MANNER
4. WHERE EARTHWORKS ARE REQUIRED IN THE VICINITY OF EXISTING SERVICES, THE CONTRACTOR SHALL SUPPORT ALL SERVICES DURING THE WORKS
5. THE CONTRACTOR SHALL, AT ITS OWN EXPENSE, DO ALL THINGS NECESSARY TO DIVERT ANY WATER INTERFERING WITH THE PROCESS OF WORKS, KEEP THE EXCAVATIONS AND TRENCHES FREE FROM WATER WHILE THE WORKS ARE IN PROGRESS AND PREVENT ANY DAMAGE TO THE WORKS BY WATER DUE TO FLOODS OR OTHER CAUSES. THE CONTRACTOR SHALL HAVE PUMPING EQUIPMENT FOR KEEPING THE EXCAVATION OR TRENCHES CONSTANTLY DEWATERED DURING THE TIMES THE WORKS ARE IN PROGRESS. ANY WORK OR MATERIAL DAMAGED BY WATER SHALL BE MADE GOOD BY THE CONTRACTOR.
6. WHERE DIRECTED BY THE SUPERINTENDENT THE BOTTOM OF TRENCHES OR EXCAVATIONS SHALL BE COMPACTED PRIOR TO THE PLACING OF ANY BEDDING OR CONCRETE MATERIALS. SHOULD, IN THE OPINION OF THE SUPERINTENDENT, THE FOUNDATION MATERIAL BE INCAPABLE OF EFFECTIVE COMPACTION, THE MATERIAL SHALL BE REMOVED AND REPLACED WITH APPROPRIATE MATERIAL
7. MATERIAL SHALL BE INSPECTED & APPROVED BY THE SUPERINTENDENT PRIOR TO USE. RELEVANT MATERIAL SPECIFICATION SHEETS ARE TO BE PROVIDED BY THE CONTRACTOR.
8. SUBSOIL DRAINAGE PIPES WITHIN THE BIORETENTION SYSTEM ARE TO BE SLOTTED 100mm uPVC CONSISTENT WITH AS/NZS 1254. JOINTS ARE TO BE SOLVENT CEMENT GLUED AND BENDS ARE TO BE 45° TO MINIMIZE BLOCKAGE.

EXCAVATIONS - BASINS

1. ALL TOPSOIL TO BE STRIPPED AND STOCKPILED FOR FUTURE USE. STRIPPED SURFACES ARE TO BE ROLLED AND INSPECTED BY A GEOTECHNICAL ENGINEER PRIOR TO CONTINUING WORKS, DEPTH OF TOPSOIL STRIPPING TO BE BETWEEN 125mm AND 200mm (TO BE CONFIRMED BY THE SUPERINTENDENT PRIOR TO CONSTRUCTION)
2. WHERE ROCK IS EXPOSED DURING EXCAVATION, THE CONTRACTOR SHALL CEASE EXCAVATION AT THIS LOCATION AND CONTACT THE SUPERINTENDENT WHO WILL THEN ADVISE ON THE LEVEL TO WHICH THE EXCAVATION IS TAKEN.

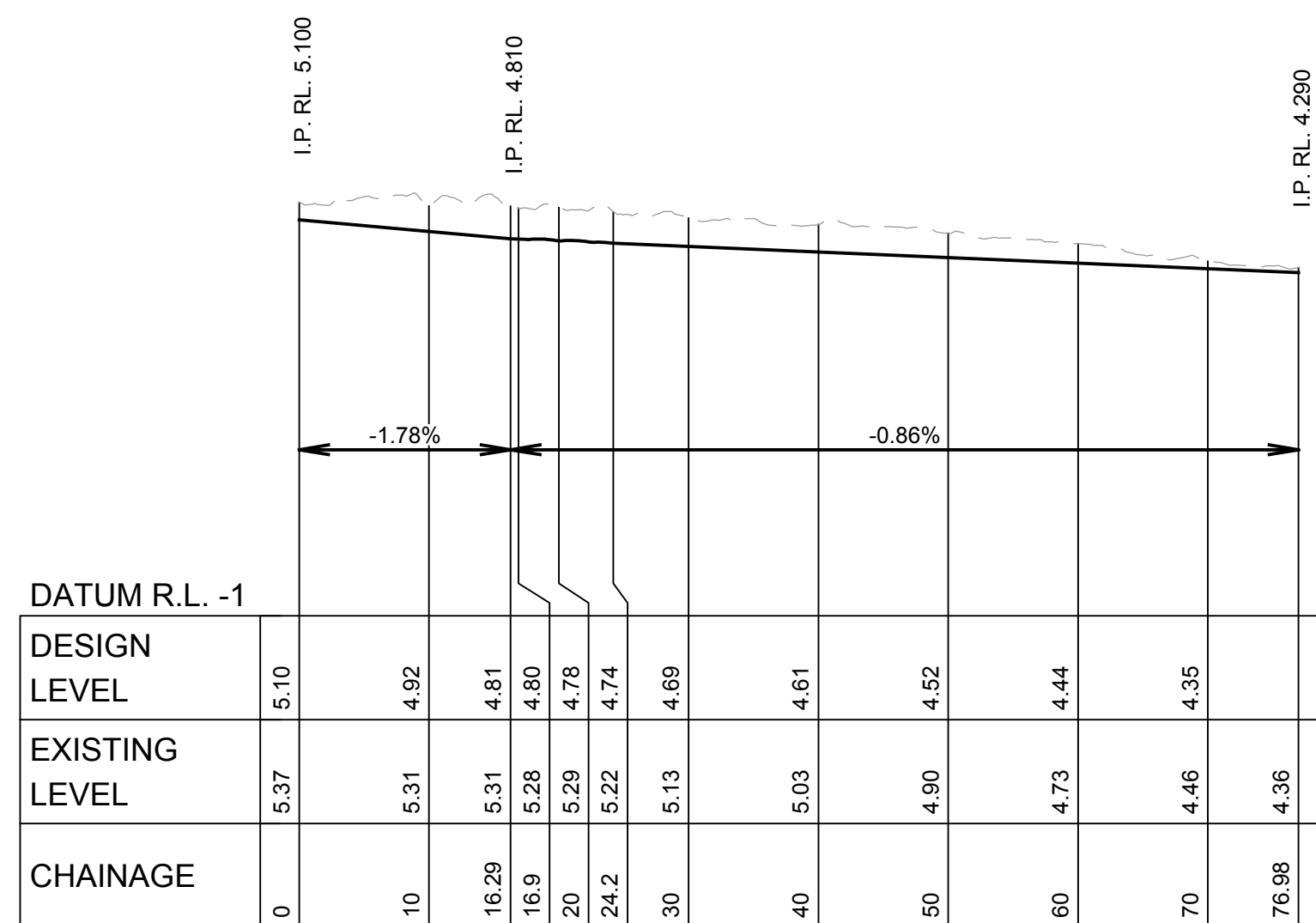


1					    BEFORE YOU DIG www.youdig.com.au	Authorised for issue by:	Principal:	Project:	 © CED NSW 2026	Colliers International Engineering & Design NSW PTY LTD ABN 77 050 209 991 ACN 050 209 991 Suite 701, Level 7, 3 Rider Boulevard, Rhodes, NSW, 2138 PO Box 3220, Rhodes NSW 2138 Tel. 9869-1855 nsw.ed.reception@colliers.com www.colliers.com.au/ced www.colliers.com.au	Drawing Title	BASIN AND RIPRAP DETAILS			
	B	09.06.26	FOR RTS SUBMISSION	M.Y.		S.M.	NALG Envirotech Pty Ltd MID NORTH COAST COUNCIL				MID-COAST REGIONAL ORGANICS FACILITY LOT 5 D.P.1089990 MIDGE ORCHID ROAD, TUNCURRY		CED Ref: 25-0359	Drawing Ref: 25-0359C-CA-0754	Revision B
	A	30.10.25	ISSUED FOR DRAFT SUBMISSION	M.Y		P.K.									
0mm	REV.	DATE	AMENDMENT DESCRIPTION	DES.	DRN.	Signature:	Scale:	Date:							
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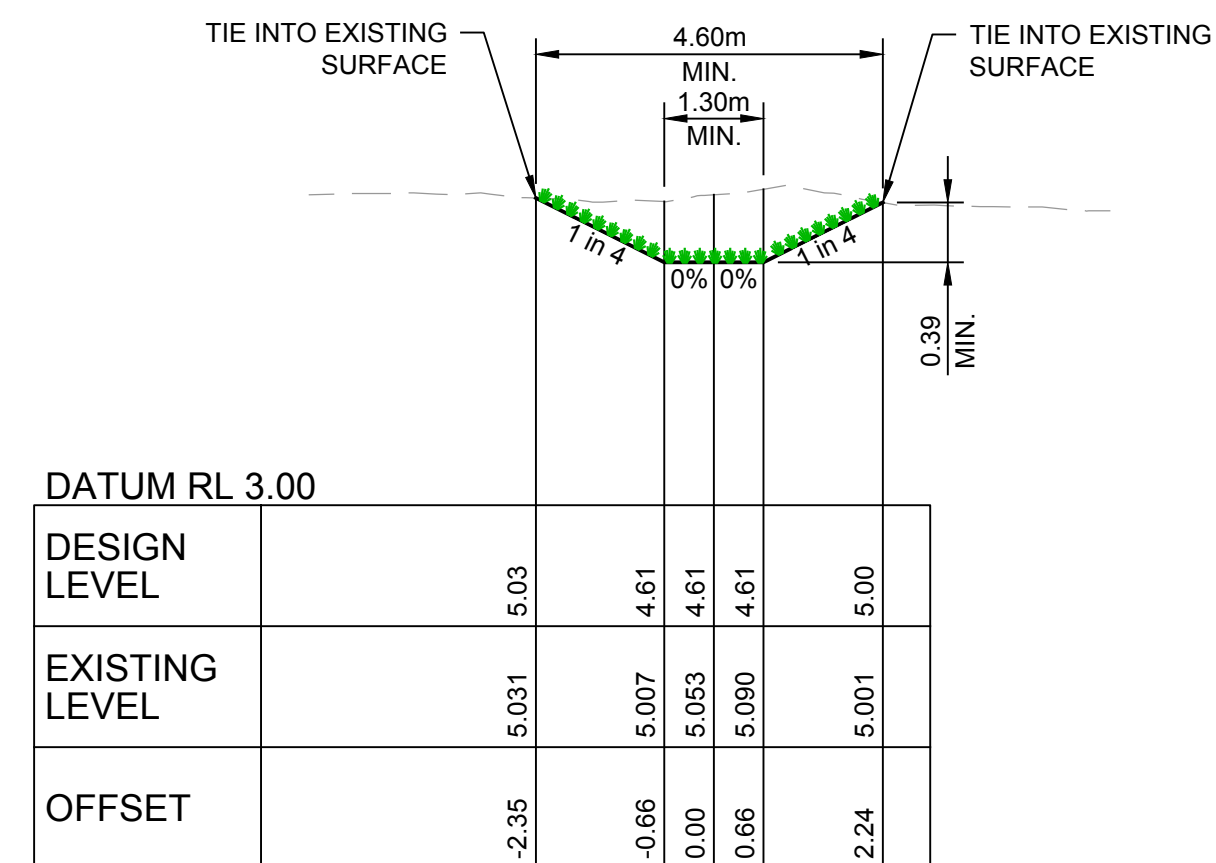
LEGEND

DESIGN SURFACE
EXISTING SURFACE



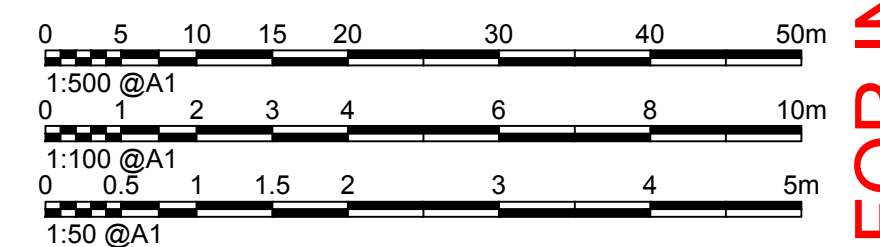
SWALE No 02 - LONGITUDINAL SECTION

HORIZONTAL SCALE - 1:500
VERTICAL SCALE - 1:100

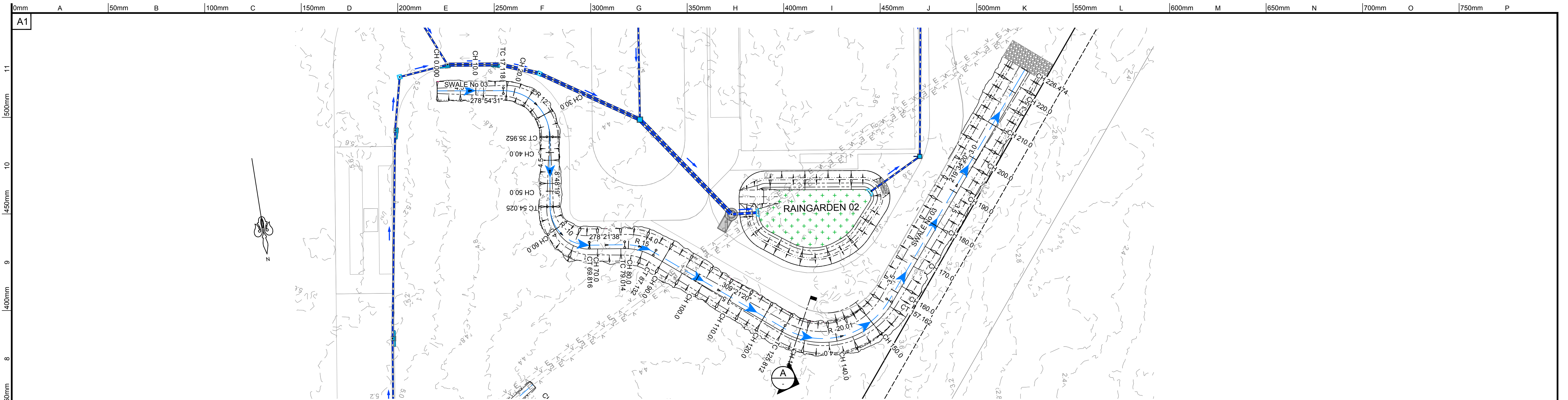


A TYPICAL SECTION

HORIZONTAL SCALE - 1:100
VERTICAL SCALE - 1:50

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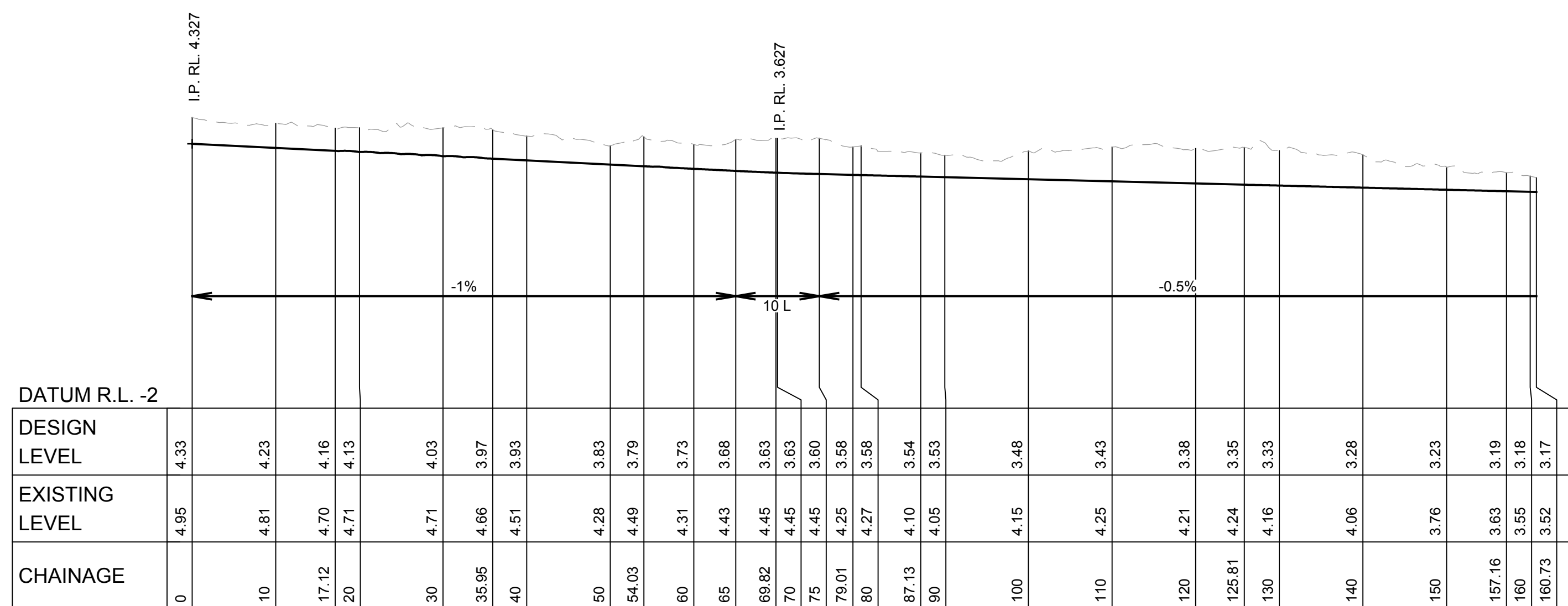
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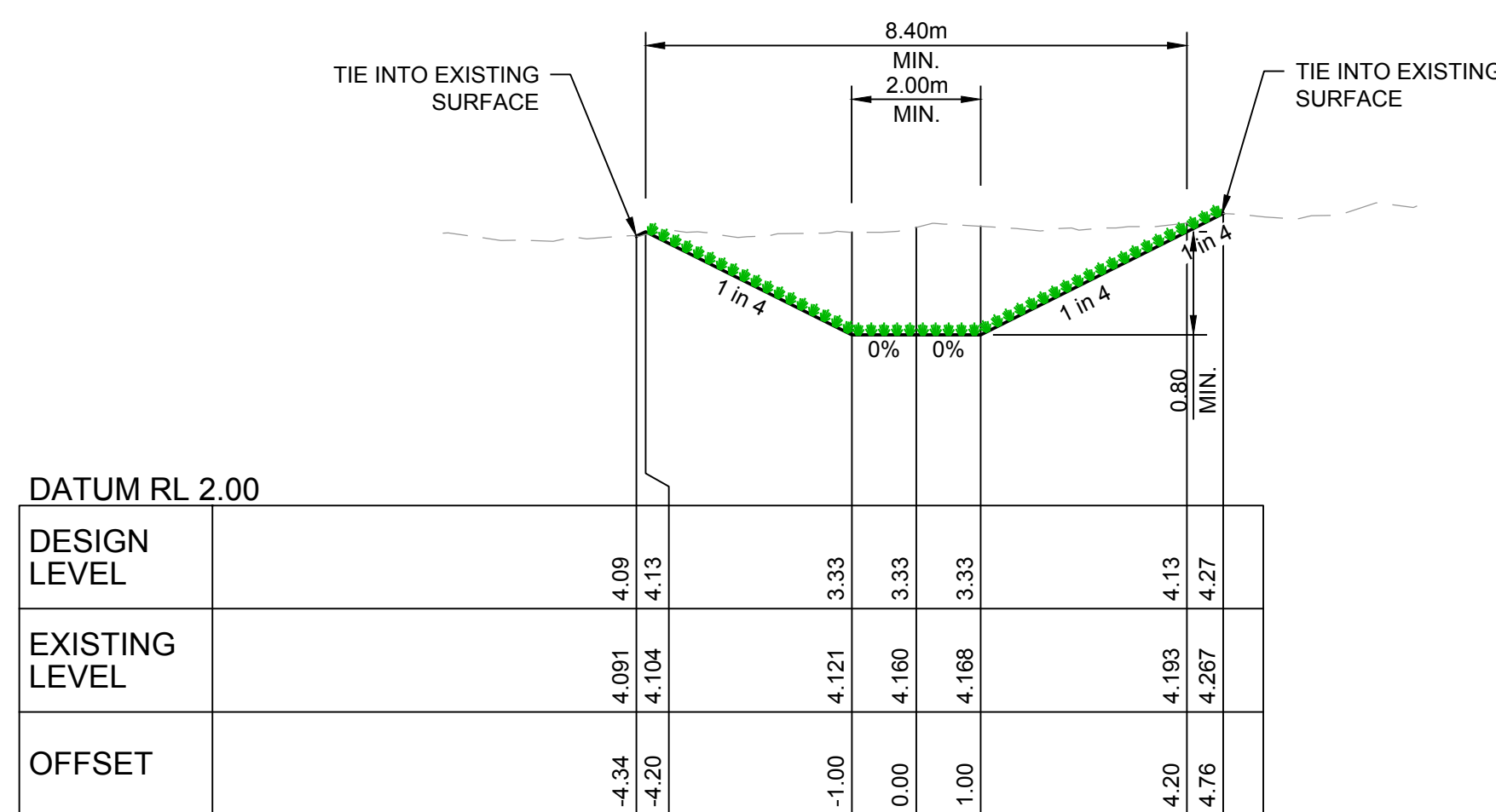
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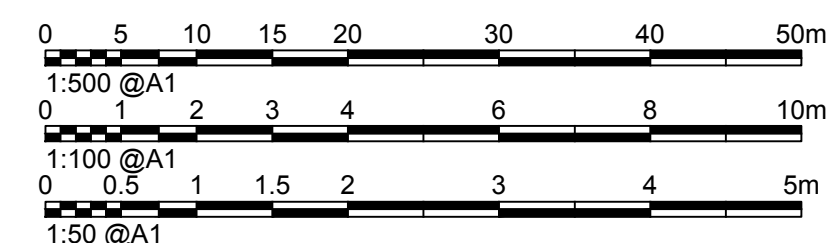
--- DESIGN SURFACE
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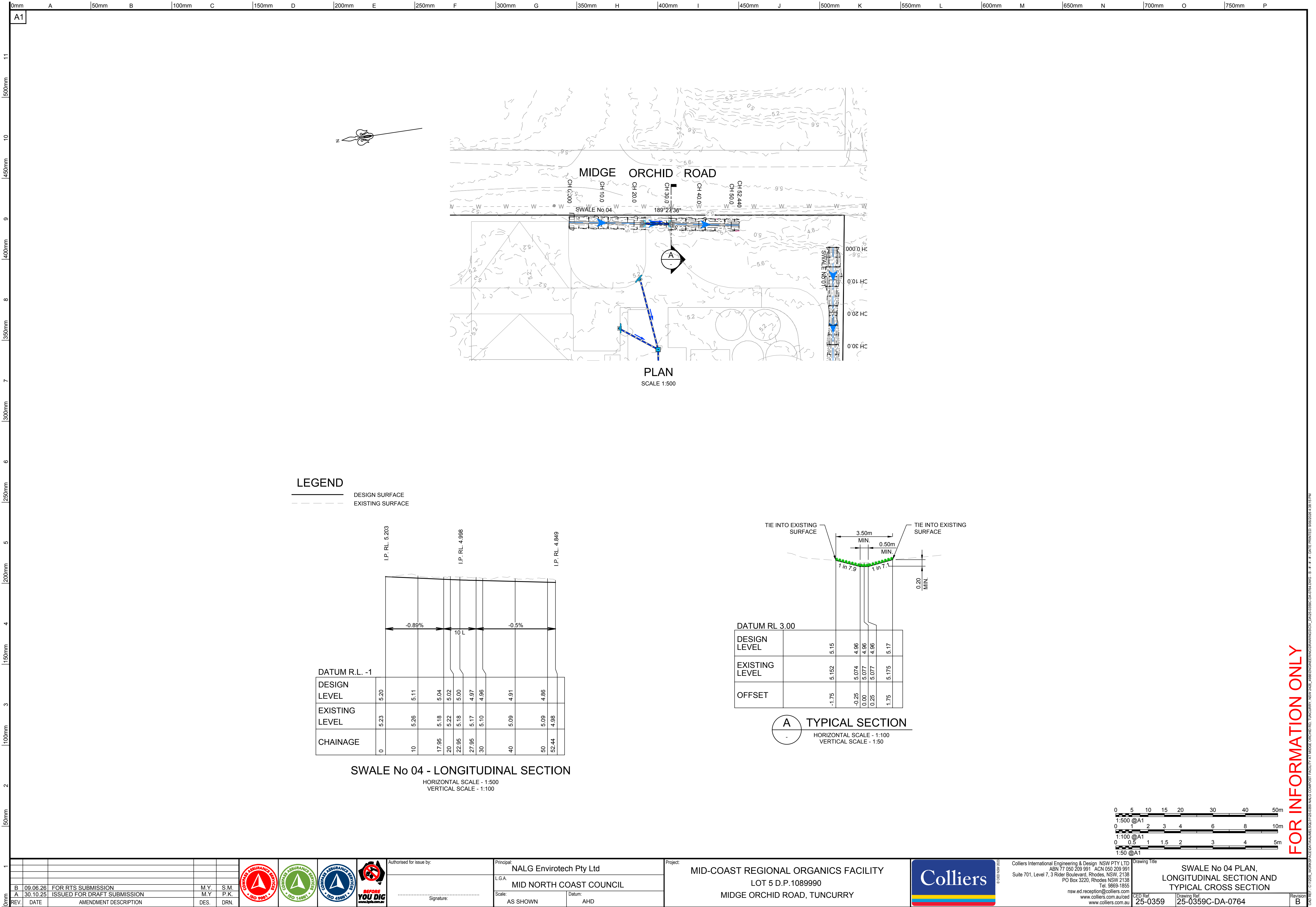


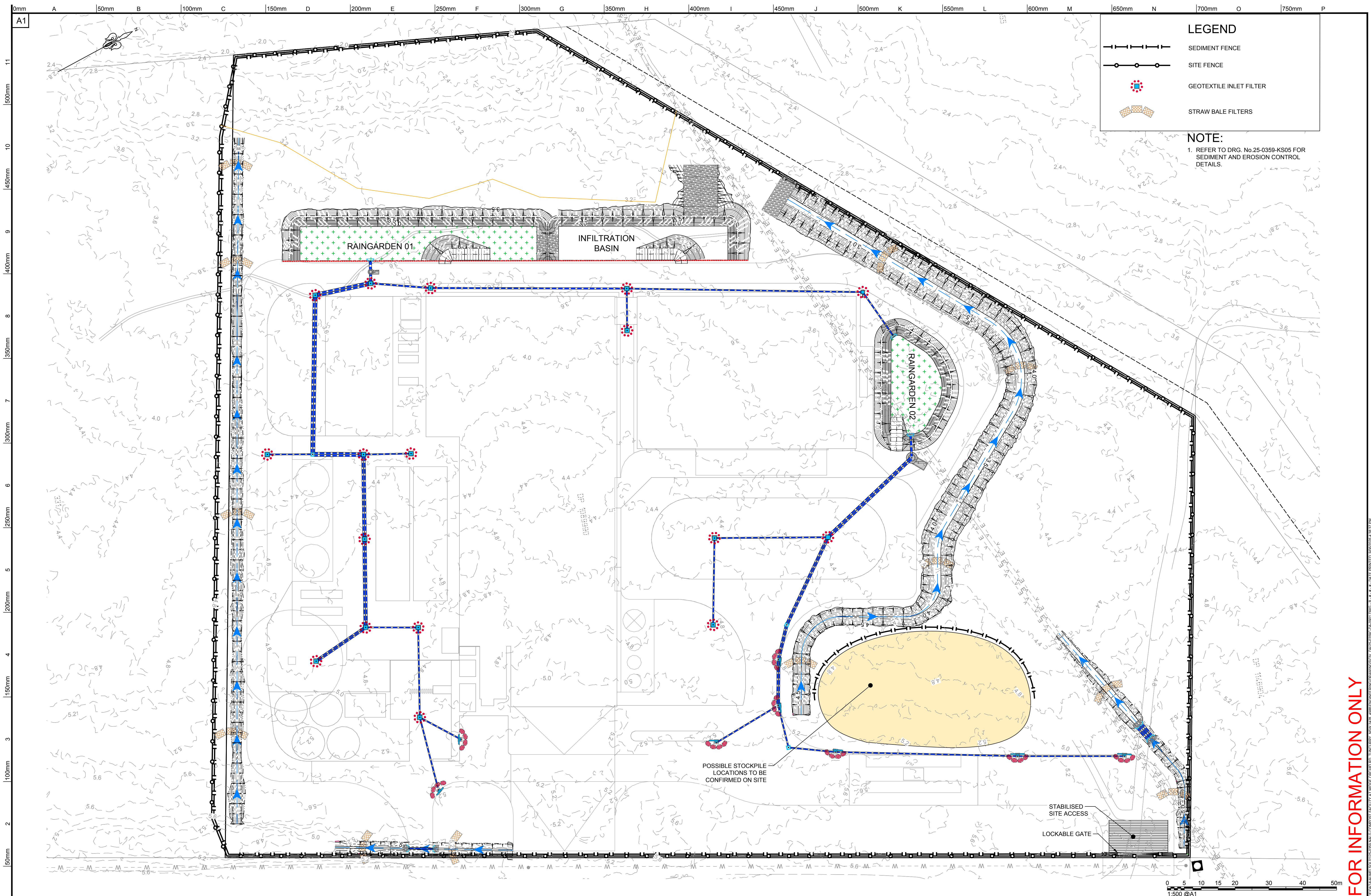
SWALE No 03 - LONGITUDINAL SECTION
HORIZONTAL SCALE - 1:500
VERTICAL SCALE - 1:100



TYPICAL SECTION
HORIZONTAL SCALE - 1:100
VERTICAL SCALE - 1:50







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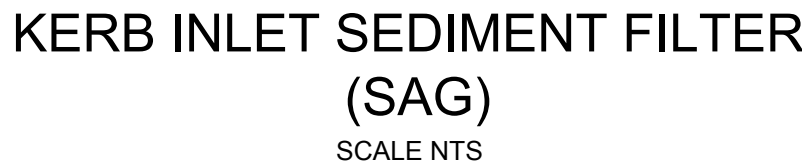
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0mm	1	50mm	2	100mm	3	150mm	4	200mm	5	250mm	6	300mm	7	350mm	8	400mm	9	450mm	10	500mm	11
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1. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95% STANDARD PROCTOR DENSITY.
2. SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
3. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BE 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/sec IN THE DESIGN STORM EVENT, USUALLY THE 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 METER LONG STAR PICKETS INTO GROUND AT 2.5 METER 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.

1. CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DIAGRAM TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION.
2. PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN THE BALES. THE STRAWS IN EACH BALE ARE TO BE ALIGNED PARALLEL TO THE GROUND.
3. ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE.
4. EMBED EACH BALE IN THE GROUND 75mm TO 100mm AND ANCHOR WITH 1.2m STAR PICKETS OR STAKES. ANGLE THE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BALE. DRIVE THEM 600mm INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS.
5. WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE BALES ARE PLACED 1m TO 2m DOWNSLOPE FROM THE TOE.
6. ESTABLISH A MAINTENANCE PROGRAM THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.



1. REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. ENSURE THAT THE INSTALLATION OF THE SEDIMENT TRAP WILL NOT CAUSE UNDESIRABLE SAFETY OR FLOODING ISSUES.
3. INSTALL SEDIMENT TRAP IN ACCORDANCE WITH STANDARD DRAWING SUPPLIED WITH THE APPROVED PLAN, OR AS DIRECTED BY THE SITE SUPERVISOR.
4. ENSURE THE SEDIMENT TRAP IS CONSTRUCTED UP-SLOPE OF AN ON-GRADE KERB INLET. THE SEDIMENT TRAP MUST NOT SURROUND THE KERB INLET UNLESS SPECIFICALLY DIRECTED BY THE SITE SUPERVISOR.
5. ENSURE THE SEDIMENT TRAP FULLY ENCLOSES THE KERB INLET. USE APPROPRIATE SPACERS TO ENSURE THE SEDIMENT TRAP DOES NOT BLOCK THE SIDE-ENTRY INLET.
6. TAKE ALL NECESSARY MEASURE TO MINIMISE THE SAFETY RISK CAUSED BY THE STRUCTURE

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

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OF STRAW BALES.
2. FOLLOW STANDARD DRAWINGS OF STRAW BALE FILTERS AND SEDIMENT FENCES FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1m CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS ON 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.

1. BUILD WITH GRADIENTS BETWEEN 1% AND 5%.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.
5. ENSURE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

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