

- SUNSHINE COAST REGIONAL COUNCIL
- APPROVED**
- OPW22/0071 21 JUNE 2022

	BULK EARTHWORKS TO BUILDING AREA
	CONCRETE FOOTPATH AREA
	BULK EARTHWORKS TO LANDSCAPE AREA. ALLOW TO FINISH EARTHWORKS TO LANDSCAPE ARCHITECTS DETAILS. GENERALLY 300mm BELOW FINISHED SURFACE LEVEL (UNO)
 • BE12.50	PROPOSED BULK EARTHWORKS LEVEL FOLLOWING CARRYING OUT WORKS IN ACCORDANCE WITH EARTHWORKS NOTES ON GENERAL NOTES DRAWING INCLUDING STRIPPING, PROOF ROLLING AND FILLING.
	PROPOSED BLOCK RETAINING WALL - REFER STRUCTURAL DWGS
	PROPOSED EARTHWORKS TOP OF BATTER
	PROPOSED EARTHWORKS TOE OF BATTER
	REFER NOTE 1 FOR DETAILS

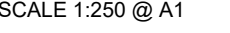
	DEVELOPMENT BOUNDARY
	EXISTING CONTOUR (0.05m INTERVAL)
	EXISTING STORMWATER
	EXISTING SEWER
	EXISTING WATER
	EXISTING GAS
	EXISTING ELECTRICAL - UNDERGROUND
	EXISTING TELECOMMUNICATIONS
	EXISTING EARTHWORKS TOP OF BATTER
	EXISTING EARTHWORKS TOE OF BATTER
	EXISTING FENCE
	EXISTING SERVICE TO BE MADE REDUNDANT

1. EXISTING EXTERIOR STRUCTURES AND TREES SHOWN ON THESE DRAWINGS ARE FEATURES EXISTING PRIOR TO ANY SEDIMENT AND DEMOLITION WORKS.
2. BULK EARTHWORKS SLOPE TO BE MAXIMUM 1V:2H. CONTRACTOR TO ALLOW FOR ANY REQUIRED SHORING OR PROTECTION TO EXISTING SERVICES AND/OR ADJACENT PROPERTIES DURING EXCAVATION FOR PROPOSED BULK EARTHWORKS AND ANY REQUIRED RETAINING WALLS. CONTRACTOR TO ALLOW TO REINSTATE OR RECTIFY ANY SERVICES AND/OR ADJACENT PROPERTIES DAMAGED DURING EXCAVATION FOR PROPOSED BULK EARTHWORKS AND ANY REQUIRED RETAINING WALLS.
3. LEVEL SUPERVISION IS REQUIRED FOR ALL EARTHWORKS OPERATIONS AND CERTIFICATION IS TO BE PROVIDED BY THE NOMINATED GEOTECHNICAL TESTING AUTHORITY FOR THE FOLLOWING ITEMS:
 - CERTIFICATION THAT ALL GENERAL EARTHWORKS OPERATIONS (ie. STRIPPING, PROOF ROLLING OF SUBGRADE, etc.) HAVE BEEN CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS AND EARTHWORKS SPECIFICATION.
 - CERTIFICATION THAT THE CONTROLLED FILL IS SUITABLE FOR SUPPORT OF CONVENTIONAL HIGH LEVEL FOOTINGS AND HAS A MINIMUM BEARING CAPACITY OF 150kPa.
 - CERTIFICATION THAT THE CONTROLLED FILL MATERIAL IS SUITABLE TO SUPPORT A CONVENTIONAL SLAB ON GROUND FLOOR (SLAB LOADS OF 15kPa ARE EXPECTED).
 - CERTIFICATION THAT FILL HAS BEEN PLACED AND COMPACTED TO THE REQUIRED MINIMUM DENSITY IN ACCORDANCE WITH THE DRAWINGS AND EARTHWORKS SPECIFICATION.
 - CERTIFICATION THAT THE QUALITY OF ANY IMPORTED FILL COMPLIES WITH DRAWINGS J AND THE EARTHWORKS SPECIFICATION REQUIREMENTS.
4. CONTRACTOR TO PROVIDE AN EARTHWORKS METHODOLOGY STATEMENT FOR APPROVAL BY ACOR PRIOR TO COMMENCING WORK ON SITE. THE METHODOLOGY STATEMENT SHALL DEMONSTRATE THE TREATMENT OF EXISTING FILL, SITE TRAFFICABILITY AND INCORPORATION OF REQUIRED SEDIMENT AND EROSION WORKS. CONTRACTOR TO ALLOW TO ATTEND AN ON SITE PRE-START MEETING AND TO EXCAVATE TEST PITS AS REQUIRED TO DEMONSTRATE THE APPROPRIATENESS OF THE METHODOLOGY STATEMENT.
5. CONTRACTOR TO ENSURE PRESERVATION AND AVOID DISTURBANCE OF EXISTING SURVEY MARKS.
6. UNLESS NOTED AS AN EXISTING TREE TO BE RETAINED ON ARCHITECTURAL DRAWINGS REMOVE OFF SITE ALL EXISTING TREES AND ALLOW TO DEEP RIP TO REMOVE ANY TREE ROOTS.
7. UNLESS NOTED AS AN EXISTING TREE TO BE RETAINED ON ARCHITECTURAL DRAWINGS CONTRACTOR TO ENGAGE A QUALIFIED ARBORIST TO CUTBACK ALL FOLIAGE OVERHANGING THE BOUNDARY LINE.
8. THE CONTRACTOR TO ENSURE ALL FIRE ANT CONTROLS OR RESTRICTIONS ON THIS SITE ASSOCIATED REQUIREMENTS HAVE BEEN COMPLIED WITH.
9. REMOVE ALL EXISTING SERVICES AND PIPES AND CAP AT THE SITE BOUNDARY PRIOR TO UNDERTAKING EARTHWORKS.
10. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING DEMOLITION DETAILS.
11. EXISTING MATERIAL IS NOT TO BE USED AS FILL, WHERE EXISTING SUBGRADE LEVELS ARE BELOW BULK EARTHWORKS LEVELS, FILL TO BULK EARTHWORKS LEVELS WITH MATERIAL NOMINATED IN EARTHWORKS NOTE 7 ON GENERAL NOTES DRAWING.

The diagram shows a vertical soil profile with five distinct layers, each represented by a different color. To the right of the profile is a vertical axis with arrows pointing in both directions, labeled 'DEPTH OF FILL' at the top and 'DEPTH OF CUT' at the bottom. Horizontal lines connect the boundaries of the soil layers to the depth axis. The depth markers are labeled as follows from top to bottom: 2.00+, 1.00, 0.00, 1.00, 2.00, and 3.00+.

Name	Cut Factor	Fill Factor	2D Area	Cut	Fill	Net
Cut&Fill	1.000	1.000	6119.033sq.m	1020.569 Cu. M.	103.124 Cu. M.	917.445 Cu. M.<Cut>
Totals			6119.033sq.m	1020.569 Cu. M.	103.124 Cu. M.	917.445 Cu. M.<Cut>

- * EARTHWORKS VOLUMES ARE BETWEEN EXISTING SURVEYED SURFACE AND EARTHWORKS SURFACE
- * VOLUMES DO NOT CONSIDER TOPSOIL STRIPPING.
- * VOLUMES INCLUDE NOMINAL 300mm BOXING FOR PAVEMENT, BUILDING AND PLANTING AREAS.
- * BALANCE VOLUME DOES NOT TAKE INTO ACCOUNT COMPACTION FACTORS (BULKING FACTORS).



FOR APPROVAL

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Client



This drawing has been assigned an electronic code that signifies the drawing has been checked and approved by:

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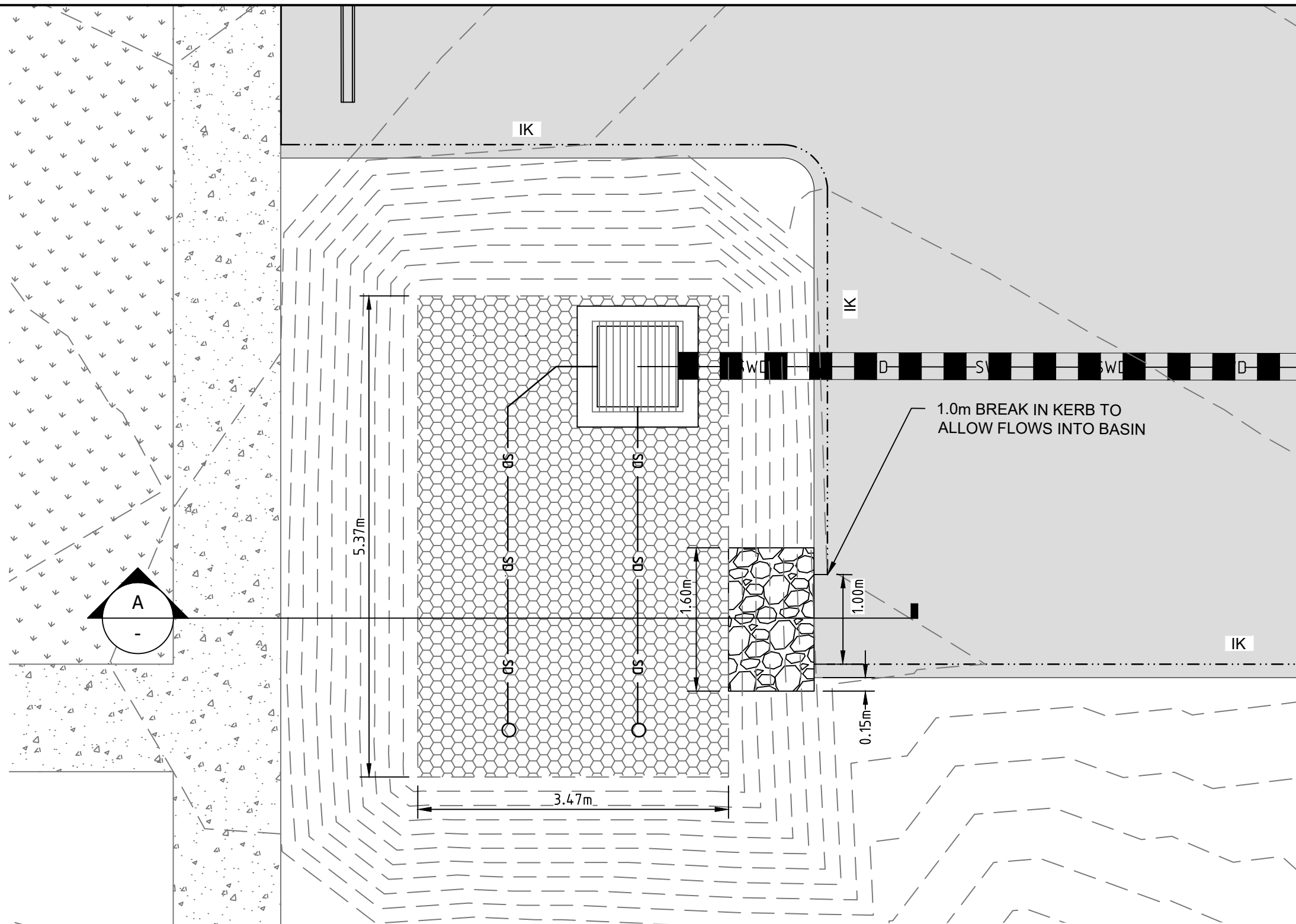
Projec

LOT 90, SPITFIRE BANKS DRIVE
PELICAN WATERS, QLD

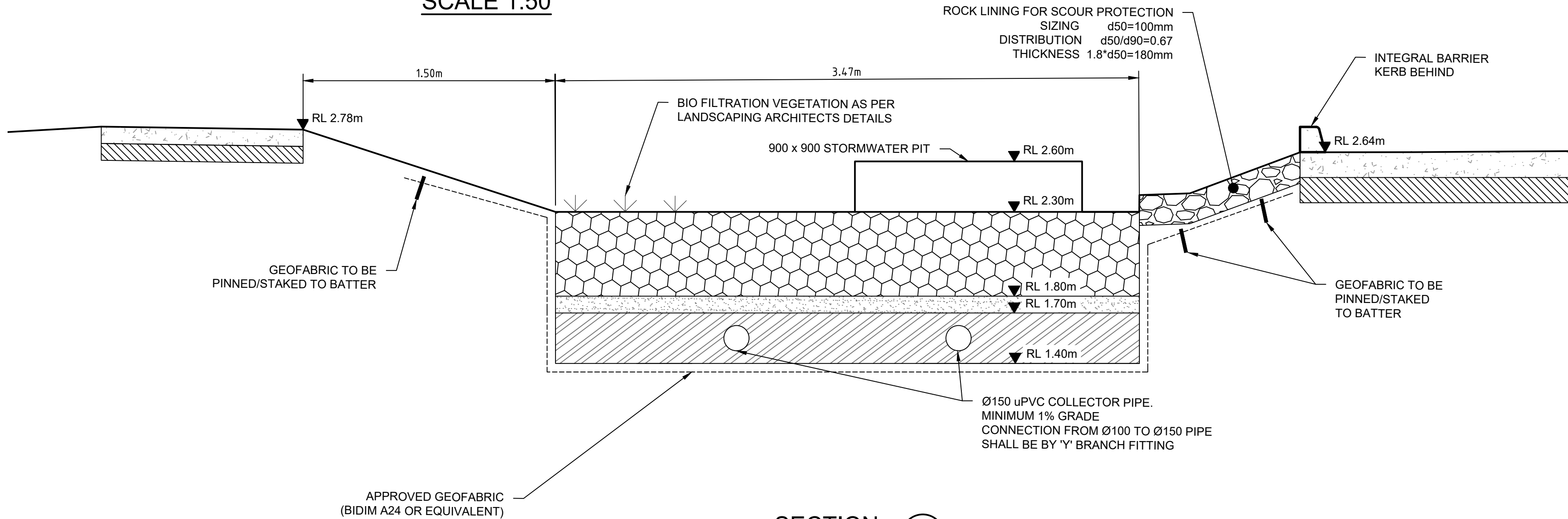
Drawing Title

BULK EARTHWORKS LAYOUT PLAN

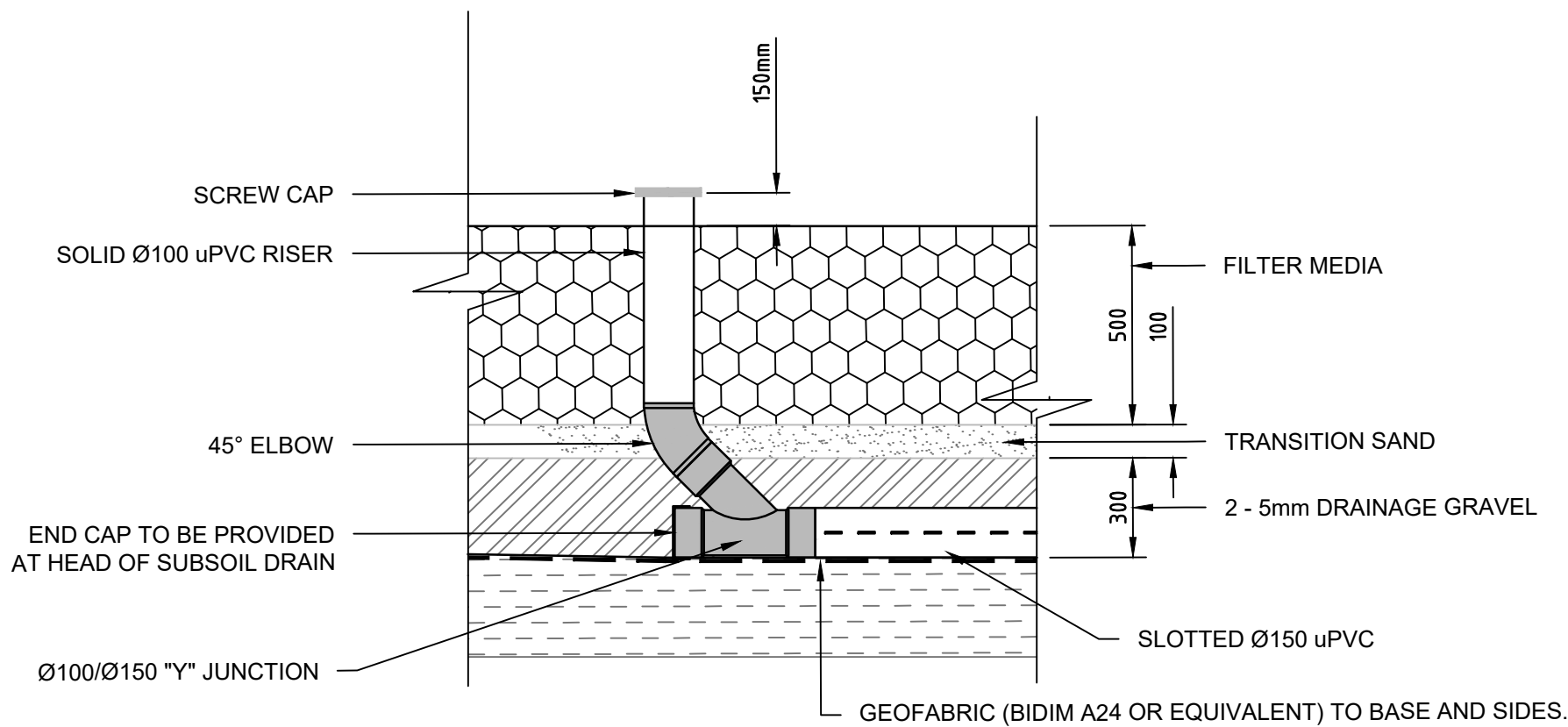
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BIO-RETENTION BASIN LAYOUT
SCALE 1:50



SECTION A-A
SCALE 1:25



TYPICAL BIO-RETENTION LAYERS
SCALE 1:20

LEGEND

- PROPOSED CARPARK PAVEMENT - REFER SITWORKS PLANS C-3.00 TO 3.04 FOR PAVEMENT TYPE /EXTENTS
- PROPOSED CONCRETE FOOTPATH - REFER CIVIL DETAILS SHEET C-6.01 FOR DETAILS
- PROPOSED LANDSCAPING - REFER TO LANDSCAPE ARCHITECTS DRAWINGS FOR SURFACE TREATMENT
- PROPOSED BIORETENTION AREA - REFER DETAIL SHEET AND TO LANDSCAPE ARCHITECTS DRAWINGS FOR SURFACE TREATMENT
- PROPOSED SPEL BASIN AREA - REFER TO SPEL BASIN CONSTRUCTION ISSUE DRAWINGS FOR MANUFACTURERS SPECIFICATIONS.
- PROPOSED ROCK SCOUR PROTECTION. ROCK SIZE d50=100mm WITH DISTRIBUTION d50/d90=0.67 INSTALLED T A LAYER THICKNESS OF 180mm WITH GEOFABRIC (A24 BIDIM) UNDERNEATH U.N.O.
- PROPOSED STORMWATER PIPE
- PROPOSED STORMWATER PIPE INFORMATION
- PROPOSED STRUCTURE NUMBER AND TOP OF GRATE/LID LEVEL
- PROPOSED ROOFWATER DRAINAGE PIPE (Ø225 uPVC UNO AT MIN 1%)
- PROPOSED SEALED SUBSOIL DRAINAGE LINE (Ø100 uPVC)
- PROPOSED SURFACE CONTOUR (0.05m INTERVAL)
- REFER NOTE 1 FOR DETAILS

BIORETENTION NOTES

- THE CONTRACTOR SHALL PROVIDE CERTIFICATION FROM THE SUPPLIER THAT THE BIO-FILTRATION MEDIA COMPLIES WITH THE CURRENT VERSION OF THE 'GUIDELINES FOR SOIL FILTER MEDIA IN BIORETENTION SYSTEMS (VERSION 2.01, MARCH 2008 OR LATER)' PREPARED BY THE FACILITY FOR ADVANCING WATER BIOFILTRATION (FAWB), MONASH UNIVERSITY PRIOR TO INSTALLATION (THE CURRENT VERSION OF THE GUIDELINES IS AVAILABLE FOR FREE DOWNLOAD FROM [HTTP://WWW.MONASH.EDU.AU/FAWB/PUBLICATIONS/INDEX.HTML](http://www.monash.edu.au/fawb/publications/index.html)).
- SANDY LOAM FILTER MATERIAL PROPERTIES

HYDRAULIC CONDUCTIVITY		180 mm/hr
PARTICLE CONTENT	CLAY AND SILY (<0.05mm DIAMETER)	<3%
	VERY FINE SAND (0.05-0.15mm DIAMETER)	5-30%
	FINE SAND (0.15-0.25mm DIAMETER)	10-30%
	MEDIUM TO COARSE SAND (0.25-1.00mm DIAMETER)	40-60%
	COARSE SAND (1.0-2.0mm DIAMETER)	7-10%
ORGANIC MATTER CONTENT	FINE GRAVEL (2.0-3.4mm DIAMETER)	<3%
		<5% w/w
pH		5.5 - 7.5 pH
ELECTRICAL CONDUCTIVITY		<1.2 ds/m
PHOSPHORUS CONCENTRATION		<100 mh/kg

3. FILTER MEDIA SHOULD BE FREE FROM RUBBISH, DELETERIOUS MATERIAL, TOXICANTS, DECLARED PLANTS AND LOCAL WEEDS. FILTER MEDIA SHOULD NOT BE HYDROPHOBIC OR DISPERSIBLE.
4. ALL LAYERS OF BIORETENTION SYSTEM TO BE INSTALLED DURING DRY WEATHER.
5. FILTER MEDIA SHOULD BE WELL GRADED, WITH NO GAPS IN THE PARTICLE SIZE GRADING.
6. TRANSITION LAYER TO BE CLEAN, WELL-GRADED COARSE SAND (CONTAINING < 2% FINES).
7. DRAINAGE LAYER TO BE CLEAN, FINE GRAVEL WITH 2-5mm WASHED SCREENINGS (CONTAINING < 2% FINES, MIN. SATURATED HYDRAULIC CONDUCTIVITY 4000mm/hr).
8. INSTALL FILTER MEDIA IN TWO LIFTS IF DEPTH >500mm.
9. FILTER MEDIA TO BE LIGHTLY COMPACTED DURING INSTALLATION, USING A SINGLE PASS WITH A LIGHT ROLLER. NO OVER TRAFFICKING, MULTIPLE PASSES OR HEAVY COMPACTION TO BE APPLIED TO THE FILTER MEDIA.
10. ENSURE SURFACE OF BIORETENTION BASIN IS FLAT AT DESIGN LEVEL.
11. CONSTRUCTION TOLERANCES SHOULD BE IN ACCORDANCE WITH TABLE BELOW, UNLESS NOTED DIFFERENTLY BY LOCAL AUTHORITY GUIDELINES/STANDARDS.

HYDRAULIC STRUCTURES	+/- 25mm*
UNDER-DRAINAGE PIPES	+/- 25mm
EARTHWORKS FOR BASIN BASE	+/- 25mm
DRAINAGE AND TRANSITION LAYERS	+/- 25mm
SURFACE LEVEL	+/- 25mm
EMBANKMENT AND BUNDS	- 25mm, + 50mm

12. UNDERDRAINAGE PIPES SHOULD BE 100mm DIAMETER SLOTTED PVC PIPES AT A MINIMUM GRADE OF 0.5% SLOPED TOWARD OUTLET (UNLESS NOTED OTHERWISE ON DRAWING). PIPE SLOTS TO BE 2MM OR SMALLER (AS2439 PART 1).
13. UNDERDRAINAGE PIPES SHOULD NOT BE WRAPPED IN GEOFABRIC OR FILTER SOCKS AND SHOULD HAVE A MINIMUM OF 50mm OF DRAINAGE MATERIAL ABOVE THE OBVERT OF THE PIPE.
14. BASIN BASE TO BE SLOPED TOWARD OUTLET AT MINIMUM GRADE OF 0.5%. BASE OF TRENCH/BASIN TO BE FREE OF LOCALISED DEPRESSIONS.
15. BASIN WALLS, FLOOR AND BATTERS TO BE LINED WITH PERMEABLE GEOFABRIC LINER (BIDIM A29 OR EQUIVALENT). LINER TO BE KEYED INTO BATTERS AND PINNED TO IN-SITU SOILS.
16. CONTRACTOR TO GET SIGN OFF'S FOR HEALTHY WATERWAYS BIORETENTION BASIN CONSTRUCTION AND ESTABLISHMENT SIGN OFF FORMS (INCLUDING INCLUDING PRE-START MEETING FORM AND FORMS A-G) FOR USE THROUGHOUT CONSTRUCTION.
17. STORMWATER QUALITY TREATMENT EFFECTIVENESS CONFORMS TO THE APPROVED SITE BASED STORMWATER MANAGEMENT PLAN.

CONSTRUCTION PHASE PROTECTION

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE BIORETENTION SYSTEM IS APPROPRIATELY PROTECTED THROUGHOUT THE DURATION OF CONSTRUCTION WORKS.
2. AS SOON AS FILTER MEDIA INSTALLED IN BIORETENTION SYSTEM, FILTER MEDIA SHOULD BE PROTECTED WITH GEOFABRIC, TOPSOIL AND TURF UNTIL 90% OF CONSTRUCTION AND BUILDINGS WORKS COMPLETED. THEREAFTER, THE GEOFABRIC TO BE REMOVED AND LANDSCAPING WORKS TO BE UNDERTAKEN.
3. CONTRACTOR TO LIMIT FOOT AND VEHICULAR TRAFFIC WITHIN BIORETENTION SYSTEM ONCE FILTER MEDIA INSTALLED.

LANDSCAPING

1. LANDSCAPING WORKS TO OCCUR AS SOON AS POSSIBLE AFTER CIVIL WORKS. MINIMUM PLANT DENSITY 6 (Qty/m²). REFER LANDSCAPE ARCHITECT'S DRAWINGS.

MAINTENANCE REQUIREMENTS

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE BIORETENTION BASIN IS REGULARLY INSPECTED AND MAINTAINED, DURING THE 'ON-MAINTENANCE' PERIOD.
2. INSPECTIONS TO BE CARRIED OUT BY THE CONTRACTOR ON A REGULAR BASIS, AT LEAST EVERY THREE MONTHS AND FOLLOWING SIGNIFICANT RAINFALL EVENTS.
3. MAINTENANCE TO INCLUDE:
 - SEDIMENT AND DEBRIS REMOVAL FROM BASIN, INFLOW AREAS AND OUTLET PITS
 - REPAIR OF SCOUR DAMAGE
 - REPLACEMENT OF DISEASED OR DAMAGED PLANTS
 - VEGETATION PEST MONITORING AND CONTROL
 - MAINTENANCE OF PLANTING DENSITY (6 PLANTS/M2)
 - REGULAR IRRIGATION OF PLANTS UNTIL WELL ESTABLISHED
 - MANUAL REMOVAL OF WEEDS (HERBICIDES SHOULD NOT BE USED)
 - ENSURING PERFORATED PIPES ARE NOT BLOCKED
5. PLANTS TO BE WATERED IN ACCORDANCE WITH SUGGESTED WATERING RATES:

WEEK 1-6	5 VISITS/WEEK
WEEK 6-10	3 VISITS/WEEK
WEEK 11-15	2 VISITS/WEEK

THE ABOVE WATERING PROGRAM SHOULD BE ADJUSTED (INCREASED) TO SUIT THE SITE CONDITIONS

CONSTRUCTION INSPECTION NOTE

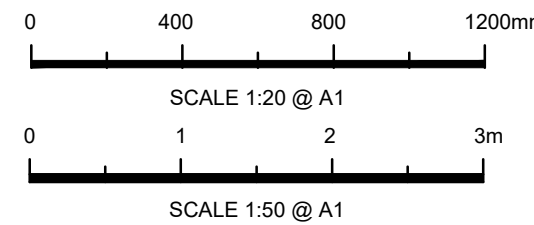
CONSTRUCTION INSPECTIONS OF THE BIO-RETENTION BASIN ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THE CONSTRUCTION INSPECTIONS LISTED ON CIVIL DRAWING C0.02.

NOTE

REFER LANDSCAPE ARCHITECTS DWGS FOR PLANTING ARRANGEMENT. REFER IPWEAQ DWG WSUD-003 FOR BIORETENTION UNDER-DRAIN CLEANOUT DETAILS

POST CONSTRUCTION QA DOCUMENTATION NOTE

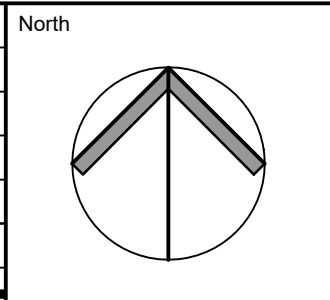
QA DOCUMENTATION OF THE BIO-RETENTION BASIN AS NOTED ON CIVIL DRAWINGS C0.02 IS TO BE PROVIDED AS PART OF THE CIVIL QA PACKAGE IN ORDER TO PROVIDE CERTIFICATION.



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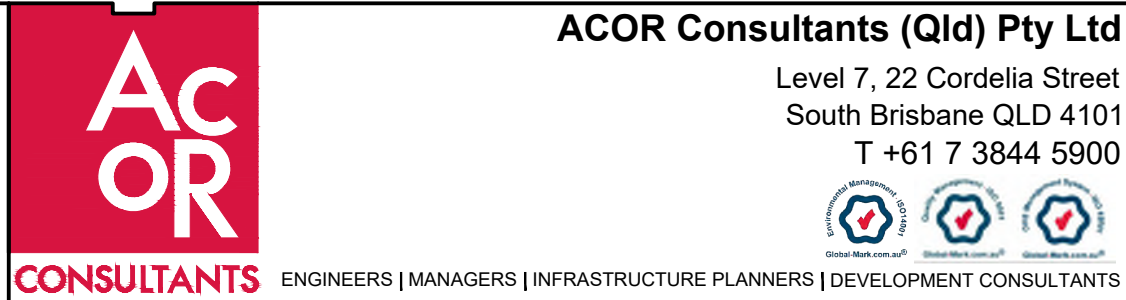
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A	APPROVAL ISSUE	03/02/22	JG	ND
Issue	Description	Date	Drawn	Approved
1	0 1cm at full size 10cm 20cm			plc



ENGINEER'S CERTIFICATION
This drawing has been assigned an electronic code that signifies the drawing has been checked and approved by:

Matthew Godwin
RPEQ 18547
2022.02.16
16:44:46+10'00'



Project
ROCKPOOL AGED CARE PELICAN WATERS
LOT 90, SPITFIRE BANKS DRIVE
PELICAN WATERS, QLD

Drawing Title					
BIO RETENTION BASIN LAYOUT					
Drawn	Date	Scale	A1	Q.A. Check	Date
JG	NOV 2021	1:50		ND	15/02/22
Designed	Project No.			Dwg. No.	Issue
ND	BR210085			21033-C-4.10	A