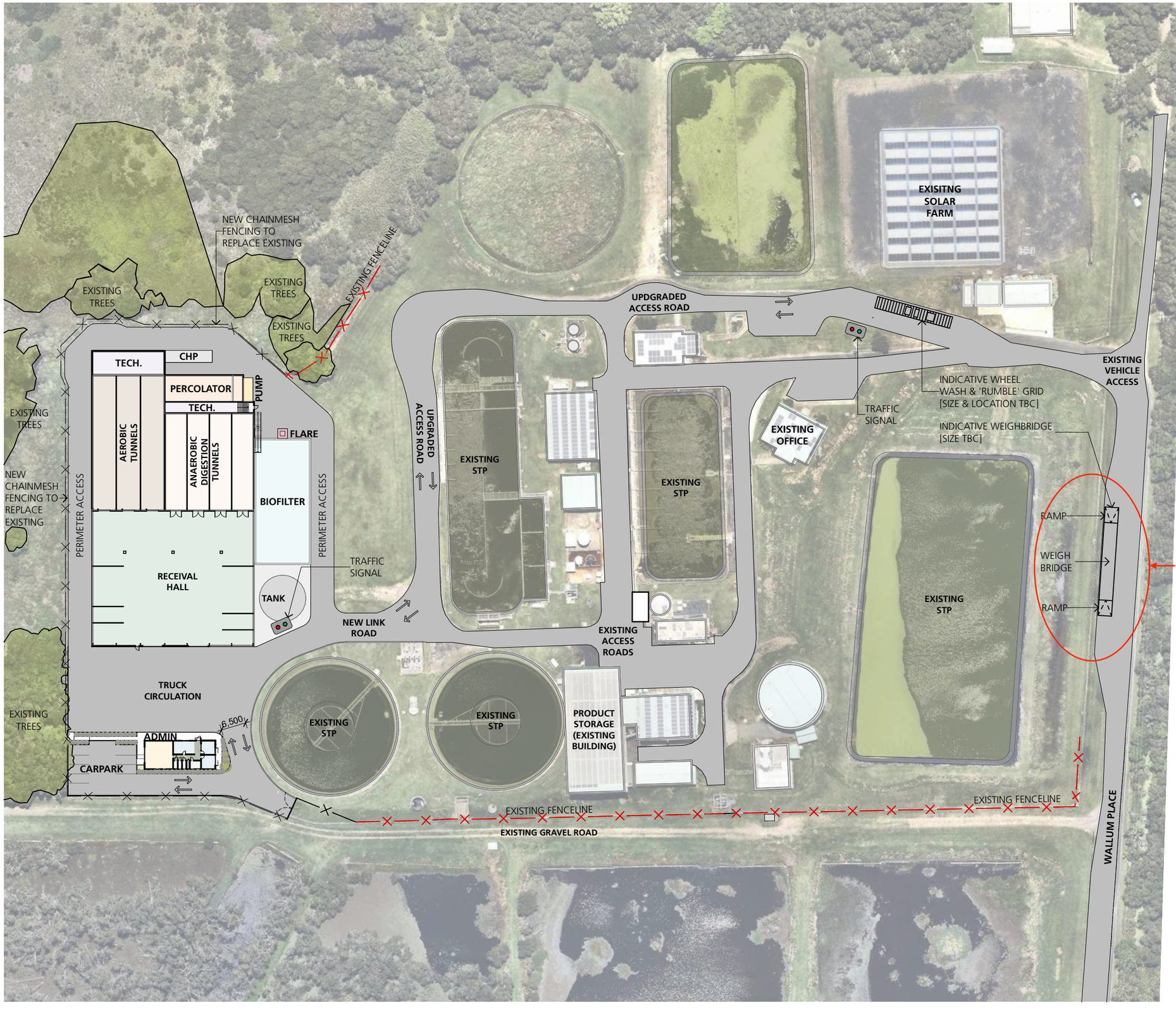

SKALA

Byron Shire Council

PRELIMINARY

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2. Work to given dimensions. Do not scale from drawing.
3. Check all dimensions on site prior to construction and fabrication.
4. Bring any discrepancies to the attention of the proprietor & architect.

Weighbridge to be relocated to within the Council operational land. Refer to consent conditions.

4312
SK1100
RevS 22/12/21

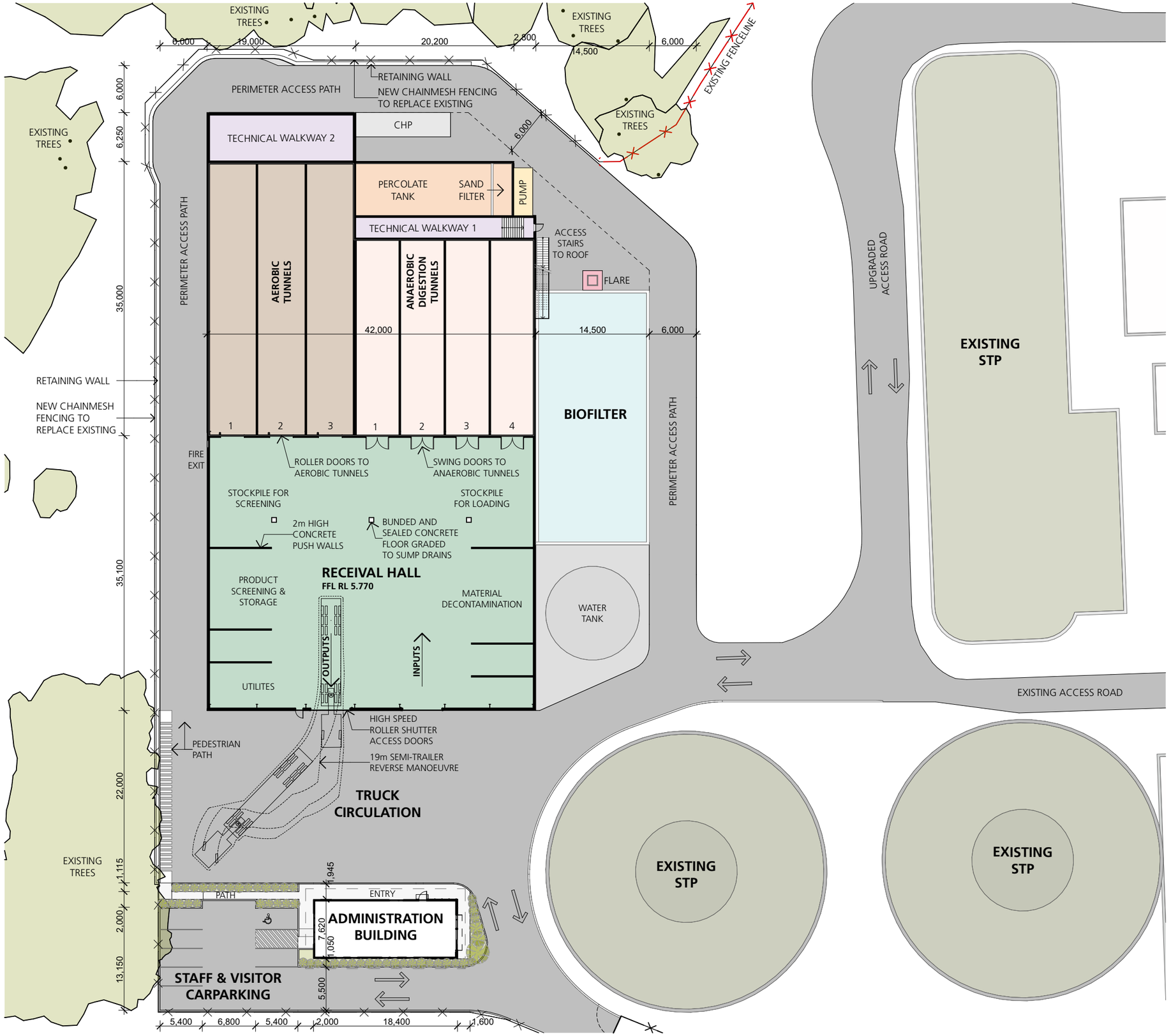
Proposed Site Plan w. Aerial View overlay

Byron Bay Bioenergy Facility
45 Wallum Place, Byron Bay, NSW

0m 10 20 30 40 50 1:1000 @A3

SHAC

Nominated Architect Justin Hamilton (6160) | ABN 32 131 584 846



SKALA

Byron Shire Council

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AREA SCHEDULE

ZONE	AREA (m²)	
Buildings		
Receival Hall	1450	
Tunnels (incl. tech. walkways)	1383	(1212 + 171)
Percolate Tank	131	
Administration	130	
CHP	38	
Biofilter	440	
	Total: 3572	
Hardstand		
Truck circulation + access road in	2956	
Carpark [incl. access & circulation]	236	
	Total: 3192	
Other		
Perimeter access	1381	
	Total: 1381	

4312
SK1101
RevV 22/12/21

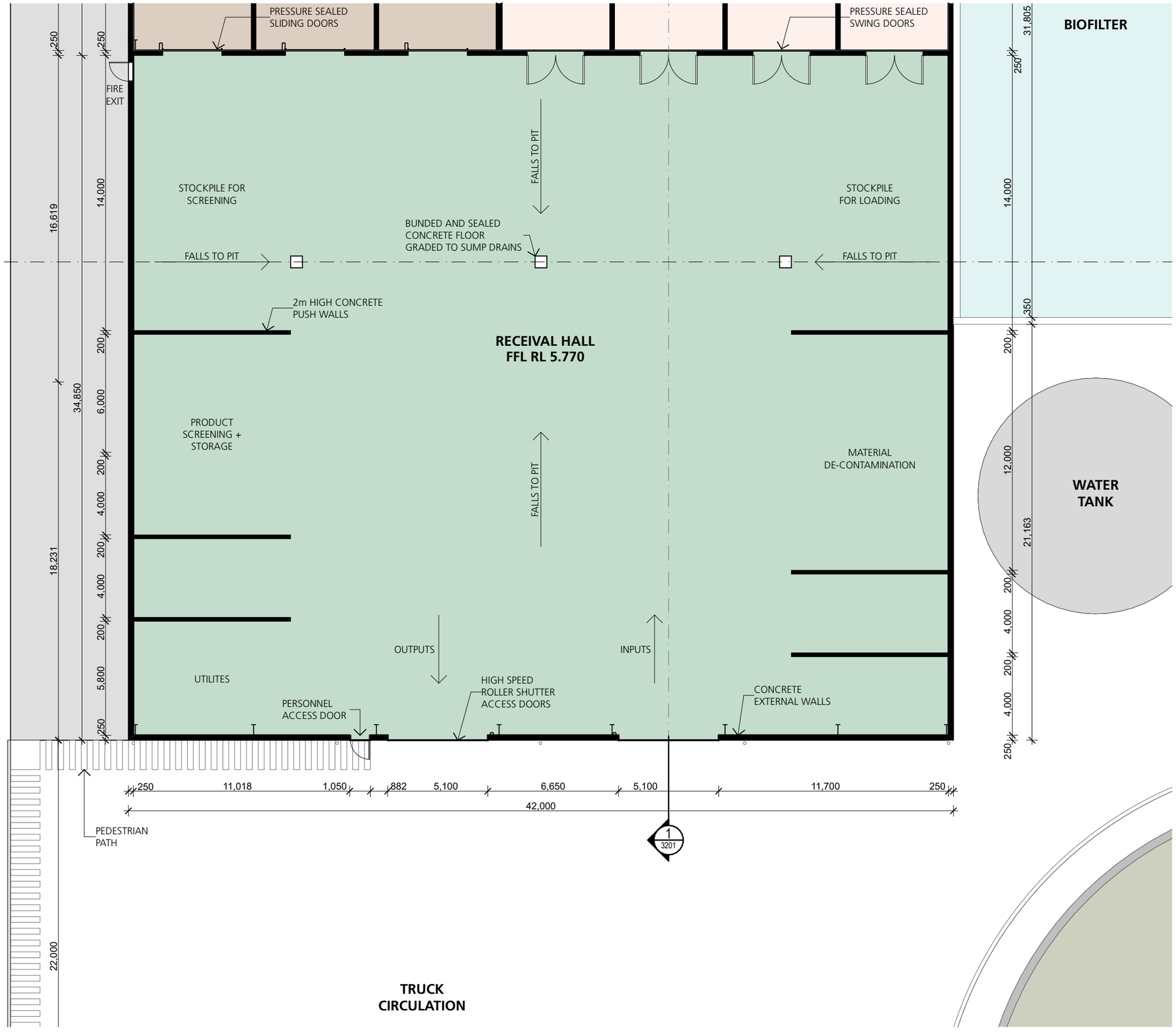
Proposed Site Plan

Byron Bay Bioenergy Facility
45 Wallum Place, Byron Bay, NSW

0m 5 10 15 20 25 1:500 @A3

SHAC

Nominated Architect Justin Hamilton (6160) | ABN 32 131 584 846



SKALA

Byron Shire Council

PRELIMINARY

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4312
SK2201
RevA 30/4/21

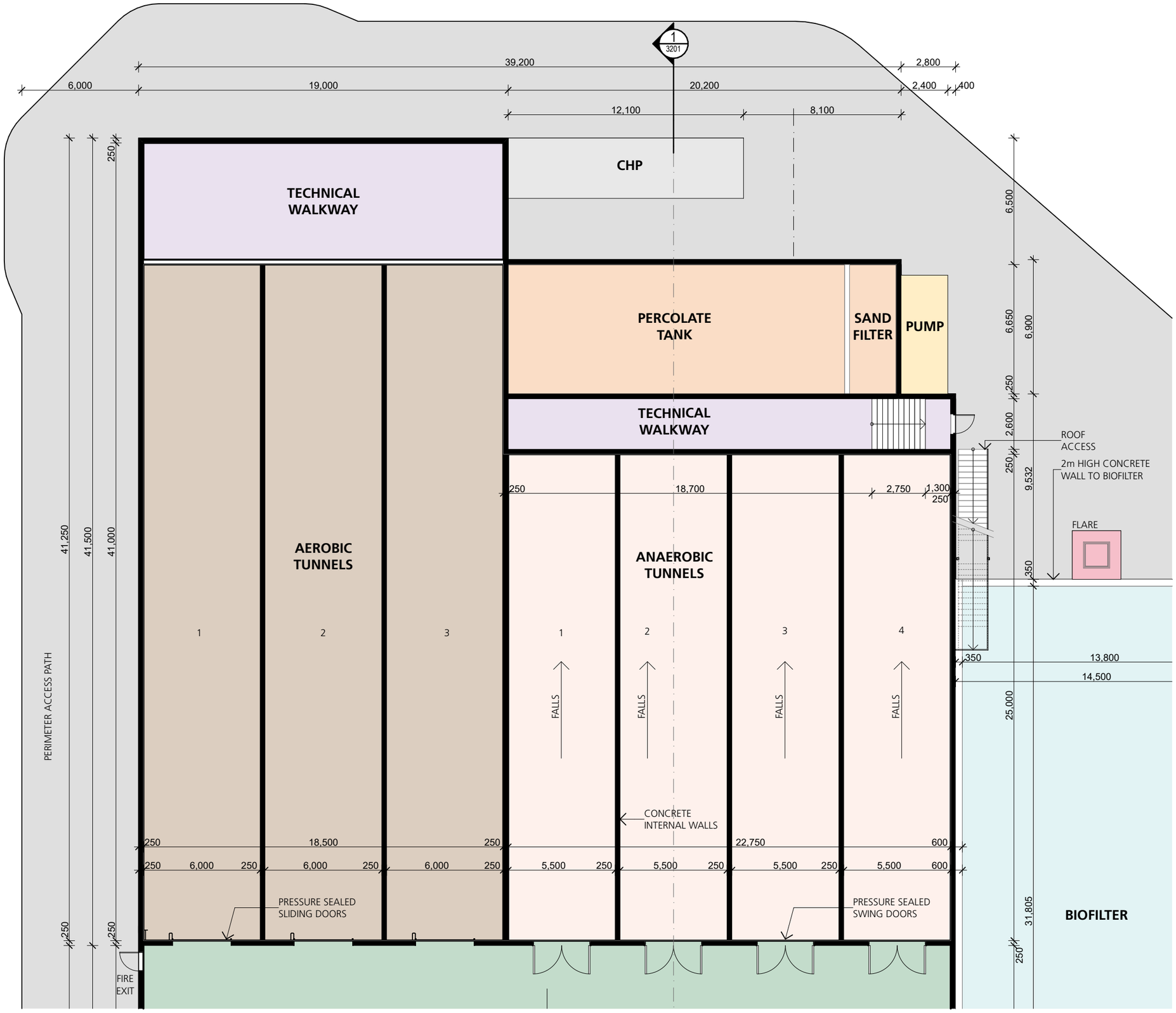
Floor Plan - Receival Hall

Byron Bay Bioenergy Facility
45 Wallum Place, Byron Bay, NSW

0m 2 4 6 8 10 1:200 @A3

SHAC

Nominated Architect Justin Hamilton (6160) | ABN 32 131 584 846



SKALA

Byron Shire Council

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4312
SK2202
RevA 30/4/21

Floor Plan - Composting Tunnels

Byron Bay Bioenergy Facility
45 Wallum Place, Byron Bay, NSW

0m 2 4 6 8 10 1:200 @A3

SHAC

Nominated Architect Justin Hamilton (6160) | ABN 32 131 584 846

PRELIMINARY

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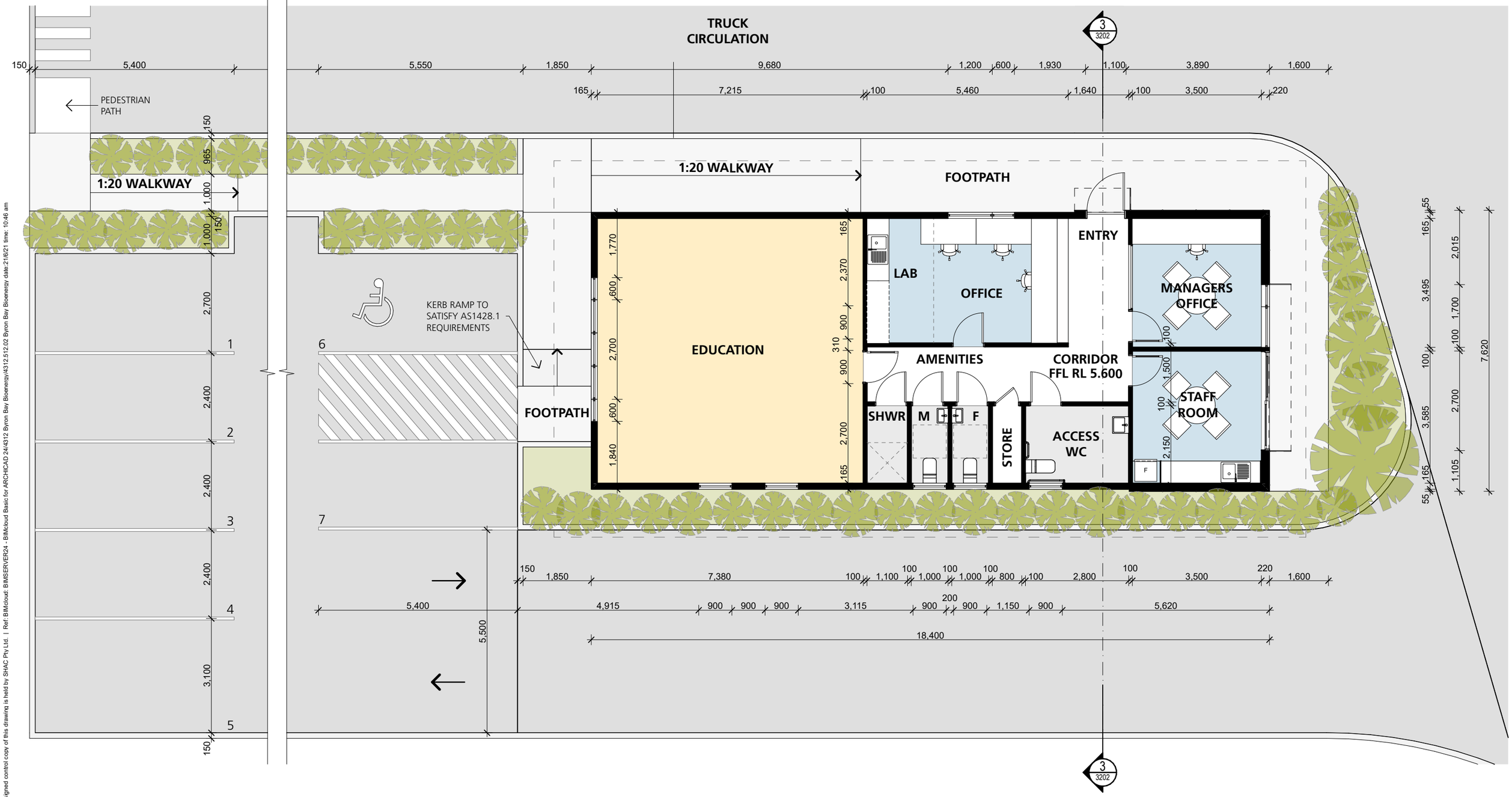


4312
SK2210
RevA 30/4/21

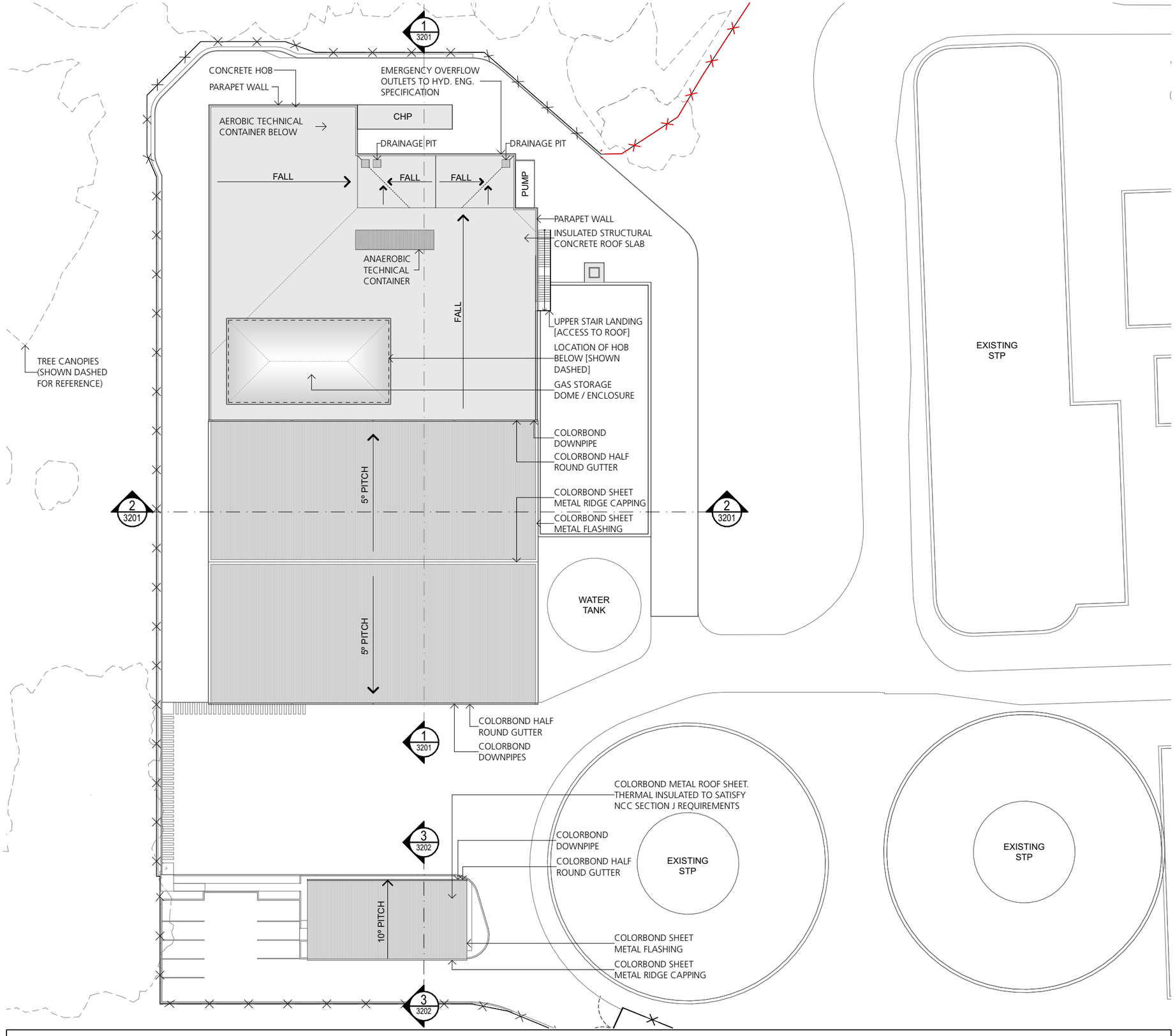
Floor Plan - Administration Building

Byron Bay Bioenergy Facility
45 Wallum Place, Byron Bay, NSW

0m 1 2 3 4 5 1:100 @A3

SHAC

Nominated Architect Justin Hamilton (6160) | ABN 32 131 584 846



SKALA

Byron Shire Council

PRELIMINARY

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4312
SK2401
RevF 22/12/21

Roof Plan

Byron Bay Bioenergy Facility
45 Wallum Place, Byron Bay, NSW

0m 5 10 15 20 25 1:500 @A3

SHAC

Nominated Architect Justin Hamilton (6160) | ABN 32 131 584 846

PRELIMINARY

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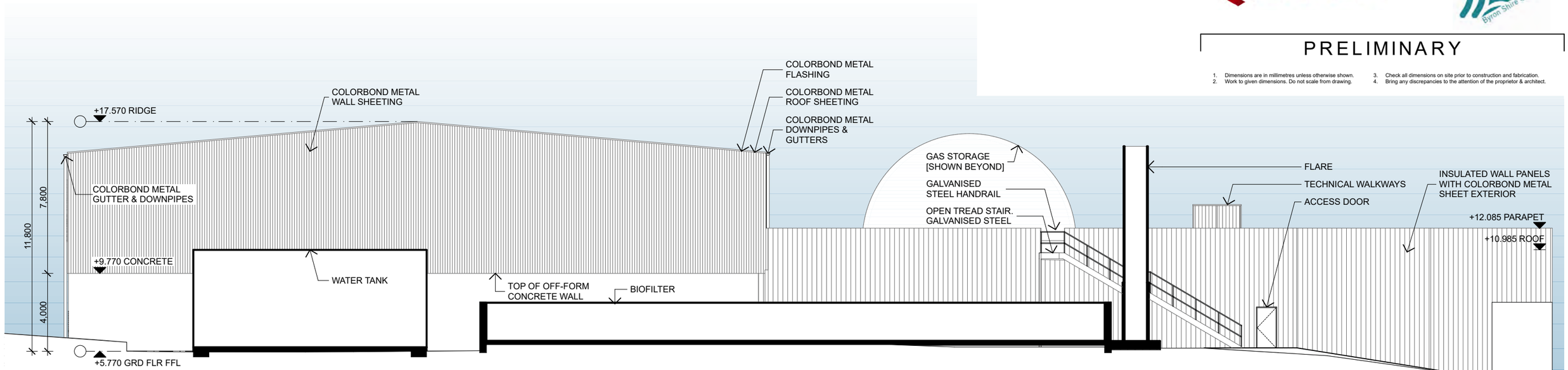
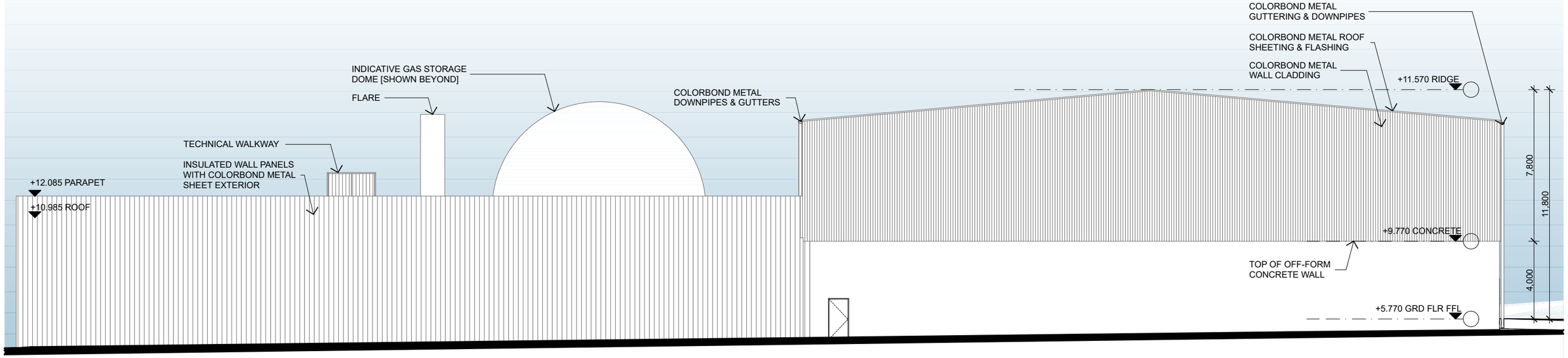


NORTH ELEVATION
SCALE: 1:200



SOUTH ELEVATION
SCALE: 1:200

4312
SK3101
RevA 30/4/21

North & South Elevations - Main Building

Byron Bay Bioenergy Facility

45 Wallum Place, Byron Bay, NSW

0m 2 4 6 8 10 1:200 @A3

SHAC

Nominated Architect Justin Hamilton (6160) | ABN 32 131 584 846

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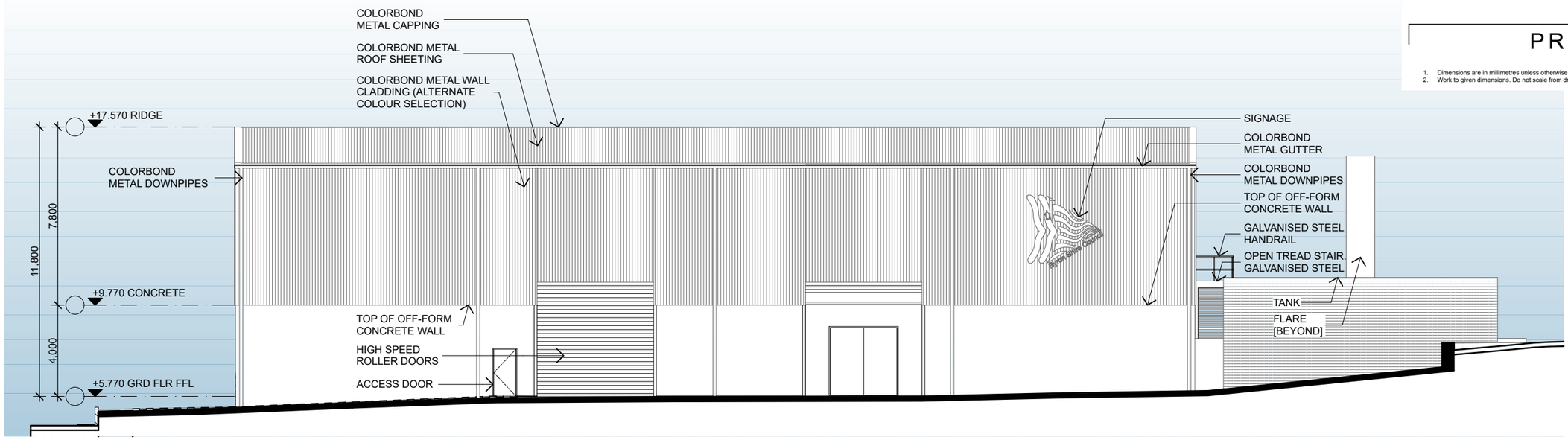
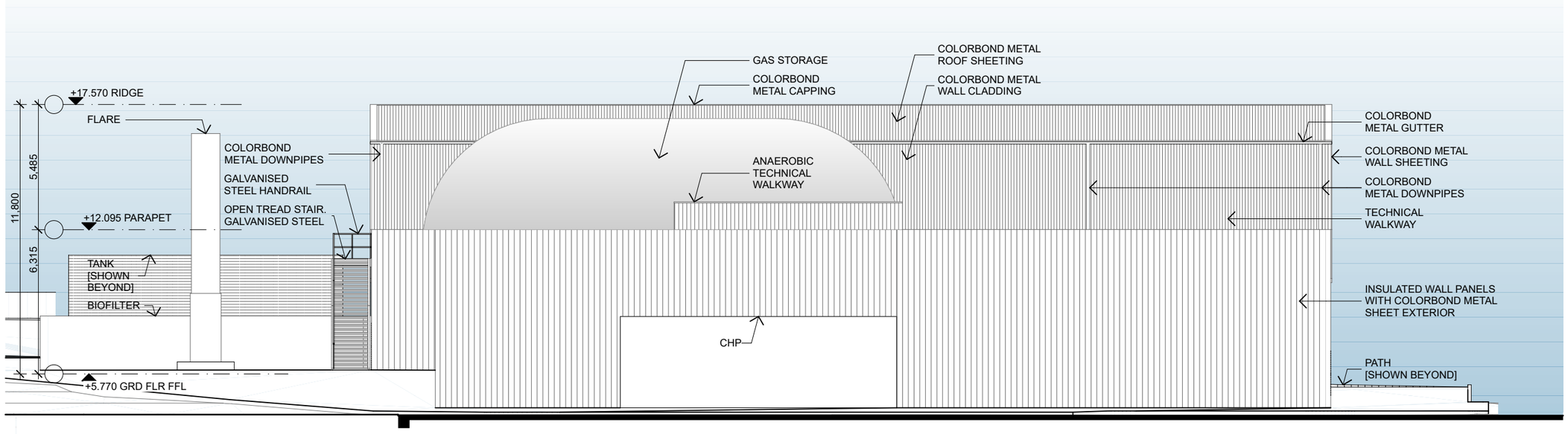


EAST ELEVATION
SCALE: 1:200



WEST ELEVATION
SCALE: 1:200

4312
SK3102
RevA 30/4/21

East & West Elevations - Main Building

Byron Bay Bioenergy Facility
45 Wallum Place, Byron Bay, NSW

0m 2 4 6 8 10 1:200 @A3

SHAC

Nominated Architect Justin Hamilton (6160) | ABN 32 131 584 846

PRELIMINARY

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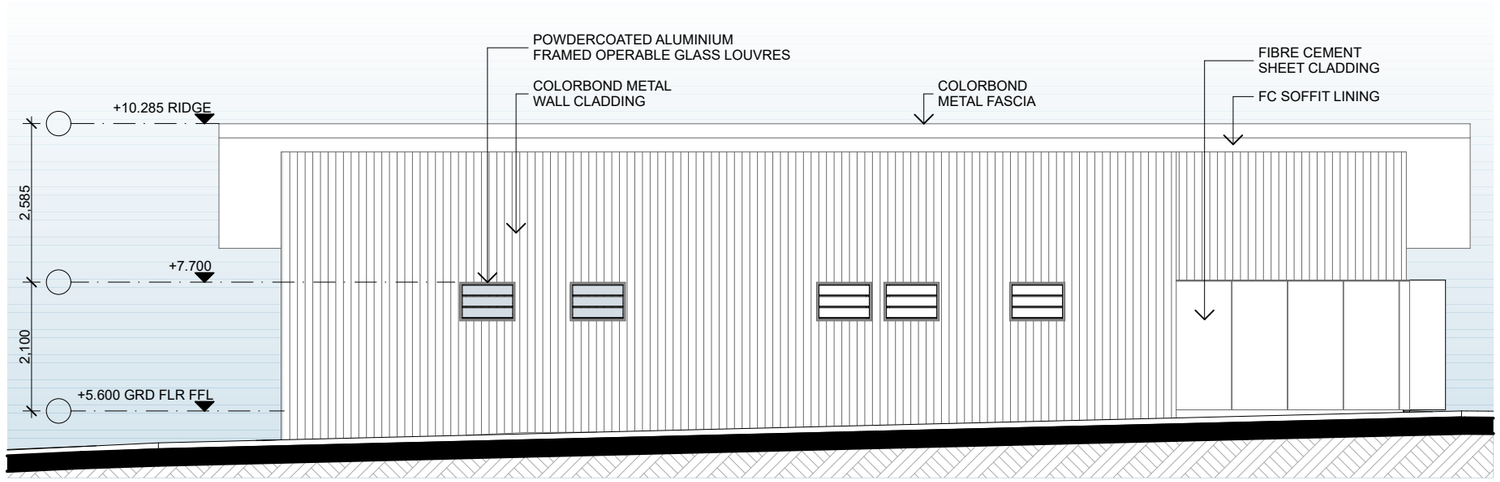
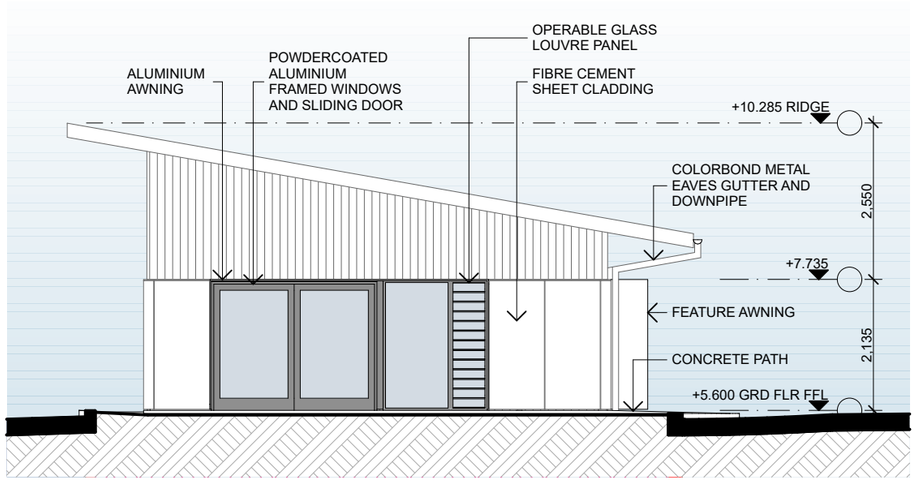
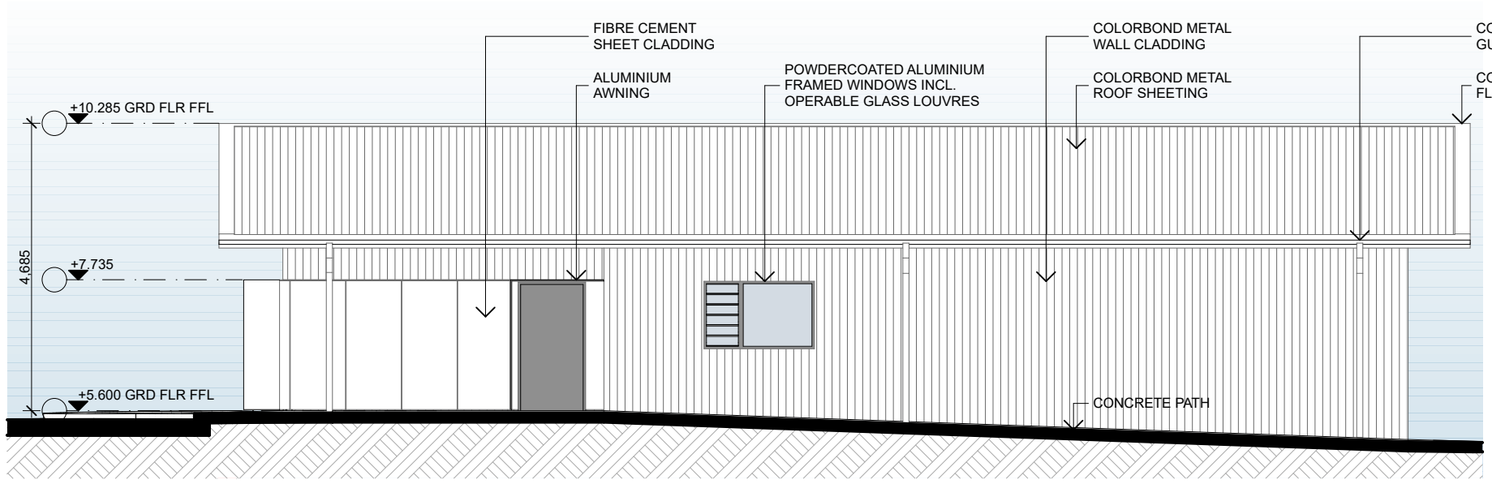


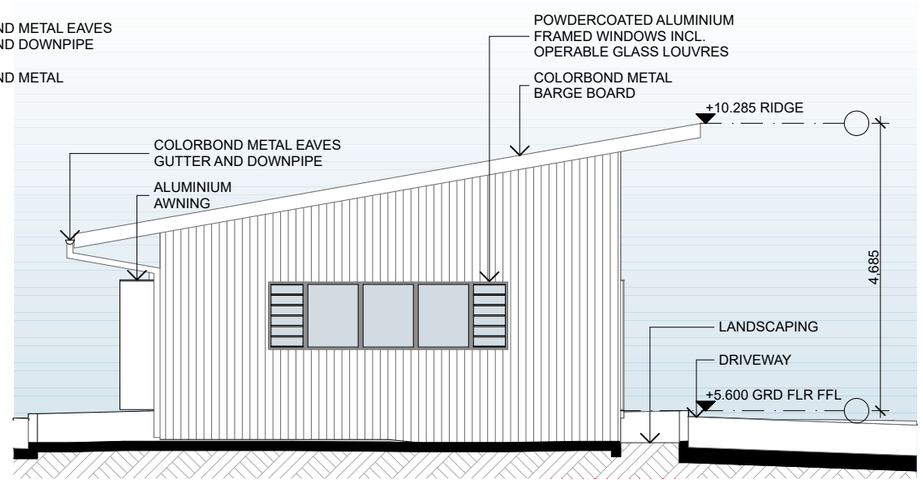
EAST ELEVATION
SCALE: 1:100



NORTH ELEVATION
SCALE: 1:100



WEST ELEVATION
SCALE: 1:100



SOUTH ELEVATION
SCALE: 1:100

4312
SK3110
RevA 30/4/21

Elevations - Administration Building

Byron Bay Bioenergy Facility
45 Wallum Place, Byron Bay, NSW

0m 1 2 3 4 5 1:100 @A3

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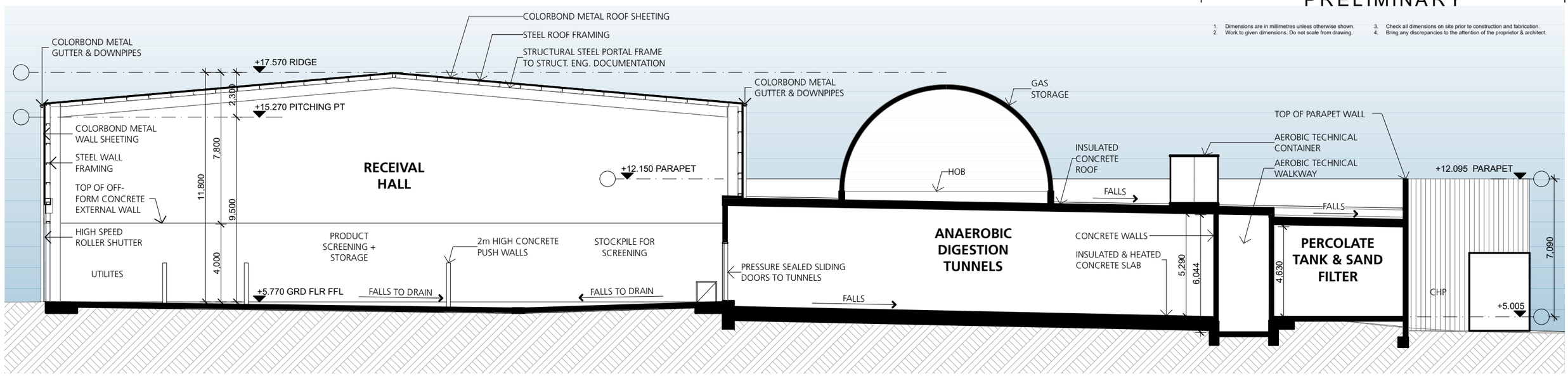
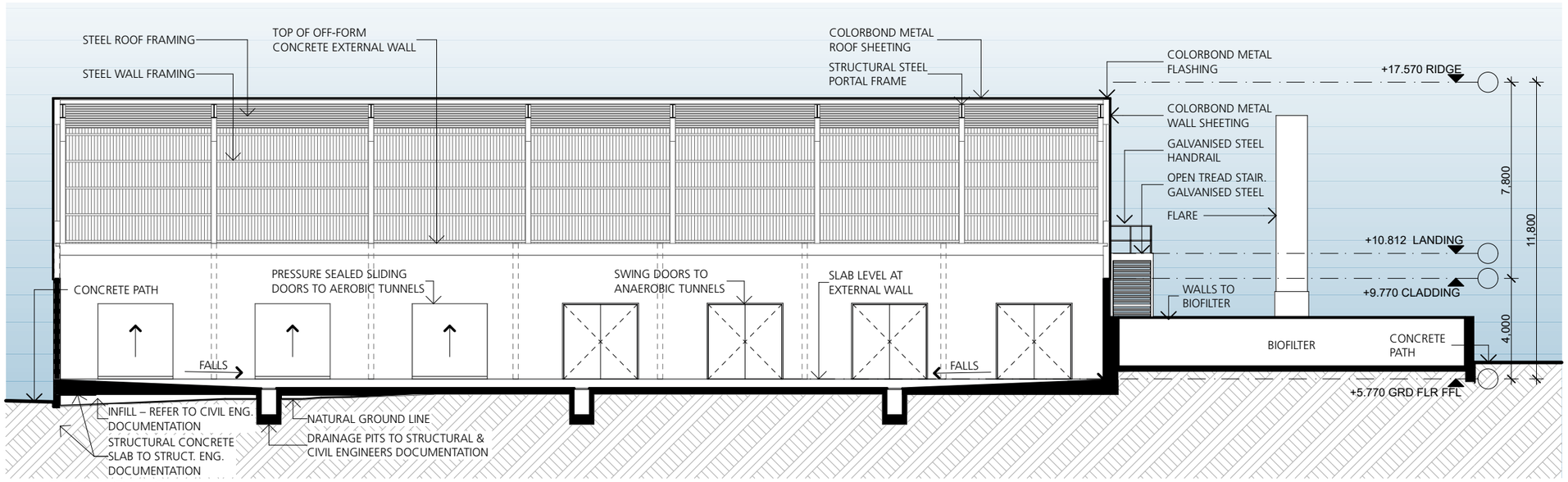


SECTION 1
SCALE: 1:200



SECTION 2
SCALE: 1:200

4312
SK3201
RevA 30/4/21

Sections 1 & 2

Byron Bay Bioenergy Facility
45 Wallum Place, Byron Bay, NSW

0m 2 4 6 8 10 1:200 @A3

SHAC

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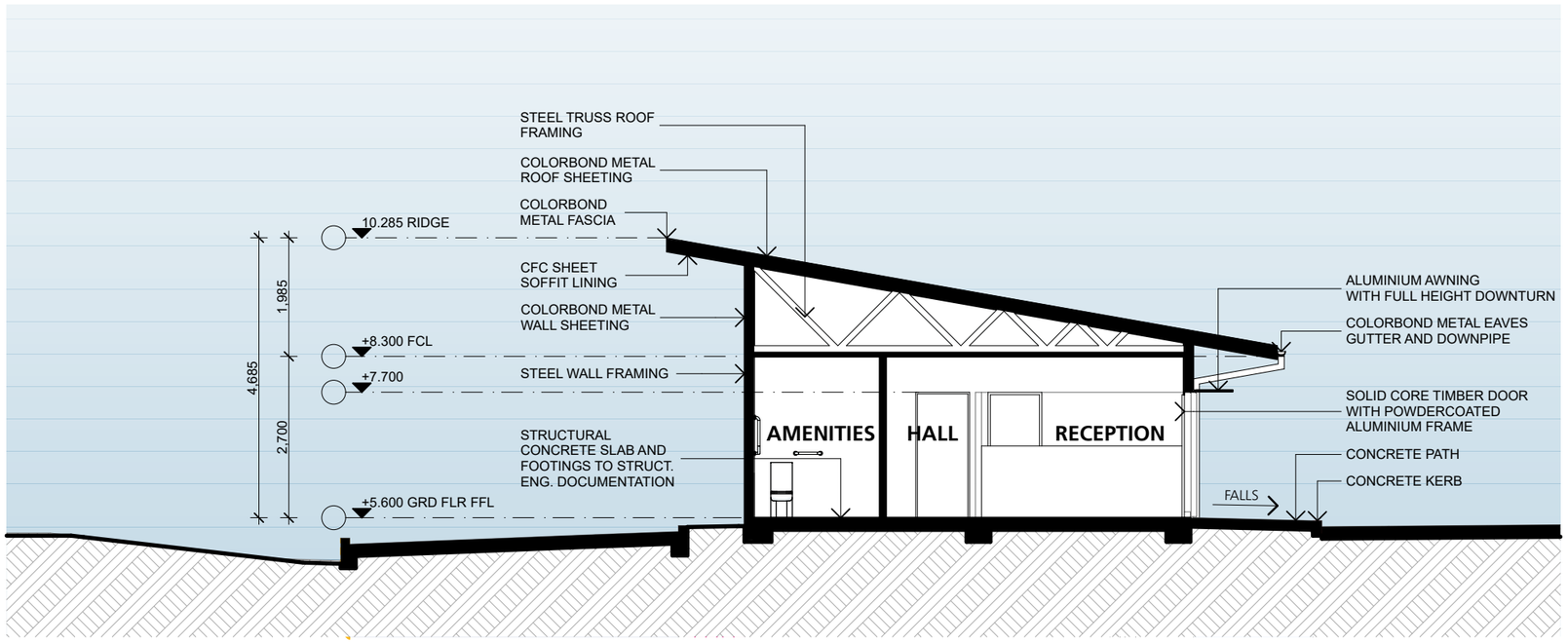


4312
SK3202
RevB 30/4/21

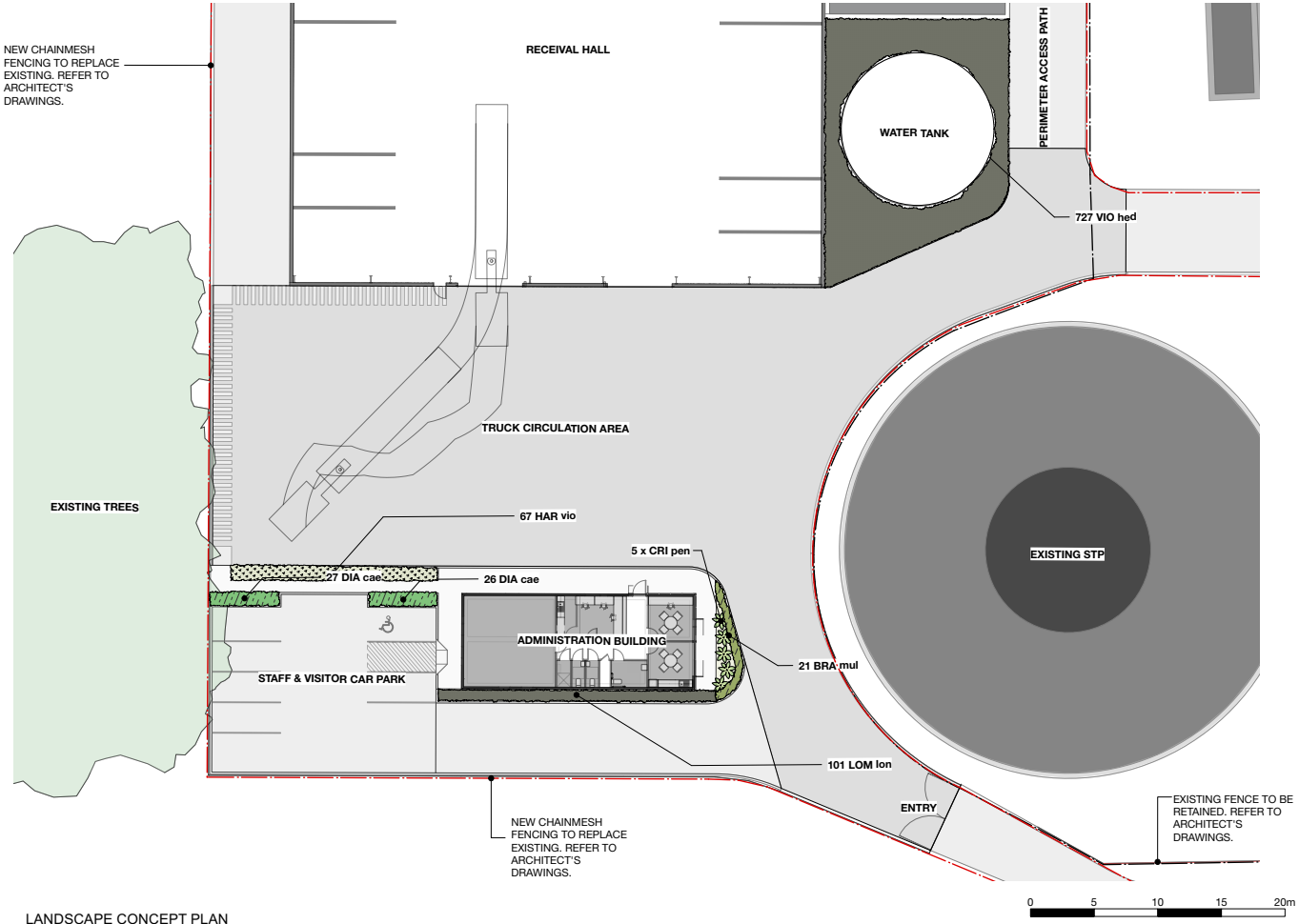
Sections - Administration Building

Byron Bay Bioenergy Facility
45 Wallum Place, Byron Bay, NSW

0m 1 2 3 4 5 1:100 @A3

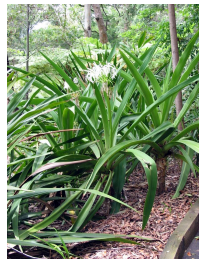
SHAC

Nominated Architect Justin Hamilton (6160) | ABN 32 131 584 846



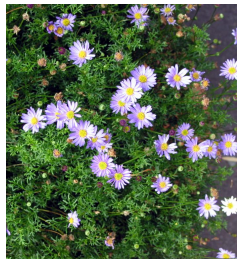
LANDSCAPE CONCEPT PLAN
Scale 1:200 @ A1

INDICATIVE PLANT IMAGERY

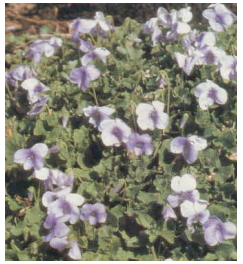

Crinum pendunculatum


Dianella caerulea


Lomandra longifolia


Brachyscome multifida


Hardenbergia violacea

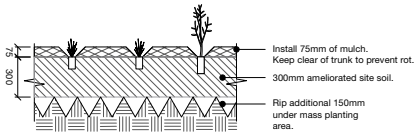

Viola hederacea

LEGEND

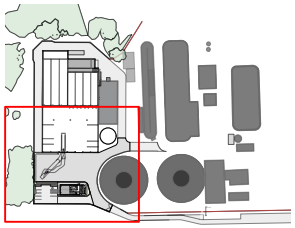
- Extent of existing works
- Extent of proposed work
- Concrete footpath
- Proposed feature plants
- Proposed groundcovers
- Turf
- Road
- Existing and proposed fences. Refer to Architect's drawings.

Planting Schedule

Code	Botanical Name	Common Name	Pot Size	Mature Height	Mature Spread	Qty	Planting Rate
Feature plants							
CRI pen	*Crinum pedunculatum*	Swamp Lily	200mm	0.45 - 0.6m	0.9 - 1.2m	5	4 per m²
Grasses							
DIA cae	*Dianella caerulea*	Blue Flax-lily	Tubestock	0.45 - 0.6m	0.3 - 0.6m	53	5 per m²
LOM lon	*Lomandra longifolia*	Spiny-headed Mat-Rush	Tubestock	0.6 - 0.9m	0.4 - 0.6m	101	5 per m²
Groundcovers							
BRA mul	*Brachyscome multifida*	Cut Leaf Daisy	140mm	0.3 - 0.45m	0.9 - 1.2m	21	3 per m²
HAR vio	*Hardenbergia violacea*	False Sarsaparilla	Tubestock	0.8 - 0.9m	1.2 - 2.0m	67	4 per m²
VIO hed	*Viola hederacea*	Native Violet	Tubestock	0.0 - 0.3m	1.2 - 2.0m	727	5 per m²



TYPICAL MASS PLANTING DETAIL
Scale 1:20 @ A1



KEY PLAN (NTS)

NOTE:
1. This plan is compliant with the Byron Shire Council DCP 2014's requirements. All plant species have been chosen from the DCP's recommended list of plant species and the plan is compliant with landscape requirements for industrial areas.

2. This plan is compliant with the NSW RFS *Standards for Asset Protection Zones* (RFS, 2005). All landscape areas located within the vicinity of the building are in Asset Protection Zone, and therefore, the chosen plant species are low-growing and are fire retardant (Ozbreed, n.d.).

moir landscape architecture
Studio 1, 88 Fern Street
PO Box 111
Islington NSW 2296
Phone (02) 4965 3500
Fax (02) 4965 3555
admin@moirla.com.au
www.moirla.com.au

ARCHITECT:
SHAC Architects

ENGINEER:

CLIENT:
Skala Australasia Pty Ltd

No:	DATE:	REVISION:	BY:
A	23/4/21	DRAFT	SB
B	27/4/21	FOR REVIEW	SB
C	13/5/21	FOR REVIEW	SB

NOTE: DRAWING PURPOSES FOR APPROVAL ONLY. NOT FOR CONSTRUCTION.

PROJECT:
BIOENERGY FACILITY BYRON BAY
45 Wallum Place, Byron Bay

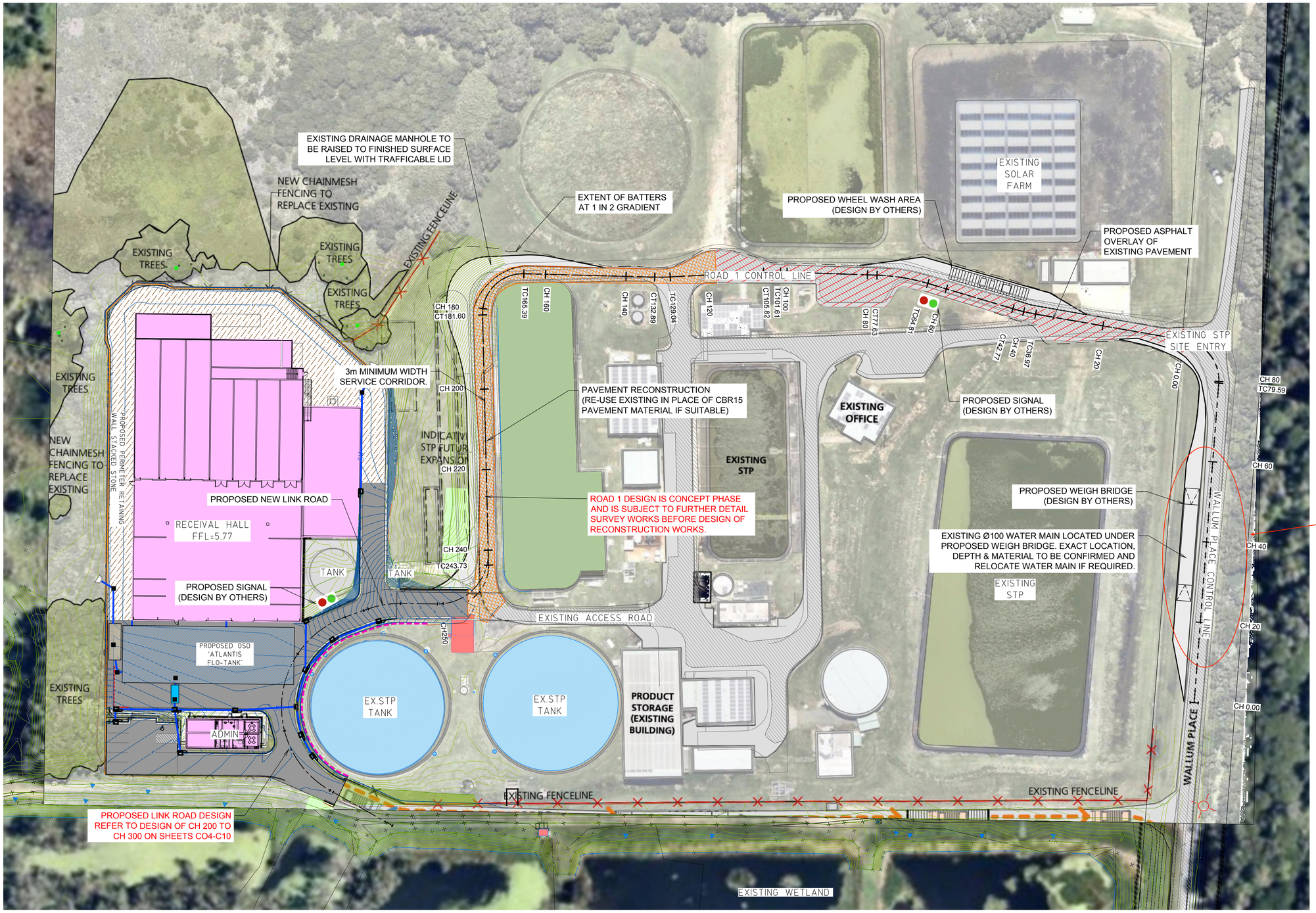
Status: FOR REVIEW

North

LANDSCAPE CONCEPT PLAN

SCALE: 1:200
ORIGINAL DRAWING AT A1.
Drawn By: SB
Checked By: AR Approved By: DM

Project No. 1983
Drawing No. LP01
Rev C



Weighbridge to be relocated to within Council operational land. Refer to consent conditions.

LEGEND

- LOT BOUNDARY
- EXISTING SEALED PAVEMENT
- PROPOSED ASPHALT OVERLAY WORKS
- PROPOSED ROAD RECONSTRUCTION WORKS
- PROPOSED UNSEALED PAVEMENT TO PERIMETER ROAD
- PROPOSED BUILDINGS
- EXISTING STP STRUCTURES
- PROPOSED ON SITE DETENTION (OSD) TANK
- PROPOSED SAND FILTER TANK (SFT)
- PROPOSED GROSS POLLUTANT TRAP (GPT)
- PROPOSED STORMWATER KERB INLET PIT
- PROPOSED STORMWATER GRATED INLET PIT
- PROPOSED STORMWATER DRAINAGE HEADWALL
- EXISTING VALVE PIT STRUCTURES
- SW — PROPOSED STORMWATER DRAINAGE PIPE
- PROPOSED SOLDIER PILE RETAINING WALL
- PROPOSED STACKED STONE RETAINING WALL
- PROPOSED MASONRY BLOCK RETAINING WALL
- 5.5 — DESIGN CONTOURS 100mm INTERVAL
- 4.5 — NATURAL SURFACE CONTOURS 100mm INTERVAL

10 5 0 10 20 30
Horizontal Scale 1:500 (A1)
1:1000 (A3)

PLANS TO BE PRINTED IN COLOUR

CONCEPT DESIGN FOR DA PHASE ONLY

ISSUE	REASON FOR ISSUE	DATE
7	ISSUED FOR COUNCIL APPROVAL - ACCESS ROAD AMENDED	16.11.2021
6	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	15.10.2021
5	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	13.08.2021
4	ISSUED FOR COUNCIL APPROVAL - ESCP ADDED TO DA SET	21.05.2021
3	ISSUED FOR COUNCIL APPROVAL - DEVELOPMENT APPLICATION	10.05.2021
2	ISSUED FOR REVIEW AT 90%	30.04.2021
1	ISSUED FOR REVIEW AT 50%	28.04.2021
0	ISSUED FOR REVIEW AT 30%	20.04.2021

mpc consulting engineers civil+structural

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16 Telford Street,
NEWCASTLE EAST, NSW 2300
PO BOX 553
THE JUNCTION, NSW 2291
Tel: (02) 4927 5566
Fax: (02) 4927 5577
Email: admin@mpceng.com.au
Web: www.mpceng.com.au
A.C.N. 098 542 575

CLIENT
BYRON SHIRE COUNCIL

TITLE
GENERAL ARRANGEMENT PLAN

PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

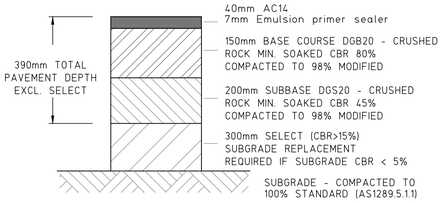
DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C02	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

PRELIMINARY PAVEMENT SECTION - FLEXIBLE PAVEMENT

FLEXIBLE PAVEMENT
DESIGN TRAFFIC LOAD $1x10^6$ ESA (T.B.C.)



PAVEMENT DESIGN

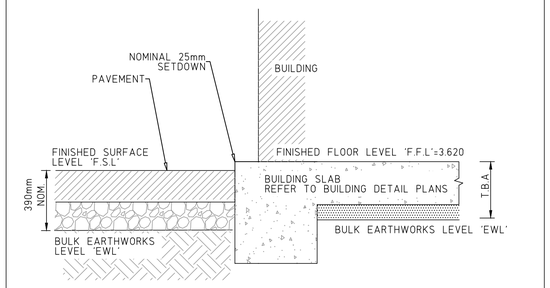
N.T.S

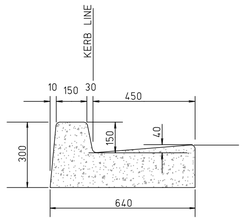
PAVEMENT DETAILS/NOTES:

1. PAVEMENT DESIGN IS PRELIMINARY AND IS SUBJECT TO SITE SUBGRADE CBR TESTING BY NATA ACCREDITED GEOTECHNICAL ENGINEER AND FINAL PAVEMENT DESIGN APPROVAL BY BYRON SHIRE COUNCIL
2. (FOR BASE & SUBBASE MATERIAL COMPLIANCE REFER TO NORTHERN RIVERS CONSTRUCTION SPECIFICATION C242 FLEXIBLE PAVEMENTS)

BUILDING / PAVEMENT INTERFACE - TYPICAL SECTION

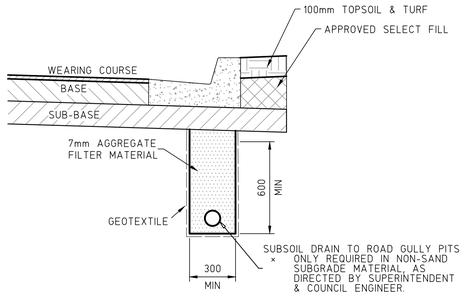
NOTES:
1. NOMINAL SETDOWN OF 25mm FROM FINISHED FLOOR LEVEL ' FFL' TO PAVEMENT LEVEL





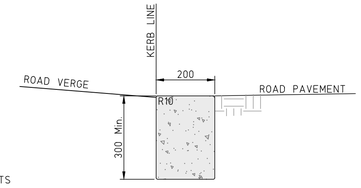
KERB & GUTTER TYPE B1 (K&G)

NOTE: REFER TO NRDG SD R-03 FOR DETAILS



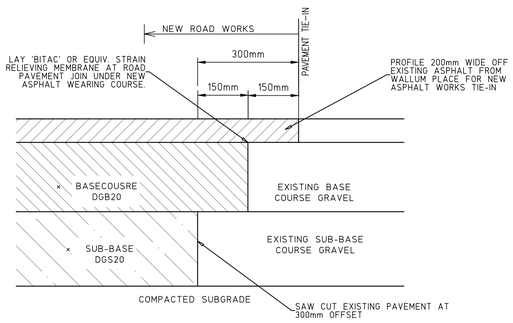
KERB DETAIL – SUBSOIL DRAINAGE

NOTE: REFER TO NCC SD A1100 FOR DETAILS



FLUSH EDGE RESTRAINT TYPE ER2

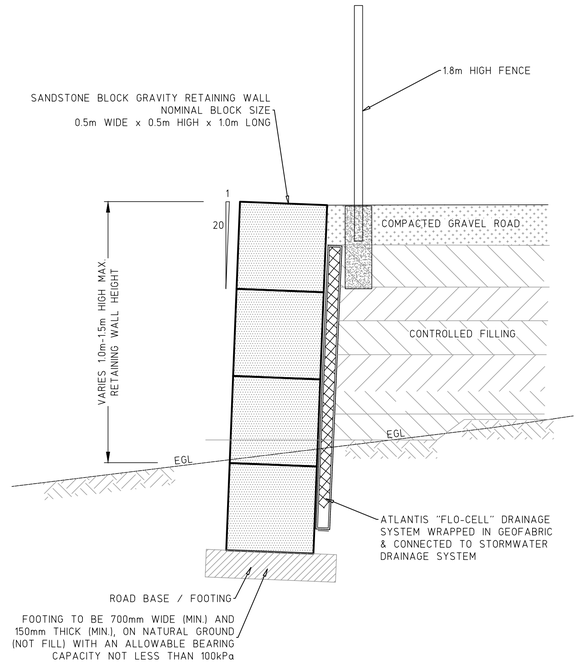
NOTE: REFER TO NRDG SD R-03 FOR DETAILS



× WALLUM PLACE EXISTING PAVEMENT DEPTHS TO BE VERIFIED BY CONTRACTOR AND FINAL PAVEMENT DESIGN SUBMITTED TO BYRON SHIRE COUNCIL FOR APPROVAL BEFORE CONSTRUCTION COMMENCEMENT

WALLUM PLACE TIE-IN – PAVEMENT DETAIL

N.T.S



PERIMETER RETAINING WALL - CUT SANDSTONE BLOCKS

N.T.S

NOTE: EXCAVATIONS FOR FOOTING SHALL BE INSPECTED BY A GEOTECHNICAL ENGINEER AT THE TIME OF BULK EXCAVATION TO CONFIRM THE NOMINATED SOIL BEARING CAPACITIES HAVE BEEN ACHIEVED.

GENERAL CIVIL NOTES:

GC1 All works shall be carried out in accordance with the approved plans, subject to Byron Shire Council's Standard Drawings and the Northern Rivers Local Government Design & Construction Specifications and Standards.
GC2 All erosion and sedimentation control measures are to be carried out in accordance with Council's Code of Practice for Erosion and Sedimentation and must be implemented prior to the commencement of any building of civil works. The developer is responsible for ongoing maintenance of erosion and siltation control measures.
GC3 All public utilities are to be clearly identified in the field prior to any civil works. Council accepts no responsibility for damage or relocation costs to utilities during construction.
GC4 Council is to be notified prior to the commencement of any works.
GC5 It is the contractor's responsibility to ensure that all works are carried in accordance with the Occupational Health and Safety Act.
GC6 Permission to enter, construct works and discharge storm water onto adjoining properties is to be obtained and submitted to Council prior to commencement of any works.
GC7 Pavement to be designed and certified by a practicing consultant geotechnical engineer and submitted to Council for approval prior to commencement of any works.
GC8 All rectification work arising from insufficient information being shown on the submitted plans is to be carried out to the engineer's satisfaction.
GC9 All disturbed areas to be shaped and turfed.
GC10 The plans to be read conjunction with engineering plan approval correspondence.

NOTE:
THE LOCATION OF UNDERGROUND SERVICES SHOWN ARE INDICATIVE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL AUTHORITIES TO DETERMINE THE LOCATION OF UNDERGROUND SERVICES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION WORK. ANY CLASH OF WORKS WITH A SERVICE IS TO BE REPORTED TO THE ENGINEER IMMEDIATELY. THE CONTRACTOR SHALL ENSURE THAT ALL SERVICES ARE FULLY PROTECTED DURING CONSTRUCTION, ANY SERVICES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

CONSTRUCTION NOTES

GENERAL:

G1 These drawings shall be read in conjunction with all Architectural & other consultants drawings & specifications and with such other written instructions as may be issued during the course of the contract. (Any discrepancy shall be referred to the Superintendent/Engineer before proceeding with the work. In case of discrepancy, precedence is given to drawings, then notes, then specification.)
G2 Materials and workmanship shall be in accordance with the relevant and current SAA codes, Local Government requirements or other relevant Building Authority.
G3 All dimensions shown shall be verified by the builder on site. Engineers drawings shall not be scaled.
G4 During all stages of construction, the structure shall be maintained in a stable condition with all temporary bracing and support of the structure being the responsibility of the contractor. The determination by the contractor of a safe work method remains the responsibility of the contractor as the documents, drawings and any written instructions, provided by MPC Consulting Engineers during the contract do not describe a work method. The design and installation of any temporary works remains the responsibility of the contractor. Any elements determined by the contractor of posing an unacceptable level of safety risk to construct shall be referred to MPC Consulting Engineers. The Occupational Health and Safety Act and Workcover Codes of Practice shall be complied with.
G5 U.N.O. denotes "Unless Noted Otherwise". All dimensions shown are in millimeters U.N.O.
G6 Construction works using these drawings must not commence until the drawings have been signed and 'Issued For Construction'. MPC Consulting Engineers accept no responsibility for any work not inspected or not approved by MPC Consulting Engineers during construction.
G7 It is the responsibility of the head contractor or site supervisors to ensure that all works noted on site or written instructions are carried out. Any queries or clarifications must be directed to MPC Consulting Engineers.
G8 Provide scaffolding, fall restraint, hand and mid rails and toe boards for work at height. Erect access stairs at earliest opportunity to reduce open shaft hazards and facilitate access maintain safety mesh and barriers to all openings and elevated edges.
G9 Submit details of changes to scope, work methods or materials etc for approval before proceeding. Approval does not authorise a variation to the contract.
G10 Check structural drawings against mechanical, electrical services and other drawings for requirements for penetrations, conduits, ducts, pipes, etc.
G11 Nomination of proprietary items does not indicate exclusive preference but indicates required properties of item. Similar alternatives having required properties may be offered for approval. Approval does not authorise a variation to the contract. Install proprietary items in accordance with manufacturers requirements and recommendations.
G12 Give two working days' (48 hours) notice so that inspection may be made of critical stages of work.
G13 All inspections undertaken by superintendent or others do not relieve contractor of responsibility for compliance with drawings and specifications.
G14 Survey and setting out to be undertaken by a Registered Surveyor.
G15 Verify on site setting out dimensions and existing member sizes shown on drawings before shop drawings, construction and fabrication is commenced. Existing structures shown on drawings are in approximate locations only.
G16 Take care of hazards associated with buried, concealed or overhead services. Undertake exploration to establish location of and protect existing services at site services shown on drawings are in approximate locations only, services other than those shown may exist on site. Mark locations of services clearly on site and on as-built drawings. Hand excavate within one metre of in-ground services.
G17 These drawings do not detail temporary works. Construction methods and temporary works are responsibility of the contractor.
G18 Implement soil and water management procedures to avoid erosion. Contamination and sedimentation of site, surrounding areas and drainage systems.
G19 Make good any damage to existing elements at completion of works.

EARTHWORKS NOTES:

E1 The contractor shall review the Geotechnical Engineering Report. Remove all topsoil, organic matter rubble, uncontrolled fill, unsuitable material at the direction of the Geotechnical Engineer. All materials stockpiles and all earthwork areas shall have sediment and erosion control measures installed in accordance with the "Blue Book" (Managing, Urban Stormwater Soils and Construction, produced by Landcom). Any surplus excavated topsoil shall be removed from site and disposed of in accordance with EPA guidelines.
E2 Proof roll all exposed natural sub-grade for building platforms, paved areas, areas to be filled, or cut batters in the presence of a suitably Qualified Geotechnical Engineer who will certify the works.
E3 Allow for excavation in all materials as found U.N.O. Any surplus excavated material shall be removed from site and disposed of in accordance with EPA guidelines.
E4 Ensure that there is continuity of compaction between building platforms in both cut and fill areas.
E5 Testing of the sub-grade shall be carried out by an approved N.A.T.A. registered laboratory and in accordance with AS3798. Where the fill is to provide support to building floor slab, level 1 testing procedures (in accordance with AS3798) shall be followed, otherwise level 2 testing shall be undertaken.
E6 The contractor shall allow in their price for all costs associated with geotechnical testing during construction works.
E7 U.N.O. Provide suitable compaction equipment to achieve specified standards. Refer to geotechnical engineering report for site sub-grade preparation guidelines. All fill materials shall be placed in maximum 200mm thick layers and compacted at optimum moisture content (+/-2%) to achieve the following standards:

* Service trenches (not under pavements)	95% standard
* Service trenches under pavements	100% standard
* Top 600mm to subgrade level under paved areas	100% standard
* Landscaped and general areas	95% standard
Pavement:	
* Base Layer	98% modified
* Sub-Base Layer	98% modified

Testing of placed fill shall be at the direction of the geotechnical engineer and suitable for the works to be certified as completed.
E8 Provide to the superintendent all necessary test certificates and certifications for all earthworks and pavement preparations.
E9 Ensure that all earthworks areas are free draining and do not pond water. Provide temporary drainage or sump pumping as required until sufficient site stormwater drainage has been installed.

PLANS TO BE PRINTED IN COLOUR

CONCEPT DESIGN FOR DA PHASE ONLY

ISSUE	REASON FOR ISSUE	DATE
7	ISSUED FOR COUNCIL APPROVAL - ACCESS ROAD AMENDED	16.11.2021
6	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	15.10.2021
5	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	13.08.2021
4	ISSUED FOR COUNCIL APPROVAL - ESCP ADDED TO DA SET	21.05.2021
3	ISSUED FOR COUNCIL APPROVAL - DEVELOPMENT APPLICATION	10.05.2021
2	ISSUED FOR REVIEW AT 90%	30.04.2021
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0	ISSUED FOR REVIEW AT 30%	20.04.2021

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A.C.N. 098 542 575

CLIENT: BYRON SHIRE COUNCIL

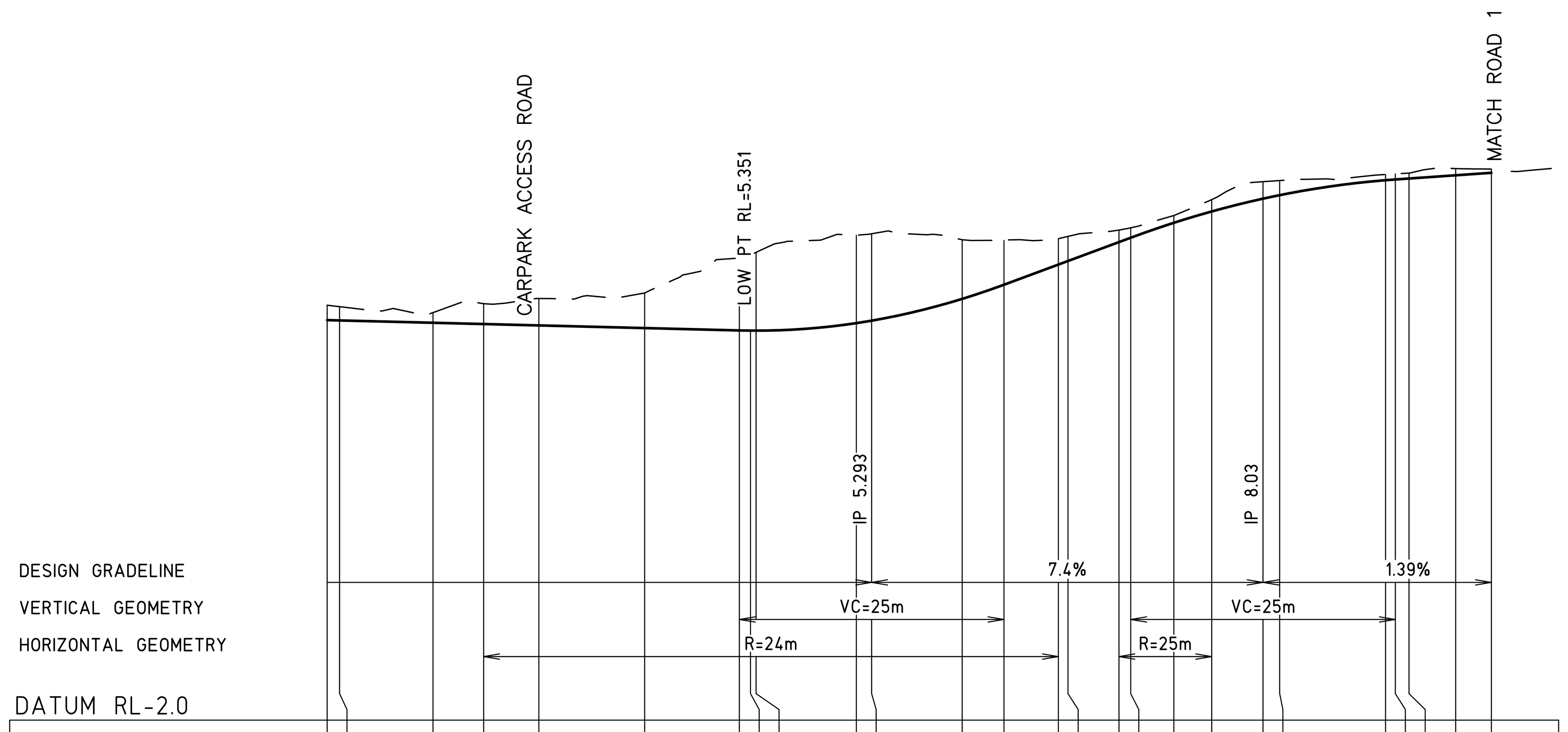
TITLE: TYPICAL SECTIONS & DETAILS

PROJECT: BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C03	7

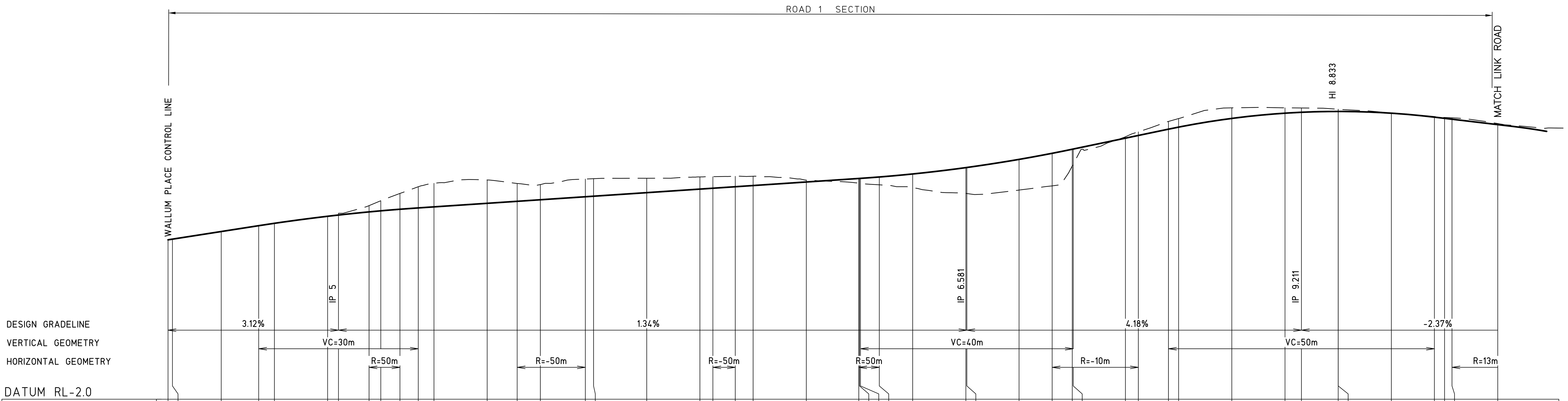
FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm



CHAINAGES	CUT / FILL	DESIGN SURFACE	NATURAL SURFACE
200.000	0.281	5.55	5.831
201.176	0.26	5.544	5.804
210.000	0.192	5.5	5.692
214.782	0.384	5.476	5.860
220.000	0.505	5.45	5.955
230.000	0.663	5.4	6.062
238.947	1.351	5.355	6.706
240.000	1.427	5.352	6.778
240.528	1.471	5.351	6.822
250.000	1.658	5.493	7.151
251.447	1.63	5.54	7.169
260.000	1.116	5.95	7.067
263.947	0.837	6.218	7.055
269.088	0.488	6.598	7.087
270.000	0.463	6.666	7.129
274.813	0.227	7.022	7.249
275.925	0.184	7.105	7.289
280.000	0.137	7.386	7.524
283.574	0.224	7.6	7.824
288.425	0.32	7.842	8.162
290.000	0.276	7.908	8.184
300.000	0.108	8.19	8.298
300.925	0.105	8.204	8.309
302.218	0.103	8.222	8.325
306.628	0.126	8.283	8.410
310.000	0.067	8.33	8.397

Horizontal 1:500 Vertical 1:100

LINK ROAD CENTRELINE



CHAINAGES	CUT / FILL	DESIGN SURFACE	NATURAL SURFACE
0.000		4	
0.828		4.026	
10.000		4.312	
17.044		4.532	
20.000		4.622	
30.000		4.886	
32.044	0.067	4.933	5.000
37.797	0.237	5.052	5.288
40.000	0.38	5.092	5.472
43.600	0.595	5.151	5.746
47.044	0.797	5.201	5.998
50.000	0.887	5.24	6.127
60.000	0.879	5.374	6.253
65.641	0.672	5.45	6.121
70.000	0.571	5.508	6.080
78.454	0.667	5.621	6.288
80.000	0.66	5.642	6.302
90.000	0.542	5.776	6.318
100.000	0.458	5.91	6.368
102.436	0.435	5.942	6.377
106.646	0.394	5.998	6.392
110.000	0.35	6.043	6.393
120.000	0.07	6.177	6.248
129.871	-0.173	6.309	6.136
130.000	-0.177	6.311	6.134
130.185	-0.186	6.313	6.127
133.723	-0.295	6.365	6.071
140.000	-0.517	6.479	5.962
150.000	-0.97	6.718	5.748
150.185	-0.98	6.723	5.743
160.000	-1.156	7.028	5.873
166.221	-1.227	7.257	6.030
170.000	-1.236	7.41	6.174
170.185	-1.234	7.417	6.183
180.000	0.051	7.828	7.879
182.427	0.136	7.929	8.066
188.090	0.291	8.166	8.457
190.000	0.321	8.243	8.564
200.000	0.397	8.571	8.968
210.000	0.201	8.767	8.969
213.090	0.162	8.802	8.963
220.000	0.083	8.833	8.916
220.007	0.082	8.833	8.915
230.000	0.006	8.768	8.774
238.090	0.022	8.619	8.641
240.000	0.032	8.574	8.606
241.394	0.052	8.541	8.593
250.000	0.04	8.33	8.377

Horizontal 1:500 Vertical 1:100

ENTRY ROAD 1 CONTROL LINE (TRIAL GRADING SUBJECT TO ADDITIONAL SURVEY DATA)

CONCEPT DESIGN FOR DA PHASE ONLY

Horizontal Scale 1:500 (A1) 1:1000 (A3)

Vertical Scale 1:100 (A1) 1:200 (A3)

PLANS TO BE PRINTED IN COLOUR

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0	ISSUED FOR REVIEW AT 30%	20.04.2021

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DATE OF RELEASE	RESPONSIBLE PRINCIPAL SIGNATURE	ISSUE

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A.C.N. 098 542 575

CLIENT
BYRON SHIRE COUNCIL

TITLE
ENTRY ROAD 1 & LINK ROAD LONGITUDINAL SECTIONS

PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C04	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

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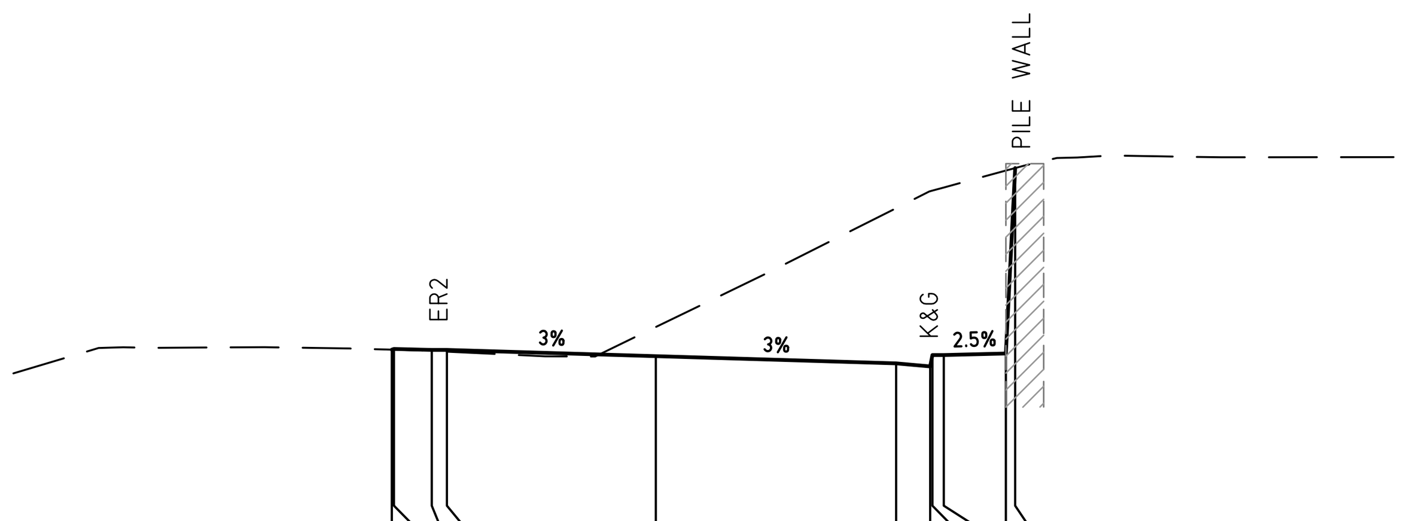
CONCEPT DESIGN FOR DA PHASE ONLY

Horizontal Scale 1:100 (A1)
1:200 (A3)

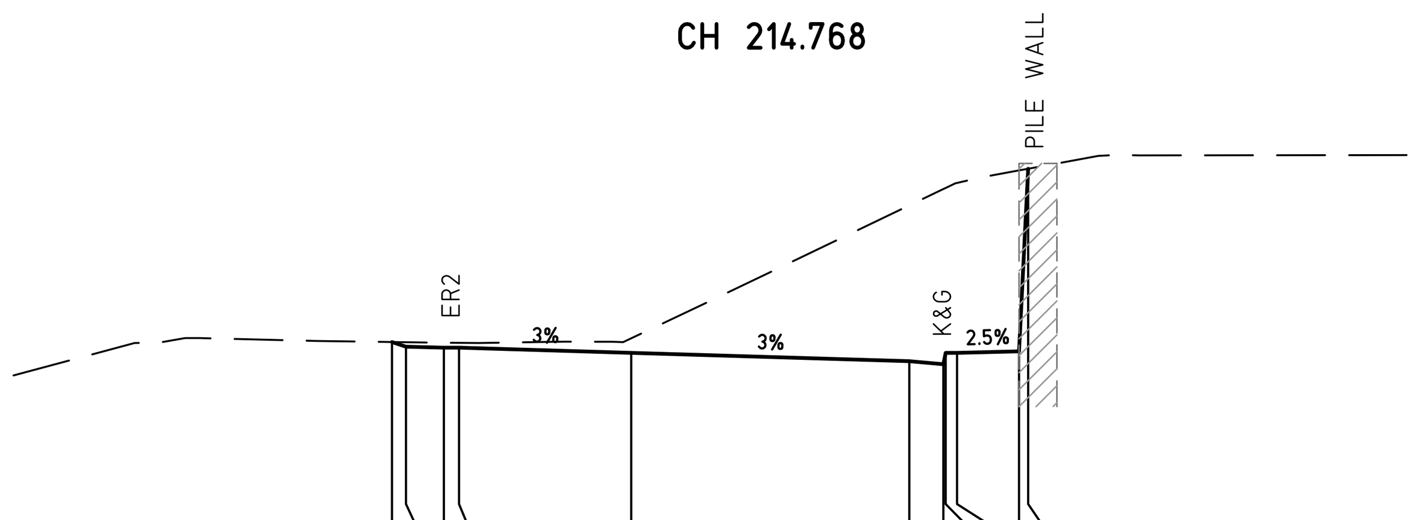
Vertical Scale 1:100 (A1)
1:200 (A3)



DATUM R.L.3.0

DESIGN SURFACE LEVEL	5.562	5.571	5.559	5.559	5.476	5.381	5.341	5.491	5.491	5.511	7.961
EXISTING SURFACE LEVEL	5.562	5.561	5.544	5.535	5.861	7.431	7.655	7.663	7.704	7.928	7.961
OFFSET	-3.488	-3.460	-2.960	-2.760	0.000	3.175	3.625	3.655	3.805	4.625	4.747

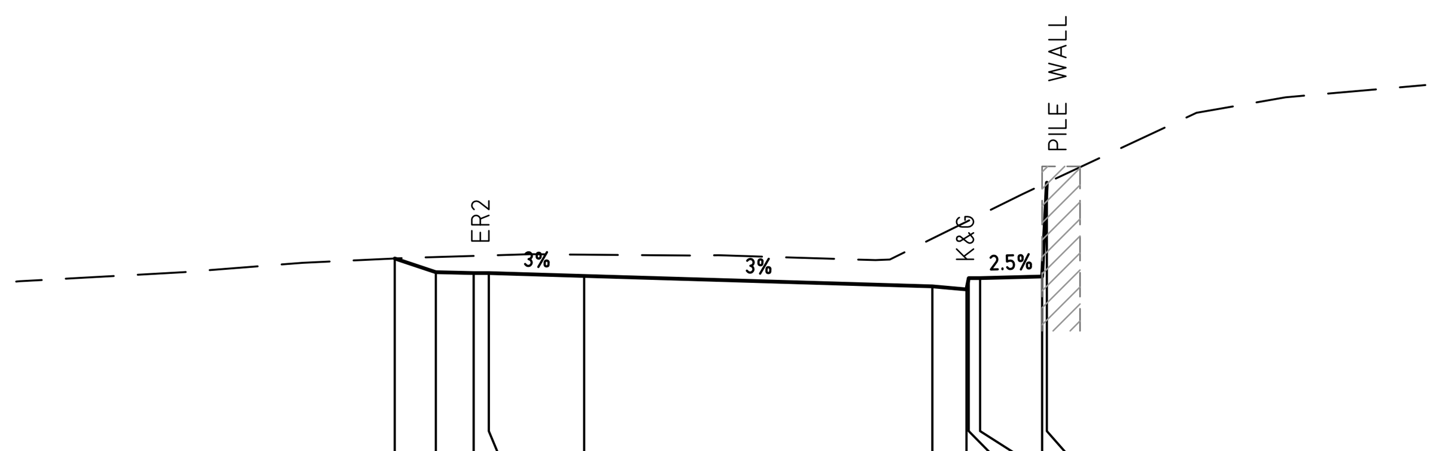
CH 214.768



DATUM R.L.3.0

DESIGN SURFACE LEVEL	5.643	5.581	5.568	5.568	5.500	5.390	5.350	5.500	5.500	5.520	7.934
EXISTING SURFACE LEVEL	5.643	5.640	5.634	5.632	5.692	7.450	7.666	7.680	7.747	7.912	7.934
OFFSET	-3.161	-2.975	-2.475	-2.275	0.000	3.675	4.125	4.155	4.305	5.125	5.246

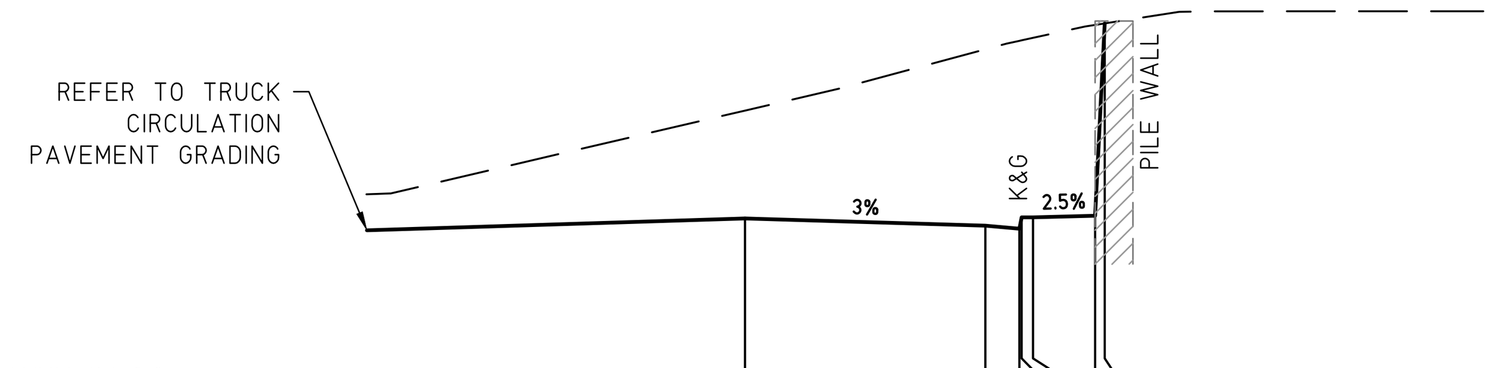
CH 210.000



DATUM R.L.3.0

DESIGN SURFACE LEVEL	5.781	5.600	5.588	5.588	5.550	5.412	5.372	5.522	5.522	5.542	6.782
EXISTING SURFACE LEVEL	5.781	5.800	5.815	5.821	5.831	6.044	6.266	6.281	6.355	6.753	6.782
OFFSET	-2.502	-1.959	-1.459	-1.259	0.000	4.600	5.050	5.080	5.230	6.050	6.112

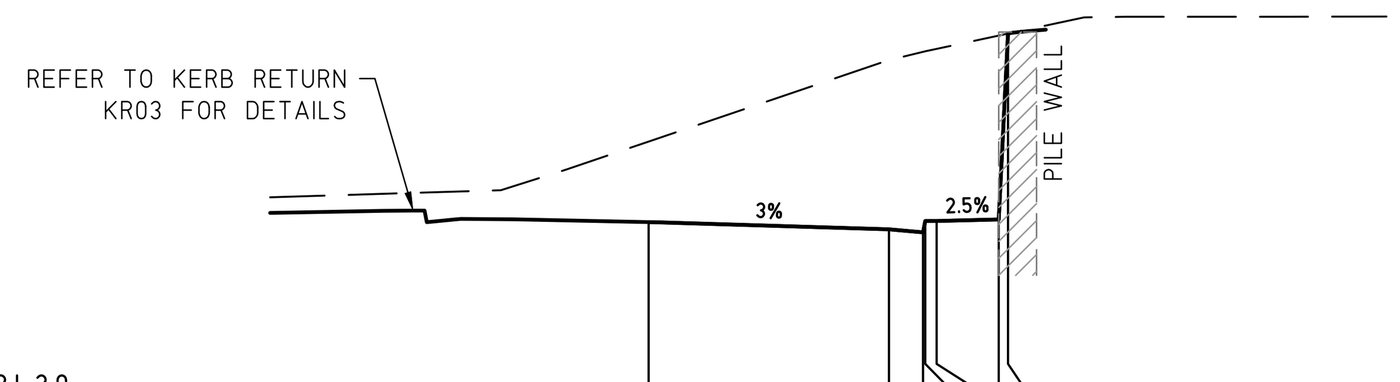
CH 200.000



DATUM R.L.3.0

DESIGN SURFACE LEVEL	5.352	5.256	5.216	5.366	5.366	5.387	7.932
EXISTING SURFACE LEVEL	6.778	7.589	7.701	7.708	7.741	7.912	7.932
OFFSET	0.000	3.175	3.625	3.655	3.805	4.625	4.752

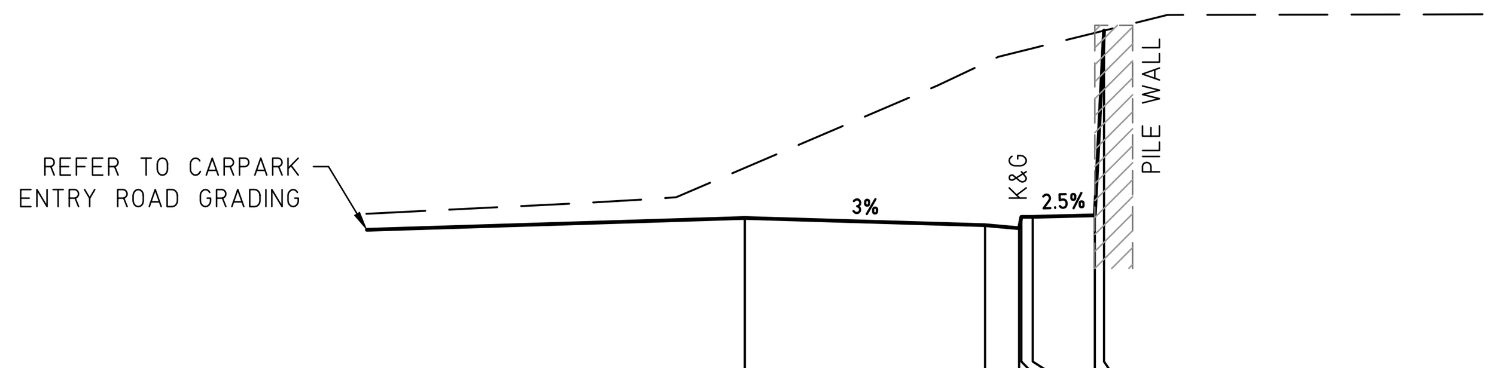
CH 240.000



DATUM R.L.3.0

DESIGN SURFACE LEVEL	5.375	5.280	5.240	5.390	5.390	5.410	7.867
EXISTING SURFACE LEVEL	6.439	7.517	7.626	7.633	7.665	7.840	7.867
OFFSET	0.000	3.175	3.625	3.655	3.805	4.625	4.748

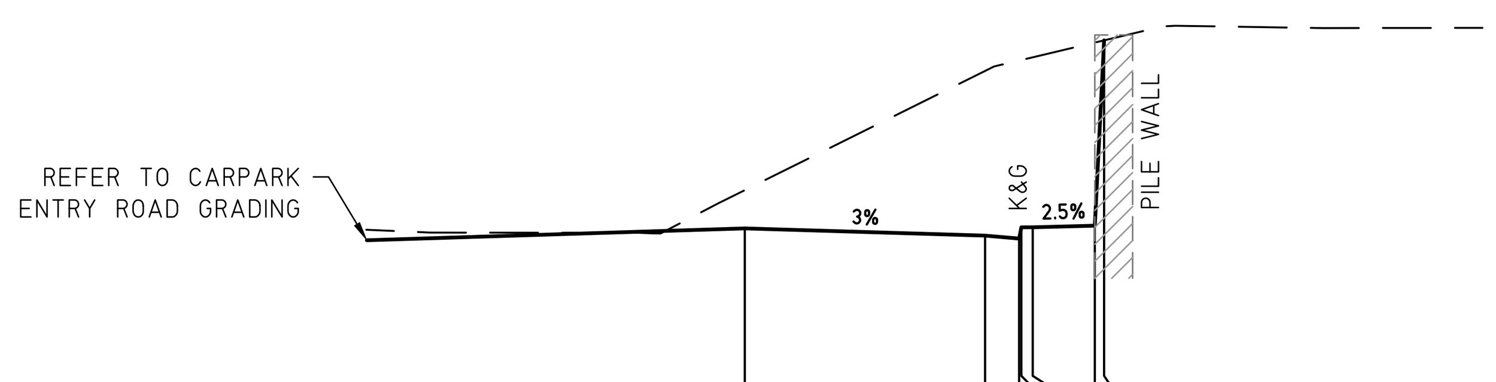
CH 235.000



DATUM R.L.3.0

DESIGN SURFACE LEVEL	5.400	5.305	5.265	5.415	5.415	5.435	7.878
EXISTING SURFACE LEVEL	6.062	7.449	7.600	7.608	7.645	7.848	7.878
OFFSET	0.000	3.175	3.625	3.655	3.805	4.625	4.747

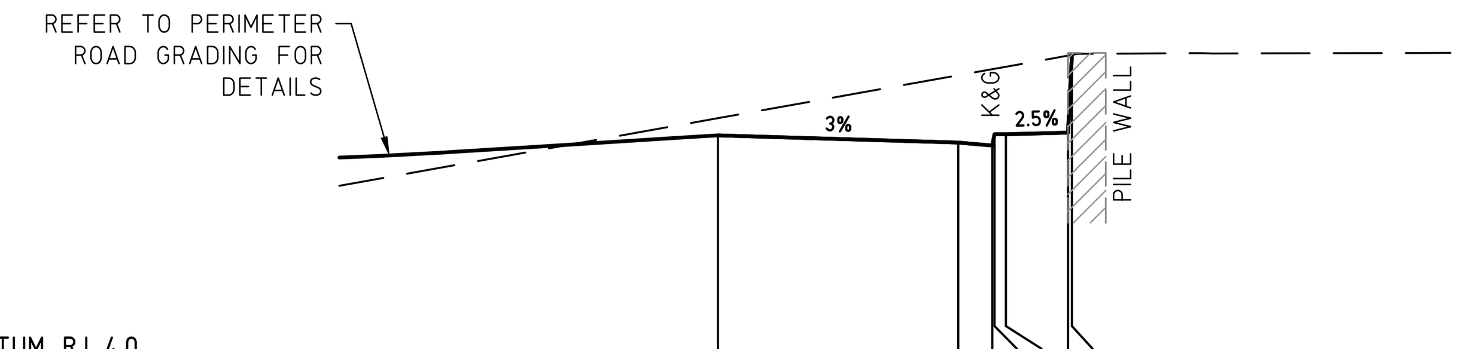
CH 230.000



DATUM R.L.3.0

DESIGN SURFACE LEVEL	5.450	5.355	5.315	5.465	5.465	5.485	7.935
EXISTING SURFACE LEVEL	5.955	7.531	7.668	7.676	7.711	7.906	7.935
OFFSET	0.000	3.175	3.625	3.655	3.805	4.625	4.748

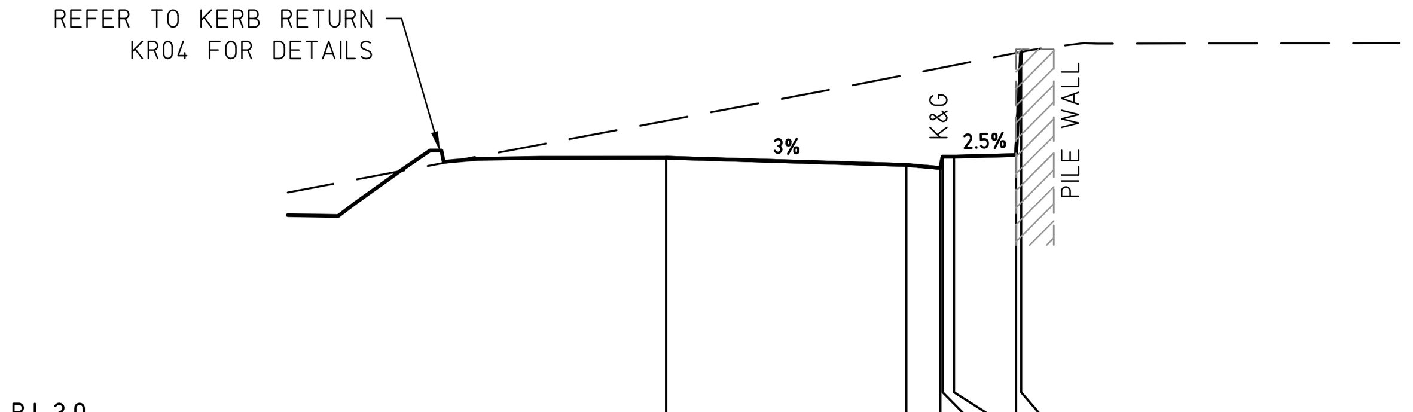
CH 220.000



DATUM R.L.4.0

DESIGN SURFACE LEVEL	7.022	6.927	6.887	7.037	7.037	7.058	8.086
EXISTING SURFACE LEVEL	7.249	7.816	7.897	7.902	7.929	8.076	8.086
OFFSET	0.000	3.175	3.625	3.655	3.805	4.625	4.676

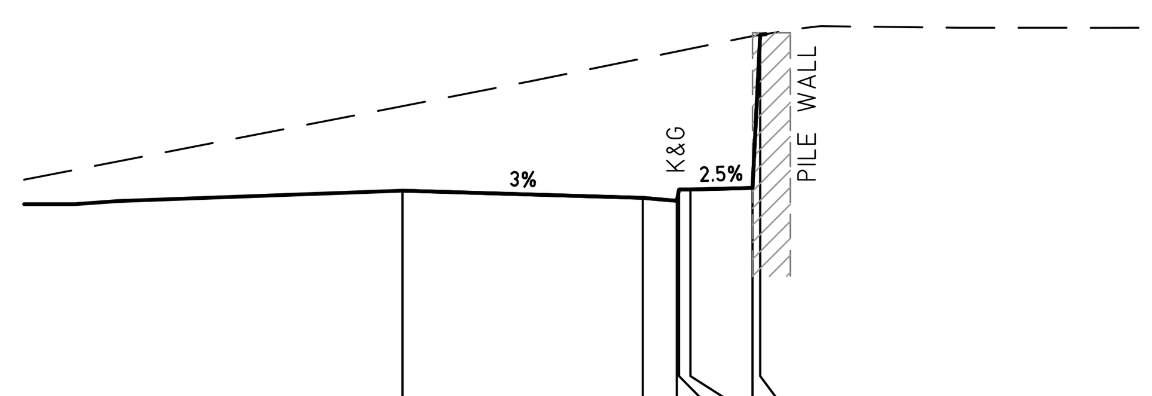
TP 274.813



DATUM R.L.3.0

DESIGN SURFACE LEVEL	6.598	6.503	6.463	6.613	6.613	6.634	7.997
EXISTING SURFACE LEVEL	7.087	7.696	7.785	7.791	7.821	7.983	7.997
OFFSET	0.000	3.175	3.625	3.655	3.805	4.625	4.693

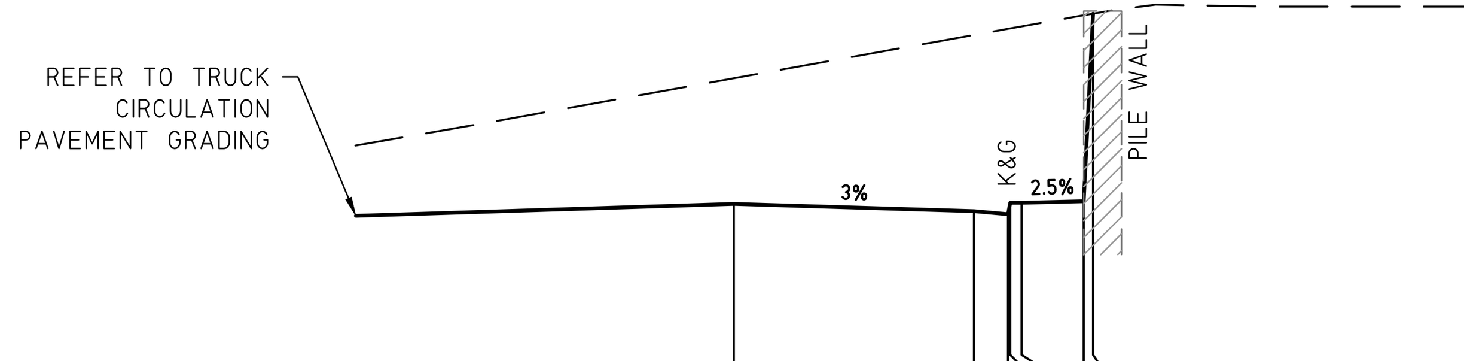
TP 269.088



DATUM R.L.3.0

DESIGN SURFACE LEVEL	5.950	5.855	5.815	5.965	5.965	5.986	8.007
EXISTING SURFACE LEVEL	7.067	7.697	7.789	7.795	7.825	7.991	8.007
OFFSET	0.000	3.175	3.625	3.655	3.805	4.625	4.726

CH 260.000



DATUM R.L.3.0

DESIGN SURFACE LEVEL	5.493	5.398	5.358	5.508	5.508	5.528	8.005
EXISTING SURFACE LEVEL	7.151	7.723	7.804	7.809	7.836	7.983	8.005
OFFSET	0.000	3.175	3.625	3.655	3.805	4.625	4.749

CH 250.000

ISSUE	REASON FOR ISSUE	DATE
7	ISSUED FOR COUNCIL APPROVAL - ACCESS ROAD AMENDED	16.11.2021
6	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	15.10.2021
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A.C.N. 098 542 575

CLIENT
BYRON SHIRE COUNCIL

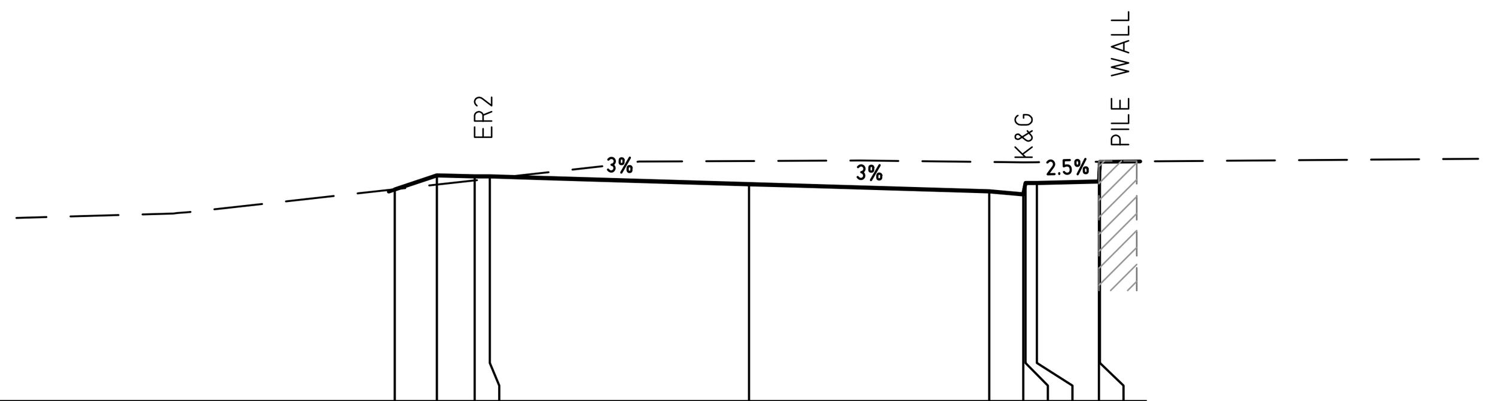
TITLE
ENTRY ROAD CROSS SECTIONS
SHEET 1 OF 2

PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C05	7

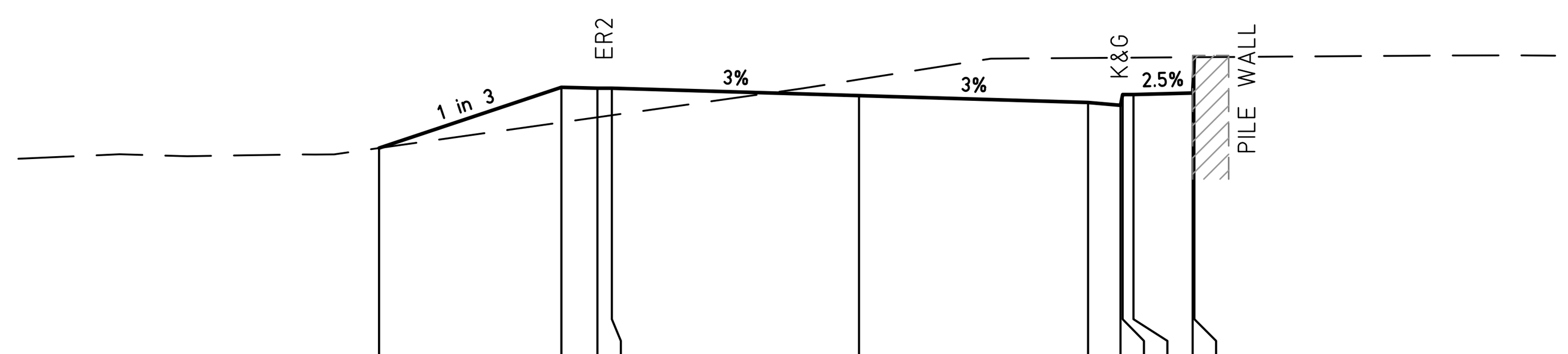
FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm



DATUM R.L.5.0

DESIGN SURFACE LEVEL	7.797	7.982	7.970	7.970	7.867	7.772	7.732	7.882	7.882	7.902	8.161
EXISTING SURFACE LEVEL	7.797	7.858	7.914	7.936	8.170	8.158	8.153	8.153	8.154	8.161	8.161
OFFSET	-4.682	-4.125	-3.625	-3.425	0.000	3.175	3.625	3.655	3.805	4.625	4.638

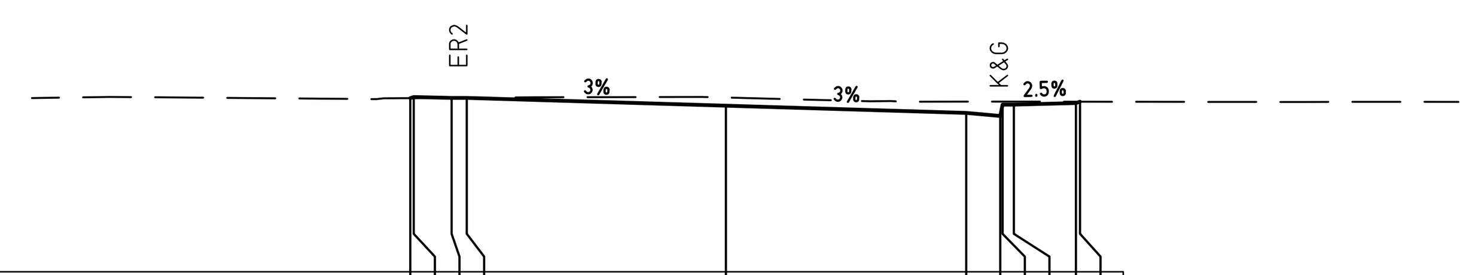
CH 289.000 - END SOLDIER PILE WALL



DATUM R.L.4.0

DESIGN SURFACE LEVEL	6.873	7.716	7.703	7.703	7.600	7.505	7.465	7.615	7.615	7.636	8.132
EXISTING SURFACE LEVEL	6.873	7.229	7.300	7.328	7.824	8.122	8.125	8.125	8.126	8.132	8.132
OFFSET	-6.652	-4.125	-3.625	-3.425	0.000	3.175	3.625	3.655	3.805	4.625	4.650

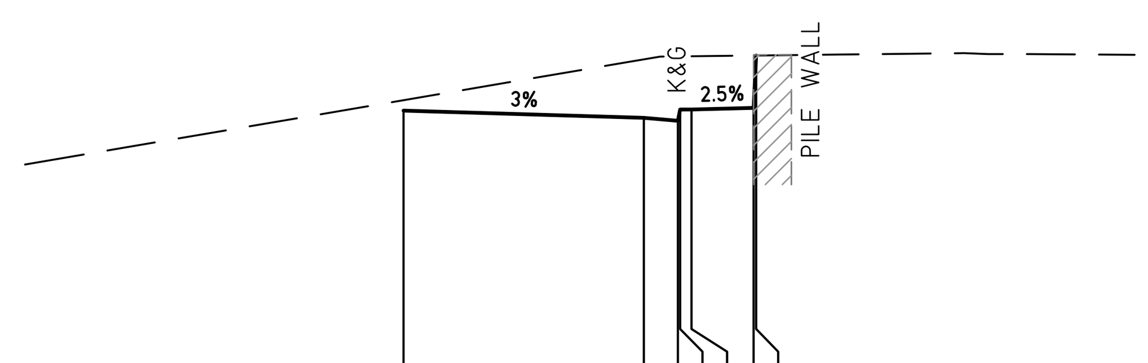
TP 283.574



DATUM R.L.6.0

DESIGN SURFACE LEVEL	8.290	8.305	8.293	8.293	8.190	8.095	8.055	8.205	8.205	8.225	8.243
EXISTING SURFACE LEVEL	8.290	8.290	8.294	8.295	8.298	8.244	8.245	8.245	8.244	8.243	8.243
OFFSET	-4.171	-4.125	-3.625	-3.425	0.000	3.175	3.625	3.655	3.805	4.625	4.679

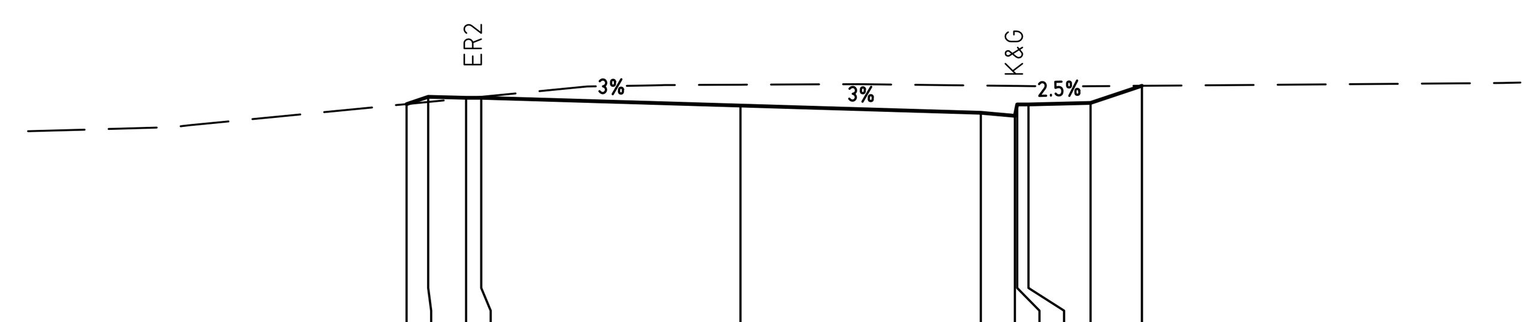
CH 300.000



DATUM R.L.4.0

DESIGN SURFACE LEVEL	7.386	7.291	7.251	7.401	7.401	7.422	8.114
EXISTING SURFACE LEVEL	7.524	8.063	8.102	8.103	8.104	8.114	8.114
OFFSET	0.000	3.175	3.625	3.655	3.805	4.625	4.660

CH 280.000



DATUM R.L.5.0

DESIGN SURFACE LEVEL	7.928	8.024	8.011	8.011	7.908	7.813	7.773	7.923	7.923	7.944	8.170
EXISTING SURFACE LEVEL	7.928	7.956	8.005	8.024	8.184	8.173	8.168	8.167	8.166	8.164	8.170
OFFSET	-4.412	-4.125	-3.625	-3.425	0.000	3.175	3.625	3.655	3.805	4.625	5.303

CH 290.000

2 1 0 2 4 6
Horizontal Scale 1:100 (A1)
1:200 (A3)

2 1 0 2 4 6
Vertical Scale 1:100 (A1)
1:200 (A3)

PLANS TO BE PRINTED IN COLOUR

CONCEPT DESIGN FOR DA PHASE ONLY

ISSUE	REASON FOR ISSUE	DATE
7	ISSUED FOR COUNCIL APPROVAL - ACCESS ROAD AMENDED	16.11.2021
6	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	15.10.2021
5	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	13.08.2021
4	ISSUED FOR COUNCIL APPROVAL - ESCP ADDED TO DA SET	21.05.2021
3	ISSUED FOR COUNCIL APPROVAL - DEVELOPMENT APPLICATION	10.05.2021
2	ISSUED FOR REVIEW AT 90%	30.04.2021
1	ISSUED FOR REVIEW AT 50%	28.04.2021
0	ISSUED FOR REVIEW AT 30%	20.04.2021

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ENDORSED BELOW

DATE OF RELEASE	RESPONSIBLE PRINCIPAL SIGNATURE	ISSUE

mpc consulting engineers civil+structural
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Email: admin@mpceng.com.au
Web: www.mpceng.com.au
A.C.N. 098 542 575

CLIENT
BYRON SHIRE COUNCIL

TITLE
ENTRY ROAD CROSS SECTIONS SHEET 2 OF 2

PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C06	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

LEGEND

	LOT BOUNDARY
▨	EXISTING SEALED PAVEMENT
▨	PROPOSED ROAD RECONSTRUCTION WORKS
■	PROPOSED ASPHALT ROAD PAVEMENT WORKS
▨	PROPOSED UNSEALED PAVEMENT TO PERIMETER ROAD
🟪	PROPOSED BUILDINGS
🟦	EXISTING STP STRUCTURES
▨	PROPOSED ON SITE DETENTION (OSD) TANK
▢	PROPOSED SAND FILTER TANK (SFT)
🟦	PROPOSED GROSS POLLUTANT TRAP (GPT)
	PROPOSED STORMWATER KERB INLET PIT
■	PROPOSED STORMWATER GRATED INLET PIT
	PROPOSED STORMWATER DRAINAGE HEADWALL
🟥	EXISTING VALVE PIT STRUCTURES
SW	PROPOSED STORMWATER DRAINAGE PIPE
	PROPOSED SOLDIER PILE RETAINING WALL
	PROPOSED STACKED STONE RETAINING WALL
	PROPOSED MASONRY BLOCK RETAINING WALL
5.5	DESIGN CONTOURS 100mm INTERVAL
4.5	NATURAL SURFACE CONTOURS 100mm INTERVAL

5 0 5 10 15
Horizontal Scale 1:250 (A1)
1:500 (A3)

PLANS TO BE PRINTED IN COLOUR

CONCEPT DESIGN FOR DA PHASE ONLY

ISSUE	REASON FOR ISSUE	DATE
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CLIENT
BYRON SHIRE COUNCIL

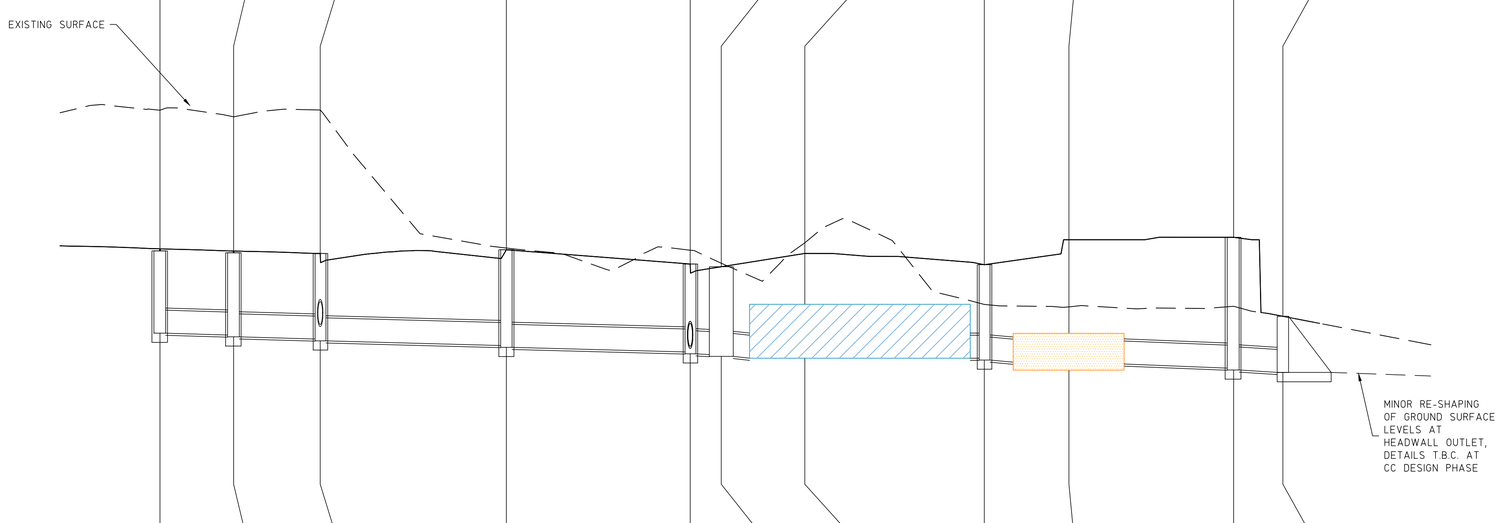
TITLE
PAVEMENT LAYOUT PLAN
LINK ROAD SECTION

PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	**JOB No**	**DRAWING No**	**ISSUE**
AS SHOWN	190178	C07	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm



STRUCTURE NAME	P5-1	P6-1	P7-1	P8-1	P9-1	GPT	OSD	P12-1	SFT	P14-1	P15-1
STRUCTURE DESCRIPTION	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - SAG 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GPT ECOSOL 4600 4.5m x 1.95m	OSD TANK 42.6m x 14.2m x 0.88m DEEP - 532m3 STORAGE	GRATED SURFACE INLET PIT 900x900mm GRATE & FRAME	SAND FILTER TANK 9m x 3m	GRATED INLET PIT - FLUSH GRATE 900x900mm GRATE & FRAME	HEADWALL OUTLET TO ENERGY DISSIPATOR
PIPE SIZE (mm)	375	375	375	375	375	375	375	375	375	375	375
PIPE SIZE / CLASS	RCP	RCP	RCP	RCP	RCP	RCP	RCP	RCP	RCP	RCP	RCP
PIPE GRADE (%)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.43%	0.00%	0.50%	0.50%	1.00%
PIPE SLOPE (1 in X)	200.0	200.0	200.0	200.0	200.0	200.0	230.9	1000000.0	200.0	200.0	100.0
PIPE FLOW (cumecs)											
CAPACITY FLOW (cumecs)											
FULL PIPE VELOCITY (m/s)											
NORMAL DEPTH VELOCITY (m/s)											
DATUM RL	-3.000										
10YR HGL IN PIPE	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000
DEPTH TO INVERT	1.313 1.343	1.343 1.343	1.373 1.396	1.426 1.562	1.592 1.425	1.465 1.433	1.463 0.880	0.880 1.526	1.556 0.471	0.501 2.134	2.164 0.916
INVERT LEVEL OF PIPE/DRAIN	4.096 4.066	4.066 4.036	4.006 3.970	3.940 3.864	3.834 3.759	3.729 3.717	3.687 3.657	3.657 3.657	3.627 3.592	3.562 3.495	3.465 3.425
DESIGN SURFACE LEVEL	5.408 (7.705)	5.378 (7.597)	5.366 (7.708)	5.427 (5.455)	5.194 (5.419)	5.150 (5.207)	5.367 (5.540)	5.183 (4.535)	5.590 (4.495)	5.630 (4.505)	4.341
SETOUT COORDINATES	556311.454E 6833086.580N	556305.473E 6833086.003N	556298.591E 6833087.621N	556293.503E 6833073.301N	556287.496E 6833059.557N	556285.157E 6833060.543N	556280.305E 6833067.237N	556273.346E 6833050.035N	556266.675E 6833051.183N	556254.314E 6833057.110N	556251.095E 6833054.703N
CHAINAGE	66.497	6.008 72.505	7.070 79.575	15.196 94.771	15.000 109.771	2.539 112.310	6.818 119.128	14.650 133.778	6.908 140.686	13.441 154.127	4.019 158.146
LINE			1								

PLANS TO BE PRINTED IN COLOUR

CONCEPT DESIGN FOR DA PHASE ONLY

Horizontal Scale 1:250 (A1) 1:500 (A3)

Vertical Scale 1:50 (A1) 1:100 (A3)

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A.C.N. 098 542 575

CLIENT
BYRON SHIRE COUNCIL

TITLE
STORMWATER DRAINAGE
LONGITUDINAL SECTIONS - SHEET 1

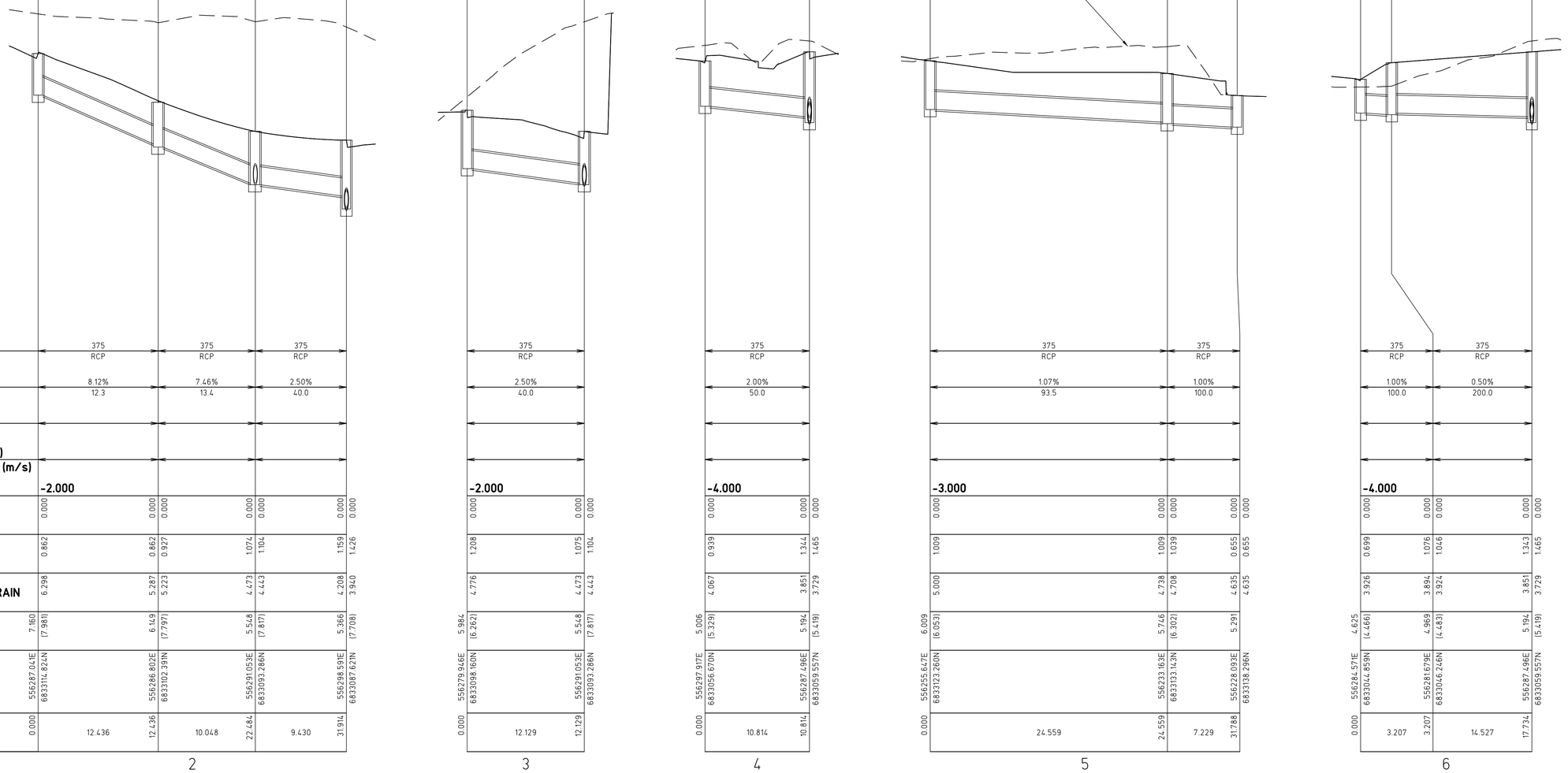
PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C08	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

STRUCTURE NAME	P1-2	P2-2	P3-2	P7-1	P1-3	P3-2	P1-4	P9-1	P1-5	P2-5	P3-5	P1-6	P2-6	P9-1
STRUCTURE DESCRIPTION	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - SAG 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED SURFACE INLET PIT 900x900mm GRATE & FRAME	HEADWALL OUTLET TO ENERGY DISSIPATOR	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL	GRATED GULLY PIT - LIP IN LINE 835x930mm CHAMBER, 2.4m LINTEL
PIPE SIZE (mm)	375	375	375		375		375		375	375		375	375	
PIPE SIZE / CLASS	RCP	RCP	RCP		RCP		RCP		RCP	RCP		RCP	RCP	
PIPE GRADE (%)	8.12%	7.46%	2.50%		2.50%		2.00%		1.07%	1.00%		1.00%	0.50%	
PIPE SLOPE (1 in X)	12.3	13.4	40.0		40.0		50.0		93.5	100.0		100.0	200.0	
PIPE FLOW (cumecs)														
CAPACITY FLOW (cumecs)														
FULL PIPE VELOCITY (m/s)														
NORMAL DEPTH VELOCITY (m/s)														
DATUM RL	-2.000				-2.000		-4.000		-3.000			-4.000		
10YR HGL IN PIPE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEPTH TO INVERT	0.862	0.862	0.927	1.074	1.208	1.075	0.939	1.344	1.009	1.009	1.039	0.655	0.699	1.076	1.046	1.343
INVERT LEVEL OF PIPE/DRAIN	6.298	5.287	5.223	4.473	4.776	4.473	4.067	3.851	5.000	4.738	4.708	4.635	3.926	3.894	3.924	3.851
DESIGN SURFACE LEVEL	7.160 (7.981)	6.149 (7.797)	5.548 (7.817)	5.366 (7.708)	5.984 (6.262)	5.548 (7.817)	5.006 (5.329)	5.194 (5.419)	6.009 (6.053)	5.746 (6.302)	5.291		4.625 (4.466)	4.969 (4.483)		5.194 (5.419)
SETOUT COORDINATES	556287.041E 6833114.824N	556286.802E 6833102.391N	556291.053E 6833093.286N	556298.591E 6833087.621N	556279.946E 6833098.160N	556291.053E 6833093.286N	556297.917E 6833056.670N	556287.496E 6833059.557N	556255.627E 6833123.260N	556233.163E 6833133.143N	556228.093E 6833138.296N		556284.571E 6833044.859N	556281.679E 6833046.246N		556287.496E 6833059.557N
CHAINAGE	0.000 12.436 12.436	10.048 22.484	9.430 31.914		0.000 12.129 12.129		0.000 10.814 10.814		0.000 24.559 24.559	7.229 31.788			0.000 3.207 3.207	14.527 17.734		
LINE	2				3		4		5				6			



PLANS TO BE PRINTED IN COLOUR

CONCEPT DESIGN FOR DA PHASE ONLY

Horizontal Scale 1:250 (A1) 1:500 (A3)

Vertical Scale 1:50 (A1) 1:100 (A3)

ISSUE	REASON FOR ISSUE	DATE
7	ISSUED FOR COUNCIL APPROVAL - ACCESS ROAD AMENDED	16.11.2021
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CLIENT
BYRON SHIRE COUNCIL

TITLE
STORMWATER DRAINAGE
LONGITUDINAL SECTIONS - SHEET 2

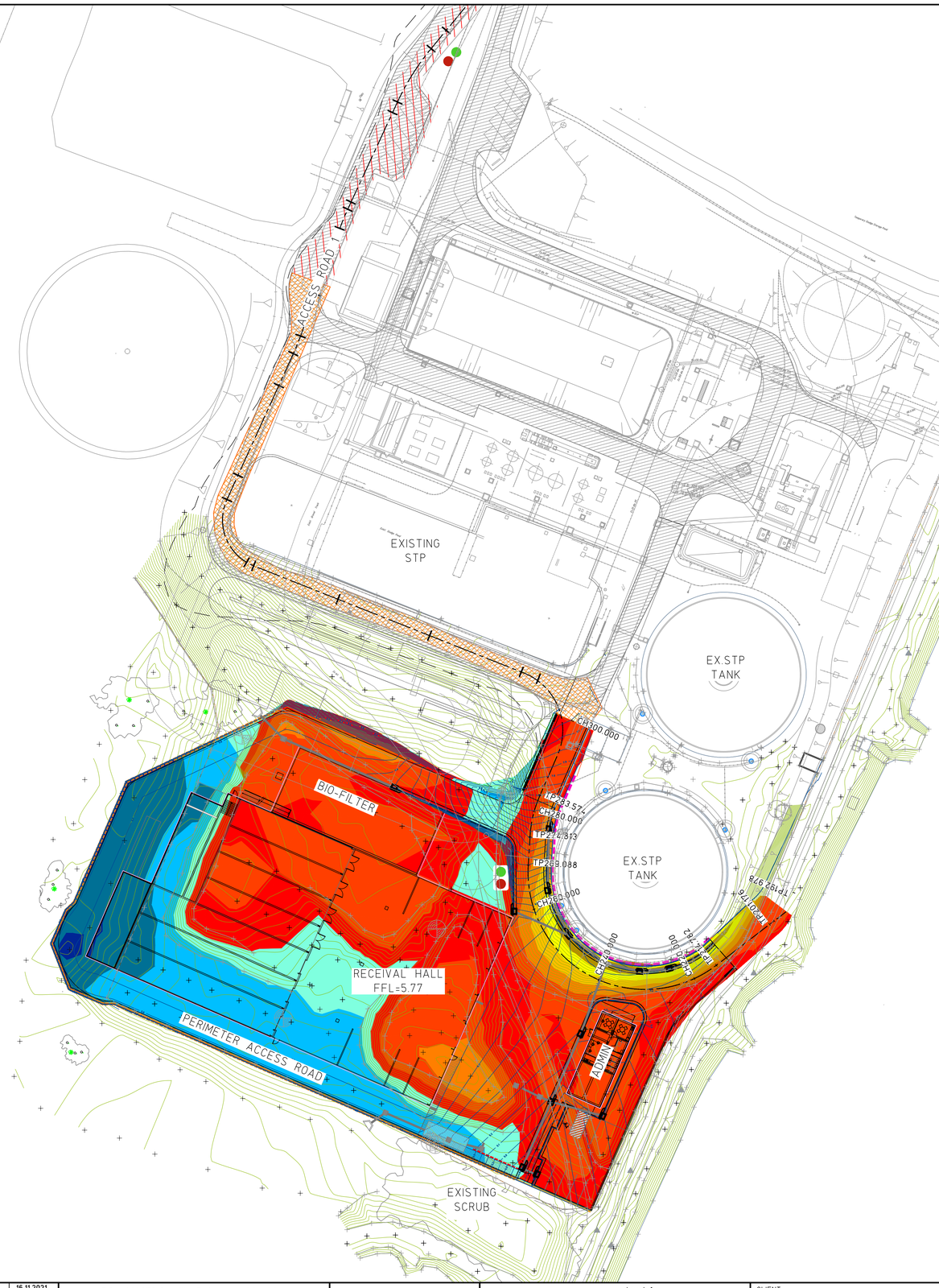
PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C09	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

NORTH



EARTHWORKS LEGEND

- CUT 2.5 - 3.0m DEPTH
- CUT 2.0 - 2.5m DEPTH
- CUT 1.5 - 2.0m DEPTH
- CUT 1.0 - 1.5m DEPTH
- CUT 0.5 - 1.0m DEPTH
- CUT 0.0 - 0.5m DEPTH
- FILL 0.0 - 0.5m DEPTH
- FILL 0.5 - 1.0m DEPTH
- FILL 1.0 - 1.5m DEPTH
- FILL 1.5 - 2.0m DEPTH
- 5.5 DESIGN CONTOURS 100mm INTERVAL
- 4.5 NATURAL SURFACE CONTOURS 100mm INTERVAL

PRELIMINARY EARTHWORKS VOLUMES:

DESIGN VOLUMES FROM NOMINAL STRIPPED SURFACE (100mm TOPSOIL DEPTH) TO DESIGN SUBGRADE MODEL

AREA OF SITE WORKS = 0.85Ha
NOMINAL TOPSOIL STRIPPED TO STOCKPILE FOR REUSE = 850m^3

SUBGRADE MODEL ASSUMES,
- 390mm ROAD BOXING DEPTH
- 250mm SLAB DEPTH UNDER NEW STRUCTURES

EARTHWORKS CUT TO FILL TOTALS
CUT = 2,970m^3
FILL = 2,330m^3
BALANCE = 640m3 EXPORT TO APPROVED SITE

NOTE: PRELIMINARY EARTHWORKS VOLUMES SUBJECT TO DETAILED SITE INVESTIGATIONS AND REPORT BY NATA ACCREDITED GEOTECHNICAL ENGINEER.

10 5 0 10 20 30
Horizontal Scale 1:500 (A1)
1:1000 (A3)

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CLIENT
BYRON SHIRE COUNCIL

TITLE
EARTHWORKS CUT TO FILL PLAN

PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C10	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

MATCH LINE A

EXISTING STP

EXISTING STP TANK

EXISTING STP TANK

EXISTING STP TANK

ADMIN BUILDING

WATER DISCHARGED VIA THE PUMP-OUT LINE TO CONTAINMENT TRUCKS FOR DISPOSAL AT A SUITABLY LICENSED FACILITY.

BASIN No.2 (WET BASIN)

PLAN AREA =65m²
SETTLING ZONE =43m³
STORAGE ZONE =21m³
BASIN VOLUME =64m³ (NOTE 1)
STORAGE VOLUME =56m³ (NOTE 2)

NOTE 1: STORAGE FOR THE 5-DAY 80TH PERCENTILE RAIN EVENT + SEDIMENT STORAGE

NOTE 2: STORAGE FOR THE 1% AEP RAIN EVENT, ABOVE THE SEDIMENT STORAGE ZONE

LEACHATE DAM DURING ACID-SULPHATE EARTHWORKS PHASE. PUMP-OUT SYSTEM TO CONTAINMENT TRUCKS. DETAILS TBC AT CC DESIGN STAGE.

PUMP AND BACK-FLOW PREVENTION VALVE, TO BE DESIGNED BY A HYDRAULIC ENGINEER.

BASIN

WATER PUMP-OUT LINE, TO BE DESIGNED BY A HYDRAULIC ENGINEER

TEMPORARY DIVERSION SWALE

EXTENT OF 1% AEP TEMPORARY STORAGE. SURFACE AREA = 400m². SURFACE RL = 0.105m ABOVE TOP OF BASIN No.1 EMBANKMENT. STORED WATER CONTAINED BY PERIMETER EMBANKMENT. FULL DETAILS TBC AT CC DESIGN STAGE.

TEMPORARY DIVERSION SWALE

TEMPORARY EARTHWORKS EMBANKMENT & DIVERSION SWALE

PUMP AND BACK-FLOW PREVENTION VALVE, TO BE DESIGNED BY A HYDRAULIC ENGINEER.

BASIN

CLAY EMBANKMENT CONTAINMENT BUND, WITH SURFACE TREATMENT AS SPECIFIED IN THE ACID-SULPHATE MANAGEMENT PLAN

BUNDED ACID SULPHATE NEUTRALISATION PAD WITH SURFACE TREATMENT AS SPECIFIED IN THE ACID-SULPHATE MANAGEMENT PLAN. PLAN AREA = 500m² (10m x 50m)

CONTROLLED ENTRY / EXIT TO NEUTRALIZATION PAD FOR EARTHWORKS PLANT

TEMPORARY DIVERSION SWALE

TEMPORARY EARTHWORKS EMBANKMENT & DIVERSION SWALE

SURFACE FALL DIRECTION WITHIN THE ACID-SULPHATE NEUTRALIZATION PAD. 2% CROSS-FALL 1% LONGITUDINAL FALL TOWARDS THE LEACHATE DAM

BASIN No.1 (WET BASIN)

PLAN AREA =134m²
SETTLING ZONE =90m³
STORAGE ZONE =45m³
BASIN VOLUME =134m³ (NOTE 1)
STORAGE VOLUME =117m³ (NOTE 2)

NOTE 1: STORAGE FOR THE 5-DAY 80TH PERCENTILE RAIN EVENT + SEDIMENT STORAGE

NOTE 2: STORAGE FOR THE 1% AEP RAIN EVENT, ABOVE THE SEDIMENT STORAGE ZONE

LEACHATE DAM DURING ACID-SULPHATE EARTHWORKS PHASE. PUMP-OUT SYSTEM TO CONTAINMENT TRUCKS. DETAILS TBC AT CC DESIGN STAGE.

STABILIZED LEACHATE SWALE WITH SURFACE TREATMENT AS SPECIFIED IN THE ACID SULPHATE MANAMENT PLAN

TEMPORARY ACCESS ROAD, EARTHWORKS EMBANKMENT AND DIVERSION SWALE

PUMP AND BACK-FLOW PREVENTION VALVE, TO BE DESIGNED BY A HYDRAULIC ENGINEER.

BASIN

EXTENT OF 1% AEP TEMPORARY STORAGE. SURFACE AREA = 290m². SURFACE RL = 0.111m ABOVE TOP OF BASIN No.3 EMBANKMENT. STORED WATER CONTAINED BY PERIMETER EMBANKMENT. FULL DETAILS TBC AT CC DESIGN STAGE.

BASIN No.3 (WET BASIN)

PLAN AREA =105m²
SETTLING ZONE =70m³
STORAGE ZONE =35m³
BASIN VOLUME =105m³ (NOTE 1)
STORAGE VOLUME =91m³ (NOTE 2)

NOTE 1: STORAGE FOR THE 5-DAY 80TH PERCENTILE RAIN EVENT + SEDIMENT STORAGE

NOTE 2: STORAGE FOR THE 1% AEP RAIN EVENT, ABOVE THE SEDIMENT STORAGE ZONE

LEACHATE DAM DURING ACID-SULPHATE EARTHWORKS PHASE. PUMP-OUT SYSTEM TO CONTAINMENT TRUCKS. DETAILS TBC AT CC DESIGN STAGE.

NOTE
BASINS TO BE PUMPED OUT TO CONTAINMENT TRUCKS AND REMOVED TO A SUITABLE LICENSED FACILITY.
DISCHARGED WATER MUST ALSO BE COMPLIANT WITH THE TARGET CRITERIA SPECIFIED IN THE ACID SULPHATE SOIL MANAGEMENT PLAN REPORT BY DOUGLAS PARTNERS: No.200486.02

REFER EARTH BASIN DETAIL SD6-4 FOR ALL TEMPORARY BASINS.
CONTRACTOR IS TO ADJUST THE BASIN SIZE AND SHAPE AS REQUIRED TO SUIT THE STATED BASIN VOLUMES AND SPECIFIED DETAILS. BATTER SHOWN INDICATIVELY ONLY

5 0 5 10 15
Horizontal Scale 1:250 (A1)
1:500 (A3)

PLANS TO BE PRINTED IN COLOUR

SOIL AND WATER MANAGEMENT PLAN SHEET 1

SCALE 1:250

SEDIMENTATION, EROSION CONTROL AND STORMWATER MANAGEMENT NOTES
1. REFER TO DRAWING C19 FOR NOTES AND LEGEND

ISSUE	REASON FOR ISSUE	DATE
7	ISSUED FOR COUNCIL APPROVAL - ACCESS ROAD AMENDED	16.11.2021
6	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	15.10.2021
5	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	13.08.2021
4	ISSUED FOR COUNCIL APPROVAL - ESCP ADDED TO DA SET	21.05.2021
3	ISSUED FOR COUNCIL APPROVAL - DEVELOPMENT APPLICATION	10.05.2021
2	ISSUED FOR REVIEW AT 90%	30.04.2021
1	ISSUED FOR REVIEW AT 50%	28.04.2021
0	ISSUED FOR REVIEW AT 30%	20.04.2021

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Web: www.mpceng.com.au
A.C.N. 098 542 575

CLIENT
BYRON SHIRE COUNCIL

TITLE
SOIL AND WATER MANAGEMENT PLAN
ACID SULPHATE MNGT - SHEET 1

PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C11	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

SOIL AND WATER MANAGEMENT PLAN SHEET 2

SCALE 1:250

INSTALL SEDIMENT FENCE TO LIMIT OF FUTURE ROAD RECONSTRUCTION WORKS

EXISTING STP

MATCH LINE A

LEGEND

- DENOTES ALLOWABLE AREA FOR TEMPORARY STOCKPILING OF CUT SOIL MATERIAL, REFER TO DETAIL SD4-1
- DENOTES TEMPORARY WATERWAY CROSSING, REFER TO DETAIL SD5-1
- DENOTES EARTHBANK (HIGH FLOW), REFER TO DETAIL SD5-6
- DENOTES ENERGY DISSIPATOR, REFER TO DETAIL SD5-8
- BASIN — DENOTES SEDIMENT POND, REFER TO DETAIL SD6-4
- DENOTES STRAW BALE FILTER, REFER TO DETAIL SD6-7
- DENOTES SEDIMENT FENCE, REFER TO DETAIL SD6-8
- DENOTES GEOTEXTILE INLET FILTER, REFER TO DETAIL SD6-12
- DENOTES STABILISED SITE ACCESS, REFER TO DETAIL SD6-14
- DENOTES SURFACE FALLS

5 0 5 10 15

Horizontal Scale 1:250 (A1)
1:500 (A3)

SEDIMENTATION, EROSION CONTROL AND STORMWATER MANAGEMENT NOTES

1. SELECTIVE CLEARING OF VEGETATION TO BE RESTRICTED TO NOMINATED AREAS WITH CLEARED VEGETATION WIND ROWED ON THE CONTOUR.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED PRIOR TO SITE DISTURBANCE.
3. TOPSOIL FROM ALL AREAS THAT WILL BE DISTURBED TO BE STRIPPED AND STOCKPILED AT THE NOMINATED SITE.
4. NO MORE THAN 150m OF TRENCH TO BE OPEN AT ANY ONE TIME.
5. CUT AND FILL BATTER GRADIENTS OF 1:2 (MAXIMUM).
6. A STRIP OF TURF 450mm WIDE IS TO BE PLACED IMMEDIATELY BEHIND THE KERB ON ALL NEW ROAD TO ACT AS A FILTER TRAP. REFER TO DETAIL SD6-13.
7. ALL SEDIMENT CONTROL STRUCTURES TO BE INSPECTED BY SITE SUPERVISOR AFTER EACH RAINFALL EVENT FOR STRUCTURAL DAMAGE AND ALL TRAPPED SEDIMENT TO BE REMOVED TO A NOMINATED STOCKPILE SITE.
8. THE PROJECT MANAGER TO INFORM ALL CONTRACTORS AND SUB-CONTRACTORS OF THEIR OBLIGATIONS UNDER THE STORMWATER MANAGEMENT PLAN.
9. NO DISTURBED AREA IS TO REMAIN DENUDED LONGER THAN 14 DAYS, UNLESS MANAGED BY THE CONTRACTOR TO ENSURE NO RUNOFF OCCURS.
10. ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S OPERATION.
11. THE CONTRACTOR MUST ENSURE THE SUITABILITY AND INTEGRITY OF ALL WORKS AT THE END OF EACH DAY'S WORK AND CONSIDER HOLD OR INSPECTION POINTS AS STAGES OF WORKS PROGRESS.
12. ORANGE BARRIER TAPE TO BE AFFIXED TO TOP OF SEDIMENT CONTROL BARRIER TO IDENTIFY WORK AREA.
13. ALL SEDIMENTATION & EROSION CONTROL AND STORMWATER MANAGEMENT MEASURES ARE TO STRICTLY COMPLY WITH THE GUIDELINES DETAILED IN THE DEPARTMENT OF HOUSING PUBLICATION, "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION", 4TH EDITION.
14. WATER TRUCKS TO BE USED AS REQUIRED TO PREVENT WIND EROSION.
15. SUBGRADE MATERIAL TO BE CONSTRUCTED IMMEDIATELY FOLLOWING FILL.
16. PROVIDE GEOTEXTILE INLET FILTERS TO ALL STORMWATER PITS, AS PER DETAIL SD 6-12.
17. PROVIDE KERBSIDE TURF STRIPS TO ALL PAVEMENT AREAS, AS PER DETAIL SD 6-13.
18. PROVIDE STABALIZED SITE ACCESS AS PER DETAIL 6-14.
19. EARTH BASINS (WET) TO BE CONSTRUCTED AS PER DETAIL SD6-4, SO AS TO PROVIDE THE BASIN VOLUMES SPECIFIED ON DRAWINGS C17 AND C18.
20. ALL DETAILS REFERRED TO ON DRAWINGS C17 AND C18 ARE REFERENCED FROM "SOIL AND CONSTRUCTION, VOLUME 1 - MANAGING URBAN STORMWATER".

PLANS TO BE PRINTED IN COLOUR

ISSUE	REASON FOR ISSUE	DATE
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CLIENT
BYRON SHIRE COUNCIL

TITLE
SOIL AND WATER MANAGEMENT PLAN
ACID SULPHATE MNGT - SHEET 2

PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C12	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

MATCH LINE A

NORTH

BASIN No.2 (WET BASIN)
PLAN AREA ≈65m²
SETTLING ZONE ≈43m³
STORAGE ZONE ≈21m³
TOTAL BASIN VOLUME ≈64m³

REFER EARTH BASIN DETAIL SD6-4
CONTRACTOR IS TO ADJUST THE BASIN SIZE AND SHAPE AS REQUIRED TO SUIT THE STATED BASIN VOLUMES AND SPECIFIED DETAILS. BATTER SHOWN INDICATIVELY ONLY

NOTE
- EARTH BASIN DISCHARGE SURFACE PUMP LINE.
- REFER TO DETAIL SD6-4
- BASIN TO BE DISCHARGED TO EXISTING STORMWATER PITS. BASIN CAPACITY TO BE RESTORED WITHIN 5 DAYS OF A RAIN EVENT.
- PRIOR TO DISCHARGING THE BASIN, THE WATER QUALITY MUST BE:
  - pH: 6.5-8.5
  - TSS: <50mg/L
  - OIL AND GREASE: NONE VISIBLE

BASIN

EXISTING STP TANK

EXISTING STP TANK

PERIMETER RETAINING WALL STACKED STONE

RECEIVALS HALL FFL=5.770

BASIN

BASIN No.1 (WET BASIN)
PLAN AREA ≈134m²
SETTLING ZONE ≈90m³
STORAGE ZONE ≈45m³
TOTAL BASIN VOLUME ≈134m³

REFER EARTH BASIN DETAIL SD6-4
CONTRACTOR IS TO ADJUST THE BASIN SIZE AND SHAPE AS REQUIRED TO SUIT THE STATED BASIN VOLUMES AND SPECIFIED DETAILS. BATTER SHOWN INDICATIVELY ONLY

NOTE
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- PRIOR TO DISCHARGING THE BASIN, THE WATER QUALITY MUST BE:
  - pH: 6.5-8.5
  - TSS: <50mg/L
  - OIL AND GREASE: NONE VISIBLE

PERIMETER RETAINING WALL STACKED STONE

REFER TO STORMWATER DOCUMENTATION FOR HEADWALL DETAILS

ADMIN BUILDING

BASIN

BASIN No.3 (WET BASIN)
PLAN AREA ≈105m²
SETTLING ZONE ≈70m³
STORAGE ZONE ≈35m³
TOTAL BASIN VOLUME ≈105m³

REFER EARTH BASIN DETAIL SD6-4
CONTRACTOR IS TO ADJUST THE BASIN SIZE AND SHAPE AS REQUIRED TO SUIT THE STATED BASIN VOLUMES AND SPECIFIED DETAILS. BATTER SHOWN INDICATIVELY ONLY

NOTE
- EARTH BASIN DISCHARGE SURFACE PUMP LINE.
- REFER TO DETAIL SD6-4
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  - pH: 6.5-8.5
  - TSS: <50mg/L
  - OIL AND GREASE: NONE VISIBLE

5 0 5 10 15
Horizontal Scale 1:250 (A1)
1:500 (A3)

SOIL AND WATER MANAGEMENT PLAN SHEET 1

SCALE 1:250

SEDIMENTATION, EROSION CONTROL AND STORMWATER MANAGEMENT NOTES
1. REFER TO DRAWING C18 FOR NOTES AND LEGEND

PLANS TO BE PRINTED IN COLOUR

ISSUE	REASON FOR ISSUE	DATE
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A.C.N. 098 542 575

CLIENT: BYRON SHIRE COUNCIL

TITLE: SOIL AND WATER MANAGEMENT PLAN POST ACID SULPHATE MNGT - SHEET 1

PROJECT: BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

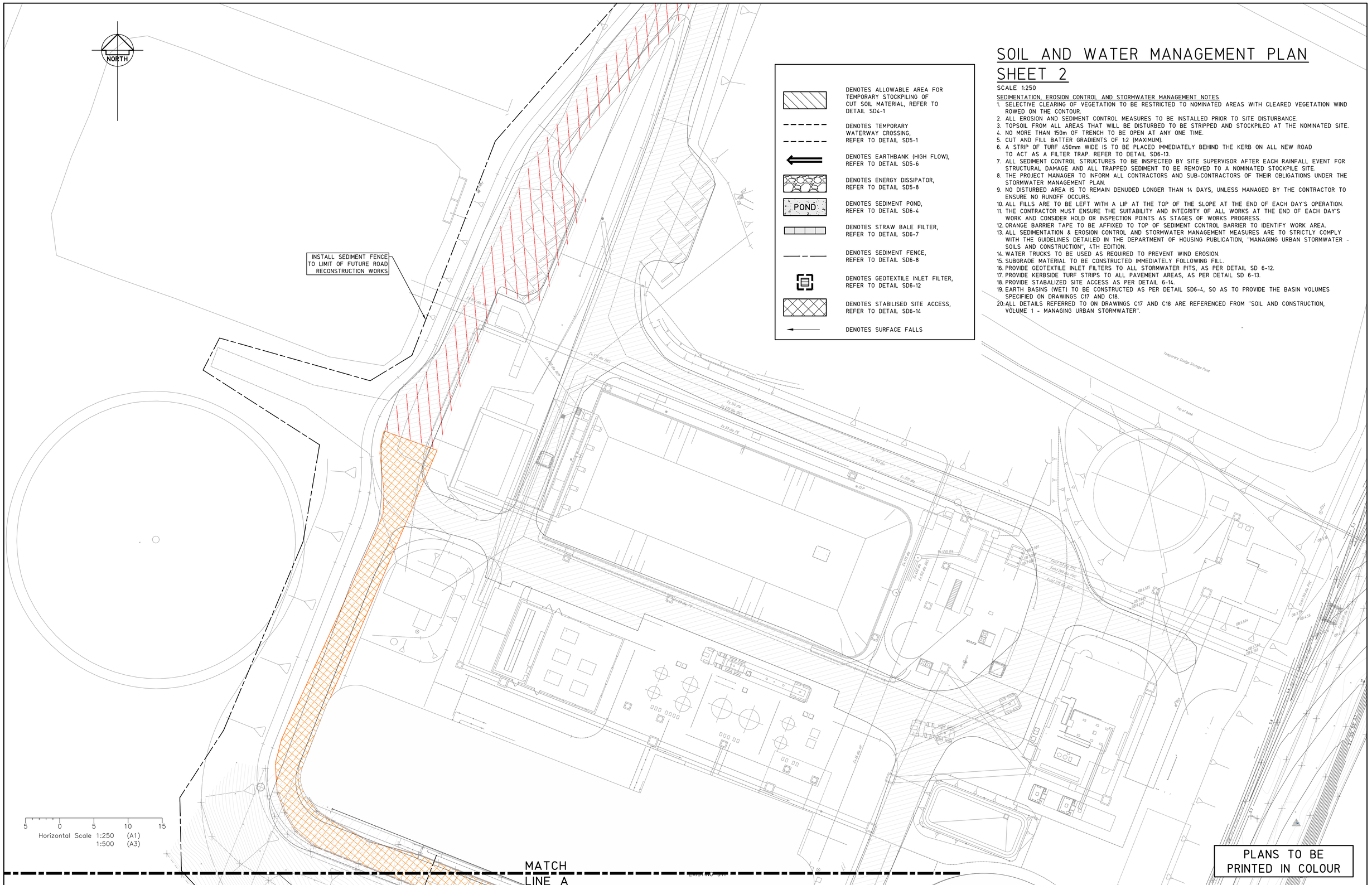
DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C13	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

SOIL AND WATER MANAGEMENT PLAN SHEET 2

SCALE 1:250



SEDIMENTATION, EROSION CONTROL AND STORMWATER MANAGEMENT NOTES

1. SELECTIVE CLEARING OF VEGETATION TO BE RESTRICTED TO NOMINATED AREAS WITH CLEARED VEGETATION WIND ROWED ON THE CONTOUR.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED PRIOR TO SITE DISTURBANCE.
3. TOPSOIL FROM ALL AREAS THAT WILL BE DISTURBED TO BE STRIPPED AND STOCKPILED AT THE NOMINATED SITE.
4. NO MORE THAN 150m OF TRENCH TO BE OPEN AT ANY ONE TIME.
5. CUT AND FILL BATTER GRADIENTS OF 1:2 (MAXIMUM).
6. A STRIP OF TURF 450mm WIDE IS TO BE PLACED IMMEDIATELY BEHIND THE KERB ON ALL NEW ROAD TO ACT AS A FILTER TRAP. REFER TO DETAIL SD6-13.
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18. PROVIDE STABALIZED SITE ACCESS AS PER DETAIL 6-14.
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CLIENT
BYRON SHIRE COUNCIL

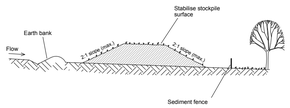
TITLE
SOIL AND WATER MANAGEMENT PLAN
POST ACID SULPHATE MNGT - SHEET 2

PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C14	7

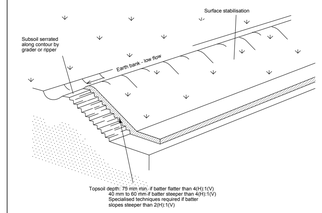
FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm



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.

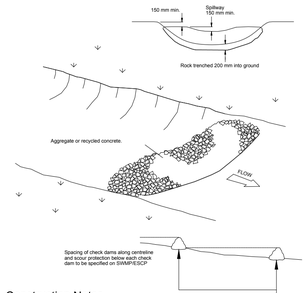
STOCKPILES SD 4-1



Construction Notes

1. Scarify the ground surface along the line of the contour to a depth of 50 mm to 100 mm 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 300 mm if compacted layers occur.
4. Where possible, replace topsoil to a depth of 40 to 60 mm on lands where the slope exceeds 4(H):1(V) and to at least 75 mm on lower gradients.

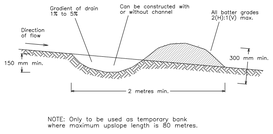
REPLACING TOPSOIL SD 4-2



Construction Notes

1. Check dams can be built with various materials, including rocks, logs, sandbags and straw bales. The maintenance program should ensure their integrity is retained, especially where constructed with straw bales. In the case of bales, this might require their replacement each two to four months.
2. Trench the check dam 200 mm into the ground across its whole width. Where rock is used, fill the trenches to at least 100 mm above the ground surface to reduce the risk of undercutting.
3. Normally, their maximum height should not exceed 600 mm above the gully floor. The centre should act as a spillway, being at least 150 mm lower than the outer edges.
4. Space the dams so the toe of the upstream dam is level with the spillway of the next downstream dam.

ROCK CHECK DAM SD 5-4

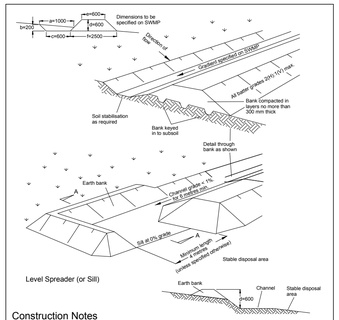


NOTE: Only to be used as temporary bank where maximum upslope length is 80 metres.

Construction Notes

1. Build with gradients between 1 percent and 5 percent.
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 the banks are properly compacted to prevent failure.
6. Complete permanent or temporary stabilisation within 10 days of construction.

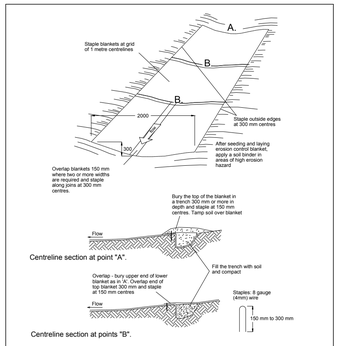
EARTH BANK (LOW FLOW) SD 5-5



Construction Notes

1. Construct at the gradient specified on the ESCP or SWMP, normally between 1 and 5 percent
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, at the dimensions shown on the SWMP.
5. Ensure the banks are properly compacted to prevent failure.
6. Complete permanent or temporary stabilisation within 10 days of construction following Table 5.2 in Landcom (2004).
7. Where discharging to erodible lands, ensure they outlet through a properly constructed level spreader.
8. Construct the level spreader at the gradient specified on the ESCP or SWMP, normally less than 1 percent or level.
9. Where possible, ensure they discharge waters onto either stabilised or undisturbed disposal sites within the same subcatchment area from which the water originated. Approval might be required to discharge into other subcatchments.

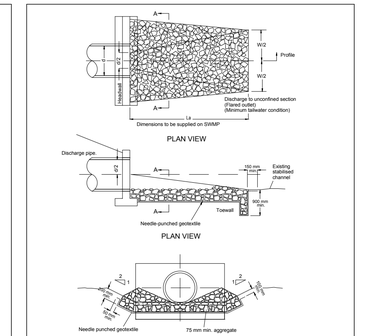
EARTH BANK (HIGH FLOWS) SD 5-6



Construction Notes

1. Remove any rocks, clods, sticks or grass from the surface before laying matting
2. Ensure that topsoil is at least 75 mm deep.
3. Complete fertilising and seeding before laying the matting.
4. Ensure fabric will be continuously in contact with the soil by grading the surface carefully first.
5. Lay the fabric in "shingle-fashion", with the end of each upstream roll overlapping those downstream. Ensure each roll is anchored properly at its upslope end.
6. Ensure that the full width of flow in the channel is covered by the matting up to the design storm event, usually in the 10-year ARI time of concentration storm event.
7. Divert water from the structure until vegetation is stabilised properly.

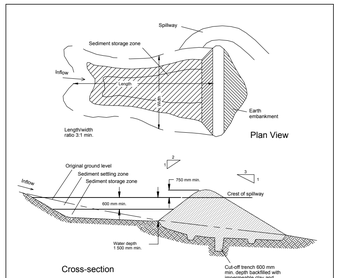
RECP : CONCENTRATED FLOW SD 5-7



Construction Notes

1. Compact the subgrade fill to the density of the surrounding undisturbed material.
2. Prepare a smooth, even foundation for the structure that will ensure that the needle-punched geotextile does not sustain serious damage when covered with rock.
3. Should any minor damage to the geotextile occur, repair it before spreading any aggregate. For repairs, patch one piece of fabric over the damage, making sure that all joints and patches overlap more than 300 mm.
4. Lay rock following the drawing, according to Table 5.2 of Landcom (2004) and with a minimum diameter of 75 mm.
5. Ensure that any concrete or riprap used for the energy dissipater or the outlet protection conforms to the grading limits specified on the SWMP.

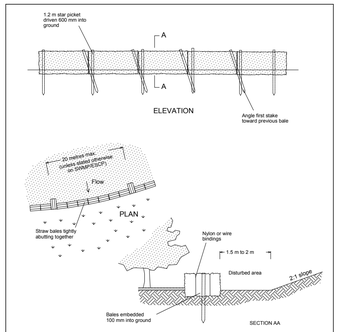
ENERGY DISSIPATER SD 5-8



Construction Notes

1. Remove all vegetation and topsoil from under the dam wall and from within the storage area.
2. Construct a cut-off trench 500 mm deep and 1,200 mm wide along the centreline of the embankment extending to a point on the gully wall level with the riser crest.
3. Maintain the trench free of water and recompact the materials with equipment as specified in the SWMP to 95 per cent Standard Proctor Density.
4. Select fill following the SWMP that is free of roots, wood, rock, large stone or foreign material.
5. Prepare the site under the embankment by ripping to at least 100 mm to help bond compacted fill to the existing substrate.
6. Spread the fill in 100 mm to 150 mm layers and compact it at optimum moisture content following the SWMP.
7. Construct the emergency spillway.
8. Rehabilitate the structure following the SWMP.

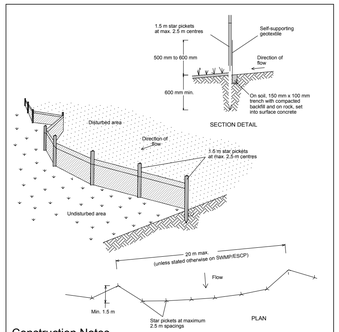
EARTH BASIN - WET SD 6-4
(APPLIES TO 'TYPE D' AND 'TYPE F' SOILS ONLY)



Construction Notes

1. Construct the straw bale filter as close as possible to being parallel to the contours of the site.
2. Place bales lengthwise in a row with ends tightly abutting. Use straw to fill any gaps between bales. Straws are to be placed parallel to ground.
3. Ensure that the maximum height of the filter is one bale.
4. Embed each bale in the ground 75 mm to 100 mm and anchor with two 1.2 metre star pickets or stakes. Angle the first star picket or stake in each bale towards the previously laid bale. Drive them 600 mm 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 the bales are placed 1 to 2 metres 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.

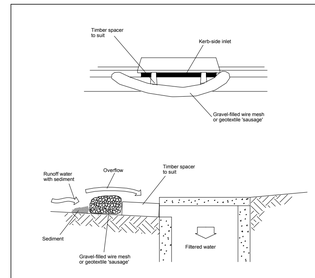
STRAW BALE FILTER SD 6-7



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 the 10-year event.
2. Cut a 150-mm 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 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

SEDIMENT FENCE SD 6-8

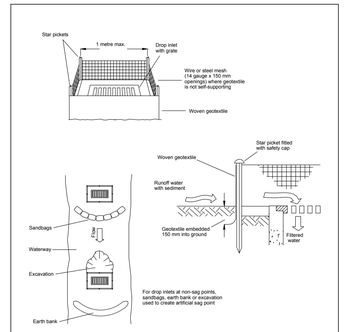


NOTE: This practice only to be used where specified in an approved SWMP/ESCP.

Construction Notes

1. Install filters to kerb inlets only at sag points.
2. Fabricate a sleeve made from geotextile or wire mesh longer than the length of the inlet pit and fill it with 25 mm to 50 mm gravel.
3. Form an elliptical cross-section about 150 mm high x 400 mm wide.
4. Place the filter at the opening leaving at least a 100-mm space between it and the kerb inlet. Maintain the opening with spacer blocks.
5. Form a seal with the kerb to prevent sediment bypassing the filter.
6. Sandbags filled with gravel can substitute for the mesh or geotextile providing they are placed so that they firmly abut each other and sediment-laden waters cannot pass between.

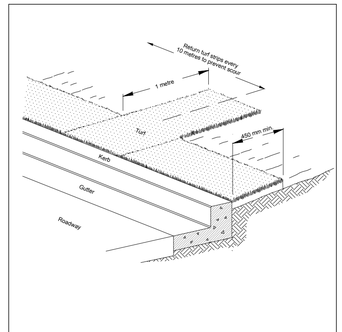
MESH AND GRAVEL INLET FILTER SD 6-11



Construction Notes

1. Fabricate a sediment barrier made from geotextile or straw bales.
2. Follow 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.

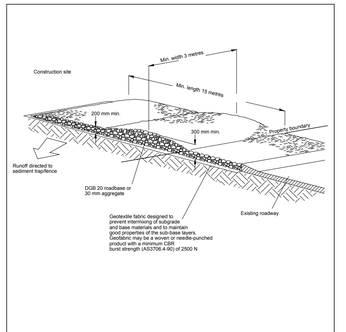
GEOTEXTILE INLET FILTER SD 6-12



Construction Notes

1. Install a 450 mm minimum wide roll of turf on the footpath next to the kerb and at the same level as the top of the kerb.
2. Lay 1.4 metre long turf strips normal to the kerb every 10 metres.
3. Rehabilitate disturbed soil behind the turf strip following the ESCP/SWMP.

KERBSIDE TURF STRIP SD 6-13



Construction Notes

1. Strip the topsoil, level the site and compact the subgrade.
2. Cover the area with needle-punched geotextile.
3. Construct a 200 mm thick pad over the geotextile using road base or 30 mm 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

SOIL AND WATER MANAGEMENT DETAILS

EROSION AND SEDIMENTATION CONTROL NOTES:
The following notes may not be relevant to each development.

GENERAL

1 ESCP refers to Erosion and Sediment Control Plan or a Soil and Water Management Plan (SWMP).
2 ESC refers to erosion and sediment control.
3 Sediment, includes, but is not limited to, clay, silt, sand, gravel, soil, mud, cement, and ceramic waste.
4 Any reference to the Blue Book refers to Managing Urban Stormwater – Soils and Construction. Landcom, 2004.
5 Any reference to the IECA White Books (2008) refers to IECA 2008. Best Practice Erosion and Sediment Control. Books 1–6.International Erosion Control Association (Australasia). Picton NSW.
6 Any material deposited in any conservation area from works associated with the development shall be removed immediately by measures involving minimal ground and/or vegetation disturbance and no machinery, or following directions by Council and/or within a timeframe advised by Council.

THE ESCP

7 The ESCP and its associated ESC measures shall be constantly monitored, reviewed, and modified as required to correct deficiencies. Council has the right to direct changes if, in its opinion, the measures that are proposed or have been installed are inadequate to prevent pollution.
8 Prior to any activities onsite, the responsible person(s) is to be nominated. The responsible person(s) shall be responsible for the ESC measures onsite. The name, address and 24 hour contact details of the person(s) shall be provided to Council in writing. Council shall be advised within 48 hours of any changes to the responsible person(s), or their contact details, in writing.
9 At least 14 days before the natural surface is disturbed in any new stage, the contractor shall submit to the Certifier, a plan showing ESC measures for that Stage. The degree of design detail shall be based on the disturbed area.
10 At any time during construction, the ESC measures onsite shall be appropriate for the area of disturbance and its characteristics including soils (in accordance with those required for the site as per DCP).
11 The implementation of the ESCP shall be supervised by personnel with appropriate qualifications and/or experience in ESC on construction sites.
12 The approved ESCP shall be available on-site for inspection by Council officers while work activities are occurring.
13 The approved ESCP shall be up to date and show a timeline of installation, maintenance and removal of ESC measures.
14 All ESC measures shall be appropriate for the Sediment Type(s) of the soils onsite, in accordance with the Blue Book, IECA White Books or other current recognised industry standard for ESC for Australian conditions.
15 Adequate site data, including soil data from a NATA approved Laboratory, shall be obtained to allow the preparation of an appropriate ESCP, and allow the selection, design and specification of required ESC measures.
16 All works shall be carried out in accordance with the approved ESCP (as amended from time to time) unless circumstances arise where:
a) compliance with the ESCP would increase the potential for environmental harm; or
b) circumstances change during construction and those circumstances could not have been foreseen; or
c) Council determines that unacceptable off-site sedimentation is occurring as a result of a land-disturbing activity. In either case, the person(s) responsible may be required to take additional, or alternative protective action, and/or undertake reasonable restoration works within the timeframe specified by the Council.
17 Additional ESC measures shall be implemented, and a revised ESCP submitted for approval to the certifier (within five business days of any such amendments) in the event that:
a) there is a high probability that serious or material environmental harm may occur as a result of sediment leaving the site; or
b) the implemented works fail to achieve Council's water quality objectives specified in these conditions; or
c) site conditions significantly change; or
d) site inspections indicate that the implemented works are failing to achieve the 'objective' of the ESCP.
18 A copy of any amended ESCP shall be forwarded to an appropriate Council Officer, within five business days of any such amendments.

SITE ESTABLISHMENT INCLUDING CLEARING AND MULCHING

19 No land clearing shall be undertaken unless preceded by the installation of adequate drainage and sediment control measures, unless such clearing is required for the purpose of installing such measures, in which case, only the minimum clearing required to install such measures shall occur.
20 Bulk tree clearing and grubbing of the site shall be immediately followed by specified temporary erosion control measures (e.g. temporary grassing or mulching) prior to commencement of each stage of construction works.
21 Trees and vegetation cleared from the site shall be mulched onsite within 7 days of clearing.
22 Appropriate measures shall be undertaken to control any dust originating due to the mulching of vegetation onsite.
23 All office facilities and operational activities shall be located such that any effluent, including wash-down water, can be totally contained and treated within the site.
24 All reasonable and practicable measures shall be taken to ensure stormwater runoff from access roads and stabilised entry/exit systems, drains to an appropriate sediment control device.
25 Site exit points shall be appropriately managed to minimise the risk of sediment being tracked onto sealed, public roadways.
26 Stormwater runoff from access roads and stabilised entry/exit points shall drain to an appropriate sediment control device.
27 The Applicant shall ensure an adequate supply of ESC, and appropriate pollution clean-up materials are available on-site at all times.
28 All temporary earth banks, flow diversion systems, and sediment basin embankments shall be machine-compacted, seeded and mulched within ten (10) days of formation for the purpose of establishing a vegetative cover, or lined appropriately.
29 Sediment deposited off site as a result of on-site activities shall be collected and the area cleaned/rehabilitated as soon as reasonable and practicable.
30 Concrete waste and chemical products, including petroleum and oil-based products, shall be prevented from entering any internal or external water body, or any external drainage system, excluding those on-site water bodies specifically designed to contain and/or treat such material. Appropriate measures shall be installed to trap these materials onsite.
31 Brick, tile or masonry cutting shall be carried out on a pervious surface (e.g. grass or open soil) and in such a manner that any resulting sediment-laden runoff is prevented from discharging into a gutter, drain or water. Appropriate measures shall be installed to trap these materials onsite.
32 Newly sealed hard-stand areas (e.g. roads, driveways and car parks) shall be swept thoroughly as soon as practicable after sealing/surfacing to minimise the risk of components of the surfacing compound entering stormwater drains.
33 Stockpiles of erodible material shall be provided with an appropriate protective cover (synthetic or organic) if the materials are likely to be stockpiled for more than 10 days.
34 Stockpiles, temporary or permanent, shall not be located in areas identified as no-go zones (including, but not limited to, restricted access areas, buffer zones, or areas of non-disturbance) on the ESCP.
35 No more than 150m of a stormwater, sewer line or other service trench shall to be open at any one time.
36 Site spoil shall be lawfully disposed of in a manner that does not result in ongoing soil erosion or environmental harm.
37 Wherever reasonable and practicable, stormwater runoff entering the site from external areas, and non-sediment laden (clean) stormwater runoff entering a work area or area of soil disturbance, shall be diverted around or through that area in a manner that minimises soil erosion and the contamination of that water for all discharges up to the specified design storm discharge.

SITE MANAGEMENT INCLUDING DUST

38 Priority shall be given to the prevention, or at least the minimisation, of soil erosion, rather than the trapping of displaced sediment. Such a clause shall not reduce the responsibility to apply and maintain, at all times, all necessary ESC measures.
39 Measures used to control wind erosion shall be appropriate for the location and prevent soil erosion at all times, including working hours, out of hours, weekends, public holidays, and during any other shutdown periods.
40 The application of liquid or chemical-based dust suppression measures shall ensure that sediment-laden runoff resulting from such measures does not create a traffic or environmental hazard.
41 All cut and fill earth batters less than 3m in elevation shall be topsoiled, and grass seeded/hydromulched within 10 days of completion of grading in consultation with Council.
42 Once cut/fill operations have been finalised in a section, all disturbed areas that are not being worked on shall be stabilised in accordance with the time lines in the Blue Book.
43 All reasonable and practicable measures shall be taken to prevent, or at least minimise, the release of sediment from the site.
44 Suitable all-weather maintenance access shall be provided to all sediment control devices.
45 Sediment control devices, other than sediment basins, shall be de-silted and made fully operational as soon as reasonable and practicable after a sediment-producing event, whether natural or artificial, if the device's sediment retention capacity falls below 75% of its design retention capacity.
46 All erosion and sediment control measures, including drainage control measures, shall be maintained in proper working order at all times during their operational lives.
47 Washing/flushing of sealed roadways shall only occur where sweeping has failed to remove sufficient sediment and there is a compelling need to remove the remaining sediment (e.g. for safety reasons). In such circumstances, all reasonable and practicable sediment control measures shall be used to prevent, or at least minimise, the release of sediment into receiving waters. Only those measures that will not cause safety and property flooding issues shall be employed. Sediment removed from roadways shall be disposed of in a lawful manner that does not cause ongoing soil erosion or environmental harm.
48 Sediment removed from sediment traps and places of sediment deposition shall be disposed of in a lawful manner that does not cause ongoing soil erosion or environmental harm.

SEDIMENT BASINS – INSTALLATION, MAINTENANCE AND REMOVAL INCLUDING SEDIMENT TRAPS

49 As-Constructed plans shall be prepared for all constructed Sediment Basins and associated emergency spillways. Such plans shall verify the basin's dimensions, levels and volumes comply with the approved design drawings. These plans may be requested by the Certifier or Council.
50 Sediment basins shall be constructed and fully operational prior to any other soil disturbance in their catchment.
51 Install an internal gated valve, or similar, in any outlet pipe once pipes installed, or install a sacrificial pipe from basin through wall to external outlet point. The valve shall be connected to a riser made from slotted pipe in the basin. The valve may be opened once captured water meets water quality requirements. The final setup for temporary internal outlet structures to be confirmed prior to construction with Council. This setup will enable discharge of treated water from site without need for pumping.
52 A sediment storage level marker post shall be with a cross member set just below the top of the sediment storage zone (as specified on the approved ESCP). At least a 75mm wide post shall be firmly set into the basin floor.
53 The Site Manager shall obtain the relevant approvals from the relevant organisations to discharge treated water from any existing basins. Organisations may include, but not be limited to, Hunter Water, and Council.
54 Where more than one stage is to be developed at one time, or before the preceding stage is complete, the sediment basin(s) for these stages shall have sufficient capacity to cater for all area directed to the basin(s).
55 Prior to any forecast weather event likely to result in runoff, any basins/traps shall be dewatered to provide sufficient capacity to capture sediment laden water from the site.
56 Sufficient quantities of chemicals/agents to treat captured water shall be placed such that water entering the basin mixes with the chemical/agents and is carried into the basin to speed up clarification.
57 Any basin shall be dewatered within the X-day rainfall depth used to calculate the capacity of the basin, after a rainfall event.
58 Sufficient quantities of chemicals/agents to treat turbid water shall be securely stored on-site to provide for at least three complete treatments of all basins requiring chemically treatment onsite.

SEDIMENT BASINS – INSTALLATION, MAINTENANCE AND REMOVAL INCLUDING SEDIMENT TRAPS (CONT'D)

59 Prior to the controlled discharge (e.g. de-watering activities) from excavations and/or sediment basins, the following water quality objectives shall be achieved:
a) Total Suspended Solids (TSS) to a maximum 50mg/L;
b) water pH between 6.5 and 8.5, unless otherwise required by the Council;
c) Turbidity (measured in NTUs) to a maximum of 60 NTU); and
d) EC levels no greater than background levels.
60 The Development Approval may require testing of additional water quality elements prior to discharge. E.g. heavy metals.
61 A sample of the released treated water shall be kept onsite in a clear container with the sample date recorded on it.
62 Water quality samples shall be taken at a depth no less than 200mm below the water surface of the basin.
63 No Aluminium based products may be used treat captured water onsite without the prior written permission from an appropriate Council Officer. The applicant shall have a demonstrated ability to use such products correctly and without environmental harm prior to any approval.
64 The chemical/agent used in Type D and Type F basins to treat captured water captured in the basin shall be applied in concentrations sufficient to achieve Council's water quality objectives within the X-day rainfall depth used to calculate the capacity of the basin, after a rainfall event.
65 All Manufacturers' instructions shall be followed for any chemicals/agents used onsite, except where approved by the Responsible Person or an appropriate Council Officer.
66 The Applicant shall ensure that on each occasion a Type F or Type D basin was not de-watered prior to being surcharged by a following rainfall event, a report is presented to an appropriate Council officer within 5 days identifying the circumstances and proposed amendments, if any, to the basin's operating procedures.
67 Settled sediment shall be removed as soon as reasonable and practicable from any sediment basin if:
a) it is anticipated that the next storm event is likely to cause sediment to settle above the basin's sediment storage zone; or
b) the elevation of settled sediment is above the top of the basin's sediment storage zone; or
c) the elevation of settled sediment is above the basins sediment marker line.
68 Scour protection measures placed on sediment basin emergency spillways shall appropriately protect the spillway chute and its side batters from scour, and shall extend a minimum of 3m beyond the downstream toe of the basin's embankment.
69 Suitable all-weather maintenance access shall be provided to all sediment control devices.
70 Materials, whether liquid or solid, removed from any ESC measures during maintenance or decommissioning, shall be disposed of in a manner that does not cause ongoing soil erosion or environmental harm.
71 All sediment basins shall remain fully operational at all times until the basin's design catchment achieves 70% ground cover or surface stabilisation acceptable to Council.
72 The ESC measures installed during the decommissioning and rehabilitation of a sediment basin shall comply with same standards specified for the normal construction works.
73 A sediment basin shall not be decommissioned until all up-slope site stabilisation measures have been implemented and are appropriately working to control soil erosion and sediment runoff..
74 Immediately prior to the construction of the permanent stormwater treatment device, appropriate flow bypass conditions shall be established to prevent sediment-laden water entering the device.

REVEGETATION/STABILISATION

75 Temporary Stabilisation may be attained using vegetation, non rewettable soil polymers, or pneumatically applied erosion controls.
76 All cut and fill earth batters less than 3m in elevation shall be topsoiled, and grass seeded/hydromulched within 10 days of completion of grading in consultation with Council.
77 Once cut/fill operations have been finalised in a section, all disturbed areas that are not being worked on shall be stabilised in accordance with time lines in the Blue Book.
78 The LMCC Seed mix shall be used unless stated on the ESCP/SWMP.
79 The pH level of topsoil shall be appropriate to enable establishment and growth of specified vegetation prior to initiating the establishment of vegetation.
80 Non rewettable binder shall be used in all hydromulch/hydroseed/polymer mixes on slopes or works adjacent to a water course.
81 Soil ameliorants shall be added to the soil in accordance with an approved Landscape Plan, Vegetation Management Plan, and/or soil analysis.
82 Surface soil density, compaction and surface roughness shall be adjusted prior to seeding/planting in accordance with an approved Landscape Plan, Vegetation Management Plan, and/or soil analysis.
83 Procedures for initiating a site shutdown, whether programmed or un-programmed, shall incorporate revegetation of all soil disturbances unless otherwise approved by Council. The stabilisation works shall not rely upon the longevity of non-vegetated erosion control blankets, or temporary soil binders.

SITE MONITORING AND MAINTENANCE

84 The Applicant shall ensure that appropriate procedures and suitably qualified personnel are engaged to plan and conduct site inspections and water quality monitoring throughout the construction and maintenance phase.
85 All ESC measures shall be inspected and any maintenance undertaken immediately:
a) at least daily (when work is occurring on-site); and
b) at least weekly (when work is not occurring on-site); and
c) within 24hrs of expected rainfall; and
d) within 18hrs of a rainfall event that causes runoff on the site.
86 Written records shall be kept onsite of ESC monitoring and maintenance activities conducted during the construction and maintenance periods, and be available to Council officers on request.
87 All environmentally relevant incidents shall be recorded in a field log that shall remain accessible to all relevant regulatory authorities.
88 All water quality data, including dates of rainfall, dates of testing, testing results and dates of water release, shall be kept in an on-site register. The register is to be maintained up to date for the duration of the approved works and be available on-site for inspection by [insert name of regulatory authority] on request.
89 At nominated instream water monitoring sites, a minimum of 3 water samples shall be taken and analysed, and the average result used to determine quality.

INSTREAM WORKS

90 All instream works (including in or adjacent to watercourses natural or manmade, flowing or not) shall be carried out in accordance with the IECA White Books.

NOT FOR CONSTRUCTION

ISSUE	REASON FOR ISSUE	DATE
7	ISSUED FOR COUNCIL APPROVAL - ACCESS ROAD AMENDED	16.11.2021
6	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	15.10.2021
5	ISSUED FOR COUNCIL APPROVAL - ESCP DETAILS AMENDED	13.08.2021
4	ISSUED FOR COUNCIL APPROVAL - ESCP ADDED TO DA SET	21.05.2021
3	ISSUED FOR COUNCIL APPROVAL - DEVELOPMENT APPLICATION	10.05.2021
2	ISSUED FOR REVIEW AT 90%	30.04.2021
1	ISSUED FOR REVIEW AT 50%	28.04.2021
0	ISSUED FOR REVIEW AT 30%	20.04.2021

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CLIENT
BYRON SHIRE COUNCIL

TITLE
SOIL AND WATER MANAGEMENT DETAILS

PROJECT
BYRON BAY BIO-ENERGY FACILITY
45 WALLUM PLACE
BYRON BAY NSW

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
T.R.	B.C.	15	A1
SCALES	JOB No	DRAWING No	ISSUE
AS SHOWN	190178	C15	7

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm