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DOUGLAS SHIRE COUNCIL
Received
File Name... OP2707/2018
Document No.
12 JUN 2018
Attention LAD
Information RN/278013

Our Ref: 4839/03
L-JD0126

8th June 2018

The Chief Executive Officer
Douglas Shire Council
PO Box 723
Mossman Qld 4873

Attention: Neil Beck

Dear Neil,

APPLICATION FOR OPERATIONAL WORKS DEVELOPMENT APPROVAL
RECONFIGURATION OF A LOT (1 LOT INTO 7)
2 OASIS DRIVE, WONGA BEACH

On behalf of our client, Port Pacific Estates Pty Ltd, we hereby submit the Operational Works application associated with the reconfiguration of 1 lot into 7 at 2 Oasis Drive, Wonga Beach.

Attached for your information and action are the following:

- Civil construction drawings 4839-C01A to 4839-C15A (2 x A3 size)
- Design submission report (R-JD0129)
- A certified statement of compliance – engineering design
- DA form 1
- Operational works receipting checklist
- A cheque for $6,370 for DSC OW fees
- Copy of Council's decision notice (Appendix A of design submission report)
- Landplan Landscape Architecture drawings 1802-005-L0.00 to 1802-005-L1.02 (2 x A3 size)

Please note the electrical reticulation plans were submitted for approval by SPA Consulting Engineers on 31st May 2018. Our plans have been coordinated with these documents.

We trust that the attached provides sufficient information to enable Council to provide an Operational Works permit for the works.

If you have any queries or require further information, please do not hesitate to contact this office.

Yours faithfully
FLANAGAN CONSULTING GROUP

JACOB DONNAN
Graduate Civil Engineer
BE Civil (Hons)

DA Form 1 – Development application details

Approved form (version 1.0 effective 3 July 2017) made under section 282 of the Planning Act 2016.

This form **must** be used to make a development application **involving code assessment or impact assessment**, except when applying for development involving building work.

For a development application involving **building work only**, use *DA Form 2 – Building work details*.

For a development application involving **building work associated with any other type of assessable development**, use this form (*DA Form 1*) **and** parts 4 to 6 of *DA Form 2 – Building work details.*

Unless stated otherwise, all parts of this form **must** be completed in full and all required supporting information **must** accompany the development application.

One or more additional pages may be attached as a schedule to this development application if there is insufficient space on the form to include all the necessary information.

This form and any other form relevant to the development application must be used to make a development application relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994*, and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008.* For the purpose of assessing a development application relating to strategic port land and Brisbane core port land, any reference to a planning scheme is taken to mean a land use plan for the strategic port land, Brisbane port land use plan for Brisbane core port land, or a land use plan for airport land.

Note: *All terms used in this form have the meaning given under the Planning Act 2016, the Planning Regulation 2017, or the Development Assessment Rules (DA Rules).*

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) *(individual or company full name)*	Port Pacific Estates Pty Limited
Contact name *(only applicable for companies)*	C/- Flanagan Consulting Group – Greg Applin
Postal address *(P.O. Box or street address)*	PO Box 5820
Suburb	CAIRNS
State	QLD
Postcode	4870
Country	Australia
Contact number	(07) 4031 3199
Email address *(non-mandatory)*	greg@flanaganconsulting.com.au
Mobile number *(non-mandatory)*	0414 768 109
Fax number *(non-mandatory)*	(07) 4051 0089
Applicant's reference number(s) *(if applicable)*	

2) Owner's consent

2.1) Is written consent of the owner required for this development application?

☐ Yes – the written consent of the owner(s) is attached to this development application

☒ No – proceed to 3)

T966

44.2018.2707.1

Queensland Government

PART 2 – LOCATION DETAILS

3) Location of the premises *(complete 3.1) or 3.2), and 3.3) as applicable)*

***Note**: Provide details below and attach a site plan for any or all premises part of the development application. For further information, see DA Forms Guide: Relevant plans.*

3.1) Street address and lot on plan

☒ Street address **AND** lot on plan *(all lots must be listed)*, ***or***

☐ Street address **AND** lot on plan for an adjoining or adjacent property of the premises *(appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon; all lots must be listed).*

a)	Unit No.	Street No.	Street Name and Type	Suburb
		2	Oasis Drive	Wonga Beach
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
	4873	2	SP259953	Douglas Shire
b)	Unit No.	Street No.	Street Name and Type	Suburb
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)

3.2) Coordinates of premises *(appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)*

***Note**: Place each set of coordinates in a separate row. Only one set of coordinates is required for this part.*

☐ Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) *(if applicable)*
		☐ WGS84 ☐ GDA94 ☐ Other:	

☐ Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) *(if applicable)*
		☐ 54 ☐ 55 ☐ 56	☐ WGS84 ☐ GDA94 ☐ Other:	

3.3) Additional premises

☐ Additional premises are relevant to this development application and their details have been attached in a schedule to this application

☒ Not required

4) Identify any of the following that apply to the premises and provide any relevant details

☐ In or adjacent to a water body or watercourse or in or above an aquifer

Name of water body, watercourse or aquifer:

☐ On strategic port land under the *Transport Infrastructure Act 1994*

Lot on plan description of strategic port land:

Name of port authority for the lot:

☒ In a tidal area

Name of local government for the tidal area *(if applicable)*: Douglas Shire

Name of port authority for tidal area *(if applicable)*:

☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*

Name of airport:

☐ Listed on the Environmental Management Register (EMR) under the *Environmental Protection Act 1994*

EMR site identification:

☐ Listed on the Contaminated Land Register (CLR) under the *Environmental Protection Act 1994*

CLR site identification:

5) Are there any existing easements over the premises?

Note: Easement uses vary throughout Queensland and are to be identified correctly and accurately. For further information on easements and how they may affect the proposed development, see DA Forms Guide.

☐ Yes – All easement locations, types and dimensions are included in plans submitted with this development application

☒ No

PART 3 – DEVELOPMENT DETAILS

Section 1 – Aspects of development

6.1) Provide details about the first development aspect

a) What is the type of development? *(tick only one box)*

☐ Material change of use ☐ Reconfiguring a lot ☒ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☒ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☒ Code assessment ☐ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

Seven (7) lot residential subdivision and drainage reserve.

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms guide: Relevant plans.*

☒ Relevant plans of the proposed development are attached to the development application

6.2) Provide details about the second development aspect

a) What is the type of development? *(tick only one box)*

☐ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☐ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☐ Code assessment ☐ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*

☐ Relevant plans of the proposed development are attached to the development application

6.3) Additional aspects of development

☐ Additional aspects of development are relevant to this development application and the details for these aspects that would be required under Part 3 Section 1 of this form have been attached to this development application

☒ Not required

Section 2 – Further development details

7) Does the proposed development application involve any of the following?	
Material change of use	☐ Yes – complete division 1 if assessable against a local planning instrument
Reconfiguring a lot	☐ Yes – complete division 2
Operational work	☒ Yes – complete division 3
Building work	☐ Yes – complete *DA Form 2 – Building work details*

Division 1 – Material change of use

***Note**: This division is only required to be completed if any part of the development application involves a material change of use assessable against a local planning instrument.*

8.1) Describe the proposed material change of use

Provide a general description of the proposed use	Provide the planning scheme definition *(include each definition in a new row)*	Number of dwelling units *(if applicable)*	Gross floor area (m^2) *(if applicable)*

8.2) Does the proposed use involve the use of existing buildings on the premises?

☐ Yes
☐ No

Division 2 – Reconfiguring a lot

***Note**: This division is only required to be completed if any part of the development application involves reconfiguring a lot.*

9.1) What is the total number of existing lots making up the premises?

9.2) What is the nature of the lot reconfiguration? *(tick all applicable boxes)*

☐ Subdivision *(complete 10))*
☐ Boundary realignment *(complete 12))*
☐ Dividing land into parts by agreement *(complete 11))*
☐ Creating or changing an easement giving access to a lot from a construction road *(complete 13))*

10) Subdivision

10.1) For this development, how many lots are being created and what is the intended use of those lots:

Intended use of lots created	Residential	Commercial	Industrial	Other, please specify:
Number of lots created				

10.2) Will the subdivision be staged?

☐ Yes – provide additional details below
☐ No

How many stages will the works include?	
What stage(s) will this development application apply to?	

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?

Intended use of parts created	Residential	Commercial	Industrial	Other, please specify:
Number of parts created				

12) Boundary realignment

12.1) What are the current and proposed areas for each lot comprising the premises?

Current lot		Proposed lot	
Lot on plan description	Area (m^2)	Lot on plan description	Area (m^2)

12.2) What is the reason for the boundary realignment?

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement? *(attach schedule if there are more than two easements)*

Existing or proposed?	Width (m)	Length (m)	Purpose of the easement? *(e.g. pedestrian access)*	Identify the land/lot(s) benefitted by the easement

Division 3 – Operational work

***Note**: This division is only required to be completed if any part of the development application involves operational work.*

14.1) What is the nature of the operational work?

☒ Road work
☒ Drainage work
☒ Landscaping
☒ Stormwater
☒ Earthworks
☐ Signage
☒ Water infrastructure
☐ Sewage infrastructure
☐ Clearing vegetation
☐ Other – please specify:

14.2) Is the operational work necessary to facilitate the creation of new lots? *(e.g. subdivision)*

☒ Yes – specify number of new lots: 1 lot into 7.
☐ No

14.3) What is the monetary value of the proposed operational work? *(include GST, materials and labour)*

$450,000

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application

Douglas Shire Council

16) Has the local government agreed to apply a superseded planning scheme for this development application?

☐ Yes – a copy of the decision notice is attached to this development application
☐ Local government is taken to have agreed to the superseded planning scheme request – relevant documents attached
☒ No

PART 5 – REFERRAL DETAILS

17) Do any aspects of the proposed development require referral for any referral requirements?

***Note**: A development application will require referral if prescribed by the* Planning Regulation 2017.

☐ No, there are no referral requirements relevant to any development aspects identified in this development application – proceed to Part 6

Matters requiring referral to the **chief executive of the Planning Regulation 2017:**

☐ Clearing native vegetation
☐ Contaminated land *(unexploded ordnance)*

- ☐ Environmentally relevant activities (ERA) *(only if the ERA have not been devolved to a local government)*
- ☐ Fisheries – aquaculture
- ☐ Fisheries – declared fish habitat area
- ☐ Fisheries – marine plants
- ☐ Fisheries – waterway barrier works
- ☐ Hazardous chemical facilities
- ☐ Queensland heritage place *(on or near a Queensland heritage place)*
- ☐ Infrastructure – designated premises
- ☐ Infrastructure – state transport infrastructure
- ☐ Infrastructure – state transport corridors and future state transport corridors
- ☐ Infrastructure – state-controlled transport tunnels and future state-controlled transport tunnels
- ☐ Infrastructure – state-controlled roads
- ☐ **Land within Port of Brisbane's port limits**
- ☐ SEQ development area
- ☐ SEQ regional landscape and rural production area or SEQ Rural living area – community activity
- ☐ SEQ regional landscape and rural production area or SEQ Rural living area – indoor recreation
- ☐ SEQ regional landscape and rural production area or SEQ Rural living area – residential development
- ☐ SEQ regional landscape and rural production area or SEQ Rural living area – urban activity
- ☒ Tidal works or works in a coastal management district
- ☐ Urban design
- ☐ Water-related development – taking or interfering with water
- ☐ Water-related development – removing quarry material *(from a watercourse or lake)*
- ☐ Water-related development – referable dams
- ☐ Water-related development – construction of new levees or modification of existing levees *(category 2 or 3 levees only)*
- ☐ Wetland protection area

Matters requiring referral to the **local government:**

- ☐ Airport land
- ☐ Environmentally relevant activities (ERA) *(only if the ERA have been devolved to local government)*
- ☐ Local heritage places

Matters requiring referral to the **chief executive of the distribution entity or transmission entity:**

- ☐ Electricity infrastructure

Matters requiring referral to:

- The **chief executive of the holder of the licence**, if not an individual
- The **holder of the licence**, if the holder of the licence is an individual

- ☐ Oil and gas infrastructure

Matters requiring referral to **the Brisbane City Council:**

- ☐ Brisbane core port land

Matters requiring referral to the **Minister under the Transport Infrastructure Act 1994:**

- ☐ Brisbane core port land
- ☐ Strategic port land

Matters requiring referral to the **relevant port operator:**

- ☐ Brisbane core port land (below high-water mark and within port limits)

Matters requiring referral to the **chief executive of the relevant port authority:**

- ☐ Land within limits of another port

Matters requiring referral to the **Gold Coast Waterways Authority:**

- ☐ Tidal works, or development in a coastal management district in Gold Coast waters

Matters requiring referral to the **Queensland Fire and Emergency Service:**

- ☐ Tidal works, or development in a coastal management district

18) Has any referral agency provided a referral response for this development application?		
☐ Yes – referral response(s) received and listed below are attached to this development application ☒ No		
Referral requirement	Referral agency	Date of referral response
Identify and describe any changes made to the proposed development application that was the subject of the referral response and the development application the subject of this form, or include details in a schedule to this development application *(if applicable)*.		

PART 6 – INFORMATION REQUEST

19) Information request under Part 3 of the DA Rules

☒ I agree to receive an information request if determined necessary for this development application

☐ I do not agree to accept an information request for this development application

***Note**: By not agreeing to accept an information request I, the applicant, acknowledge:*

- *that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the development application are not obligated under the DA Rules to accept any additional information provided by the applicant for the development application unless agreed to by the relevant parties*
- *Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules.*

Further advice about information requests is contained in the DA Forms Guide.

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? *(e.g. a preliminary approval)*

☒ Yes – provide details below or include details in a schedule to this development application

☐ No

List of approval/development application references	Reference number	Date	Assessment manager
☒ Approval ☐ Development application	ROL 1961/2017	19th of September 2017	Douglas Shire Council
☐ Approval ☐ Development application			

21) Has the portable long service leave levy been paid? *(only applicable to development applications involving building work or operational work)*

☐ Yes – the yellow local government/private certifier's copy of the receipted QLeave form is attached to this development application

☒ No – I, the applicant will provide evidence that the portable long service leave levy has been paid before the assessment manager decides the development application. I acknowledge that the assessment manager may give a development approval only if I provide evidence that the portable long service leave levy has been paid

☐ Not applicable

Amount paid	Date paid (dd/mm/yy)	QLeave levy number (A, B or E)
$		

22) Is this development application in response to a show cause notice or required as a result of an enforcement notice?

☐ Yes – show cause or enforcement notice is attached

☒ No

23) Further legislative requirements

Environmentally relevant activities

23.1) Is this development application also taken to be an application for an environmental authority for an **Environmentally Relevant Activity (ERA)** under section 115 of the *Environmental Protection Act 1994*?

☐ Yes – the required attachment (form EM941) for an application for an environmental authority accompanies this development application, and details are provided in the table below

☒ No

***Note**: Application for an environmental authority can be found by searching "EM941" at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.*

Proposed ERA number:		Proposed ERA threshold:	
Proposed ERA name:			

☐ Multiple ERAs are applicable to this development application and the details have been attached in a schedule to this development application.

Hazardous chemical facilities

23.2) Is this development application for a **hazardous chemical facility**?

☐ Yes – *Form 69: Notification of a facility exceeding 10% of schedule 15 threshold* is attached to this development application

☒ No

***Note**: See www.justice.qld.gov.au for further information.*

Clearing native vegetation

23.3) Does this development application involve **clearing native vegetation** that requires written confirmation the chief executive of the *Vegetation Management Act 1999* is satisfied the clearing is for a relevant purpose under section 22A of the *Vegetation Management Act 1999*?

☐ Yes – this development application is accompanied by written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)

☒ No

***Note**: See www.qld.gov.au for further information.*

Environmental offsets

23.4) Is this development application taken to be a prescribed activity that may have a significant residual impact on a **prescribed environmental matter** under the *Environmental Offsets Act 2014*?

☐ Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as having a significant residual impact on a prescribed environmental matter

☒ No

***Note**: The environmental offset section of the Queensland Government's website can be accessed at www.qld.gov.au for further information on environmental offsets.*

Koala conservation

23.5) Does this development application involve a material change of use, reconfiguring a lot or operational work within an assessable development area under Schedule 10, Part 10 of the Planning Regulation 2017?

☐ Yes

☒ No

***Note**: See guidance materials at www.ehp.qld.gov.au for further information.*

Water resources

23.6) Does this development application involve **taking or interfering with artesian or sub artesian water, taking or interfering with water in a watercourse, lake or spring, taking overland flow water or waterway barrier works**?

☐ Yes – the relevant template is completed and attached to this development application

☒ No

***Note**: DA templates are available from www.dilgp.qld.gov.au.*

23.7) Does this application involve **taking or interfering with artesian or sub artesian water, taking or interfering with water in a watercourse, lake or spring, or taking overland flow water** under the *Water Act 2000*?

☐ Yes – I acknowledge that a relevant water authorisation under the *Water Act 2000* may be required prior to

commencing development

☒ No

Note: Contact the Department of Natural Resources and Mines at www.dnrm.qld.gov.au for further information.

Marine activities

23.8) Does this development application involve **aquaculture, works within a declared fish habitat area or removal, disturbance or destruction of marine plants?**

☐ Yes – an associated resource allocation authority is attached to this development application, if required under the *Fisheries Act 1994*

☒ No

Note: See guidance materials at www.daf.qld.gov.au for further information.

Quarry materials from a watercourse or lake

23.9) Does this development application involve the **removal of quarry materials from a watercourse or lake** under the *Water Act 2000?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

☒ No

Note: Contact the Department of Natural Resources and Mines at www.dnrm.qld.gov.au for further information.

Quarry materials from land under tidal waters

23.10) Does this development application involve the **removal of quarry materials from land under tidal water** under the *Coastal Protection and Management Act 1995?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

☒ No

Note: Contact the Department of Environment and Heritage Protection at www.ehp.qld.gov.au for further information.

Referable dams

23.11) Does this development application involve a **referable dam** required to be failure impact assessed under section 343 of the *Water Supply (Safety and Reliability) Act 2008* (the Water Supply Act)?

☐ Yes – the 'Notice Accepting a Failure Impact Assessment' from the chief executive administering the Water Supply Act is attached to this development application

☒ No

Note: See guidance materials at www.dews.qld.gov.au for further information.

Tidal work or development within a coastal management district

23.12) Does this development application involve **tidal work or development in a coastal management district?**

☒ Yes – the following is included with this development application:

☐ Evidence the proposal meets the code for assessable development that is prescribed tidal work *(only required if application involves prescribed tidal work)*

☒ A certificate of title *work within CMD - no tidal work*

☐ No

Note: See guidance materials at www.ehp.qld.gov.au for further information.

Queensland and local heritage places

23.13) Does this development application propose development on or adjoining a place entered in the **Queensland heritage register** or on a place entered in a local government's **Local Heritage Register**?

☐ Yes – details of the heritage place are provided in the table below

☒ No

Note: See guidance materials at www.ehp.qld.gov.au for information requirements regarding development of Queensland heritage places.

Name of the heritage place:		Place ID:	

Brothels

23.14) Does this development application involve a **material change of use for a brothel?**

☐ Yes – this development application demonstrates how the proposal meets the code for a development application for a brothel under Schedule 3 of the *Prostitution Regulation 2014*

☒ No

Decision under section 62 of the *Transport Infrastructure Act 1994*

23.15) Does this development application involve new or changed access to a state-controlled road?

☐ Yes - this application will be taken to be an application for a decision under section 62 of the *Transport Infrastructure Act 1994* (subject to the conditions in section 75 of the *Transport Infrastructure Act 1994* being satisfied)
☒ No

PART 8 – CHECKLIST AND APPLICANT DECLARATION

24) Development application checklist	
I have identified the assessment manager in question 15 and all relevant referral requirement(s) in question 17 ***Note:*** *See the Planning Regulation 2017 for referral requirements*	☒ Yes
If building work is associated with the proposed development, Parts 4 to 6 of *Form 2 – Building work details* have been completed and attached to this development application	☐ Yes ☒ Not applicable
Supporting information addressing any applicable assessment benchmarks is with development application ***Note:*** *This is a mandatory requirement and includes any relevant templates under question 23, a planning report and any technical reports required by the relevant categorising instruments (e.g. local government planning schemes, State Planning Policy, State Development Assessment Provisions). For further information, see DA Forms Guide: Planning Report Template.*	☒ Yes
Relevant plans of the development are attached to this development application ***Note:*** *Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*	☒ Yes
The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued *(see 21))*	☒ Yes ☐ Not applicable

25) Applicant declaration

☒ By making this development application, I declare that all information in this development application is true and correct

☒ Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the assessment manager and any referral agency for the development application where written information is required or permitted pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001*

Note: *It is unlawful to intentionally provide false or misleading information.*

Privacy – Personal information collected in this form will be used by the assessment manager and/or chosen assessment manager, any relevant referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the development application.
All information relating to this development application may be available for inspection and purchase, and/or published **on the assessment manager's and/or referral agency's website.**
Personal information will not be disclosed for a purpose unrelated to the *Planning Act 2016*, Planning Regulation 2017 and the DA Rules except where:

- such disclosure is in accordance with the provisions about public access to documents contained in the *Planning Act 2016* and the Planning Regulation 2017, and the access rules made under the *Planning Act 2016* and Planning Regulation 2017; or
- required by other legislation (including the *Right to Information Act 2009*); or
- otherwise required by law.

This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002.*

PART 9 – FOR OFFICE USE ONLY

Date received: | | Reference number(s): | |

Notification of engagement of alternative assessment manager	
Prescribed assessment manager	
Name of chosen assessment manager	
Date chosen assessment manager engaged	
Contact number of chosen assessment manager	
Relevant licence number(s) of chosen assessment manager	

QLeave notification and payment *Note: For completion by assessment manager if applicable*	
Description of the work	
QLeave project number	
Amount paid ($)	
Date paid	
Date receipted form sighted by assessment manager	
Name of officer who sighted the form	

The *Planning Act 2016*, the Planning Regulation 2017 and the DA Rules are administered by the Department of Infrastructure, Local Government and Planning. This form and all other required development application materials should be sent to the assessment manager.

CURRENT TITLE SEARCH

DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 25424188
Search Date: 27/02/2017 10:21

Title Reference: 50919565
Date Created: 22/07/2013

Previous Title: 21397215
50284671

REGISTERED OWNER

Dealing No: 717502438 09/09/2016

PORT PACIFIC ESTATES PTY LIMITED A.C.N. 112 832 685

ESTATE AND LAND

Estate in Fee Simple

LOT 2 SURVEY PLAN 259953
Local Government: DOUGLAS

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
   Deed of Grant No. 20211168 (POR 46)

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
716631660	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	16/07/2015 13:02	CURRENT

UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

** End of Current Title Search **

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Requested By: D-ENQ CITEC CONFIRM

Land Title Act 1994 ; Land Act 1994
Form 21 Version 3

SURVEY PLAN

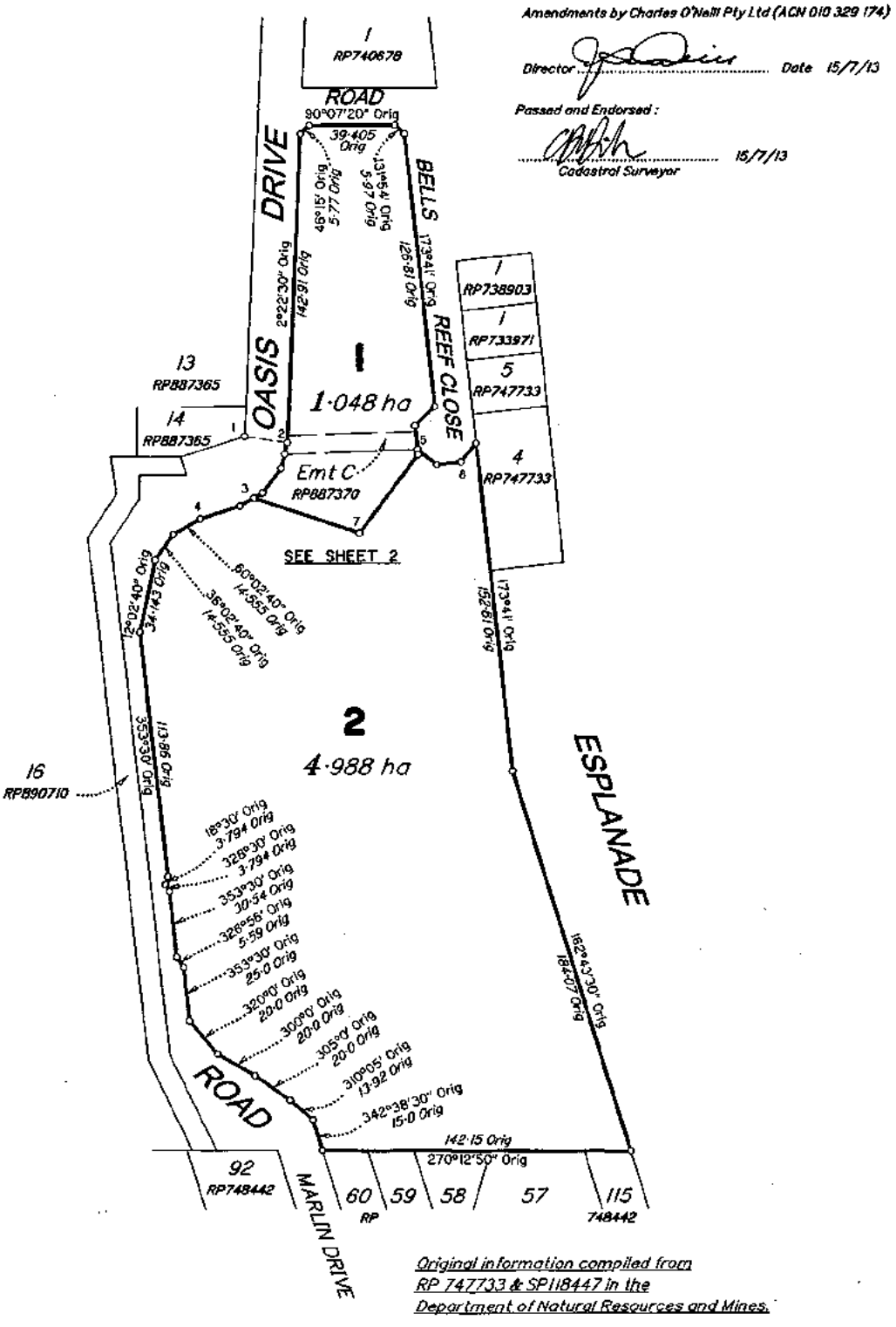
Sheet 1 of 2

Amendments by Charles O'Neill Pty Ltd (ACN 010 329 174)

Director ..... Date 15/7/13

Passed and Endorsed :

..... 15/7/13
Cadastral Surveyor



Original information compiled from RP 747733 & SP118447 in the Department of Natural Resources and Mines.

Scale 1:2000 – Lengths are in Metres.

20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

50mm 100mm 150mm

State copyright reserved.

CHARLES O'NEILL PTY. LTD. (ACN 010 329 174) hereby certify that the land comprised in this plan was surveyed by the corporation, by Kevin Eric Thorne, Registered Surveying Associate, for whose work the corporation accepts responsibility, under the supervision of Grant Harold Phillips, Cadastral Surveyor, and that the plan is accurate, that the said survey was performed in accordance with the *Survey and Mapping Infrastructure Act 2003* and *Surveyors Act 2003* and associated Regulations and Standards and that the said survey was completed on 27/06/2013

THE COMMON SEAL OF CHARLES O'NEILL PTY. LTD. ACN 010 329 174

Charles Edward O'Neill, Director

Julie Anne O'Neill, Director

Date 25/6/2013

Plan of Lots 1 & 2

Cancelling Lot 2 on RP747733 & Lot 17 on SP118447

LOCAL GOVERNMENT: Cairns Regional Council LOCALITY: Wonga

Meridian: RP747733 F/N's: No

Scale: 1:2000

Format: STANDARD

SP259953

Plan Status:

7427MEY-II 7427BS-II 9/4/13

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715209063

$477.80
18/07/2013 10:52

NR 400 NT

Legal/Searches [redacted]
PO Box [redacted] Cairns QLD 4870

MT

WARNING : Folded or Mutilated Plans will not be accepted.
Plans may be rolled.
Information may not be placed in the outer margins.

Registered

5. Lodged by

(Include address, phone number, reference, and Lodger Code)

1. Certificate of Registered Owners or Lessees.

I/We WROXALL INVESTMENTS PTY. LTD.
ACN 010 172 728

(Names in full)

*as Registered Owners of this land agree to this plan ~~and dedicate the Public Use Land as shown hereon in accordance with Section 50 of the Land Title Act 1994.~~

~~*as Lessees of this land agree to this plan.~~

Signature of *Registered Owners ~~*Lessees~~

RODNEY THOMAS FORRESTER (Director)

WILLIAM JOHN FREEMAN (DIRECTOR)

* Rule out whichever is inapplicable

6. Existing		Created		
Title Reference	Description	New Lots	Road	Secondary Interests
21397215	Lot 2 on RP747733	1 & 2	—	—
50284671	Lot 17 on SP118447	2	—	—

ENCUMBRANCE EASEMENT ALLOCATIONS

Easement	Lots to be Encumbered
701345809 (Emt C on RP887370)	1

MORTGAGE ALLOCATIONS

Mortgage	Lots Fully Encumbered	Lots Partially Encumbered
711137143	1 & 2	—

2. Local Government Approval.

* CAIRNS REGIONAL COUNCIL
hereby approves this plan in accordance with the :
%
SUSTAINABLE PLANNING ACT 2009

DATE OF APPLICATION : 15 MAY 2013

Dated this FIRST day of JULY 2013

DELEGATED OFFICER
GRAHAM BOYD, MANAGER
DEVELOPMENT AND
REGULATORY SERVICES

#

* Insert the name of the Local Government. % Insert Integrated Planning Act 1997 or
# Insert designation of signatory or delegation Local Government (Planning & Environment) Act 1990

Lots	Orig
1,2	Por 46

7. Portion Allocation :

8. Map Reference :
7965-21324

9. Parish:
WHYANBEEL

10. County:
Solander

11. Passed & Endorsed :
By: CHARLES O'NEILL PTY.LTD. ACN 010 328 174
Date: 25/06/2013
Signed:
Designation : Cadastral Surveyor

12. Building Format Plans only.
I certify that :
* As far as it is practical to determine, no part of the building shown on this plan encroaches onto adjoining lots or road;
* Part of the building shown on this plan encroaches onto adjoining * lots and road

Licensed Surveyor/Director * Date
*delete words not required

13. Lodgement Fees :

Survey Deposit	$
Lodgement	$
..... New Titles	$
Photocopy	$
Postage	$
TOTAL	$

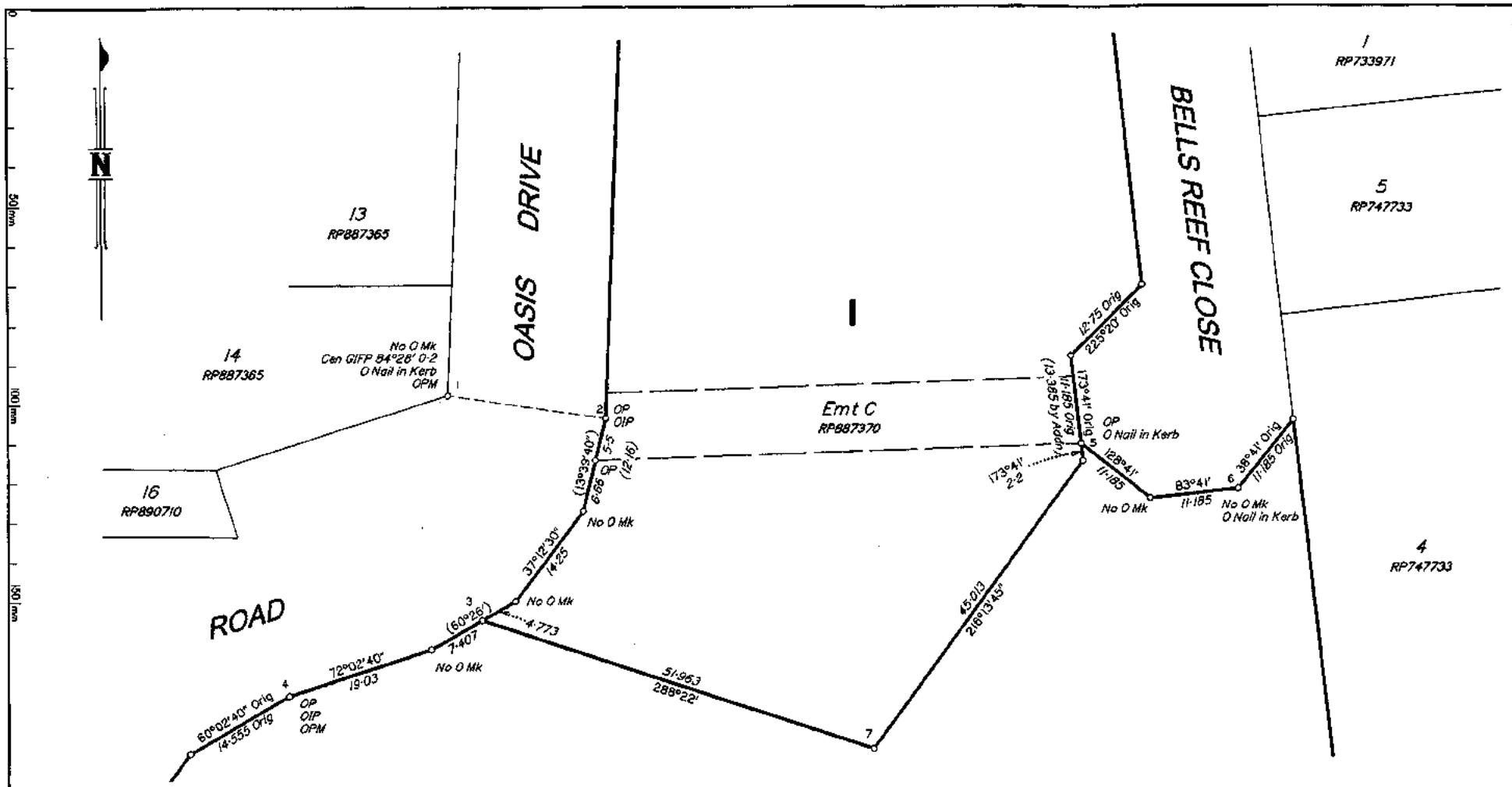
14. Insert Plan Number SP259953

3. Plans with Community Management Statement :
CMS Number :
Name :

4. References :
Dept File :
Local Govt : 8/13/1733
Surveyor : 7427WEY

Land Title Act 1994; Land Act 1994
Form 21A Version 1

ADDITIONAL SHEET



REFERENCE MARKS

STN	TO	ORIGIN	BEARING	DIST
1	O Nail in Kerb	RP887365	50°39'	7·97
2	OIP	RP747733	278°10'20"	2·005
3	Nail in Kerb		288°38'	8·08
4	OIP	RP887365	345°44'	1·0
5	O Nail in Kerb	RP887370	46°46'	5·665
6	O Nail in Kerb	RP887370	326°13'	5·085
7	Pin		129°08'	1·297

TRAVERSES

LINE	BEARING	DIST
1–2	98°24'50"	20·105

Peg placed at all new corners.

PERMANENT MARKS

PM	ORIGIN	BEARING	DIST	NO	TYPE	
1–OPM	RP887365	145°34'	7·2	96526	Standard	
4–OPM	RP748442	172°23'35"	336·959	99373	Standard	New Conn

Scale 1:500 – Lengths are in Metres.

5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

Insert Plan Number SP259953

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Sheet 2 of 2

Ray Burton

From: Greg Applin <Greg@flanaganconsulting.com.au>
Sent: Tuesday, 27 March 2018 4:32 PM
To: rjb.upp@gmail.com
Cc: 4839-03 Civil Services; Jacob Donnan
Subject: RE: 2 Oasis Drive DSC Fees

Ray,
Please make the cheque payable to Douglas Shire Council, not FCG.

Thanks,

Greg Applin | Senior Civil Engineer
Flanagan Consulting Group | 138-142 Spence Street, Cairns QLD 4870
t: (07) 4031 3199 | **m:** 0414 768 109

From: Jacob Donnan
Sent: Tuesday, 27 March 2018 12:58 PM
To: rjb.upp@gmail.com
Cc: Greg Applin <Greg@flanaganconsulting.com.au>; 4839-03 Civil Services <4839-03CivilServices@flanaganconsulting.com.au>
Subject: 2 Oasis Drive DSC Fees

Good Afternoon Ray,

I have attached an excerpt from the Douglas Shire Council Fees and Charges Schedule (2017/2018) below:

7.4 OPERATIONAL WORKS

Operational works for excavation and filling is not required where authorised by a Development Permit for Buildi Work.

7.4.1 Operational Works Associated with Reconfiguration of Land

Lot Reconfiguration - base fee (up to 2 lots)

Additional fee per lot (excluding park / drainage reserve lots)

The fee payable for the reconfiguration of 2 Oasis Drive, Wonga beach will be $6370.00.

Could you please send a cheque for this amount through so that we may include it in our operational works submission.

Cheque # 060

Kind Regards,

Jacob Donnan

Graduate Civil Engineer
BEng (Hons), GradIEAust

Operational Works Receipting Checklist

(To be completed by Consulting engineer making the application)

Name of Council: Douglas Shire Council

Development Name and Location: 2 Oasis Drive, Wonga Beach 4873

Planning Permit No/Council File No: RoL / 1961 / 2017

DESIGN SUBMISSION	CHECK	COMMENT
1. Completed 'Statement of Compliance' form. (FNQROC - AP1 – Appendix A)	✓	
2. IDAS Forms A ,E & IDAS Assessment Checklist (Available from www.ipa.qld.gov.au)	✓	IDAS Forms superseded by DA Form 1.
3. Payment of Engineering Application Fees (Copy of receipt to be attached)	✓	Cheque attached to submission.
4. Copy of Decision Notice for Development Application Conditions, inc. explanation of how each condition is to be addressed (Statement of Compliance)	✓	RoL 1961 /2017 D# 827371
5. Engineering Design drawings - Complete sets (1 x A1 set, 2 x A3 sets and 1 x electronic copy on compact disc in 'PDF' format)	✓	
6. One copy of Design and Standard Specifications (Unbound Copy Preferable)	✓	Design specifications shown on engineering drawings.
7. Written consent from adjoining property owners authorising any works on their property	N/A	
8. Water reticulation network in electronic format (Engineer to confirm system requirements and compatibility with Cairns Water)	✓	
9. Landscape drawings - Complete set (1 x A1 set, 2 x A3 sets and 1 x electronic copy on compact disc in 'PDF' format). These must be accompanied by elements of the stormwater & street ltg. layout design, to avoid conflicts.	✓	

Operational Works Receipting Checklist

(To be completed by Consulting engineer making the application)

DESIGN SUBMISSION	CHECK	COMMENT
10. Overall network drawings (for staged development) for:	✓	
• Water	✓	
• Stormwater	✓	
• Sewer	N/A	
• Pathways and roads	✓	
• Street Lighting	✓	By SPA Consulting Engineers.
• Electrical	✓	By SPA Consulting Engineers.
• Gas	N/A	
• Public Transport	N/A	
• Park Reserves	N/A	
• Drainage Reserves	✓	
11. Pavement design criteria	✓	
12. Geotechnical reports for proposed earthworks	N/A	
13. Structural and geotechnical certificates for retaining walls etc.	N/A	
14. Water supply/sewerage pump station design parameters	N/A	
15. Stormwater drainage calculations	N/A	See DHI drainage study referred to.
16. Erosion and Sediment Control Strategy (ESCS)	✓	
17. Declared Pest Management Plan (if applicable)	N/A	
18. The approval of any other Authorities & concurrence agencies likely to be affected by the works.	N/A	

19. Contact details of the Consulting Engineer who is submitting the Application:

Name of Engineer	Greg Applin	
Name of Company	Flanagan Consulting Group	
Telephone Number (s)	Office: 4031 3199	Mobile: 0414 768 109
Email address	greg@flanaganconsulting.com.au	
RPEQ No.	6073	

20. Date of submission of application 8/6/~~200~~2018

(For further information on all of the above refer to the FNQROC Development Manual Section AP1)

FNQROC DEVELOPMENT MANUAL

Council Douglas Shire Council
(INSERT COUNCIL NAME)

STATEMENT OF COMPLIANCE
OPERATIONAL WORKS DESIGN

This form duly completed and signed by an authorised agent of the Designer shall be submitted with the Operational Works Application for Council Approval.

Name of Development 2 Oasis Drive, Wonga Beach

Location of Development 2 Oasis Drive, Wonga Beach QLD 4873

Applicant Port Pacific Estates Pty Ltd

Designer Flanagan Consulting Group

It is hereby certified that the Calculations, Drawings, Specifications and related documents submitted herewith have been prepared, checked and amended in accordance with the requirements of the FNQROC Development Manual and that the completed works comply with the requirements therein, **except** as noted below.

Compliance with the requirements of the Operational Works Design Guidelines	Non-Compliance refer to non-compliance report / drawing number
Plan Presentation	
Geotechnical requirements	
Geometric Road Design	
Pavements	
Structures / Bridges	
Subsurface Drainage	
Stormwater Drainage	
Site Re-grading	
Erosion Control and Stormwater Management	
Pest Plant Management	
Cycleway / Pathways	

Landscaping	
Water Source and Disinfection/Treatment Infrastructure (if applicable)	
Water Reticulation, Pump Stations and water storages	
Sewer Reticulation and Pump Stations	
Electrical Reticulation and Street Lighting	
Public Transport	
Associated Documentation/ Specification	
Priced Schedule of Quantities	
Referral Agency Conditions	
Supporting Information (AP1.08)	
Other	

Conscientiously believing the above statements to be true and correct, signed on behalf of:

Designer Greg Applin - Flanagan Consulting Group **RPEQ No** 6073

Name in Full Greg Applin

Signature ..... **Date** 8/6/18

FLANAGAN CONSULTING GROUP
Trusted Advisor to Northern Australia

Design Submission Report

2 Oasis Drive, Wonga Beach QLD 4873

Operational Works Application

For Port Pacific Estates Pty Ltd

Project No.	**4839-03**
Reference No.	**R-JD0129**
Date:	**June 2018**

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APPENDIX A – Reconfiguration of Lot Decision Notice (RoL 1961/2017)

APPENDIX B – Engineering Design Drawings

APPENDIX C – Landplan Landscape Architecture Drawings

1.0 INTRODUCTION

Flanagan Consulting Group has been commissioned by Port Pacific Estates Pty Ltd to undertake the detailed design and documentation of earthworks, roadworks, stormwater drainage, water reticulation, underground conduits and miscellaneous works for the construction of 2 Oasis Drive which consists of the subdivision of 7 lots from the parcel of land described as Lot 2 on SP259953, Wonga Beach.

A Reconfiguration of Lot Application for the site was approved subject to conditions by Douglas Shire Council on 19 September 2017 (DSC ref: ROL 1961/2017 (D#827371)).

For Council's reference, a copy of the ROL Decision Notice is attached in **Appendix A.**

The development submitted and this design report has been prepared in compliance with the layout and the conditions proposed in the decision notice.

2.0 ENGINEERING DOCUMENTATION

Attached in accordance with Council's requirements are the following:

- Project Construction Drawings (see **Appendix B**)

  4839-C01A – SITE PLAN AND DRAWING INDEX

  4839-C02A – STANDARD NOTES

  4839-C03A – GENERAL ARRANGEMENT

  4839-C04A – MARLIN DRIVE CUL-DE-SAC SETOUT AND GRADING

  4839-C05A – EAST WEST DRAINAGE CHANNEL PLAN AND LONG SECTION

  4839-C06A – EAST WEST DRAINAGE CHANNEL PEDESTRIAN BRIDGE AND DETAILS

  4839-C07A – EAST WEST DRAINAGE CHANNEL CROSS SECTIONS SHEET 1 OF 2

  4839-C08A – EAST WEST DRAINAGE CHANNEL CROSS SECTIONS SHEET 2 OF 2

  4839-C09A – SITE GRADING

  4839-C10A – ALLOTMENT BUILDING PADS

  4839-C11A – MODIFICATION TO EXISTING COASTAL GUTTER DRAIN

  4839-C12A – WATER RETICULATION

  4839-C13A – EROSION AND SEDIMENT CONTROL STRATEGY

  4839-C14A – EROSION AND SEDIMENT CONTROL DEVICES SHEET 1 OF 2

  4839-C15A – EROSION AND SEDIMENT CONTROL DEVICES SHEET 2 OF 2

- Project Landscape Drawings (see **Appendix C**)

  1802-005-L0.00 – LANDSCAPE COVER SHEET

  1802-005-L1.01 – PLANTING PLAN 1 OF 1

  1802-005-L1.02 – LANDSCAPE DETAILS AND SPECIFICATION

- Statement of Compliance – Engineering Design

3.0 COMPLIANCE WITH SUBDIVISION CONDITIONS

To demonstrate compliance, the following responses have been prepared to address each condition:

Assessment Manager Conditions

1. Carry out the approved development generally in accordance with the approved drawing(s) and/or document(s), and in accordance with:

- **a. The specifications, facts and circumstances as set out in the application submitted to Council; and**
- **b. The following conditions of approval and the requirements of Council's Planning Scheme and the FNQROC Development Manual.**

Except where modified by these conditions of approval.

Noted and agreed.

Timing of Effect

2. The conditions of the Development Permit must be effected prior to Commencement of Use, except where specified otherwise in these conditions of approval.

Noted and agreed.

Access

3. No lot is to have vehicle access to or from the Esplanade.

No proposed lot has vehicle access to or from the Esplanade.

Street Layout and Design

4. **The street layout and design is to be generally in accordance with Flanagan Consulting Group Proposal Plan, Sketch 4839-SK01 subject to:**

- **a. The south-east corner of Lot 1 is to be truncated to facilitate access from the drainage reserve to the esplanade. The boundary of Lot 1 must be set back 5m from the top of bank from the existing drain based on a detailed survey of the site.**
- **b. Provision of a minimum fill area of 1000m2 on each lot for building work and onsite waste water disposal whereby:**
  - **i. Fill areas must not include any covenant areas as required by a concurrence agency;**
  - **ii. Setback of fill areas a minimum of 6m from the property boundary from all roads and Esplanade;**
  - **iii. Setback of fill areas a minimum of 3.0 metres from the southern boundary of proposed Lot 7;**

iv. **The fill pad for proposed Lots 1 and 2 must be extended to the respective northern boundary and retained or setback a minimum of 3.0 metres from the northern boundary;**

v. **Fill areas for the lots are at a level to provide an immunity to a 1% storm tide event and a 1% flood event;**

vi. **Fill for proposed lots must be graded away from the east to the west and must not result in ponding of water between the fill pad and the existing road reserve to the west; and**

vii. **All fill is to drain to lawful point of discharge and must not detrimentally impact on upstream, downstream or surrounding land and/or proposed lots;**

c. **Appropriate protection is to be provided at the Marlin Drive cul-de-sac to prevent non-authorised vehicles from accessing the pedestrian link including at a minimum, barrier kerbing and bollards. The applicant is to assess the need for additional barriers and or landscaping in these areas;**

d. **The access to the drainage channel is to be designed to facilitate normal maintenance machinery and is to be fitted with suitable gates;**

e. **Provision of estuarine crocodile warning signs to the new road and public pedestrian pathways;**

f. **A 6m setback area from the eastern boundary (to the Esplanade) is to be included in a conservation covenant area and is to be vegetated in accordance with Condition 25;**

g. **Provision of suitable vehicle access for Council from the pedestrian pathway to the Esplanade and foreshore for maintenance purposes. These purposes include the ability to access to maintain the open channel drainage flow path;**

h. **Provide a suitable surface cover and finish to the 20m wide drainage easement area and provide a naturally, vegetated invert to provide a stabilised channel that is able to be traversed by Council's maintenance equipment;**

i. **The access strip to proposed Lot 3 must have a minimum width of 4m and a sealed pavement of not less than 3m; and**

j. **Any amendments required to comply with the conditions and the requirements of Queensland Streets and the FNQROC Development Manual;**

The detailed design plans incorporating the above requirements must be submitted to the satisfaction of the Chief Executive Officer with the application for a Development Permit for Operational Works.

All works must be carried out in accordance with the approved plans, to the requirements and satisfaction of the Chief Executive Officer prior to the issue of a Compliance Certificate for the Plan of Survey.

The street layout and design is generally in accordance with Flanagan Consulting Group Proposal Plan, Sketch 4839-SK01.

4a: The south-east corner of Lot 1 does not require truncating as there is currently sufficient room (greater than 5m) to facilitate esplanade access.

4b: Refer to drawing 4839-C10 for compliance with building pad design conditions.

4c: Bollards only have been incorporated on design drawing 4839-C04. Given access is required to 4 allotments off the cul-de-sac, lay back kerb and channel is proposed to match the existing kerb. Barrier kerb has not been proposed as the area requiring barrier kerb is a short section containing a gully pit, a pram ramp and a gate for access, therefore if adopted the kerb would look very disjointed.

4d: A gate as per S9010 is proposed as detailed on drawing 4839-C04.

4e: Signage provided as detailed on drawing 4839-C06 is proposed at the head of the new drainage reserve.

4f: A 6m setback area has been included within the conservation covenant to the east of the site and is to be vegetated as per Landplan Landscape Architecture's plan 1802-005-L1.01.

4g: Suitable vehicle access from the pedestrian pathway to the Esplanade has been provided.

4h: This requirement contradicts Condition 17. A 3.0m wide concrete base has been provided as per Condition 17.

4i: The existing sealed road is being utilised for Lot 3. The driveway has been inspected and found to be structurally sound. A 30mm AC overlay is also proposed to freshen up the appearance.

4j: Noted.

Water Supply

5. Undertake water supply works internal to the subject land in accordance with the FNQROC development manual within the internal road system such that each lot can be connected to Council's water supply network at the lot frontage. A plan of the water supply reticulation network is to be generally in accordance with Flanagan Consulting Group Sketch 4839-SK04 and must be supported by appropriate calculations including hydraulic network analysis demonstrating compliance with FNQROC. In particular, the plan must include:

a. A minimum 100mm diameter main on one side and a 50mm (63mm OD) main on the opposite side to provide a looped service at the northern end of Marlin Drive;

b. Provide the conduit for water supply for the full length of the access leg for proposed Lot 3. The conduit does not need to be connected to Council's water supply. The conduit must be capped and staked at the road frontage of the lots and at the end of the access leg for easy identification when a future house is constructed on this lot.

The plan must also identify any infrastructure external to the subdivision that may require upgrading to accommodate the development and achieve the minimum pressures for maximum hour and firefighting scenarios.

All the above works must be designed and constructed in accordance with the FNQROC Development Manual.

All works must be carried out in accordance with the approved plans, to the requirements and satisfaction of the Chief Executive Officer prior to the issue of a Compliance Certificate for the Plan of Survey.

A water reticulation plan "4839-C12" is provided and is generally in accordance with FCG Sketch 4839-SK04. Each lot will be connected to Council's water supply network and compliance with conditions 5a & 5b can be seen on the plans.

No infrastructure external to the subdivision requires upgrading to accommodate the development.

On-Site Effluent Disposal

6. The On-Site Sewage Disposal Assessment Report prepared by Gilbert and Sutherland (2010) must be reviewed and confirmation provided to Council that the report findings and recommendations remain consistent with current Codes and Standards.

Subject to the above confirmation of currency, the method of on-site effluent disposal must be in accordance with the recommendations contained in the On- Site Sewage Disposal Assessment Report prepared by Gilbert and Sutherland or as otherwise approved by the Chief Executive Officer.

The review and advice on the Gilbert and Sutherland (2010) report is to be provided to Council with the Operational Works application for site works to verify that no additional works are required for effluent disposal.

The on-site sewage disposal assessment report prepared by Gilbert and Sutherland (2010) found that there is only limited impediment with regard to on-site effluent disposal – based on a proposed minimum lot size of 800m^2. The scope of development has changed significantly, and the smallest lot size of the currently proposed development is approximately 5,000m^2. In view of this, we confirm that on site sewer treatment can be achieved and comply with the current codes and standards.

Compliance with the current codes and standards of the proposed on-site sewage treatment will be provided at the plumbing approval stage of each residential dwelling.

General External Works

7. Undertake the following external works:

- **a. Provide a new pedestrian and cycle connection across the realigned drain to reinstate the pathway connection from the northern end of Marlin Drive to the pathway running to the west from the development site;**
- **b. The detail design in (a) above must include hydraulic assessment of the afflux through the new culverts and must maximise the waterway area to achieve minimum afflux through the culvert;**
- **c. The northern end of Marlin Drive currently has a levee/berm to prevent the storm water flows within the drain entering Marlin Drive and creating flooding and trafficability issues. The construction of the Marlin Drive**

extension and cul-de-sac is to be graded and designed to achieve a similar barrier to protect Marlin Drive from external flows entering the street; and

d. The applicant is to provide sufficient site level information to assess whether the bund in (c) above is required to extend west along the boundary with 102 Marlin Drive, Lot 92 on RP748442. Hydraulic information on the drainage path will be required per drainage conditions;

Three (3) copies of a plan of the works must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works. All works must be carried out in accordance with the approved plan prior to the issue of a Compliance Certificate for the Plan of Survey.

All works to be carried out in accordance with the approved plan.

7a, b: new pedestrian and cycle connection provided as detailed in drawing 4839-C04.

7c, d: Marlin Drive extension and cul-de-sac is designed to match existing levels to achieve the current flood immunity. Please note, there is no bund as described in 4c and therefore no future extension west is required, nor would this achieve anything.

Three copies of a plan of the works to be submitted to the CEO for endorsement prior to the issue of a Development Permit for Operational Works.

Acid Sulfate Soil Investigation

8. Undertake an Acid Sulfate Soil investigation in the area to be affected by this development. Soil sampling and analysis must be undertaken in accordance with procedures specified in 'Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils in Queensland' (1998) or updated version of document produced by Department of Natural Resources and Mines (Previously DNRW - QASSIT), and State Planning Policy 2/02 - 'Planning and Managing Development involving Acid Sulfate Soils'. The results of this investigation must be submitted to Council for approval prior to any earthworks or clearing being commenced on the site.

Identification of soils with a pyrite content in excess of the action levels nominated in the latest version of DNRM - QASSIT: 'Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils in Queensland' (1998) will trigger the requirement for preparation of an Acid Sulfate Soil Environmental Management Plan in accordance with the most recent requirements of the DNRM: 'Queensland Acid Sulfate Soil Technical Manual' (2002), including Soil Management Guidelines (updated Feb 2003), which must be prepared to the satisfaction of the Chief Executive Officer.

If the excavated drainage reserve is suspected of containing acid sulphate soil, a suitably qualified geo-technical specialist will be engaged to conduct testing. If actual acid sulphate soils (AASS) or potential acid sulphate soils (PASS) are discovered, then management mechanisms will be implemented according to the recommendations.

Drainage Study of Site

9. The design of the drainage infrastructure is to be generally in accordance with the drainage study for the site by DHI International. The applicant must certify that there are no adverse drainage impacts on upstream and downstream properties and/or identify the mitigation measures required to minimise such impacts.

The study must be endorsed as remaining current for this development or must be updated an approved by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works.

The pre- and post-development storm water levels in the "Existing Drainage Reserve," identified on Flanagan Consulting Group Sketch SK02, south from the new drainage reserve are required to be shown on plans submitted with the application for operational works.

The proposed development and drainage infrastructure is generally in accordance with the drainage study of the site by DHI International. The existing case remains the same as in 2013 when this report was commissioned. Building pad levels of RL 4.04m AHD have been set on each lot based on the supplementary Wave Runup model undertaken by DHI International in 2015.

The flood modelling shows that the proposed development results in a net decrease in flood level for the site. The proposed east-west drainage reserve now has a higher capacity, due to the 3.0m wide concrete invert base, and is more central to the site than the design analysed in the 2015 model. Pre- and post- development levels are reduced.

Extent of Earthworks

10. The extent of earthworks as detailed on Flanagan Consulting Group Sketch 4839 SK02 together with the areas of fill for each lot required under Condition 4 above, compliance with the on-site disposal and drainage conditions and subject to the following amendments:

a. **The earthworks fill zones are to avoid localised low points between properties;**
b. **The existing drainage channel in proposed Lots 6 and 7 and the proposed infill lake areas in proposed lots 1 and 3 and the Drainage Reserve are to be filled and compacted to the appropriate standard for residential use/ drainage reserve use at no cost to Council. The applicant must provide a lot classification report for these lots and drainage reserve.**
c. **A construction specification must be included for the decommissioning of the current drain and lake areas proposed to be filled. The construction specification must provide the requirements for clearing, ground preparation and testing prior to filling of these areas. The specification must be included in the operational works supporting information.**
d. **The rear of allotments are to be graded evenly in accordance with the concepts shown on FCG Sketch 4839-SK02 to ensure that they remain free draining throughout the property and through to the drainage reserve or Esplanade area.**
e. **The nominated fill level of 2.9m is to be increased to provide immunity to the 1% AEP storm tide event unless otherwise approved by Council. The Cairns BMT-**

WMB Cairns Region Storm Tide Inundation Study, Final Report and Mapping January 2013 (Council document reference 0# 462510) identified the 1% AEP storm tide event as 4.04 metres AHD having regard to a 0.8m sea level rise and intensity of cyclonic action.

f. **The Applicant's submitted DHI Water and Environment Pty Ltd hydrodynamic analysis dated 9 June 2015 (Council document reference 0#457391) utilised 0.3m AHD sea level rise and intensity of cyclonic action. The DHI hydrodynamic analysis is acceptable only where a 0.8m sea level rise is utilised and an amended study is required to be submitted to the satisfaction of the Chief Executive Officer.**

g. **Any reduction below a 0.8m sea level rise must be supported by an appropriate study that deals with sea level rise and intensity of cyclonic action to be approved by Council.**

h. **The final earthworks design is to be lodged with the application for a Development Permit for Operational Works. Such earthworks must be completed in accordance with the approved plans prior to the issue of a Compliance Certificate for the Plan of Survey.**

The extent of earthworks and site grading has been designed in accordance with the above conditions and has been detailed on drawing 4839-C10. Building pads have been set at RL 4.04m AHD minimum which allows for the 1% AEP storm tide and 0.80m sea level rise.

Access to Hatchet or Battleaxe Lots

11. Construct a concrete driveway or other approved surface to battleaxe Lot 3 extending the full length of the access leg from adjacent kerb and channel with a standard crossover in accordance with FNQROC Development Manual Standard Drawing. Construction of the concrete driveway must be in accordance with FNQROC Development Manual Standard Drawing.

All works must be carried out to the requirements and satisfaction of the Chief Executive Officer prior to the issue of a Compliance Certificate for the Plan of Survey.

The existing sealed access has been visually assessed and shows no sign of deformation, therefore it is proposed to be retained as an access to Lot 3. A 30mm AC overlay is proposed for aesthetic value. See drawing 4839-C03 for detail.

Service Conduits

12. Provide service conduits to Lot 3 adjacent to the driveway together with associated access pits if necessary, to extend from the front boundary to the end of the access driveway.

All works must be carried out to the requirements and satisfaction of the Chief Executive Officer prior to the issue of a Compliance Certificate for the Plan of Survey.

All services (water, electrical and telecommunications) will be provided at the frontage of Lot 3.

Building Envelope Plan

13. A building envelope plan for each of the lots must be lodged with Council prior to the issue of a Compliance Certificate for the Plan of Survey. The building envelope plan must comply with the following requirements:

a. **The building envelope must be pegged on site to the requirements and satisfaction of the Chief Executive Officer; and**
b. **No building, structure, infrastructure or fill shall be sited or vehicle/pedestrian access provided through to the Esplanade within the conservation covenant area for proposed lots 1, 6 or 7.**

The applicant I owner must also ensure that the endorsed building envelope plans are made known to all prospective purchasers of the lots.

Noted. A building envelope plan will be submitted at plan sealing.

Stockpiling and Transportation of Fill Material

14. Soil used for filling or spoil from the excavation is not to be stockpiled in locations that can be viewed from adjoining premises or a road frontage for any longer than one (1) month from the commencement of works.

Transportation of fill or spoil to and from the site must not occur within:

a. **peak traffic times; or**
b. **before 7:00 am or after 6:00 pm Monday to Friday; or**
c. **before 7:00 am or after 1:00 pm Saturdays; or**
d. **on Sundays or Public Holidays.**

Noted and agreed.

15. Dust emissions or other air pollutants must not extend beyond the boundary of the site and cause a nuisance to surrounding properties.

Noted and agreed. Appropriate pollutant mitigation strategy to be implemented as per EPAct during construction.

Storage of Machinery and Plant

16. The storage of any machinery, material and vehicles must not cause a nuisance to surrounding properties, to the satisfaction of the Chief Executive Officer.

Noted and agreed.

Drainage Construction

17. The applicant/owner must undertake the development of the land generally in accordance with the findings of the Drainage Study dated 28 November 2013 prepared by DHI Water and Environment Pty Ltd, (or as updated in accordance with Condition 9).

The drainage reserve profile is to be generally as detailed by Flanagan Consulting Group Sketch 4839-SK02 and SK03 except that a 3m base width concrete channel lining is to be provided to facilitate trafficability and maintenance to the satisfaction of the Chief Executive Officer. The geoweb cellular confinement lining nominated on FCG Sketch 4839-SK03 is not approved.

Provision for the proposed maintenance access must be made on the northern side of the drainage reserve.

Drainage works in the western drainage swale to regrade the swale and direct runoff to the new drainage path are to be nominated on plans included in the application for operational works. The plans must show pre- and post- development surface levels and contours and must identify any significant trees that will be removed to construct the works.

A landscaping plan is required to show revegetation works in both the western swale and the new drainage reserve through to the Esplanade.

Associated earthworks and landscaping must be completed in accordance with the approved plans prior to the issue of a Compliance Certificate for the Plan of Survey.

The development of the land will be undertaken generally in accordance with the findings of DHI's Drainage Study. The profile of the drainage reserve is as shown in FCG sketches 4839-SK02 & SK03 and is detailed on drawing 4839-C06 which incorporates the concrete channel lining as specified. Provision for maintenance access has been provided.

Minimal modifications to the western drainage swale have been proposed in order to retain the existing trees. Proposed works are shown on drawing 4839-C11. No major landscaping/revegetation is proposed for the minimal works. It is simply minor reshaping works to ensure appropriate hydraulic conveyance may occur. Hydromulching of disturbed areas will be implemented as required.

Lawful Point of Discharge

18. All storm water from the property must be directed to a lawful point of discharge such that it does not adversely affect surrounding properties or properties downstream from the development to the requirements and satisfaction of the Chief Executive Officer.

The site generally falls to the new drainage reserve, which is the legal point of discharge.

Plan of Drainage Works

19. The subject land must be drained to the satisfaction of the Chief Executive Officer generally in accordance with Flanagan Consulting Group Sketch 4839-SK02. In particular:

a. **Construction of proposed drainage channel within the drainage reserve per condition 17 above, at no cost to Council;**
b. **Drainage infrastructure in catch drains and roads in accordance with the FNQROC Development Manual;**

c. **All fill areas within the proposed building envelopes allotments shall have immunity from flooding associated with an ARI 100-year (1% AEP) rainfall event; and**
d. **Where practical, all new allotments must be drained to the road frontages, drainage easements or drainage reserves and discharged to the existing drainage system.**

All works comply with the above.

Sediment and Erosion Control

20. A sediment and erosion control plan must be submitted prior the issue of a Development Permit for Operational Works. Such plans must be installed/implemented prior to discharge of water from the site, such that no external storm water flow from the site adversely affects surrounding or downstream properties (in accordance with the requirements of the Environmental Protection Act 1994, and the FNQROC Development Manual).

An erosion and sediment control strategy detailing the primary measures to be constructed is provided in drawings 4839-C13, C14 & C15. Implementation will occur prior to construction commencing.

Existing Services

21. Written confirmation of the location of existing services for the land must be provided. This includes the existing overhead power lines along the western boundary. In any instance where existing services are contained within another lot, the following applies, either:

a. **Relocate the services to comply with this requirement; or**
b. **Arrange registration of necessary easements over services located within another lot prior to, or in conjunction with, the lodgement of a Compliance Certificate for the Plan of Survey creating the lot.**

All known existing services are located on the general arrangement, drawing 4839-C03. Redundant services are to be removed as shown.

Additional road reserve has been provided due to Ergon requirements for their infrastructure to be contained within road reserve.

Electricity Supply

22. Written evidence from Ergon Energy advising if distribution substation/s are required within the development must be provided. If required, details regarding the location of these facilities must be submitted to the Chief Executive Officer accompanied by written confirmation from Ergon Energy. Details regarding electricity supply must be provided prior to the issue of a Development Permit for Operational Works.

No distribution substation is required – refer to electrical drawings submitted under separate cover by SPA Consulting Engineers.

Electricity and Telecommunications

23. Written evidence of negotiations with Ergon Energy and the telecommunication authority must be submitted to Council stating that both an underground electricity supply and telecommunications service will be provided to the development prior to the issue of a Compliance Certificate for the Plan of Survey.

Noted.

Street Lighting

24. The following arrangements for the installation of street lighting within the proposed subdivision must be provided prior to the issue of a Compliance Certificate for the Plan of Survey:

a. **Prior to the approval and dating of the Plan of Survey, a Rate 2 lighting scheme is to be prepared by Ergon Energy or its approved consultant and submitted to the Chief Executive Officer for approval. The Rate 2 lighting scheme is to be designed in accordance with the relevant Road Lighting Standard AS/NZS 1158 and the FNQROC Development Manual. The applicable lighting category is to be determined from the Road Hierarchy Table D1.1 and the corresponding applicable Lighting Categories Table D8.1 as identified in the FNQROC Development Manual.**
b. **The design must provide the applicable illumination level specified in the Road Lighting Standard AS/NZS 1158 at the following road element, Cul-de- sacs (at the northern end of Marlin Drive only)**
c. **Prior to the issue of a Compliance Certificate for the Plan of Survey written confirmation that the relevant capital contribution required by Ergon Energy has been paid must be submitted, to ensure that the street lighting will be constructed.**
d. **Where a new intersection is formed on an existing roadway for the purpose of accessing a new subdivision development, the intersection and existing road approaches must be provided with street lighting for a distance equivalent to at least two (2) spans either side of the intersection to the relevant Lighting Category.**
e. **Where an existing intersection is required to be upgraded as part of a development approval, the intersection and existing road approaches must be provided with street lighting for a distance equivalent to at least two (2) spans either side of the intersection to the relevant Lighting Category.**

Compliance with the above conditions is demonstrated in SPA Consulting Engineers' drawings submitted under separate cover by SPA Consulting Engineers.

Landscape Plan - Conservation Covenant Areas

25. Undertake landscaping of the conservation covenant areas for Lots 1, 6 and 7 inclusive in accordance with FNQROC Development Manual and in accordance with a landscape plan. The landscape plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Work. In particular, the plan must show:

a. **The revegetation of the conservation covenant area including ground, lower, middle and upper storey canopy vegetation using species in accordance with the Planning Scheme Landscaping Policy;**
b. **The revegetation of cut and fill batters;**
c. **Provision of suitable street trees; and**
d. **Inclusion of all requirements as detailed in other relevant conditions included in this Approval, with a copy of this Development Approval to be given to the applicant's Landscape Architect Designer.**

Two (2) A 1 copies and one (1) A3 copy of the landscape plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works. Areas to be landscaped must be established prior to approval and dating of the Plan of Survey and must be maintained for the duration of the on-maintenance period to the satisfaction of the Chief Executive Officer.

Landscaping plans for the conservation covenant area (6m strip within 30m covenant for Lots 1, 6 & 7) have been provided by Landplan Landscape Architecture and demonstrate compliance with the above conditions. Detailed plans can be found in **Appendix C**.

Landscape Plan

26. Undertake landscaping of the site and street frontages of new roads in accordance with FNQROC Development Manual and in accordance with a landscape plan. The landscape plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Work. In particular, the plan must show:

a. **Planting of the footpath with trees, using appropriate species with regard to any overhead powerline constraints;**
b. **The revegetation of cut and fill batters;**
c. **Species to have regard to the Planning Scheme Landscaping Policy;**
d. **Remediation and revegetation works to be undertaken within the both the major drainage line and the drainage reserve;**
e. **Inclusion of all requirements as detailed in other relevant conditions included in this Approval, with a copy of this Development Approval to be given to the applicant's Landscape Architect I Designer.**

Two (2) A1 copies and one (1) A3 copy of the landscape plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works. Areas to be landscaped must be established prior to approval and dating of the Plan of Survey and must be maintained for the duration of the on-maintenance period to the satisfaction of the Chief Executive Officer.

Landscaping plans have been provided by Landplan Landscape Architecture and demonstrate compliance with the above conditions. Detailed plans can be found in **Appendix C**.

Damage to Council Infrastructure

27. If any part of Council's existing water or road infrastructure is damaged because of construction activities occurring on the site, including but not limited to; mobilisation of heavy construction equipment, stripping and grubbing, the applicant/owner must notify Council immediately of the affected infrastructure and have it repaired or replaced at the developer's/owners/builders cost, prior to the Commencement of any Use.

Noted and agreed.

4.0 COMPLIANCE WITH COUNCIL'S DEVELOPMENT CONDITION

We confirm that the design and documentation of this generally in accordance with Council's Development Manual – "FNQROC Development Manual" as outlined in this report.

5.0 SUPPORTING INFORMATION

5.1 Roadworks

The Marlin Drive cul-de-sac extension has been designed in accordance with FNQROC Design Guidelines and the relevant sections of AUSTROADS and Queensland Streets.

The existing sightboard is to be removed and the existing pavement sawcut so that the extension may be matched in neatly with the existing road. The cul-de-sac has been graded to prevent external storm water flows entering Marlin Drive and creating flooding and trafficability issue as per DSC's conditions.

All existing trees in the road verge are to be removed. Bollards have been provided at the cul-de-sac head to prevent unwanted vehicle access.

5.2 Pedestrian Connectivity

A 2-metre-wide footpath is proposed to connect Marlin Drive with the existing bitumen footpath skirting the western boundary of the site through the cul-de-sac extension. The new pathway is to transition from the existing pathway on Marlin Drive to 2.0m in width over a 4.0m section. This then grades to match with the existing pathway to the west of the cul-de-sac head over 6.5m.

5.3 Site Grading

Site grading has been developed based on flood modelling as part of the drainage study undertaken by DHI Water & Environment Pty Ltd. Site grading prior to the provision of building pads has been detailed as per drawing 4839-C09 to ensure all lots are free draining to the new drainage channel.

Building pads (min 1,000m^2) for the 7 allotments in this development have been elevated and set to RL 4.04m AHD provide immunity to the 1% AEP storm tide and flood events.

5.4 Stormwater Drainage

This development is bisected by a proposed 20m wide concrete inverted drainage reserve which provides drainage for the proposed lots whilst also upgrading the connection to the beach outlet for local drainage flows which are conveyed overland via the existing coastal gutter drain.

The drainage reserve has been modelled previously by DHI International and documented in accordance with the drainage report and RoL conditions.

5.5 Sewerage Reticulation

The on-site sewage disposal assessment report prepared by Gilbert and Sutherland (2010) found that there is only limited impediment with regard to on-site effluent disposal – based on a proposed minimum lot size of 800m^2. The scope of development has changed significantly, and the smallest lot size of the currently proposed development is approximately 5,000m2. In view of this, we confirm that on site sewer treatment can be achieved and comply with the current codes and standards.

Compliance with the current codes and standards of the proposed on-site sewage treatment will be provided at the plumbing approval stage of each residential dwelling.

5.6 Water Reticulation

The water reticulation has been designed in accordance with the FNQROC Design Guidelines and WSA 03-2002 – Water Supply Code of Australia.

Water reticulation works in this development are limited to two main extensions at both Marlin and Oasis Drive.

Lots 4-7 are to be serviced at the cul-de-sac head by looping the existing DN100 main at Marlin Drive. Lots 2 & 3 are serviced by connecting to and extending the existing DN150 main on Oasis Drive, while Lot 1 is serviced by an existing connection located at the cul-se-sac head at Bells Reef Close. The water reticulation plan is detailed in project drawing 4839-C12.

5.7 Utility Services

The detailed electrical designs have been undertaken by SPA Consulting Engineers (QLD) Pty Ltd and has been approved by Ergon Energy. Electrical plans were submitted to Council under separate cover on 31st of May 2018.

5.8 Erosion and Sediment Control Strategy

An Erosion and Sediment Control Strategy has been produced to assist in minimising erosion and the transportation of sediment from the site and as a guide to the contractor in producing an Erosion and Sediment Control Plan.

The strategy includes the provision of a sediment fence at the boundary of the south-east corner of Lot 1, a rock check dam where the drainage reserve connects to the coastal gutter drain and a kerb inlet sediment trap within the existing drainage channel at Marlin Drive.

The ESCS is shown in project drawing 4839-C13.

5.9 Landscaping

The landscaping design for the development to be completed by Landplan Landscape Architecture is attached in **Appendix C**.

6.0 RECOMMENDATIONS

Following consideration of this design submission report and the accompanying design documentation it is requested that:

1. Council approve the design and documentation of the subdivision as presented in this report.

2. Council approve the design and documentation of the landscaping and issue an Operational Works Permit.

3. Council issue an Operational Works Permit for the civil works.

GREG APPLIN

Senior Civil Engineer – Cairns

RPEQ - 6073

FLANAGAN
CONSULTING GROUP
Trusted Advisor to Northern Australia

APPENDIX: A

Reconfiguration of Lot Decision Notice ROL 1961/2017

DOUGLAS
SHIRE COUNCIL

PO Box 723 Mossman Qld 4873
www.douglas.qld.gov.au
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ABN 71 241 237 800

Administration Office
64 - 66 Front St Mossman
P 07 4099 9444
F 07 4098 2902

YOUR REF: R-EC1881
OUR REF: ROL 1961/2017 (D#827371) SC

19 September 2017

Port Pacific Estates Pty Limited
c/- Flanagan Consulting Group
PO Box 5820
CAIRNS QLD 4870 erin@flanaganconsulting.com.au

Attention: Ms Erin Campbell

Dear Madam

DECISION NOTICE UNDER S 335 SUSTAINABLE PLANNING ACT 2009: DEVELOPMENT APPLICATION FOR 2L OASIS DRIVE WONGA BEACH

With reference to the abovementioned Development Application, which was determined by Council at the Ordinary Meeting held on 19 September 2017, please find attached the relevant Decision Notice.

The Notice includes extracts from the Act with respect to making representations about conditions, negotiated decisions, suspension of the appeal period, and lodging an Appeal.

This notice also includes an Infrastructure Charges Notice issued in accordance with sections 119 and 120 of the *Planning Act 2016.*

Council also resolved at the Ordinary Meeting that the following notation will be placed on Council's future rates record in respect of the new lots:

1. For each of the proposed Lots 1, 6 and 7:

    a. There are conservation covenants registered over part of the land, as required under Development Approval ROL 1961/2017, being: a 6m setback from the eastern property boundary to the Esplanade as required by the Assessment Manager; and a further area of setback from the eastern boundary as required by the Concurrence Agency, the Department of Infrastructure, Local Government and Planning. No building, structure or infrastructure may be developed in this covenanted area.

b. Vehicle access to the Esplanade from this lot is prohibited.

2. For all lots:

a. The area of fill on the proposed lots must be setback 6m from all roads and Esplanade, refer to Development Approval ROL 1961/2017.

Should you have any enquiries in relation to this Decision Notice, please contact Jenny Elphinstone of Sustainable Communities on telephone number 07 4099 9482.

Yours faithfully

Tracey Crouch
A/Manager Sustainable Communities

Att

DOUGLAS
SHIRE COUNCIL

PO Box 723 Mossman Qld 4873
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64 - 66 Front St Mossman
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DECISION NOTICE DETAILS
SUSTAINABLE PLANNING ACT 2009

APPLICANT DETAILS
Port Pacific Estates Pty Limited
c/- Flanagan Consulting Group
PO Box 5820
CAIRNS QLD 4870

ADDRESS
2L Oasis Drive, Wonga Beach

REAL PROPERTY DESCRIPTION
Lot 2 on SP259953

PROPOSAL
Reconfiguration of 1 lot into 7 lots and drainage reserve

DECISION
Approved subject to conditions (refer to approval package below).

DECISION DATE
19 September 2017

TYPE
Reconfiguration of a Lot (Development Permit)

REFERRAL AGENCIES

For an application involving	Name of referral agency	Advice agency or concurrence agency	Address
SPA 200Schedule 7, Table 2, Item 14, *SP Reg 2009*, Development in a coastal management district	Department of Infrastructure, Local Government and Planning	Advice or Concurrence	Far North Queensland Regional Office PO Box 2358 CAIRNS QLD 4870

SUBMISSIONS
There were no submissions for this application.

FURTHER DEVELOPMENT PERMITS REQUIRED
Development Permit for Operational Work

CODES TO COMPLY WITH FOR SELF-ASSESSABLE DEVELOPMENT
None

DOES THE ASSESSMENT MANAGER CONSIDER THE APPLICATION TO BE IN CONFLICT WITH APPLICABLE CODES, PLANNING SCHEME, STATE PLANNING POLICIES OR PRIORITY INFRASTRUCTURE PLAN (IF YES, INCLUDE STATEMENT OF REASONS)
Not in conflict

APPROVED DRAWING(S) AND/OR DOCUMENT(S)
The term 'approved drawing(s) and/or document(s)' or other similar expression means:

Drawing or Document	Reference	Date
Proposal Plan	Flanagan Consulting Group Drawing 4839-SK01 dated 6 March 2017 and as amended by Condition 4 and the Concurrence agency Conditions	To be determined
Stormwater Drainage	Flanagan Consulting Group Drawing 4839-SK02	Undated and as submitted to Council on 16 March 2017
Proposed Drainage Channel	Flanagan Consulting Group Drawing 4839-SK02, Undated and as submitted to Council on 16 March 2017 and as amended by Condition 4.	To be determined
Water Reticulation	Flanagan Consulting Group Drawing 4839-SK04	Undated and as submitted to Council on 16 March 2017

ASSESSMENT MANAGER CONDITIONS:

1. Carry out the approved development generally in accordance with the approved drawing(s) and/or document(s), and in accordance with:

   a. The specifications, facts and circumstances as set out in the application submitted to Council; and

   b. The following conditions of approval and the requirements of Council's Planning Scheme and the FNQROC Development Manual.

   Except where modified by these conditions of approval.

Timing of Effect

2. The conditions of the Development Permit must be effected prior to Commencement of Use, except where specified otherwise in these conditions of approval.

Access

3. No lot is to have vehicle access to or from the Esplanade.

Street Layout and Design

4. The street layout and design is to be generally in accordance with Flanagan Consulting Group Proposal Plan, Sketch 4839-SK01 subject to:

   a. The south-east corner of Lot 1 is to be truncated to facilitate access from the drainage reserve to the esplanade. The boundary of Lot 1 must be set back 5m from the top of bank for the existing drain based on a detailed survey of the site.

   b. Provision of a minimum fill area of 1000m^2 on each lot for building work and onsite waste water disposal whereby:

      i. Fill areas must not include any covenant areas as required by a concurrence agency;

      ii. Setback of fill areas a minimum of 6m from the property boundary from all roads and Esplanade;

      iii. Setback of fill areas a minimum of 3.0 metres from the southern boundary of proposed Lot 7;

      iv. The fill pad for proposed Lots 1 and 2 must be extended to the respective northern boundary and retained or setback a minimum of 3.0 metres from the northern boundary;

      v. Fill areas for the lots are at a level to provide an immunity to a 1% storm tide event and a 1% flood event;

      vi. Fill for proposed lots must be graded away from the east to the west and must not result in ponding of water between the fill pad and the existing road reserve to the west; and

      vii. All fill is to drain to lawful point of discharge and must not detrimentally impact on upstream, downstream or surrounding land and/or proposed lots;

c. Appropriate protection is to be provided at the Marlin Drive cul-de-sac to prevent non authorised vehicles from accessing the pedestrian link including at a minimum, barrier kerbing and bollards. The applicant is to assess the need for additional barriers and or landscaping in these areas;

d. The access to the drainage channel is to be designed to facilitate normal maintenance machinery and is to be fitted with suitable gates;

e. Provision of estuarine crocodile warning signs to the new road and public pedestrian pathways;

f. A 6m setback area from the eastern boundary (to the Esplanade) is to be included in a conservation covenant area and is to be vegetated in accordance with Condition 25;

g. Provision of suitable vehicle access for Council from the pedestrian pathway to the Esplanade and foreshore for maintenance purposes. These purposes include the ability to access to maintain the open channel drainage flow path;

h. Provide a suitable surface cover and finish to the 20m wide drainage easement area and provide a naturally, vegetated invert to provide a stabilised channel that is able to be traversed by Council's maintenance equipment;

i. The access strip to proposed Lot 3 must have a minimum width of 4m and a sealed pavement of not less than 3m; and

j. Any amendments required to comply with the conditions and the requirements of Queensland Streets and the FNQROC Development Manual;

The detailed design plans incorporating the above requirements must be submitted to the satisfaction of the Chief Executive Officer with the application for a Development Permit for Operational Works.

All works must be carried out in accordance with the approved plans, to the requirements and satisfaction of the Chief Executive Officer prior to the issue of a Compliance Certificate for the Plan of Survey.

Water Supply

5. Undertake water supply works internal to the subject land in accordance with the FNQROC development manual within the internal road system such that each lot can be connected to Council's water supply network at the lot frontage. A plan of the water supply reticulation network is to be generally in accordance with Flanagan Consulting Group Sketch 4839-SK04 and must be supported by appropriate calculations including hydraulic network analysis demonstrating compliance with FNQROC. In particular, the plan must include:

a. A minimum 100mm diameter main on one side and a 50mm (63mm OD) main on the opposite side to provide a looped service a the northern end of Marlin Drive;

b. Provide the conduit for water supply for the full length of the access leg for proposed Lot 3. The conduit does not need to be connected to Council's water supply. The conduit must be capped and staked at the road frontage of the lots and at the end of the access leg for easy identification when a future house is constructed on this lot.

The plan must also identify any infrastructure external to the subdivision that may require upgrading to accommodate the development and achieve the minimum pressures for maximum hour and fire fighting scenarios.

All the above works must be designed and constructed in accordance with the FNQROC Development Manual.

All works must be carried out in accordance with the approved plans, to the requirements and satisfaction of the Chief Executive Officer prior to the issue of a Compliance Certificate for the Plan of Survey.

On-Site Effluent Disposal

6. The On-Site Sewage Disposal Assessment Report prepared by Gilbert and Sutherland (2010) must be reviewed and confirmation provided to Council that the report findings and recommendations remain consistent with current Codes and Standards.

Subject to the above confirmation of currency, the method of on-site effluent disposal must be in accordance with the recommendations contained in the On-Site Sewage Disposal Assessment Report prepared by Gilbert and Sutherland or as otherwise approved by the Chief Executive Officer.

The review and advice on the Gilbert and Sutherland (2010) report is to be provided to Council with the Operational Works application for site works to verify that no additional works are required for effluent disposal.

General External Works

7. Undertake the following external works:-

a. Provide a new pedestrian and cycle connection across the realigned drain to reinstate the pathway connection from the northern end of Marlin Drive to the pathway running to the west from the development site;

b. The detail design in (a) above must include hydraulic assessment of the afflux through the new culverts and must maximise the waterway area to achieve minimum afflux through the culvert;

c. The northern end of Marlin Drive currently has a levee/berm to prevent the stormwater flows within the drain entering Marlin Drive and creating flooding and trafficability issues. The construction of the Marlin Drive extension and cul-de-sac is to be graded and designed to achieve a similar barrier to protect Marlin Drive from external flows entering the street; and

d. The applicant is to provide sufficient site level information to assess whether the bund in (c) above is required to extend west along the boundary with 102 Marlin Drive, Lot 92 on RP748442. Hydraulic information on the drainage path will be required per drainage conditions;

Three (3) copies of a plan of the works must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works. All works must be carried out in accordance with the approved plan prior to the issue of a Compliance Certificate for the Plan of Survey.

Acid Sulfate Soil Investigation

8. Undertake an Acid Sulfate Soil investigation in the area to be affected by this development. Soil sampling and analysis must be undertaken in accordance with procedures specified in 'Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils in Queensland' (1998) or updated version of document produced by Department of Natural Resources and Mines (Previously DNRW – QASSIT), and State Planning Policy 2/02 – 'Planning and Managing Development involving Acid Sulfate Soils'. The results of this investigation must be submitted to Council for approval prior to any earthworks or clearing being commenced on the site.

   Identification of soils with a pyrite content in excess of the action levels nominated in the latest version of DNRM – QASSIT: 'Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils in Queensland' (1998) will trigger the requirement for preparation of an Acid Sulfate Soil Environmental Management Plan in accordance with the most recent requirements of the DNRM: 'Queensland Acid Sulfate Soil Technical Manual' (2002), including Soil Management Guidelines (updated Feb 2003), which must be prepared to the satisfaction of the Chief Executive Officer.

Drainage Study of Site

9. The design of the drainage infrastructure is to be generally in accordance with the drainage study for the site by DHI International. The applicant must certify that there are no adverse drainage impacts on upstream and downstream properties and/or identify the mitigation measures required to minimise such impacts.

   The study must be endorsed as remaining current for this development or must be updated an approved by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works.

The pre and post-development stormwater levels in the "Existing Drainage Reserve," identified on Flanagan Consulting Group Sketch SK02, south from the new drainage reserve are required to be shown on plans submitted with the application for operational works.

Extent of Earthworks

10. The extent of earthworks as detailed on Flanagan Consulting Group Sketch 4839 SK02 together with the areas of fill for each lot required under Condition 4 above, compliance with the on-site disposal and drainage conditions and subject to the following amendments:

    a. The earthworks fill zones are to avoid localised low points between properties;

    b. The existing drainage channel in proposed Lots 6 and 7 and the proposed infill lake areas in proposed lots 1 and 3 and the Drainage Reserve are to be filled and compacted to the appropriate standard for residential use/ drainage reserve use at no cost to Council. The applicant must provide a lot classification report for these lots and drainage reserve.

    c. A construction specification must be included for the decommissioning of the current drain and lake areas proposed to be filled. The construction specification must provide the requirements for clearing, ground preparation and testing prior to filling of these areas. The specification must be included in the operational works supporting information.

    d. The rear of allotments are to be graded evenly in accordance with the concepts shown on FCG Sketch 4839-SK02 to ensure that they remain free draining throughout the property and through to the drainage reserve or Esplanade area.

    e. The nominated fill level of 2.9m is to be increased to provide immunity to the 1% AEP stormtide event unless otherwise approved by Council. The Cairns BMT-WMB Cairns Region Storm Tide Inundation Study, Final Report and Mapping January 2013 (Council document reference D# 462510) identified the 1% AEP stormtide event as 4.04 metres AHD having regard to a 0.8m sea level rise and intensity of cyclonic action.

       The Applicant's submitted DHI Water and Environment Pty Ltd hydrodynamic analysis dated 9 June 2015 (Council document reference D#457391) utilised 0.3m AHD sea level rise and intensity of cyclonic action. The DHI hydrodynamic analysis is acceptable only where a 0.8m sea level rise is utilised and an amended study is required to be submitted to the satisfaction of the Chief Executive Officer.

       Any reduction below a 0.8m sea level rise must be supported by an appropriate study that deals with sea level rise and intensity of cyclonic action to be approved by Council.

The final earthworks design is to be lodged with the application for a Development Permit for Operational Works. Such earthworks must be completed in accordance with the approved plans prior to the issue of a Compliance Certificate for the Plan of Survey.

Access to Hatchet or Battleaxe Lots

11. Construct a concrete driveway or other approved surface to battleaxe Lot 3 extending the full length of the access leg from adjacent kerb and channel with a standard crossover in accordance with FNQROC Development Manual Standard Drawing. Construction of the concrete driveway must be in accordance with FNQROC Development Manual Standard Drawing.

    All works must be carried out to the requirements and satisfaction of the Chief Executive Officer prior to the issue of a Compliance Certificate for the Plan of Survey.

Service Conduits

12. Provide service conduits to Lot 3 adjacent to the driveway together with associated access pits if necessary, to extend from the front boundary to the end of the access driveway.

    All works must be carried out to the requirements and satisfaction of the Chief Executive Officer prior to the issue of a Compliance Certificate for the Plan of Survey.

Building Envelope Plan

13. A building envelope plan for each of the lots must be lodged with Council prior to the issue of a Compliance Certificate for the Plan of Survey. The building envelope plan must comply with the following requirements:

    a. The building envelope must be pegged on site to the requirements and satisfaction of the Chief Executive Officer; and

    b. No building, structure, infrastructure or fill shall be sited or vehicle /pedestrian access provided through to the Esplanade within the conservation covenant area for proposed lots 1, 6 or 7.

    The applicant / owner must also ensure that the endorsed building envelope plans are made known to all prospective purchasers of the lots.

Stockpiling and Transportation of Fill Material

14. Soil used for filling or spoil from the excavation is not to be stockpiled in locations that can be viewed from adjoining premises or a road frontage for any longer than one (1) month from the commencement of works.

Transportation of fill or spoil to and from the site must not occur within:

a. peak traffic times; or

b. before 7:00 am or after 6:00 pm Monday to Friday; or

c. before 7:00 am or after 1:00 pm Saturdays; or

d. on Sundays or Public Holidays.

15. Dust emissions or other air pollutants must not extend beyond the boundary of the site and cause a nuisance to surrounding properties.

Storage of Machinery and Plant

16. The storage of any machinery, material and vehicles must not cause a nuisance to surrounding properties, to the satisfaction of the Chief Executive Officer.

Drainage Construction

17. The applicant / owner must undertake the development of the land generally in accordance with the findings of the Drainage Study dated 28 November 2013 prepared by DHI Water and Environment Pty Ltd, (or as updated in accordance with Condition 9). The drainage reserve profile is to be generally as detailed by Flanagan Consulting Group Sketch 4839-SK02 and SK03 except that a 3m base width concrete channel lining is to be provided to facilitate trafficability and maintenance to the satisfaction of the Chief Executive Officer. The geoweb cellular confinement lining nominated on FCG Sketch 4839-SK03 is not approved.

    Provision for the proposed maintenance access must be made on the northern side of the drainage reserve.

    Drainage works in the western drainage swale to regrade the swale and direct runoff to the new drainage path are to be nominated on plans included in the application for operational works. The plans must show pre and post development surface levels and contours and must identify any significant trees that will be removed to construct the works.

    A landscaping plan is required to show revegetation works in both the western swale and the new drainage reserve through to the Esplanade.

    Associated earthworks and landscaping must be completed in accordance with the approved plans prior to the issue of a Compliance Certificate for the Plan of Survey.

Lawful Point of Discharge

18. All stormwater from the property must be directed to a lawful point of discharge such that it does not adversely affect surrounding properties or properties downstream from the development to the requirements and satisfaction of the Chief Executive Officer.

Plan of Drainage Works

19. The subject land must be drained to the satisfaction of the Chief Executive Officer generally in accordance with Flanagan Consulting Group Sketch 4839-SK02. In particular:

    a. Construction of proposed drainage channel within the drainage reserve per condition 17 above, at no cost to Council;

    b. Drainage infrastructure in catch drains and roads in accordance with the FNQROC Development Manual;

    c. All fill areas within the proposed building envelopes allotments shall have immunity from flooding associated with an ARI 100 year (1% AEP) rainfall event; and

    d. Where practical, all new allotments must be drained to the road frontages, drainage easements or drainage reserves and discharged to the existing drainage system.

Sediment and Erosion Control

20. A sediment and erosion control plan must be submitted prior the issue of a Development Permit for Operational Works. Such plans must be installed / implemented prior to discharge of water from the site, such that no external stormwater flow from the site adversely affects surrounding or downstream properties (in accordance with the requirements of the Environmental Protection Act 1994, and the FNQROC Development Manual).

Existing Services

21. Written confirmation of the location of existing services for the land must be provided. This includes the existing overhead power lines along the western boundary. In any instance where existing services are contained within another lot, the following applies, either:

    a. Relocate the services to comply with this requirement; or

    b. Arrange registration of necessary easements over services located within another lot prior to, or in conjunction with, the lodgement of a Compliance Certificate for the Plan of Survey creating the lot.

Electricity Supply

22. Written evidence from Ergon Energy advising if distribution substation/s are required within the development must be provided. If required, details regarding the location of these facilities must be submitted to the Chief Executive Officer accompanied by written confirmation from Ergon Energy. Details regarding electricity supply must be provided prior to the issue of a Development Permit for Operational Works.

Electricity and Telecommunications

23. Written evidence of negotiations with Ergon Energy and the telecommunication authority must be submitted to Council stating that both an underground electricity supply and telecommunications service will be provided to the development prior to the issue of a Compliance Certificate for the Plan of Survey.

Street Lighting

24. The following arrangements for the installation of street lighting within the proposed subdivision must be provided prior to the issue of a Compliance Certificate for the Plan of Survey:

    a. Prior to the approval and dating of the Plan of Survey, a Rate 2 lighting scheme is to be prepared by Ergon Energy or its approved consultant and submitted to the Chief Executive Officer for approval. The Rate 2 lighting scheme is to be designed in accordance with the relevant Road Lighting Standard AS/NZS 1158 and the FNQROC Development Manual. The applicable lighting category is to be determined from the Road Hierarchy Table D1.1 and the corresponding applicable Lighting Categories Table D8.1 as identified in the FNQROC Development Manual.

    The design must provide the applicable illumination level specified in the Road Lighting Standard AS/NZS 1158 at the following road element, Cul-de-sacs (at the northern end of Marlin Drive only)

    b. Prior to the issue of a Compliance Certificate for the Plan of Survey written confirmation that the relevant capital contribution required by Ergon Energy has been paid must be submitted, to ensure that the street lighting will be constructed.

    c. Where a new intersection is formed on an existing roadway for the purpose of accessing a new subdivision development, the intersection and existing road approaches must be provided with street lighting for a distance equivalent to at least two (2) spans either side of the intersection to the relevant Lighting Category.

    d. Where an existing intersection is required to be upgraded as part of a development approval, the intersection and existing road approaches must be provided with street lighting for a distance equivalent to at least two (2) spans either side of the intersection to the relevant Lighting Category.

Landscape Plan – Conservation Covenant Areas

25. Undertake landscaping of the conservation covenant areas for Lots 1, 6 and 7 inclusive in accordance with FNQROC Development Manual and in accordance with a landscape plan. The landscape plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Work. In particular, the plan must show:

    a. The revegetation of the conservation covenant area including ground, lower, middle and upper storey canopy vegetation using species in accordance with the Planning Scheme Landscaping Policy;

    b. The revegetation of cut and fill batters;

    c. provision of suitable street trees; and

    d. Inclusion of all requirements as detailed in other relevant conditions included in this Approval, with a copy of this Development Approval to be given to the applicant's Landscape Architect / Designer.

    Two (2) A1 copies and one (1) A3 copy of the landscape plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works. Areas to be landscaped must be established prior to approval and dating of the Plan of Survey and must be maintained for the duration of the on-maintenance period to the satisfaction of the Chief Executive Officer.

Landscape Plan

26. Undertake landscaping of the site and street frontages of new roads in accordance with FNQROC Development Manual and in accordance with a landscape plan. The landscape plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Work. In particular, the plan must show:

    a. Planting of the footpath with trees, using appropriate species with regard to any overhead powerline constraints;

    b. The revegetation of cut and fill batters;

    c. Species to have regard to the Planning Scheme Landscaping Policy;

    d. Remediation and revegetation works to be undertaken within the both the major drainage line and the drainage reserve;

    e. Inclusion of all requirements as detailed in other relevant conditions included in this Approval, with a copy of this Development Approval to be given to the applicant's Landscape Architect / Designer.

Two (2) A1 copies and one (1) A3 copy of the landscape plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works. Areas to be landscaped must be established prior to approval and dating of the Plan of Survey and must be maintained for the duration of the on-maintenance period to the satisfaction of the Chief Executive Officer.

Damage to Council Infrastructure

27. In the event that any part of Council's existing water or road infrastructure is damaged as a result of construction activities occurring on the site, including but not limited to; mobilisation of heavy construction equipment, stripping and grubbing, the applicant/owner must notify Council immediately of the affected infrastructure and have it repaired or replaced at the developer's/owners/builders cost, prior to the Commencement of any Use.

REFERRAL AGENCY CONDITIONS & REQUIREMENTS

Referral Agency	Referral Agency Reference	Date	Council Electronic Reference
Department of Infrastructure, Local Government & Planning	SDA-0317-038201	29 June 2017	D#820403

Refer to Attachment 2: Referral Agency Requirements. (Please note that these conditions / requirements may be superseded by subsequent negotiations with the relevant referral agencies).

ADVICE

1. This approval, granted under the provisions of the *Sustainable Planning Act 2009*, shall lapse four (4) years from the day the approval takes effect in accordance with the provisions of section 339 of the *Sustainable Planning Act 2009*.

2. All building site managers must take all action necessary to ensure building materials and / or machinery on construction sites are secured immediately following the first cyclone watch and that relevant emergency telephone contacts are provided to Council officers, prior to commencement of works.

3. This approval does not negate the requirement for compliance with all other relevant Local Laws and other statutory requirements.

Infrastructure Charges Notice

4. A charge levied for the supply of trunk infrastructure is payable to Council towards the provision of trunk infrastructure in accordance with the Adopted Infrastructure Charges Notice, a copy of which is attached for reference purposes only. The original Adopted Infrastructure Charges Notice will be provided under cover of a separate letter:

   The amount in the Adopted Infrastructure Charges Notice has been calculated according to Council's Adopted Infrastructure Charges Resolution.

   Please note that this Decision Notice and the Adopted Infrastructure Charges Notice are stand-alone documents. The Sustainable Planning Act 2009 confers rights to make representations and appeals in relation to a Decision Notice and an Adopted Infrastructure Charges Notice separately.

   The amount in the Adopted Infrastructure Charges Notice is subject to index adjustments and may be different at the time of payment. Please contact Development Assessment and Coordination at Council for review of the charge amount prior to payment.

   The time when payment is due is contained in the Adopted Infrastructure Charges Notice.

5. For information relating to the *Sustainable Planning Act 2009* and the *Planning Act 2016* log on to www.dilgp.qld.gov.au. To access the *FNQROC Development Manual*, Local Laws and other applicable Policies, log on to www.douglas.qld.gov.au.

6. Advice Statement for Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

   You are advised that the EPBC Act applies to action that has, will have, or is likely to have, a significant impact on matters of national environmental significance.

   Further information on the EPBC Act can be obtained from the Department of the Environment's website www.environment.gov.au/epbc EPBC Act Policy Statement 1.1 *Significant Impact Guidelines Matters of National Environmental Significance* (Oct 2009).

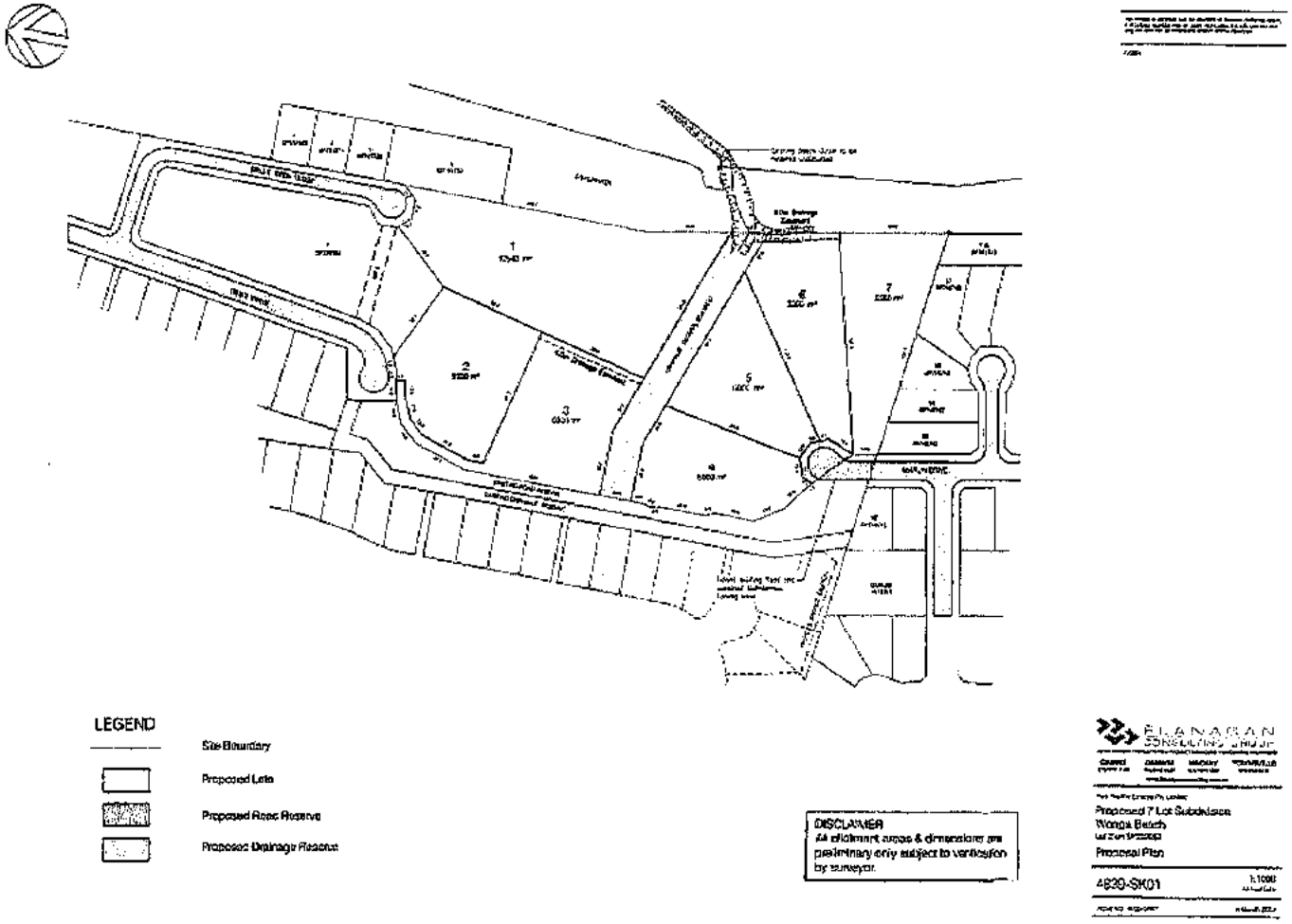
RIGHTS OF REPRESENTATIONS ON CONDITIONS AND RIGHTS OF APPEAL
Attached

End of Decision Notice

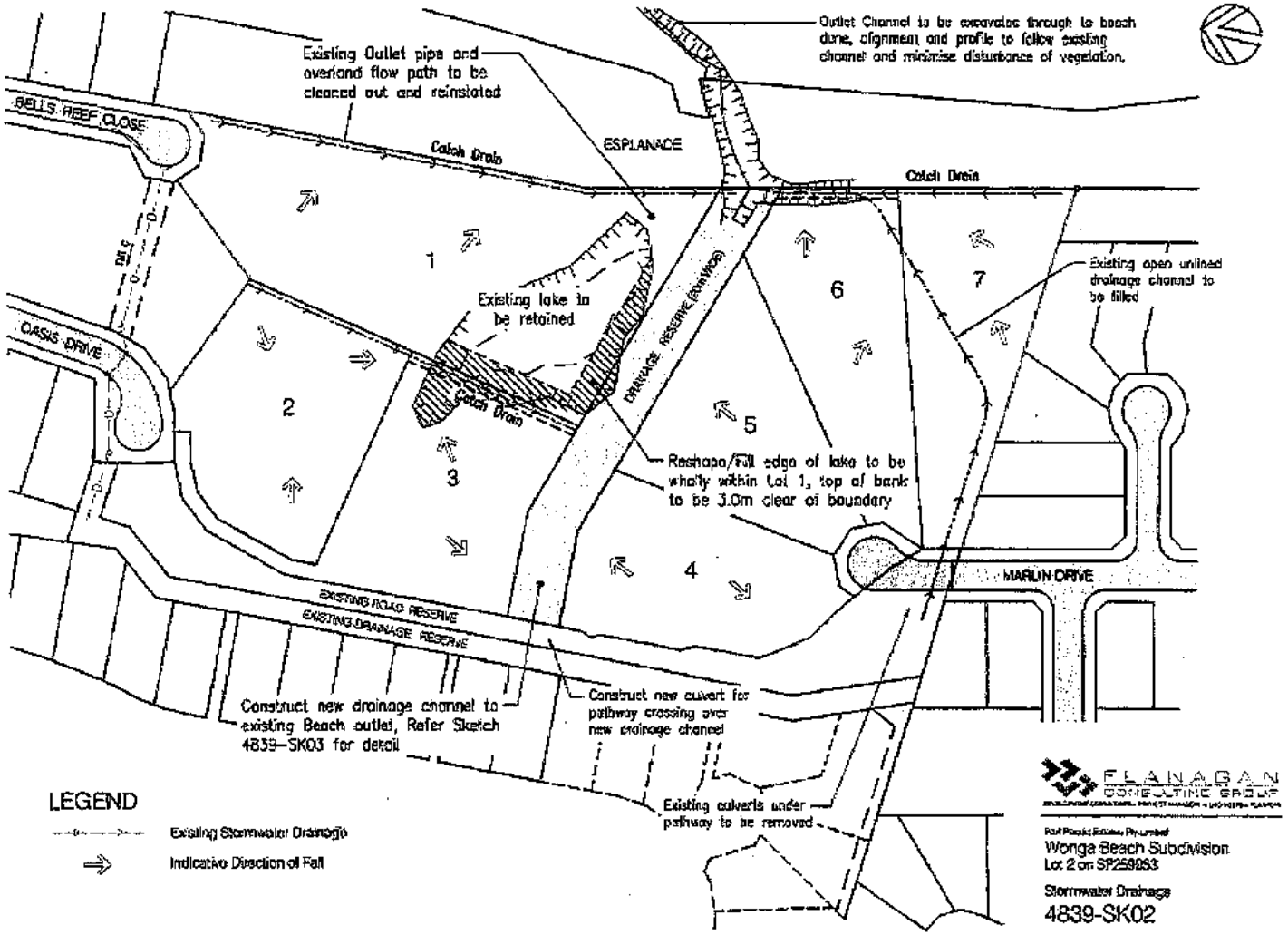
DECISION NOTICE DETAILS
SUSTAINABLE PLANNING ACT 2009

APPENDIX 1: APPROVED DRAWING(S) & DOCUMENT(S)

Subject to Conditions of Approval.



17 / 32 (D#827371)
41.2017.1961



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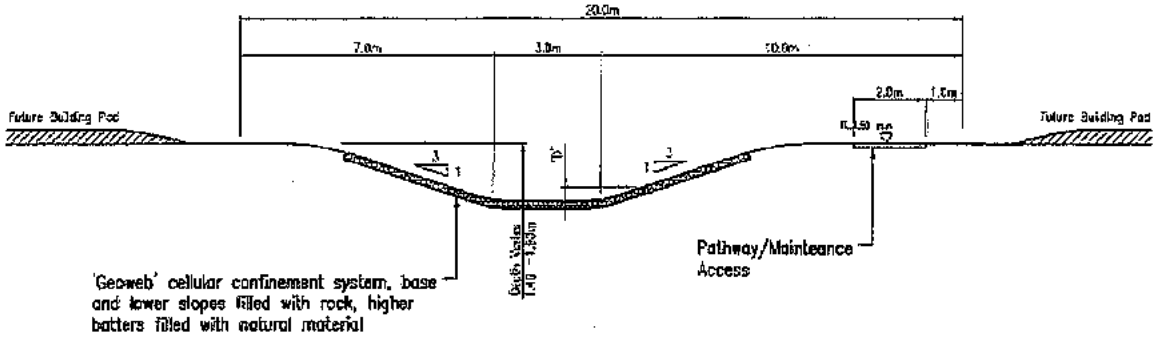


PROPOSED DRAINAGE CHANNEL
1:100

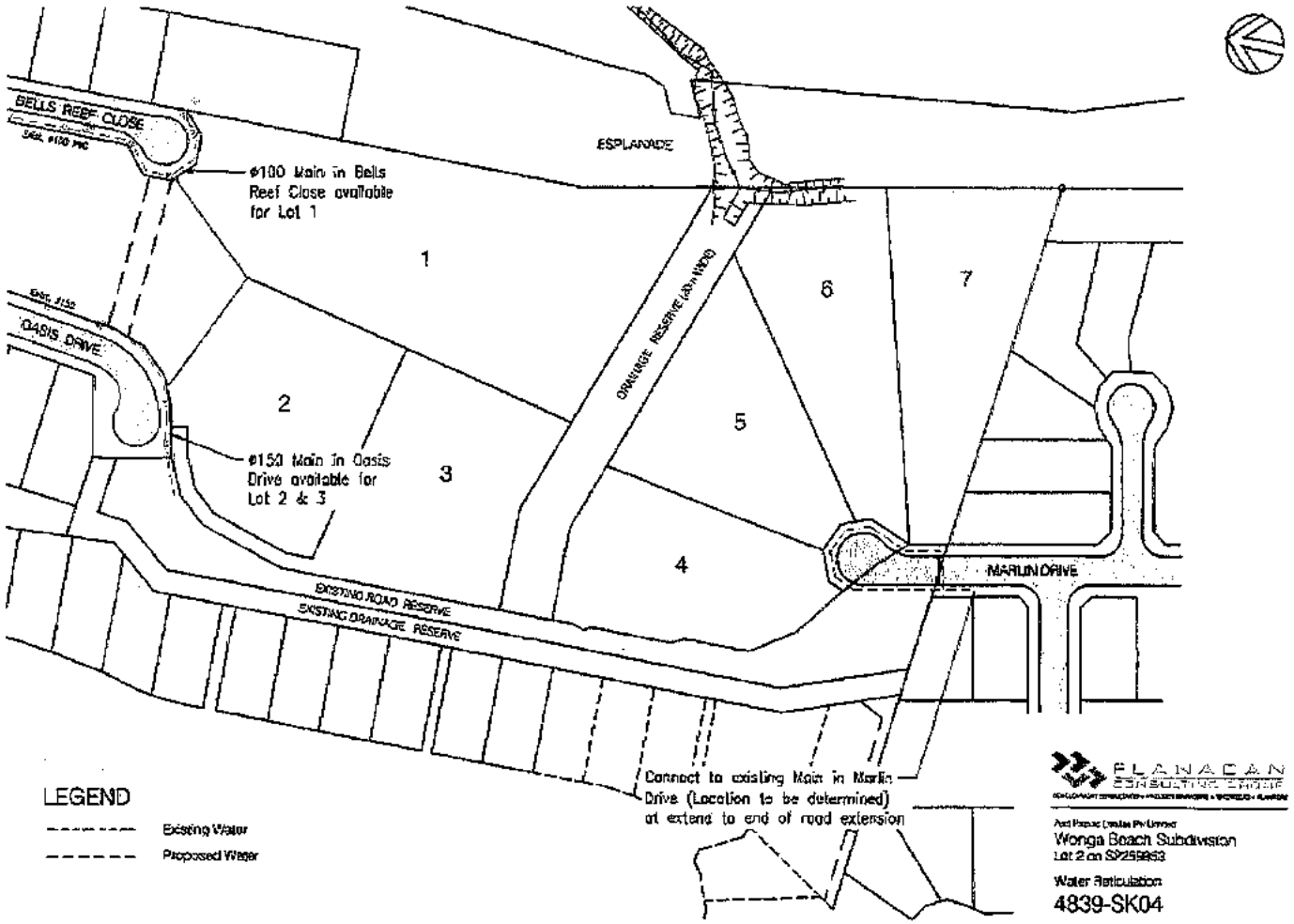
FLANAGAN CONSULTING GROUP

Port Pacific Estates Pty Limited
Wonga Beach Subdivision
Lot 2 on SP259953

Drainage Details
4839-SK03

41.2017.1961
19/32 (D#827371)

DECISION NOTICE DETAILS
SUSTAINABLE PLANNING ACT 2009



PLANACAN CONSULTING ENGINEERS

Wonga Beach Subdivision
Lot 2 on SP259953

Water Reticulation
4839-SK04

41.2017.1961
20/32 (D#827371)

APPENDIX 2: REFERRAL AGENCY REQUIREMENTS

Queensland Government

Department of Infrastructure, Local Government and Planning

Our reference: SDA-0317-038201
Applicant reference: 4839/01 L-EC1882
Council reference: RCL 1961/2017

29 June 2017

Chief Executive Officer
Douglas Shire Council
PO Box 723
Mossman QLD 4873

enquiries@douglas.qld.gov.au

Dear Sir /Madam

Concurrence agency response—with conditions
2L Oasis Drive, Wonga Beach QLD – Lot 2 on SP259953
(Given under section 285 of the *Sustainable Planning Act 2009*)

The referral agency material for the development application described below was received by the Department of Infrastructure, Local Government and Planning under section 272 of the *Sustainable Planning Act 2009* on 30 March 2017.

Applicant details

Applicant name:	Port Pacific Estates Pty Limited
Applicant contact details:	PO Box 5820 CAIRNS QLD 4870 erin@flanaganconsulting.com.au

Site details

Street address:	2L Oasis Drive WONGA BEACH QLD 4873
Lot on plan:	Lot 2 on SP259953
Local government area:	DOUGLAS SHIRE

Far North Queensland Regional Office
Ground Floor, Cairns Port Authority
PO Box 2358
Cairns QLD 4870

SDA-0017-035201

Application details

Proposed development:	Development Permit for Reconfiguring a Lot (1 lot into 7 lots and drainage reserve)

Aspects of development and type of approval being sought

Nature of Development	Approval Type	Brief Proposal of Description	Level of Assessment
Reconfiguring a Lot	Development permit	Seven (7) lot residential subdivision & drainage reserve	Code Assessment

Referral triggers

The development application was referred to the department under the following provisions of the *Sustainable Planning Regulation 2009*:

Referral trigger	Schedule 7, Table 2, Item 14 – Coastal management district

Conditions

Under section 287(1)(a) of the *Sustainable Planning Act 2009*, the conditions set out in Attachment 1 must be attached to any development approval.

Reasons for decision to impose conditions

Under section 289(1) of the *Sustainable Planning Act 2009*, the department must set out the reasons for the decision to impose conditions. These reasons are set out in Attachment 2.

Approved plans and specifications

The department requires that the following plans and specifications set out below and in Attachment 4 must be attached to any development approval.

Drawing/Report Title	Prepared by	Date	Reference no.	Version/Issue
Aspect of development: reconfiguration of lot				
Proposed 7 Lot Subdivision Wonga Beach	Flanagan Consulting Group	6 March 2017	4839-SK01	amended by the Department of Local Government and Planning on 28 June 2017

A copy of this response has been sent to the applicant for their information.

SDA-0317-029201

For further information, please contact Tony Croke, Principal Planning Officer, SARA Far North QLD on 4037 3205, or email tony.croke@dilgp.qld.gov.au who will be pleased to assist.

Yours sincerely

Brett Nancarrow
Manager (Planning)

cc: Port Pacific Estates Pty Limited, erin@flanaganconsulting.com.au

enc: Attachment 1—Conditions to be imposed
Attachment 2—Reasons for decision to impose conditions
Attachment 4—Approved Plans and Specifications

41.2017.1961
23/32 (D#827371)

Our reference: SDA-0317-038201
Applicant reference: 4839/01 L-EC1882
Council reference: RGL 1961/2017

Attachment 1—Conditions to be imposed

No.	Conditions	Condition timing
Aspect of development: Reconfiguring a Lot		
Schedule 7, Table 2, Item 14 – Coastal management district —Pursuant to section 255D of the *Sustainable Planning Act 2009*, the chief executive administering the Act nominates the Director-General of Department of Environment and Heritage Protection to be the assessing authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following condition(s):		
1.	The development must be carried out generally in accordance with the following plans: • Proposed 7 Lot Subdivision Wonga Beach prepared by Flanagan Consulting Group dated 6 March 2017, reference 4839-SK01 (as amended by the Department of Local Government and Planning on 28 June 2017 to identify a development free buffer).	Prior to submitting the Plan of Survey to the local government for approval and to be maintained at all times
2.	(a) Statutory Environmental Covenant Enter into an environmental covenant with the Department of Natural Resources and Mines pursuant to Section 97A of the *Land Title Act 1994* to ensure the appropriate management of the land identified as Areas A1 and A2 on Proposed 7 Lot Subdivision Wonga Beach prepared by Flanagan Consulting Group dated 6 March 2017, reference 4839-SK01 and as amended by the Department of Local Government and Planning on 28 June 2017 for the purpose of preserving vegetation / coastal protection. (b) Submit Covenant Submit to Department of Environment and Heritage Protection, Permit and License Management, Implementation and Support Unit, GPO Box 2454, Brisbane Qld 4001 the environmental covenant for endorsement. The covenant must detail the responsibilities, liabilities, measures, remedies and intents as necessary to ensure the management of the identified vegetation and ecological features on the land and must address the following: i. Exclusion from the covenant area of all buildings and structures (including swimming pools, tennis courts, retaining walls), on-site stormwater infrastructure, on-site wastewater treatment, on-site parking for the lot. (c) Lodge Covenant Lodge the endorsed Covenant Form 31 with the Registrar of Titles for the relevant Queensland State Government Authority.	a) Prior to sealing of the plan of subdivision with the local government b) Prior to an application for plan sealing with the local government c) Within 6 months of the local government's notation of the

No.	Conditions	Condition timing
	(d) Submit Copy of Registered Covenant Submit to Department of Environment and Heritage Protection, Permit and License Management, Implementation and Support Unit, GPO Box 2454, Brisbane Qld 4001, a copy of the registered Covenant Form 31.	plan of subdivision d) Within 2 weeks of the registration of the covenant

Our reference: SDA-0317-038201
Applicant reference: 4639/01 L-EC1992
Council reference: ROL 1961/2017

Attachment 2—Reasons for decision to impose conditions

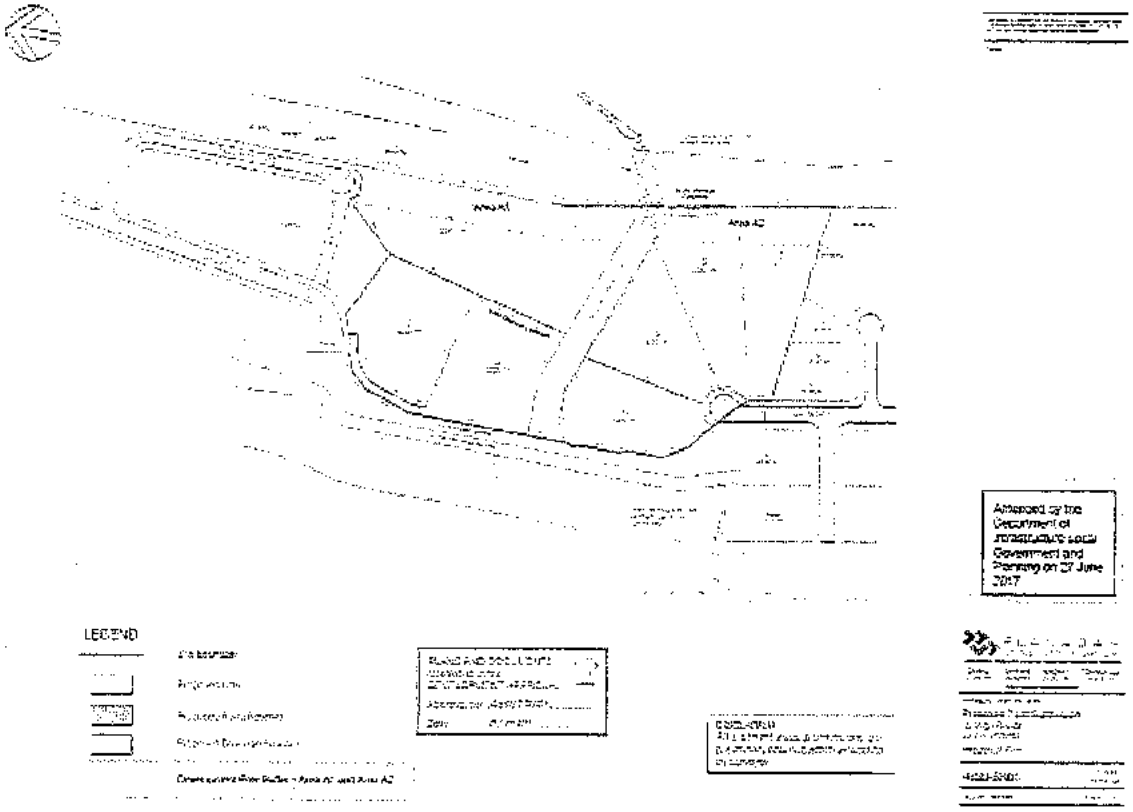
The reasons for this decision are:

- To ensure the development is carried out generally in accordance with the plans of development submitted with the application, as amended by the Department of Environment and Heritage Protection on 19 June 2017.
- To maintain the erosion prone area as a development free buffer zone that protects people and infrastructure from coastal hazards and increases the community's resilience to natural hazards.
- To ensure that adequate buffer zones are provided to minimise the potential for activity to impact on the identified environmental values.

Our reference: SDA-0317-038201
Applicant reference: 4639/01 L-EG1E32
Council reference: RCL 1961/2017

Attachment 4—Approved plans and specifications

41.2017.1961
27/32 (D#827371)


LEGEND
Approved by the Department of Infrastructure, Local Government and Planning on 27 June 2017

Appendix 2 Adopted Charges Notice

DOUGLAS SHIRE COUNCIL

2008 Douglas Shire Planning Schemes Applications

ADOPTED INFRASTRUCTURE CHARGES NOTICE

DEVELOPERS NAME		ESTATE NAME	STAGE
Port Pacific Estates Pty Ltd		0	0

STREET No. & NAME	SUBURB	LOT & RP No.s	PARCEL No.
2L Oasis Dve Wonga Beach	Port Douglas	L2 SP269953	187270

DEVELOPMENT TYPE		COUNCIL FILE NO.	VALIDITY PERIOD (year)
ROL (1 into 7 Lots)		ROL 1961/2017	4

DSC Reference Doc. No.	VERSION No.
D#822908	1

		Use	Charge per Use	Amount Due	Amount Paid	Receipt Code & GL Code
Rural Areas - Water Only						
	proposed	0	0.00	0.00		
		0	0.00	0.00		
	existing	0	0.00	0.00		
	Total			0.00		
Urban Areas - Water only						
	proposed	7	12,832.47	89,827.29		
		0	0.00	0.00		
	existing	1	12,832.47	12,832.47		
	Total			78,994.82		Code 895 GL 07600.0135.0825
Urban Areas - Water & Sewer						
		0	0.00	0.00		
		0	0.00	0.00		
		0	0.00	0.00		
		0	0.00	0.00		
	Total			0.00		

TOTAL $78,994.82

Prepared by	J Elphinstone	31-Jul-17	Amount Paid	
Checked by	D Lamond	31-Jul-17	Date Paid	
Date Payable			Receipt No.	
Amendments		Date	Cashier	

Note:

The Infrastructure Charges in this Notice are payable in accordance with Sections 119 and 120 of the *Planning Act 2016 as from Council's resolution from the Special meeting held on 24 June 2015.*

Charge rates under the current Policy are not subject to indexing.

Charges are payable to: Douglas Shire Council. You can make payment at any of Council's Business Offices or by mail with your cheque or money order to Douglas Shire Council, PO Box 723, Mossman QLD 4873. Cheques must be made payable to Douglas Shire Council and marked 'Not Negotiable.' Acceptance of a cheque is subject to collection of the proceeds. Post dated cheques will not be accepted

Any enquiries regarding Infrastructure Charges can be directed to the Development & Environment, Douglas Shire Council on 07 4099 9444 or by email on enquiries@douglas.qld.gov.au

(a) on the day the referral agency's response for the missed referral agency is received by the assessment manager; or

(b) if the missed referral agency does not give a referral agency's response—on the day the referral agency's assessment period of the missed referral agency ends.

Part 8 Dealing with decision notices and approvals

Division 1 Changing decision notices and approvals during applicant's appeal period

360 Application of div 1

This division applies only during the applicant's appeal period.

361 Applicant may make representations about decision

(1) The applicant may make written representations to the assessment manager about—

(a) a matter stated in the decision notice, other than a refusal or a matter about which a concurrence agency told the assessment manager under section 287(1) or (5); or

(b) the standard conditions applying to a deemed approval.

(2) However, the applicant can not make representations under subsection (1)(a) about a condition attached to an approval under the direction of the Minister.

Authorised by the Parliamentary Counsel

362 Assessment manager to consider representations

The assessment manager must consider any representations made to the assessment manager under section 361.

363 Decision about representations

(1) If the assessment manager agrees with any of the representations about a decision notice or a deemed approval, the assessment manager must give a new decision notice (the ***negotiated decision notice***) to—

(a) the applicant; and

(b) each principal submitter; and

(c) each referral agency; and

(d) if the assessment manager is not the local government and the development is in a local government area—the local government.

(2) Before the assessment manager agrees to a change under this section, the assessment manager must consider the matters the assessment manager was required to consider in assessing the application, to the extent the matters are relevant.

(3) Only 1 negotiated decision notice may be given.

(4) The negotiated decision notice—

(a) must be given within 5 business days after the day the assessment manager agrees with the representations; and

(b) must comply with section 335; and

(c) must state the nature of the changes; and

(d) replaces—

(i) the decision notice previously given; or

(ii) if a decision notice was not previously given and the negotiated decision notice relates to a deemed approval—the standard conditions applying to the deemed approval.

Authorised by the Parliamentary Counsel

(5) If the assessment manager does not agree with any of the representations, the assessment manager must, within 5 business days after the day the assessment manager decides not to agree with any of the representations, give written notice to the applicant stating the decision about the representations.

364 Giving new notice about charges for infrastructure

(1) This section applies if the development approved by the negotiated decision notice is different from the development approved in the decision notice or deemed approval in a way that affects the amount of a levied charge.

(2) The local government may give the applicant a new infrastructure charges notice to replace the original notice.

366 Applicant may suspend applicant's appeal period

(1) If the applicant needs more time to make the representations, the applicant may, by written notice given to the assessment manager, suspend the applicant's appeal period.

(2) The applicant may act under subsection (1) only once.

(3) If the representations are not made within 20 business days after the day written notice was given to the assessment manager, the balance of the applicant's appeal period restarts.

(4) If the representations are made within 20 business days after the day written notice was given to the assessment manager—

(a) if the applicant gives the assessment manager a notice withdrawing the notice under subsection (1)—the balance of the applicant's appeal period restarts the day after the assessment manager receives the notice of withdrawal; or

(b) if the assessment manager gives the applicant a notice under section 363(5)—the balance of the applicant's appeal period restarts the day after the applicant receives the notice; or

Authorised by the Parliamentary Counsel

(c) if the assessment manager gives the applicant a negotiated decision notice—the applicant's appeal period starts again the day after the applicant receives the negotiated decision notice.

Division 2 Changing approvals—request for change after applicant's appeal period ends

Subdivision 1 Preliminary

367 What is a *permissible change* for a development approval

(1) A ***permissible change***, for a development approval, is a change to the approval that would not, because of the change—

(a) result in a substantially different development; or

(b) if the application for the approval were remade including the change—

(i) require referral to additional concurrence agencies; or

(ii) for an approval for assessable development that previously did not require impact assessment—require impact assessment; or

(c) for an approval for assessable development that previously required impact assessment—be likely, in the responsible entity's opinion, to cause a person to make a properly made submission objecting to the proposed change, if the circumstances allowed; or

(d) cause development to which the approval relates to include any prohibited development.

(2) For deciding whether a change is a permissible change under subsection (1)(b) or (d), the planning instruments or law in force at the time the request for the change was made apply.

Authorised by the Parliamentary Counsel

(2) The person is taken to have engaged in the representative's conduct, unless the person proves the person could not have prevented the conduct by exercising reasonable diligence.

(3) In this section—

conduct means an act or omission.

representative means—

(a) of a corporation—an executive officer, employee or agent of the corporation; or

(b) of an individual—an employee or agent of the individual.

state of mind, of a person, includes the person's—

(a) knowledge, intention, opinion, belief or purpose; and

(b) reasons for the intention, opinion, belief or purpose.

Chapter 6 Dispute resolution

Part 1 Appeal rights

229 Appeals to tribunal or P&E Court

(1) Schedule 1 states—

(a) matters that may be appealed to—

(i) either a tribunal or the P&E Court; or

(ii) only a tribunal; or

(iii) only the P&E Court; and

(b) the person—

(i) who may appeal a matter (the ***appellant***); and

(ii) who is a respondent in an appeal of the matter; and

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(iii) who is a co-respondent in an appeal of the matter; and

(iv) who may elect to be a co-respondent in an appeal of the matter.

(2) An appellant may start an appeal within the appeal period.

(3) The ***appeal period*** is—

(a) for an appeal by a building advisory agency—10 business days after a decision notice for the decision is given to the agency; or

(b) for an appeal against a deemed refusal—at any time after the deemed refusal happens; or

(c) for an appeal against a decision of the Minister, under chapter 7, part 4, to register premises or to renew the registration of premises—20 business days after a notice is published under section 269(3)(a) or (4); or

(d) for an appeal against an infrastructure charges notice—20 business days after the infrastructure charges notice is given to the person; or

(e) for an appeal about a deemed approval of a development application for which a decision notice has not been given—30 business days after the applicant gives the deemed approval notice to the assessment manager; or

(f) for any other appeal—20 business days after a notice of the decision for the matter, including an enforcement notice, is given to the person.

Note—

See the P&E Court Act for the court's power to extend the appeal period.

(4) Each respondent and co-respondent for an appeal may be heard in the appeal.

(5) If an appeal is only about a referral agency's response, the assessment manager may apply to the tribunal or P&E Court to withdraw from the appeal.

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(6) To remove any doubt, it is declared that an appeal against an infrastructure charges notice must not be about—

(a) the adopted charge itself; or

(b) for a decision about an offset or refund—

(i) the establishment cost of trunk infrastructure identified in a LGIP; or

(ii) the cost of infrastructure decided using the method included in the local government's charges resolution.

230 Notice of appeal

(1) An appellant starts an appeal by lodging, with the registrar of the tribunal or P&E Court, a notice of appeal that—

(a) is in the approved form; and

(b) succinctly states the grounds of the appeal.

(2) The notice of appeal must be accompanied by the required fee.

(3) The appellant or, for an appeal to a tribunal, the registrar, must, within the service period, give a copy of the notice of appeal to—

(a) the respondent for the appeal; and

(b) each co-respondent for the appeal; and

(c) for an appeal about a development application under schedule 1, table 1, item 1—each principal submitter for the development application; and

(d) for an appeal about a change application under schedule 1, table 1, item 2—each principal submitter for the change application; and

(e) each person who may elect to become a co-respondent for the appeal, other than an eligible submitter who is not a principal submitter in an appeal under paragraph (c) or (d); and

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(f) for an appeal to the P&E Court—the chief executive; and

(g) for an appeal to a tribunal under another Act—any other person who the registrar considers appropriate.

(4) The ***service period*** is—

(a) if a submitter or advice agency started the appeal in the P&E Court—2 business days after the appeal is started; or

(b) otherwise—10 business days after the appeal is started.

(5) A notice of appeal given to a person who may elect to be a co-respondent must state the effect of subsection (6).

(6) A person elects to be a co-respondent by filing a notice of election, in the approved form, within 10 business days after the notice of appeal is given to the person.

(7) Despite any other Act or rules of court to the contrary, a copy of a notice of appeal may be given to the chief executive by emailing the copy to the chief executive at the email address stated on the department's website for this purpose.

231 Other appeals

(1) Subject to this chapter, schedule 1 and the P&E Court Act, unless the Supreme Court decides a decision or other matter under this Act is affected by jurisdictional error, the decision or matter is non-appealable.

(2) The *Judicial Review Act 1991*, part 5 applies to the decision or matter to the extent it is affected by jurisdictional error.

(3) A person who, but for subsection (1) could have made an application under the *Judicial Review Act 1991* in relation to the decision or matter, may apply under part 4 of that Act for a statement of reasons in relation to the decision or matter.

(4) In this section—

decision includes—

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DOUGLAS
SHIRE COUNCIL

PO Box 723 Mossman Qld 4873
www.douglas.qld.gov.au
enquiries@douglas.qld.gov.au
ABN 71 241 237 800

Administration Office
64 - 66 Front St Mossman
P 07 4099 9444
F 07 4098 2902

YOUR REF: R-EC1881
OUR REF: ROL 1961/2017 (D#827371) SC

19 September 2017

Port Pacific Estates Pty Limited
c/- Flanagan Consulting Group
PO Box 5820
CAIRNS QLD 4870 erin@flanaganconsulting.com.au

Attention: Ms Erin Campbell

Dear Madam

ADOPTED INFRASTRUCTURE CHARGES NOTICE FOR 2L OASIS DRIVE WONGA BEACH

Please find attached an Adopted Infrastructure Charges Notice issued in accordance with sections 119 and 120 of the *Planning Act 2016* (the Act).

The amount in the Adopted Infrastructure Charges Notice has been calculated according to Council's Adopted Infrastructure Charges Resolution.

The amount in the Adopted Infrastructure Charges Notice is subject to index adjustments and may be different at the time of payment. Please contact Development and Environment at Council for review of the charge amount prior to payment.

These charges are payable prior to the issue of a Compliance Certificate for the Plan of Subdivision.

Please also find attached extracts from the Act regarding the following:

- your right to make representations to Council about the Adopted Infrastructure Charges Notice; and
- your Appeal rights with respect to the Adopted Infrastructure Charges Notice.

Should you have any enquiries in relation to this Adopted Infrastructure Charges Notice, please contact Jenny Elphinstone of Sustainable Communities on telephone number (07) 4099 9482.

Yours faithfully

Tracey Crouch
A/Manager Sustainable Communities

Att

41.2017.1961
31/32 (D#827371)

INFRASTRUCTURE CHARGES NOTICE

DOUGLAS SHIRE COUNCIL

2008 Douglas Shire Planning Schemes Applications

ADOPTED INFRASTRUCTURE CHARGES NOTICE

DEVELOPERS NAME		ESTATE NAME	STAGE
Port Pacific Estates Pty Ltd		0	0
STREET No. & NAME	**SUBURB**	**LOT & RP No.s**	**PARCEL No.**
2L Oasis Dve Wonga Beach	Port Douglas	L2 SP259953	167270
DEVELOPMENT TYPE		**COUNCIL FILE NO.**	**VALIDITY PERIOD (year)**
ROL (1 into 7 Lots)		ROL 1961/2017	4
DSC Reference Doc. No.	**VERSION No.**		
D#822905	1		

	Use	Charge per Use	Amount Due	Amount Paid	Receipt Code & GL Code
Rural Areas - Water Only					
proposed	0	0.00	0.00		
	0	0.00	0.00		
existing	0	0.00	0.00		
Total			0.00		
Urban Areas - Water only					
proposed	7	12,832.47	89,827.29		
	0	0.00	0.00		
existing	1	12,832.47	12,832.47		
Total			76,994.82		Code 695 GL 07500.0135.0625
Urban Areas - Water & Sewer					
	0	0.00	0.00		
	0	0.00	0.00		
	0	0.00	0.00		
	0	0.00	0.00		
Total			0.00		
		TOTAL	$76,994.82		

Prepared by	J Elphinstone	31-Jul-17	Amount Paid	
Checked by	D Lamond	31-Jul-17	Date Paid	
Date Payable			Receipt No.	
Amendments		**Date**	Cashier	

Note:

The Infrastructure Charges in this Notice are payable in accordance with Sections 119 and 120 of the *Planning Act 2016* *as from Council's resolution from the Special meeting held on 24 June 2015.*

Charge rates under the current Policy are not subject to indexing.

Charges are payable to: Douglas Shire Council. You can make payment at any of Council's Business Offices or by mail with your cheque or money order to Douglas Shire Council, PO Box 723, Mossman QLD 4873. Cheques must be made payable to Douglas Shire Council and marked 'Not Negotiable.' Acceptance of a cheque is subject to collection of the proceeds. Post dated cheques will not be accepted

Any enquiries regarding Infrastructure Charges can be directed to the Development & Environment, Douglas Shire Council on 07 4099 9444 or by email on enquiries@douglas.qld.gov.au

41.2017.1961
32/32 (D#827371)

required to be given to the local government for approval; or

(b) if the charge applies for building work—when the final inspection certificate for the building work, or the certificate of classification for the building, is given under the Building Act; or

(c) if the charge applies for a material change of use—when the change happens; or

(d) if the charge applies for other development—on the day stated in the infrastructure charges notice under which the charge is levied.

(2) This section is subject to section 123.

123 Agreements about payment or provision instead of payment

(1) The recipient of an infrastructure charges notice and the local government that gave the notice may agree about either or both of the following—

(a) whether the levied charge under the notice may be paid other than as required under section 122 including whether the charge may be paid by instalments;

(b) whether infrastructure may be provided instead of paying all or part of the levied charge.

(2) If the levied charge is subject to an automatic increase provision, the agreement must state how increases in the charge are payable under the agreement.

Subdivision 5 Changing charges during relevant appeal period

124 Application of this subdivision

This subdivision applies to the recipient of an infrastructure charges notice given by a local government.

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125 Representations about infrastructure charges notice

(1) During the appeal period for the infrastructure charges notice, the recipient may make representations to the local government about the infrastructure charges notice.

(2) The local government must consider the representations.

(3) If the local government—

(a) agrees with a representation; and

(b) decides to change the infrastructure charges notice;

the local government must, within 10 business days after making the decision, give a new infrastructure charges notice (a ***negotiated notice***) to the recipient.

(4) The local government may give only 1 negotiated notice.

(5) A negotiated notice—

(a) must be in the same form as the infrastructure charges notice; and

(b) must state the nature of the changes; and

(c) replaces the infrastructure charges notice.

(6) If the local government does not agree with any of the representations, the local government must, within 10 business days after making the decision, give a decision notice about the decision to the recipient.

(7) The appeal period for the infrastructure charges notice starts again when the local government gives the decision notice to the recipient.

126 Suspending relevant appeal period

(1) If the recipient needs more time to make representations, the recipient may give a notice suspending the relevant appeal period to the local government.

(2) The recipient may give only 1 notice.

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(3) If the representations are not made within 20 business days after the notice is given, the balance of the relevant appeal period restarts.

(4) If representations are made within the 20 business days and the recipient gives the local government a notice withdrawing the notice of suspension, the balance of the relevant appeal period restarts the day after the local government receives the notice of withdrawal.

Division 3 Development approval conditions about trunk infrastructure

Subdivision 1 Conditions for necessary trunk infrastructure

127 Application and operation of subdivision

(1) This subdivision applies if—

(a) trunk infrastructure—

(i) has not been provided; or

(ii) has been provided but is not adequate; and

(b) the trunk infrastructure is or will be located on—

(i) premises (the ***subject premises***) that are the subject of a development application, whether or not the infrastructure is necessary to service the subject premises; or

(ii) other premises, but is necessary to service the subject premises.

(2) Section 128 provides for the local government to be able to impose particular development conditions (each a ***necessary infrastructure condition***) on the development approval.

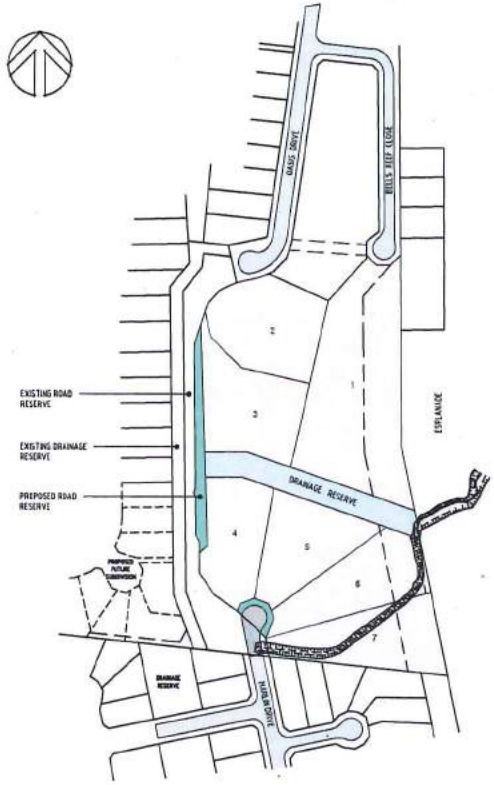
Authorised by the Parliamentary Counsel

FLANAGAN
CONSULTING GROUP
Trusted Advisor to Northern Australia

APPENDIX: B

Engineering Design Drawings

DO NOT SCALE



SITE PLAN
1:2000

DRAWING INDEX

PROJECT DRAWINGS

4839-C01	SITE PLAN AND DRAWING INDEX
4839-C02	STANDARD NOTES
4839-C03	GENERAL ARRANGEMENT
4839-C04	MARLIN DRIVE-CUL-DE-SAC - SETOUT AND GRADING
4839-C05	EAST WEST DRAINAGE CHANNEL - PLAN & LONG SECTION
4839-C06	EAST WEST DRAINAGE CHANNEL - PEDESTRIAN BRIDGE & DETAILS
4839-C07	EAST WEST DRAINAGE CHANNEL - CROSS SECTIONS SHEET 1 OF 2
4839-C08	EAST WEST DRAINAGE CHANNEL - CROSS SECTIONS SHEET 2 OF 2
4839-C09	SITE GRADING
4839-C10	ALLOTMENT BUILDING PADS
4839-C11	MODIFICATION TO EXISTING COASTAL GUTTER DRAIN
4839-C12	WATER RETICULATION
4839-C13	EROSION AND SEDIMENT CONTROL STRATEGY
4839-C14	EROSION AND SEDIMENT CONTROL DEVICES - SHEET 1 OF 2
4839-C15	EROSION AND SEDIMENT CONTROL DEVICES - SHEET 2 OF 2

ASSOCIATED STANDARD DRAWINGS

ROADWORKS AND DRAINAGE

S1000	CONCRETE KERB AND CHANNEL
S1016	KERB RAMP
S1025	HANDRAIL/TUBULAR STEEL FENCE
S1035	PATHWAY/BIKEWAY
S1046	EXCAVATION, BEDDING AND BACKFILLING OF PRECAST BOX CULVERTS
S1050	GRATED KERB INLET - PIPES £ 600 DIA
S1060	KERB INLET GRATE AND FRAME
S1095	SUBSURFACE DRAINAGE FLUSHING POINTS OUTLET
DTMR 1318	CONSTRUCTION OF BASES WITH RECESSES AND APRONS (ALL SIZES)

WATER RETICULATION

S2000	VALVE BOX INSTALLATION
S2005	HYDRANT BOX INSTALLATION
S2010	KERB / ROAD MARKERS
S2016	WATER RETICULATION BEDDING DETAILS - PIPE DIA < 300
S2020	MAIN CONNECTION DETAILS
SEQ-WAT-1205-1	TYPICAL THRUST BLOCK DETAILS - MASS CONCRETE
SEQ-WAT-1206-1	TYPICAL THRUST AND ANCHOR BLOCKS FOR VALVES
SEQ-WAT-1207-1	TYPICAL THRUST AND ANCHOR BLOCKS FOR VERTICAL BENDS

LANDSCAPING

S4030	BARRIER FENCE AND BOLLARDS
S9010	PARK ACCESS GATE

REV	DESCRIPTION	TASK MAN.	APPROVED	NPEQ No.	DATE
A	ISSUE FOR APPROVAL	GA	GA	6073	8/06/2018

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ASSOCIATED CONSULTANTS

CLIENT / PROJECT

PORT PACIFIC ESTATE PTY LTD
PROPOSED SUBDIVISION OF
2 OASIS DRIVE , WONGA BEACH
LOT 2 on SP259953

FLANAGAN CONSULTING GROUP
DEVELOPMENT CONSULTANTS • PROJECT MANAGERS • ENGINEERS • PLANNERS
CAIRNS (07) 4031 2159 DARWIN (08) 8943 8620 MACKAY (07) 4944 1288 TOWNSVILLE (07) 4724 5737
www.flanaganconsulting.com.au

DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C01
SCALE NTS

TITLE
SITE PLAN & DRAWING INDEX

A1 FULL SIZE

DRAWING No. 4839-C01
SHEET 1 OF 15 SHEETS

REVISION A

DO NOT SCALE

SURVEY CONTROL NOTES

1. SURVEY ORIGIN -

LEVEL DATUM :	AHD(D)
ORIGIN OF LEVELS :	PSM 53559 RL 13.696
MERIDIAN :	MGA ZONE 55
ORIGIN OF COORDNATES :	PSM 53559 E 360136.781 N 8142554.238

GENERAL NOTES

1. ALL WORKS MUST BE CARRED OUT IN ACCORDANCE WITH THE RELEVANT FNQROC DEVELOPMENT MANUAL SPECIFICATIONS. WHERE DIFFERENCES EXIST BETWEEN THE PLANS AND THE DEVELOPMENT MANUAL, THESE PLANS SHALL TAKE PRECEDENCE.
2. THE CONTRACTOR IS TO ENSURE A COPY OF THE OPERATIONAL WORKS APPROVAL IS AVAILABLE ON SITE. THE SITE FOREMAN IS TO ENSURE ALL WORKS ARE UNDERTAKEN IN ACCORDANCE WITH THE APPROVAL.
3. THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN APPROXIMATED FROM THE KNOWN POSITIONS OF VALVES, MANHOLES, ETC. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE CONTRACTOR MUST CONTACT RELEVANT AUTHORITIES FOR POSSIBLE LOCATION OF FURTHER SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.
4. EXISTING SERVICES ARE TO BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. WHERE NECESSARY THE CONTRACTOR SHALL CONFIRM THE DEPTH TO EXISTING SERVICES BY POTHOLING BEFORE COMMENCING WORKS. THE SUPERINTENDENT SHALL BE CONSULTED WHERE THE CONTRACTOR CONSIDERS SPECIFIC PROTECTION WORKS NECESSARY TO PROTECT THE SERVICE.

EROSION AND SEDIMENT CONTROL NOTES

1. NO EARTHWORKS SHALL COMMENCE ON ANY PART OF THE SITE PRIOR TO INSTALLING APPROPRIATE ESC MEASURES DOWNSTREAM OF THE SITE AND IN ACCORDANCE WITH THE APPROVED ESC.
2. AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS AND TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION.
3. THE IMPACT ON THE ENVIRONMENT SHALL BE MINIMISED BY OBSERVING THE FOLLOWING CONSTRUCTION PRACTICES:
   - AREAS DISTURBED BY CONSTRUCTION TRAFFIC AND PROCEDURES SHALL BE MINIMISED.
   - MINIMISE TRAFFIC MOVEMENTS AND SPEEDS ON EXPOSED SURFACES.
   - REVEGETATION OF DISTURBED AREAS SHALL BE CARRIED OUT SOON AFTER THE COMPLETION OF TOPSOIL PLACEMENT.
   - FLOW DIVERSION SHALL BE CARRIED OUT BY EARLY INSTALLATION OF DRAINS ALONG TOPS OF BATTERS WITH APPROPRIATE SILTATION CONTROL DEVICES.
   - SEDIMENT INTERCEPTION BY THE PLACEMENT OF SUITABLE RETENTION SYSTEMS ACROSS DRAINAGE LINES AND AT INTERCEPTION POINTS FOR BOTH THE CONSTRUCTION AND STOCKPILE AREAS.
4. ALL ACCESS TO AND FROM THE SITE SHALL BE VIA A TEMPORARY CONSTRUCTION ENTRY/EXIT. THE CONTRACTOR SHALL NOMINATE A PROPOSED ACCESS LOCATION ON THE ESC PLAN FOR APPROVAL BY THE SUPERINTENDENT.
5. STOCKPILES SHALL ONLY BE LOCATED IN AREAS NOMINATED ON THE PROJECT DRAWINGS OR APPROVED BY THE SUPERINTENDENT. ALL STOCKPILES MUST HAVE APPROPRIATE ESC MEASURES INSTALLED TO PREVENT SEDIMENT TRANSPORT. THE MAXIMUM HEIGHT OF ALL STOCKPILES MUST BE LMITED TO 2.0M.
6. ALL PERMANENT AND TEMPORARY UNLINED SWALES AND DRAINS TO HAVE APPROPRIATE TEMPORARY EROSION PROTECTION.
7. ALL PARTIALLY CONSTRUCTED DRAINAGE STRUCTURES TO BE PROTECTED AGAINST SEDIMENT INFILTRATION DURING CONSTRUCTION.
8. ALL COMPLETED DRAINAGE STRUCTURES TO BE PROTECTED AGAINST SEDIMENT INFILTRATION UNTIL GRASSING IS ESTABLISHED.
9. ALL DISTURBED AREAS FLATTER THAN 1 ON 2 AND NOT UNDER ROAD PAVEMENT OR PATHWAY MUST BE TOPSOILED AND GRASS SEEDED. ALL DISTURBED AREAS 1 ON 2 OR STEEPER MUST BE TOPSOILED AND HYDROMULCHED.
10. REHABILITATION AND RE-VEGETATION IS TO BE PROGRESSIVE THROUGHOUT THE PROJECT TO ENSURE THAT ALL DISTURBED AREAS ARE RE-VEGETATED AS SOON AS POSSIBLE FOLLOWING COMPLETION OF WORKS.
11. ROAD VERGE TO BE FULLY TURFED IMMEDIATELY FOLLOWING TOPSOILING.
12. THE CONTRACTOR IS RESPONSIBLE FOR THE CONTROL OF DUST EMANATING FROM THE SITE AT ALL TIMES FOR THE DURATION OF CONSTRUCTION.
13. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE CHECKED FOR DAMAGE, CLEANED OUT AND FULLY REINSTATED AFTER EACH RAINFALL EVENT RESULTING IN RUNOFF.
14. IF EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN FOUND TO BE DEFICIENT OR FAILED IN SERVICE, DUE TO UNFORESEEN CIRCUMSTANCES, CORRECTIVE ACTION IS TO BE UNDERTAKEN IMMEDIATELY WHICH MAY INCLUDE AMENDMENTS/ADDITIONS TO THE ORIGINAL APPROVED EROSION CONTROL PLANS.
15. THE INSTALLATION, REMOVAL, RELOCATION OR MODIFICATION TO EROSION AND SEDIMENT CONTROL DEVICES MAY BE MADE BY DOUGLAS SHIRE COUNCIL IF DEEMED NECESSARY AND RELEVANT.
16. EROSION AND SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL THE TREATMENT AREA IS SUITABLY STABILISED/VEGETATED.
17. THE CONTRACTOR SHALL UNDERTAKE A FORMAL COMPLIANCE AUDIT OF THE ESC AT SIX WEEKS INTERVALS DURING THE CONSTRUCTION PERIOD OF THE PROJECT. RECORDS OF THE AUDIT SHALL BE RETAINED ON SITE. WHERE IDENTIFIED AS PART OF THE AUDIT THE ESCP SHALL BE UPDATED AND PROVIDED TO THE SUPERINTENDENT.

EARTHWORKS NOTES

1. ALL EARTHWORKS MUST BE CARRIED OUT IN ACCORDANCE WITH AS3798 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS'.
2. NO VEGETATION SHALL BE REMOVED WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT UNLESS NOTED ON THE DRAWINGS.
3. FINISHED SURFACE LEVELS SHOWN ON PROJECT DRAWINGS ARE AFTER ALL EARTHWORKS ARE COMPLETE INCLUDING TOPSOILING. ALL AREAS ARE TO BE GRADED EVENLY BETWEEN FINISHED SURFACE LEVELS UNLESS NOTED OTHERWISE.
4. ALL BATTERS WITHIN ALLOTMENTS SHALL BE AS FOLLOWS (UNLESS NOTED OTHERWISE)
   - ROAD FRONTAGE 1 ON 4 MAX
   - SIDE BOUNDARY 1 ON 2
   - REAR BOUNDARY 1 ON 2

ROADS & PATHWAYS NOTES

1. NEW ROADS PATHS AND KERBING SHALL JOIN SMOOTHLY TO EXISTING WORKS. WHERE NECESSARY, EXISTING WORKS SHALL BE CUT BACK TO FORM A NEAT JOIN.
2. PAVEMENT DESIGN STATED HEREIN IS FOR A RANGE OF SUBGRADE CBR VALUES. THE CONTRACTOR IS TO CONFIRM THE SUBGRADE CBR BY TESTING IN ACCORDANCE WITH THE SPECIFICATION. RESULTS ARE TO BE PROVIDE TO THE SUPERINTENDENT FOR FINAL PAVEMENT SELECTION.
3. ALL KERB PROFILES TO BE AS PER FNQROC STD DRAWING S1400 UNLESS NOTED OTHERWISE.
4. ALL PATHWAYS SHALL BE 2.0M WIDE (UNO) IN ACCORDANCE WITH FNQROC STD DRG S1035. PATHWAY CROSSFALL MUST NOT EXCEED 2.5%.
5. CONNECTIONS TO EXISTING PATHS SHALL BE SMOOTH AND NEAT. THE MAXIMUM STEP SHALL BE:
   +3MM ABOVE EXISTING &
   -0MM BELOW EXISTING
6. ALL KERB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FNQROC STD DRG S1016. WIDTH OF RAMP SHALL MATCH PATHWAY WIDTH.
7. ALL STREET SIGNS AND TRAFFIC SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH FNQROC STD DRGS S1040 AND S1041.

DRAINAGE NOTES

1. ALL REINFORCED CONCRETE PIPES SHALL BE CLASS 2 UNLESS NOTED OTHERWISE. ALTERNATIVE MATERIAL TYPES SUCH AS HDPE OR FRC MAYBE USED SUBJECT TO SUPERINTENDENTS/COUNCIL APPROVAL.
2. EXCAVATION, BEDDING AND BACKFILL FOR PRECAST BOX CULVERTS SHALL BE CARRIED OUT IN ACCORDANCE WITH FNQROC STANDARD DRAWING S1045.
3. EXCAVATION, BEDDING AND BACKFILL FOR CONCRETE PIPES SHALL BE CARRIED OUT IN ACCORDANCE WITH FNQROC STANDARD DRAWING S1046.
4. BOX CULVERTS SHALL BE INSTALLED IN ACCORDANCE WITH DTMR STD DRG 1316. CONCRETE BASES TO CULVERTS SHALL BE PROVIDED IN ACCORDANCE WITH DTMR STD DRG 1318.
5. ALL KERB INLET PITS AND MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FNQROC STD DRG'S S1050, S1055, S1060, S1065, S1066 AND S1070.
6. ALL CAST-IN-SITU HEADWALLS SHALL BE PROVIDED IN ACCORDANCE WITH FNQROC STD DRG'S S1075, S1080, S1085, AND S1090.
7. ALL PRECAST HEADWALLS SHALL BE PROVIDED WITH CONCRETE CUT-OFF WALL IN ACCORDANCE WITH FNQROC STD DRG S1075. WHERE HEADWALL ABUTS CONCRETE LINED CHANNEL, THE CUT-OFF WALL MAYBE OMITTED SUBJECT TO APPROVAL BY THE SUPERINTENDENT.
8. SUBSOIL DRAINAGE SHALL BE PROVIDED WHERE SHOWN ON THE PROJECT DRAWINGS. DRAINS SHALL ACHIEVE A MINIMUM 0.5% GRADE. FLUSHING POINTS AND OUTLETS TO BE PROVIDED IN ACCORDANCE WITH FNQROC STD DRAWING S1095.
9. ANY STORMWATER QUALITY INTERCEPTION DEVICE SHALL BE CLEANED BY THE CONTRACTOR AND DOCKETS PROVIDED AT TIME OF OFF MAINTENANCE. ALL COSTS TO BE BOURNE BY THE CONTRACTOR

WATER RETICULATION NOTES

1. ALL PVC AND PE PIPES SHALL BE CLASS PN16. PVC PIPES SHALL BE RUBBER RING JOINTED AND DUCTILE IRON COMPATIBLE.
2. DICL PIPES SHALL BE CLASS PN35 "TYTON" TYPE RUBBER RING JOINTED.
3. ALL WATER MAINS SHALL BE INSTALLED ON A STANDARD 2.8M OFFSET FROM THE PROPERTY BOUNDARY UNLESS NOTED OTHERWISE ON PLANS.
4. FOR VALVES & HYDRANT BOXES INSTALLATION DETAILS REFER FNQROC STD DRGS S2004 & S2005.
5. ALL HYDRANTS AND VALVES TO BE LOCATED OPPOSITE PROPERTY BOUNDARY TRUNCATIONS AND CORNERS, UNLESS NOTED OTHERWISE ON PLANS.
6. KERB MARKER PLATES SHALL BE PROVIDED TO IDENTIFY THE POSITION OF ALL VALVES AND HYDRANTS IN ACCORDANCE WITH FNQROC STD DRG S2010 VERSION 4-2009. IN ADDITION TO KERB MARKER PLATES, HYDRANTS SHALL ALSO HAVE TEARDROP MARKERS AND BLUE RETRO-REFLECTIVE MARKERS PROVIDED ON THE ROAD PAVEMENT IN ACCORDANCE WITH FNQROC STD DRG 2010 VERSION 4-2009.
7. FOR MAIN TRENCHING, BEDDING & ANCHORAGE DETAILS REFER FNQROC STD DRGS S2015 & S2016. ENSURE COVER TO WATERMAINS IS 600MM MINIMUM UNDER ROADWAYS AND 600MM MINIMUM ELSEWHERE.
8. FOR MAIN CONNECTION DETAILS, REFER FNQROC STD DRG S2020.
9. DOUGLAS SHIRE COUNCIL MUST BE CONTACTED TO PERFORM ANY DIRECT CONNECTION OR ALTERATION TO LIVE WATER MAINS. THE CONTRACTOR SHALL LODGE WITH COUNCIL THE APPROPRIATE APPLICATION FORMS AND FEES FOR THESE WORKS TO BE COMPLETED. IT MAY BE POSSIBLE FOR SOME WORKS TO BE PERFORMED BY THE CONTRACTOR UNDER SPECIAL CIRCUMSTANCES AND SUBJECT TO APPROPRIATE CONDITIONS AGREED TO WITH COUNCIL.
10. HYDRANTS OR VALVES CONSTRUCTED IN CONCRETE ARE TO HAVE A COMPRESSIBLE LAYER (ABLEFLEX) INSTALLED ON THE SURROUND. REFER FNQROC STD DRG 2000

SITE SPECIFIC NOTES

1. PRIOR TO REMOVAL OF ANY TREES, A WILDLIFE SPOTTER IS REQUIRED TO INVESTIGATE AND RELOCATE ANY IDENTIFIED FAUNA.

EXISTING DAM FILL PROCESS

1. THE EXISTING DAM TO BE DRAINED USING A FLOATING PUMP SYSTEM TO ENSURE PUMP WATER IS CLEAN BEFORE DISCHARGE.
2. AFTER DEWATERING THE DAM BASE IS TO BE INSPECTED BY THE SUPERVISING ENGINEER PRIOR TO PLACEMENT OF FILL TO CONFIRM STABLE BASE OR TREATMENT AS REQUIRED TO ACHIEVE STABLE BASE.
3. FILL TO BE PLACED IN LAYERS NOT EXCEEDING 400mm THICK (MAY BE LESS DEPENDING ON COMPACTION EQUIPMENT USED) AS COMPACTED TO 95% STD AS PER TABLE 5.1 OF AS3798. TESTING FREQUENCY TO BE AS PER TABLE 8.1 OF AS3798 TO A LEVEL 2 STANDARD.

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A	ISSUE FOR APPROVAL	GA	GA	6073	8/05/2018

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PORT PACIFIC ESTATE PTY LTD
PROPOSED SUBDIVISION OF
2 OASIS DRIVE , WONGA BEACH
LOT 2 on SP259953

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DESIGNED	IRM
DRAWN	IRM
ACAD No.	4839-C02
SCALE	NTS

TITLE: STANDARD NOTES

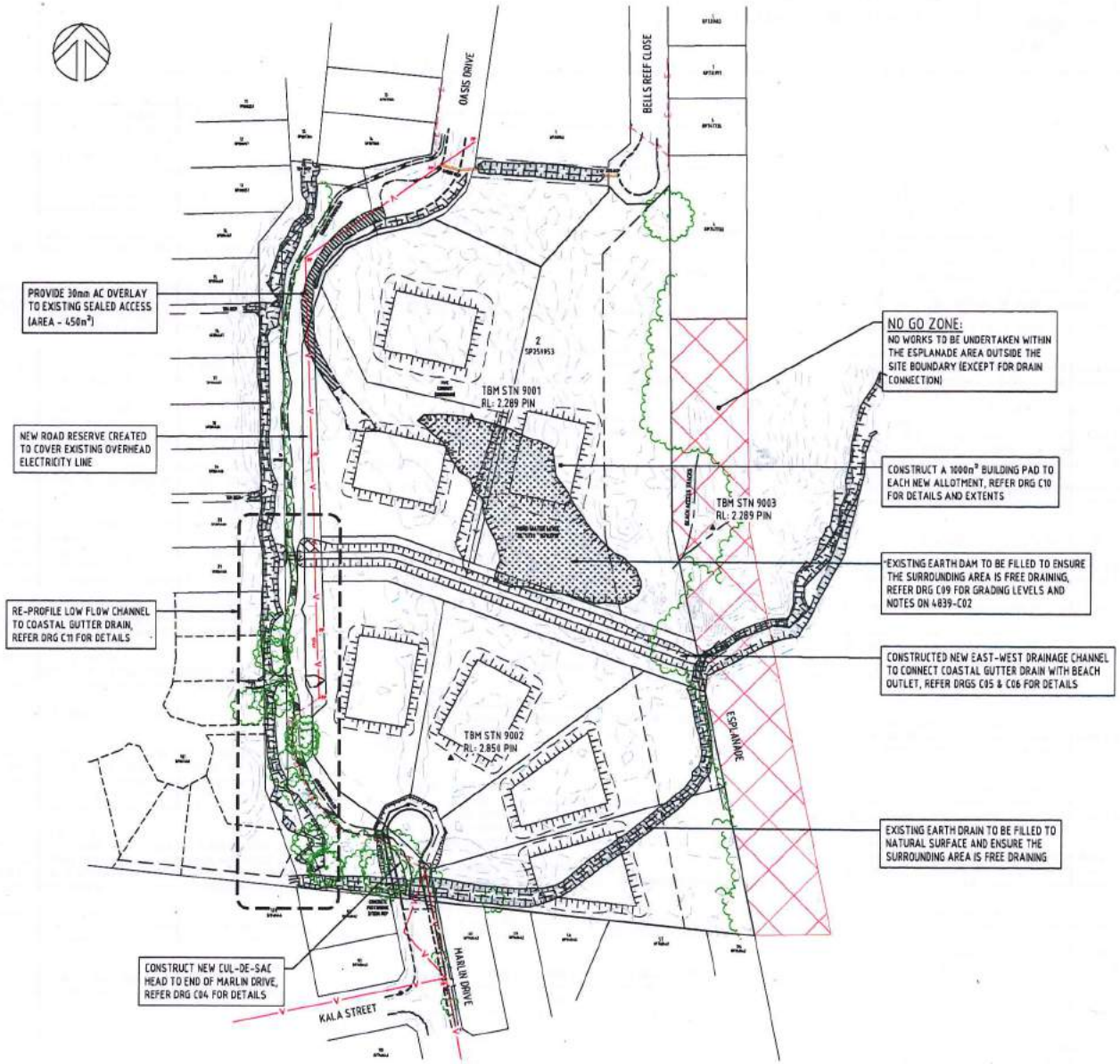
A1 FULL SIZE

DRAWING No. 4839-C02

SHEET 1 OF 15 SHEETS

REVISION A

DO NOT SCALE



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LOT 2 on SP259953

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DESIGNED: IRM
DRAWN: IRM
aCAD No.: 4839-C03
SCALE: NTS

TITLE: GENERAL ARRANGEMENT

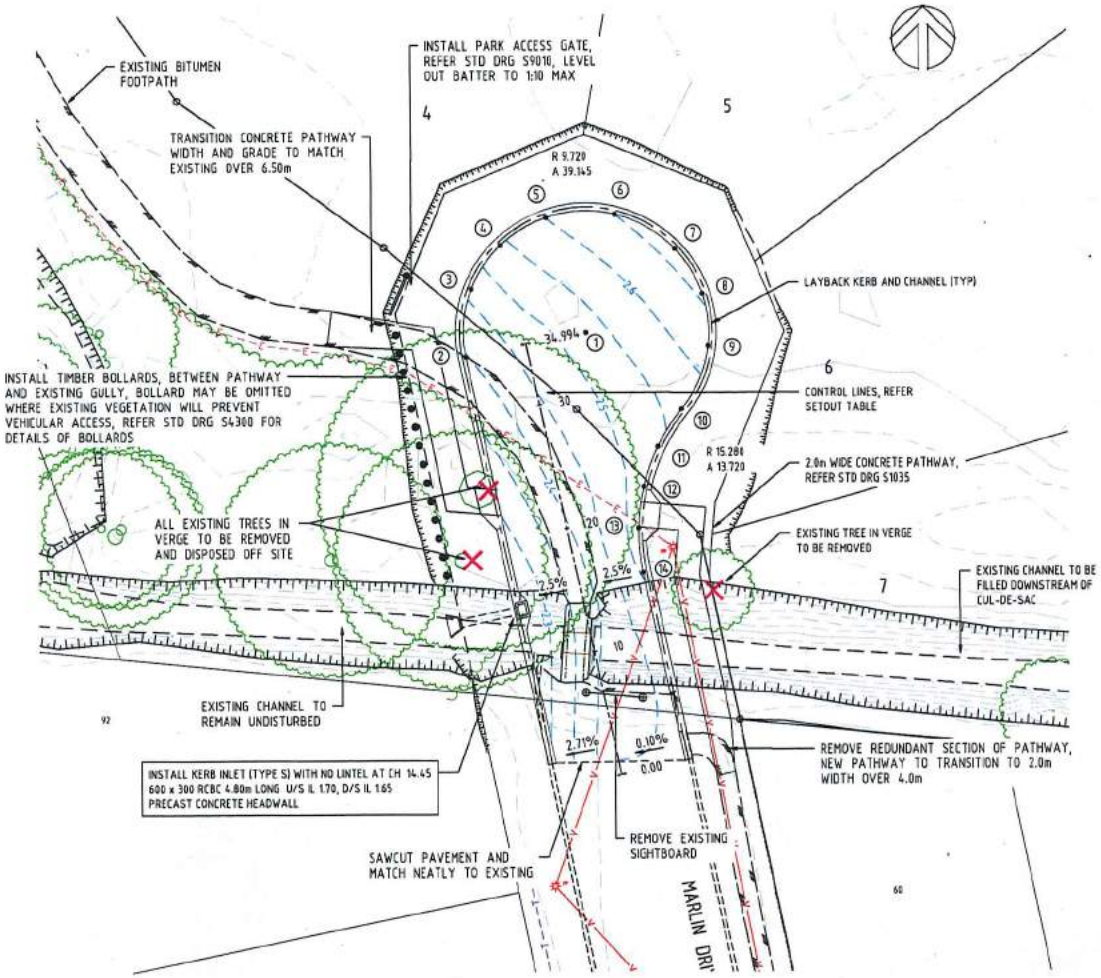
A1 FULL SIZE

DRAWING No.: 4839-C03
SHEET 1 OF 15 SHEETS

REVISION: A

XREFS :- X-4839-EX SURVEY.dwg ; X-4839-DESIGN.dwg

DO NOT SCALE



MARLIN DRIVE CUL-DE-SAC
1:200

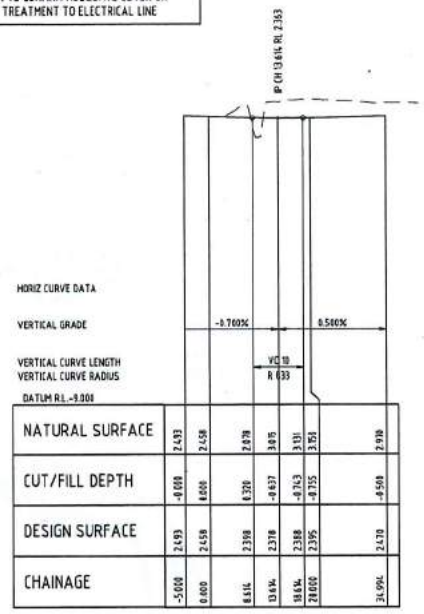
LEGEND

R 15.280	KERB RADIUS
A 5.246	KERB ARC LENGTH
• (9)	SETOUT POINT
88	FINISHED SURFACE CONTOUR (0.05m INTERVAL)
	LAYBACK KERB AND CHANNEL (STD S1040)
	PEDESTRIAN KERB RAMP
	EXISTING TREE TO BE REMOVED

MARLIN DRIVE CUL-DE-SAC SETOUT COORDINATES

POINT	EASTING	NORTHING	LEVEL
1	330504.639	8191412.903	2.530
2	330495.117	8191410.955	2.397
3	330495.573	8191416.406	2.464
4	330497.902	8191419.910	2.540
5	330501.494	8191422.100	2.601
6	330506.959	8191422.342	2.650
7	330511.690	8191419.595	2.666
8	330513.857	8191415.989	2.656
9	330514.297	8191411.805	2.626
10	330512.174	8191406.763	2.567
11	330510.284	8191403.805	2.540
12	330509.158	8191400.665	2.526
13	330508.741	8191397.355	2.522
14	330509.088	8191393.863	2.507

WARNING:
CONTRACTOR TO LOCATE AND CONFIRM DEPTH OF EXISTING LIVE ELECTRICAL LINE PRIOR TO COMMENCING CONSTRUCTION TO CONFIRM ADEQUATE COVER OR ALTERNATIVE TREATMENT TO ELECTRICAL LINE



MARLIN DRIVE LONGITUDINAL SECTION
SCALE 1:500 HORIZONTAL, 1:100 VERTICAL

MARLIN DRIVE - CONTROL LINE SETOUT

PT	CHAINAGE	EASTING	NORTHING	BEARING
IP 1	0.000	330507.311	8191377.798	347°43'53.09"
IP 2	34.994	330499.870	8191411.990	347°43'53.09"

DIAL BEFORE YOU DIG www.1100.com.au

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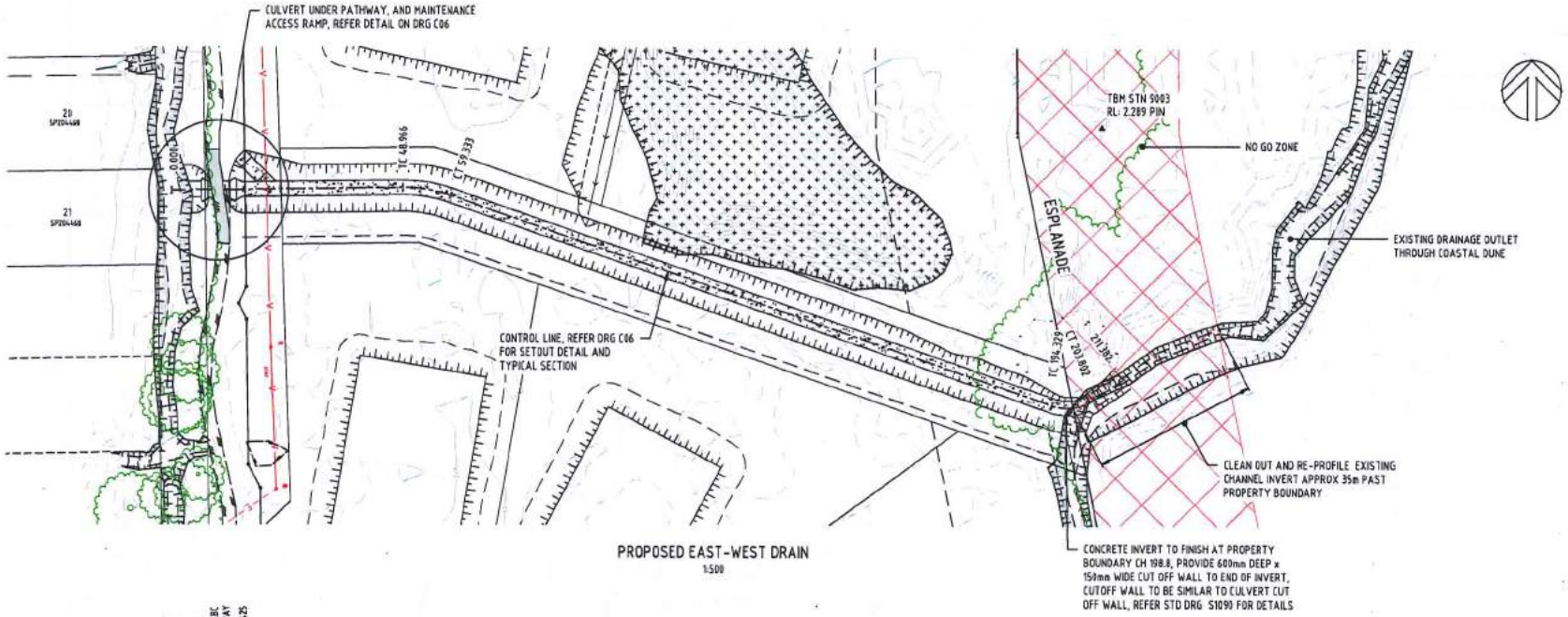
DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C04
SCALE AS SHOWN

TITLE
MARLIN DRIVE CUL-DE-SAC
SETOUT & GRADING PLAN

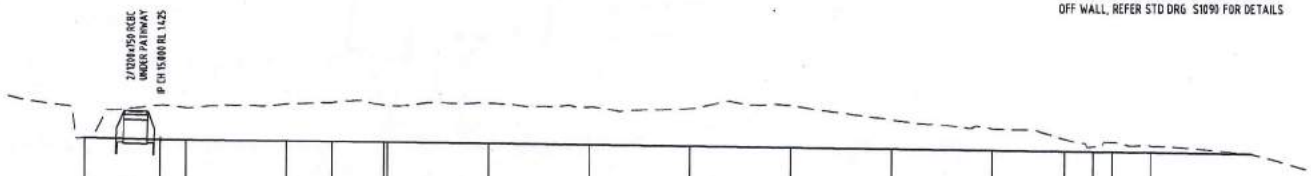
A1 FULL SIZE
DRAWING No. 4839-C04
SHEET 1 OF 15 SHEETS
REVISION A

DATE : 8-4839-D3 SURVCT.dwg ; X-4839-DESIGN.dwg

DO NOT SCALE



PROPOSED EAST-WEST DRAIN
1:500



HORIZ CURVE DATA							R 30										R - 0			
VERTICAL GRADE		-0.500%								-0.200%										
VERTICAL CURVE LENGTH VERTICAL CURVE RADIUS																				
DATUM R.L.-9.000																				
NATURAL SURFACE	1.497	2.781	2.699	2.841	2.917	2.817	2.812	2.765	2.766	2.796	2.845	2.313	1.951	1.553	1.215	1.432	1.290			
CUT/FILL DEPTH	0.003	-1.356	-1.284	-1.466	-1.550	-1.481	-1.487	-1.610	-1.511	-1.501	-1.670	-1.168	-0.856	-0.487	-0.319	-0.384	-0.258			
DESIGN SURFACE	1.500	1.425	1.415	1.375	1.357	1.336	1.335	1.295	1.255	1.215	1.175	1.135	1.095	1.066	1.095	1.047	1.032			
CHAINAGE	0.000	15.000	28.000	40.000	48.966	59.333	60.000	80.000	100.000	120.000	140.000	160.000	180.000	194.329	200.000	203.802	211.382			

EAST WEST DRAIN - LONGITUDINAL SECTION
SCALE 1:500 HORIZONTAL, 1:100 VERTICAL

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
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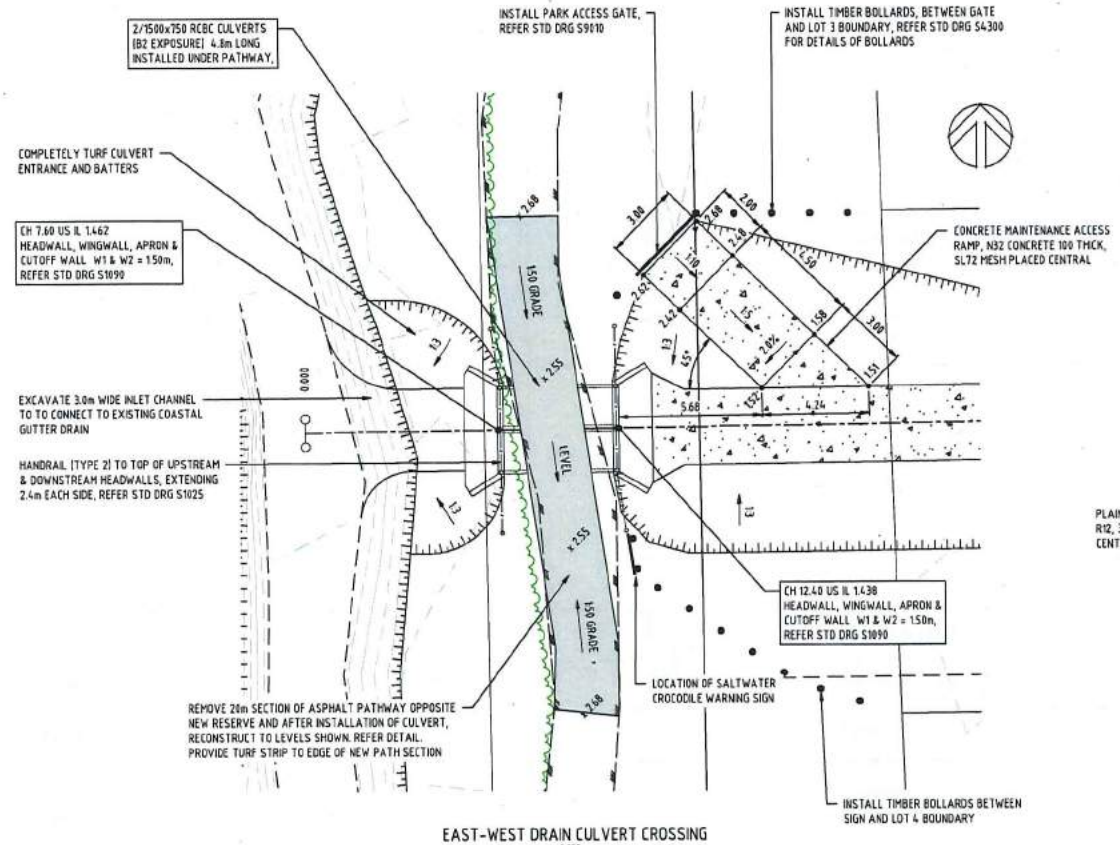
DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C05
SCALE 1:500

TITLE
EAST-WEST DRAINAGE CHANNEL
PLAN & LONGITUDINAL SECTION

A1 FULL SIZE
DRAWING No. 4839-C05
SHEET 1 OF 15 SHEETS
REVISION A

X:\4839-02 SURVEY\dwg\X-4839-DESIGN.dwg

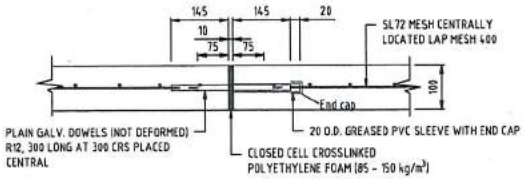
DO NOT SCALE



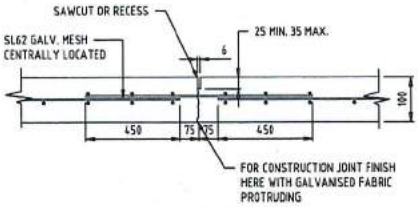
EAST-WEST DRAIN CULVERT CROSSING
1:100

EAST-WEST DRAINAGE CHANNEL - CONTROL LINE SETOUT

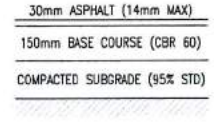
PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	330441.530	8191535.530	89°13'35.44"			
TC	48.970	330490.490	8191536.190	89°13'35.44"			
IP 2	54.150	330495.720	8191536.260		30.000	10.370	19°47'54.32"
CT	59.330	330500.670	8191534.550	109°01'29.75"			
TC	194.330	330628.300	8191490.550	109°01'29.75"			
IP 3	199.070	330633.140	8191488.880		10.000	9.470	54°16'27.07"
CT	203.800	330637.330	8191491.840	54°45'02.68"			
IP 4	211.380	330643.520	8191496.210	54°45'02.68"			



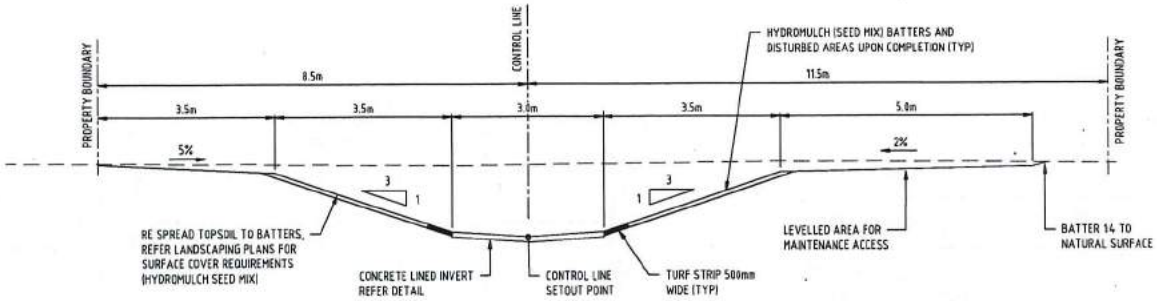
SPACING 16m MAX.
EXPANSION JOINT
N.T.S.



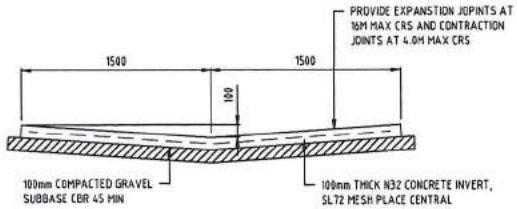
SPACING 4m MAX.
CONTRACTION JOINT
N.T.S.



ASPHALT PATHWAY
NTS



EAST-WEST DRAIN TYPICAL SECTION
1:50



CONCRETE LINED CHANNEL INVERT
1:20

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
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LOT 2 on SP259953

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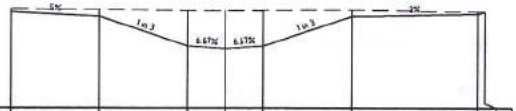
DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C06
SCALE 1:500

TITLE
EAST-WEST DRAINAGE CHANNEL
PEDESTRIAN BRIDGE DETAIL & SECTIONS

A1 FULL SIZE
DRAWING No. 4839-C06
SHEET 1 OF 15 SHEETS
REVISION A

IRCTS K-4839-DX SURVEY.dwg , X-4839-DESIGN.dwg

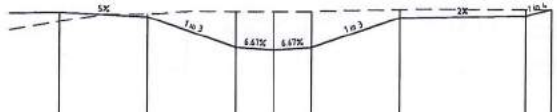
DO NOT SCALE



CENTRELINE DATA
X = 330500.674
Y = 8191534.554
Z = 1336
Datum -1

DESIGN HEIGHT	2.778	2.693	1.436	1.336	1.436	2.693	2.703	2.779
NATURAL SURFACE	2.897	2.871	2.826	2.817	2.832	2.859	2.782	2.779
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	10.305

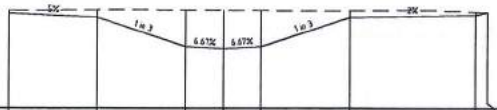
59.333



CENTRELINE DATA
X = 330558.677
Y = 8191514.778
Z = 1215
Datum -3

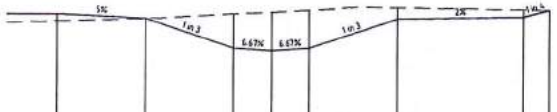
DESIGN HEIGHT	2.457	2.482	1.315	1.215	1.315	2.482	2.582	2.861
NATURAL SURFACE	2.310	2.683	2.716	2.716	2.735	2.895	2.838	2.861
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	11.039

120.000



CENTRELINE DATA
X = 330498.49
Y = 8191536.19
Z = 1357
Datum -1

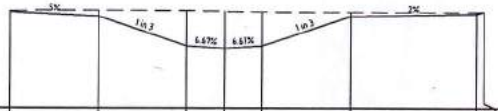
DESIGN HEIGHT	2.199	2.624	1.457	1.357	1.457	2.624	2.724	2.842
NATURAL SURFACE	2.901	2.921	2.915	2.907	2.899	2.896	2.853	2.842
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	10.474



CENTRELINE DATA
X = 330539.12
Y = 8191521.297
Z = 1255
Datum -2

DESIGN HEIGHT	2.697	2.522	1.355	1.255	1.355	2.522	2.622	2.883
NATURAL SURFACE	2.410	2.514	2.701	2.746	2.852	2.958	2.696	2.883
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	11.045

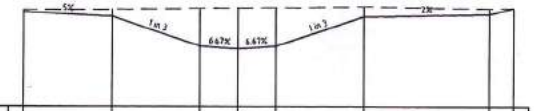
100.000



CENTRELINE DATA
X = 330481.534
Y = 8191536.069
Z = 1375
Datum -1

DESIGN HEIGHT	2.817	2.642	1.475	1.375	1.475	2.642	2.742	2.815
NATURAL SURFACE	2.868	2.874	2.861	2.841	2.817	2.803	2.812	2.815
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	10.292

40.000



CENTRELINE DATA
X = 330520.212
Y = 8191527.811
Z = 1295
Datum -1

DESIGN HEIGHT	2.737	2.562	1.395	1.295	1.395	2.562	2.662	2.899
NATURAL SURFACE	2.816	2.834	2.880	2.905	2.914	2.956	2.873	2.899
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	10.949

80.000

REV	DESCRIPTION	TASK MAN.	APPROVED	NPEQ No.	DATE
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LOT 2 on SP259953

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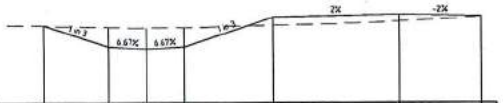
DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C07
SCALE 1:100

TITLE
EAST-WEST DRAINAGE CHANNEL
CROSS SECTIONS - SHEET 1 OF 2

A1 FULL SIZE
DRAWING No. 4839-C07
SHEET 1 OF 15 SHEETS
REVISION A

DO NOT SCALE



CENTRELINE DATA
X = 330614.75
Y = 8191495.278
Z = 1.095
Datum -1

DESIGN HEIGHT	2.845	1.195	1.095	1.195	2.362	2.462	2.397
NATURAL SURFACE	2.845	1.986	1.951	1.959	2.654	2.217	2.397
DESIGN OFFSET	-4.051	-1.500	0.000	1.500	5.000	10.000	13.231

180.000

CENTRELINE DATA
X = 330637.328
Y = 8191491.835
Z = 1.847
Datum -1

DESIGN HEIGHT	1.324	1.147	1.047	1.147	1.450	
NATURAL SURFACE	1.324	1.302	1.432	1.436	1.459	
DESIGN OFFSET	-2.830	-1.500	0.000	1.500	2.409	

203.802

CENTRELINE DATA
X = 330555.643
Y = 8191501.739
Z = 1.135
Datum -1

DESIGN HEIGHT	2.577	2.402	1.235	1.135	1.235	2.402	2.502	2.578
NATURAL SURFACE	2.213	2.328	2.301	2.303	2.339	2.424	2.569	2.578
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	10.305

160.000

CENTRELINE DATA
X = 330633.865
Y = 8191490.277
Z = 1.855
Datum -1

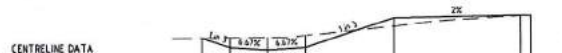
DESIGN HEIGHT	1.382	1.155	1.055	1.155	1.229	
NATURAL SURFACE	1.382	1.371	1.245	1.231	1.229	
DESIGN OFFSET	-2.981	-1.500	0.000	1.500	1.722	

200.000

CENTRELINE DATA
X = 330576.935
Y = 8191500.250
Z = 1.175
Datum -2

DESIGN HEIGHT	2.617	2.442	1.275	1.175	1.275	2.442	2.542	2.878
NATURAL SURFACE	2.762	2.918	2.873	2.865	2.827	2.908	2.590	2.878
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	11.346

140.000



CENTRELINE DATA
X = 330628.297
Y = 8191490.514
Z = 1.966
Datum -1

DESIGN HEIGHT	1.534	1.166	1.066	1.166	2.333	2.433	2.424
NATURAL SURFACE	1.534	1.538	1.553	1.623	2.405	2.440	2.424
DESIGN OFFSET	-2.684	-1.500	0.000	1.500	5.000	10.000	10.427

194.329

CENTRELINE DATA
X = 330643.516
Y = 8191496.21
Z = 1.832
Datum -1

DESIGN HEIGHT	1.519	1.132	1.032	1.132	1.456	
NATURAL SURFACE	1.519	1.455	1.290	1.435	1.456	
DESIGN OFFSET	-2.868	-1.500	0.000	1.500	2.471	

211.382

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
A	ISSUE FOR APPROVAL	GA	GA	6073	8/06/2018

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ASSOCIATED CONSULTANTS

CLIENT / PROJECT

PORT PACIFIC ESTATE PTY LTD
PROPOSED SUBDIVISION OF
2 OASIS DRIVE , WONGA BEACH
LOT 2 on SP259953

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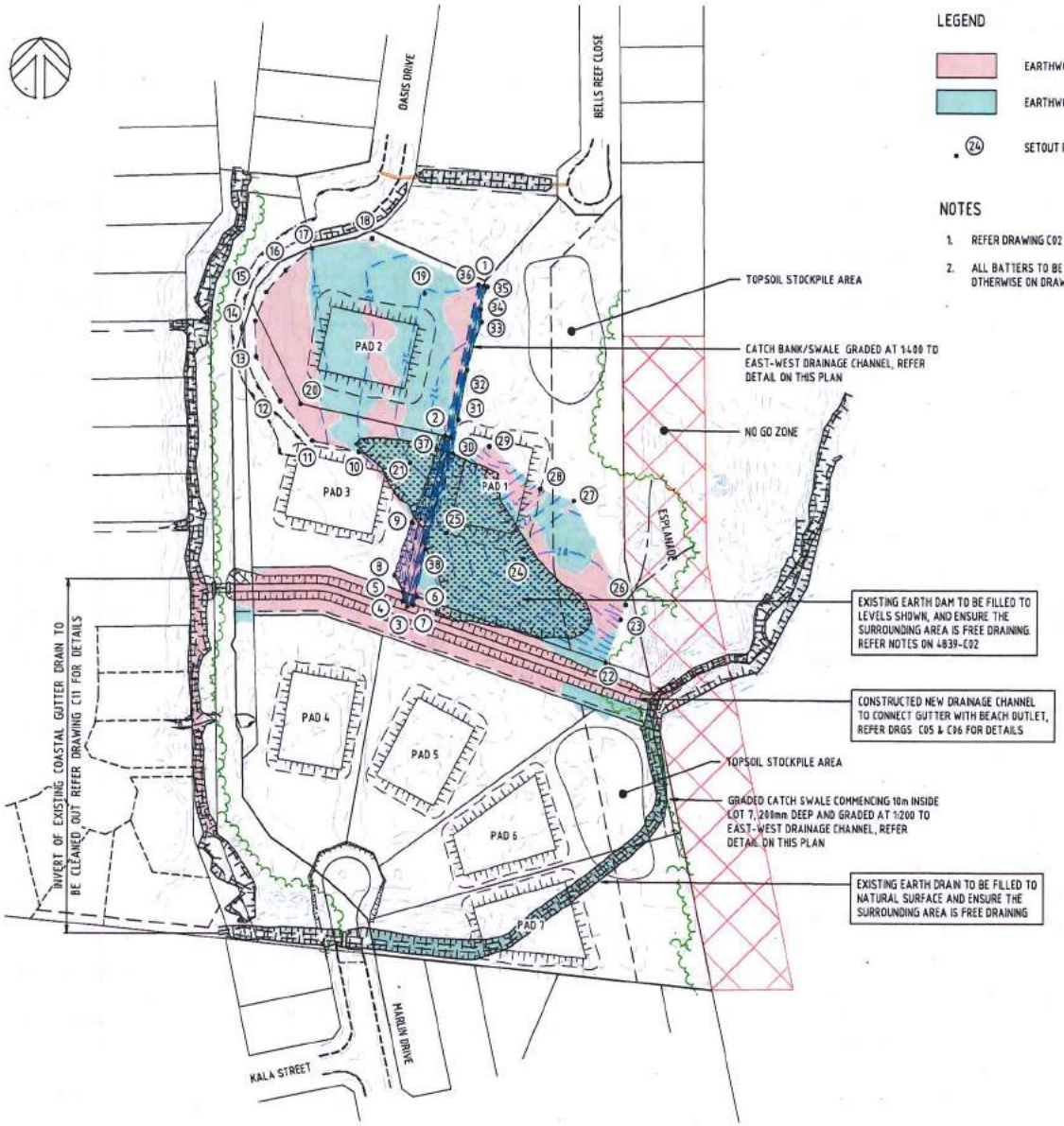
DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C08
SCALE 1:100

TITLE
EAST-WEST DRAINAGE CHANNEL
CROSS SECTIONS - SHEET 2 OF 2

A1 FULL SIZE
DRAWING No. 4839-C08
SHEET 1 OF 15 SHEETS
REVISION A

DO NOT SCALE



LEGEND

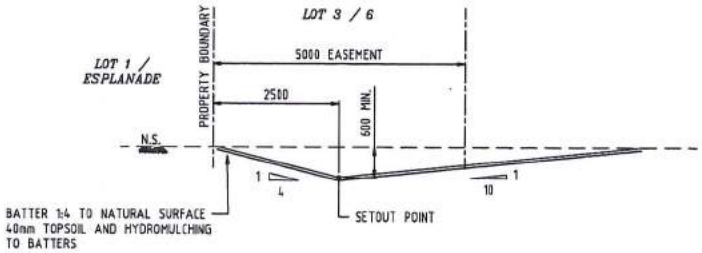
- EARTHWORKS IN CUT
- EARTHWORKS IN FILL
- (24) SETOUT POINT

NOTES

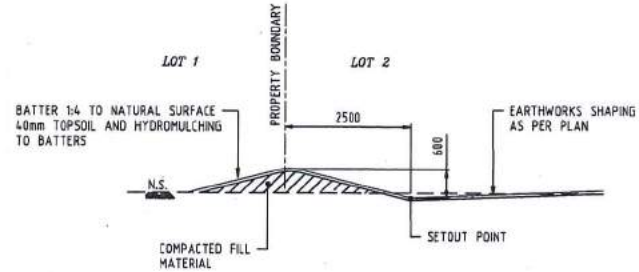
1. REFER DRAWING C02 FOR STANDARD NOTES.
2. ALL BATTERS TO BE 1:4 UNLESS NOTED OTHERWISE ON DRAWINGS

SITE GRADING SETOUT COORDINATES

POINT	EASTING	NORTHING	LEVEL	POINT	EASTING	NORTHING	LEVEL
1	330558.780	8191663.116	2.500	20	330484.510	8191613.179	2.750
2	330545.075	8191599.859	2.241	21	330530.473	8191588.839	2.500
3	330529.507	8191528.002	1.946	22	330612.794	8191504.885	2.547
4	330527.623	8191530.551	2.549	23	330619.044	8191523.011	1.740
5	330527.750	8191534.269	2.727	24	330578.026	8191548.233	2.100
6	330533.487	8191532.231	2.714	25	330545.792	8191559.054	2.493
7	330532.128	8191528.997	2.540	26	330621.179	8191529.202	2.078
8	330524.206	8191541.123	2.789	27	330599.215	8191572.874	2.219
9	330531.429	8191563.652	2.654	28	330585.062	8191577.744	2.428
10	330508.894	8191593.350	2.600	29	330563.688	8191595.614	2.240
11	330489.391	8191597.937	2.750	30	330548.341	8191592.730	2.240
12	330475.892	8191614.297	2.800	31	330550.587	8191606.568	2.480
13	330465.738	8191632.839	2.800	32	330554.258	8191627.260	2.762
14	330465.295	8191647.787	2.800	33	330560.202	8191647.459	2.464
15	330469.750	8191659.935	2.800	34	330559.668	8191652.691	2.891
16	330477.984	8191669.060	2.750	35	330562.510	8191662.307	2.746
17	330488.871	8191678.253	2.700	36	330561.126	8191662.607	3.100
18	330514.076	8191682.263	2.650	37	330547.291	8191599.372	3.265
19	330536.297	8191659.464	2.490	38	330537.260	8191552.156	2.631



CATCH SWALE (LOT 3 & 6)
1:50



CATCH BANK (LOT 2)
1:50

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A	ISSUE FOR APPROVAL	GA	GA	6073	8/06/2018

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LOT 2 on SP259953

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DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C09
SCALE NTS

TITLE
SITE GRADING

A1 FULL SIZE
DRAWING No. 4839-C09
SHEET 1 OF 15 SHEETS
REVISION A

XREFS :- X-4839-E2 SURVEY.dwg ; X-4839-DESIGN.dwg

DO NOT SCALE

LEGEND

PROPOSED BUILDING PAD

(24) SETOUT POINT

NOTES

1. REFER DRAWING C02 FOR STANDARD NOTES.
2. ALL BATTERS TO BE 1:4 UNLESS NOTED OTHERWISE ON DRAWINGS

BUILDING PAD SETOUT COORDINATES

POINT	EASTING	NORTHING	LEVEL
11	330574.224	8191558.532	4.040
12	330547.857	8191564.344	4.040
13	330555.851	8191600.730	4.040
14	330582.243	8191594.914	4.040
21	330521.946	8191619.452	4.040
22	330491.565	8191627.471	4.040
23	330497.376	8191653.838	4.040
24	330533.762	8191645.844	4.040
31	330514.488	8191558.393	4.040
32	330478.107	8191566.411	4.040
33	330483.918	8191592.779	4.040
34	330520.305	8191584.785	4.040
41	330502.158	8191459.537	4.040
42	330475.533	8191464.026	4.040
43	330481.694	8191500.762	4.040
44	330508.344	8191496.274	4.040
51	330548.822	8191444.449	4.040
52	330516.938	8191457.041	4.040
53	330534.292	8191490.006	4.040
54	330558.197	8191477.401	4.040
61	330553.958	8191415.258	4.040
62	330549.163	8191432.190	4.040
63	330583.551	8191457.564	4.040
64	330592.444	8191426.157	4.040
71	330562.512	8191385.050	4.040
72	330557.772	8191401.788	4.040
73	330596.259	8191412.687	4.040
74	330605.308	8191380.731	4.040

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
A	ISSUE FOR APPROVAL	GA	GA	6073	8/06/2018

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LOT 2 on SP259953

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DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C10
SCALE NTS

TITLE ALLOTMENT BUILDING PADS

A1 FULL SIZE

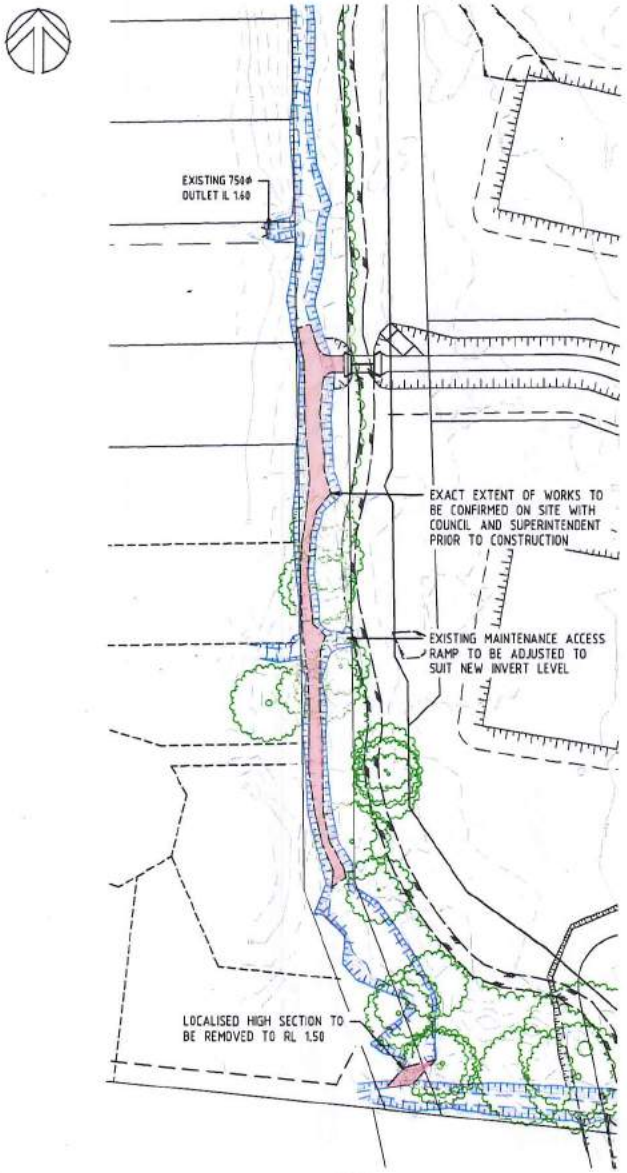
DRAWING No. 4839-C10

SHEET 1 OF 15 SHEETS

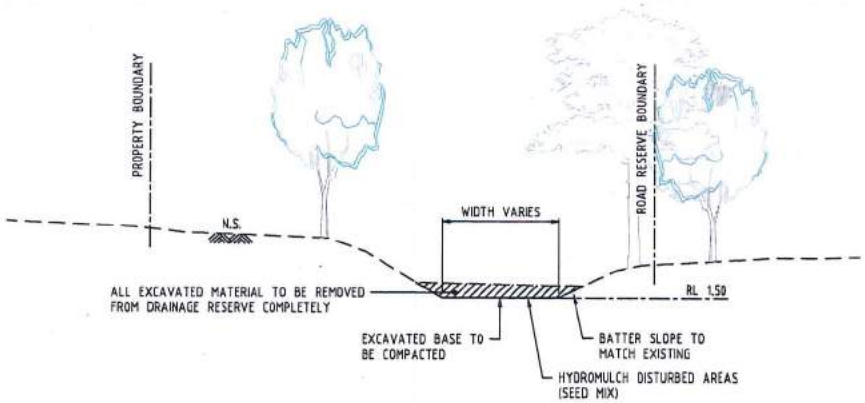
REVISION A

ARCTS :- X-4839-EX SURVEY.dwg , X-4839-DESIGN.dwg

DO NOT SCALE



PLAN
1:500



TYPICAL SECTION - MODIFICATION OF EXISTING LOW FLOW INVERT
1:50

LEGEND

- APPROXIMATE EXTENT OF CHANNEL IMPROVEMENT WORKS
- EXISTING LOW FLOW INVERT
- SIGNIFICANT TREES IDENTIFIED IN SITE SURVEY

NOTES

1. REFER DRAWING C02 FOR STANDARD NOTES.
2. NO TREES SHALL BE REMOVED FROM THE DRAINAGE RESERVE OR EXISTING ROAD RESERVE WITHOUT THE APPROVAL OF DOUGLAS SHIRE COUNCIL

REV	DESCRIPTION	TASK MANL	APPROVED	RFEQ No.	DATE
A	ISSUE FOR APPROVAL	GA	GA	6073	8/06/2018

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LOT 2 on SP259953

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DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C11
SCALE NTS

TITLE
MODIFICATIONS TO EXISTING COASTAL GUTTER DRAIN

A1 FULL SIZE

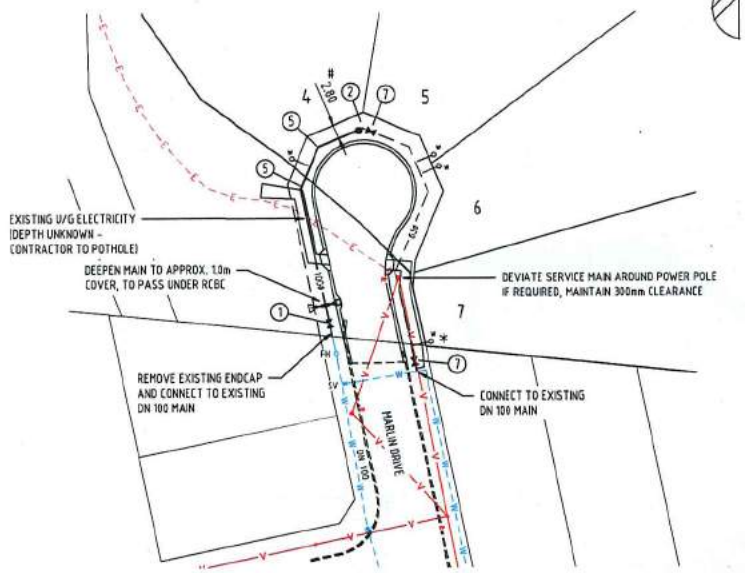
DRAWING No. 4839-C11
SHEET 1 OF 15 SHEETS

REVISION A

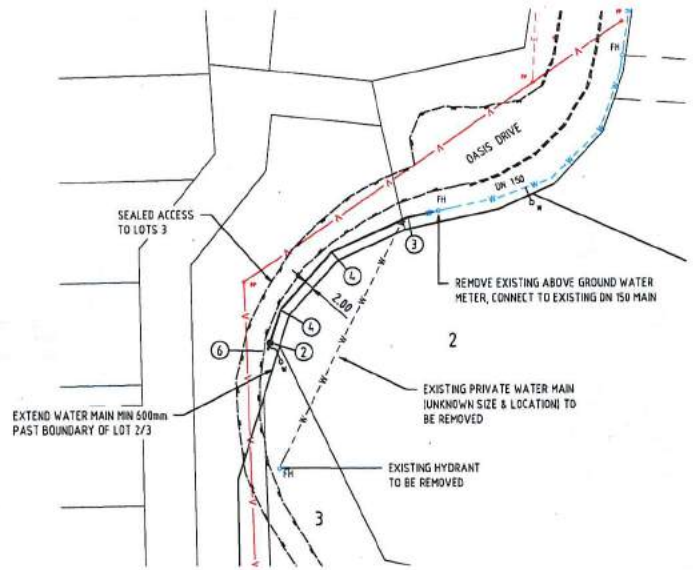
X:\4839 - EX SURVEY.dwg ; X:\4839 - DESIGN.dwg

DO NOT SCALE

PRIOR TO CONSTRUCTION CONTRACTOR TO CONFIRM COUNCILS PREFERENCE TO ADOPT 2.8m OFFSET FROM BOUNDARY OR MATCH EXISTING MAIN ALIGNMENT



MAIN EXTENSION - MARLIN DRIVE
1:500



MAIN EXTENSION - OASIS DRIVE
1:500

LEGEND

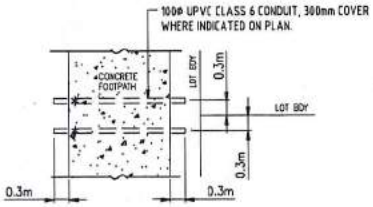
- EXISTING WATER MAIN
- DN 100 PVC-U MAIN PN16
- DN 63 PE MAIN PN16
- PROPOSED WATER SERVICE CONNECTION (INSTALLATION BY COUNCIL)
- * WATER SERVICE CONDUIT UNDER PATH (REFER DETAIL)

NOTES

1. REFER DRAWING C02 FOR STANDARD NOTES.
2. ALL BATTERS TO BE ¾ UNLESS NOTED OTHERWISE ON DRAWINGS

WATER SCHEDULE

1. DIA 100 VALVE & BOX
2. DIA 100 HYDRANT
3. DIA 100 x 11¼° BEND
4. DIA 100 x 22½° BEND
5. DIA 100 x 45° BEND
6. DIA 100 END CAP
7. DIA 63 - 100 MAIN CONNECTOR WITH DIA 50 VALVE AND BOX (STD S2020)



Plan

MARK CONDUIT LOCATION WITH NON-FERROUS CUPHEAD BOLT CAST INTO CONCRETE PATHWAY

WATER SERVICE CONDUIT
N.T.S.

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
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LOT 2 on SP259953

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DESIGNED: IRM
DRAWN: IRM
ACAD No.: 4839-C12
SCALE: 1:500

TITLE: WATER RETICULATION

A1 FULL SIZE

DRAWING No. 4839-C12

SHEET 1 OF 15 SHEETS

REVISION A

DRGTS -> X:\4839-DX SURVEY.dwg , X:\4839-DESIGN.dwg

DO NOT SCALE

LEGEND

- EXISTING SURFACE CONTOUR (0.2m INTERVAL)
- FINISHED SURFACE CONTOUR (0.10m INTERVAL)
- EARTHWORKS IN CUT
- EARTHWORKS IN FILL
- WORKS BOUNDARY
- SF — SEDIMENT FENCE
- KST — KERB INLET SEDIMENT TRAP
- RCD — ROCK CHECK DAM (250 HIGH)

NOTES - EROSION & SEDIMENT CONTROL

1. THIS EROSION AND SEDIMENT CONTROL PLAN DETAILS THE PRIMARY MEASURES THAT ARE TO BE CONSTRUCTED. THE CONTRACTOR SHALL AS A RESULT OF THE PROPOSED CONSTRUCTION SEQUENCING, INSTALL ANY ADDITIONAL MEASURES CONSIDERED NECESSARY TO LIMIT SOIL EROSION AND THE TRANSPORTATION OF SEDIMENT OFF THE PROPOSED SITE.
2. NO EARTHWORKS SHALL COMMENCE ON ANY PART OF THE SITE PRIOR TO INSTALLING APPROPRIATE ESC MEASURES DOWNSTREAM OF THE SITE AND IN ACCORDANCE WITH THE APPROVED ESCP.
3. ALL ACCESS TO AND FROM THE SITE SHALL BE VIA A TEMPORARY CONSTRUCTION ENTRY/EXIT. THE CONTRACTOR SHALL NOMINATE A PROPOSED ACCESS LOCATION ON THE ESC PLAN FOR APPROVAL BY THE SUPERINTENDENT.
4. THE CONTRACTOR SHALL MAINTAIN AN ON-SITE DUST MANAGEMENT PROGRAM TO LIMIT TO THE TRANSPORTATION OF SEDIMENT, AND NUISANCE TO ADJOINING LAND OWNERS. CONTROL MEASURE MAY BE DONE BY ONE OR MORE OF THE FOLLOWING METHODS:
   - MAINTAINING MOIST SOIL CONDITIONS
   - CHEMICAL SEALANTS (SOIL BINDERS) PLACED OVER THE SOIL SURFACE
   - WIND BREAKS
   - RE-VEGETATING EXPOSED SURFACES
   - MINIMISING TRAFFIC MOVEMENTS AND SPEEDS TO (<15KM/H) ON EXPOSED SURFACES
5. STRIP TOPSOIL ONLY FROM CONSTRUCTION AREAS AND STOCKPILE ON SITE. STOCKPILES SHALL ONLY BE LOCATED AS SHOWN ON THE DRAWINGS OR AS APPROVED BY THE SUPERINTENDENT. ALL STOCKPILES MUST BE PROTECTED BY A CATCH DRAIN ALONG THE UPSTREAM SIDES AND SILT FENCING OR MULCH BANK ON THE DOWNSTREAM SIDES.
6. TOPSOIL STRIPPED FROM THE SITE SHOULD BE RE-USED WHERE EVER POSSIBLE.
7. ALL TEMPORARY EARTH STRUCTURES ARE TO BE MACHINE COMPACTED AND MAINTAINED.
8. ALL PERMANENT AND TEMPORARY UNLINED SWALES AND DRAINS TO HAVE APPROPRIATE TEMPORARY EROSION PROTECTION.
9. ALL PARTIALLY CONSTRUCTED DRAINAGE STRUCTURES TO BE PROTECTED AGAINST SEDIMENT INFILTRATION DURING CONSTRUCTION.
10. ALL COMPLETED DRAINAGE STRUCTURES TO BE PROTECTED AGAINST SEDIMENT INFILTRATION UNTIL GRASSING IS ESTABLISHED.
11. ALL KERBS MUST BE PROVIDED WITH TURF STRIPS IMMEDIATELY FOLLOWING TOPSOILING.
12. ALL DISTURBED AREAS FLATTER THAN 1 ON 2 AND NOT UNDER ROAD PAVEMENT OR PATHWAY MUST BE TOPSOILED AND GRASS SEEDED. ALL DISTURBED AREAS 1 ON 2 OR STEEPER MUST BE TOPSOILED AND HYDROMULCHED.
13. REHABILITATION AND RE-VEGETATION IS TO BE PROGRESSIVE THROUGHOUT THE PROJECT TO ENSURE THAT ALL DISTURBED AREAS ARE RE-VEGETATED AS SOON AS POSSIBLE FOLLOWING COMPLETION OF WORKS.
14. ALL TEMPORARY ESC MEASURES TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN FULLY STABILISED OR RE-VEGETATED AND 80% VEGETATION COVER HAS BEEN ACHIEVED.
15. ALL EROSION AND SEDIMENT CONTROLS MEASURES TO BE CHECKED FOR DAMAGE CLEANED OUT AND FULL REINSTATEMENT AFTER EACH RAINFALL EVENT RESULTING IN RUNOFF.
16. A FORMAL COMPLIANCE AUDIT OF THE ESCP IS TO BE CONDUCTED AT SIX WEEKS INTERVALS DURING THE CONSTRUCTION PERIOD OF THE PROJECT.

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
A	ISSUE FOR APPROVAL	QA	QA	6073	8/06/2018

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LOT 2 on SP259953

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DESIGNED: IRM
DRAWN: IRM
ACAD No.: 4839-C13
SCALE: NTS

TITLE: EROSION & SEDIMENT CONTROL STRATEGY

A1 FULL SIZE

DRAWING No.: 4839-C13

SHEET 1 OF 15 SHEETS

REVISION: A

XREFS :- X-4839-EX SURVEY.dwg ; X-4839-DESIGN.dwg

DO NOT SCALE

SEDIMENT FENCE

MATERIALS

FABRIC:
POLYPROPYLENE, POLYAMIDE, NYLON, POLYESTER, OR POLYETHYLENE WOVEN OR NON-WOVEN FABRIC, AT LEAST 700mm IN WIDTH AND A MINIMUM UNIT WEIGHT OF 140GSM. ALL FABRICS TO CONTAIN ULTRAVIOLET INHIBITORS AND STABILISERS TO PROVIDE A MINIMUM OF 6 MONTHS OF USEABLE CONSTRUCTION LIFE (ULTRAVIOLET STABILITY EXCEEDING 70%).

FABRIC REINFORCEMENT:
WIRE OR STEEL MESH MINIMUM 14-GAUGE WITH A MAXIMUM MESH SPACING OF 200mm.

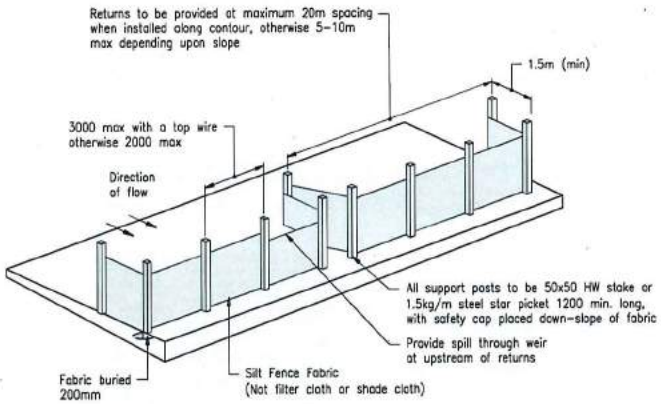
SUPPORT POSTS/STAKES:
1500mm² (MIN) HARDWOOD, 2500mm² (MIN) SOFTWOOD, OR 1.5kg/m (MIN) STEEL STAR PICKETS SUITABLE FOR ATTACHING FABRIC.

INSTALLATION
1. REFER TO APPROVED PLANS FOR LOCATION, EXTENT AND REQUIRED TYPE OF FABRIC (IF SPECIFIED). IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, FABRIC TYPE, OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. TO THE MAXIMUM DEGREE PRACTICAL AND WHERE THE PLANS ALLOW, ENSURE THE FENCE IS LOCATED:
   i. TOTALLY WITHIN THE PROPERTY BOUNDARIES;
   ii. ALONG A LINE OF CONSTANT ELEVATION WHEREVER PRACTICAL;
   iii. AT LEAST 2m FROM THE TOE OF ANY FILLING OPERATIONS THAT MAY RESULT IN SHIFTING SOIL/FILL DAMAGING THE FENCE.
3. INSTALL RETURNS WITHIN THE FENCE AT MAXIMUM 20m INTERVALS IF THE FENCE IS INSTALLED ALONG THE CONTOUR, OR 5 TO 10m MAXIMUM SPACING (DEPENDING ON SLOPE) IF THE FENCE IS INSTALLED AT AN ANGLE TO THE CONTOUR. THE 'RETURNS' SHALL CONSIST OF EITHER:
   i. V-SHAPED SECTION EXTENDING AT LEAST 1.5m UP THE SLOPE; OR
   ii. SANDBAG OR ROCK/AGGREGATE CHECK DAM A MINIMUM 1/3 AND MAXIMUM 1/2 FENCE HEIGHT, AND EXTENDING AT LEAST 1.5m UP THE SLOPE.
4. ENSURE THE EXTREME ENDS OF THE FENCE ARE TURNED UP THE SLOPE AT LEAST 1.5m, OR AS NECESSARY, TO MINIMISE WATER BYPASSING AROUND THE FENCE.
5. ENSURE THE SEDIMENT FENCE IS INSTALLED IN A MANNER THAT AVOIDS THE CONCENTRATION OF FLOW ALONG THE FENCE, AND THE UNDESIRABLE DISCHARGE OF WATER AROUND THE ENDS OF THE FENCE.
6. IF THE SEDIMENT FENCE IS TO BE INSTALLED ALONG THE EDGE OF EXISTING TREES, ENSURE CARE IS TAKEN TO PROTECT THE TREES AND THEIR ROOT SYSTEMS DURING INSTALLATION OF THE FENCE. DO NOT ATTACH THE FABRIC TO THE TREES.
7. UNLESS DIRECTED BY THE SITE SUPERVISOR OR THE APPROVED PLANS, EXCAVATE A 200mm WIDE BY 200mm DEEP TRENCH ALONG THE PROPOSED FENCE LINE, PLACING THE EXCAVATED MATERIAL ON THE UP-SLOPE SIDE OF THE TRENCH.
8. ALONG THE LOWER SIDE OF THE TRENCH, APPROPRIATELY SECURE THE STAKES INTO THE GROUND SPACED NO GREATER THAN 3m IF SUPPORTED BY A TOP SUPPORT WIRE OR WEIR MESH BACKING, OTHERWISE NO GREATER THAN 2m.
9. IF SPECIFIED, SECURELY ATTACH THE SUPPORT WIRE OR MESH TO THE UP-SLOPE SIDE OF THE STAKES WITH THE MESH EXTENDING AT LEAST 200mm INTO THE EXCAVATED TRENCH, ENSURE THE MESH AND FABRIC IS ATTACHED TO THE UP-SLOPE SIDE OF THE STAKES EVEN WHEN DIRECTING A FENCE AROUND A CORNER OR SHARP CHANGE OF DIRECTION.
10. WHEREVER POSSIBLE, CONSTRUCT THE SEDIMENT FENCE FROM A CONTINUOUS ROLL OF FABRIC. TO JOIN FABRIC EITHER:
    i. ATTACH EACH END TO TWO OVERLAPPING STAKES WITH THE FABRIC FOLDING AROUND THE ASSOCIATED STAKE ONE TURN, AND WITH THE TWO STAKES TIED TOGETHER WITH WIRE; OR
    ii. OVERLAP THE FABRIC TO THE NEXT ADJACENT SUPPORT POST.
11. SECURELY ATTACH THE FABRIC TO THE SUPPORT POSTS USING 25 X 12.5mm STAPLES, OR TIE WIRE AT MAXIMUM 150mm SPACING.
12. SECURELY ATTACH THE FABRIC TO THE SUPPORT WIRE/MESH (IF ANY) AT A MAXIMUM SPACING OF 1m.
13. ENSURE THE COMPLETED SEDIMENT FENCE IS AT 450mm, BUT NOT MORE THAN 700mm HIGH. IF A SPILL-THOUGH WEIR IS INSTALLED, ENSURE THE CREST OF THE WEIR IS AT LEAST 300mm ABOVE GROUND LEVEL.
14. BACKFILL THE TRENCH AND TAMP THE FILL TO FIRMLY ANCHOR THE BOTTOM OF THE FABRIC AND MESH TO PREVENT WATER FROM FLOWING UNDER THE FENCE.

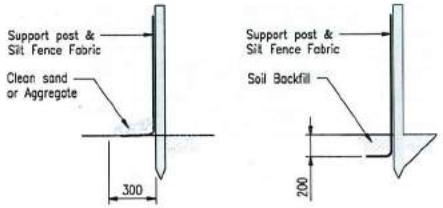
ADDITIONAL REQUIREMENTS FOR THE INSTALLATION OF SPILL-THROUGH WEIR
1. LOCATE THE SPILL -THROUGH WEIR SUCH THAT THE WEIR CREST WILL BE LOWER THAN THE GROUND LEVEL AT EACH END OF THE FENCE.
2. ENSURE THE CREST OF THE SPILL-THROUGH WEIR IS AT LEAST 300mm THE GROUND ELEVATION.
3. SECURELY TIE A HORIZONTAL CROSS MEMBER (WEIR) TO THE SUPPORT POSTS/STAKES EACH SIDE OF THE WEIR. CUT THE FABRIC DOWN THE SIDE OF EACH POST AND FOLD THE FABRIC OVER THE CROSS MEMBER AND APPROPRIATELY SECURE THE FABRIC.
4. INSTALL A SUITABLE SPLASH PAD AND/OR CHUTE IMMEDIATELY DOWN-SLOPE OF THE SPILL-THROUGH WEIR TO CONTROL SOIL EROSION AND APPROPRIATELY DISCHARGE THE CONCENTRATED FLOW PASSING OVER THE WEIR.

MAINTENANCE
1. INSPECT THE SEDIMENT FENCE AT LEAST WEEKLY AND AFTER ANY SIGNIFICANT RAIN. MAKE NECESSARY REPAIRS IMMEDIATELY.
2. REPAIR ANY TORN SECTIONS WITH A CONTINUOUS PIECE OF FABRIC FROM POST TO POST.
3. WHEN MAKING REPAIRS, ALWAYS RESTORE THE SYSTEM TO ITS ORIGINAL CONFIGURATION UNLESS AN AMENDED LAYOUT IS REQUIRED OR SPECIFIED.
4. IF THE FENCE IS SAGGING BETWEEN STAKES, INSTALL ADDITIONAL SUPPORT POSTS.
5. REMOVE ACCUMULATED SEDIMENT IF THE SEDIMENT DEPOSIT EXCEEDS A DEPTH OF 1/3 THE HEIGHT OF THE FENCE.
6. DISPOSE OF SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
7. REPLACE THE FABRIC IS THE SERVICE LIFE OF THE EXISTING FABRIC EXCEEDS 6 MONTHS.

REMOVAL
1. WHEN DISTURBED AREAS UP-SLOPE OF THE SEDIMENT FENCE ARE SUFFICIENTLY STABILISED TO RESTRAIN EROSION, THE FENCE MUST BE REMOVED.
2. REMOVE MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
3. REHABILITATE/REVEGETATE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.

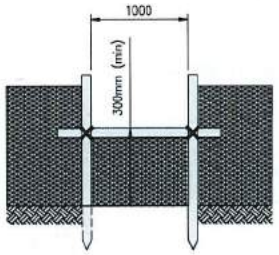


SEDIMENT FENCE
N.T.S



METHOD A METHOD B

ANCHORING BASE OF FABRIC
N.T.S



SPILL TROUGH WEIR
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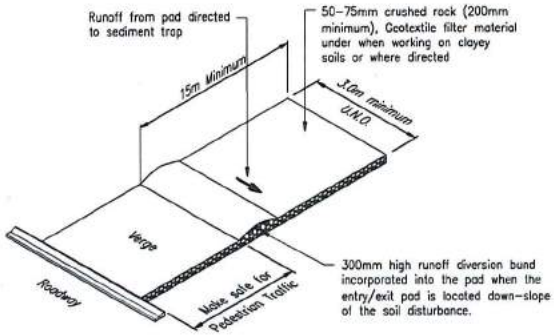

TEMPORARY CONSTRUCTION ENTRY / EXIT
N.T.S

TEMPORARY CONSTRUCTION ENTRY / EXIT

MATERIALS
ROCK:
WELL GRADED, HARD, ANGULAR, EROSION RESISTANT ROCK, NOMINAL DIAMETER OF 50 TO 75mm (SMALL DISTURBANCES) OR 100 TO 150mm (LARGE DISTURBANCES). ALL REASONABLE MEASURES MUST BE TAKEN TO OBTAIN ROCK OF NEAR UNIFORM SIZE.

FOOTPATH STABILISING AGGREGATE:
25 TO 50mm GRAVEL OR AGGREGATE.

GEOTEXTILE FABRIC:
HEAVY-DUTY, NEEDLE-PUNCHES, NON-WOVEN FILTER CLOTH ("BIDIM" A24 OR EQUIVALENT).

INSTALLATION
1. REFER TO APPROVED PLANS FOR LOCATION AND DIMENSIONAL DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. CLEAR THE LOCATION OF THE ROCK PAD, REMOVING STUMPS, ROOTS AND OTHER VEGETATION TO PROVIDE A FIRM FOUNDATION SO THAT THE ROCK IS NOT PRESSED INTO SOFT GROUND. CLEAR SUFFICIENT WIDTH TO ALLOW PASSAGE OF LARGE VEHICLES, BUT CLEAR ONLY THAT NECESSARY FOR THE EXIT. DO NOT CLEAR ADJACENT AREAS UNTIL THE REQUIRED EROSION AND SEDIMENT CONTROL DEVICES ARE IN PLACE.
3. IF THE EXPOSED SOIL IS SOFT, PLASTIC OR CLAYEY, PLACE A SUB-BASE OF CRUSHED ROCK OR A LAYER OF HEAVY-DUTY FILTER CLOTH TO PROVIDE A FIRM FOUNDATION.
4. PLACE THE ROCK PAD FORMING A MINIMUM 200mm THICK LAYER OF CLEAN, OPEN-VOID ROCK.
5. IF THE ASSOCIATED CONSTRUCTION SITE IS UP-SLOPE OF THE ROCK PAD, THUS CAUSING STORMWATER RUNOFF TO FLOW TOWARDS THE ROCK PAD, THEN FORM A MINIMUM 300mm HIGH FLOW CONTROL BERM ACROSS THE ROCK PAD TO DIVERT SUCH RUNOFF TO A SUITABLE SEDIMENT TRAP.
6. THE LENGTH OF THE ROCK PAD SHOULD BE AT LEAST 15M WHERE PRACTICABLE, AND AS WIDE AS THE FULL WIDTH OF THE ENTRY OR EXIT AND AT LEAST 3m. THE ROCK PAD SHOULD COMMENCE AT THE EDGE OF THE OFF-SITE SEALED ROAD OR PAVEMENT.
7. FLARE THE END OF THE ROCK PAD WHERE IT MEETS THE PAVEMENT SO THAT THE WHEELS OF TURNING VEHICLES DO NOT TRAVEL OVER UNPROTECTED SOIL.
8. IF THE FOOTPATH IS OPEN TO PEDESTRIAN MOVEMENT, COVER THE COARSE ROCK WITH FINE AGGREGATE OR GRAVEL, OR OTHERWISE TAKE WHATEVER MEASURES ARE NEEDED TO MAKE THE AREA SAFE.

MAINTENANCE
1. INSPECT ALL SITE ENTRY AND EXIT POINTS PRIOR TO FORECAST RAIN, DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER RUNOFF-PRODUCING RAINFALL, OR OTHERWISE AT FORTNIGHTLY INTERVALS.
2. IF SAND, SOIL, SEDIMENT OR MUD IS TRACKED OR WASHED ONTO THE ADJACENT SEALED ROADWAY, THEN SUCH MATERIAL MUST BE PHYSICALLY REMOVED, FIRST USING A SQUARE-EDGED SHOVEL, AND THEN A STIFF-BRISTLED BROOM, AND THEN BY A MECHANICAL VACUUM UNIT, IF AVAILABLE.
3. IF NECESSARY FOR SAFETY REASONS, THE ROADWAY SHALL ONLY BE WASHED CLEAN AFTER ALL REASONABLE EFFORTS HAVE BEEN TAKEN TO SHOVEL AND SWEEP THE MATERIAL FROM THE ROADWAY.
4. WHEN THE VOIDS BETWEEN THE ROCK BECOME FILLED WITH MATERIAL AND THE EFFECTIVENESS OF THE ROCK PAD IS REDUCED TO A POINT WHERE SEDIMENT IS BEING TRACKED OFF THE SITE, A NEW 100MM LAYER OF ROCK MUST BE ADDED AND/OR THE ROCK PAD MUST BE EXTENDED.
5. ENSURE ANY ASSOCIATED DRAINAGE CONTROL MEASURES (e.g. FLOW CONTROL BERM) ARE MAINTAINED IN ACCORDANCE WITH THEIR DESIRED OPERATIONAL CONDITIONS.
6. DISPOSE OF SEDIMENT AND DEBRIS IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.

REMOVAL
1. THE ROCK PAD SHOULD BE REMOVED ONLY AFTER IT IS NO LONGER NEEDED AS A SEDIMENT TRAP.
2. REMOVE MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
3. RE-GRADE AND STABILISE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.

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ASSOCIATED CONSULTANTS

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PROPOSED SUBDIVISION OF 2 OASIS DRIVE , WONGA BEACH
LOT 2 on SP259953

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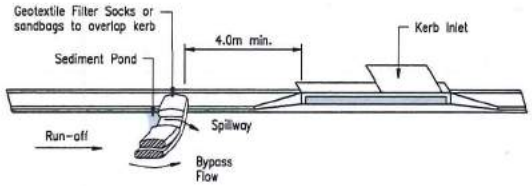
DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C14
SCALE NTS

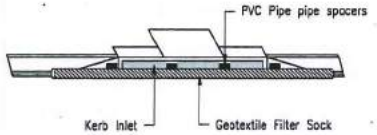
TITLE
EROSION & SEDIMENT CONTROL DETAILS - SHEET 1 OF 2

A1 FULL SIZE
DRAWING No. 4839-C14
SHEET 1 OF 15 SHEETS
REVISION A

DO NOT SCALE



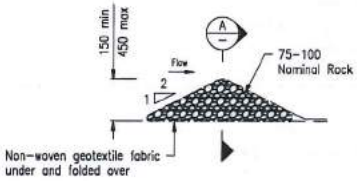
ON-GRADE INLET



SAG INLET

KERB INLET SEDIMENT TRAP

N.T.S



DETAIL 1

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SECTION A

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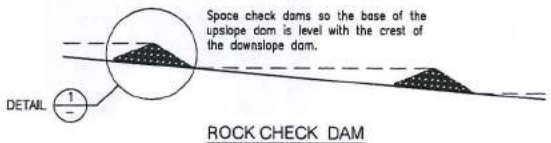

ROCK CHECK DAM

N.T.S

KERB INLET SEDIMENT TRAP

MATERIAL

SOCKS:

MINIMUM 200mm DIAMETER SYNTHETIC OR BIODEGRADABLE TUBES MANUFACTURED FROM NON-WOVEN OR COMPOSITE FABRIC SUITABLE FOR THE 'FILTRATION' OF COARSE SEDIMENT.

FILL MATERIAL:

STRAW CANE MULCH, COMPOSITE MATERIAL (AS4454), COURSE SAND OR CLEAN AGGREGATE.

INSTALLATION

1. REFER TO APPROVED PLANS FOR THE LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. ENSURE THE SOCKS ARE PLACED INDIVIDUALLY OR COLLECTIVELY (AS A SINGLE SEDIMENT TRAP) SUCH THAT:
   (i) LEAKAGE AROUND OR UNDER THE SOCKS IS MINIMISED;
   (ii) ADJOINING SOCKS ARE TIGHTLY BUTTED OR OVERLAPPED AT LEAST 450mm;
   (iii) THE SURFACE AREA OF POTENTIAL WATER PONDING UP-SLOPE OF EACH SEDIMENT TRAP IS MAXIMISED;
   (iv) TO THE MAXIMUM DEGREE PRACTICAL, ALL SEDIMENT-LADEN WATER WILL PASS THROUGH THE FORMED POND BEFORE FLOWING OVER THE DOWN-SLOPE END OF THE SEDIMENT TRAP.
3. WHEN PLACED ACROSS THE INVERT OF MINOR DRAINS. ENSURE THE SOCKS ARE PLACED SUCH THAT:
   (i) THE CREST OF THE DOWNSTREAM SOCK IS LEVEL WITH THE CHANNEL INVERT AT THE IMMEDIATE UPSTREAM SOCK (IF ANY);
   (ii) EACH SOCK EXTENDS UP THE CHANNEL BANKS SUCH THAT THE CREST OF THE SOCK AT ITS LOWEST POINT IS LOWER THAN GROUND LEVEL AT EITHER END OF THE SOCK.
4. IF STAKES ARE REQUIRED TO ANCHOR THE SOCKS, THEIR SPACING DOES NOT EXCEED 1.2m OR SIX TIMES THE SOCK DIAMETER (WHICHEVER IS THE LESSER). A MAXIMUM STAKE SPACING OF 0.3m APPLIES WHEN USED TO FORM CHECK DAMS.

MAINTENANCE

1. INSPECT ALL FILTER SOCKS PRIOR TO FORECAST RAIN DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER SIGNIFICANT RUNOFF PRODUCING STORMS OR OTHERWISE AT WEEKLY INTERVALS.
2. REPAIR OR REPLACE DAMAGED SOCKS.
3. THE BULK OF THE SEDIMENT COLLECTED BEHIND THE FILTER SOCKS SHOULD BE REMOVED BY SHOVEL AFTER EACH STORM EVENT.
4. REMOVE COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

REMOVAL

1. ALL SAND, SOIL, SEDIMENT OR MUD MUST BE PHYSICALLY REMOVED FROM SEALED SURFACES, FIRST USING A SQUARE-EDGED SHOVEL, AND THEN A STIFF-BRISTLED BROOM, AND THEN BY A MECHANICAL VACUUM UNIT, IF AVAILABLE.
2. IF NECESSARY FOR SAFETY REASONS, THE SEALED SURFACE SHALL ONLY BE WASHED CLEAN AFTER ALL REASONABLE EFFORTS HAVE BEEN TAKEN TO SHOVEL AND SWEEP THE MATERIALS FROM THE SURFACE.
3. DISPOSE OF COLLECTED SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
4. ALL SYNTHETIC (PLASTIC) MESH OR OTHER NON READILY BIODEGRADABLE MATERIALS MUST BE REMOVED FROM THE SITE ONCE THE SLOPE OR DRAIN IS STABILISED, OR THE SOCKS HAVE DETERIORATED TO A POINT WHERE THEY ARE NO LONGER PROVIDING THEIR INTENDED DRAINAGE OR SEDIMENT CONTROL FUNCTION.

ROCK CHECK DAMS

MATERIALS

ROCK:

75 TO 100mm NOMINAL DIAMETER, HARD, EROSION RESISTANT ROCK.

GEOTEXTILE FABRIC:

HEAVY-DUTY, NEEDLE-PUNCHES, NON-WOVEN FILTER CLOTH ('BIDIM' A24 OR EQUIVALENT).

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. PRIOR TO PLACEMENT OF THE CHECK DAMS, ENSURE THE TYPE AND SIZE OF EACH CHECK DAMS WILL NOT CAUSE A SAFETY HAZARD OR CAUSE WATER TO SPILL OUT OF THE DRAIN.
3. LOCATE THE FIRST CHECK DAM AT THE DOWNSTREAM END OF THE SECTION OF CHANNEL BEING PROTECTED. LOCATE EACH SUCCESSIVE CHECK DAM SUCH THAT THE CREST OF THE IMMEDIATE DOWNSTREAM DAM IS LEVEL WITH THE TOE OF THE CHECK DAM BEING INSTALLED.
4. ENSURE THE CHANNEL SLOPE IS NO STEEPER THAN 10:1 (H:V). OTHERWISE CONSIDER THE USE OF A SUITABLE CHANNEL LINER INSTEAD OF THE CHECK DAMS.
5. CONSTRUCT THE CHECK DAM TO THE DIMENSIONS AND PROFILE SHOWN WITHIN THE APPROVED PLAN.
6. WHERE SPECIFIED, THE CHECK DAMS SHALL BE CONSTRUCTED ON A SHEET OF GEOTEXTILE FABRIC USED AS A DOWNSTREAM SPLASH PAD.
7. EACH CHECK DAM SHALL BE EXTENDED UP THE CHANNEL BANK (WHERE PRACTICABLE) TO AN ELEVATION AT LEAST 150mm ABOVE THE CREST LEVEL OF THE DAM.

MAINTENANCE

1. INSPECT EACH CHECK DAM AND THE DRAINAGE CHANNEL AT LEAST WEEKLY AND AFTER RUNOFF-PRODUCING RAINFALL.
2. CORRECT ANY DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN ANY OF THE CHECK DAMS, THEN CHECK THE SPACING OF DAMS AND WHERE NECESSARY INSTALL INTERMEDIATE CHECK DAMS OR A SUITABLE CHANNEL LINER.
3. CHECK FOR DISPLACEMENT OF THE CHECK DAMS
4. CHECK FOR SOIL SCOUR AROUND THE ENDS OF EACH CHECK DAM. IF SUCH EROSION IS OCCURRING, CONSIDER EXTENDING THE WIDTH OF THE CHECK DAM TO AVOID SUCH PROBLEMS.
5. IF SEVERE SOIL EROSION OCCURS EITHER UNDER OR AROUND THE CHECK DAMS, THEN SEEK EXPERT ADVICE ON AN ALTERNATIVE TREATMENT MEASURE.
6. REMOVE AND SEDIMENT ACCUMULATED BY THE CHECK DAMS, UNLESS IT IS INTENDED THAT THIS SEDIMENT WILL REMAIN WITHIN THE CHANNEL.
7. DISPOSE OF COLLECTED SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

REMOVAL

1. WHEN CONSTRUCTION WORK WITHIN THE DRAINAGE AREA ABOVE THE CHECK DAMS HAS BEEN COMPLETED, AND THE DISTURBED AREAS AND THE DRAINAGE CHANNEL ARE SUFFICIENTLY STABILISED TO RESTRAIN EROSION, ALL TEMPORARY CHECK DAMS MUST BE REMOVED.
2. REMOVE THE CHECK DAMS AND ASSOCIATED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

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ACAD No. 4839-C15
SCALE NTS

TITLE

EROSION & SEDIMENT CONTROL DETAILS - SHEET 2 OF 2

A1 FULL SIZE

DRAWING No. 4839-C15

SHEET 1 OF 15 SHEETS

REVISION A

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APPENDIX: C

Landplan Landscape Architecture Landscaping Submission

PROPOSED 7 LOT SUBDIVISION - WONGA BEACH

PORT PACIFIC ESTATES

LANDSCAPE DOCUMENTATION

Issue: OPERATIONAL WORKS

Date: 01-06-2018

SHEET PLAN 1:1000

DRAWING SCHEDULE

DWG No.	DRAWING TITLE	ISSUE
1801-003-CD-L0.00	COVER SHEET	03
1801-003-CD-L1.01	PLANTING PLAN 1 OF 1	03
1801-003-CD-L2.01	DETAILS AND SPECIFICATION	03

PLANT SCHEDULE

CODE	SPECIES	COMMON NAME	POTSIZE	QUANTITY
MODULE A - Area: 370m2				
ATR fit	ATRACTOCARPUS fitzalanii	Yellow Mangosteen	tube	22
ACM hem	ACMENA hemilampra	Broad Leaf Lilly Pilly	tube	22
CAR bra	CARALLIA brachiata	Corkwood	tube	22
CLE hyl	CLEISTANTHUS hylandii	Bernie's Cleistanthus	tube	22
LEE ind	LEEA indica	Bandicoot Berry	tube	22
LOM lon	LOMANDRA longifolia	Mat Rush	tube	22
PHY cus	PHYLLANTHUS cuscuiflorus	Pink Phyllanthus	tube	22
RHU tal	RHUS tallensis	Sumac	tube	22
SCA lac	SCAEVOLA laccida	Sea Lettuce	tube	22
SCO bra	SCOLOPIA braunii	Brown Birch	tube	22
SYZ fib	SYZYGIUM fibrosum	Fibrous Satinash	tube	22
MODULE B - Area: 370m2				
ARC gra	ARCHIDENDRON grandiflorum	Laceflower Tree	tube	16
ARC luc	ARCHIDENDRON lucyi	Scarlet Bean	tube	16
ARC ale	ARCHONTOPHOENIX alexandrae	Alexandra palm	tube	16
ALL lit	ALLOCASUARINA littoralis	Black She Oak	tube	16
BAR cal	BARRINGTONIA calyptrata	Cassowary Pine	tube	16
BAR asi	BARRINGTONIA asiatica	Beach Barringtonia	tube	16
BOM ceI	BOMBAX ceiba	Bombax	tube	16
BRA ace	BRACHYCHITON acerifolius	Flame Tree	tube	16
BUC arb	BUCHANANIA arborescens	Jaliara	tube	16
CAL bic	CALOPHYLLUM bicolor		tube	16
CAL ino	CALOPHYLLUM inophyllum	Beach Calophyllum	tube	16
CAS equ	CASUARINA equisetifolia	Beach She Oak	tube	16
COR sub	CORDIA subcordata	Sea Trumpet	tube	16
CUP ana	CUPANIOPSIS anacardioides	Tuckeroo	tube	16
EUG rel	EUGENIA reinwardtiana	Beach Cherry	tube	16
MODULE C - Area: 370m2				
ACR spe	ACROSTICHUM speciosum	Mangrove Fern	tube	35
BAR acu	BARRINGTONIA acutangula	Freshwater Mangrove	tube	35
CRI pen	CRINUM pedunculatum	Swamp Lily	tube	35
DIL ala	DILLENIA alata	Red Beech	tube	35
GAR sca	GARDENIA scabrella	Native Gardenia	tube	35
GRA exc	GRAPTOPHYLLUM excelsum	Scarlet Fuschia	tube	35
PAN tec	Pandanus tectorius	Thatch Screw Pine	tube	35

Tube stock to be planted randomly at 1.5m centres. The contractor shall review the plant schedule to ensure that drawings and schedules concur. Where insufficient detail or discrepancies may exist on either the plans or the schedule, it is the contractors responsibility to resolve immediately with the Landscape Architect and prior to providing tender pricing, signing work contracts or commencement of works.

GENERAL NOTES

1. Refer to Engineers' drawings for finished surface levels unless shown on Landscape drawings. Retain existing levels to buildings and adjacent surfaces except where instructed by the superintendent. All new finished surfaces are to align flush with existing surface levels.
2. Refer to Engineers' drawings for path and kerb crossover setting out, service locations, jointing and conduiting in pavement, all structural beams and reinforcements to pavements and walls etc, lighting and hydraulic elements.
3. Final setout for all landscape treatments to be confirmed on site by the superintendent.

UNDERGROUND SERVICES:
The locations of underground services are approximate only and their exact location should be determined on site. No guarantee is given that all existing services are shown.

TREE SETTING OUT PRINCIPLES:
Trees are to be planted in accordance with FNQROC Design Guidelines D9 - Landscaping, at the following spacings:

- 4.0m min. from electricity or telecommunications poles or pillars
- 7.5m min. from streetlights
- 4.0m radius from high voltage transmission lines
- 2.0m from stormwater pits
- 0.6 - 1.0m from back of kerb
- 3.0m min. from driveway
- 10m min. from the face of the kerb of the adjoining street

NOTE
PLANS HAVE BEEN PREPARED WITHOUT ELECTRICAL DESIGN. TREES MAY NEED TO BE SITE LOCATED TO MEET FNQROC REQUIREMENTS REGARDING LIGHT POLES.

IMPORTANT NOTE

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Refer to Civil Engineer's drawings for service locations. All services are to be verified on site prior to any excavation / construction. Trees to be located minimum 1m from services. All services are indicative only.

Final set-out for all landscape treatments to be confirmed on site by the Landscape Architect.

Unless shown on the landscape drawings, refer to Structural Engineer's drawings for jointing, reinforcement, structural fixings etc for all walls and pavements.

All trees marked within / adjacent to vehicle sightlines are to be set out on site prior to installation and approved by the Landscape Architect and Traffic Engineer.

For Lighting requirements refer Electrical Engineers drawings.

The contractor shall review the plant schedule to ensure that drawings and schedules concur. Where insufficient detail or discrepancies may exist on either the plans or the schedule, it is the contractors responsibility to resolve immediately with the Landscape Architect and prior to providing tender pricing, signing work contracts or commencement of works.

rev. no	description	date	drawn
03	REVISED FOR OPERATIONAL WORKS	01/06/2018	SM
02	REVISED FOR OPERATIONAL WORKS	13/04/2018	SM
01	PRELIMINARY	26/03/2018	SH

LANDPLAN
LANDSCAPE ARCHITECTURE
p 0439 065 294 | e shane@landplanla.com.au | PO Box 751 Bungalow 4870

client: PORT PACIFIC ESTATES

project: PROPOSED 7 LOT SUBDIVISION - WONGA BEACH

title: LANDSCAPE COVER SHEET

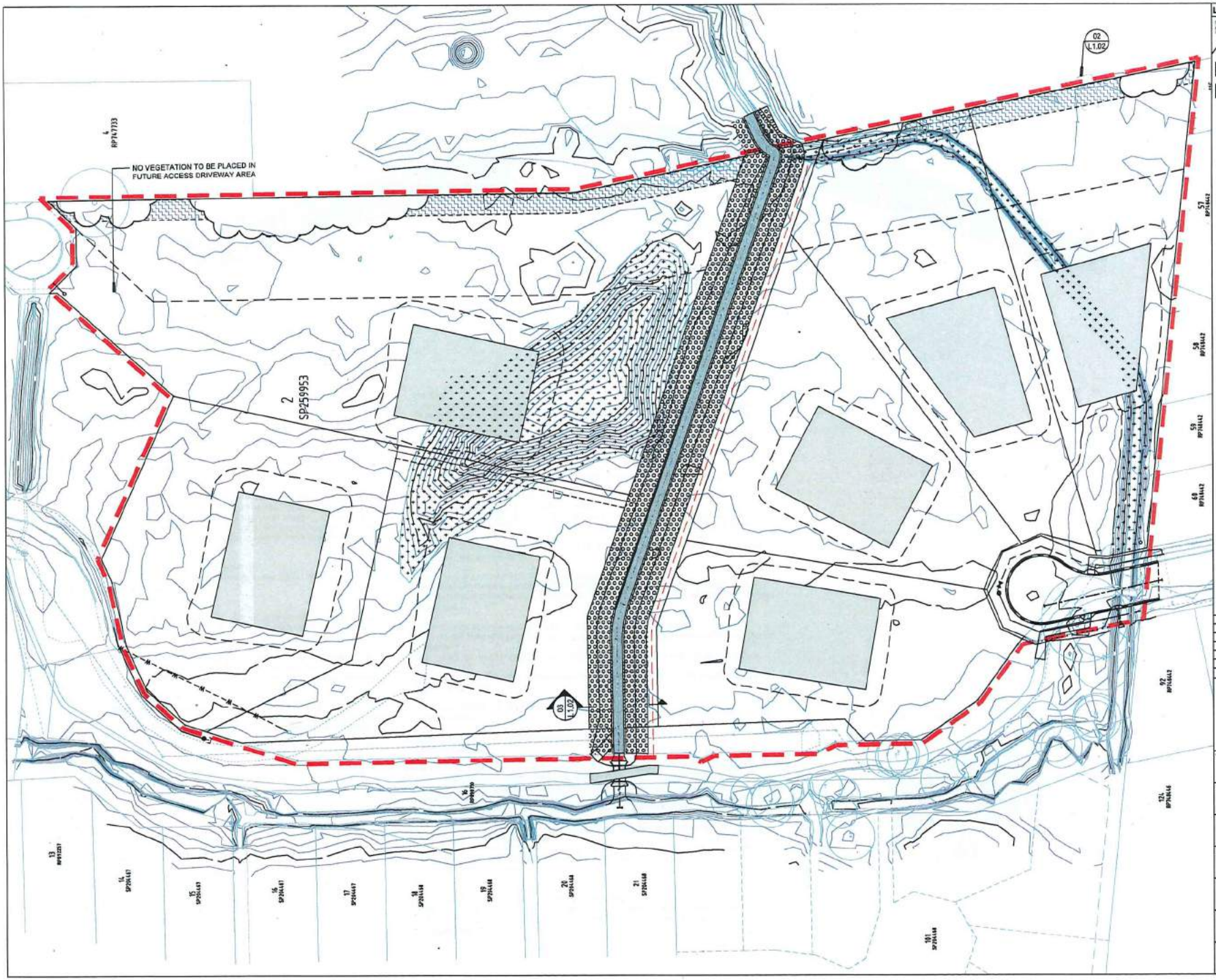
scale: 1:1000 (AT A1 SIZE SHEET) — 0 10m 20m 30m 40m 50m

drawn	approved	date
S.H.	S.M.	01/06/2018

project number: 1802-005

north point

drawing number: L0.00 — rev: 03



LEGEND

- PLANTING AREA TYPE 1 (PA1) - REVEGETATION PLANTING AREAS AS SPECIFIED
- EXISTING TREE CANOPY
- HYDRO SEEDING GRASS BY OTHERS. OBTAIN 90% COVERAGE AFTER 10 WEEKS.
- CONCRETE LINED DRAIN REFER TO CIVIL PACKAGE

Rev. No	Description	Date	Drawn
03	REVISED FOR OPERATIONAL WORKS	01/06/2018	SM
02	REVISED FOR OPERATIONAL WORKS	13/04/2018	SM
01	PRELIMINARY	29/03/2018	SH

LANDPLAN
LANDSCAPE ARCHITECTURE

p 0439 020 294 | e simon@landplanqld.com.au | PO Box 181 Bungalow 4870

client
PORT PACIFIC ESTATES

project
PROPOSED 7 LOT SUBDIVISION - WONGA BEACH

title
PLANTING PLAN 1 OF 1

scale
1:500 (AT A1 SIZE SHEET)
0 5m 10m 15m 20m 25m

drawn	approved	date
S.H.	S.M.	01/06/2018

project number
1802-005

drawing number
L1.01

rev
03

SPECIFICATIONS

SCOPE OF WORK
The work includes the organisation for and supply of all relevant labour, materials, plant and equipment as required to execute the works.
The scope of work includes but is not limited to the following:

- Trimming of areas to be landscaped;
- Removal of deleterious material;
- Cultivation;
- Supply and spreading of additives;
- Supply and installation of imported topsoil;
- Supply and installation of mulch;
- Planting; and
- Maintenance.

WORKS BY OTHERS

- All hard pavement
- Retaining walls
- All fencing types
- Subsoil drainage

EARTHWORKS
Earthworks shall involve the removal of existing compacted material, the cultivation of subsoil, the supply and mixing in of additives, the supply and spreading of topsoil and the fine grading of such soil and existing soil profiles to all landscaped areas to form the finished levels and profiles.
Finished surfaces shall finish flush with adjacent surfaces.

Preparation
Eradicate all weeds using environmentally acceptable methods, such as non-residual glyphosate herbicide in any of its registered formulae, at the recommended maximum rate.
Maintain all areas in a weed free state for the duration of the contract and Plant Establishment periods.

Cultivation
Excavate and remove from site compacted fill resulting from the building works. Cultivate all planting and turf areas to a depth of 150mm and place 100g/m2 of Blood and Bone and 100g/m2 of Gypsum.

IMPORTED TOPSOIL (FOR PLANTING)
Import and spread premium topsoil mix . Soil shall be free of weeds, sticks, rocks and other deleterious matter. Imported topsoil is to comply with AS4419.

MULCH
Mulch to be spread evenly across all planting areas. Mulch to planting areas shall be approved rainforest mulch free of soil, stones, weeds, rubbish or any other deleterious materials. Spread mulch to garden bed areas to a depth of 75mm, to finish 20mm below adjacent surfaces. Keep mulch clear of plant stems. Spread mulch following planting and watering in. Avoid mixing of soil and mulch materials. Do not use recycled garden mulch. Mulch to comply with AS4454.

HYDRO MULCH
Material: Hydromulch in accordance with FNQROC S8.05specification
Application: apply mulch to batters prior to turfing
Location: Swale Batters

PLANTING AREAS
Finished soil depth to all garden areas shall be 300mm crowned towards centre of beds ensuring positive falls to drainage structures. Use 'Agriform' 10g fertilizer tablets (or approved equivalent) to base of all plant root balls at manufacturer's recommended rate.

PLANTS
Provide plants with the following characteristics:

- Large healthy root systems, with no evidence of root curl, restriction or damage;
- Vigorous well-established stock free from pests and diseases, of good form consistent with the pot size, species or variety;
- Hardened off, not soft or forced, and suitable for planting in the natural climatic conditions prevailing at the site.

Label at least one plant from each species in a batch with a durable, readable tag. Plant stock immediately after it is delivered to site. For all plant stock excavate a hole twice the diameter of the rootball and at least 200mm deeper than the rootball. Loosen compacted sides and base of holes to prevent confinement of root growth. Fill all holes to half deep with water in advance of planting, allowing time for water to soak away. After planting, fill hole with amended/imported soils.

STAKES AND TIES
All 45L stock and larger are to be staked and tied.

GRASS AREAS
Refer Civil Engineers Specifications.

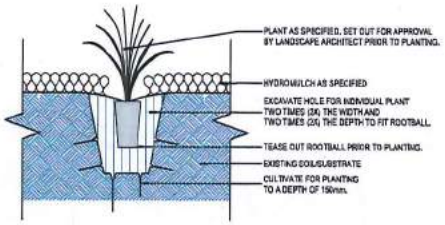
SWALE TURF STRIP
Extent of turf limited to areas disturbed by building construction and shall be cultivated to 150mm depth.
Mix 1 kg/m2 'Terra Firma Organic Life' to topsoil. Turf shall be Broad Leaf Buffalo - Axonopus compressus
Carry out fine grading of improved soil to all landscaped areas to form finished levels with falls to edges or kerbs as required, to ensure drainage of surface water to the street.

CONDUITS
The contractor is responsible for co-ordination with the building contractor to ensure that conduits under proposed paved or concreted areas have been installed. Conduits for irrigation purposes shall be 90mm PVC pipe - top min. 250mm below finished surface levels.

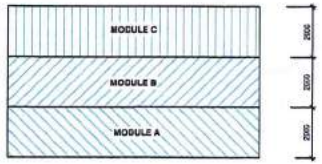
PLANTING ESTABLISHMENT
Establish and maintain the works for a period of thirteen (13) weeks from the Date of Practical Completion.
Establishment shall include the care of the contract areas by accepted horticultural practices, as well as rectifying any defects that become apparent in the works under normal 'use'. This shall include, but not be limited to, the following works:

- Repair and/or replace any defects due to failure and/or inferior quality materials and/or workmanship;
- Replace plants that have failed and/or have been damaged or died;
- Weed and pest control;
- Maintain all landscape areas in a neat and tidy condition at all times;
- Maintain fertilising and pruning as required;
- Check and adjust levels to attain those specified by addition or removal of mulch and/or topsoil.

All planted beds are to be weeded to maintain same in a grass and weed free environment. Carry out any other work that is specified or is necessary to establish the landscape works in a first class condition.



01 PT1 PLANTING
SCALE 1:10



02 TYPICAL MODULES
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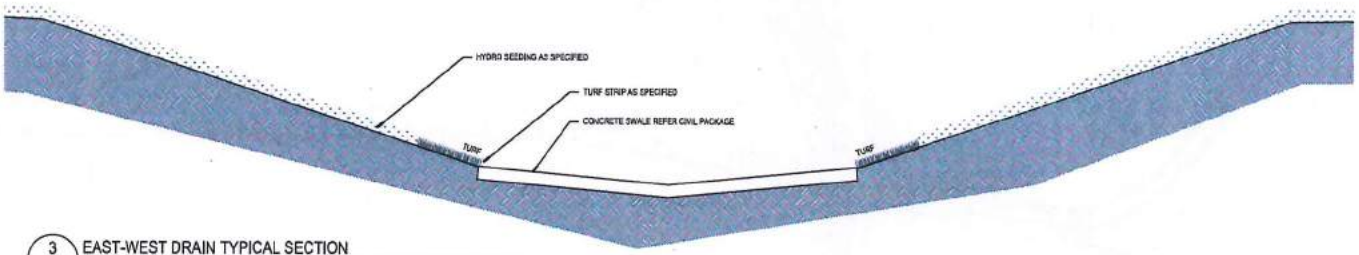


3 EAST-WEST DRAIN TYPICAL SECTION
SCALE 1:20

rev. no	description	date	drawn
03	REVISED FOR OPERATIONAL WORKS	01/06/2018	SM
02	REVISED FOR OPERATIONAL WORKS	13/04/2018	SM
01	PRELIMINARY	29/03/2018	SH

LANDPLAN
LANDSCAPE ARCHITECTURE

client: PORT PACIFIC ESTATES

project: PROPOSED 7 LOT SUBDIVISION - WONGA BEACH

title: LANDSCAPE DETAILS AND SPECIFICATION

scale: AS SHOWN (AT A1 SIZE SHEET)

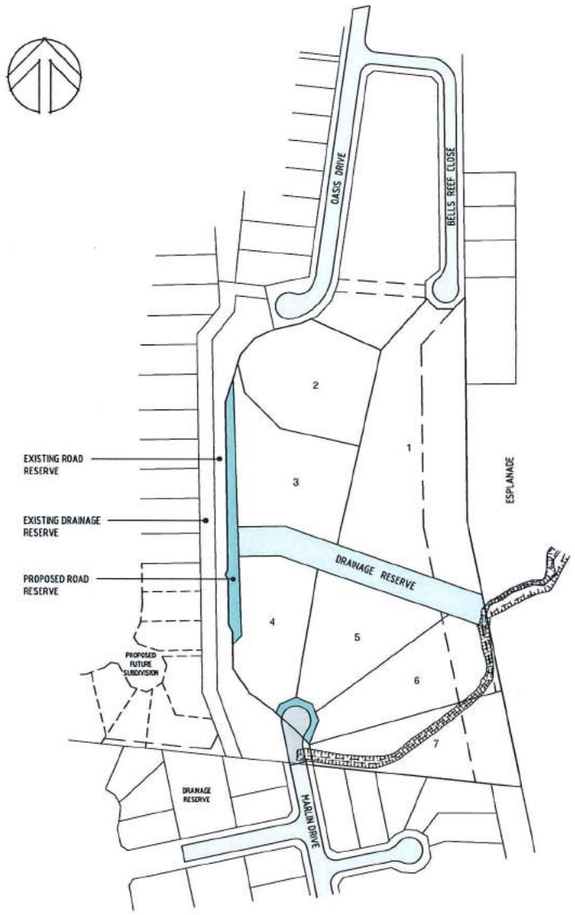
drawn	approved	date
S.H.	S.M.	01/06/2018

project number: 1802-005

drawing number: L2.01

rev: 03

DO NOT SCALE



SITE PLAN
1:2000

DRAWING INDEX

PROJECT DRAWINGS

4839-C01	SITE PLAN AND DRAWING INDEX
4839-C02	STANDARD NOTES
4839-C03	GENERAL ARRANGEMENT
4839-C04	MARLIN DRIVE CUL-DE-SAC - SETOUT AND GRADING
4839-C05	EAST WEST DRAINAGE CHANNEL - PLAN & LONG SECTION
4839-C06	EAST WEST DRAINAGE CHANNEL - PEDESTRIAN BRIDGE & DETAILS
4839-C07	EAST WEST DRAINAGE CHANNEL - CROSS SECTIONS SHEET 1 OF 2
4839-C08	EAST WEST DRAINAGE CHANNEL - CROSS SECTIONS SHEET 2 OF 2
4839-C09	SITE GRADING
4839-C10	ALLOTMENT BUILDING PADS
4839-C11	MODIFICATION TO EXISTING COASTAL GUTTER DRAIN
4839-C12	WATER RETICULATION
4839-C13	EROSION AND SEDIMENT CONTROL STRATEGY
4839-C14	EROSION AND SEDIMENT CONTROL DEVICES - SHEET 1 OF 2
4839-C15	EROSION AND SEDIMENT CONTROL DEVICES - SHEET 2 OF 2

ASSOCIATED STANDARD DRAWINGS

ROADWORKS AND DRAINAGE

S1000	CONCRETE KERB AND CHANNEL
S1016	KERB RAMP
S1025	HANDRAIL/TUBULAR STEEL FENCE
S1035	PATHWAY/BIKEWAY
S1046	EXCAVATION, BEDDING AND BACKFILLING OF PRECAST BOX CULVERTS
S1050	GRATED KERB INLET - PIPES £ 600 DIA
S1060	KERB INLET GRATE AND FRAME
S1095	SUBSURFACE DRAINAGE FLUSHING POINTS OUTLET
DTMR 1318	CONSTRUCTION OF BASES WITH RECESSES AND APRONS (ALL SIZES)

WATER RETICULATION

S2000	VALVE BOX INSTALLATION
S2005	HYDRANT BOX INSTALLATION
S2010	KERB / ROAD MARKERS
S2016	WATER RETICULATION BEDDING DETAILS - PIPE DIA < 300
S2020	MAIN CONNECTION DETAILS
SEQ-WAT-1205-1	TYPICAL THRUST BLOCK DETAILS - MASS CONCRETE
SEQ-WAT-1206-1	TYPICAL THRUST AND ANCHOR BLOCKS FOR VALVES
SEQ-WAT-1207-1	TYPICAL THRUST AND ANCHOR BLOCKS FOR VERTICAL BENDS

LANDSCAPING

S4030	BARRIER FENCE AND BOLLARDS
S9010	PARK ACCESS GATE

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
A	ISSUE FOR APPROVAL	GA		6073	8/06/2018

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ASSOCIATED CONSULTANTS

CLIENT / PROJECT

PORT PACIFIC ESTATE PTY LTD
PROPOSED SUBDIVISION OF
2 OASIS DRIVE , WONGA BEACH
LOT 2 on SP259953

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DESIGNED	IRM
DRAWN	IRM
ACAD No.	4839-C01
SCALE	NTS
A1 FULL SIZE	
TITLE	SITE PLAN & DRAWING INDEX
DRAWING No.	4839-C01
SHEET 1 OF 15 SHEETS	
REVISION	A

DO NOT SCALE

SURVEY CONTROL NOTES

1. SURVEY ORIGIN -

LEVEL DATUM :	AHD(D)
ORIGIN OF LEVELS :	PSM 53559 RL 13.696
MERIDIAN :	MGA ZONE 55
ORIGIN OF COORDINATES :	PSM 53559 E 360136.781 N 8142554.238

GENERAL NOTES

1. ALL WORKS MUST BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT FNQROC DEVELOPMENT MANUAL SPECIFICATIONS. WHERE DIFFERENCES EXIST BETWEEN THE PLANS AND THE DEVELOPMENT MANUAL, THESE PLANS SHALL TAKE PRECEDENCE.
2. THE CONTRACTOR IS TO ENSURE A COPY OF THE OPERATIONAL WORKS APPROVAL IS AVAILABLE ON SITE. THE SITE FOREMAN IS TO ENSURE ALL WORKS ARE UNDERTAKEN IN ACCORDANCE WITH THE APPROVAL.
3. THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN APPROXIMATED FROM THE KNOWN POSITIONS OF VALVES, MANHOLES, ETC. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE CONTRACTOR MUST CONTACT RELEVANT AUTHORITIES FOR POSSIBLE LOCATION OF FURTHER SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.
4. EXISTING SERVICES ARE TO BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. WHERE NECESSARY THE CONTRACTOR SHALL CONFIRM THE DEPTH TO EXISTING SERVICES BY POTHOLING BEFORE COMMENCING WORKS. THE SUPERINTENDENT SHALL BE CONSULTED WHERE THE CONTRACTOR CONSIDERS SPECIFIC PROTECTION WORKS NECESSARY TO PROTECT THE SERVICE.

EROSION AND SEDIMENT CONTROL NOTES

1. NO EARTHWORKS SHALL COMMENCE ON ANY PART OF THE SITE PRIOR TO INSTALLING APPROPRIATE ESC MEASURES DOWNSTREAM OF THE SITE AND IN ACCORDANCE WITH THE APPROVED ESC.
2. AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS AND TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION.
3. THE IMPACT ON THE ENVIRONMENT SHALL BE MINIMISED BY OBSERVING THE FOLLOWING CONSTRUCTION PRACTICES:
   - AREAS DISTURBED BY CONSTRUCTION TRAFFIC AND PROCEDURES SHALL BE MINIMISED.
   - MINIMISE TRAFFIC MOVEMENTS AND SPEEDS ON EXPOSED SURFACES.
   - REVEGETATION OF DISTURBED AREAS SHALL BE CARRIED OUT SOON AFTER THE COMPLETION OF TOPSOIL PLACEMENT.
   - FLOW DIVERSION SHALL BE CARRIED OUT BY EARLY INSTALLATION OF DRAINS ALONG TOPS OF BATTERS WITH APPROPRIATE SILTATION CONTROL DEVICES.
   - SEDIMENT INTERCEPTION BY THE PLACEMENT OF SUITABLE RETENTION SYSTEMS ACROSS DRAINAGE LINES AND AT INTERCEPTION POINTS FOR BOTH THE CONSTRUCTION AND STOCKPILE AREAS.
4. ALL ACCESS TO AND FROM THE SITE SHALL BE VIA A TEMPORARY CONSTRUCTION ENTRY/EXIT. THE CONTRACTOR SHALL NOMINATE A PROPOSED ACCESS LOCATION ON THE ESC PLAN FOR APPROVAL BY THE SUPERINTENDENT.
5. STOCKPILES SHALL ONLY BE LOCATED IN AREAS NOMINATED ON THE PROJECT DRAWINGS OR APPROVED BY THE SUPERINTENDENT. ALL STOCKPILES MUST HAVE APPROPRIATE ESC MEASURES INSTALLED TO PREVENT SEDIMENT TRANSPORT. THE MAXIMUM HEIGHT OF ALL STOCKPILES MUST BE LIMITED TO 2.0M.
6. ALL PERMANENT AND TEMPORARY UNLINED SWALES AND DRAINS TO HAVE APPROPRIATE TEMPORARY EROSION PROTECTION.
7. ALL PARTIALLY CONSTRUCTED DRAINAGE STRUCTURES TO BE PROTECTED AGAINST SEDIMENT INFILTRATION DURING CONSTRUCTION.
8. ALL COMPLETED DRAINAGE STRUCTURES TO BE PROTECTED AGAINST SEDIMENT INFILTRATION UNTIL GRASSING IS ESTABLISHED.
9. ALL DISTURBED AREAS FLATTER THAN 1 ON 2 AND NOT UNDER ROAD PAVEMENT OR PATHWAY MUST BE TOPSOILED AND GRASS SEEDED. ALL DISTURBED AREAS 1 ON 2 OR STEEPER MUST BE TOPSOILED AND HYDROMULCHED.
10. REHABILITATION AND RE-VEGETATION IS TO BE PROGRESSIVE THROUGHOUT THE PROJECT TO ENSURE THAT ALL DISTURBED AREAS ARE RE-VEGETATED AS SOON AS POSSIBLE FOLLOWING COMPLETION OF WORKS.
11. ROAD VERGE TO BE FULLY TURFED IMMEDIATELY FOLLOWING TOPSOILING.
12. THE CONTRACTOR IS RESPONSIBLE FOR THE CONTROL OF DUST EMANATING FROM THE SITE AT ALL TIMES FOR THE DURATION OF CONSTRUCTION.
13. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE CHECKED FOR DAMAGE, CLEANED OUT AND FULLY REINSTATED AFTER EACH RAINFALL EVENT RESULTING IN RUNOFF.
14. IF EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN FOUND TO BE DEFICIENT OR FAILED IN SERVICE, DUE TO UNFORESEEN CIRCUMSTANCES, CORRECTIVE ACTION IS TO BE UNDERTAKEN IMMEDIATELY WHICH MAY INCLUDE AMENDMENTS/ADDITIONS TO THE ORIGINAL APPROVED EROSION CONTROL PLANS.
15. THE INSTALLATION, REMOVAL, RELOCATION OR MODIFICATION TO EROSION AND SEDIMENT CONTROL DEVICES MAY BE MADE BY DOUGLAS SHIRE COUNCIL IF DEEMED NECESSARY AND RELEVANT.
16. EROSION AND SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL THE TREATMENT AREA IS SUITABLY STABILISED/VEGETATED.
17. THE CONTRACTOR SHALL UNDERTAKE A FORMAL COMPLIANCE AUDIT OF THE ESC AT SIX WEEKS INTERVALS DURING THE CONSTRUCTION PERIOD OF THE PROJECT. RECORDS OF THE AUDIT SHALL BE RETAINED ON SITE. WHERE IDENTIFIED AS PART OF THE AUDIT THE ESCP SHALL BE UPDATED AND PROVIDED TO THE SUPERINTENDENT.

EARTHWORKS NOTES

1. ALL EARTHWORKS MUST BE CARRIED OUT IN ACCORDANCE WITH AS3798 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS'.
2. NO VEGETATION SHALL BE REMOVED WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT UNLESS NOTED ON THE DRAWINGS.
3. FINISHED SURFACE LEVELS SHOWN ON PROJECT DRAWINGS ARE AFTER ALL EARTHWORKS ARE COMPLETE INCLUDING TOPSOILING. ALL AREAS ARE TO BE GRADED EVENLY BETWEEN FINISHED SURFACE LEVELS UNLESS NOTED OTHERWISE.
4. ALL BATTERS WITHIN ALLOTMENTS SHALL BE AS FOLLOWS (UNLESS NOTED OTHERWISE)
   - ROAD FRONTAGE 1 ON 4 MAX
   - SIDE BOUNDARY 1 ON 2
   - REAR BOUNDARY 1 ON 2

ROADS & PATHWAYS NOTES

1. NEW ROADS PATHS AND KERBING SHALL JOIN SMOOTHLY TO EXISTING WORKS. WHERE NECESSARY, EXISTING WORKS SHALL BE CUT BACK TO FORM A NEAT JOIN.
2. PAVEMENT DESIGN STATED HEREIN IS FOR A RANGE OF SUBGRADE CBR VALUES. THE CONTRACTOR IS TO CONFIRM THE SUBGRADE CBR BY TESTING IN ACCORDANCE WITH THE SPECIFICATION. RESULTS ARE TO BE PROVIDE TO THE SUPERINTENDENT FOR FINAL PAVEMENT SELECTION.
3. ALL KERB PROFILES TO BE AS PER FNQROC STD DRAWING S1000 UNLESS NOTED OTHERWISE.
4. ALL PATHWAYS SHALL BE 2.0M WIDE (UNO) IN ACCORDANCE WITH FNQROC STD DRG S1035. PATHWAY CROSSFALL MUST NOT EXCEED 2.5%.
5. CONNECTIONS TO EXISTING PATHS SHALL BE SMOOTH AND NEAT. THE MAXIMUM STEP SHALL BE:
   +3MM ABOVE EXISTING &
   -0MM BELOW EXISTING
6. ALL KERB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FNQROC STD DRG S1016. WIDTH OF RAMP SHALL MATCH PATHWAY WIDTH.
7. ALL STREET SIGNS AND TRAFFIC SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH FNQROC STD DRGS S1040 AND S1041.

DRAINAGE NOTES

1. ALL REINFORCED CONCRETE PIPES SHALL BE CLASS 2 UNLESS NOTED OTHERWISE. ALTERNATIVE MATERIAL TYPES SUCH AS HDPE OR FRC MAYBE USED SUBJECT TO SUPERINTENDENTS/COUNCIL APPROVAL.
2. EXCAVATION, BEDDING AND BACKFILL FOR PRECAST BOX CULVERTS SHALL BE CARRIED OUT IN ACCORDANCE WITH FNQROC STANDARD DRAWING S1045.
3. EXCAVATION, BEDDING AND BACKFILL FOR CONCRETE PIPES SHALL BE CARRIED OUT IN ACCORDANCE WITH FNQROC STANDARD DRAWING S1046.
4. BOX CULVERTS SHALL BE INSTALLED IN ACCORDANCE WITH DTMR STD DRG 1316. CONCRETE BASES TO CULVERTS SHALL BE PROVIDED IN ACCORDANCE WITH DTMR STD DRG 1318.
5. ALL KERB INLET PITS AND MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FNQROC STD DRG'S S1050, S1055, S1060, S1065, S1066 AND S1070.
6. ALL CAST-IN-SITU HEADWALLS SHALL BE PROVIDED IN ACCORDANCE WITH FNQROC STD DRG'S S1075, S1080, S1085, AND S1090.
7. ALL PRECAST HEADWALLS SHALL BE PROVIDED WITH CONCRETE CUT-OFF WALL IN ACCORDANCE WITH FNQROC STD DRG S1075. WHERE HEADWALL ABUTS CONCRETE LINED CHANNEL, THE CUT-OFF WALL MAYBE OMITTED SUBJECT TO APPROVAL BY THE SUPERINTENDENT.
8. SUBSOIL DRAINAGE SHALL BE PROVIDED WHERE SHOWN ON THE PROJECT DRAWINGS. DRAINS SHALL ACHIEVE A MINIMUM 0.5% GRADE. FLUSHING POINTS AND OUTLETS TO BE PROVIDED IN ACCORDANCE WITH FNQROC STD DRAWING S1095.
9. ANY STORMWATER QUALITY INTERCEPTION DEVICE SHALL BE CLEANED BY THE CONTRACTOR AND DOCKETS PROVIDED AT TIME OF OFF MAINTENANCE. ALL COSTS TO BE BOURNE BY THE CONTRACTOR

WATER RETICULATION NOTES

1. ALL PVC AND PE PIPES SHALL BE CLASS PN16. PVC PIPES SHALL BE RUBBER RING JOINTED AND DUCTILE IRON COMPATIBLE.
2. DICL PIPES SHALL BE CLASS PN35 "TYTON" TYPE RUBBER RING JOINTED.
3. ALL WATER MAINS SHALL BE INSTALLED ON A STANDARD 2.8M OFFSET FROM THE PROPERTY BOUNDARY UNLESS NOTED OTHERWISE ON PLANS.
4. FOR VALVES & HYDRANT BOXES INSTALLATION DETAILS REFER FNQROC STD DRGS S2000 & S2005.
5. ALL HYDRANTS AND VALVES TO BE LOCATED OPPOSITE PROPERTY BOUNDARY TRUNCATIONS AND CORNERS, UNLESS NOTED OTHERWISE ON PLANS.
6. KERB MARKER PLATES SHALL BE PROVIDED TO IDENTIFY THE POSITION OF ALL VALVES AND HYDRANTS IN ACCORDANCE WITH FNQROC STD DRG S2010 VERSION 4-2009. IN ADDITION TO KERB MARKER PLATES, HYDRANTS SHALL ALSO HAVE TEARDROP MARKERS AND BLUE RETRO-REFLECTIVE MARKERS PROVIDED ON THE ROAD PAVEMENT IN ACCORDANCE WITH FNQROC STD DRG 2010 VERSION 4-2009.
7. FOR MAIN TRENCHING, BEDDING & ANCHORAGE DETAILS REFER FNQROC STD DRGS S2015 & S2016. ENSURE COVER TO WATERMAINS IS 800MM MINIMUM UNDER ROADWAYS AND 600MM MINIMUM ELSEWHERE.
8. FOR MAIN CONNECTION DETAILS, REFER FNQROC STD DRG S2020.
9. DOUGLAS SHIRE COUNCIL MUST BE CONTACTED TO PERFORM ANY DIRECT CONNECTION OR ALTERATION TO LIVE WATER MAINS. THE CONTRACTOR SHALL LODGE WITH COUNCIL THE APPROPRIATE APPLICATION FORMS AND FEES FOR THESE WORKS TO BE COMPLETED. IT MAY BE POSSIBLE FOR SOME WORKS TO BE PERFORMED BY THE CONTRACTOR UNDER SPECIAL CIRCUMSTANCES AND SUBJECT TO APPROPRIATE CONDITIONS AGREED TO WITH COUNCIL.
10. HYDRANTS OR VALVES CONSTRUCTED IN CONCRETE ARE TO HAVE A COMPRESSIBLE LAYER (ABLEFLEX) INSTALLED ON THE SURROUND. REFER FNQROC STD DRG 2000

SITE SPECIFIC NOTES

1. PRIOR TO REMOVAL OF ANY TREES, A WILDLIFE SPOTTER IS REQUIRED TO INVESTIGATE AND RELOCATE ANY IDENTIFIED FAUNA.

EXISTING DAM FILL PROCESS

1. THE EXISTING DAM TO BE DRAINED USING A FLOATING PUMP SYSTEM TO ENSURE PUMP WATER IS CLEAN BEFORE DISCHARGE.
2. AFTER DEWATERING THE DAM BASE IS TO BE INSPECTED BY THE SUPERVISING ENGINEER PRIOR TO PLACEMENT OF FILL TO CONFIRM STABLE BASE OR TREATMENT AS REQUIRED TO ACHIEVE STABLE BASE.
3. FILL TO BE PLACED IN LAYERS NOT EXCEEDING 400mm THICK (MAY BE LESS DEPENDING ON COMPACTION EQUIPMENT USED) AS COMPACTED TO 95% STD AS PER TABLE 5.1 OF AS3798. TESTING FREQUENCY TO BE AS PER TABLE 8.1 OF AS3798 TO A LEVEL 2 STANDARD.

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
A	ISSUE FOR APPROVAL	GA		6073	8/06/2018

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LOT 2 on SP259953

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DESIGNED	IRM
DRAWN	IRM
ACAD No.	4839-C02
SCALE	NTS

TITLE: STANDARD NOTES

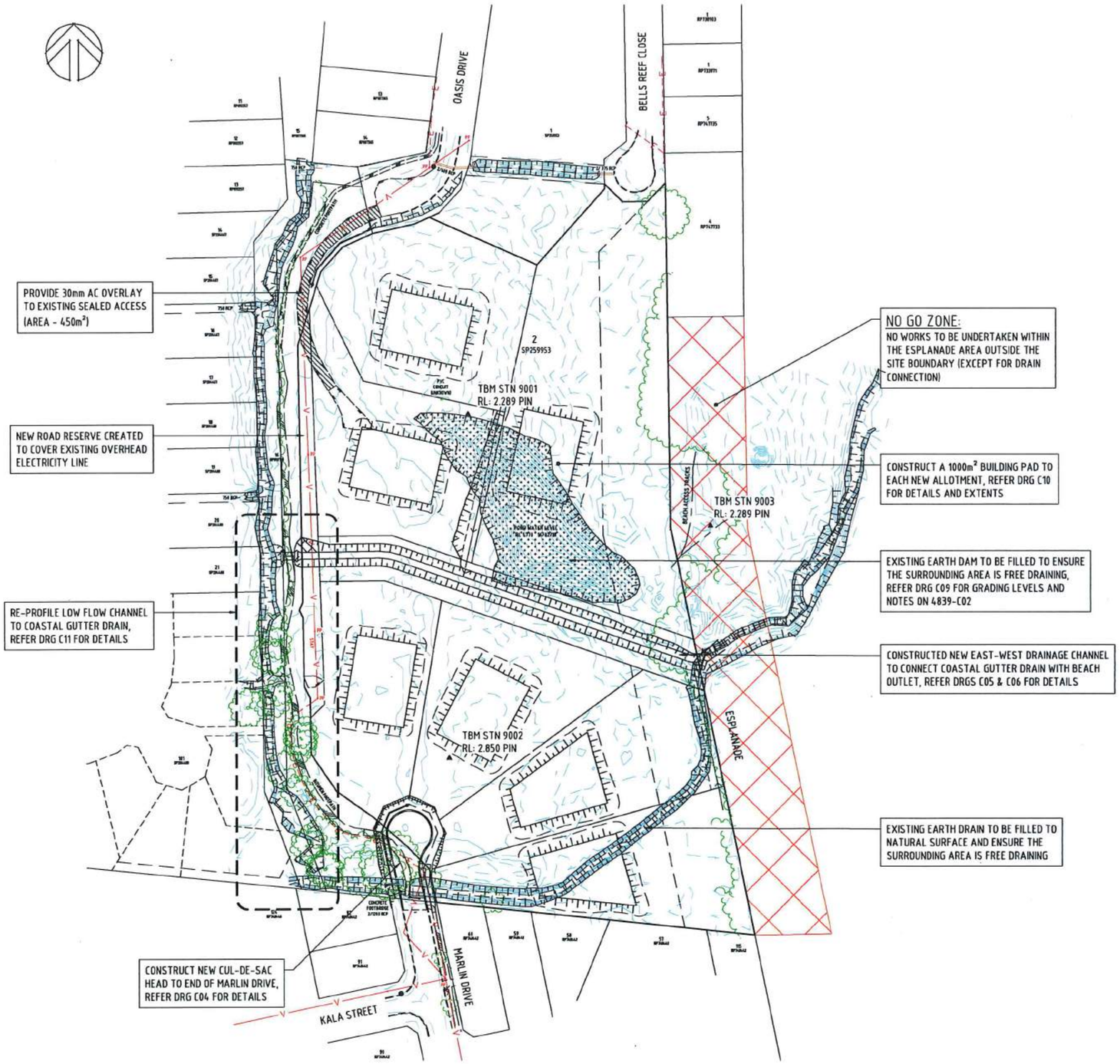
A1 FULL SIZE

DRAWING No. 4839-C02

SHEET 1 OF 15 SHEETS

REVISION A

DO NOT SCALE



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DESIGNED	IRM
DRAWN	IRM
ACAD No.	4839-C03
SCALE	NTS

TITLE

GENERAL ARRANGEMENT

A1 FULL SIZE

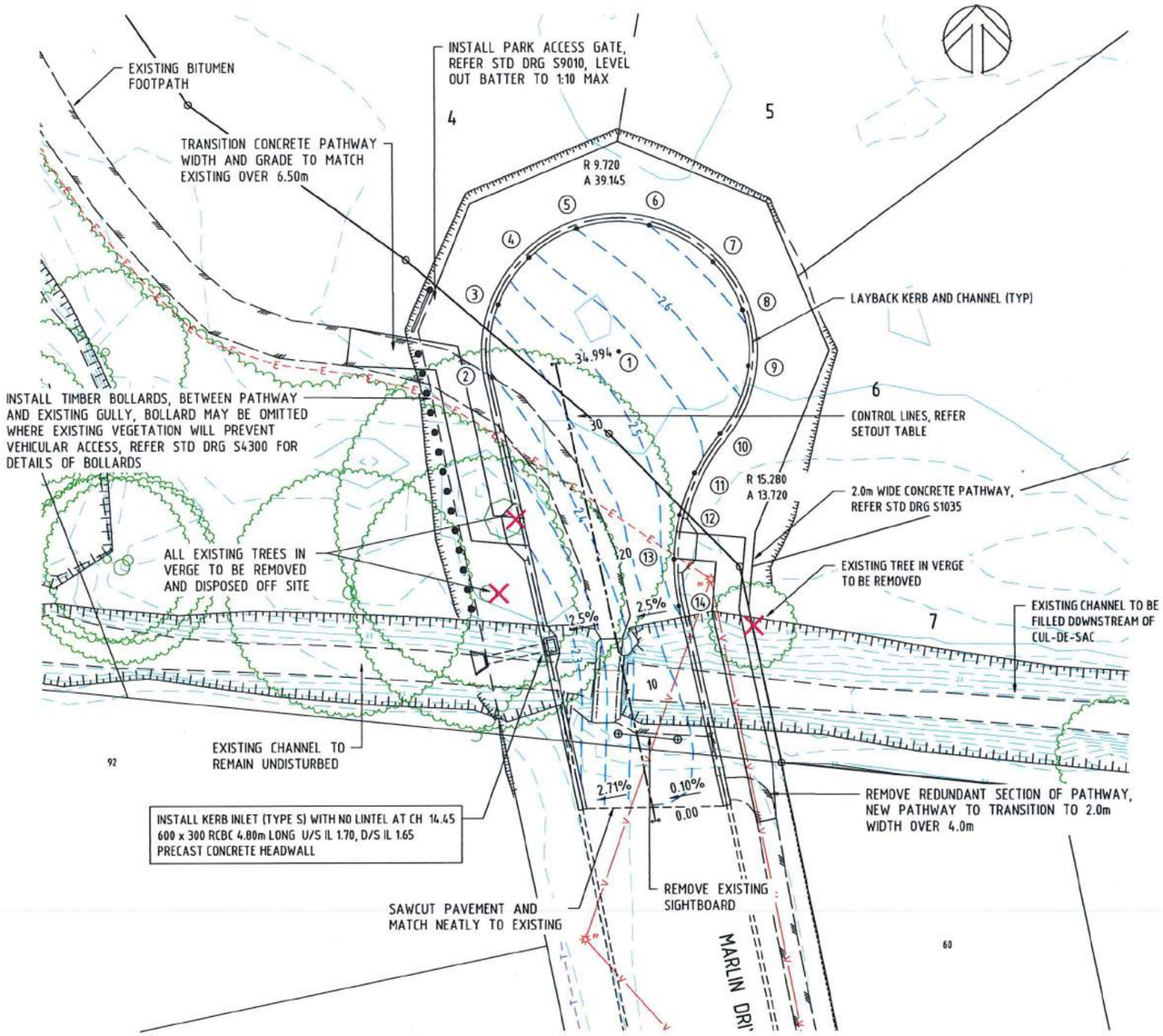
DRAWING No. 4839-C03

SHEET 1 OF 15 SHEETS

REVISION A

XREFS :- X-4839-EX SURVEY.dwg ; X-4839-DESIGN.dwg

DO NOT SCALE



MARLIN DRIVE CUL-DE-SAC
1:200

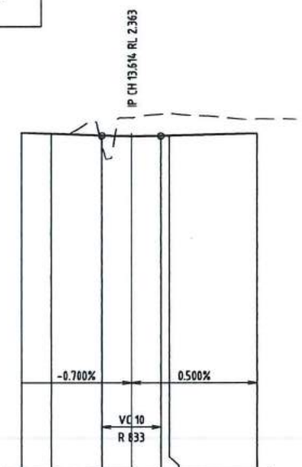
LEGEND

R 15.280	KERB RADIUS
A 5.246	KERB ARC LENGTH
• (9)	SETOUT POINT
— 8.8 —	FINISHED SURFACE CONTOUR (0.05m INTERVAL)
	LAYBACK KERB AND CHANNEL (STD S1000)
	PEDESTRIAN KERB RAMP
	EXISTING TREE TO BE REMOVED

MARLIN DRIVE CUL-DE-SAC SETOUT COORDINATES

POINT	EASTING	NORTHING	LEVEL
1	330504.639	8191412.903	2.530
2	330495.117	8191410.955	2.397
3	330495.573	8191416.406	2.464
4	330497.902	8191419.910	2.540
5	330501.494	8191422.100	2.601
6	330506.959	8191422.342	2.650
7	330511.690	8191419.595	2.666
8	330513.857	8191415.989	2.656
9	330514.297	8191411.805	2.626
10	330512.174	8191406.763	2.567
11	330510.284	8191403.805	2.540
12	330509.158	8191400.665	2.526
13	330508.741	8191397.355	2.522
14	330509.088	8191393.863	2.507

WARNING:
CONTRACTOR TO LOCATE AND CONFIRM DEPTH OF EXISTING LIVE ELECTRICAL LINE PRIOR TO COMMENCING CONSTRUCTION TO CONFIRM ADEQUATE COVER OR ALTERNATIVE TREATMENT TO ELECTRICAL LINE



HORIZ CURVE DATA
VERTICAL GRADE: -0.700% / 0.500%
VERTICAL CURVE LENGTH: VC 10
VERTICAL CURVE RADIUS: R 833
DATUM R.L.-9.000

NATURAL SURFACE	2.493	2.458	2.078	3.015	3.131	3.150		2.970
CUT/FILL DEPTH	-0.000	0.000	0.320	-0.637	-0.743	-0.755		-0.500
DESIGN SURFACE	2.493	2.458	2.398	2.378	2.388	2.395		2.470
CHAINAGE	-5.000	0.000	8.614	13.614	18.614	20.000		34.994

MARLIN DRIVE LONGITUDINAL SECTION
SCALE 1:500 HORIZONTAL, 1:100 VERTICAL

MARLIN DRIVE - CONTROL LINE SETOUT

PT	CHAINAGE	EASTING	NORTHING	BEARING
IP 1	0.000	330507.311	8191377.798	347°43'53.09"
IP 2	34.994	330499.870	8191411.990	347°43'53.09"

DIAL BEFORE YOU DIG www.1100.com.au

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
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LOT 2 on SP259953

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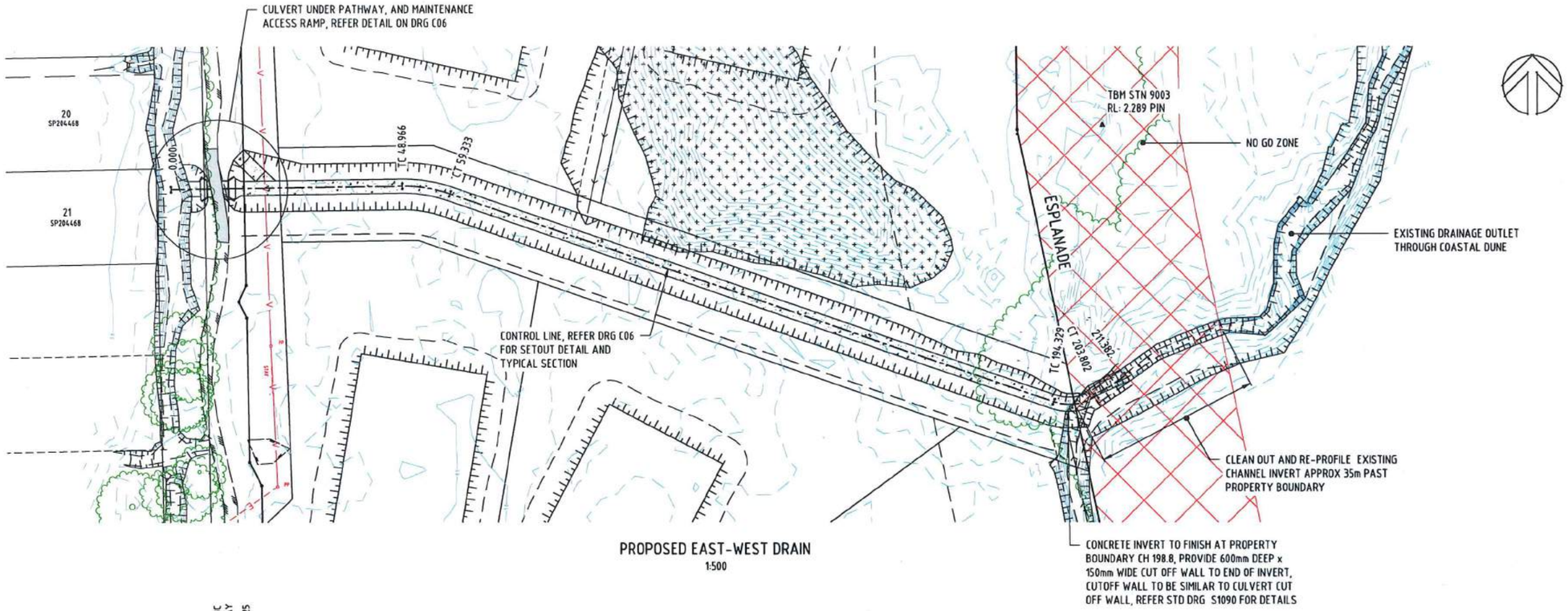
DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C04
SCALE AS SHOWN

TITLE
MARLIN DRIVE CUL-DE-SAC
SETOUT & GRADING PLAN

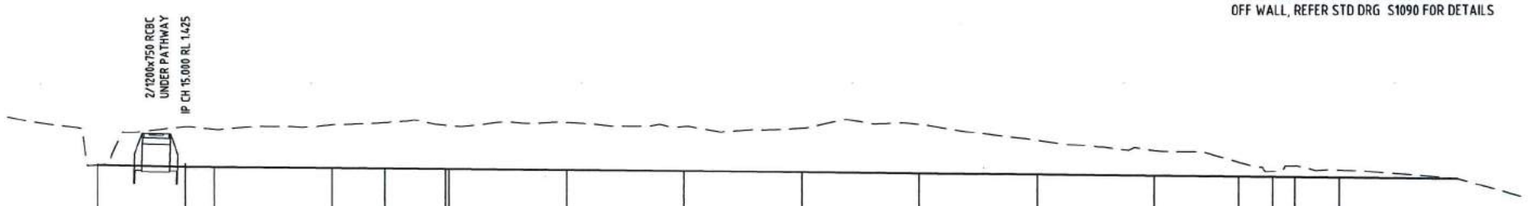
A1 FULL SIZE
DRAWING No. 4839-C04
SHEET 1 OF 15 SHEETS
REVISION A

XREFS :- X-4839-EX SURVEY.dwg ; X-4839-DESIGN.dwg

DO NOT SCALE



PROPOSED EAST-WEST DRAIN
1:500



HORIZ CURVE DATA: R 30; R -10

VERTICAL GRADE: -0.500%; -0.200%

VERTICAL CURVE LENGTH

VERTICAL CURVE RADIUS

DATUM R.L.-6.000

CHAINAGE	NATURAL SURFACE	CUT/FILL DEPTH	DESIGN SURFACE
0.000	1.497	0.003	1.500
15.000	2.781	-1.356	1.425
20.000	2.699	-1.284	1.415
40.000	2.841	-1.466	1.375
48.966	2.907	-1.550	1.357
59.333	2.817	-1.481	1.336
60.000	2.802	-1.467	1.335
80.000	2.905	-1.610	1.295
100.000	2.766	-1.511	1.255
120.000	2.716	-1.501	1.215
140.000	2.845	-1.670	1.175
160.000	2.303	-1.168	1.135
180.000	1.951	-0.856	1.095
194.329	1.553	-0.487	1.066
200.000	1.245	-0.190	1.055
203.802	1.432	-0.384	1.047
211.382	1.290	-0.258	1.032

EAST WEST DRAIN - LONGITUDINAL SECTION
SCALE 1:500 HORIZONTAL, 1:100 VERTICAL

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
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DESIGNED: IRM
DRAWN: IRM
ACAD No.: 4839-C05
SCALE: 1:500

TITLE: EAST-WEST DRAINAGE CHANNEL PLAN & LONGITUDINAL SECTION

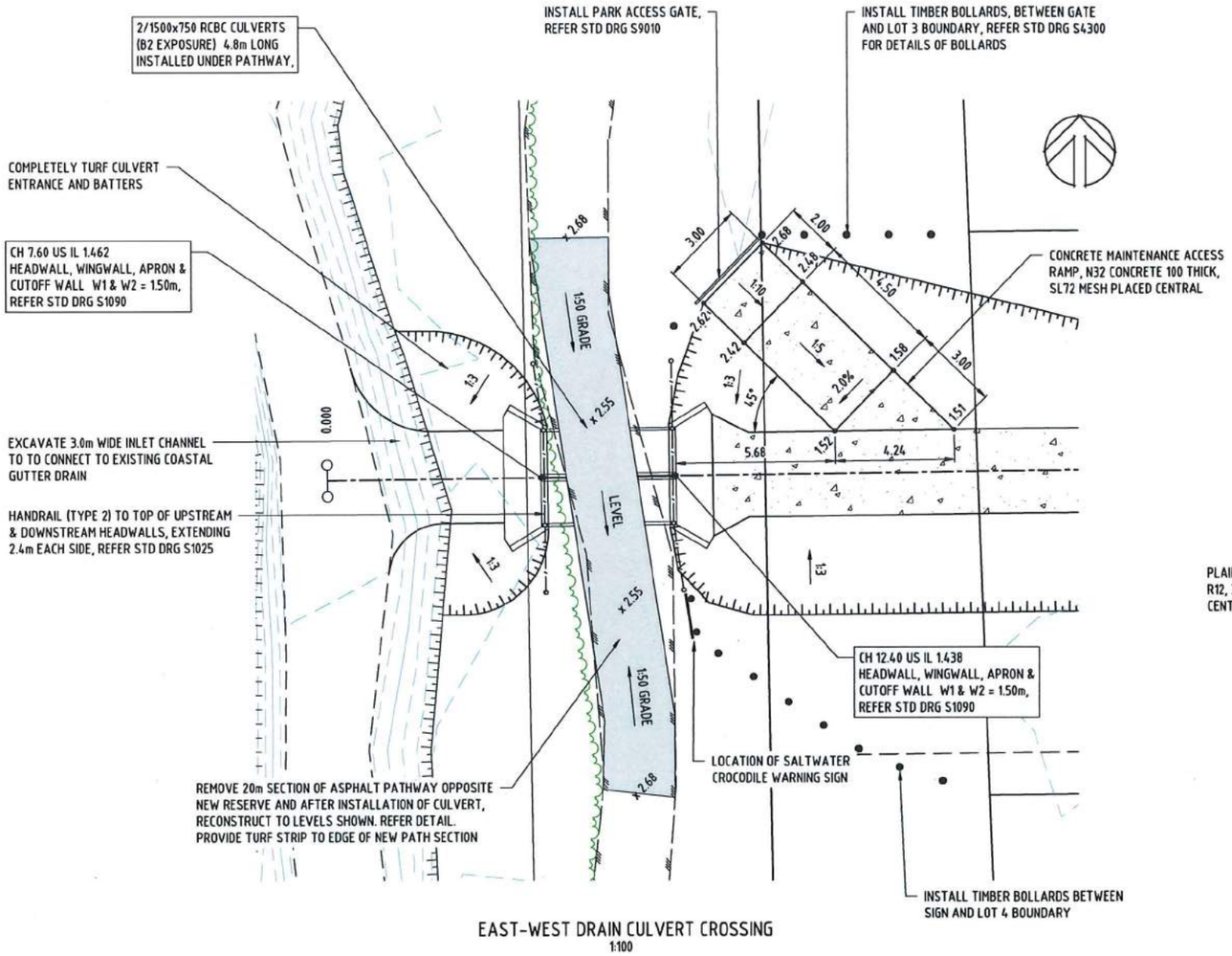
A1 FULL SIZE

DRAWING No.: 4839-C05
SHEET 1 OF 15 SHEETS

REVISION: A

XREFS: ~ X-4839-EX SURVEY.dwg ; X-4839-DESIGN.dwg

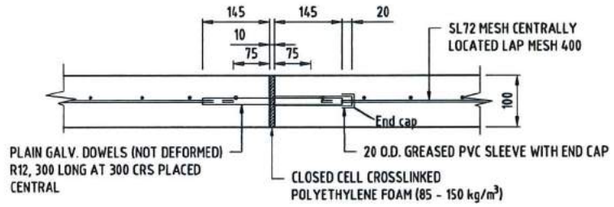
DO NOT SCALE



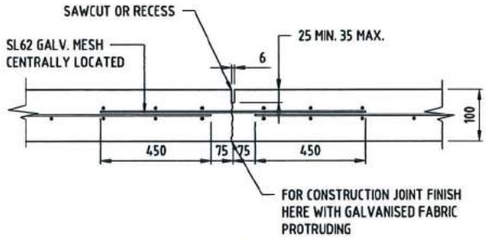
EAST-WEST DRAIN CULVERT CROSSING
1:100

EAST-WEST DRAINAGE CHANNEL - CONTROL LINE SETOUT

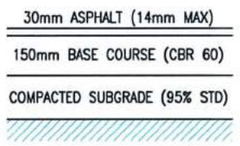
PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	330441.530	8191535.530	89°13'35.44"			
TC	48.970	330490.490	8191536.190	89°13'35.44"			
IP 2	54.150	330495.720	8191536.260		30.000	10.370	19°47'54.32"
CT	59.330	330500.670	8191534.550	109°01'29.75"			
TC	194.330	330628.300	8191490.550	109°01'29.75"			
IP 3	199.070	330633.140	8191488.880		10.000	9.470	54°16'27.07"
CT	203.800	330637.330	8191491.840	54°45'02.68"			
IP 4	211.380	330643.520	8191496.210	54°45'02.68"			



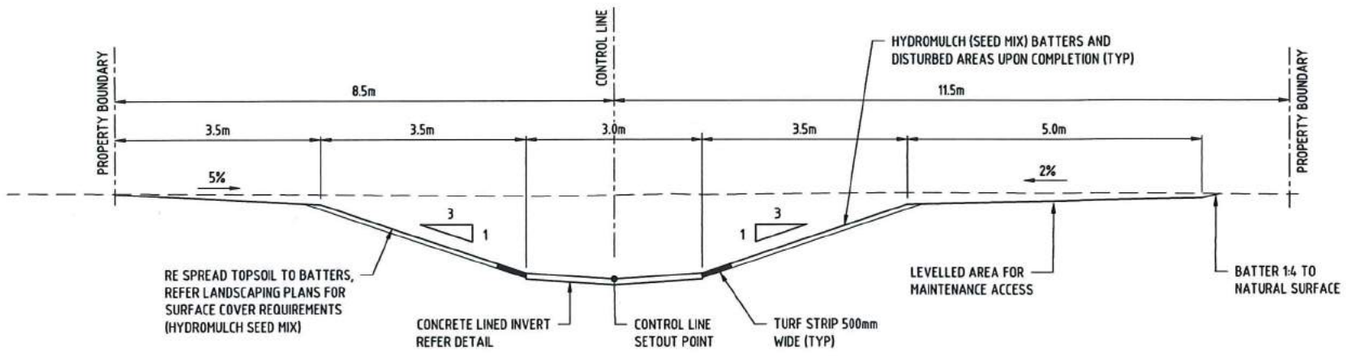
SPACING 16m MAX.
EXPANSION JOINT
N.T.S.



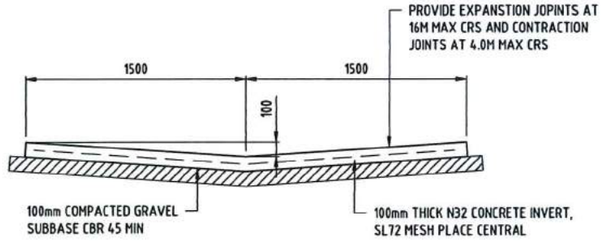
SPACING 4m MAX.
CONTRACTION JOINT
N.T.S.



ASPHALT PATHWAY
NTS



EAST-WEST DRAIN TYPICAL SECTION
1:50



CONCRETE LINED CHANNEL INVERT
1:20

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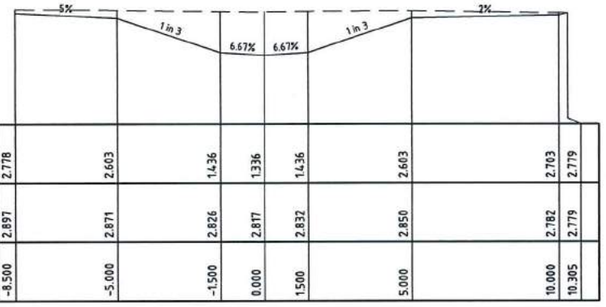
DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C06
SCALE 1:500

TITLE
EAST-WEST DRAINAGE CHANNEL
PEDESTRIAN BRIDGE DETAIL & SECTIONS

A1 FULL SIZE
DRAWING No. 4839-C06
SHEET 1 OF 15 SHEETS
REVISION A

XREFS: X-4839-EX SURVEY.dwg ; X-4839-DESIGN.dwg

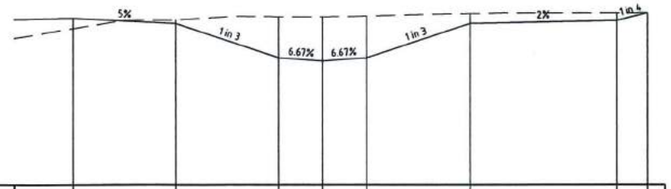
DO NOT SCALE



CENTRELINE DATA
X = 330500.674
Y = 8191534.554
Z = 1.336
Datum -1

DESIGN HEIGHT	2.778	2.603	1.436	1.336	1.436	2.603	2.703	2.779
NATURAL SURFACE	2.897	2.871	2.826	2.817	2.832	2.850	2.782	2.779
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	10.305

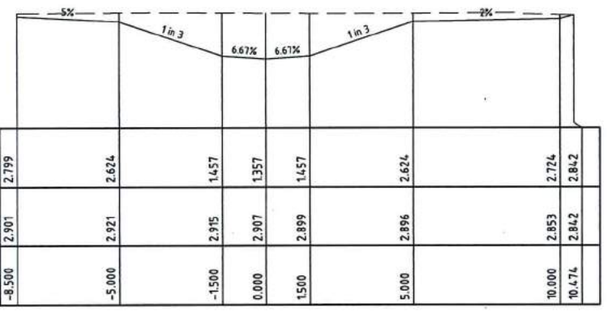
59.333



CENTRELINE DATA
X = 330558.027
Y = 8191514.778
Z = 1.215
Datum -3

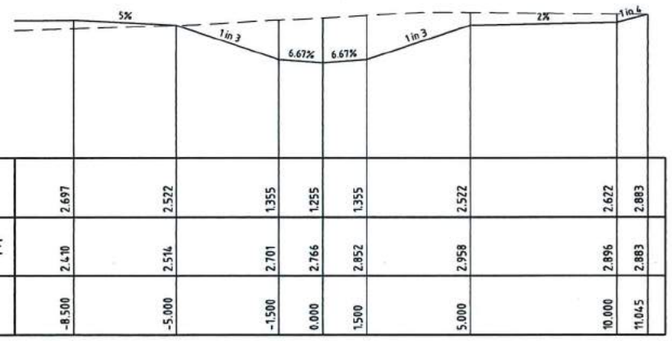
DESIGN HEIGHT	2.657	2.482	1.315	1.215	1.315	2.482	2.582	2.841
NATURAL SURFACE	2.310	2.603	2.716	2.716	2.735	2.815	2.838	2.841
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	11.039

120.000



CENTRELINE DATA
X = 330490.49
Y = 8191536.19
Z = 1.357
Datum -1

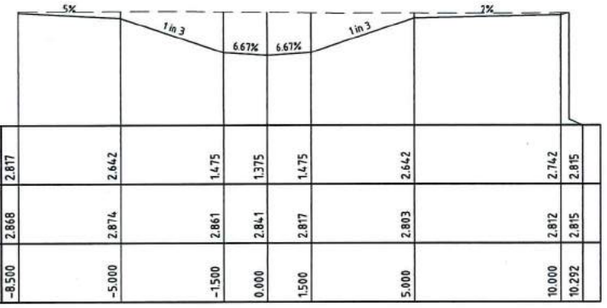
DESIGN HEIGHT	2.799	2.624	1.457	1.357	1.457	2.624	2.724	2.842
NATURAL SURFACE	2.901	2.921	2.915	2.907	2.899	2.896	2.853	2.842
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	10.474



CENTRELINE DATA
X = 330539.12
Y = 8191521.297
Z = 1.255
Datum -2

DESIGN HEIGHT	2.697	2.522	1.355	1.255	1.355	2.522	2.622	2.883
NATURAL SURFACE	2.410	2.514	2.701	2.766	2.852	2.958	2.896	2.883
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	11.045

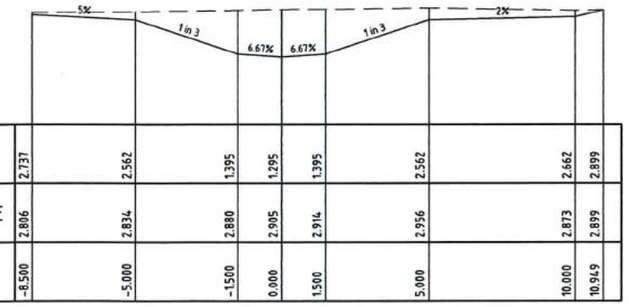
100.000



CENTRELINE DATA
X = 330481.524
Y = 8191536.069
Z = 1.375
Datum -1

DESIGN HEIGHT	2.817	2.642	1.475	1.375	1.475	2.642	2.742	2.815
NATURAL SURFACE	2.868	2.874	2.861	2.841	2.817	2.803	2.812	2.815
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	10.292

40.000



CENTRELINE DATA
X = 330520.212
Y = 8191527.817
Z = 1.295
Datum -1

DESIGN HEIGHT	2.737	2.562	1.395	1.295	1.395	2.562	2.662	2.899
NATURAL SURFACE	2.896	2.834	2.880	2.905	2.914	2.956	2.873	2.899
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	10.949

80.000

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
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LOT 2 on SP259953

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DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C07
SCALE 1:100

TITLE
EAST-WEST DRAINAGE CHANNEL
CROSS SECTIONS - SHEET 1 OF 2

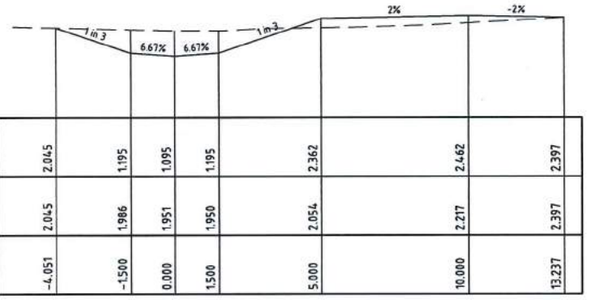
A1 FULL SIZE

DRAWING No. 4839-C07

SHEET 1 OF 15 SHEETS

REVISION A

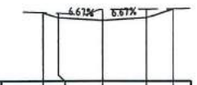
DO NOT SCALE



CENTRELINE DATA
X = 330614.75
Y = 8191495.219
Z = 1.095
Datum -1

DESIGN HEIGHT	2.045	1.195	1.095	1.195	2.362	2.462	2.397
NATURAL SURFACE	2.045	1.986	1.951	1.950	2.054	2.217	2.397
DESIGN OFFSET	-4.051	-1.500	0.000	1.500	5.000	10.000	13.237

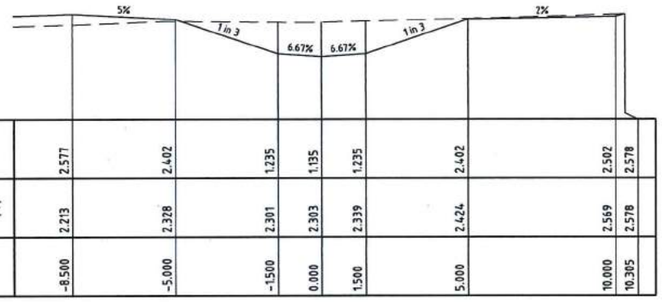
180.000



CENTRELINE DATA
X = 330637.328
Y = 8191491.835
Z = 1.047
Datum -1

DESIGN HEIGHT	1.324	1.147	1.047	1.147	1.450
NATURAL SURFACE	1.324	1.302	1.432	1.436	1.450
DESIGN OFFSET	-2.030	-1.500	0.000	1.500	2.409

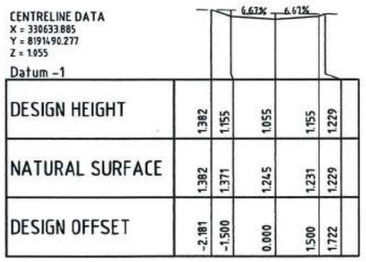
203.802



CENTRELINE DATA
X = 330595.843
Y = 8191501.739
Z = 1.135
Datum -1

DESIGN HEIGHT	2.577	2.402	1.235	1.135	1.235	2.402	2.502	2.578
NATURAL SURFACE	2.213	2.328	2.301	2.303	2.339	2.424	2.569	2.578
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	10.305

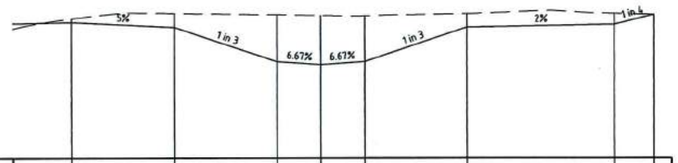
160.000



CENTRELINE DATA
X = 330633.885
Y = 8191490.277
Z = 1.055
Datum -1

DESIGN HEIGHT	1.382	1.155	1.055	1.155	1.229
NATURAL SURFACE	1.382	1.371	1.245	1.231	1.229
DESIGN OFFSET	-2.181	-1.500	0.000	1.500	1.722

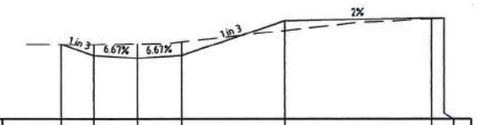
200.000



CENTRELINE DATA
X = 330576.935
Y = 8191508.258
Z = 1.175
Datum -2

DESIGN HEIGHT	2.617	2.442	1.275	1.175	1.275	2.442	2.542	2.878
NATURAL SURFACE	2.740	2.918	2.873	2.845	2.827	2.900	2.910	2.878
DESIGN OFFSET	-8.500	-5.000	-1.500	0.000	1.500	5.000	10.000	11.346

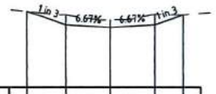
140.000



CENTRELINE DATA
X = 330628.297
Y = 8191490.548
Z = 1.066
Datum -1

DESIGN HEIGHT	1.534	1.166	1.066	1.166	2.333	2.433	2.424	
NATURAL SURFACE	1.534	1.538	1.553	1.623	2.005	2.400	2.424	
DESIGN OFFSET	-2.694	-1.500	0.000	1.500	5.000	10.000	10.427	

194.329



CENTRELINE DATA
X = 330643.518
Y = 8191496.21
Z = 1.032
Datum -1

DESIGN HEIGHT	1.579	1.132	1.032	1.132	1.456	
NATURAL SURFACE	1.579	1.455	1.290	1.475	1.456	
DESIGN OFFSET	-2.840	-1.500	0.000	1.500	2.471	

211.382

REV	DESCRIPTION	TASK MAN.	APPROVED	APPEQ No.	DATE
A	ISSUE FOR APPROVAL	GA		6073	8/06/2018

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ASSOCIATED CONSULTANTS

CLIENT / PROJECT

PORT PACIFIC ESTATE PTY LTD

PROPOSED SUBDIVISION OF
2 OASIS DRIVE , WONGA BEACH
LOT 2 on SP259953

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DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C08
SCALE 1:100

TITLE
EAST-WEST DRAINAGE CHANNEL
CROSS SECTIONS - SHEET 2 OF 2

A1 FULL SIZE

DRAWING No. 4839-C08
SHEET 1 OF 15 SHEETS

REVISION A

DO NOT SCALE

LEGEND

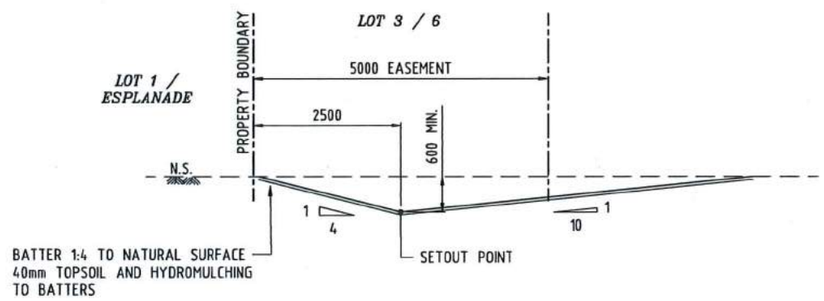
- EARTHWORKS IN CUT
- EARTHWORKS IN FILL
- (24) SETOUT POINT

NOTES

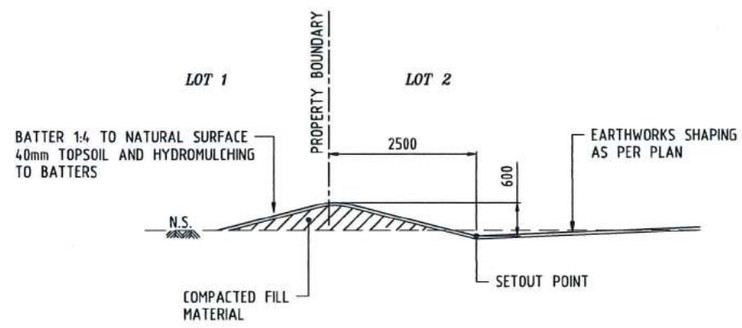
1. REFER DRAWING C02 FOR STANDARD NOTES.
2. ALL BATTERS TO BE 1:4 UNLESS NOTED OTHERWISE ON DRAWINGS

SITE GRADING SETOUT COORDINATES

POINT	EASTING	NORTHING	LEVEL	POINT	EASTING	NORTHING	LEVEL
1	330558.780	8191663.116	2.500	20	330484.510	8191613.179	2.750
2	330545.075	8191599.859	2.241	21	330530.473	8191588.839	2.500
3	330529.507	8191528.002	1.946	22	330612.794	8191504.885	2.547
4	330527.623	8191530.551	2.549	23	330619.044	8191523.011	1.740
5	330527.750	8191534.209	2.727	24	330578.026	8191548.233	2.100
6	330533.487	8191532.231	2.714	25	330545.792	8191559.054	2.493
7	330532.128	8191528.997	2.540	26	330621.179	8191529.202	2.078
8	330524.206	8191541.123	2.789	27	330599.215	8191572.874	2.219
9	330531.429	8191563.652	2.654	28	330585.062	8191577.744	2.428
10	330508.894	8191593.350	2.600	29	330563.688	8191595.614	2.240
11	330489.391	8191597.937	2.750	30	330548.341	8191592.730	2.240
12	330475.892	8191614.297	2.800	31	330550.587	8191606.568	2.480
13	330465.738	8191632.839	2.800	32	330554.258	8191627.260	2.762
14	330465.295	8191647.787	2.800	33	330560.202	8191647.459	2.464
15	330469.750	8191659.935	2.800	34	330559.668	8191652.691	2.891
16	330477.984	8191669.060	2.750	35	330562.510	8191662.307	2.746
17	330488.871	8191678.253	2.700	36	330561.126	8191662.607	3.100
18	330514.076	8191682.283	2.650	37	330547.291	8191599.372	3.265
19	330536.297	8191659.464	2.490	38	330537.260	8191552.156	2.631



CATCH SWALE (LOT 3 & 6)
1:50



CATCH BANK (LOT 2)
1:50

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CLIENT / PROJECT

PORT PACIFIC ESTATE PTY LTD
PROPOSED SUBDIVISION OF
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LOT 2 on SP259953

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DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C09
SCALE NTS

TITLE: SITE GRADING

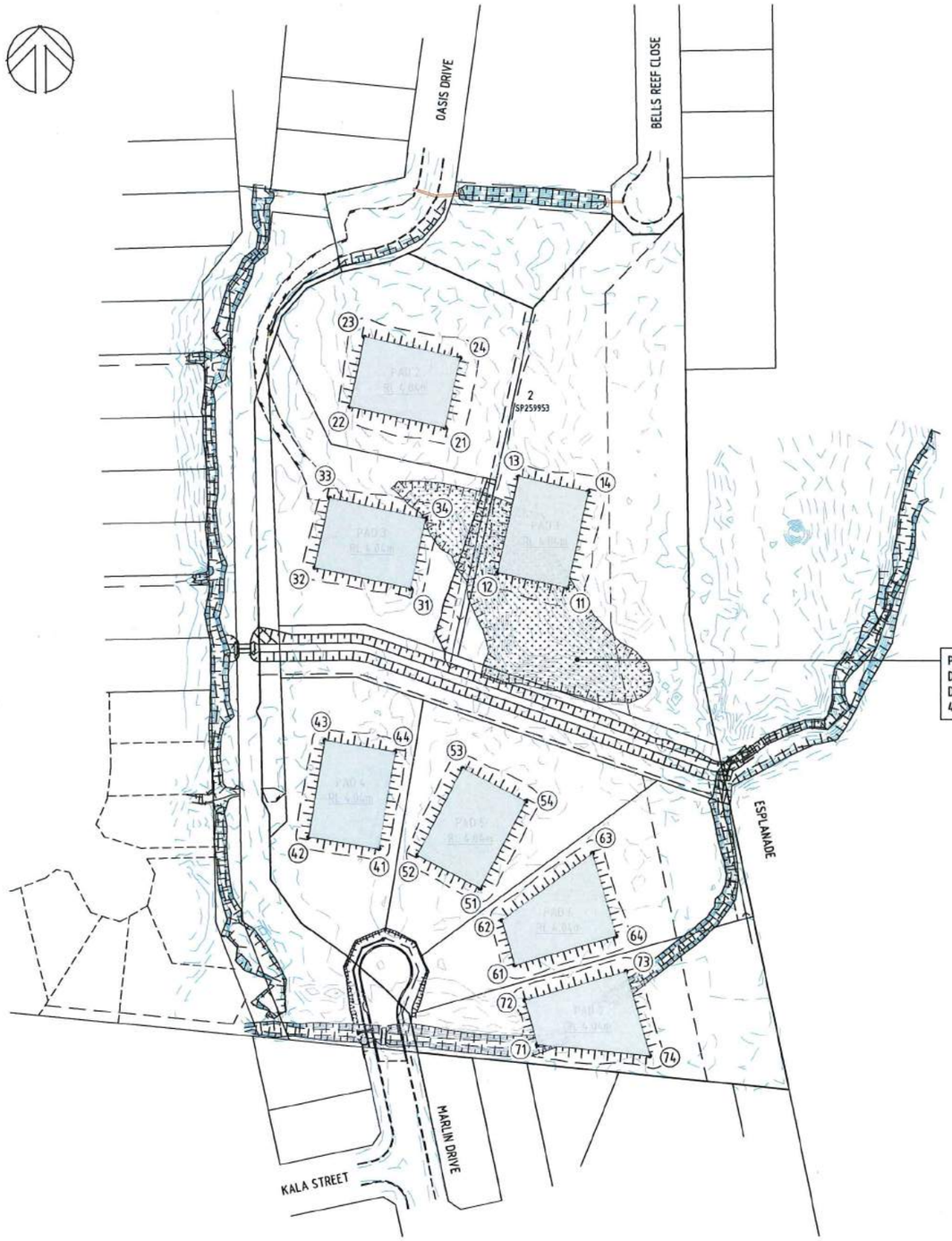
A1 FULL SIZE

DRAWING No. 4839-C09
SHEET 1 OF 15 SHEETS

REVISION A

XREFS :- X-4839-EX SURVEY.dwg ; X-4839-DESIGN.dwg

DO NOT SCALE



PRIOR TO CONSTRUCTING BUILDING PADS, THE EXISTING EARTH DAM TO BE FILLED TO ENSURE THE SURROUNDING AREA IS FREE DRAINING, REFER DRG 4839-C09 FOR GRADING LEVELS AND 4839-C02 FOR NOTES

LEGEND

PROPOSED BUILDING PAD

(24) SETOUT POINT

NOTES

1. REFER DRAWING C02 FOR STANDARD NOTES.
2. ALL BATTERS TO BE 1:4 UNLESS NOTED OTHERWISE ON DRAWINGS

BUILDING PAD SETOUT COORDINATES

POINT	EASTING	NORTHING	LEVEL
11	330574.224	8191558.532	4.040
12	330547.857	8191564.344	4.040
13	330555.851	8191600.730	4.040
14	330582.243	8191594.914	4.040
21	330527.946	8191619.452	4.040
22	330491.565	8191627.471	4.040
23	330497.376	8191653.838	4.040
24	330533.762	8191645.844	4.040
31	330514.488	8191558.393	4.040
32	330478.107	8191566.411	4.040
33	330483.918	8191592.779	4.040
34	330520.305	8191584.785	4.040
41	330502.158	8191459.537	4.040
42	330475.533	8191464.020	4.040
43	330481.694	8191500.762	4.040
44	330508.344	8191496.274	4.040
51	330540.822	8191444.448	4.040
52	330516.938	8191457.041	4.040
53	330534.292	8191490.006	4.040
54	330558.197	8191477.401	4.040
61	330553.958	8191415.258	4.040
62	330549.163	8191432.190	4.040
63	330583.551	8191457.560	4.040
64	330592.444	8191426.157	4.040
71	330562.512	8191385.050	4.040
72	330557.772	8191401.788	4.040
73	330596.259	8191412.687	4.040
74	330605.308	8191380.731	4.040

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
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PROPOSED SUBDIVISION OF
2 OASIS DRIVE , WONGA BEACH

LOT 2 on SP259953

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DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C10
SCALE NTS

TITLE
ALLOTMENT BUILDING PADS

A1 FULL SIZE

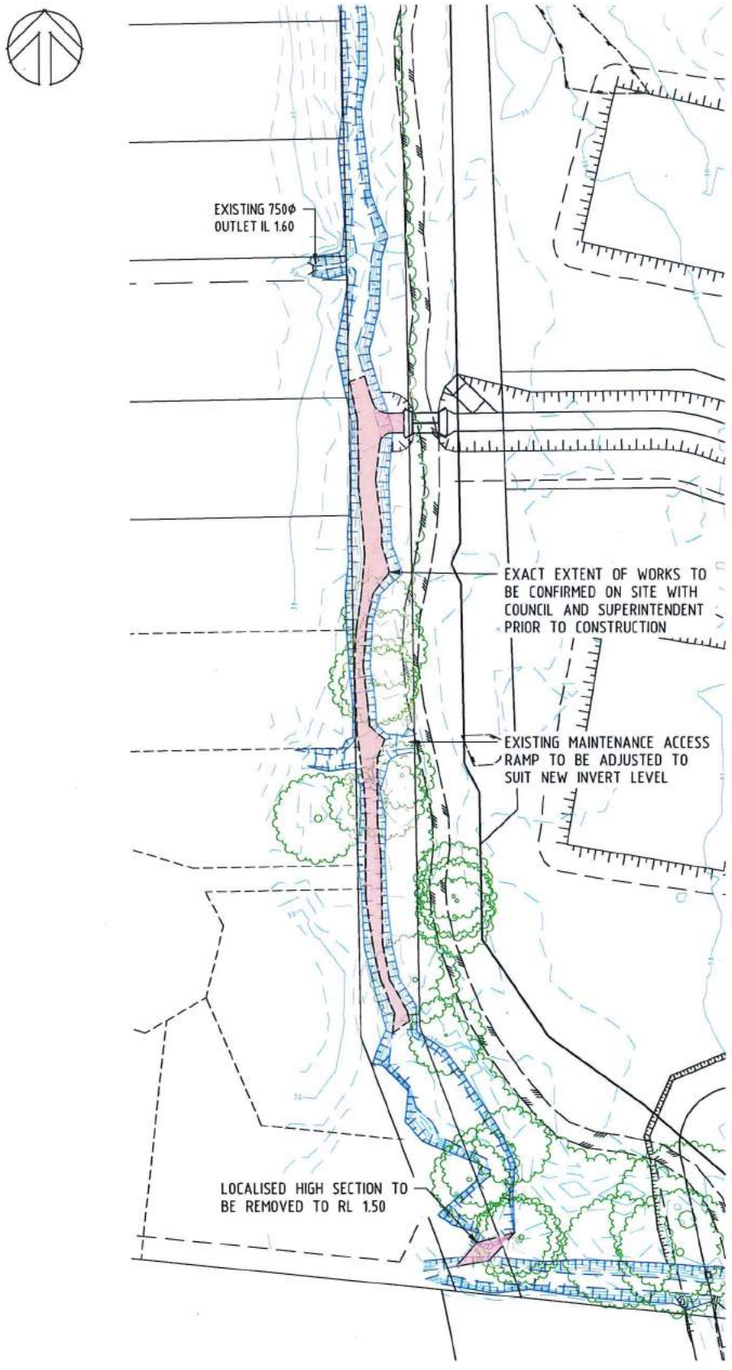
DRAWING No. 4839-C10

SHEET 1 OF 15 SHEETS

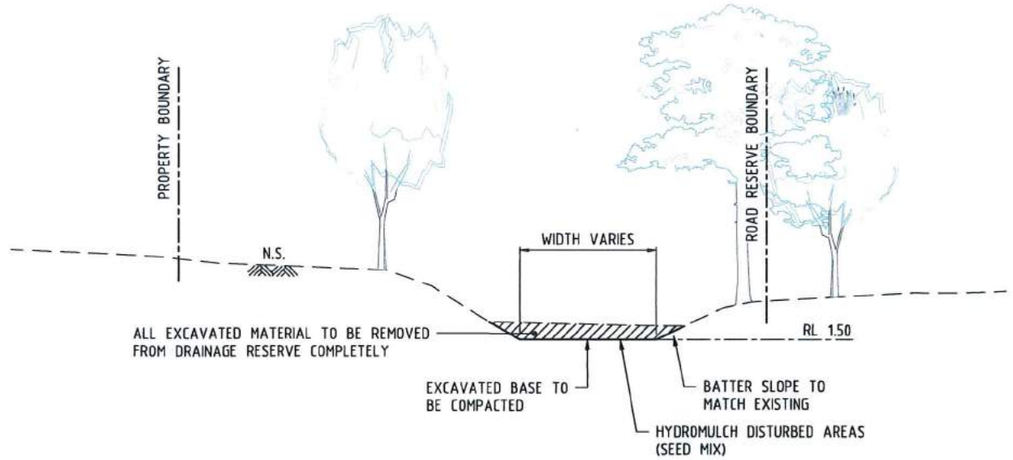
REVISION A

XREFS : X-4839-EX SURVEY.dwg ; X-4839-DESIGN.dwg

DO NOT SCALE



PLAN
1:500



TYPICAL SECTION - MODIFICATION OF EXISTING LOW FLOW INVERT
1:50

LEGEND

- APPROXIMATE EXTENT OF CHANNEL IMPROVEMENT WORKS
- EXISTING LOW FLOW INVERT
- SIGNIFICANT TREES IDENTIFIED IN SITE SURVEY

NOTES

1. REFER DRAWING C02 FOR STANDARD NOTES.
2. NO TREES SHALL BE REMOVED FROM THE DRAINAGE RESERVE OR EXISTING ROAD RESERVE WITHOUT THE APPROVAL OF DOUGLAS SHIRE COUNCIL

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DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C11
SCALE NTS

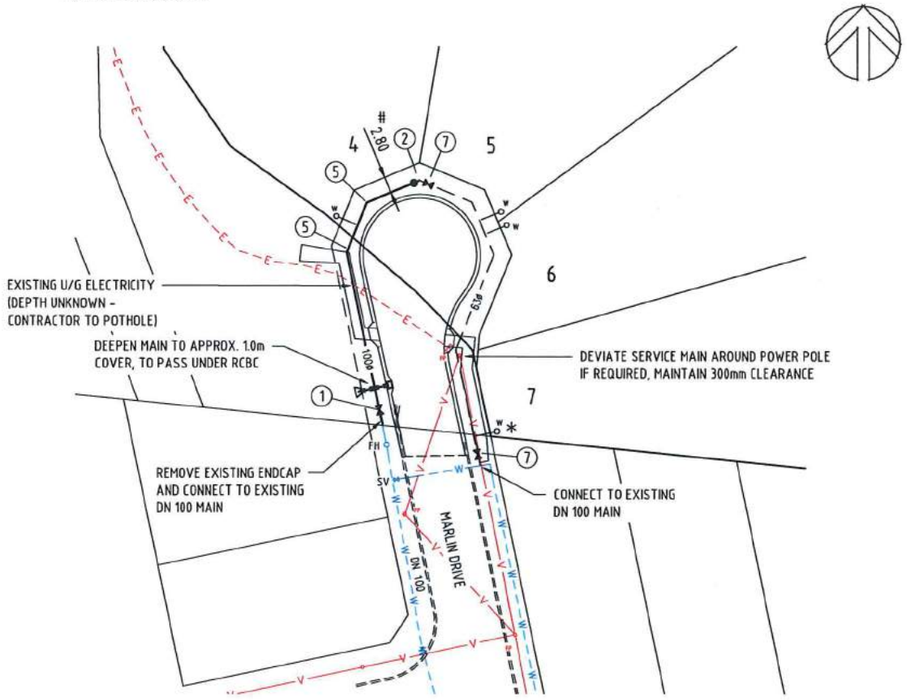
TITLE
MODIFICATIONS TO EXISTING COASTAL GUTTER DRAIN

A1 FULL SIZE
DRAWING No. 4839-C11
SHEET 1 OF 15 SHEETS
REVISION A

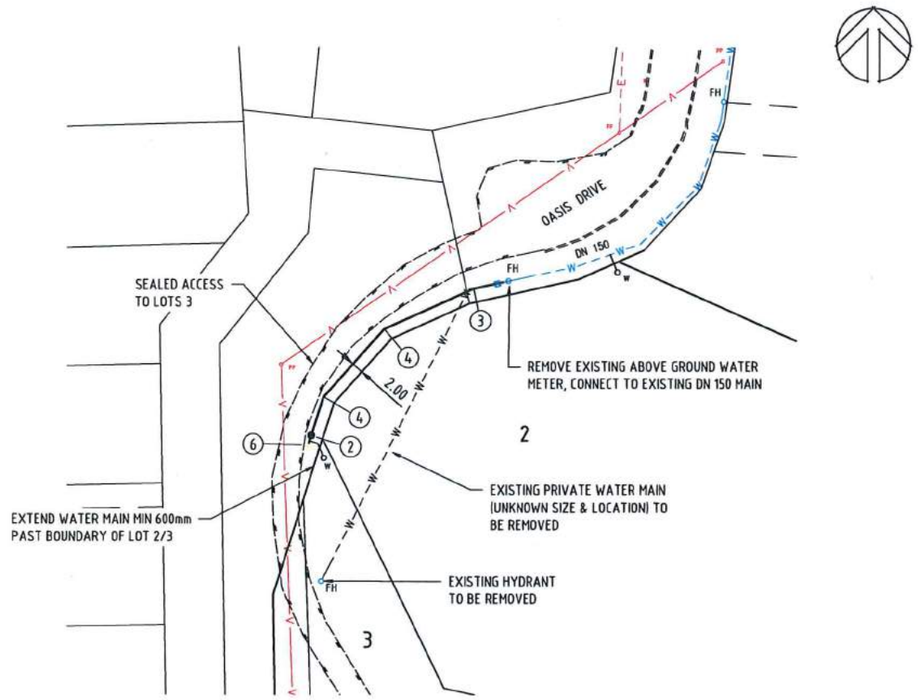
XREFS :- X-4839-EX SURVEY.dwg : X-4839-DESIGN.dwg

DO NOT SCALE

PRIOR TO CONSTRUCTION CONTRACTOR TO CONFIRM COUNCILS PREFERENCE TO ADOPT 2.8m OFFSET FROM BOUNDARY OR MATCH EXISTING MAIN ALIGNMENT



MAIN EXTENSION - MARLIN DRIVE
1:500



MAIN EXTENSION - OASIS DRIVE
1:500

LEGEND

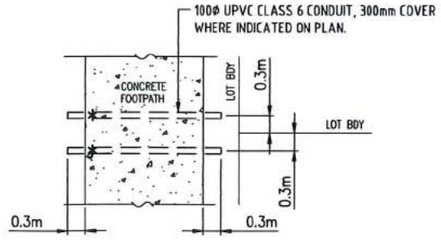
- EXISTING WATER MAIN
- DN 100 PVC-U MAIN PN16
- DN 63 PE MAIN PN16
- PROPOSED WATER SERVICE CONNECTION (INSTALLATION BY COUNCIL)
- * WATER SERVICE CONDUIT UNDER PATH (REFER DETAIL)

NOTES

1. REFER DRAWING C02 FOR STANDARD NOTES.
2. ALL BATTERS TO BE 1:4 UNLESS NOTED OTHERWISE ON DRAWINGS

WATER SCHEDULE

1. DIA 100 VALVE & BOX
2. DIA 100 HYDRANT
3. DIA 100 x 11¼° BEND
4. DIA 100 x 22½° BEND
5. DIA 100 x 45° BEND
6. DIA 100 END CAP
7. DIA 63 - 100 MAIN CONNECTOR WITH DIA 50 VALVE AND BOX (STD S2020)



Plan

MARK CONDUIT LOCATION WITH NON-FERROUS CUPHEAD BOLT CAST INTO CONCRETE PATHWAY

WATER SERVICE CONDUIT
N.T.S.

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LOT 2 on SP259953

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DESIGNED IRM
DRAWN IRM
ACAD No. 4839-C12
SCALE 1:500

TITLE
WATER RETICULATION

A1 FULL SIZE

DRAWING No. 4839-C12
SHEET 1 OF 15 SHEETS

REVISION A

XREFS :- X-4839-EX SURVEY.dwg ; X-4839-DESIGN.dwg

DO NOT SCALE

LEGEND

3.0	EXISTING SURFACE CONTOUR (0.2m INTERVAL)
2.8	FINISHED SURFACE CONTOUR (0.10m INTERVAL)
	EARTHWORKS IN CUT
	EARTHWORKS IN FILL
	WORKS BOUNDARY
SF	SEDIMENT FENCE
KST	KERB INLET SEDIMENT TRAP
RCD	ROCK CHECK DAM (250 HIGH)

NOTES - EROSION & SEDIMENT CONTROL

1. THIS EROSION AND SEDIMENT CONTROL PLAN DETAILS THE PRIMARY MEASURES THAT ARE TO BE CONSTRUCTED. THE CONTRACTOR SHALL AS A RESULT OF THE PROPOSED CONSTRUCTION SEQUENCING, INSTALL ANY ADDITIONAL MEASURES CONSIDERED NECESSARY TO LIMIT SOIL EROSION AND THE TRANSPORTATION OF SEDIMENT OFF THE PROPOSED SITE.
2. NO EARTHWORKS SHALL COMMENCE ON ANY PART OF THE SITE PRIOR TO INSTALLING APPROPRIATE ESC MEASURES DOWNSTREAM OF THE SITE AND IN ACCORDANCE WITH THE APPROVED ESCP.
3. ALL ACCESS TO AND FROM THE SITE SHALL BE VIA A TEMPORARY CONSTRUCTION ENTRY/EXIT. THE CONTRACTOR SHALL NOMINATE A PROPOSED ACCESS LOCATION ON THE ESC PLAN FOR APPROVAL BY THE SUPERINTENDENT.
4. THE CONTRACTOR SHALL MAINTAIN AN ON-SITE DUST MANAGEMENT PROGRAM TO LIMIT TO THE TRANSPORTATION OF SEDIMENT, AND NUISANCE TO ADJOINING LAND OWNERS. CONTROL MEASURE MAY BE DONE BY ONE OR MORE OF THE FOLLOWING METHODS:
   - MAINTAINING MOIST SOIL CONDITIONS
   - CHEMICAL SEALANTS (SOIL BINDERS) PLACED OVER THE SOIL SURFACE
   - WIND BREAKS
   - RE-VEGETATING EXPOSED SURFACES
   - MINIMISING TRAFFIC MOVEMENTS AND SPEEDS TO (<15KM/H) ON EXPOSED SURFACES
5. STRIP TOPSOIL ONLY FROM CONSTRUCTION AREAS AND STOCKPILE ON SITE. STOCKPILES SHALL ONLY BE LOCATED AS SHOWN ON THE DRAWINGS OR AS APPROVED BY THE SUPERINTENDENT. ALL STOCKPILES MUST BE PROTECTED BY A CATCH DRAIN ALONG THE UPSTREAM SIDES AND SILT FENCING OR MULCH BANK ON THE DOWNSTREAM SIDES.
6. TOPSOIL STRIPPED FROM THE SITE SHOULD BE RE-USED WHERE EVER POSSIBLE.
7. ALL TEMPORARY EARTH STRUCTURES ARE TO BE MACHINE COMPACTED AND MAINTAINED.
8. ALL PERMANENT AND TEMPORARY UNLINED SWALES AND DRAINS TO HAVE APPROPRIATE TEMPORARY EROSION PROTECTION.
9. ALL PARTIALLY CONSTRUCTED DRAINAGE STRUCTURES TO BE PROTECTED AGAINST SEDIMENT INFILTRATION DURING CONSTRUCTION.
10. ALL COMPLETED DRAINAGE STRUCTURES TO BE PROTECTED AGAINST SEDIMENT INFILTRATION UNTIL GRASSING IS ESTABLISHED.
11. ALL KERBS MUST BE PROVIDED WITH TURF STRIPS IMMEDIATELY FOLLOWING TOPSOILING.
12. ALL DISTURBED AREAS FLATTER THAN 1 ON 2 AND NOT UNDER ROAD PAVEMENT OR PATHWAY MUST BE TOPSOILED AND GRASS SEEDED. ALL DISTURBED AREAS 1 ON 2 OR STEEPER MUST BE TOPSOILED AND HYDROMULCHED.
13. REHABILITATION AND RE-VEGETATION IS TO BE PROGRESSIVE THROUGHOUT THE PROJECT TO ENSURE THAT ALL DISTURBED AREAS ARE RE-VEGETATED AS SOON AS POSSIBLE FOLLOWING COMPLETION OF WORKS.
14. ALL TEMPORARY ESC MEASURES TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN FULLY STABILISED OR RE-VEGETATED AND 80% VEGETATION COVER HAS BEEN ACHIEVED.
15. ALL EROSION AND SEDIMENT CONTROLS MEASURES TO BE CHECKED FOR DAMAGE CLEANED OUT AND FULL REINSTATEMENT AFTER EACH RAINFALL EVENT RESULTING IN RUNOFF.
16. A FORMAL COMPLIANCE AUDIT OF THE ESCP IS TO BE CONDUCTED AT SIX WEEKS INTERVALS DURING THE CONSTRUCTION PERIOD OF THE PROJECT.

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PROPOSED SUBDIVISION OF 2 OASIS DRIVE , WONGA BEACH

LOT 2 on SP259953

FLANAGAN CONSULTING GROUP
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DESIGNED	IRM
DRAWN	IRM
ACAD No.	4839-C13
SCALE	NTS

TITLE: EROSION & SEDIMENT CONTROL STRATEGY

A1 FULL SIZE

DRAWING No. 4839-C13

SHEET 1 OF 15 SHEETS

REVISION A

XREFS :- X-4839-EX SURVEY.dwg ; X-4839-DESIGN.dwg

DO NOT SCALE

SEDIMENT FENCE

MATERIALS

FABRIC:
POLYPROPYLENE, POLYAMIDE, NYLON, POLYESTER, OR POLYETHYLENE WOVEN OR NON-WOVEN FABRIC, AT LEAST 700mm IN WIDTH AND A MINIMUM UNIT WEIGHT OF 140GSM. ALL FABRICS TO CONTAIN ULTRAVIOLET INHIBITORS AND STABILISERS TO PROVIDE A MINIMUM OF 6 MONTHS OF USEABLE CONSTRUCTION LIFE (ULTRAVIOLET STABILITY EXCEEDING 70%).

FABRIC REINFORCEMENT:
WIRE OR STEEL MESH MINIMUM 14-GAUGE WITH A MAXIMUM MESH SPACING OF 200mm.

SUPPORT POSTS/STAKES:
1500mm² (MIN) HARDWOOD, 2500mm² (MIN) SOFTWOOD, OR 1.5kg/m (MIN) STEEL STAR PICKETS SUITABLE FOR ATTACHING FABRIC.

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION, EXTENT AND REQUIRED TYPE OF FABRIC (IF SPECIFIED). IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, FABRIC TYPE, OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. TO THE MAXIMUM DEGREE PRACTICAL, AND WHERE THE PLANS ALLOW, ENSURE THE FENCE IS LOCATED:
   i. TOTALLY WITHIN THE PROPERTY BOUNDARIES;
   ii. ALONG A LINE OF CONSTANT ELEVATION WHEREVER PRACTICAL;
   iii. AT LEAST 2m FROM THE TOE OF ANY FILLING OPERATIONS THAT MAY RESULT IN SHIFTING SOIL/FILL DAMAGING THE FENCE.
3. INSTALL RETURNS WITHIN THE FENCE AT MAXIMUM 20m INTERVALS IF THE FENCE IS INSTALLED ALONG THE CONTOUR, OR 5 TO 10m MAXIMUM SPACING (DEPENDING ON SLOPE) IF THE FENCE IS INSTALLED AT AN ANGLE TO THE CONTOUR. THE 'RETURNS' SHALL CONSIST OF EITHER:
   i. V-SHAPED SECTION EXTENDING AT LEAST 1.5m UP THE SLOPE; OR
   ii. SANDBAG OR ROCK/AGGREGATE CHECK DAM A MINIMUM 1/3 AND MAXIMUM 1/2 FENCE HEIGHT, AND EXTENDING AT LEAST 1.5m UP THE SLOPE.
4. ENSURE THE EXTREME ENDS OF THE FENCE ARE TURNED UP THE SLOPE AT LEAST 1.5m, OR AS NECESSARY, TO MINIMISE WATER BYPASSING AROUND THE FENCE.
5. ENSURE THE SEDIMENT FENCE IS INSTALLED IN A MANNER THAT AVOIDS THE CONCENTRATION OF FLOW ALONG THE FENCE, AND THE UNDESIRABLE DISCHARGE OF WATER AROUND THE ENDS OF THE FENCE.
6. IF THE SEDIMENT FENCE IS TO BE INSTALLED ALONG THE EDGE OF EXISTING TREES, ENSURE CARE IS TAKEN TO PROTECT THE TREES AND THEIR ROOT SYSTEMS DURING INSTALLATION OF THE FENCE. DO NOT ATTACH THE FABRIC TO THE TREES.
7. UNLESS DIRECTED BY THE SITE SUPERVISOR OR THE APPROVED PLANS, EXCAVATE A 200mm WIDE BY 200mm DEEP TRENCH ALONG THE PROPOSED FENCE LINE, PLACING THE EXCAVATED MATERIAL ON THE UP-SLOPE SIDE OF THE TRENCH.
8. ALONG THE LOWER SIDE OF THE TRENCH, APPROPRIATELY SECURE THE STAKES INTO THE GROUND SPACED NO GREATER THAN 3m IF SUPPORTED BY A TOP SUPPORT WIRE OR WEIR MESH BACKING, OTHERWISE NO GREATER THAN 2m.
9. IF SPECIFIED, SECURELY ATTACH THE SUPPORT WIRE OR MESH TO THE UP-SLOPE SIDE OF THE STAKES WITH THE MESH EXTENDING AT LEAST 200mm INTO THE EXCAVATED TRENCH, ENSURE THE MESH AND FABRIC IS ATTACHED TO THE UP-SLOPE SIDE OF THE STAKES EVEN WHEN DIRECTING A FENCE AROUND A CORNER OR SHARP CHANGE OF DIRECTION.
10. WHEREVER POSSIBLE, CONSTRUCT THE SEDIMENT FENCE FROM A CONTINUOUS ROLL OF FABRIC. TO JOIN FABRIC EITHER:
    i. ATTACH EACH END TO TWO OVERLAPPING STAKES WITH THE FABRIC FOLDING AROUND THE ASSOCIATED STAKE ONE TURN, AND WITH THE TWO STAKES TIED TOGETHER WITH WIRE; OR
    ii. OVERLAP THE FABRIC TO THE NEXT ADJACENT SUPPORT POST.
11. SECURELY ATTACH THE FABRIC TO THE SUPPORT POSTS USING 25 X 12.5mm STAPLES, OR TIE WIRE AT MAXIMUM 150mm SPACING.
12. SECURELY ATTACH THE FABRIC TO THE SUPPORT WIRE/MESH (IF ANY) AT A MAXIMUM SPACING OF 1m.
13. ENSURE THE COMPLETED SEDIMENT FENCE IS AT 450mm, BUT NOT MORE THAN 700mm HIGH. IF A SPILL-THOUGH WEIR IS INSTALLED, ENSURE THE CREST OF THE WEIR IS AT LEAST 300mm ABOVE GROUND LEVEL.
14. BACKFILL THE TRENCH AND TAMP THE FILL TO FIRMLY ANCHOR THE BOTTOM OF THE FABRIC AND MESH TO PREVENT WATER FROM FLOWING UNDER THE FENCE.

ADDITIONAL REQUIREMENTS FOR THE INSTALLATION OF SPILL-THROUGH WEIR

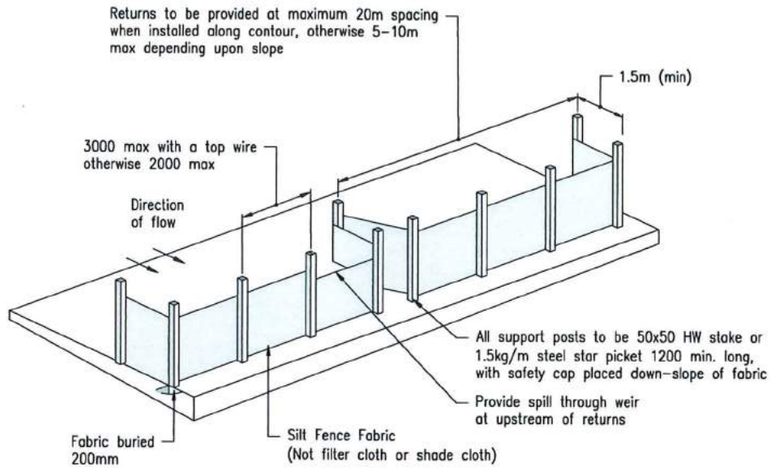
1. LOCATE THE SPILL -THROUGH WEIR SUCH THAT THE WEIR CREST WILL BE LOWER THAN THE GROUND LEVEL AT EACH END OF THE FENCE.
2. ENSURE THE CREST OF THE SPILL-THROUGH WEIR IS AT LEAST 300mm THE GROUND ELEVATION.
3. SECURELY TIE A HORIZONTAL CROSS MEMBER (WEIR) TO THE SUPPORT POSTS/STAKES EACH SIDE OF THE WEIR. CUT THE FABRIC DOWN THE SIDE OF EACH POST AND FOLD THE FABRIC OVER THE CROSS MEMBER AND APPROPRIATELY SECURE THE FABRIC.
4. INSTALL A SUITABLE SPLASH PAD AND/OR CHUTE IMMEDIATELY DOWN-SLOPE OF THE SPILL-THROUGH WEIR TO CONTROL SOIL EROSION AND APPROPRIATELY DISCHARGE THE CONCENTRATED FLOW PASSING OVER THE WEIR.

MAINTENANCE

1. INSPECT THE SEDIMENT FENCE AT LEAST WEEKLY AND AFTER ANY SIGNIFICANT RAIN. MAKE NECESSARY REPAIRS IMMEDIATELY.
2. REPAIR ANY TORN SECTIONS WITH A CONTINUOUS PIECE OF FABRIC FROM POST TO POST.
3. WHEN MAKING REPAIRS, ALWAYS RESTORE THE SYSTEM TO ITS ORIGINAL CONFIGURATION UNLESS AN AMENDED LAYOUT IS REQUIRED OR SPECIFIED.
4. IF THE FENCE IS SAGGING BETWEEN STAKES, INSTALL ADDITIONAL SUPPORT POSTS.
5. REMOVE ACCUMULATED SEDIMENT IF THE SEDIMENT DEPOSIT EXCEEDS A DEPTH OF 1/3 THE HEIGHT OF THE FENCE.
6. DISPOSE OF SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
7. REPLACE THE FABRIC IS THE SERVICE LIFE OF THE EXISTING FABRIC EXCEEDS 6 MONTHS.

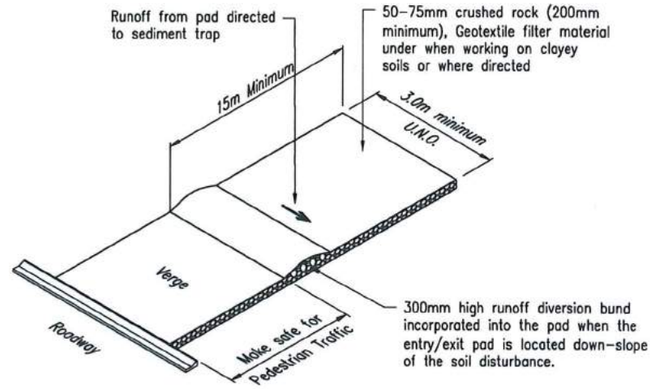
REMOVAL

1. WHEN DISTURBED AREAS UP-SLOPE OF THE SEDIMENT FENCE ARE SUFFICIENTLY STABILISED TO RESTRAIN EROSION, THE FENCE MUST BE REMOVED.
2. REMOVE MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
3. REHABILITATE/REVEGETATE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.



SEDIMENT FENCE

N.T.S



TEMPORARY CONSTRUCTION ENTRY / EXIT

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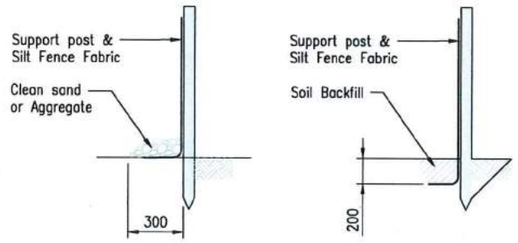
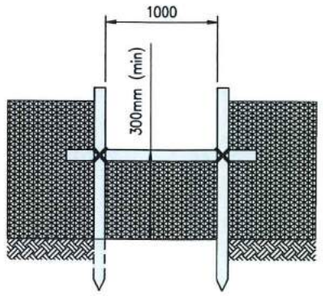


METHOD A METHOD B

ANCHORING BASE OF FABRIC

N.T.S



SPILL TROUGH WEIR

N.T.S

TEMPORARY CONSTRUCTION ENTRY / EXIT

MATERIALS

ROCK:
WELL GRADED, HARD, ANGULAR, EROSION RESISTANT ROCK, NOMINAL DIAMETER OF 50 TO 75mm (SMALL DISTURBANCES) OR 100 TO 150mm (LARGE DISTURBANCES). ALL REASONABLE MEASURES MUST BE TAKEN TO OBTAIN ROCK OF NEAR UNIFORM SIZE.

FOOTPATH STABILISING AGGREGATE:
25 TO 50mm GRAVEL OR AGGREGATE.

GEOTEXTILE FABRIC:
HEAVY-DUTY, NEEDLE-PUNCHES, NON-WOVEN FILTER CLOTH ('BIDIM' A24 OR EQUIVALENT).

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION AND DIMENSIONAL DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. CLEAR THE LOCATION OF THE ROCK PAD, REMOVING STUMPS, ROOTS AND OTHER VEGETATION TO PROVIDE A FIRM FOUNDATION SO THAT THE ROCK IS NOT PRESSED INTO SOFT GROUND. CLEAR SUFFICIENT WIDTH TO ALLOW PASSAGE OF LARGE VEHICLES, BUT CLEAR ONLY THAT NECESSARY FOR THE EXIT. DO NOT CLEAR ADJACENT AREAS UNTIL THE REQUIRED EROSION AND SEDIMENT CONTROL DEVICES ARE IN PLACE.
3. IF THE EXPOSED SOIL IS SOFT, PLASTIC OR CLAYEY, PLACE A SUB-BASE OF CRUSHED ROCK OR A LAYER OF HEAVY-DUTY FILTER CLOTH TO PROVIDE A FIRM FOUNDATION.
4. PLACE THE ROCK PAD FORMING A MINIMUM 200mm THICK LAYER OF CLEAN, OPEN-VOID ROCK.
5. IF THE ASSOCIATED CONSTRUCTION SITE IS UP-SLOPE OF THE ROCK PAD, THUS CAUSING STORMWATER RUNOFF TO FLOW TOWARDS THE ROCK PAD, THEN FORM A MINIMUM 300mm HIGH FLOW CONTROL BERM ACROSS THE ROCK PAD TO DIVERT SUCH RUNOFF TO A SUITABLE SEDIMENT TRAP.
6. THE LENGTH OF THE ROCK PAD SHOULD BE AT LEAST 15M WHERE PRACTICABLE, AND AS WIDE AS THE FULL WIDTH OF THE ENTRY OR EXIT AND AT LEAST 3m. THE ROCK PAD SHOULD COMMENCE AT THE EDGE OF THE OFF-SITE SEALED ROAD OR PAVEMENT.
7. FLARE THE END OF THE ROCK PAD WHERE IT MEETS THE PAVEMENT SO THAT THE WHEELS OF TURNING VEHICLES DO NOT TRAVEL OVER UNPROTECTED SOIL.
8. IF THE FOOTPATH IS OPEN TO PEDESTRIAN MOVEMENT, COVER THE COARSE ROCK WITH FINE AGGREGATE OR GRAVEL, OR OTHERWISE TAKE WHATEVER MEASURES ARE NEEDED TO MAKE THE AREA SAFE.

MAINTENANCE

1. INSPECT ALL SITE ENTRY AND EXIT POINTS PRIOR TO FORECAST RAIN, DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER RUNOFF-PRODUCING RAINFALL, OR OTHERWISE AT FORTNIGHTLY INTERVALS.
2. IF SAND, SOIL, SEDIMENT OR MUD IS TRACKED OR WASHED ONTO THE ADJACENT SEALED ROADWAY, THEN SUCH MATERIAL MUST BE PHYSICALLY REMOVED, FIRST USING A SQUARE-EDGED SHOVEL, AND THEN A STIFF-BRISTLED BROOM, AND THEN BY A MECHANICAL VACUUM UNIT, IF AVAILABLE.
3. IF NECESSARY FOR SAFETY REASONS, THE ROADWAY SHALL ONLY BE WASHED CLEAN AFTER ALL REASONABLE EFFORTS HAVE BEEN TAKEN TO SHOVEL AND SWEEP THE MATERIAL FROM THE ROADWAY.
4. WHEN THE VOIDS BETWEEN THE ROCK BECOME FILLED WITH MATERIAL AND THE EFFECTIVENESS OF THE ROCK PAD IS REDUCED TO A POINT WHERE SEDIMENT IS BEING TRACKED OFF THE SITE, A NEW 100MM LAYER OF ROCK MUST BE ADDED AND/OR THE ROCK PAD MUST BE EXTENDED.
5. ENSURE ANY ASSOCIATED DRAINAGE CONTROL MEASURES (e.g. FLOW CONTROL BERM) ARE MAINTAINED IN ACCORDANCE WITH THEIR DESIRED OPERATIONAL CONDITIONS.
6. DISPOSE OF SEDIMENT AND DEBRIS IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.

REMOVAL

1. THE ROCK PAD SHOULD BE REMOVED ONLY AFTER IT IS NO LONGER NEEDED AS A SEDIMENT TRAP.
2. REMOVE MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
3. RE-GRADE AND STABILISE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.

REV	DESCRIPTION	TASK MAN.	APPROVED	RPEQ No.	DATE
A	ISSUE FOR APPROVAL	GA		6073	8/06/2018

J. XREFS

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DESIGNED	IRM
DRAWN	IRM
ACAD No.	4839-C14
SCALE	NTS

TITLE: EROSION & SEDIMENT CONTROL DETAILS - SHEET 1 OF 2

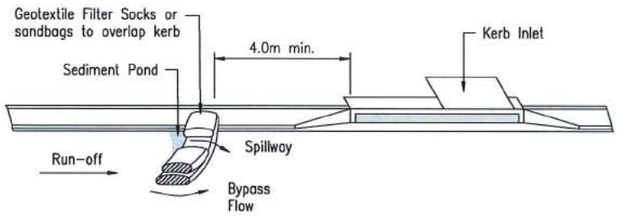
A1 FULL SIZE

DRAWING No. 4839-C14

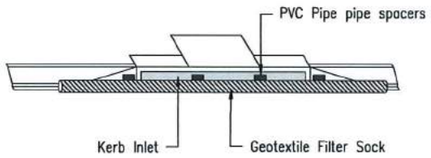
SHEET 1 OF 15 SHEETS

REVISION A

DO NOT SCALE



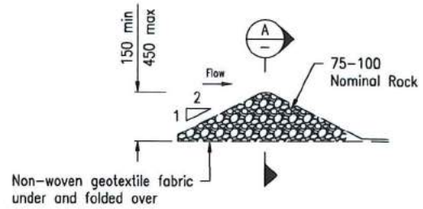
ON-GRADE INLET



SAG INLET

KERB INLET SEDIMENT TRAP

N.T.S



DETAIL 1

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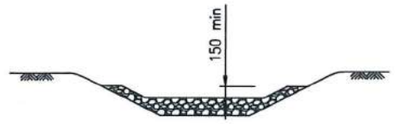

SECTION A

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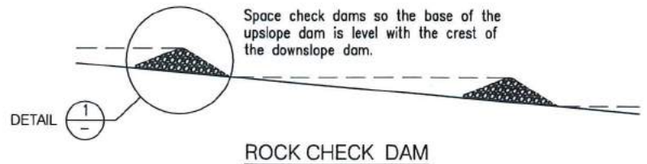

ROCK CHECK DAM

N.T.S

KERB INLET SEDIMENT TRAP

MATERIAL

SOCKS:

MINIMUM 200mm DIAMETER SYNTHETIC OR BIODEGRADABLE TUBES MANUFACTURED FROM NON-WOVEN OR COMPOSITE FABRIC SUITABLE FOR THE 'FILTRATION' OF COARSE SEDIMENT.

FILL MATERIAL:

STRAW CANE MULCH, COMPOSITE MATERIAL (AS4454), COURSE SAND OR CLEAN AGGREGATE.

INSTALLATION

1. REFER TO APPROVED PLANS FOR THE LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. ENSURE THE SOCKS ARE PLACED INDIVIDUALLY OR COLLECTIVELY (AS A SINGLE SEDIMENT TRAP) SUCH THAT:
   (i) LEAKAGE AROUND OR UNDER THE SOCKS IS MINIMISED;
   (ii) ADJOINING SOCKS ARE TIGHTLY BUTTED OR OVERLAPPED AT LEAST 450mm;
   (iii) THE SURFACE AREA OF POTENTIAL WATER PONDING UP-SLOPE OF EACH SEDIMENT TRAP IS MAXIMISED;
   (iv) TO THE MAXIMUM DEGREE PRACTICAL, ALL SEDIMENT-LADEN WATER WILL PASS THROUGH THE FORMED POND BEFORE FLOWING OVER THE DOWN-SLOPE END OF THE SEDIMENT TRAP.
3. WHEN PLACED ACROSS THE INVERT OF MINOR DRAINS, ENSURE THE SOCKS ARE PLACED SUCH THAT:
   (i) THE CREST OF THE DOWNSTREAM SOCK IS LEVEL WITH THE CHANNEL INVERT AT THE IMMEDIATE UPSTREAM SOCK (IF ANY);
   (ii) EACH SOCK EXTENDS UP THE CHANNEL BANKS SUCH THAT THE CREST OF THE SOCK AT ITS LOWEST POINT IS LOWER THAN GROUND LEVEL AT EITHER END OF THE SOCK.
4. IF STAKES ARE REQUIRED TO ANCHOR THE SOCKS, THEIR SPACING DOES NOT EXCEED 1.2m OR SIX TIMES THE SOCK DIAMETER (WHICHEVER IS THE LESSER). A MAXIMUM STAKE SPACING OF 0.3m APPLIES WHEN USED TO FORM CHECK DAMS.

MAINTENANCE

1. INSPECT ALL FILTER SOCKS PRIOR TO FORECAST RAIN DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER SIGNIFICANT RUNOFF PRODUCING STORMS OR OTHERWISE AT WEEKLY INTERVALS.
2. REPAIR OR REPLACE DAMAGED SOCKS.
3. THE BULK OF THE SEDIMENT COLLECTED BEHIND THE FILTER SOCKS SHOULD BE REMOVED BY SHOVEL AFTER EACH STORM EVENT.
4. REMOVE COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

REMOVAL

1. ALL SAND, SOIL, SEDIMENT OR MUD MUST BE PHYSICALLY REMOVED FROM SEALED SURFACES, FIRST USING A SQUARE-EDGED SHOVEL, AND THEN A STIFF-BRISTLED BROOM, AND THEN BY A MECHANICAL VACUUM UNIT, IF AVAILABLE.
2. IF NECESSARY FOR SAFETY REASONS, THE SEALED SURFACE SHALL ONLY BE WASHED CLEAN AFTER ALL REASONABLE EFFORTS HAVE BEEN TAKEN TO SHOVEL AND SWEEP THE MATERIALS FROM THE SURFACE.
3. DISPOSE OF COLLECTED SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
4. ALL SYNTHETIC (PLASTIC) MESH OR OTHER NON READILY BIODEGRADABLE MATERIALS MUST BE REMOVED FROM THE SITE ONCE THE SLOPE OR DRAIN IS STABILISED, OR THE SOCKS HAVE DETERIORATED TO A POINT WHERE THEY ARE NO LONGER PROVIDING THEIR INTENDED DRAINAGE OR SEDIMENT CONTROL FUNCTION.

ROCK CHECK DAMS

MATERIALS

ROCK:

75 TO 100mm NOMINAL DIAMETER, HARD, EROSION RESISTANT ROCK.

GEOTEXTILE FABRIC:

HEAVY-DUTY, NEEDLE-PUNCHES, NON-WOVEN FILTER CLOTH ('BIDIM' A24 OR EQUIVALENT).

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. PRIOR TO PLACEMENT OF THE CHECK DAMS, ENSURE THE TYPE AND SIZE OF EACH CHECK DAMS WILL NOT CAUSE A SAFETY HAZARD OR CAUSE WATER TO SPILL OUT OF THE DRAIN.
3. LOCATE THE FIRST CHECK DAM AT THE DOWNSTREAM END OF THE SECTION OF CHANNEL BEING PROTECTED. LOCATE EACH SUCCESSIVE CHECK DAM SUCH THAT THE CREST OF THE IMMEDIATE DOWNSTREAM DAM IS LEVEL WITH THE TOE OF THE CHECK DAM BEING INSTALLED.
4. ENSURE THE CHANNEL SLOPE IS NO STEEPER THAN 10:1 (H:V). OTHERWISE CONSIDER THE USE OF A SUITABLE CHANNEL LINER INSTEAD OF THE CHECK DAMS.
5. CONSTRUCT THE CHECK DAM TO THE DIMENSIONS AND PROFILE SHOWN WITHIN THE APPROVED PLAN.
6. WHERE SPECIFIED, THE CHECK DAMS SHALL BE CONSTRUCTED ON A SHEET OF GEOTEXTILE FABRIC USED AS A DOWNSTREAM SPLASH PAD.
7. EACH CHECK DAM SHALL BE EXTENDED UP THE CHANNEL BANK (WHERE PRACTICABLE) TO AN ELEVATION AT LEAST 150mm ABOVE THE CREST LEVEL OF THE DAM.

MAINTENANCE

1. INSPECT EACH CHECK DAM AND THE DRAINAGE CHANNEL AT LEAST WEEKLY AND AFTER RUNOFF-PRODUCING RAINFALL.
2. CORRECT ANY DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN ANY OF THE CHECK DAMS, THEN CHECK THE SPACING OF DAMS AND WHERE NECESSARY INSTALL INTERMEDIATE CHECK DAMS OR A SUITABLE CHANNEL LINER.
3. CHECK FOR DISPLACEMENT OF THE CHECK DAMS
4. CHECK FOR SOIL SCOUR AROUND THE ENDS OF EACH CHECK DAM. IF SUCH EROSION IS OCCURRING, CONSIDER EXTENDING THE WIDTH OF THE CHECK DAM TO AVOID SUCH PROBLEMS.
5. IF SEVERE SOIL EROSION OCCURS EITHER UNDER OR AROUND THE CHECK DAMS, THEN SEEK EXPERT ADVICE ON AN ALTERNATIVE TREATMENT MEASURE.
6. REMOVE AND SEDIMENT ACCUMULATED BY THE CHECK DAMS, UNLESS IT IS INTENDED THAT THIS SEDIMENT WILL REMAIN WITHIN THE CHANNEL.
7. DISPOSE OF COLLECTED SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

REMOVAL

1. WHEN CONSTRUCTION WORK WITHIN THE DRAINAGE AREA ABOVE THE CHECK DAMS HAS BEEN COMPLETED, AND THE DISTURBED AREAS AND THE DRAINAGE CHANNEL ARE SUFFICIENTLY STABILISED TO RESTRAIN EROSION, ALL TEMPORARY CHECK DAMS MUST BE REMOVED.
2. REMOVE THE CHECK DAMS AND ASSOCIATED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

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SCALE NTS

TITLE

EROSION & SEDIMENT CONTROL DETAILS - SHEET 2 OF 2

A1 FULL SIZE

DRAWING No. 4839-C15

SHEET 1 OF 15 SHEETS

REVISION A

PROPOSED 7 LOT SUBDIVISION - WONGA BEACH

PORT PACIFIC ESTATES

LANDSCAPE DOCUMENTATION

Issue: OPERATIONAL WORKS

Date: 01-06-2018

SHEET PLAN 1:1000

DRAWING SCHEDULE

DWG No.	DRAWING TITLE	ISSUE
1801-003-CD-L0.00	COVER SHEET	03
1801-003-CD-L1.01	PLANTING PLAN 1 OF 1	03
1801-003-CD-L2.01	DETAILS AND SPECIFICATION	03

PLANT SCHEDULE

CODE	SPECIES	COMMON NAME	POTSIZE	QUANTITY
MODULE A - Area: 370m2				
ATR fit	ATRACTOCARPUS fitzalanii	Yellow Mangosteen	tube	22
ACM hem	ACMENA hemilampra	Broad Leaf Lilly Pilly	tube	22
CAR bra	CARALLIA brachiata	Corkwood	tube	22
CLE hyl	CLEISTANTHUS hylandii	Bernie's Cleistanthus	tube	22
LEE ind	LEEA indica	Bandicool Berry	tube	22
LOM lon	LOMANDRA longifolia	Mat Rush	tube	22
PHY cus	PHYLLANTHUS cusculiflorus	Pink Phyllanthus	tube	22
RHU tal	RHUS taltensis	Sumac	tube	22
SCA lac	SCAEVOLA laccada	Sea Lettuce	tube	22
SCO bra	SCOLOPIA braunii	Brown Birch	tube	22
SYZ fib	SYZYGIUM fibrosum	Fibrous Satinash	tube	22
MODULE B - Area: 370m2				
ARC gra	ARCHIDENDRON grandiflorum	Laceflower Tree	tube	16
ARC luc	ARCHIDENDRON lucyi	Scarlet Bean	tube	16
ARC ale	ARCHONTOPHOENIX alexandrae	Alexandra palm	tube	16
ALL lit	ALLOCASUARINA littoralis	Black She Oak	tube	16
BAR cal	BARRINGTONIA calyptrata	Cassowary Pine	tube	16
BAR asi	BARRINGTONIA asiatica	Beach Barringtonia	tube	16
BOM cei	BOMBAX ceiba	Bombax	tube	16
BRA ace	BRACHYCHITON acerifolius	Flame Tree	tube	16
BUC arb	BUCHANANIA arborescens	Jallara	tube	16
CAL bic	CALOPHYLLUM bicolor		tube	16
CAL ino	CALOPHYLLUM inophyllum	Beach Calophyllum	tube	16
CAS equ	CASUARINA equisetifolia	Beach She Oak	tube	16
COR sub	CORDIA subcordata	Sea Trumpet	tube	16
CUP ana	CUPANIOPSIS anacardioides	Tuckeroo	tube	16
EUG rei	EUGENIA reinwardtiana	Beach Cherry	tube	16
MODULE C - Area: 370m2				
ACR spe	ACROSTICHUM speciosum	Mangrove Fern	tube	35
BAR acu	BARRINGTONIA acutangula	Freshwater Mangrove	tube	35
CRI pen	CRINUM pedunculatum	Swamp Lily	tube	35
DIL ala	DILLENIA alata	Red Beech	tube	35
GAR sca	GARDENIA scabrella	Native Gardenia	tube	35
GRA exc	GRAPTOPHYLLUM excelsum	Scarlet Fuschia	tube	35
PAN tec	Pandanus tectorius	Thatch Screw Pine	tube	35

Tube stock to be planted randomly at 1.5m centres. The contractor shall review the plant schedule to ensure that drawings and schedules concur. Where insufficient detail or discrepancies may exist on either the plans or the schedule, it is the contractors responsibility to resolve immediately with the Landscape Architect and prior to providing tender pricing, signing work contracts or commencement of works.

GENERAL NOTES

1. Refer to Engineers' drawings for finished surface levels unless shown on Landscape drawings. Retain existing levels to buildings and adjacent surfaces except where instructed by the superintendent. All new finished surfaces are to align flush with existing surface levels.
2. Refer to Engineers' drawings for path and kerb crossover setting out, service locations, jointing and conduiting in pavement, all structural fixings and reinforcements to pavements and walls etc., lighting and hydraulic elements.
3. Final setout for all landscape treatments to be confirmed on site by the superintendent.

UNDERGROUND SERVICES:
The locations of underground services are approximate only and their exact location should be determined on site. No guarantee is given that all existing services are shown.

TREE SETTING OUT PRINCIPLES:
Trees are to be planted in accordance with FNQROC Design Guidelines D9 - Landscaping, at the following spacings:

- 4.0m min. from electricity or telecommunications poles or pillars
- 7.5m min. from streetlights
- 4.0m radius from high voltage transmission lines
- 2.0m from stormwater pits
- 0.8 - 1.0m from back of kerb
- 3.0m min. from driveway
- 10m min. from the face of the kerb of the adjoining street

NOTE
PLANS HAVE BEEN PREPARED WITHOUT ELECTRICAL DESIGN. TREES MAY NEED TO BE SITE LOCATED TO MEET FNQROC REQUIREMENTS REGARDING LIGHT POLES.

IMPORTANT NOTE

This plan was prepared for the sole purposes of PORT PACIFIC ESTATES ("Client") for the specific purpose of OPERATIONAL WORKS SUBMISSION ("Purpose"). This plan is strictly limited to the Purpose and does not apply directly or indirectly and will not be used for any other application, purpose, use or matter. The plan is presented without the assumption of a duty of care to any other person (other than the Client) ("Third Party") and may not be relied on by Third Party.

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e. the Client or any Third Party not verifying information in this plan where recommended by Landplan LA; lodgement of this plan with any local authority against the recommendation of Landplan LA; the accuracy, reliability, suitability or completeness of any estimates or approximations made or referred to by Landplan LA in this plan. Without limiting paragraph 1 or 2 above, this plan may not be copied, distributed, or reproduced by any process unless this note is clearly displayed on the plan. The dimensions, area, size and location of improvements and number of lots shown on this plan are approximate only and may vary. Scale shown is correct for the original plan and any copies of this plan should be verified by checking against the bar scale. Cadastral boundaries are obtained by title dimensions and digitising from existing cadastral maps. These boundaries have not been verified and are approximate only. Landplan LA will not be liable (in negligence or otherwise) for any direct or indirect loss, damage, liability or claim arising out of or incidental to Landplan LA relying on base information provided to it by FLANAGAN where the base information is incorrect, incomplete, inaccurate, out-of-date or unreasonable. Landplan LA will not be liable (in negligence or otherwise) for any direct or indirect loss, damage, liability or claim arising out of or incidental to Landplan LA relying on building information provided to it by FLANAGAN where the building information is incorrect, incomplete, inaccurate, out-of-date or unreasonable. Refer to Civil Engineer's drawings for finished surface levels unless shown on Landscape drawings. Retain existing levels to buildings and adjacent surfaces except where instructed by the Landscape Architect. All new finished surfaces are to align flush with existing surface levels. Refer to Civil Engineer's drawings for path and kerb crossover setting out.
Refer to Civil Engineer's drawings for service locations. All services are to be verified on site prior to any excavation / construction. Trees to be located minimum 1m from services. All services are indicative only.

Final set-out for all landscape treatments to be confirmed on site by the Landscape Architect.

Unless shown on the landscape drawings, refer to Structural Engineer's drawings for jointing, reinforcement, structural fixings etc for all walls and pavements.

All trees marked within / adjacent to vehicle sightlines are to be set out on site prior to installation and approved by the Landscape Architect and Traffic Engineer.

For Lighting requirements refer Electrical Engineers drawings.

The contractor shall review the plant schedule to ensure that drawings and schedules concur. Where insufficient detail or discrepancies may exist on either the plans or the schedule, it is the contractors responsibility to resolve immediately with the Landscape Architect and prior to providing tender pricing, signing work contracts or commencement of works.

rev. no	description	date	drawn
03	REVISED FOR OPERATIONAL WORKS	01/06/2018	SM
02	REVISED FOR OPERATIONAL WORKS	13/04/2018	SM
01	PRELIMINARY	29/03/2018	SH

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client: PORT PACIFIC ESTATES

project: PROPOSED 7 LOT SUBDIVISION - WONGA BEACH

title: LANDSCAPE COVER SHEET

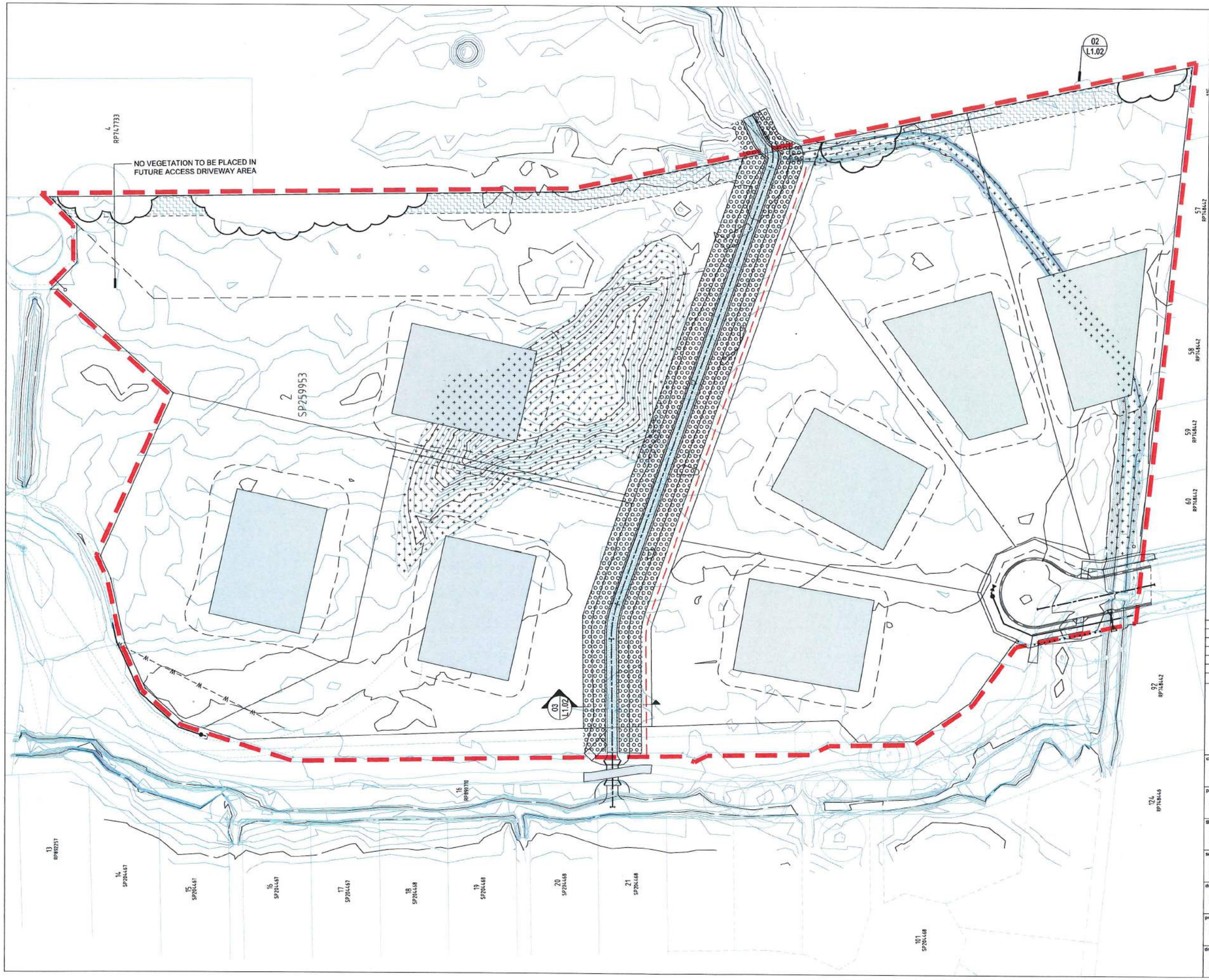
scale: 1:1000 (AT A1 SIZE SHEET) — 0 10m 20m 30m 40m 50m

drawn	approved	date
S.H.	S.M.	01/06/2018

project number: 1802-005

drawing number: L0.00 — rev: 03

northpoint



LEGEND

- PLANTING AREA TYPE 1 (PA1) - REVEGETATION PLANTING AREAS AS SPECIFIED
- EXISTING TREE CANOPY
- HYDRO SEEDING GRASS BY OTHERS. OBTAIN 90% COVERAGE AFTER 10 WEEKS.
- CONCRETE LINED DRAIN REFER TO CIVIL PACKAGE

rev. no	description	date	drawn
03	REVISED FOR OPERATIONAL WORKS	01/06/2018	SM
02	REVISED FOR OPERATIONAL WORKS	13/04/2018	SM
01	PRELIMINARY	29/03/2018	SH

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client
PORT PACIFIC ESTATES

project
PROPOSED 7 LOT SUBDIVISION - WONGA BEACH

title
PLANTING PLAN 1 OF 1

scale
1:500 (AT A1 SIZE SHEET)
0 5m 10m 15m 20m 25m

drawn	aporoved	date
S.H.	S.M.	01/06/2018

project number
1802-005

drawing number
L1.01

rev
03

northpoint

SPECIFICATIONS

SCOPE OF WORK
The work includes the organisation for and supply of all relevant labour, materials, plant and equipment as required to execute the works.
The scope of work includes but is not limited to the following:
- Trimming of areas to be landscaped;
- Removal of deleterious material;
- Cultivation;
- Supply and spreading of additives;
- Supply and installation of imported topsoil;
- Supply and installation of mulch;
- Planting; and
- Maintenance.

WORKS BY OTHERS
- All hard pavement
- Retaining walls
- All fencing types
- Subsoil drainage

EARTHWORKS
Earthworks shall involve the removal of existing compacted material, the cultivation of subsoil, the supply and mixing in of additives, the supply and spreading of topsoil and the fine grading of such soil and existing soil profiles to all landscaped areas to form the finished levels and profiles.
Finished surfaces shall finish flush with adjacent surfaces.
Preparation
Eradicate all weeds using environmentally acceptable methods, such as non-residual glyphosate herbicide in any of its registered formulae, at the recommended maximum rate.
Maintain all areas in a weed free state for the duration of the contract and Plant Establishment periods.
Cultivation
Excavate and remove from site compacted fill resulting from the building works. Cultivate all planting and turf areas to a depth of 150mm and place 100g/m2 of Blood and Bone and 100g/m2 of Gypsum.

IMPORTED TOPSOIL (FOR PLANTING)
Import and spread premium topsoil mix . Soil shall be free of weeds, sticks, rocks and other deleterious matter. Imported topsoil is to comply with AS4419.

MULCH
Mulch to be spread evenly across all planting areas. Mulch to planting areas shall be approved rainforest mulch free of soil, stones, weeds, rubbish or any other deleterious materials. Spread mulch to garden bed areas to a depth of 75mm, to finish 20mm below adjacent surfaces. Keep mulch clear of plant stems. Spread mulch following planting and watering in. Avoid mixing of soil and mulch materials. Do not use recycled garden mulch. Mulch to comply with AS4454.

HYDRO MULCH
Material: Hydromulch in accordance with FNQROC S8.05specification
Application: apply mulch to batters prior to turfing
Location: Swale Batters

PLANTING AREAS
Finished soil depth to all garden areas shall be 300mm crowned towards centre of beds ensuring positive falls to drainage structures. Use 'Agriform' 10g fertilizer tablets (or approved equivalent) to base of all plant root balls at manufacturer's recommended rate.

PLANTS
Provide plants with the following characteristics:
- Large healthy root systems, with no evidence of root curl, restriction or damage;
- Vigorous well-established stock free from pests and diseases, of good form consistent with the pot size, species or variety;
- Hardened off, not soft or forced, and suitable for planting in the natural climatic conditions prevailing at the site.

Label at least one plant from each species in a batch with a durable, readable tag. Plant stock immediately after it is delivered to site. For all plant stock excavate a hole twice the diameter of the rootball and at least 200mm deeper than the rootball. Loosen compacted sides and base of holes to prevent confinement of root growth. Fill all holes to half deep with water in advance of planting, allowing time for water to soak away. After planting, fill hole with amended/imported soils.

STAKES AND TIES
All 45L stock and larger are to be staked and tied.

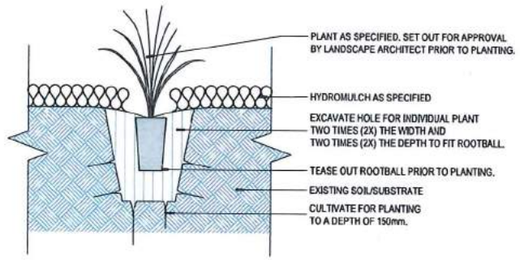
GRASS AREAS
Refer Civil Engineers Specifications.

SWALE TURF STRIP
Extent of turf limited to areas disturbed by building construction and shall be cultivated to 150mm depth.
Mix 1 kg/m2 'Terra Firma Organic Life' to topsoil. Turf shall be Broad Leaf Buffalo - Axonopus compressus
Carry out fine grading of improved soil to all landscaped areas to form finished levels with falls to edges or kerbs as required, to ensure drainage of surface water to the street.

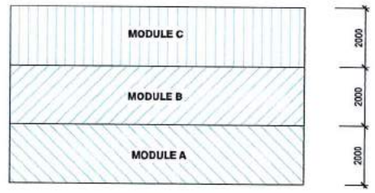
CONDUITS
The contractor is responsible for co-ordination with the building contractor to ensure that conduits under proposed paved or concreted areas have been installed. Conduits for irrigation purposes shall be 90mm PVC pipe - top min. 250mm below finished surface levels.

PLANTING ESTABLISHMENT
Establish and maintain the works for a period of thirteen (13) weeks from the Date of Practical Completion.
Establishment shall include the care of the contract areas by accepted horticultural practices, as well as rectifying any defects that become apparent in the works under normal 'use'. This shall include, but not be limited to, the following works:
- Repair and/or replace any defects due to failure and/or inferior quality materials and/or workmanship;
- Replace plants that have failed and/or have been damaged or died;
- Weed and pest control;
- Maintain all landscape areas in a neat and tidy condition at all times;
- Maintain fertilising and pruning as required;
- Check and adjust levels to attain those specified by addition or removal of mulch and/or topsoil.

All planted beds are to be weeded to maintain same in a grass and weed free environment. Carry out any other work that is specified or is necessary to establish the landscape works in a first class condition.



01 PT1 PLANTING
SCALE 1:10



02 TYPICAL MODULES
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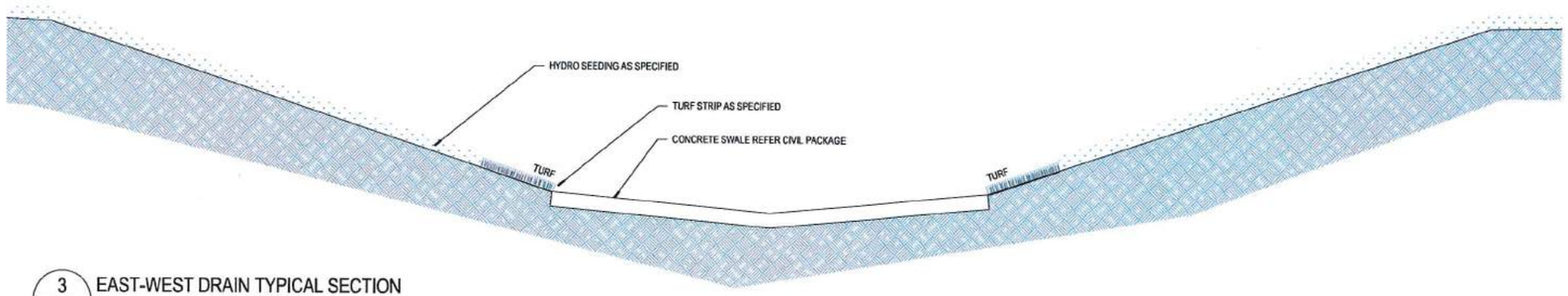

3 EAST-WEST DRAIN TYPICAL SECTION
SCALE 1:20

rev. no	description	date	drawn
03	REVISED FOR OPERATIONAL WORKS	01/06/2018	SM
02	REVISED FOR OPERATIONAL WORKS	13/04/2018	SM
01	PRELIMINARY	29/03/2018	SH

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client: PORT PACIFIC ESTATES
project: PROPOSED 7 LOT SUBDIVISION - WONGA BEACH
title: LANDSCAPE DETAILS AND SPECIFICATION
scale: AS SHOWN (AT A1 SIZE SHEET)
drawn: S.H. | approved: S.M. | date: 01/06/2018
project number: 1802-005
drawing number: L2.01 | rev: 03
northpoint