

Permit

Environmental Protection Act 1994

Environmental authority EA0001587

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EA0001587

Environmental authority takes effect on 30 January 2019

Environmental authority holder(s)

Name(s)	Registered address
Close Encounter Dredging Pty Ltd	67 Honeyeater Dr BURLEIGH WATERS QLD 4220 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Prescribed ERA, ERA 16 - Extraction and Screening, 1: Dredging, in a year, the following quantity of material, (a) 1000t to 10,000t	Adjacent to LOT 10/RP887373
Prescribed ERA, ERA 16 - Extraction and Screening, 1: Dredging, in a year, the following quantity of material, (a) 1000t to 10,000t	Adjacent to LOT 46/RP145641
Prescribed ERA, ERA 16 - Extraction and Screening, 1: Dredging, in a year, the following quantity of material, (a) 1000t to 10,000t	Adjacent to LOT 326/RP170011
Prescribed ERA, ERA 16 - Extraction and Screening, 1: Dredging, in a year, the following quantity of material, (a) 1000t to 10,000t	Adjacent to LOT 48/RP126292
Prescribed ERA, ERA 16 - Extraction and Screening, 1: Dredging, in a year, the following quantity of material, (a) 1000t to 10,000t	Adjacent to LOT 109/RP136610
Prescribed ERA, ERA 16 - Extraction and Screening, 1: Dredging, in a year, the following quantity of material, (a) 1000t to 10,000t	Adjacent to LOT 145/RP166216
Prescribed ERA, ERA 16 - Extraction and Screening, 1: Dredging, in a year, the following quantity of material, (a) 1000t to 10,000t	Adjacent to LOT 0/BUP100562
Prescribed ERA, ERA 16 - Extraction and Screening, 1: Dredging, in a year, the following quantity of material, (a) 1000t to 10,000t	Adjacent to LOT 140/RP200967
Prescribed ERA, ERA 16 - Extraction and Screening, 1: Dredging, in a year, the following quantity of material, (a) 1000t to 10,000t	Adjacent to LOT 18/SP113737

Additional information for applicantsEnvironmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
- b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
- c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

Environmental authority

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

Amanda Gray
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Coastal and Marine Assessment
Department of Environment and Science

Phone: 1300 130 372
Email: palm@des.qld.gov.au

Date issued: 21 June 2019

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

PART 1 – General Conditions for all Zones

Conditions of environmental authority

Environmentally relevant activity/activities	Location(s)
16-1(a) – Dredging material: 1000-10000t/yr within each zone 1-9	Zone 1: Canals adjacent to: Lot 10 RP887373 as shown in zone 1 within the tidal works approval zones attached to this document. Runaway Bay West. Zone 2: Canals adjacent to: Lot 46 RP145641 as shown in zone 2 within the tidal works approval zones attached to this document. Shearwater Estate. Zone 3: Canals adjacent to: Lot 326 RP170011 as shown in zone 3 within the tidal works approval zones attached to this document. Shearwater West Canal Estate. Zone 4: Canals adjacent to: Lot 48 RP126292 as shown in zone 4 within the tidal works approval zones attached to this document. Paradise Point Keys. Zone 5: Canals adjacent to: Lot 109 RP136610 as shown in zone 5 within tidal works approval zones attached to this document. Paradise Point South. Zone 6: Canals adjacent to: Lot 145 RP166216 as shown in zone 6 within tidal works approval zone attached to this document. Bayview Estate. Zone 7: Canals adjacent to: Lot 0 BUP100562 as shown in zone 7 within tidal works approval zone attached to this document. Anglers Paradise Estate. Zone 8: Canals adjacent to: Lot 140 RP200967 as shown in zone 8 within tidal works approval zone attached to this document. Pacific Waters Stage 2. Zone 9: Canals adjacent to: Lot 18 SP113737 as shown in zone 9 within tidal works approval zone attached to this document. Stradbroke Waters Development (Couran Cove).

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Agency interest: General	
Condition number	Condition
G1	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. the amount of material to be dredged in a year must not exceed 10,000 tonnes within each of the zones 1-9 attached at attachment A.
G2	All reasonable and practicable measures must be taken to prevent or minimise environmental harm caused by the activities .
G3	Any breach of a condition of this environmental authority must be reported to the administering authority as soon as practicable within 24 hours of becoming aware of the breach. Records must be kept including full details of the breach and any subsequent actions taken.
G4	Other than as permitted by this environmental authority, the release of a contaminant into the environment must not occur.
G5	Environmental monitoring results must be kept until surrender of this environmental authority. All other information and records that are required by the conditions of this environmental authority must be kept for a minimum of five (5) years. All information and records required by the conditions of this environmental authority must be provided to the administering authority , or nominated delegate upon request, within the required timeframe and in the specified format.
G6	An appropriately qualified person(s) must monitor, record and interpret all parameters that are required to be monitored by this environmental authority and in the manner specified by this environmental authority.
G7	All analyses required under this environmental authority must be carried out by a laboratory that has National Association of Testing Authorities (NATA) certification, or an equivalent certification, for such analyses. The only exception to this condition is for in situ monitoring of pH and turbidity.
G8	When required by the administering authority , monitoring must be undertaken in the manner prescribed by the administering authority , to investigate a complaint of environmental nuisance arising from the activity . The monitoring results must be provided within 10 business days to the administering authority upon its request.
G9	The activity must be undertaken in accordance with written procedures that: 1. identify potential risks to the environment from the activity during routine operations, closure and an emergency 2. establish and maintain control measures that minimise the potential for environmental harm 3. ensure plant, equipment and measures are maintained in a proper and effective condition 4. ensure plant, equipment and measures are operated in a proper and effective manner 5. ensure that staff are trained and aware of their obligations under the <i>Environmental Protection Act 1994</i> 6. ensure that reviews of environmental performance are undertaken at least annually.
G10	The Environmental Management Plan (Reference: FinalEA.App22Oct2018ENSC.v1.5b dated 22/10/18) must not be implemented or amended in a way that contravenes or is inconsistent with any condition of this environmental authority.

G11	The characterisation of sediments and suitability for unconfined disposal to waters of dredged material from each zone must be submitted to the administering authority prior to works being undertaken in accordance with methodology provided in the latest edition of the following: · National Assessment Guidelines for Dredging : applicable for disposal to waters · Queensland Acid Sulfate Soil Technical Manual: applicable for disposal to waters or land And any other relevant guideline specified by the administering authority, at least 20 business days prior to the commencement of the dredging activity. Note: It is the responsibility of the operator to determine whether previous characterisation of sediments are suitable for assessing risks to environmental values associated with the dredging campaign (zone specific) to which this environmental authority relates.
G12	Prior to the commencement of the dredging activity, a Dredge Management Plan (DMP) for the activity must be developed and implemented for each zone, and the DMP must contain the following: 1. Clearly stated aims and objectives. 2. Description of dredging operation including: a. type of equipment to be used in dredging; b. volume of dredged material to be removed, and duration and timing of the dredging campaign; c. methods to be utilised for transporting dredged material; and d. dredged material disposal methods. 3. Maps or plans showing: a. legend, north arrow and scale; b. boundaries of dredging operation; c. estimated or modelled zone of influence of sediment plumes; d. location of designated disposal sites; e. location of sensitive receptors; and f. all monitoring locations. 4. A detailed description of sediment plume-associated monitoring program including: a. sampling regime and methods; and b. monitoring sites. 5. A detailed description of the assessment methodology to provide data in relation to trigger values that will define alert levels. 6. Clearly set out data handling and evaluation procedures that demonstrate how exceedance of alert levels will be determined. 7. Management actions to be initiated if alert levels are exceeded. Note: The Dredge Management Plan is subject to review and amendment as required by changing regulation, monitoring results or administering authority recommendations.
G13	The Dredge Management Plan (DMP) must be provided to the administering authority at either of the addresses below: palm@des.qld.gov.au; or Permit and Licence Management Implementation and Support Unit Department of Environment and Science GPO Box 2454 BRISBANE QLD 4001.

G14	The Dredge Management Plan must be submitted to the administering authority at least 20 business days prior to the commencement of dredging and amended in accordance with any comments made by the administering authority .
G15	Condition G13 applies each time the Dredge Management Plan is amended.
G16	The dredging activity must be undertaken in accordance with the Dredge Management Plan required in condition G12.
G17	If maintenance dredged material is proposed to be placed in waters the dredged material must not be placed at sea except at a designated place authorised under an authority, licence or other permit issued by the Commonwealth or Queensland governments.
G18	The Dredge Management Plan must not be implemented or amended in a way that contravenes or is inconsistent with any condition of this authority.
Agency interest: Water	
Condition number	Condition
WT1	Where the zone of influence of a sediment plume generated by the activity encroaches upon a sensitive receptor, slightly disturbed or high ecological value waters, sediment plume-associated monitoring (SPAM) is to be undertaken as follows. The default¹ SPAM requirement is: 1. For small-scale dredging operations (<50,000 cubic metres): a. continuous visual monitoring², and b. spot-checking (weekly and event-based concern site monitoring with control site-based checking). ¹ The default sediment plume-associated monitoring program may be amended at the discretion of the administering authority to a more-intensive or less-intensive monitoring approach depending on the amount and quality of supporting information available at the time the dredging application is made, the management intent of waters under the Environmental Protection (Water) Policy 2009, and the level of perceived risk and protection status of each potentially-affected environmental value. ² The continuous visual monitoring methodology includes a subjective monitoring component, but must also be supplemented with daily, non-subjective (i.e. objective, empirical) data collection that must occur at the most appropriate times to report the full extent of the sediment plumes being generated (e.g. mid-ebb and flood tides whilst actively dredging). This will be detailed within a supporting Dredge Management Plan as outlined within section G12.
WT2	The release to waters permitted in condition WT1 must not produce any slick or other visible evidence of oil or grease, scum, litter or other visually objectionable matter.
WT3	All reasonable and practicable measures must be taken to minimise the size of the sediment plume and concentration of suspended solids during the conduct of the dredging activity .
Agency interest: Noise	

Condition number	Condition
N1	Noise generated by the activity must not cause environmental nuisance to any sensitive place or commercial place .
Agency interest: Air	
Condition number	Condition
A1	Other than as permitted within this environmental authority, odours or airborne contaminants must not cause environmental nuisance to any sensitive place or commercial place .
Agency interest: Land	
Condition number	Condition
L1	Treatment and management of acid sulfate soils must comply with the guidance provided in the current edition of the <i>Queensland Acid Sulfate Soil Technical Manual</i> .
Agency interest: Waste	
Condition number	Condition
W1	All waste generated in carrying out the activity must be lawfully reused, recycled or removed to a facility that can lawfully accept the waste.

PART 2 – Site Specific Conditions – Zone 1

Conditions of environmental authority

Environmentally relevant activity/activities		Location(s)																												
16-1(a) – Dredging material:1000-10000t/yr		Zone 1 located within and adjacent to canals around Lot 10 Plan RP887373 as shown in zone 1 within the tidal works approval zones (in attachment A and B) attached to this document. Runaway Bay West.																												
The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.																														
Agency interest: General																														
Condition number	Condition																													
Z1	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. The dredging works must be carried out generally in accordance with the following plans: Zone 1: <table><tr><th>Drawing/Report title</th><th>Prepared by</th><th>Date</th><th>Reference no.</th><th>Version/issue</th></tr><tr><td>Lae Enterprises Pty Ltd Nyamba Village Canal Cross Sections</td><td>Cameron, Mcnamara and Partners Pty Ltd</td><td>15/5/79</td><td>30874</td><td>A</td></tr><tr><td>Lae Enterprises Pty Ltd Nyamba Village Typical Canal Cross Sections</td><td>Cameron, Mcnamara and Partners Pty Ltd</td><td>15/5/79</td><td>30837</td><td>A</td></tr><tr><td>Lae Enterprises Pty Ltd Nyamba Village Details of Bank Treatment</td><td>Cameron, Mcnamara and Partners Pty Ltd</td><td>15/5/79</td><td>30876</td><td>A</td></tr><tr><td>Runaway Bay West Stage 5,6 and 7 locality Plan, Layout, drainage and canal works</td><td>Cameron, Mcnamara and Partners Pty Ltd</td><td>16/11/81</td><td>31237</td><td>A</td></tr></table>					Drawing/Report title	Prepared by	Date	Reference no.	Version/issue	Lae Enterprises Pty Ltd Nyamba Village Canal Cross Sections	Cameron, Mcnamara and Partners Pty Ltd	15/5/79	30874	A	Lae Enterprises Pty Ltd Nyamba Village Typical Canal Cross Sections	Cameron, Mcnamara and Partners Pty Ltd	15/5/79	30837	A	Lae Enterprises Pty Ltd Nyamba Village Details of Bank Treatment	Cameron, Mcnamara and Partners Pty Ltd	15/5/79	30876	A	Runaway Bay West Stage 5,6 and 7 locality Plan, Layout, drainage and canal works	Cameron, Mcnamara and Partners Pty Ltd	16/11/81	31237	A
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Runaway Bay West Stage 5,6 and 7 locality Plan, Layout, drainage and canal works	Cameron, Mcnamara and Partners Pty Ltd	16/11/81	31237	A																										

PART 3 – Site Specific Conditions – Zone 2

Conditions of environmental authority

Environmentally relevant activity/activities		Location(s)																	
16-1(a) – Dredging material:1000-10000t/yr		Zone 2 located within and adjacent to canals around Lot 46 RP145641 as shown in zone 2 within the tidal works approval zones (in attachment A and C) attached to this document. Shearwater Estate.																	
The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.																			
Agency interest: General																			
Condition number	Condition																		
Z2	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. The dredging works must be carried out generally in accordance with the following plans: Zone 2: <table><tr><th>Drawing/Report title</th><th>Prepared by</th><th>Date</th><th>Reference no.</th><th>Version/issue</th></tr><tr><td>Lae Enterprises Pty Ltd Stage 2 Canal Details</td><td>Cameron, Mcnamara and Partners Pty Ltd</td><td>26/11/75</td><td>73-193 30159</td><td>B</td></tr><tr><td>Lae Enterprises Pty Ltd Stage 4 Subdivisional roadworks, drainage and canal works details sheet</td><td>Cameron, Mcnamara and Partners Pty Ltd</td><td>20/09/76</td><td>73-193 30413</td><td>B</td></tr></table>				Drawing/Report title	Prepared by	Date	Reference no.	Version/issue	Lae Enterprises Pty Ltd Stage 2 Canal Details	Cameron, Mcnamara and Partners Pty Ltd	26/11/75	73-193 30159	B	Lae Enterprises Pty Ltd Stage 4 Subdivisional roadworks, drainage and canal works details sheet	Cameron, Mcnamara and Partners Pty Ltd	20/09/76	73-193 30413	B
Drawing/Report title	Prepared by	Date	Reference no.	Version/issue															
Lae Enterprises Pty Ltd Stage 2 Canal Details	Cameron, Mcnamara and Partners Pty Ltd	26/11/75	73-193 30159	B															
Lae Enterprises Pty Ltd Stage 4 Subdivisional roadworks, drainage and canal works details sheet	Cameron, Mcnamara and Partners Pty Ltd	20/09/76	73-193 30413	B															

PART 4 – Site Specific Conditions – Zone 3

Conditions of environmental authority

Environmentally relevant activity/activities	Location(s)
16-1(a) – Dredging material: 1000-10000t/yr	Zone 3 which is located within and adjacent to canals around Lot 326 RP170011 as shown in zone 3 within the tidal works approval zones (in attachment A and D) attached to this document. Shearwater West Canal Estate.

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Agency interest: General					
Condition number	Condition				
Z3	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. The dredging works must be carried out generally in accordance with the following plans:				
	Zone 3:				
	Drawing/Report title	Prepared by	Date	Reference no.	Version/issue
	Typical cross section shearwater west canal estate	Cameron, Mcnamara and Partners Pty Ltd	27/4/77	S1448	-
	Revetment walls for canals	Cameron, Mcnamara and Partners Pty Ltd	23/12/17	S1205	-

PART 5 – Site Specific Conditions – Zone 4

Conditions of environmental authority

Environmentally relevant activity/activities	Location(s)
16-1(a) – Dredging material:1000-10000t/yr	Zone 4 located within and adjacent to canals around Lot 48 RP126292 as shown in zone 4 within the tidal works approval zones (in attachment A and E) attached to this document. Paradise Point Keys.

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Agency interest: General					
Condition number	Condition				
Z4	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. The dredging works must be carried out generally in accordance with the following plans:				
	Zone 4				
	Drawing/Report title	Prepared by	Date	Reference no.	Version/issue
	Paradise Point keys Stage 3 Flood canal	C.N.Fryer-Consulting Engineer	25/7/73	Section B.B P.2.1.64	-
	Paradise Point keys Stage 3 canal cross sections	C.N.Fryer-Consulting Engineer	25/7/73	Section B.B P.2.1.60.	-
	Paradise point keys Revetment details and erosion protection	C.N. Fryer Consulting Engineer	23/4/69	Capping Section S.10	-
	Paradise Point keys Stage 3 weir details	C.N.Fryer	11/9/1972	P.2.1.75.	-

PART 6 – Site Specific Conditions – Zone 5

Conditions of environmental authority

Environmentally relevant activity/activities	Location(s)
16-1(a) – Dredging material: 1000-10000t/yr	Zone 5 located within and adjacent to canals around Lot 109 RP136610 as shown in zone 5 within tidal works approval zones (in attachment A and F) attached to this document. Paradise Point South.

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Agency interest: General					
Condition number	Condition				
Z5	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. The dredging works must be carried out generally in accordance with the following plans: Zone 5				
	Drawing/Report title	Prepared by	Date	Reference no.	Version/issue
	Paradise point south subdivisional roadworks and drainage typical sections	Cameron, Mcnamara and Partners Pty Ltd	27/8/79	24080	-

PART 7 – Site Specific Conditions – Zone 6

Conditions of environmental authority

Environmentally relevant activity/activities	Location(s)
16-1(a) – Dredging material: 1000-10000t/yr	Zone 6 located within and adjacent to canals around Lot 145 RP166216 as shown in zone 6 within tidal works approval zones (in attachment A and G) attached to this document. Bayview Estate.

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Agency interest: General					
Condition number	Condition				
Z6	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. The dredging works must be carried out generally in accordance with the following plans:				
	Zone 6				
	Drawing/Report title	Prepared by	Date	Reference no.	Version/issue
	Bayview Estate Typical Cross Section	Cameron, Mcnamara and Partners Pty Ltd	4/2/77	8803	-

PART 8 – Site Specific Conditions – Zone 7

Conditions of environmental authority

Environmentally relevant activity/activities	Location(s)
16-1(a) – Dredging material: 1000-10000t/yr	Zone 7 located within and adjacent to canals around Lot 0 BUP100562 as shown in zone 7 within tidal works approval zones (in attachment A and H) attached to this document. Anglers Paradise Estate.

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Agency interest: General					
Condition number	Condition				
Z7	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. The dredging works must be carried out generally in accordance with the following plans:				
	Zone 7				
	Drawing/Report title	Prepared by	Date	Reference no.	Version/issue
	Anglers Paradise Estate Canal Excavation	Cardno and Davies Pty Ltd	15/06/68	1.424	C

PART 9 – Site Specific Conditions – Zone 8

Conditions of environmental authority

Environmentally relevant activity/activities	Location(s)
16-1(a) – Dredging material: 1000-10000t/yr	Zone 8 located within and adjacent to canals around Lot 140 RP200967 as shown in zone 8 within tidal works approval zones (in attachment A and I) attached to this document. Pacific Waters Stage 2.

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Agency interest: General																				
Condition number	Condition																			
Z8	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. The dredging works must be carried out generally in accordance with the following plans: Zone 8 <table><tr><th>Drawing/Report title</th><th>Prepared by</th><th>Date</th><th>Reference no.</th><th>Version/issue</th></tr><tr><td>Pacific Waters Stage 2 Special Drainage Apron, beach detail typical cross section Biggera Creek</td><td>Lewiac Pty Ltd Cameron McNamara</td><td>22/2/83</td><td>31095</td><td>--</td></tr><tr><td>Pacific Waters Stage 2 Stormwater Drainage layout and canal Works</td><td>Lewiac Pty Ltd Cameron Mcnamara</td><td>22/6/83</td><td>31092</td><td>-</td></tr></table>					Drawing/Report title	Prepared by	Date	Reference no.	Version/issue	Pacific Waters Stage 2 Special Drainage Apron, beach detail typical cross section Biggera Creek	Lewiac Pty Ltd Cameron McNamara	22/2/83	31095	--	Pacific Waters Stage 2 Stormwater Drainage layout and canal Works	Lewiac Pty Ltd Cameron Mcnamara	22/6/83	31092	-
Drawing/Report title	Prepared by	Date	Reference no.	Version/issue																
Pacific Waters Stage 2 Special Drainage Apron, beach detail typical cross section Biggera Creek	Lewiac Pty Ltd Cameron McNamara	22/2/83	31095	--																
Pacific Waters Stage 2 Stormwater Drainage layout and canal Works	Lewiac Pty Ltd Cameron Mcnamara	22/6/83	31092	-																

PART 10 – Site Specific Conditions – Zone 9

Conditions of environmental authority

Environmentally relevant activity/activities	Location(s)
16-1(a) – Dredging material: 1000-10000t/yr	Zone 9 located within and adjacent to canals around Lot 18 SP113737 as shown in zone 9 within tidal works approval zones (in attachment A and J) attached to this document. Stradbroke Waters Development (Couran Cove).

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Agency interest: General					
Condition number	Condition				
Z9	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. The dredging works must be carried out generally in accordance with the following plans:				
	Zone 9				
	Drawing/Report title	Prepared by	Date	Reference no.	Version/issue
	Details of prestressed Concrete Pile Units Type A and B for Stradbroke Waters Development South Stradbroke Island	Mclwain Associates Pty Ltd	16/8/19	228/999	-
	Road, Drainage and Reclamation Levels Stage Part Levels Stage part I.C. Sheet 2 Stradbroke Waters Estate	Mcllwain, Taylor and Associates Pty Ltd	6/11/73	228-1644	-
Timing: Prior to the commencement of use and to be maintained at all times					

Definitions

Key terms and/or phrases used in this document are defined in this section and **bolded** throughout this document. Applicants should note that where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

Activity means the environmentally relevant activities, whether resource activities or prescribed activities, to which the **environmental** authority relates.

Administering authority means the Department of Environment and Science or its successor or predecessors.

Alert level represent tiers in a hierarchy of increasing environmental risk and are defined by trigger values. Three alert levels (low, moderate, and high) are typically used in a management action framework to indicate adverse conditions and guide management responses that aim to prevent and minimise environmental harm.

Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills or experience relevant to the EA requirement and can give authoritative assessment, advice and analysis in relation to the EA requirements using the relevant protocols, standards, methods or literature.

Baseline-based assessment means the environmental management plan involves a monitoring result assessment methodology that uses assessment criteria developed from a pre-disturbance baseline data collection phase.

Commercial place means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

Concern site means a site where a **sensitive receptor** occurs within the **zone of influence** of a sediment plume.

Continuous visual monitoring means visual appraisal of the sediment plume extent and intensity as performed by the dredge crew throughout the day on an *ad hoc* basis (i.e. whenever it is safe and non-disruptive to do so). The **continuous visual monitoring** requirement is intended to facilitate an early response feature in the environmental management plan, so that the dredge operator remains cognisant of the extent and intensity of the sediment plume being generated and reacts according to the environmental management plan accordingly. This requirement must be supplemented with empirical data (e.g. photography, when water quality instruments are not in use) taken at key indicative points in the tidal cycle (where applicable) to demonstrate the extent and intensity of the sediment plume.

Control site refers to a monitoring site located beyond the anticipated **zone of influence** of sediment plumes and has **site pairing** with one or more **test sites** or **sentinel sites**. In monitoring programs, **control sites** serve the same role as do **reference sites** but only for a defined subset of parameters.

Dredge footprint is the area being dredged including batters.

Dredging means the mechanical removal of material from below naturally occurring surface waters. It excludes minor adjustments to the bed surface to level troughs and peaks and where bed material is only redistributed locally (bed levelling).

Dredged material means mud, sand, coral, shingle, gravel, clay, earth and other material removed by dredging. Dredged material includes dredge spoil and extracted quarry material.

Dredge management plan (DMP) is an environmental management plan for the dredging **activity**. It defines and describes the:

- scope, timing and duration of the **dredging** operation
- **sediment plume-associated monitoring programs**
- assessment of data, **trigger values** and **alert levels**, and

- management actions that may be required in response to adverse monitoring results.

The DMP includes an aim to prevent and minimise environmental harm to **sensitive receptors** as a result of the dredging **activity**.

Environmental nuisance as defined in Chapter 1 of the *Environmental Protection Act 1994*.

Environmental value –

- a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or
- another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.

Event-based actions refers to management responses (e.g. an increased level of monitoring) initiated in following ‘an event’, with the event being defined in the environmental management plan (e.g. ‘an event’ can occur when monitoring results indicate an exceedance of an adopted **trigger value**, or a non-compliance with the environmental authority condition).

Land means any land, whether above or below the ordinary high-water mark at spring tides (i.e. includes tidal land).

Measures has the broadest interpretation and includes:

- Procedural measures such as standard operating procedures for **dredging** operations, environmental risk assessment, management actions, departmental direction and competency expectations under relevant guidelines
- Physical measures such as plant, equipment, physical objects (such as bunding, containment systems etc.), ecosystem monitoring and bathymetric surveys.

NATA means National Association of Testing Authorities.

Nominated delegate means another government agency that provides services to the **administering authority**.

Records include breach notifications, written procedures, analysis results, monitoring reports and monitoring programs required under a condition of this authority.

Release of a contaminant into the environment means to:

- deposit, discharge, emit or disturb the contaminant
- cause or allow the contaminant to be deposited, discharged, emitted or disturbed
- fail to prevent the contaminant from being deposited, discharged emitted or disturbed
- allow the contaminant to escape
- fail to prevent the contaminant from escaping.

Reference site refers to a monitoring site located not only beyond the anticipated **zone of influence** of a sediment plume, but also beyond other sources of environmental impacts, and has **site pairing** with one or more **test sites** or **sentinel sites**. In monitoring programs, reference sites serve the same role as do **control sites** but can generally be suitable for a broader set of parameters.

Sediment plume-associated impacts are impacts associated with sediment plumes including turbidity and suspended solids concentrations, light attenuation or sedimentation rates elevated above either **control site** or **reference site** readings or baseline conditions for an equivalent time of year. Where **dredge material** possesses acid sulfate soil-related properties, sediment plume-associated impacts may also include pH, dissolved oxygen and metal and metalloid-related toxicity impacts.

Sediment plume-associated monitoring (SPAM) means environmental monitoring associated with risk management of **sediment plume-associated impacts**.

Sensitive place includes the following and includes a place within the curtilage of such a place reasonably used by persons at that place:

1. a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
2. a motel, hotel or hostel; or
3. a kindergarten, school, university or other educational institution; or
4. a medical centre or hospital; or
5. a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
6. a public park or garden; or
7. for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

Sensitive receptor includes biological sensitive receptors together with other **environmental values** sensitive to the effects of dredge-generated **sediment plume-associated impacts**.

Sentinel site is a **test site** that is situated between the disturbance source and the **sensitive receptor** and serves to provide earlier warning of developing adverse conditions than does a **test site**.

Site pairing refers to monitoring sites that have a functional control-impact relationship, for example, Control site A is referenced to assess monitoring data collected from **Concern Sites AA and AB**, thus, **Concern Sites AA and AB** share site pairing with Control Site A.

Spot-checking refers to a non-**continuous** monitoring approach performed at a fixed distance and direction from a mobile impact source (in the context of this guidance, dredging vessels) or at other key points of interest. Spot-checking may be routine or **event-based**, and may also include monitoring at fixed monitoring sites, such as **reference sites** or **control sites** and **test sites** or **sentinel sites**, although the same sites need not necessarily be monitored on every sampling event.

Test site is a **concern site** that functions as a test point for compliance, is a monitoring site situated within the area where a **sensitive receptor** occurs and where environmental monitoring-related assessment criteria (e.g. **trigger values**) apply.

Tidal land means land that is submerged at any time by tidal water.

Trigger values are physicochemical, parameter-specific measurement values used to indicate a condition where an **environmental value** or sensitive receptor may be at low, moderate or high risk, or some other risk-related indicator.

Waters includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water, natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

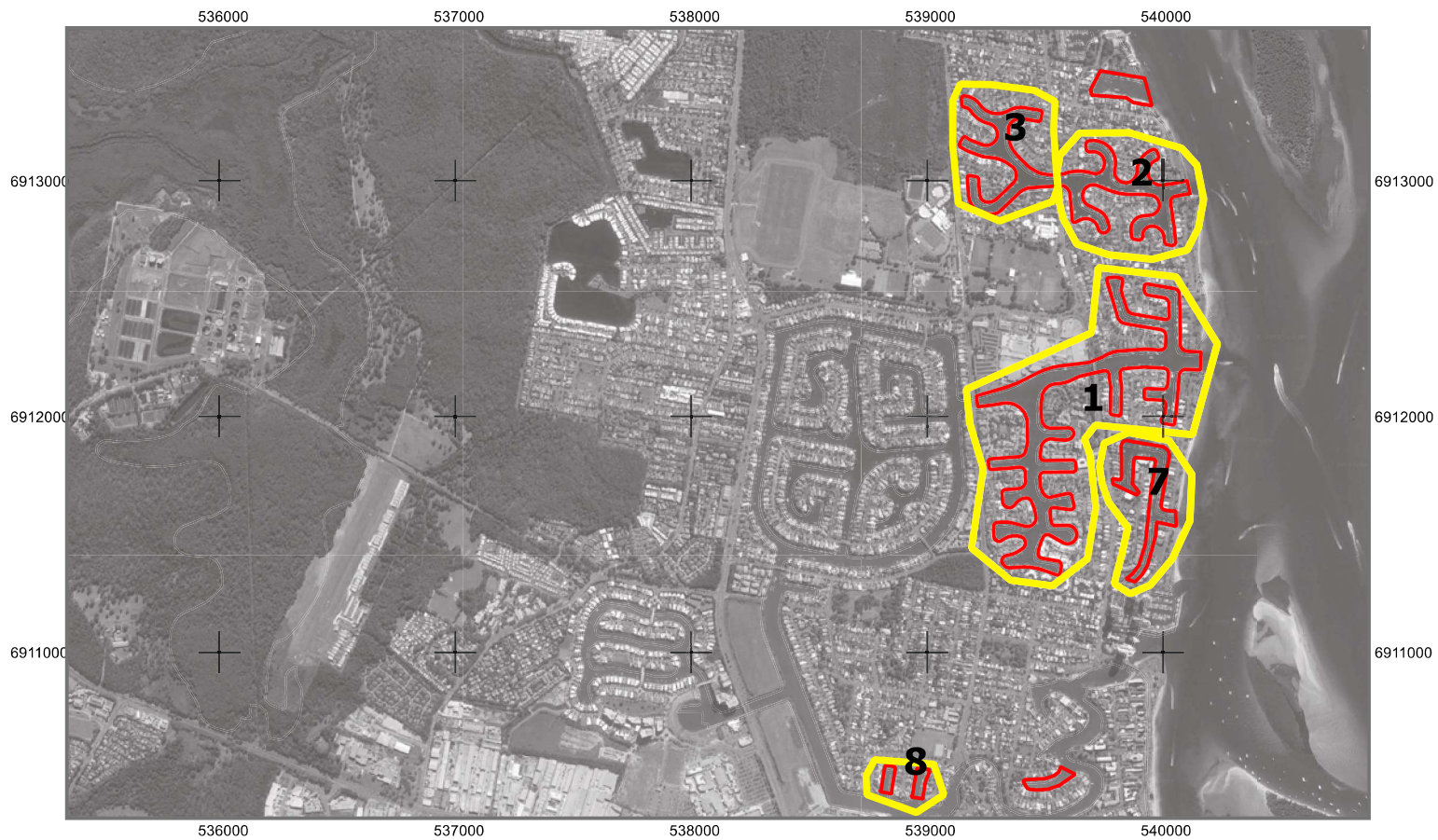
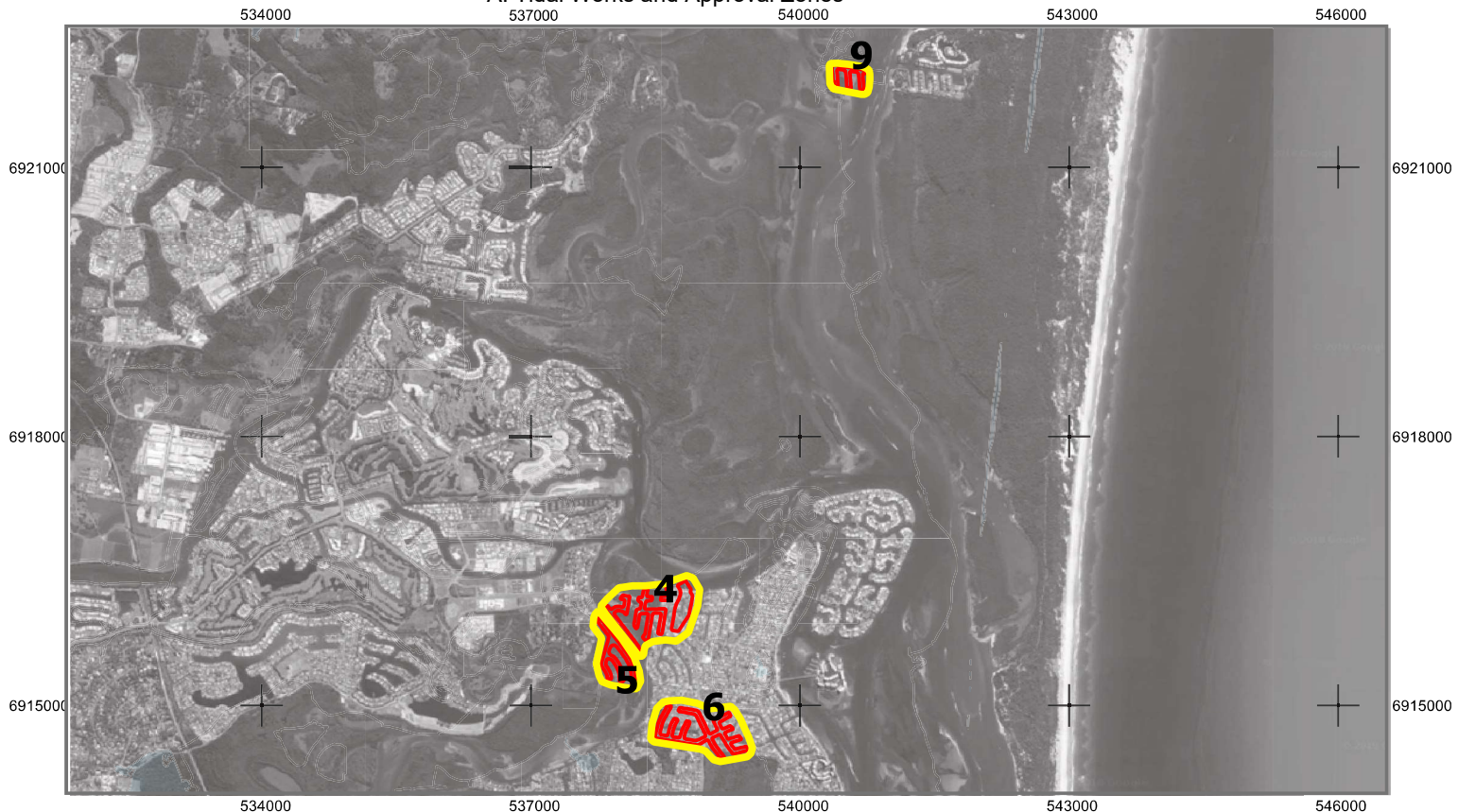
You means the holder of the environmental authority.

Zone of Influence of a sediment plume is, in its broadest application, defined by the **dredge footprint** and the area beyond the **dredge footprint** where at least some level of **sediment plume-associated impacts** are expected to occur. The overall *zone of influence* may be broken down into more risk-relevant sub-categories, such as the *Zone of Unavoidable Loss* (the **dredge footprint** and immediately adjacent areas), the *Zone of Moderate Impact*, or the *Zone of Marginal Impact*, with each zone being defined according to its purpose or role in environmental management.

Attached - Approved Plan and structural drawings of Zones 1-9 proposed dredge areas.

- A. Tidal works approval zones (1-9)**
- B. Zone 1 Approved plans**
- C. Zone 2 Approved plans**
- D. Zone 3 Approved plans**
- E. Zone 4 Approved plans**
- F. Zone 5 Approved plans**
- G. Zone 6 Approved plans**
- H. Zone 7 Approved plans**
- I. Zone 8 Approved plans**
- J. Zone 9 Approved plans**

A. Tidal Works and Approval Zones



MAP TITLE: Tidal works approval zones

STATUS: Final

PAGE SIZE: A4

CLIENT: Close Encounter
Dredging

AUTHOR: E. Taylor

DATE: 18.10.18

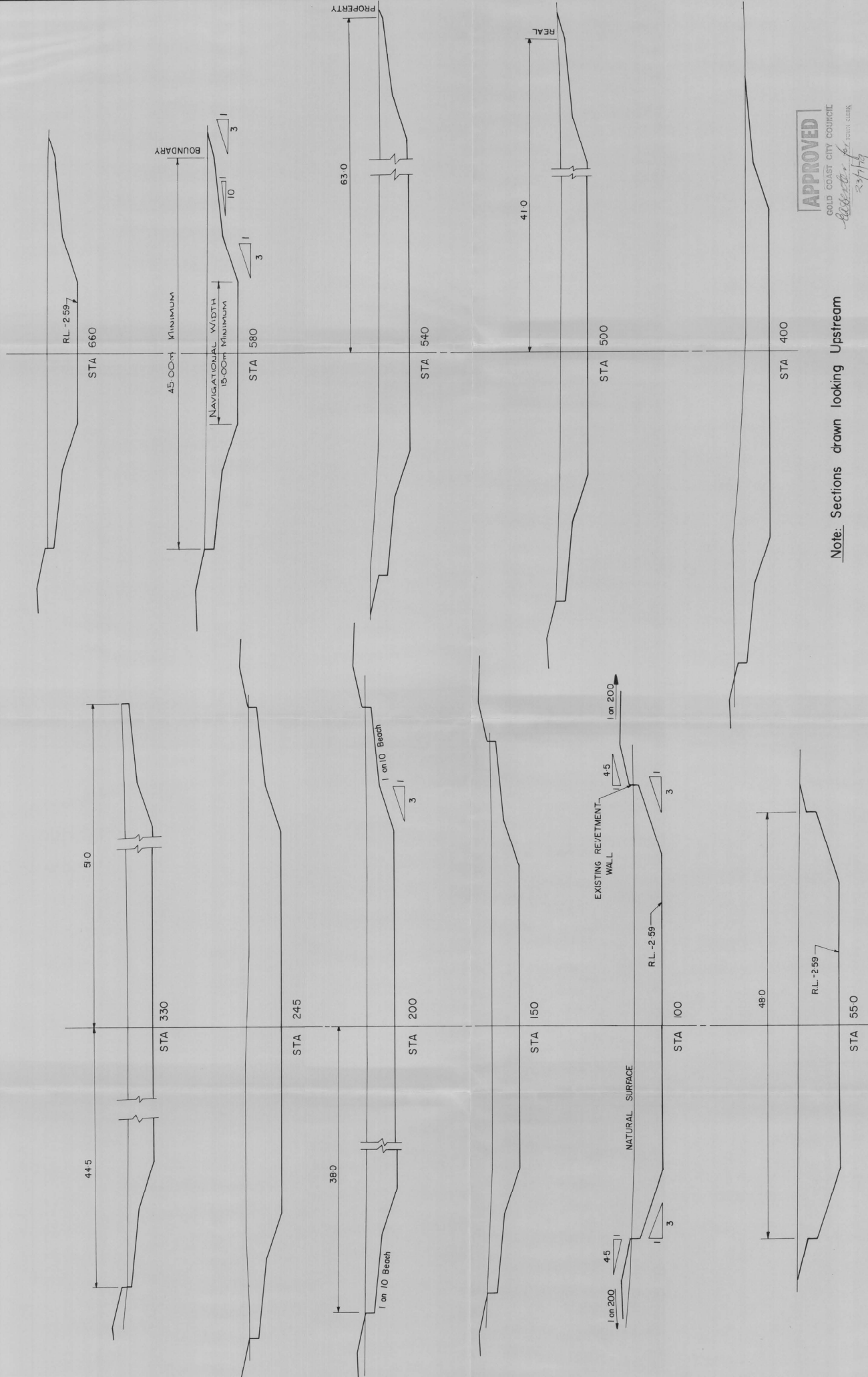
COPYRIGHT ALL RIGHTS RESERVED

LEGEND

-  Approval Zones
-  Dredge area
-  Tidal waters
- Satellite imagery (2018)



B. Zone 1
Approved Plans

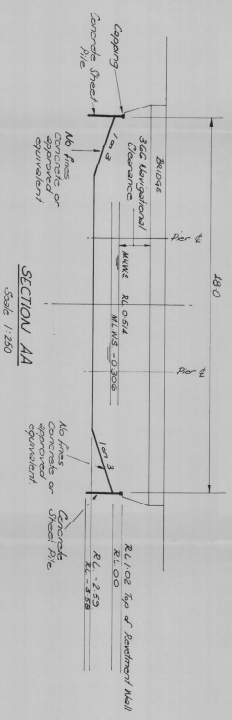
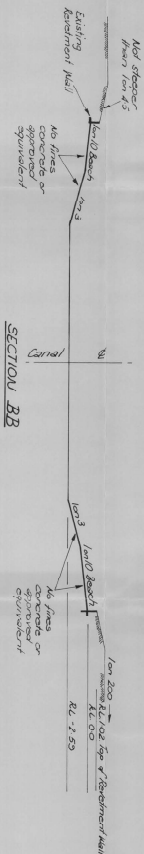
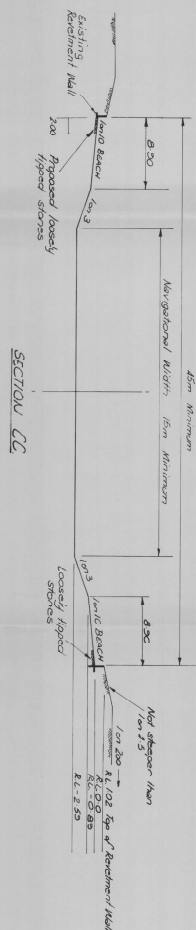


Note: Sections drawn looking Upstream

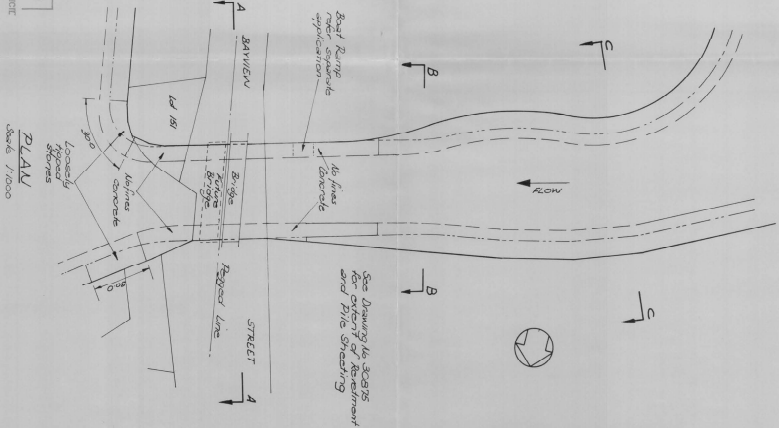
APPROVED
GOLD COAST CITY COUNCIL
Robert J. [Signature]
23/1/13

	ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE. DATUM: AHD State Datum - O.I. = A.H.D.		REVISIONS A R.P. Boundary Note 16/79		DRAWN P.S. CHECKED N.H. DESIGNED P.S. CHECKED N.H.		CAMERON McNAMARA & PARTNERS PTY. LTD. CONSULTING ENGINEERS 15. S. 73.	JOB NO. 78-1131	NYAMBA VILLAGE CANAL CROSS SECTIONS	DRAWING NO. 30874 AMDT. A
	LAE ENTERPRISES PTY LTD		15. S. 73.		15. S. 73.		15. S. 73.		15. S. 73.	

(In Direction of Flow)
GROSS SECTION L.H.S.
WITHOUT RETAINMENT WALL



APPROVED
 DDD COAST CITY COUNCIL
 23/7/17



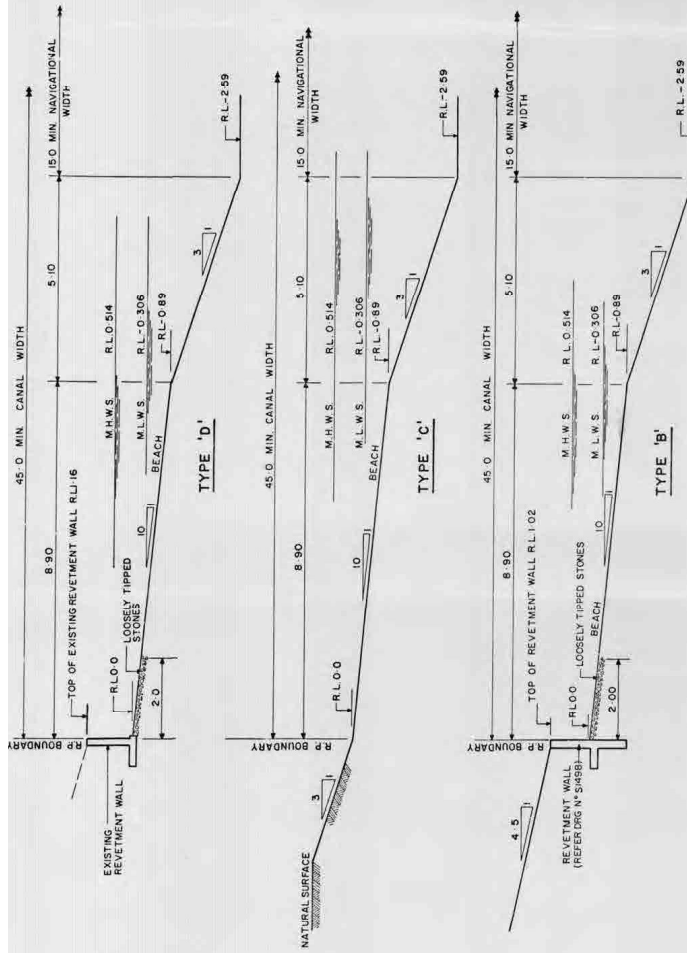
ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE
 DATUM: AHD
 SLOPE DATUM: O = AHD

REVISIONS	DATE	BY	CHKD	DESIGNED	CHECKED	PRV	N.Y.H.
1							
2							
3							
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9							
10							

CMP CAMERON MCNAMARA & PARTNERS PTY LTD
 CONSULTING ENGINEERS
 78-1131

LAE ENTERPRISES PTY LTD
 NYAMBA VILLAGE
 TYPICAL CANAL CROSS SECTIONS

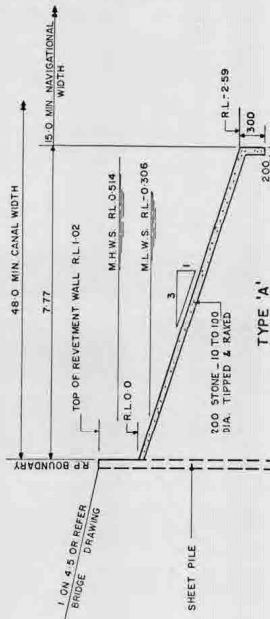
DRAWING NO
30837
 AND: **A**



NOTE:
ALLOW 900 DIA. OPENING IN
REVELMENT WALL AT APRON
POSITIONS OPENING TO BE
FILLED WITH CONCRETE
TO ALLOW FUTURE CONSTRUCTION
OF DRAINAGE OUTLET.

DETAIL OF OPENING IN
REVELMENT WALL TO
ALLOW FUTURE DRAINAGE

APRON N°	APRON TYPE	OUTLET PIPE DIA. mm	OUTLET PIPE R.L. OF C	LENGTH A OF C	LENGTH B OF D	R.L. X'	R.L. Z'	R.L. Y'
1	B	—	—	0.96	1.71	0.0	-0.48	-0.89
2	A	—	-0.4	3.00	5.90	0.0	-0.45	-0.89
3	A	—	-0.4	3.00	5.90	0.0	-0.45	-0.89
4	A	—	-0.4	3.00	5.90	0.0	-0.45	-0.89
5	A	—	-0.4	3.00	5.90	0.0	-0.45	-0.89
6	A	—	-0.4	3.00	5.90	0.0	-0.45	-0.89
7	A	—	-0.4	3.00	5.90	0.0	-0.45	-0.89
8	A	—	-0.4	3.00	5.90	0.0	-0.45	-0.89
9	B	675	—	—	—	0.0	—	-0.89
10	A	750	—	—	—	0.0	—	-0.89
11	A	450	—	—	—	0.0	—	-0.89
12	A	300	—	—	—	0.0	—	-0.89
13	A	900	—	—	—	0.0	—	-0.89



APRON TABLE (REFER DRG N° S1502)

CAMRON McNAMARA & PARTNERS LTD.
CONSULTING ENGINEERS

DRAWN: V.A.G.
CHECKED: P.S.
DESIGNED: P.S.
REVISIONS: A TYPE 'A' APRON (S.S.)

DATE: 13.05.13

ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.

SCALE: 0 1 2 3m

DATUM: AHD

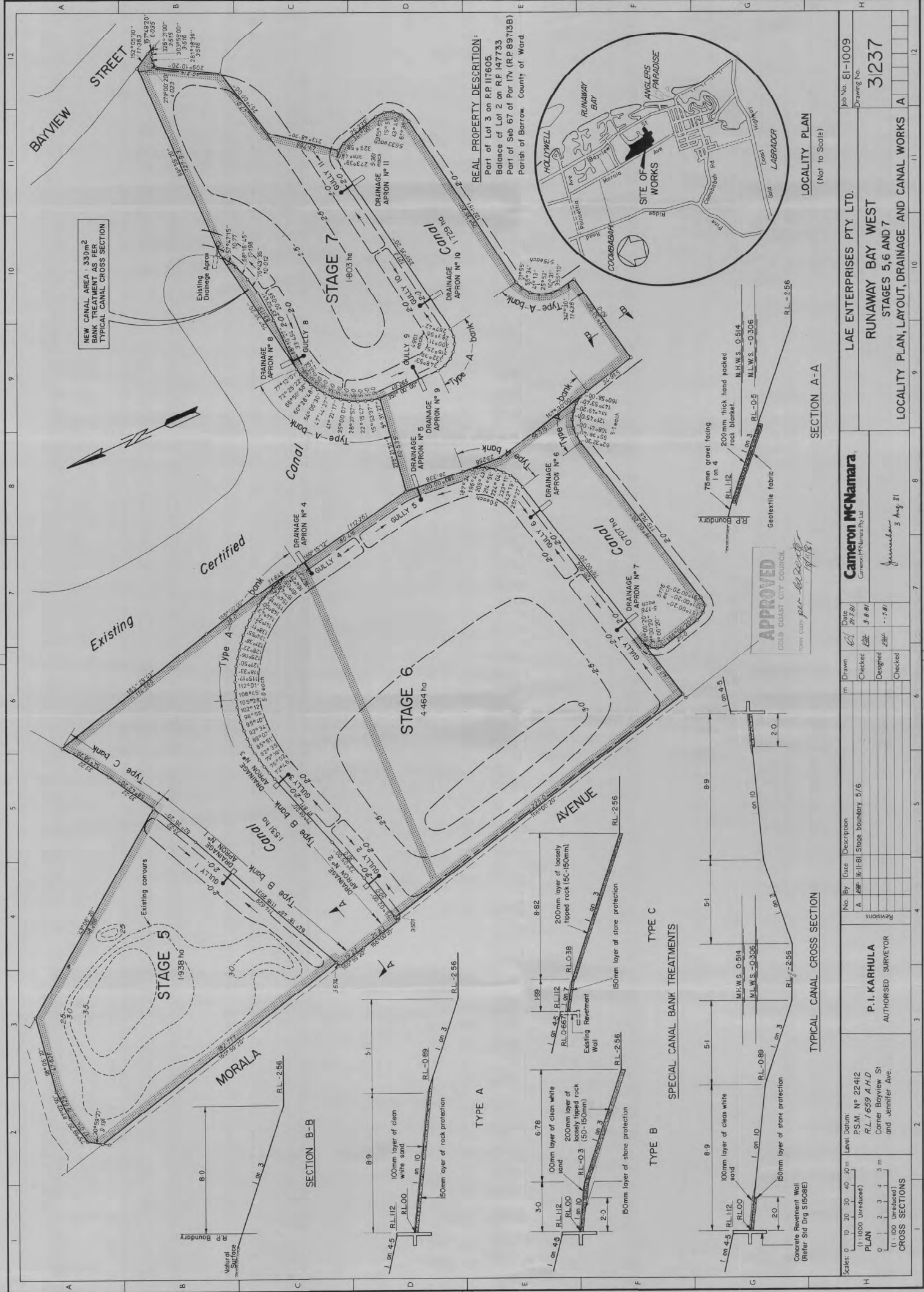
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AMDT: A

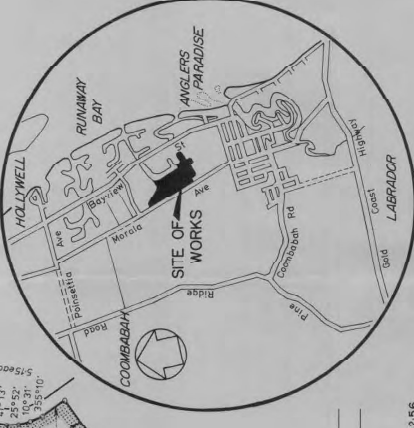
NYAMBA VILLAGE

DETAILS OF BANK TREATMENT

Dry N. 14/8/19
revised with F.2.



REAL PROPERTY DESCRIPTION:
Part of Lot 3 on R.P. 117605
Balance of Lot 2 on R.P. 147733
Part of Sub 67 of Por 17 (R.P. 89713B)
Parish of Barrow, County of Ward



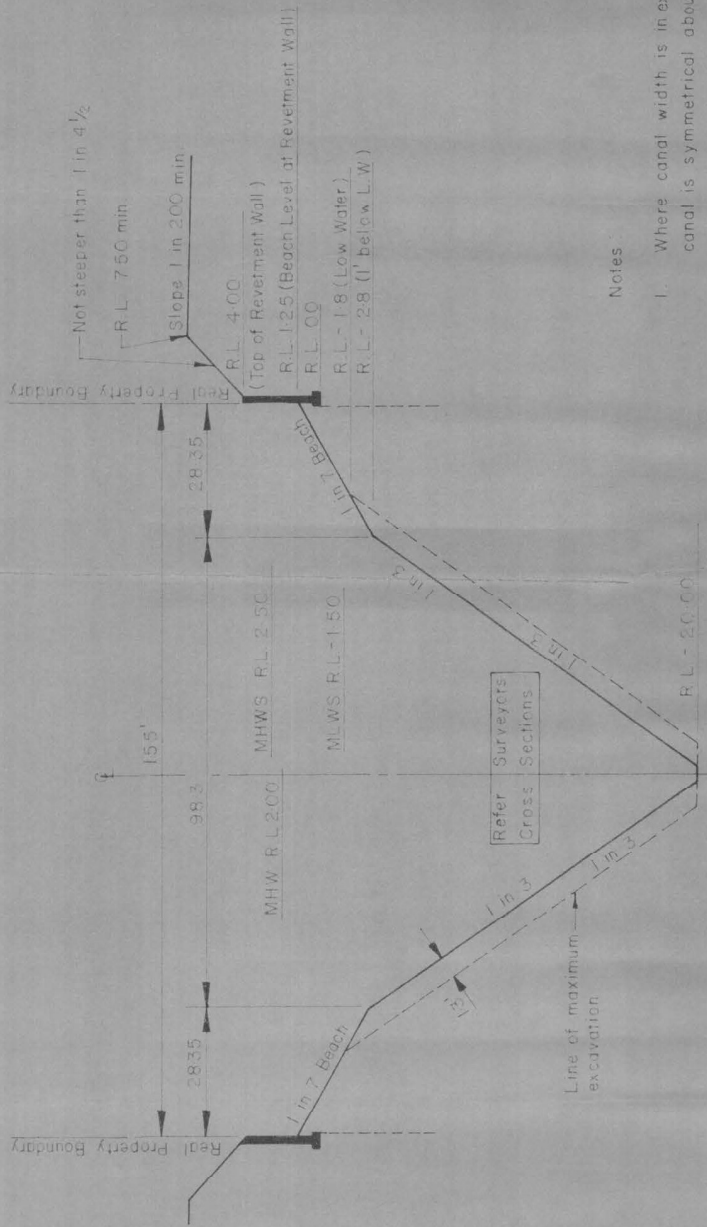
LOCALITY PLAN
(Not to Scale)

SECTION A-A

TYPICAL CANAL CROSS SECTION

Job No. E1-1009 Drawing No. 31237		LAE ENTERPRISES PTY. LTD.		Runaway Bay West Stages 5, 6 and 7 Locality Plan, Layout, Drainage and Canal Works	
Date 27/10/18 Checked 3/8/18 Designed 1/18/18 Checked		Cameron McNamara General Manager		P.I. KANHULA AUTHORISED SURVEYOR	
No. By Date Description		Level datum PSM. No 22412 R.L. 1659 A.H.D. Corner Bayview St and Jennifer Ave.		PLAN (1:1000 Unreduced) 0 1 2 3 4 5 m CROSS SECTIONS (1:100 Unreduced)	
A 1/18/18 Stage boundary 5/6		Concrete Retention Wall (Refer Sid Drg S105E)		Scale: 0 10 20 30 40 50 m	

C. Zone 2
Approved Plans



EXCAVATION IN CANALS



Notes

1. Where canal width is in excess of 155 ft, canal is symmetrical about centre line.
2. At canal ends, beach slope to be 1 in 7 to -1 ft Low Water Datum, thence 1 in 3 to a max level of -20 ft State Datum.



CAMERON McNAMARA & PARTNERS
CONSULTING ENGINEERS

PTY. LTD.

DRAWN *[Signature]*
CHECKED *[Signature]*
DESIGNED *[Signature]*
CHECKED

REVISIONS

DRAWING NO. *73-193*

JOB NO. *73-193*

LAE ENTERPRISES PTY. LTD.

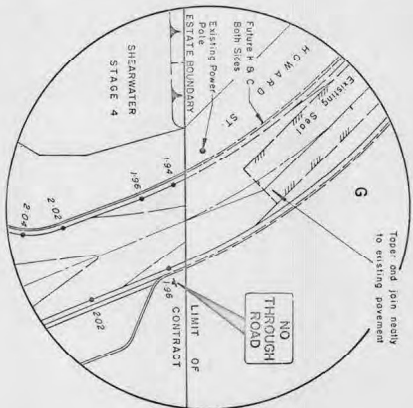
SHEARWATER ESTATE

STAGE 2 - CANAL DETAILS

DRAWING NO.

30159

AMDT



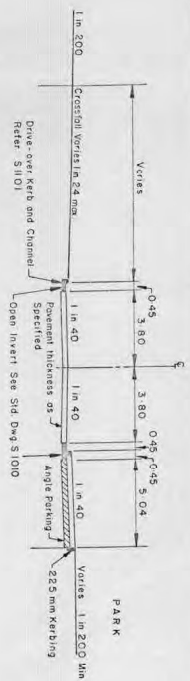
DETAIL OF HOWARD ST. ACCESS

SCALE
0 4 8 12 16
(1:200 Undressed)



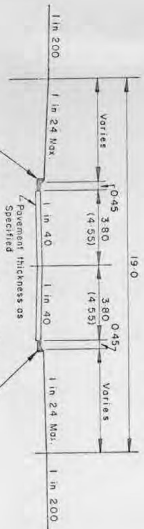
PLAN
ANGLE PARKING BAY
SCALE
0 2 3 4 5
(1:100 Undressed)

0 2 3 4 5
(1:100 Undressed)



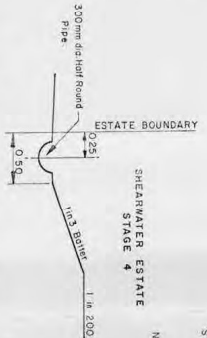
SECTION THROUGH PARKING EAVS

SCALE:
0 1 2 3 4 5
(1:100 Undressed)



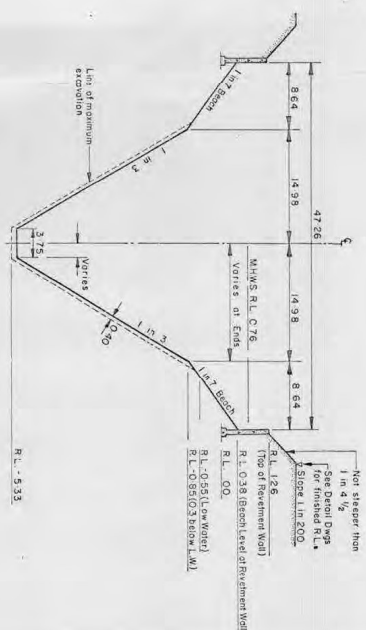
INTERNAL ROADS
Dimensions for 10 pavement shown in brackets
SCALE:
0 1 2 3 4 5
(1:100 Undressed)

0 1 2 3 4 5
(1:100 Undressed)



CROSS SECTION HOWARD ST. ALLOTMENT DRAIN

SCALE: 0 0.02 0.04 0.06
(1:20 Undressed)



TYPICAL CANAL CROSS SECTION

SCALE: HORIZ. 0 1 2 3 4 5
VERT. 0 1 2 3 4 5
(1:250 Undressed)

Note: Detail for Canal Ends as for half section above with 'varies' dimension.

Drainage	Action	Length	Area	Length	Area	Length	Area	Length	Area
No.	Type	From	To	From	To	From	To	From	To
N1	A	0.23	0	8.61	1 in 7	0.38	-0.85	-	-
N2	A	0.23	0	8.61	1 in 7	0.38	-0.85	-	-
N3	A	0.23	0	8.61	1 in 7	0.38	-0.85	-	-
N4	A	0.23	0	8.72	1 in 7	0.38	-0.85	-	-
N5	A	0.23	0	8.61	1 in 7	0.38	-0.85	-	-
N6	A	0.30	0	-	1 in 7	0.38	-0.85	3.71	4.90

APRON TABLE: Refer Dwg. S109
GOLD COAST CITY COUNCIL

		ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SHOWN		STATE DATUM: PS.M. 1973/47 N.L. 1.746		SCALE: AS SHOWN		P.I. KARRHULA AUTHORISED SURVEYOR		DRAWN ID: /M/ CHECKED ID: /M/ DESIGNED GP: /M/ CHECKED: /M/		CONSULTING ENGINEER: /M/ JOB NO: 74-1022		L&E ENTERPRISES PTY. LTD. SHEARWATER ESTATE - STAGE 4 SUBDIVISIONAL ROADWORKS DRAINAGE AND CANAL WORKS DETAILS SHEET		DRAWING NO: 30413 MORT: B	
--	--	---	--	---------------------------------------	--	-----------------	--	--------------------------------------	--	--	--	---	--	---	--	------------------------------	--

D. Zone 3
Approved Plans

GOLD COAST CITY COUNCIL

TOWN CLERK

27/4/77



Note Detail for Canal Ends as for half section above
with 'various' dimension
Dimensions in brackets refer to bridge
at property
Bottom slopes 1:17 from 20' West of
End of 11' ditch out of the - 2:55

DRAWN *R.H.M.*

CHECKED

DESIGNED *Alfred*

CHICKED

TYPICAL CROSS SECTION

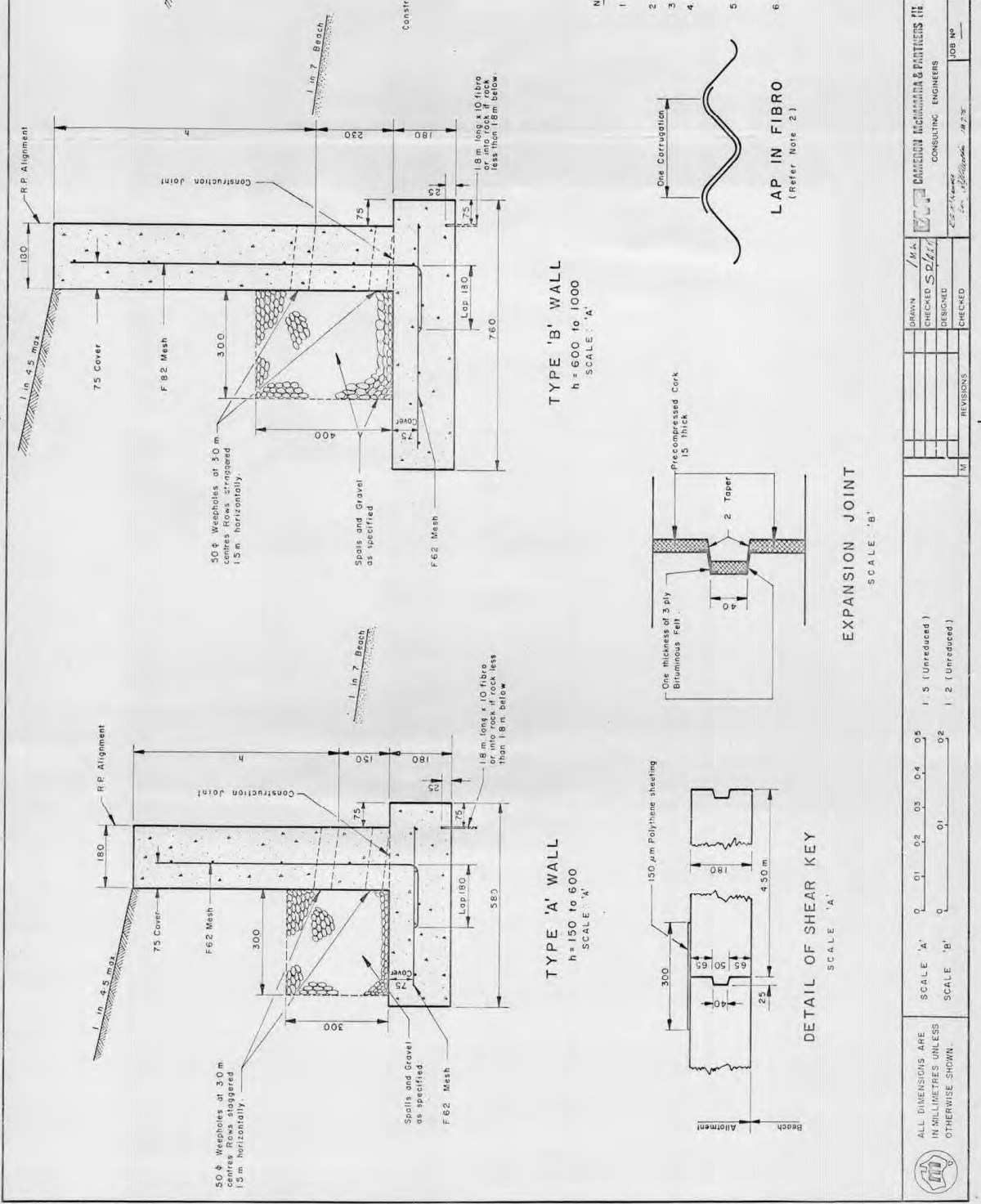
SHEARWATER WEST
CANAL ESTATE

ENT

CAMERON, McNAMARA & PARTNERS PTY. LTD.
CONSULTING ENGINEERS

DRG. No.

S 1448



	ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.		SCALE 'A'		0		0.1	0.2	0.3	0.4	0.5	1 : 5 (Unreduced)	1 : 2 (Unreduced)	REVISIONS		1/1	DRAWN / M.A. CHECKED / S.A. DESIGNED / S.A. CHECKED / S.A.	 CAMERON MCGILLIVRAY & PARTNERS INC. CONSULTING ENGINEERS	JOB NO —	STANDARD DETAILS	DRAWING NO S 120	AMDT
			SCALE 'B'		0		0.1	0.2														
REVETMENT WALLS FOR CANALS																						

APPROVED
GOLD COAST CITY COUNCIL
13/12/16

E. Zone 4
Approved Plans

RIVER

COOMERA

FLOOD CANAL 375 FT WIDE

WORKS
for Construction
of
Flood Canal
at
Coomba Bay
July 1973
D.L.

PROPOSED
150 FT
CANAL

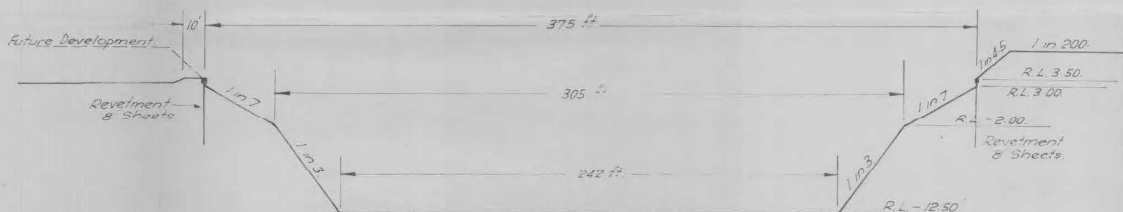
106 FT WIDE ROAD

106 FT WIDE ROAD

COOMBA BAY

CREEK

Scale: 100ft to the inch.



Scales: Horiz: 40 ft to the inch.
Vert: 10 ft to the inch.

SECTION B-B

Scale: Horiz: 40 ft to the inch.
Vert: 10 ft to the inch.

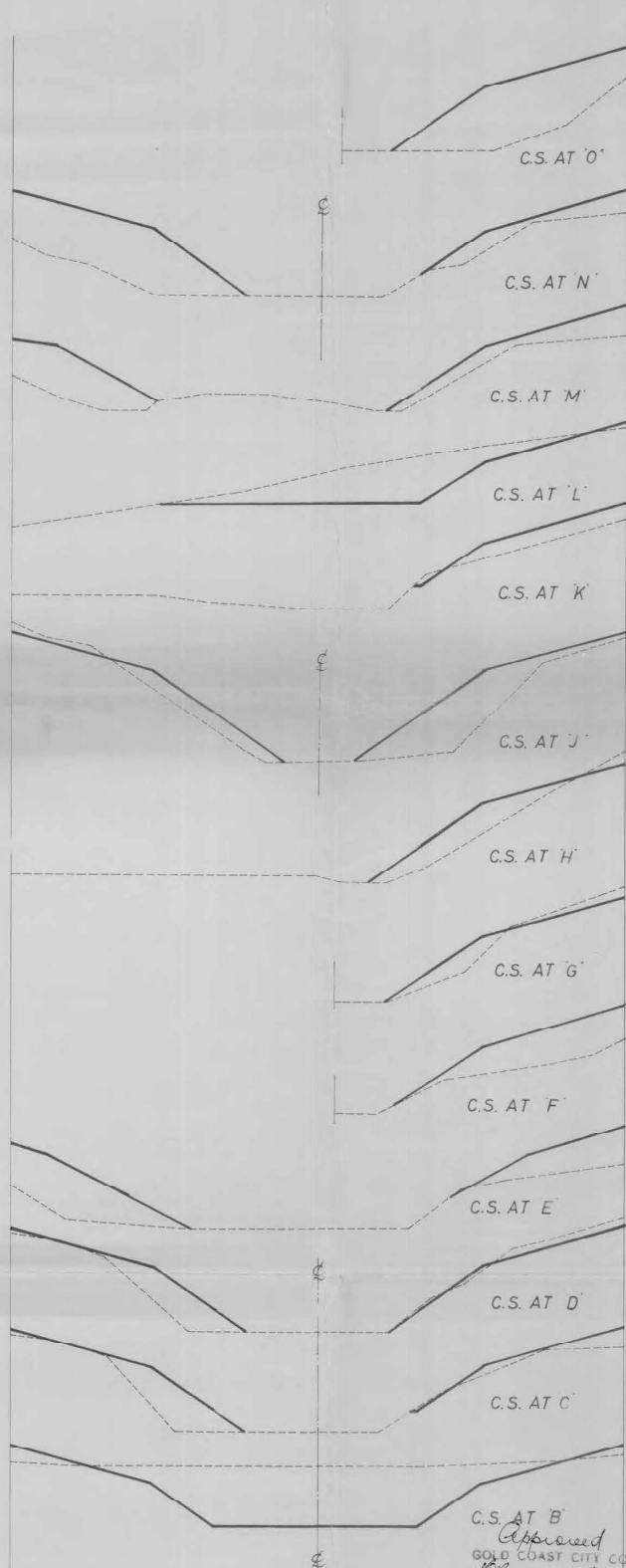
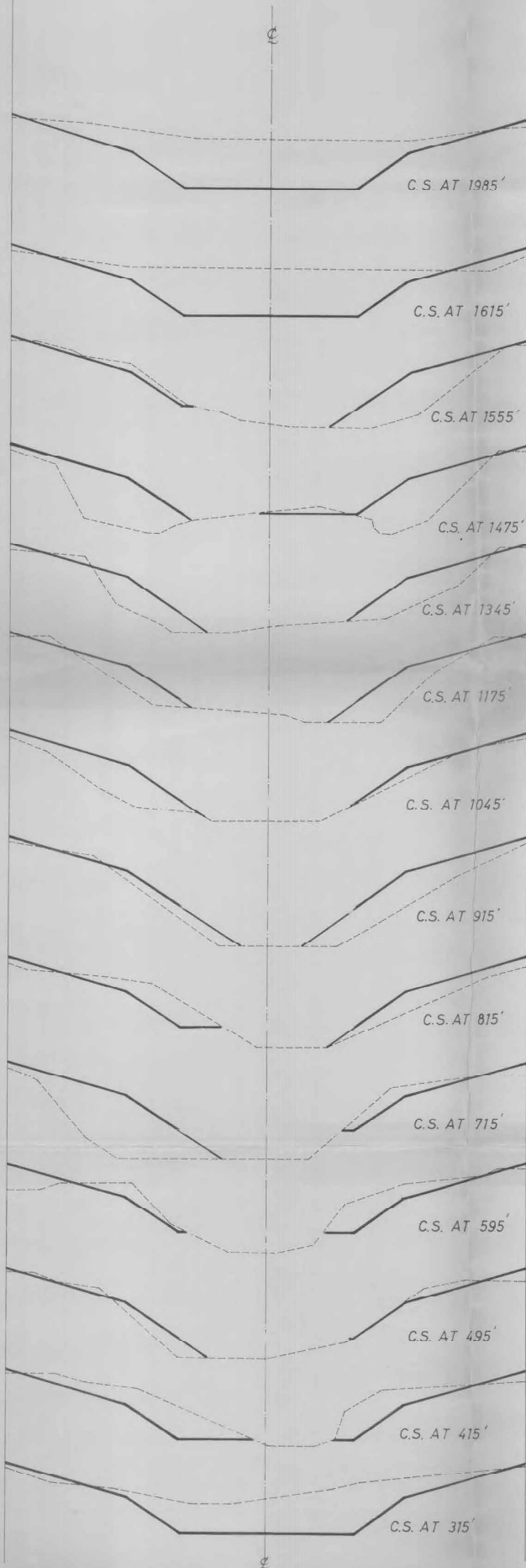
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6	1973	ST	Design of L.V. shown
7	1973	ST	Design of L.V. shown
8	1973	ST	Design of L.V. shown
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10	1973	ST	Design of L.V. shown
11	1973	ST	Design of L.V. shown
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SOLD COAST CITY COUNCIL
Paradise Point Estates Pty. Ltd.
Paradise Point Key Stage 3
M.C. COX & FRER PTY LTD - SURFERS PARADISE - Ph. 93 0412
C.N. FRYER - CONSULTING ENGINEER
PILKATHULA - AUTHORISED SURVEYOR

P.2.1. 64

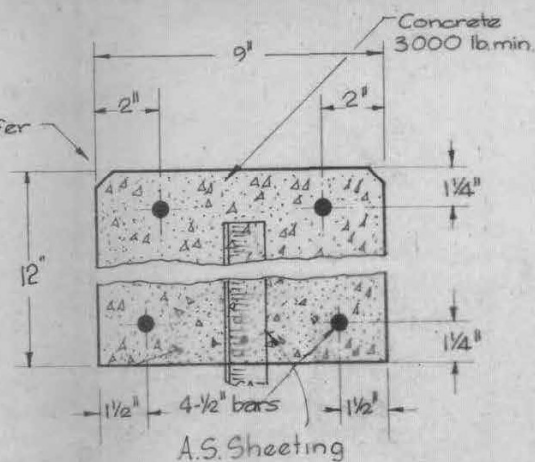
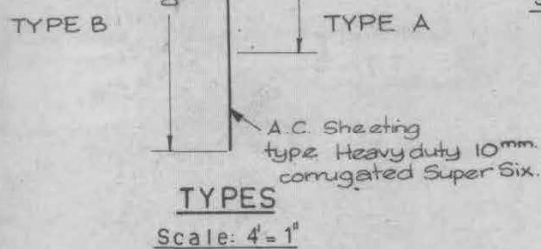
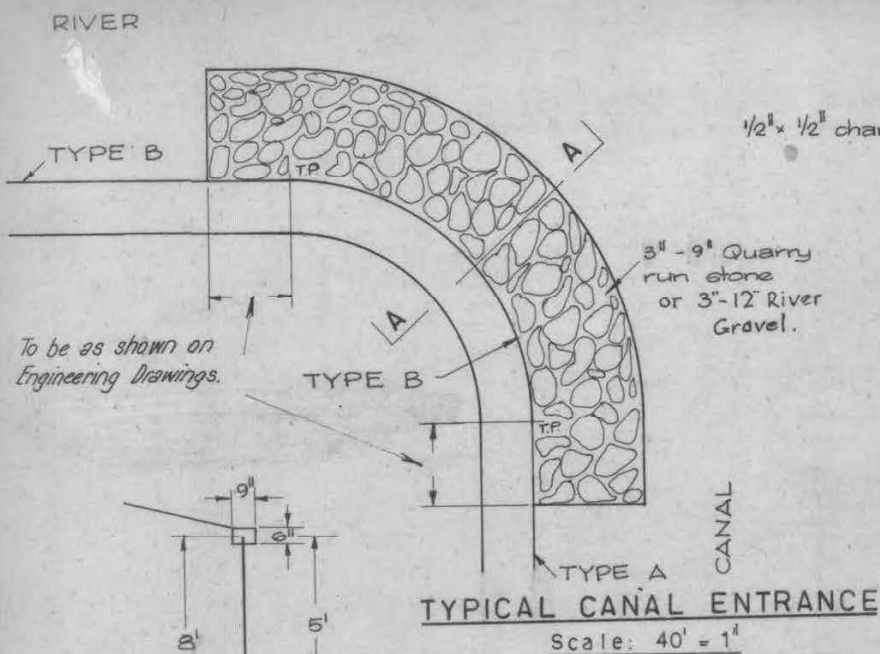
WORKS INSTRUCTIONS
H. Parker
 for Contract of Works & Particulars L.A. 100
 20th July 193.

Existing Surface shown thus: - - - - -
 Prop'd finished Surface shown thus: ————



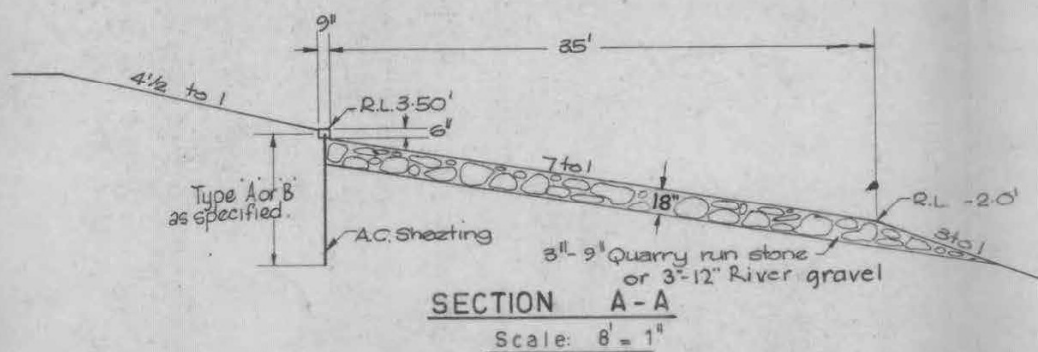
Note: This plan to be read in conjunction with Plan No P. 2. 1. 61.

PARADISE POINT ESTATES. PTY. LTD.			
PARADISE POINT KEYS. STAGE. 3.			
CANAL CROSS SECTIONS			
M. C. COX. & FRYER, PTY. LTD.			
C. N. FRYER, Consulting Engineer.			
P. I. KARHULA, Authorised Surveyor.			
DESIGNED:	SCALE: Horiz. 20' to the inch.	DATE:	
DRAWN:	Approved: <i>[Signature]</i>		
CHECKED:			
REVISIONS			P. 2. 1. 60.

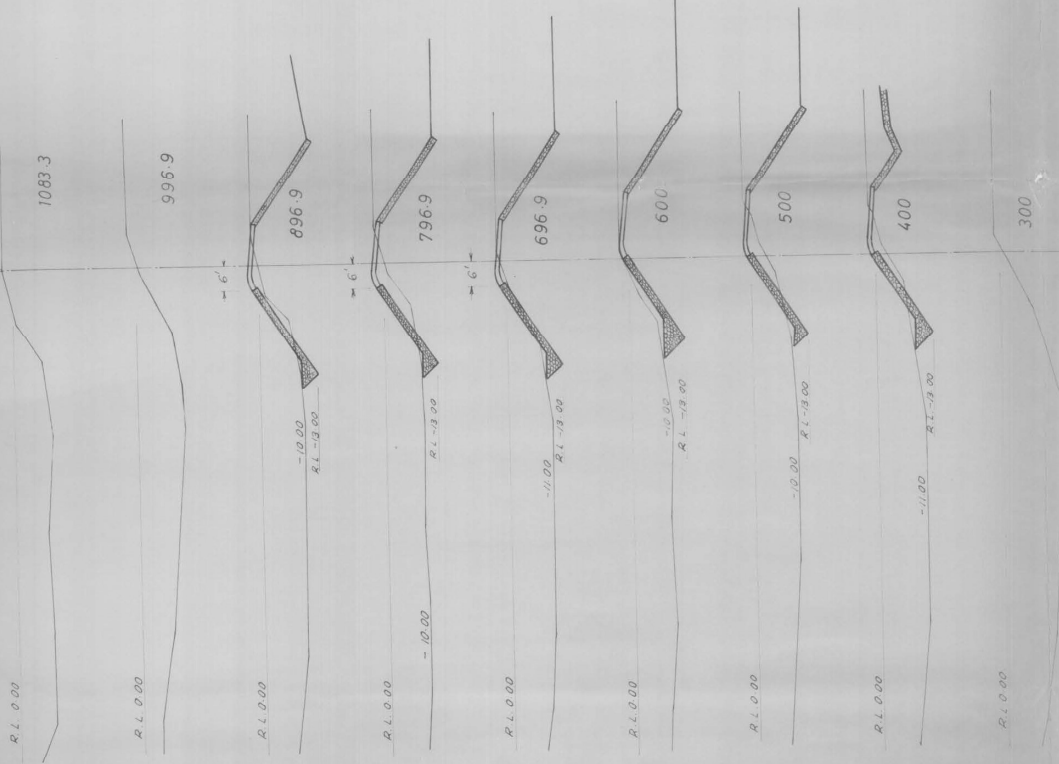


CAPPING SECTION

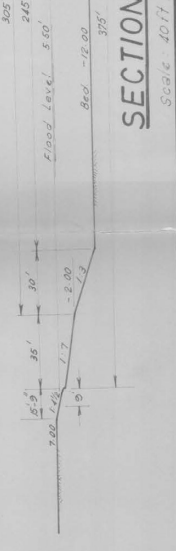
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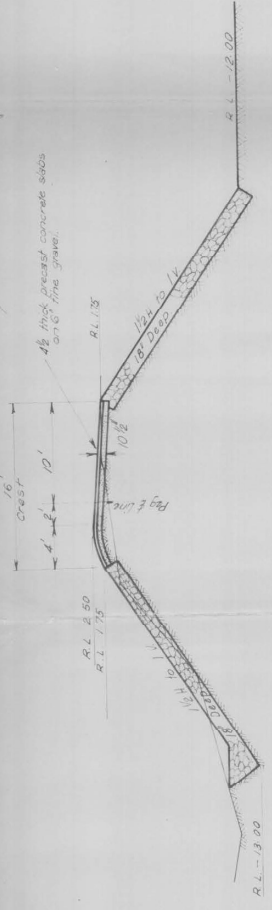
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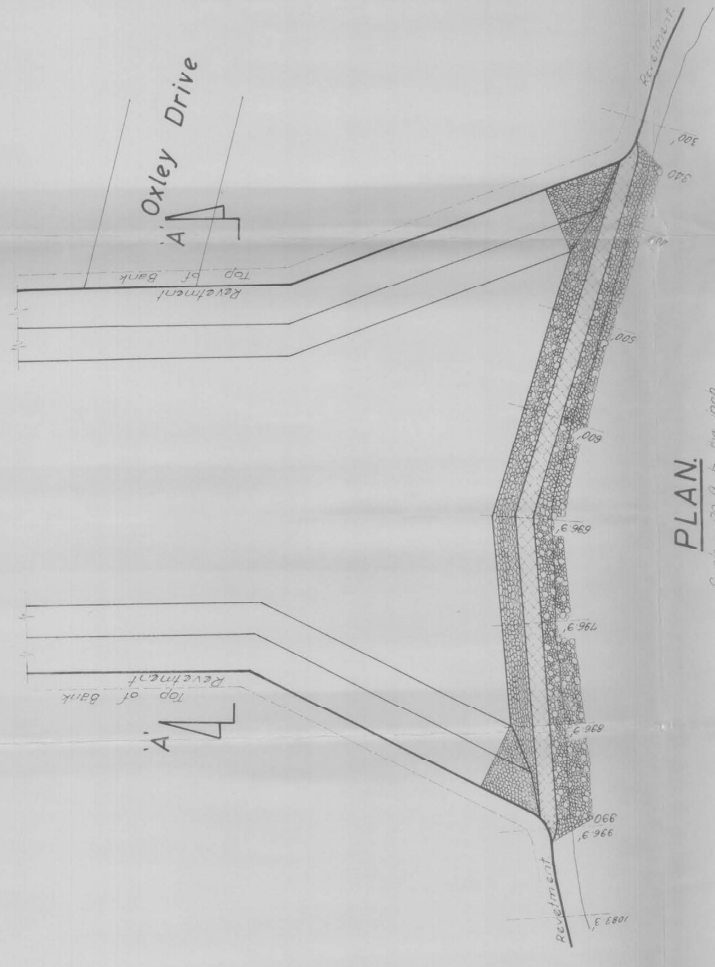
CROSS SECTIONS.
Scale: 20 ft to the inch



SECTION A-A
Scale: 40 ft to the inch



TYPICAL CROSS SECTION.
Scale: 8 ft to the inch



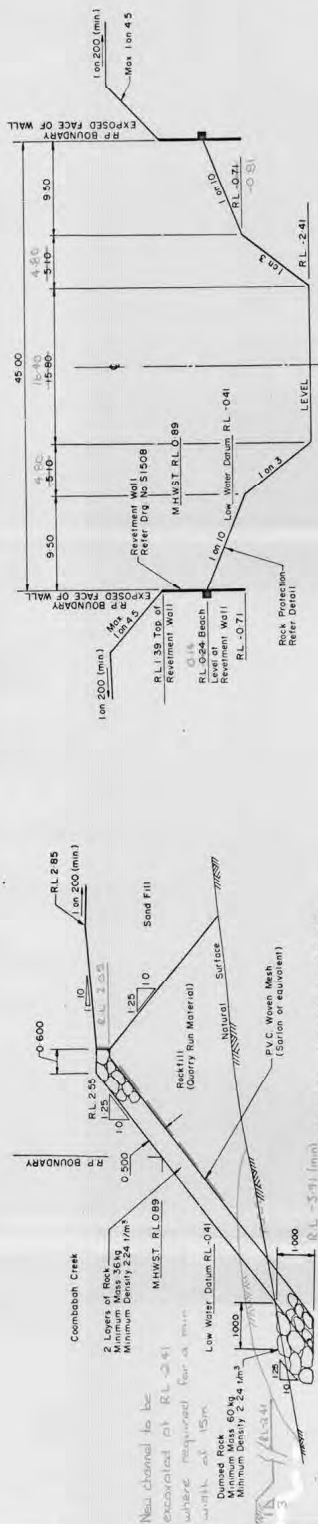
PLAN.
Scale: 80 ft to the inch

Approved
GOLD COAST CITY COUNCIL
M. C. COX & FRYER PTY. LTD.

PARADISE POINT ESTATES PTY. LTD.	PARADISE POINT KEYS STAGE 3	WEIR DETAILS	M. C. COX & FRYER PTY. LTD. — SURFERS PARADISE — Ph. 39 0412	C.N.FRYER — CONSULTING ENGINEER	P.1. KARHULA — AUTHORISED SURVEYOR	Designed: C.N.F. Scale: As Shown Date: 18 Sep 1972	Drawn: A.U.W. Approved: C.N.F. Checked: C.N.F.	REVISIONS	P.2.1.75.
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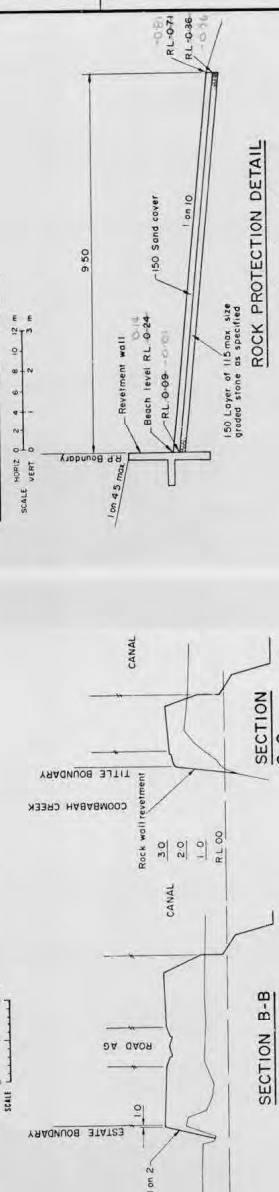
F. Zone 5
Approved Plans

CANAL CERTIFICATION STAGES 14.15.16+17



TYPICAL CROSS SECTION ROCK WALL

TYPICAL 45m WIDE CANAL



ROCK PROTECTION DETAIL

WORKS EXECUTED
It is certified that the original drawing has been carefully compared with the works as constructed as to line, level and dimensions and has been suitably amended so as to contain a true and correct record of the works as constructed.

for CAMERON MCNAMARA & PARTNERS PTY. LTD.

(Supervising Engineer)

DATE OF COMPLETION MAY 1981

for CAMERON MCNAMARA & PARTNERS PTY. LTD.

(Supervising Engineer)

DATE OF COMPLETION MAY 1981

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(Supervising Engineer)

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DATE OF COMPLETION MAY 1981

for CAMERON MCNAMARA & PARTNERS PTY. LTD.

(Supervising Engineer)

APPROVED
GOLD COAST CITY COUNCIL
TOWN CLERK per [Signature] 16/8

DRAWN A.M.D. (DERIVED)
LEVELS ON A.D. (DERIVED) • LEVELS ON STATE DATUM - 0.11 METRES

JONES, FLINT & PIKE
CONSULTING SURVEYORS
AND PLANNERS

DESIGNED R.A.M.
CHECKED R.A.M.

Mr. ERNEST & MERVILLE STREETS
SOUTH BRISBANE

REVISIONS

CHECKED [Signature]

DATE 2.7.8.79

CONSULTING ENGINEERS

LEWIS PTY. LTD.

PARADISE POINT SOUTH

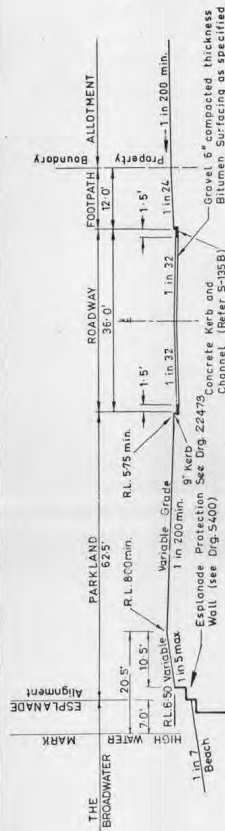
SUBDIVISIONAL ROADWORKS AND DRAINAGE

TYPICAL SECTIONS AND DETAILS

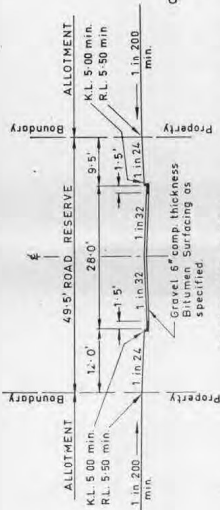
DRAWING NO. 24080

AMDT

G. Zone 6
Approved Plans

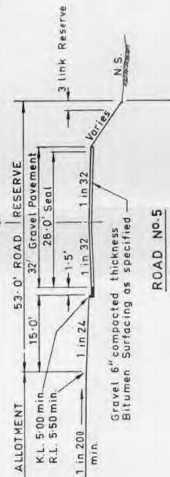


THE ESPLANADE
Scale: A



ROADS NOS. 2, 3 & 4
Scale: A

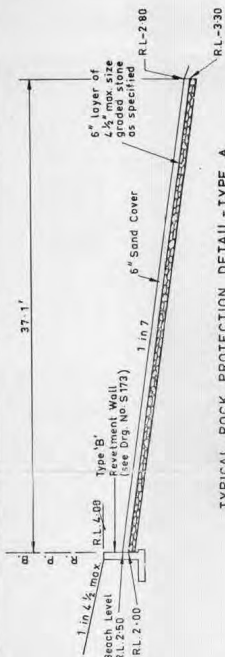
EXCAVATION IN THE BROADWATER
SCALE: HORIZONTAL C
VERTICAL D



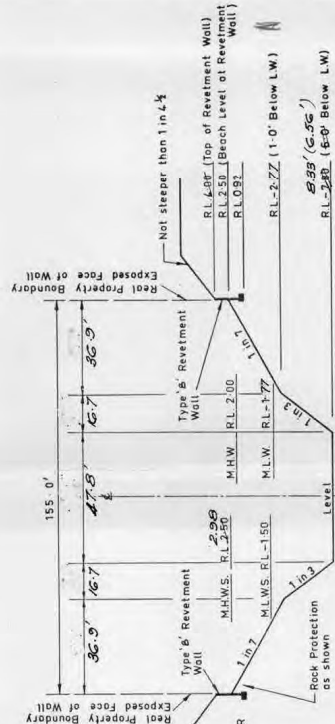
ROAD No. 5
Scale: A

SCALE A	10	5	0	10	20	30
SCALE B	4	2	0	4	8	12
SCALE C	20	10	0	20	40	60
SCALE D	5	2.5	0	5	10	15
SCALE E	2	1	0	2	4	6

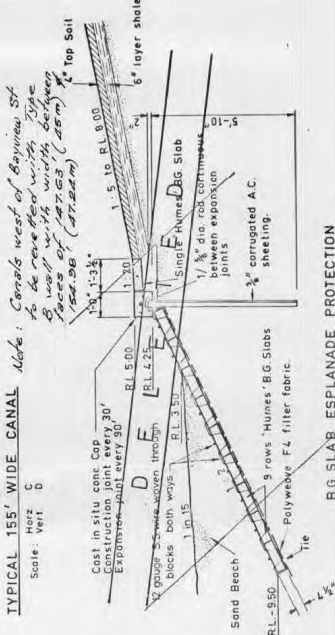
To convert metric values to imperial values multiply by 0.3048 and then add 0.118.



TYPICAL ROCK PROTECTION DETAIL-TYPE A
Scale: B



TYPICAL 155' WIDE CANAL
Scale: C



TYPICAL 155' WIDE CANAL
Scale: C

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N.T.S.

EXPANSION JOINT
N.T.S.

DETAIL X
N.T.S.

EXPANSION JOINT
N.T.S.

DETAIL X
N.T.S.

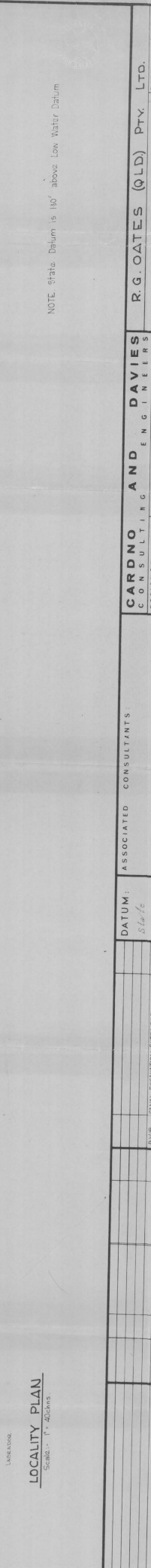
EXPANSION JOINT
N.T.S.

DETAIL X
N.T.S.

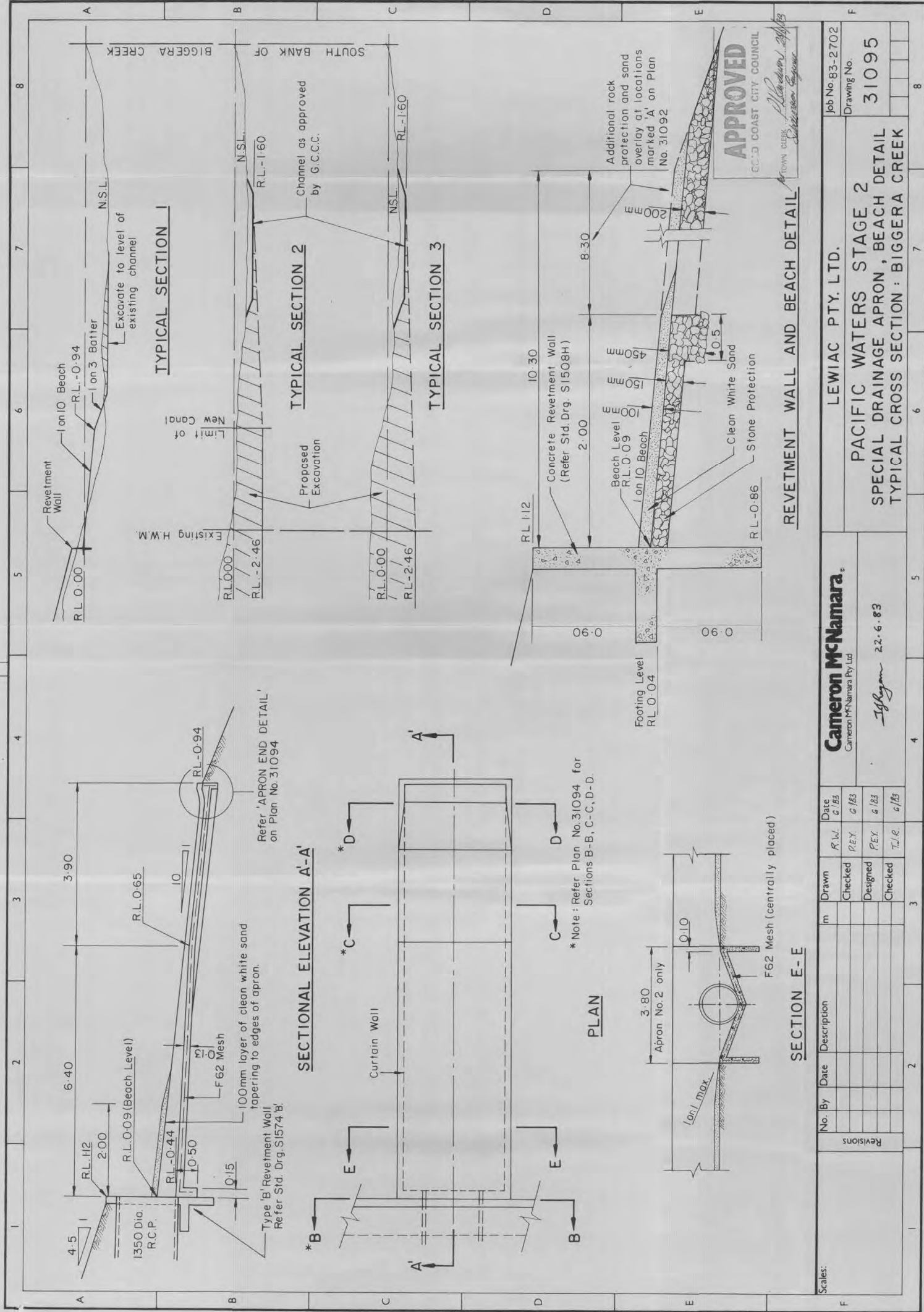
EXPANSION JOINT
N.T.S.

DETAIL X
N.T.S.

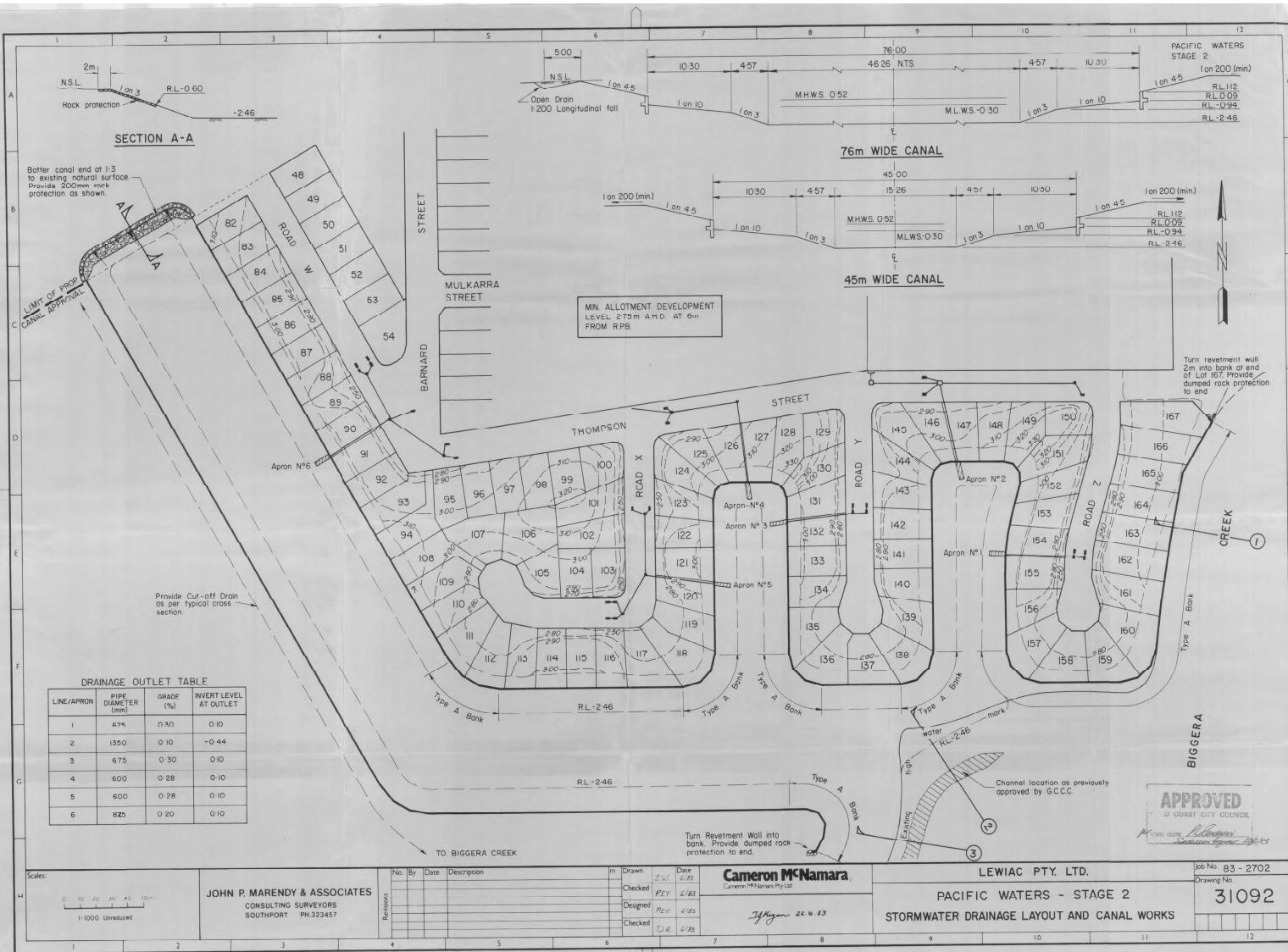
H. Zone 7
Approved Plans

[illegible]

**I. Zone 8
Approved Plans**



Scales:		Job No. 83-2702		Drawing No.		31095							
Revisions		LEWAC PTY. LTD.		PACIFIC WATERS STAGE 2 SPECIAL DRAINAGE APRON, BEACH DETAIL TYPICAL CROSS SECTION: BIGGERA CREEK									
No. By		Date		Description		m		Drawn		Date		Cameron McNamara Cameron McNamara Pty Ltd	
								Checked		6/85			
								Designed		6/83		22.6.83	
								Checked		6/83		Ighy	



DRAINAGE OUTLET TABLE

LINE/APRON	PIPE DIAMETER (mm)	GRADE (%)	INVERT LEVEL AT OUTLET
1	675	0.30	0.10
2	1350	0.10	-0.44
3	675	0.30	0.10
4	600	0.28	0.10
5	600	0.28	0.10
6	525	0.20	0.10

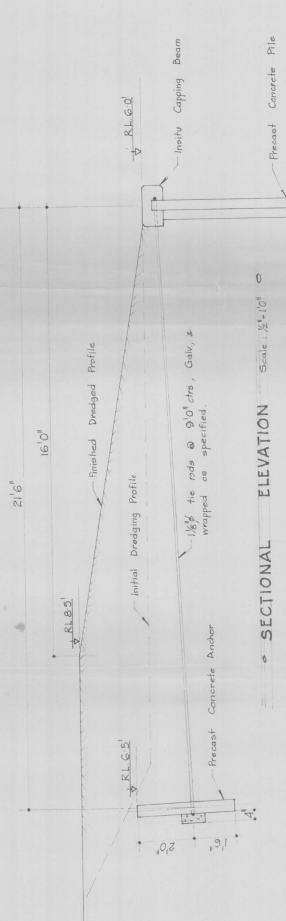
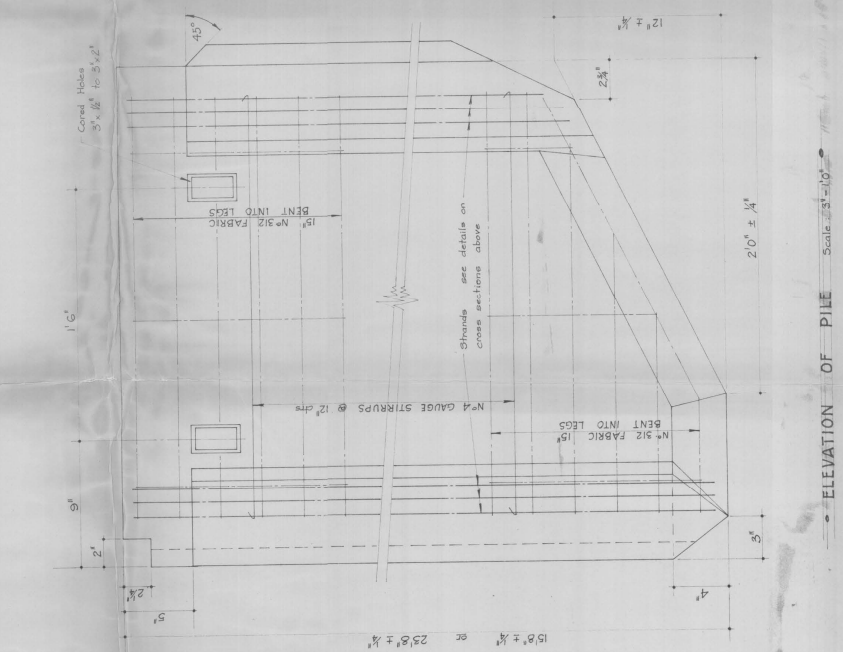
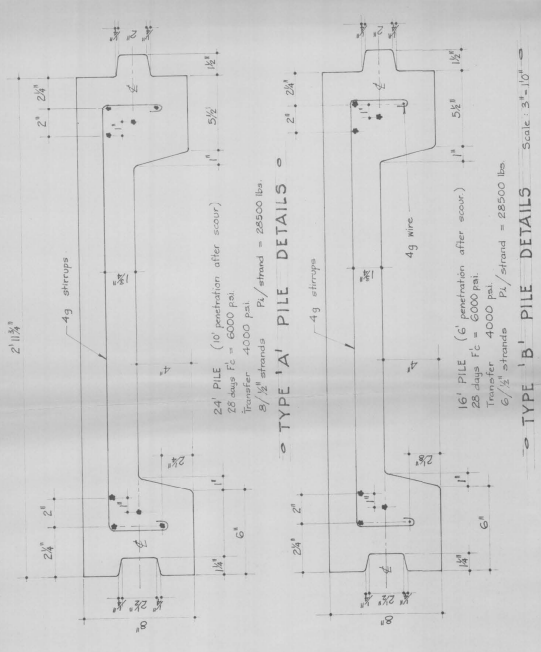
JOHN P. MARENDY & ASSOCIATES
CONSULTING SURVEYORS
SOUTHPORT PH 323457

Cameron McNamara
Cameron McNamara Pty Ltd

No. By Date Description
Checked PEY 6/83
Designed PEY 11/83
Checked T.J.R. 6/83

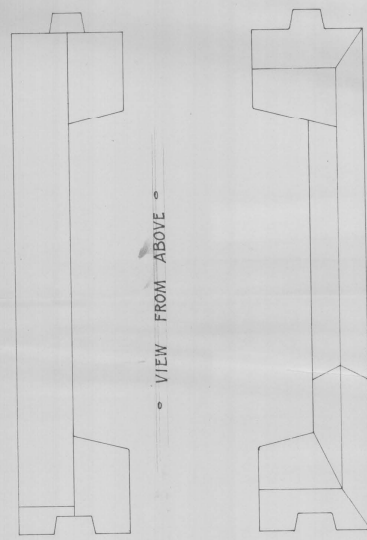
Scales:
0 10 20 30 40 50m
1:1000 Unreduced

J. Zone 9
Approved Plans



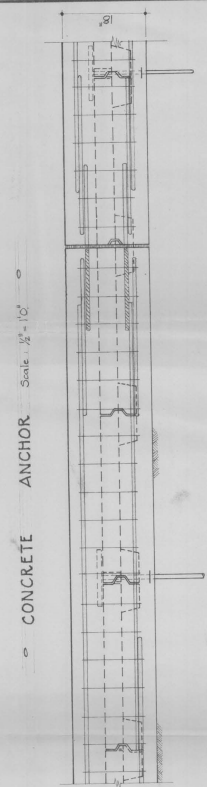
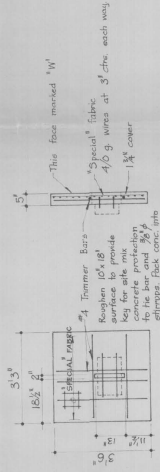
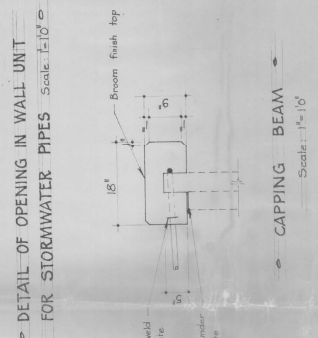
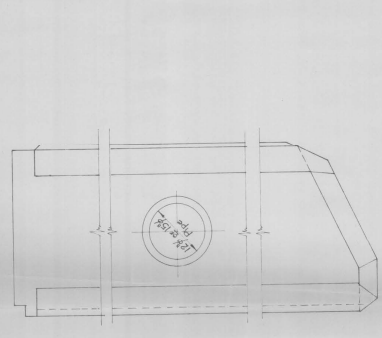
- CONCRETE**
- The coverage of all the strength bars shall be greater than the specified strength (f'_c) and not less than 5% of the concrete volume.
 - Specified strength (f'_c)
 3000 psi Max slump 4"
 4000 psi " " 5"
 6000 psi " " 6"
 - Precast concrete piles, Type A & B
 Reinforcement shall be:
 Plain round bar, epoxy coated grade
 49 wire, epoxy coated wire
 The bar is indicated by a number following the bar type symbol and representing the size in #.
 - Concrete protection
 (a) Non-pretreated units.
 (b) Pretreated units.
 - All precast units shall be nonshrink without joints.
 - All concrete surfaces shall be initially cured, at least overnight by ponding, continuous wetting or by continuously wetted coverings of absorbent material immediately following the initial curing and before the concrete has dried, additional curing for seven days shall be carried out according to the specification.
 - Horizontal formwork must not be added in place. Formwork should be removed before placing concrete. Horizontal formwork shall be stripped after a time approved by the Consulting Engineer.
 - Pretreatment of concrete
 Pretreatment of concrete shall be as follows:
 0.6 minimum treating load as follows:
 57000 lbs
 51000 lbs
 - Reinforcing wire to be hard drawn wire to AS 82
 All dimensions $\pm 1/8"$ unless otherwise shown.
 Variation of bow in either plane $\pm 1/4"$.

- TIE RODS**
- The rods shall be structural grade steel conforming to SAA N/AI-1956
 - Welding shall conform with SAA Int-code 352



VIEW FROM BELOW

NOTE: Precast units are to be constructed and supplied by 'Munier' or equal.

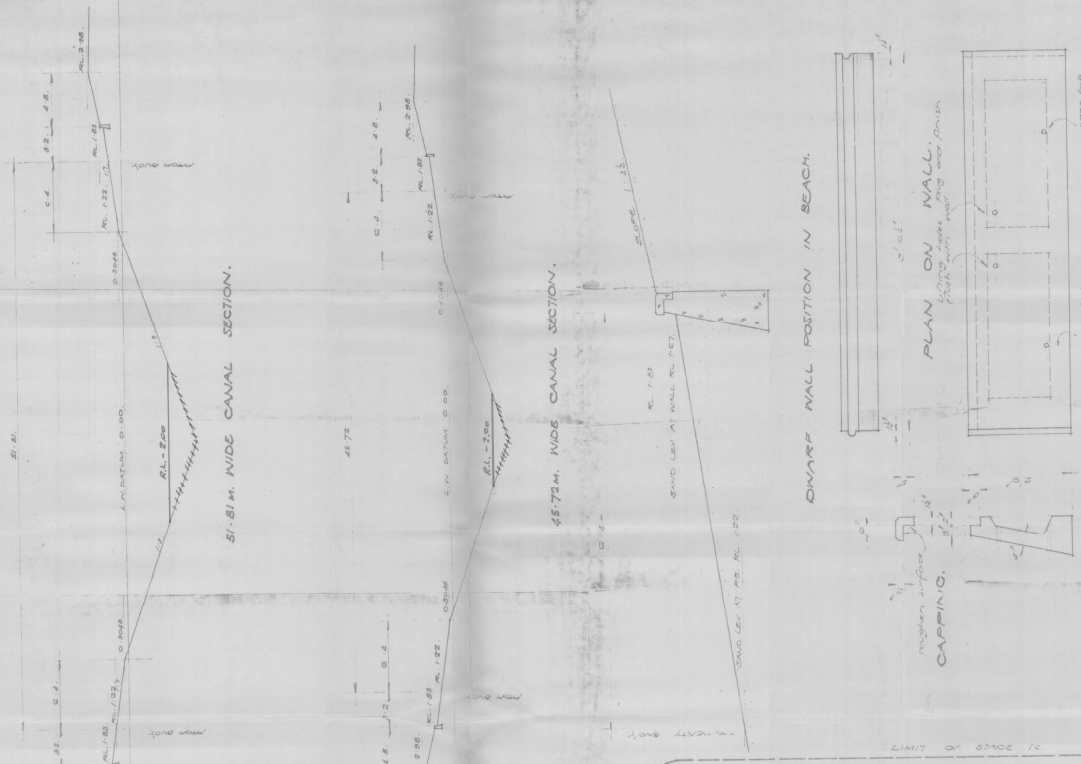


MALVIN ASSOCIATES Pty. Ltd. CIVIL ENGINEERS 15 ARTHUR ST. QUEENSLAND, AUSTRALIA TEL. 93391		DETAILS OF PRESTRESSED CONCRETE PILE UNITS TYPE 'A' & 'B' FOR STRADBROKE WATERS DEVELOPMENT SOUTH STRADBROKE ISLAND	
DATE	APPROVED	SCALE	228/999

"WHILE AS EXISTING"
It is certified that the original drawing has been carefully
examined and found to be a true and correct record of the works as
and dimensions, and has been suitably amended to as to
constitute a true and correct record of the works as
completed.

Date of completion: 16/9/17

Sup. McKeown
Supervising Engineer



REINFORCEMENT
AS SHOWN AT
NORTHWAIN, TAYLOR & ASSOCIATES
CITY, LTD.

ROAD, DRAINAGE AND
RECLAMATION LEVELS
STAGE PART 1C: SHEET 2.
STRADBROKE WATERS ESTATE.

APPROVED
ALBERT SHIRE COUNCIL
6/11/17
DATE

APPROVED
ALBERT SHIRE COUNCIL
6/11/17
DATE

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ALBERT SHIRE COUNCIL
6/11/17
DATE

FOR CONTINUATION SEE
DRAWING NO 228-154

SHOULD BE CONTINUED LEGAL (A4H)

228-154