

**In the matter of the
Commissions Of Inquiry Act 1950**

Commission of Inquiry Order (No. 1) 2011

QUEENSLAND FLOODS COMMISSION OF INQUIRY

Witness Statement of Neil Donald Lowry

Executive General Manager Asset Management

Ergon Energy Corporation Limited

Table of Attachments

	Description	Date
NL-1	Material Change of Use for Community Infrastructure application - Town Planning report - Schomburgk Planning Pty Ltd	July 2007
NL-2	Letter Bundaberg City Council to Schomburgk Planning Pty Ltd enclosing Decision Notice	24 August 2007
NL-3	Report on Preliminary Investigation - Walla Street site	October 2005
NL-4	Memorandum Bob Moloney to Dean Fraser	14 August 2006
NL-5	Extract - Ergon Energy Works Specification - Bundaberg Central Substation - Flood mitigation	19 June 2007
NL-6	Approved earthworks plans	October 2007
NL-7	Site photographs	29 December 2010

WITNESS STATEMENT OF NEIL DONALD LOWRY

This written statement is provided in response to a Requirement, dated 21 November 2011, pursuant to section 5(1)(d) of the *Commissions of Inquiry Act 1950* (Qld) to provide a written statement, under oath or affirmation, to the Queensland Floods Commission of Inquiry.

I, Neil Donald Lowry, Executive General Manager of [REDACTED] Zemlicoff Street, North Rockhampton in the State of Queensland, swear as follows:

Introduction and Background

1. I am employed as the Executive General Manager Asset Management for Ergon Energy Corporation Limited ("**Ergon Energy**"). I commenced employment with Capricornia Regional Electricity Board (a predecessor of Ergon Energy) as a Cadet Electrical Engineer in 1972, and was appointed to my current role on 2 November 2009.
2. In that capacity, I am accountable for all Asset Strategy and for defining the Program of Work across the distribution business, in order to maximise the efficient and effective management of the assets. I am a member of the Executive Management team and report to the Ergon Energy Chief Executive. In this role I have oversight responsibility for the management of Ergon Energy's electricity distribution infrastructure and assets, including zone substations. I am based at Ergon Energy's Rockhampton office and have overall familiarity with the impact of the 2010/2011 flood event on Ergon Energy's assets. This includes a level of familiarity with the impact of the flood event on the particular asset of interest to the Commission of Inquiry, being the flooding of the substation located at 26 Walla Street, Bundaberg South. This substation is known as the Bundaberg Central zone substation.
3. The sources of information for the matters set out in this statement are:
 - (a) my personal knowledge and recollection of relevant events; and
 - (b) my review of relevant Ergon Energy files and records.
4. The subject site comprises an area of 6,075 m². The real property description is Lot 144 on CK1925. The site was gazetted as a site for electrical purposes on 11 November 1978 and the registered trustee for the site was Wide Bay - Burnett Electricity Board.
5. On 12 July 2007 Ergon Energy lodged an application with the Bundaberg City Council ("**BCC**") for a Development Permit for a Material Change of Use for the establishment of Community Infrastructure (Electrical Substation) as described under the Bundaberg City Planning Scheme. The subject site was located within Local Area 6 - Eastern Bundaberg - Community Precinct 6(d) of the Plan, and the proposed development of the site for

Community Infrastructure was code assessable within this Precinct. At the time of this application the site comprised vacant land.

6. The proposed MCU application was supported by a town planning report dated July 2007 by Schomburgk Planning Pty Ltd. A copy of this town planning report is annexed to my statement and marked NL-1.
7. By letter to Ergon Energy dated 24 August 2007 BCC advised that the application was approved subject to conditions. A copy of this approval is attached to my statement and marked NL-2. The approval contained the following conditions, relevant to flooding related issues:

"(A) Assessment Manager's Conditions

General

- (1) Compliance with the requirements of the Planning Scheme for Bundaberg City;*
- (2) The Defined Flood Event for the site is QK_{50ARI} (2% AEP) - being RL8.5 metres AHD. Essential services infrastructure:-
 - (a) is to be located above the Defined Flood Event; or*
 - (b) located below the Defined Flood Event is to be designed and constructed to exclude floodwater intrusion/infiltration; and*
 - (c) is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the Defined Flood Event.**

Note: The Q_{100ARI} (1% AEP) level for the site is RL9.25 metres AHD".

8. Following the receipt of the MCU approval and the approval of a subsequent development permit for building works, Ergon Energy proceeded with the construction of the substation. Construction had been completed and the substation was operational at the time of the 2010/2011 flood event.

Commission Question 1

- (a) The need for the substation**



9. The Bundaberg Central substation is required to supply the local customers. It transforms the incoming supply at 66,000 volts to 11,000 volts which is reticulated in the local distribution network. The 11,000 volts is then converted to the normal 240/415 volts in the surrounding area by distribution transformers.
10. The substation was constructed to meet the ongoing load growth in Bundaberg. The adjacent zone substations at West Bundaberg and East Bundaberg had reached their capacity and Bundaberg Central was needed to ensure a reliable supply to customers under peak load conditions for at least the next fifteen years in the Bundaberg Central area.

(b) The number of customers the substation services

11. The Bundaberg Central zone substation currently supplies 2,378 customers. This number is expected to grow.

(c) The features of alternate sites considered for the substation

12. In establishing the zone substation an area between the two existing substations was examined for a suitable location. The search was narrowed to four vacant or unused sites including the selected site. These sites were:
 - (a) lots 3 to 6 on RP117028 fronting Targo Street near the George Street corner;
 - (b) lots 54 to 56 on B1587;
 - (c) part lot 1 on RP40520 fronting Walla Street diagonally opposite the subject lot; and
 - (d) the subject lot 144 on CK1925 located at 26 Walla Street.
13. The review of these four sites considered a range of features associated with suitability for the proposed development. One of the key features was flood impact, with the selected site being at least equal to, if not superior to the other sites in relation to potential flooding issues. Other aspects relevant to the selection process included proximity to residential areas and existing networks, impact on adjoining properties, and the suitability of the site for getting electrical lines, both overhead and underground, out of the site.
14. The site selection and suitability review process of potential sites, including the selected site, is addressed in two internal Ergon Energy documents, copies of which are attached to my statement.
15. Attachment NL-3 dated October 2005 is a report on preliminary investigations of the suitability of the Walla Street site for the purposes of constructing a 66kV/11kV substation produced by Ergon Energy Property Officer, [REDACTED]. This investigation concluded that

subject to confirmation by elevation surveys of capability of construction above recommendation flood heights, the Walla Street site appeared quite suitable for Ergon Energy's intended use.

16. Notwithstanding the outcome of this October 2005 investigation Ergon Energy requested that [REDACTED] undertake further investigations to locate a suitable flood free site (Q100 event) within the Bundaberg City precincts. Attachment NL-4 is a memorandum from [REDACTED] dated 14 August 2006 in which he sets out his consideration and analysis of potential alternate sites and concludes with a recommendation that the 26 Walla Street site is the preferred site.

Commission Question 2

(a) - (d) Characteristics of the 26 Walla Street, particularly as regards flood risk and flood mitigation measures

17. The analysis of potential sites resulted in no suitable flood free sites being identified within the Bundaberg City precinct. This is largely due to the fact that the relatively flat and low lying topography of the Bundaberg City precinct presents very limited options in terms of flood free sites. However, the 26 Walla Street site presented as the best option in relation to flooding issues and consideration of the site proceeded on the basis of establishing a substation that would be suitably flood immune.
18. The Bundaberg City Planning Scheme, adopted on 5 February 2004, has adopted a Defined Flood Event (DFE) based on a Burnett River flood of 50 year average recurrence interval (ARI). In a letter to Ergon Energy dated 23 May 2005 (included as part of attachment NP-3) the BCC advised that the adopted Burnett River 50 year ARI flood level at the 26 Walla Street site is 8.5 metres AHD.
19. I understand that the Minister for Local Government and Planning has identified State Planning policy 1/03 as having been appropriately reflected in the Bundaberg City Planning Scheme.
20. The Q100 ARI (1% AEP) level for the 26 Walla Street site is RL9.25 metres AHD. I understand that the site, and Bundaberg generally do not have a published Q200 ARI (0.5% AEP) level.
21. The natural ground level of the site is between approximately 5.0 metres and 6.0 metres AHD. I understand that filling the site in the order of 3.0 metres to the Q100 level of 9.25m AHD was unacceptable to BCC, due to the impact on amenity for the surrounding properties, and this would also have been cost prohibitive for Ergon Energy, and other options in terms of site flood immunity were examined.

22. In this regard the risks of flooding and potential damage to equipment were assessed and suitable mitigation measures for the project were developed. These measures are set out in detail in the Works Specification - Scope of Works for the project, section 1.4 - Flood Mitigation, and include:
- (a) filling the finished ground level to 7.0 AHD;
 - (b) mounting all critical outdoor plant above (minimum plus 300mm) the Q50 (8.5m AHD) flood level;
 - (c) mounting all indoor equipment, in particular the protection, metering and control panels above (minimum plus 300mm) the Q100 (9.25m AHD - incorrectly referenced in the Works Specification as 9.55m AHD);
 - (d) designing the height of the indoor 11kV switchboard, indoor protection, control and metering panels and mounting the primary outdoor 66kV equipment such as current transformers, voltage transformers and circuit breakers to at least a Q100 plus 300mm flood level; and
 - (e) mounting isolators, earth switches and busbar at an adequate height, in general greater than 4 metres from substation ground level, that is, greater than 11 metres AHD so as to be well above the Q100 flood level.
23. As a result, all critical equipment was to be built to at least 9.55m AHD (Q100 plus 300mm) and heights were also specified for other less critical items and components. Attached to my statement and marked NP-5 is an extract comprising the flood mitigation section of the Works Specification - Scope of Works.
24. Attached to my statement and marked NP-6 are the approved bulk earthworks plans for the development. Because of their small print these plans are difficult to read. However, the plans identify the location of the assets and equipment within the site, by reference to the RL7.0 (finished ground level), Q50 and Q100 flood levels, and illustrate the level sections for the proposed development consistent with the flood mitigation measures detailed in the works specification.
25. BCC approved the application as complying with the requirements of the Bundaberg City Plan and related codes for the Community Precinct (6b) including the Flood Management code, subject to conditions.
26. The design measures complied with the BCC MCU approval conditions described in paragraph 7 above that all essential services infrastructure be located above the Defined Flood

Event (Q50) or, if located below the DFE, is to be designed and constructed to exclude flood water intrusion/infiltration.

27. By these means the design of the facility sought to minimise the flood risk to the assets so far as was possible and practicable within the constraints of the site.

(e) Whether the site (including the substation) flooded during the 2010/2011 floods and if so, details in relation to the flooding of the site, impact on customers and rectification of any damage

28. At a flood level of 7.0m AHD flood water began entering the substation yard. Prior to this occurring, on Tuesday, 28 December 2010, the yard equipment was progressively de-energised as a precautionary measure. This involved the de-energising of the 66kV switchyard and all external equipment. Whilst this step may not have been necessary, it was taken as a risk mitigation measure given the uncertainty, at that time, of the level that the flooding would reach, and in circumstances where it was unnecessary for Ergon Energy to take any risk in relation to the Bundaberg Central substation as it had available to it the option of shifting the substation load to other zone substations as described in paragraph 29 below. However, the 11kV switchboard located in the switchboard room within the site building remained energised throughout the event by being back-energised by an 11,000 volt feeder from one of the adjacent zone substations.
29. During the period that the yard was de-energised, the Bundaberg Central load was shifted to other zone substations, particularly the East Bundaberg and West Bundaberg substations. No load was therefore shed as a result of the de-energising of the Bundaberg Central substation and the de-energising of the substation did not result in the loss of electricity supply to any customers.
30. Supply was only lost to customers where the distribution network high voltage 11,000 volt and low voltage 240/415 volt assets were inundated or deemed to be a safety risk if energised. In this regard it should be noted that a significant area surrounding and supplied from the Bundaberg Central substation was flooded, necessitating local electricity supply to those consumers to be disconnected for safety reasons. However, these disconnections did not arise as a result of the de-energising of the Bundaberg Central substation.
31. I understand that in its supplementary Report to the Queensland Floods Commission of Inquiry dated 21 April 2011 (sections 2 and 3) Ergon Energy has outlined a high level overview of the operation of the electricity supply network and Ergon Energy's approach to the disconnection of electricity supply in an emergency, and has described the process whereby operational disconnections of the supply of low voltage electricity to a street or part of a street is carried out due to potential inundation or for safety reasons, even though supply is still available from the network distributor to the consumer. These issues of individual property inundation and

consumer safety were the primary reasons for the disconnection of local supply to consumers in the areas surrounding the Bundaberg Central substation during the 2010/2011 event.

32. According to Ergon Energy's records the Burnett River peaked at approximately 7.95 metres on the night of Wednesday, 29 December 2010. This accords with Bureau of Meteorology records which identify a flood peak for the Burnett River at Bundaberg of 7.92m AHD. This flood peak is approximately 600mm below the Q50 flood level.
33. At around 4:30pm on the afternoon of 29 December 2010 an Ergon Energy officer took some photographs of the substation site. Copies of these photographs are annexed to my statement and marked NL-7. At this time the flood level at the site was 7.45m AHD, approximately 400mm above the finished ground level of 7.0m AHD and approximately 500mm below the flood peak. Accordingly, at the flood peak the water levels experienced at the site were approximately half a metre higher than the levels shown in these photographs.
34. As is apparent from the photographs, the flood peak fell well short of reaching any of the essential infrastructure on the site, and no inundation was sustained by the site building, control and switchboard rooms or transformers. The only equipment inundated was the capacitor banks which, as noted in the Works Specification, are non-critical plant for the operation of the substation.
35. Before re-energisation was undertaken, the substation was inspected, cleaned and tested. It had sustained no damage. The cleaning required the removal of minimal amounts of water and silt. The yard was re-energised at 7:10pm on Saturday, 1 January 2011. However, it is important to emphasise that no customers were off-line as a result of the substation being de-energised.

(e)(vi) and (vii) Investigations or work undertaken to increase the flood resilience of the site

36. As the flooding risk at the site is known and understood no detailed investigations have been completed following the flood event. However, a review of the substation is in progress to determine whether any alternations or additional measures can be justified to improve the flood resilience of this site. This review will consider, for example, whether any of the equipment which is currently located above the Q50 flood level can be conveniently and economically relocated to above the Q100 flood line, and whether it is economically feasible to place the capacitor banks on a plinth to better flood proof that non-essential equipment.
37. More broadly, Ergon Energy has recently revised its flood level standard with respect to the establishment of new Bulk Supply and Zone substations. The standard provides for a minimum of Q200 for zone substations, or located below the Recommended Flood Level

(RFL) where flood resilience steps can be taken so that the substation can function effectively during and immediately after the RFL flood event.

Questions 3 and 4 - Planning issues

38. The overall Ergon Energy design philosophy is to provide substations:
- safe for the public;
 - safe for operation and maintenance personnel;
 - safe for plant and equipment;
 - with environmental considerations, and aesthetic quality;
 - delivering supply of electricity to its customers, safely, with acceptable levels of quality and reliability;
 - satisfying Ergon Energy's minimum standards for transmission, sub-transmission and zone substation designs;
 - meeting the requirements for future ultimate development; and
 - at the lowest possible cost.
39. As noted in paragraph 37 above Ergon Energy's current standard for the development of bulk supply and zone substations including customer dedicated assets is Q200, or where the Q200 level is not known or is for other reasons unachievable or impractical, located below the RFL but designed and constructed so that the assets can function effectively during and immediately after a RFL flood event.
40. In situations where, as is likely to be the case for many of the geographic regions which fall within Ergon Energy's responsibility, the Q200 level is not presently known, but it is believed that a potential flood risk exists in relation to the proposed site, Ergon Energy will commission a hydrological assessment by an external consultant. A recent example of this concerned the proposed Bohle Plains substation where a full 0.5% AEP (Q200) hydrological assessment was undertaken. This will not apply to all proposals, as in some cases it will be readily apparent that there is no possible flood risk related to the site and the commissioning of such an assessment would constitute an unnecessary expense.
41. In circumstances where it is not possible to identify a suitable piece of land to achieve Q200 flood immunity the design of the substation will be based on a risk assessment to ensure that sensitive electricity equipment such as transformers, control cabinets and switch gear are

- located so far as practicable outside of the RFL and are designed so as to maximise flood immunity, and that the substation is otherwise designed to ensure that the impact on customers and any damage to assets from a flood event is minimised.
42. In terms of Ergon Energy's more direct interface with customers (residents and businesses) and the location of assets such as local distribution transformers, Ergon Energy has an obligation to enable the development of subdivisions and other community and commercial infrastructure through the development of our network as part of our responsibility to provide the supply of electricity. This means that Ergon Energy is required to construct electricity infrastructure within flood prone areas in order to provide a supply of electricity to existing and new residential, community and commercial developments that are built in these areas.
 43. This is particularly the case for low voltage 240/415 volt infrastructure and to a lesser degree for higher voltage infrastructure. This risk can be reduced through developing more flood resilient infrastructure such as overhead assets instead of the underground (or on ground) assets that are normally a requirement of local authorities for new urban developments.
 44. Any legislative and policy changes therefore need to prevent, where possible, electricity supply infrastructure development being approved in areas below the DFL. Where this is not possible, Ergon Energy should be permitted to construct the most flood resilient assets possible such as overhead assets to provide electricity supply to these areas, so as to minimise the risk of adverse impact in a flood event.
 45. In the case of customer dedicated assets where the customer provides the space for the installation of electricity assets, for example within a commercial development, the customer must be required to provide adequate suitable space for the installation of this asset above the DFL.
 46. Since the 2010/11 events Ergon Energy, together with Energex and Powerlink have been closely involved in the work of the Queensland Reconstruction Authority (QRA) in investigating and implementing improvements to the resilience of electricity infrastructure for the future. Ergon Energy supports the guidelines issued by the QRA in its recent publication "Planning for stronger, more resilient electrical infrastructure".
 47. Ergon Energy has also had the benefit of reading the submission by Energex to the Commission of Inquiry in relation to the Planning Term of Reference in October 2011, and reading the evidence given to the Commission of Inquiry by Mr Christopher Arnold of Energex on 24 October 2011.
 48. Ergon Energy generally concurs with what Energex has said in relation to planning issues as regards electricity infrastructure, particularly in section F and schedules A and B of the

Energex submission. Ergon Energy also generally concurs with the matters discussed by Mr Arnold in his evidence and does not wish to raise any additional matters supplementary to that evidence.

I make this statement conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1867* (Qld).

Sworn by Neil Donald Lowry at Rockhampton in the State of Queensland this 24th day of November 2011 before me:

[Redacted signature area]

Neil Donald Lowry (Deponent)

[Redacted signature area]

Witness (Solicitor/Justice of the Peace)



Table of Attachments

	Description	Date
NL-1	Material Change of Use for Community Infrastructure application - Town Planning report - Schomburgk Planning Pty Ltd	July 2007
NL-2	Letter Bundaberg City Council to Schomburgk Planning Pty Ltd enclosing Decision Notice	24 August 2007
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NL-6	Approved earthworks plans	October 2007
NL-7	Site photographs	29 December 2010

**Proposed
Material Change of Use
for Community Infrastructure**

at

**Walla Street,
Bundaberg South**

Lot 144 on CK1925

for

Ergon Energy Corporation Ltd

Town Planning Report

Date: July 2007
Ref: 07028

SCHOMBURGK PLANNING PTY LTD
PO Box 612
Mooloolaba Qld 4557
Ph: 07 5444 1888
Fax: 07 5444 7506



Town Planning Consultants

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PROPOSED COMMUNITY INFRASTRUCTURE (ELECTRICAL SUBSTATION)
WALLA STREET, BUNDABERG SOUTH

TOWN PLANNING REPORT

SCHOMBURGK PLANNING PTY LTD

© Schomburgk Planning Pty Ltd

PO Box 612
Mooloolaba Qld 4557
Ph: 07 5444 1888
Fax: 07 5444 7506

Schomburgk Planning Pty Ltd				
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Revision No	Date	Revision Details	Author	Reviewer
1	May 2007	Draft Report	KS	MTG/CGA
2	July 2007	Final Report	MTG	CGA

1.0 EXECUTIVE SUMMARY

Development Application

Proposed Development: Material Change of Use for Community Infrastructure –
Development Permit

Applicant: Ergon Energy Corporation Ltd

Contact: [REDACTED]
Schomburgk Planning Pty Ltd
Ph: 07 [REDACTED]
Email: [REDACTED]

Consultants: Schomburgk Planning Pty Ltd – Town Planners

Local Government: Bundaberg City Council

Planning Scheme: Bundaberg City Plan

Level of Assessment: Code Assessable

Site Details

Address: [REDACTED] Walla Street, Bundaberg South

Property Description: Lot [REDACTED] on CK1925

Site Area: 6075m²

Registered Trustee: Wide Bay-Burnett Electricity Board

Current Use of Land: Vacant

Bundaberg City Plan

Local Area: Local Area 6 - Eastern Bundaberg

Precinct: Community (6d)

Applicable Overlays: Acid Sulphate Soils
Flood Management

Proposed Application: Material Change of Use for “Community Infrastructure”

Grounds for Approval:

This planning report demonstrates that approval for a Material Change of Use for Community Infrastructure is warranted subject to the imposition of reasonable and relevant conditions on the following basis:-

- the proposed development complies with the provisions set out in the applicable codes of the Bundaberg City Plan;
- the proposed development will provide integral infrastructure services to the Bundaberg area;
- current services are near capacity and unable to cope with future demand;
- four (4) possible locations were investigated for the proposed substation. The subject site was determined to be the most suitable in regards to potential flooding, proximity to residential areas and existing network;
- the subject site has been previously been identified as an 'electrical works reserve';
- the proposed use and associated infrastructure will not impose any negative impacts on adjoining properties;
- all necessary infrastructure services will be connected to the site in accordance with the Planning Scheme requirements;
- additional landscaping will be provided and where possible existing vegetation will be retained to ensure minimal impacts are imposed on the existing landscape of the of the surrounding area;
- any environmental or social issues imposed as a result of the proposed development will be successfully managed through appropriate design of the substation and the inclusion of suitable landscaping;
- the site is not identified on the Regional Ecosystem System Mapping or Essential Habitat Mapping as Including any Of Concern, or Remnant Endangered Regional Ecosystems; and,
- the proposed development will have limited impact on the existing amenity of the surrounding area.

2.0 INTRODUCTION

2.1 Purpose of Report

This assessment report is intended to accompany the Development Application prepared by *Schomburgk Planning Pty Ltd* on behalf of Ergon Energy Corporation Ltd. The site is described as Lot on CK1925, and is situated at Walla Street, Bundaberg South. The Wide-Bay Burnett Electricity Board is the registered trustee over the site.

The application is for a Development Permit for a Material Change of Use for the establishment of **Community Infrastructure** (Electrical Substation) as described under the Bundaberg Shire Planning Scheme. The subject site is located within **Local Area 6 – Eastern Bundaberg - Community Precinct (6d)** of the Plan. The development of the site for Community Infrastructure is Code Assessable within this Precinct.

The purpose of this report is to describe the site, its existing and proposed uses, and to address the relevant Town Planning and design issues with respect to the proposed change in use. This report should be read in conjunction with the covering letter, relevant Development Application Forms and site layout plans prepared by Ergon Energy Corporation Ltd.

3.0 PROPOSED DEVELOPMENT

Ergon Energy is seeking to establish a 66/11kV substation on the previously mentioned property, which is to connect to the existing 11kV powerlines. These works will complement the existing East Bundaberg and West Bundaberg 66/11kV zone substations and is intended to ensure adequate electricity supply capacity is available to meet customer supply needs for at least the next fifteen years in the Bundaberg Central area.

As previously mentioned, the subject site is 6075m² in size, however the substation will be located within a confined area that measures 79.5m x 43.9m in size. The proposed substation will comprise the following elements:

- An outdoor 66kV area consisting of two transformer bays, two feeder bays and a bus section bay.
- Two 66/11kV transformers;
- A 11kV indoor switchboard consisting of two transformer incomer circuit breakers, two bus section circuit breakers, two capacitor bank circuit breakers and twelve feeder breakers (two feeder circuit breakers shall be initially spare with each spare circuit breaker connected to a different bus section).
- Local supply shall be provided via two 315kVA 11000 / 415 volts local supply transformers. Each local supply transformer shall be connected to separate bus sections via a fuse switch.
- Two 6MVA multi-stage 12kV capacitor banks.
- Building/s shall be provided to house the indoor switchboards, all control, protection, communication and metering equipment and AC and DC supply equipment;
- The internal layout of the building/s shall consist of, as a minimum, an air-conditioned control room, air-conditioned communications room, a switch room partitioned from the control and communications rooms and cable basement;
- The external appearance of the building should take into consideration the local architecture used in developing the surrounding residential areas so as to maximise its aesthetic appeal to local residents;
- The proposed building comprises 227m² GFA and is 9.27m in height;
- Security fencing shall be installed around the perimeter of the substation, to a height of 1.8m; and,
- Vegetation screening is to be provided around the perimeter of the substation fence to aid in minimising the visual impact of the proposal.

Please refer to Appendix 1 – Site Plans and Elevations, prepared by Ergon Energy Corporation Ltd.

3.1 Fencing

In order to keep all trespassers out of the substation site, a 1.8 metre high fence will be erected around the proposed substation. The fence will be a chain wire fence with double wired rails and a top section consisting of barbed wires, facing outwards at a 45° angle to deter unauthorised access to the site. Fencing is an open style of fencing that will impose minimal impacts to the surrounding visual amenity. The proposed fencing is in accordance with the safety specifications and standards for Ergon Energy

3.2 Access

Access to the development will be directly from Walla Street, and provided in accordance with the relevant provisions of the Bundaberg City Plan. Service vehicles will enter the site on an as needs basis. Access to the site will be restricted to authorised personal only, through the use of front gates on Walla Street.

3.3 Vegetation

A majority if the site vegetation has previously been. The site has not been identified on the Regional Ecosystems Mapping as containing any form of remnant vegetation.

Some vegetation is located in the northwest adjoining the densely vegetated lot to the west of the subject site. It is proposed to retain this vegetation, where possible, in the form of a landscape buffer.

3.4 Stormwater

During construction of the development, sediment and erosion control devices will be used to ensure that sediment laden runoff does not enter drainage lines. After construction is completed, onsite stormwater will be managed to ensure that all runoff will not impact the existing to water quality.

3.5 Noise

Noise emissions generated by the proposed development will be minimal and further mitigated through the use of reduced sound level transformers. Furthermore, landscaping buffers, building location and building materials used in the development will ensure that noise levels are minimised. Overall, given the surrounding land uses in the area, noise emissions generated by the proposed development will not be unreasonable.

3.6 Amenity

The proposed development is situated in an area specifically intended for community facilities, such as that proposed. Landscaping treatments and building design and layout have been provided in accordance with the relevant provisions of the Planning Scheme, therefore the imposition on the surrounding area will be minimised. Given the nature of the proposed development, the subject site is considered an appropriate site and not situated in close proximity to any conflicting land uses.

3.7 Land Use Definition and Level of Assessment

The proposed development is defined as "*Community Infrastructure*" under the Bundaberg City Plan. The Plan establishes the following definition Community Infrastructure:

"the use of Premises for:

- *Aeronautical facilities*
- ***Electricity supply***
- *Emergency Services- ambulance, fire service, police, state emergency*
- *Facilities for the storage of valuable records or items of cultural or historic significance*

- *Hospital – hospice, nursing home, sanatorium*
- *Railway lines, stations and associated facilities*
- *Sewerage*
- *State-controlled roads*
- *Telecommunications*
- *Water supply.”*

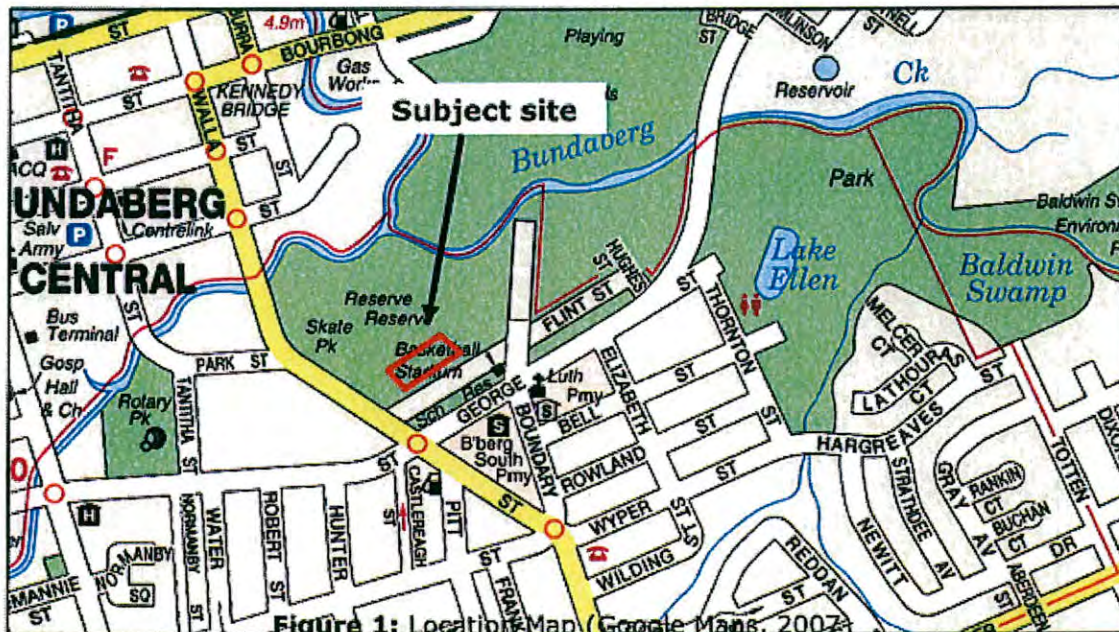
According to the Development Assessment Table for Local Area 6 - Eastern Bundaberg, development of the subject site for Community Infrastructure is **Code Assessable**. A detailed assessment of the proposed development against the relevant provisions of the Bundaberg City Plan has been outlined in this report.

4.0 DESCRIPTION OF SITE

4.1 Site Description

Ergon Energy is seeking to develop a substation on the subject site which is intended to facilitate necessary upgrades to the Bundaberg electricity network. The subject site is ideally located to connect to the existing 66kV lines which run adjacent to the site.

The development application concerns Lot 144 CK1925 at 26 Walla Street, Bundaberg South, which has a site area of approximately 6075m². The Wide-Bay Burnett Electricity Board is the registered trustee over the site.



4.1.1 Easements and Encumbrances

There are no easements on or adjoining the subject site. Please refer to appendix 2 – Title Search.

4.1.2 Contaminated Land

The subject site is not identified on the Environmental Management Register (EMR) or Contaminated Land Register (CLR). Please refer to appendix 3 – Contaminated Land Search.

4.1.3 Vegetation

The subject site is devoid of any significant vegetation per the Regional Ecosystem mapping.

4.1.4 Waterways

The subject site does not contain, and is not adjacent to, any existing waterways.

4.2 Surrounding Land Uses

The subject site is situated in South Bundaberg, within a precinct largely characterised by a range of community uses. Situated on the northern boundary of the subject site are parklands which comprises a skate park and general open space (please refer to

figure 2, below). Impacts imposed by the proposed development on the parklands will be mitigated through the use of a landscaping buffer, appropriate building design and layout, and fencing.



Figure 2: Parklands – Adjoining northern boundary of the subject site

Located south of the subject site is a single storey building previously used as a scout hall (please refer to figure 4, below). The proposal will have minimal impact on the future use of this building given the proposed setbacks from the adjoining boundary. The Bundaberg State School adjoins the southern and eastern boundaries of both the scout and the subject site (please refer to figure 3, below). Again, given the proposed setbacks it is unlikely the development will have any impacts on Bundaberg State School.



Figure 3: Southern Boundary of Subject site looking from the rear of the site (State School)



Figure 4: Southern Boundary of Subject site looking from the front of the site (Scout Hall)

Opposite the subject site further south along Walla Street, there is a combination of retail shops and residential properties. Directly opposite the subject site is community organisation clubhouse (please refer to figure 5, below). The proposed use will be provided with a landscaping buffer and a sufficient setback to protect the current streetscape and amenity of Walla Street.



Figure 5: Community organisation clubhouse, situated opposite the subject site

5.0 TOWN PLANNING CONSIDERATIONS

5.1 Bundaberg City Plan 2004

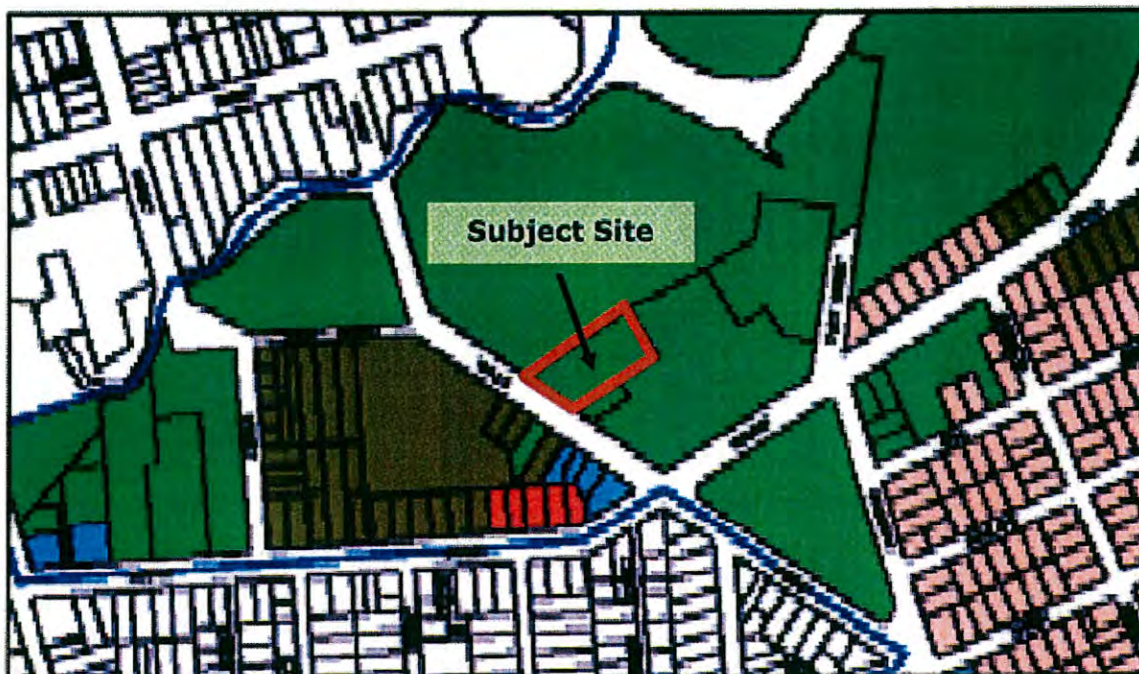


Figure 2: Precinct Map (Bundaberg City Plan)

5.1.1 Local Area 6 - East Bundaberg

The subject site is included in local area 6 - East Bundaberg in accordance with Map 3.7, Sheet 1 of the Bundaberg City Plan. The intent to Local Area 6 - East Bundaberg is outlined below.

"Eastern Bundaberg will have a suburban character, with rural activities such as agriculture remaining on land unsuitable for urban development or on land not required for urban development within the life of the Planning Scheme. Specifically it is intended that:

- (a) a standard of amenity consistent with the Residential Strategy will be achieved in the residential precincts;*
- (b) alternatives in housing types are provided in locations offering high accessibility to a range of services and facilities;*
- (c) the design of new residential development near the interface with industry must not compromise the operations of existing industry;*
- (d) the area will be well serviced by social infrastructure such as schools, public transport and a range of sporting facilities. In addition, the area will provide a range of informal recreational facilities for young people such as half courts for basketball and skate ramps;*
- (e) a comprehensive network of urban recreation space will be created;*
- (f) an integrated bicycle network throughout the City will connect Eastern Bundaberg to the CBD;*
- (g) regulated pedestrian access to and along the banks of the Burnett River will be facilitated through an integrated network of pedestrian pathways;*

- (h) *a range of local shopping facilities and other community facilities will be available within the Local Area;*
- (i) *expansion of industrial development beyond the Industry Precinct is inconsistent with the intent for this Local Area;*
- (j) *the East Water Tower will be reinforced as an important landmark to create a sense of community identity"*

Each of the local areas are divided into six (6) precincts, the subject site is identified in the Community Precinct (6b).

5.1.2 Community Precinct (6b)

The Bundaberg City plan has identified each precinct based on existing development, adjoining land uses, zoning or development approvals and the desired future character of these areas.

The development of the subject site for community infrastructure is in accordance with the Councils intent for the subject site.

In accordance with *Table 3.6- Development Assessment for Local Area 6-Eastern Bundaberg* the application requires assessment against the following codes:

- Community Activity Code;
- Flood Management Code;
- Infrastructure Services Code;
- Signs Code;
- Landscaping code; and
- Vehicle parking and access code.

The abovementioned codes are addressed in the following tables.

**5.1.2.1 Community Activity Code
PURPOSE OF THE CODE**

"To ensure that development of community activities, special uses and utilities limit the adverse impacts on nearby properties and the environment."

The table below is an assessment of the proposed development in accordance with the Performance Criteria and Solutions of the Community Activity Code.

Performance Criteria	Solutions	Proposal	Council Use
P1 All community activities, special uses and utilities must be provided with an acceptable standard of infrastructure.	A1.1 Infrastructure is provided in accordance with the Infrastructure Services Code; and	The proposed Electrical Substation is provided in accordance with the Infrastructure Services Code, Refer to s 5.1.2.3 for an assessment of the proposal against the Infrastructure Services Code.	
P2 The design and siting of community buildings and associated operational works must complement the character of nearby development	A2.1 Where a development site is adjoining or opposite residential areas, a 5m wide buffer along the interface boundary of the site is landscaped in accordance with the Landscaping Code; and A2.2 A minimum 3m wide landscape area is provided along side and rear boundaries adjoining land in the Residential A or Residential B Precinct in accordance with the Landscaping Code; and A2.3 The main entrance to the building is visibility from and directly accessible from the street; and	The subject site is not adjoining or situated opposite residential areas as zoned in the Bundaberg City Plan. However, a 5m vegetation buffer is provided along the western boundary of the site. The subject site is not adjoining any residential areas as zone in the Bundaberg City Plan	
		The entrance to the substation site will be gated and clearly visible.	

Performance Criteria	Solutions	Proposal	Council Use
<p>P3 Hours of operation must be appropriate for the areas in which the use is operated.</p>	<p>A2.4 Building setbacks are 6m from the main street boundaries and 3m from other boundaries; and</p>	<p>The control room and switchboard room building is setback more than 6m from the street frontage and 3m from other boundaries. Please refer to attachment 1 – Site Plans prepared by Ergon Energy Corporation Ltd.</p>	
<p>P4 Emissions from the use must be within acceptable limits</p>	<p>A2.5 Signage is developed in accordance with the Signs Code</p> <p>A3.1 With the exception of emergency services and hospitals, Community Activities being undertaken in, adjoining or opposite a residential A or Residential B Precinct are confined which the houses of 6:00am to 10:00pm</p> <p>A4.1 External lighting is provided in accordance with Australian Standards AS2560; and</p> <p>A4.2 Illuminated signs are in accordance with the requirements of the Signs Code; and</p> <p>A4.3 Any noise produced by the use does not exceed the background noise level plus 10dB(A) (6am-10pm) or background noise plus 3dB(A) (10pm- 6am) measured as the adjusted maximum sound pressure level at an noise sensitive place</p>	<p>No signage is proposed as part of this application.</p> <p>The subject site is not in, adjoining or opposite any residential areas as zoned in the Bundaberg City Plan.</p> <p>The associated lighting for the substation will only be turned on in the event of night-time switching operations or emergency situations.</p> <p>No signage is proposed as part of this application.</p> <p>Noise emissions from the Substation will be in accordance with the noise limits as defined in the appropriate Australians Standard and in accordance with the relevant provisions of the Bundaberg City Plan.</p>	
<p>P5 Sufficient car parking and vehicle access must be provided</p>	<p>A5.1 On-site car parking and vehicle access is provided in accordance with the Vehicle Parking and Access Code</p>	<p>Parking and access on the subject site for the proposed substation will be in accordance with the Vehicle Parking and Access Code. Refer to section</p>	

Performance Criteria	Solutions	Proposal	Council Use
		5.1.2.5 of this report, which demonstrates the proposals compliance with the Vehicle Parking and Access Code.	

5.1.2.2 Flood Management Code

PURPOSE OF THE CODE

"To ensure that development generates no adverse alteration of the storage and flow characteristics of floodwaters and that people, property, essential services and community infrastructure are protected from specified flood events."

The table below is an assessment of the proposed development in accordance with the Performance Criteria and Solutions of the Flood Management Code.

Performance Criteria	Solutions	Proposal	Council Use
<p>P1 The Proposed development must not:</p> <ul style="list-style-type: none"> Adversely impact on the downstream properties by maintain the pre-development flow peaks, inundation time and flood levels up to and including the DFE. Increase the flood levels up stream and down stream for storm events up to including the DFE 	<p>A1.1 The design and construction of all major and minor stormwater runoff management measures for the proposed development is in accordance with the <u>Bundaberg City Engineering Design Planning Scheme Policy</u>.</p>	<p>Stormwater management measures for the proposed electrical substation will be in accordance with the <u>Bundaberg City Engineering Design Planning Scheme Policy</u>.</p>	
<p>P2 Any changes to runoff characteristics (hydrograph volume, peak and time to peak) for a range of storm events up to and including the DFE must be minimised, consistent with the maintenance of the environmental values of waterways</p>	<p>A2.1 Any changes to runoff characteristics are in accordance with <u>Bundaberg City Engineering Design Planning Scheme Policy</u>.</p>	<p>Stormwater management of the subject site will be in accordance with the <u>Bundaberg City Engineering Design Planning Scheme Policy</u>.</p>	
<p>P3 Bridges and culverts for flood immunity minimise traffic disruptions, provide for public safety and bike ways, allow for fauna habitat and movements and maintain necessary hydraulic performance.</p>	<p>A3.1 The design parameters are in accordance with the <u>Bundaberg City Engineering Design Planning Scheme Policy</u>.</p>	<p>N/A There are no bridges or culverts included in the proposed development.</p>	
<p>P4 Land surface and road access thereto</p>	<p>A4.1 On all allotments in the Residential A and</p>	<p>N/A The subject site is not located in a</p>	

Performance Criteria	Solutions	Proposal	Council Use
<p>of land used for residential purposes must provide safe egress during the DFE</p>	<p>Residential B Precinct existing at the date the planning scheme commences, no solutions is prescribed; or A4.2 On all other allotments, the land surfaces and road access thereto of all land used for residential purposes is above the DFE level for the site</p>	<p>residential area.</p>	
<p>P5 The occupants and chattels of habitable rooms must be safeguarded against illness, injury and damage caused by the DFE.</p>	<p>A5.1 The floor level of a habitable room is at least 300m above the DFE</p>	<p>N/A The application is for an electrical substation in the Community Precinct. The proposal does not include any form of development that includes habitable rooms.</p>	
<p>P6 Land surface and road access thereto of land used for commercial, business or industrial purposes shall provide for safe egress during DFE</p>	<p>A6.1 Land surface and road access thereto of land used for commercial business or industrial purposes is above the DFE level for the shire</p>	<p>N/A The application is for an electrical substation in the Community Precinct.</p>	
<p>P7 The occupants and chattels of commercial, business or industrial premises shall be safeguarded against injury or damage caused by the DFE</p>	<p>A7.1 The floor level of premises used for commercial, business or industrial uses is above the DFE level for the site; and A7.2 The premises are located in an area where there is sufficient flood warning time to enable safe evacuation.</p>	<p>N/A The application is for an electrical substation in the Community Precinct. No commercial, business or industrial uses (as detailed in the Bundaberg City Plan) are applied for as part of this application.</p>	
<p>P8 Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous, toxic or noxious materials manufactures or stored in bulk</p>	<p>A8.1 The manufacture or storage in bulk of hazardous, toxic or noxious materials takes place above the DFE level; or A8.2 Structure used in the manufacture or storage in bulk or hazardous, toxic or noxious materials are designed to prevent intrusions from floodwaters.</p>	<p>N/A The application is for an electrical substation in the Community Precinct. no hazardous, toxic or noxious materials will not be stored or manufactured on site</p>	
<p>P9 Essential services infrastructure (e.g. electricity, gas, water supply, sewerage</p>	<p>A9.1 Essential services infrastructure is located above the DFE level; or</p>	<p>Filling for the subject site is proposed to a height of 1 to 2m to ensure that</p>	

Performance Criteria	Solutions	Proposal	Council Use
<p>and telecommunications) maintains its function during a DFE</p>	<p>A9.2 Essential services infrastructure located below the DFE are designed and constructed to exclude floodwater intrusions/infiltration; and, Essential services infrastructure is designed and constructed to resist hydrostatic hydrodynamic forces as a result of inundation by the DFE.</p>	<p>all essential services are located outside the designated flood event area. All operational works will be carried out in accordance with Council's standards.</p>	
<p>P10 Community Infrastructure is able to functions effectively during and immediately after a DFE</p>	<p>A10.1 Community Infrastructure located below the Recommended Flood Level can function effectively during and after flood events; and A10.2 Essential Community Infrastructure has an emergency rescue area above the Recommended Flood Level</p>	<p>Filling for the subject site is proposed to a height of 1 to 2m to ensure that all essential services are located outside the designated flood event area. All operational works will be carried out in accordance with Council's standards.</p>	

5.1.2.3 Infrastructure Services Code

PURPOSE OF THE CODE

"To ensure that infrastructure services provided with land use activities adequately service those activities in a manner that protects the infrastructure, the access thereto and the surrounding environment."

The table below is an assessment of the proposed development in accordance with the Performance Criteria and Solutions of the Infrastructure Services Code.

Performance Criteria	Solutions	Proposal	Council Use
P1 Development must include adequate provision for water supply, waste water disposal, solid waste collection, electricity, gas and telecommunication services	A1.1 Connection is provided to reticulated water supply, reticulated sewerage, electricity, gas (where available in the street) and telecommunications services including provision of easements, and A1.2 The water supply property service is sized in accordance with the recommendations of a hydraulic consultant; and A1.3 Manoeuvring areas for the collection of solid waste are provided in accordance with Austroads- Design Vehicles and turning Templates to accommodate the Design Single Unit Truck/Bus (12.5m) for turning speed up to 5km/h.	The electrical substation is proposed for the subject site and is capable of being connected to all services if required. A power line runs directly to the north of the subject site. All services will be provided in accordance with Council's standards. No waste will be created from the substation. Waste removal is not required.	
P2 Infrastructure available adjacent to the frontage of the site (including infrastructure for vehicle and pedestrian movement and services conduits) must be acceptable for the proposed development,	A2.1 Electricity, telecommunications and street-lighting is available adjacent to the frontage of the site or is provided at the developers expense	The subject is capable of being connected to all required services.	

Performance Criteria		Solutions		Proposal	Council Use
		A2.2 The following infrastructure is available adjacent to the frontage of the site or is provided at the developers expense in accordance with Table 4.3; and	A2.3 Where any disturbance to existing infrastructure is caused by a development, the developer rectifies that disturbance.	All infrastructure required in accordance with table 4.3 of this code will be provided to the proposed development.	
P3 Adequate protection is provided against damage to existing underground infrastructure services, and access is available for future maintenance of the services		A3.1 Excavation and piling near sewers, stormwater drains and water mains conducted in accordance with Queensland Development Code- Part 5		Any disturbance to existing infrastructure caused as a result of the proposed development will be rectified at the expense of Ergon Energy Corporation Ltd.	
P4 Stormwater drainage must not result in unacceptable water quality, increased flooding or erosion impacts		A4.1 Design storm criteria in all situations shall be Major System Design ARI (years) 100 Minor System Design ARI (years) Commercial 10 Community 10 Industrial 10 Recreation Indoor 10 Special Uses 10 Utilities 10 Recreation Outdoor 05 Residential 05 Park 01		N/A no excavation is proposed as part of this application.	
		A4.2 Stormwater drainage infrastructure is provided in accordance with the Queensland Urban Drainage Manual – Section 6; and		Stormwater drainage will not result in unacceptable water quality, increased flooding or erosion impacts on surrounding properties.	
				Stormwater works and infrastructure will be provided in accordance with the Queensland Urban Drainage Manual.	

Performance Criteria		Solutions		Proposal		Council Use	
		A4.3 Detention basins are provided in accordance with the Queensland Urban Drainage Manual - Section 6; and		Stormwater works and infrastructure will be provided in accordance with the Queensland Urban Drainage Manual.			
		A4.4 Stormwater quality, sediment and erosion control measures are provided in accordance with the Queensland Urban Drainage Manual -Section 9		Stormwater works and infrastructure will be provided in accordance with the Queensland Urban Drainage Manual.			

5.1.2.4 Landscaping Code

PURPOSE OF THE CODE

"To achieve an acceptable standard of landscaping through species selection, location and maintenance in order to:

- *Mitigate the visual impacts of development;*
- *Provide adequate privacy and screening;*
- *Delineate and enhance pedestrian and vehicle routes;*
- *Enhance the safety and security of pedestrians, vehicles and the transport network; and*
- *Promote water conservation practices."*

The table below is an assessment of the proposed development in accordance with the Performance Criteria and Solutions of the Landscaping Code.

Performance Criteria		Solutions	Proposal	Council Use
P1	Planting and other landscape treatments must be provided to enhance the appearance of the development	<p>A1.1 A landscaped area is provided to the main street frontage of the site to the following depths</p> <p>Development Area</p> <p>Residential (other than a residential single unit) 6m</p> <p>Commercial (other than in local area 5) 2m</p> <p>Industrial (other than a service station) 6m</p> <p>Service Station 3m</p> <p>Recreation 6m</p> <p>AND</p> <p>As1.2 A landscape area is provided to other street frontages, at half the dimensions prescribed in A1.1</p>	<p>Landscaping is provided along all boundaries of the subject site. The landscape buffer proposed is 5m wide along street frontage boundary.</p> <p>Existing established vegetation buffers in the west will be retained, where possible.</p>	
P2	Landscaping must be provided to	A2.1 For development other than residential,	Landscaping is provided along all	all

Performance Criteria	Solutions	Proposal	Council Use
<p>protect the privacy of any existing residential areas in the vicinity of the site.</p>	<p>where on a site opposite to or adjoining residential areas, a 5m wide buffer along the interface boundary of the site is planted to create an effective screen</p>	<p>boundaries of the subject site. The landscape buffer proposed is 5m wide along each boundary. The front boundary and 3m setback along each of the remaining boundaries. Please refer to the attached plan (appendix 1).</p>	
<p>P3 Landscaping must be installed to delineate and enhance pedestrians and vehicle routes within and adjacent to the site.</p>	<p>A3.1 Landscaping comply with the performance criterion is provided.</p>	<p>Please note that the subject site does not adjoin any residential areas. All landscaping will be provided in accordance with this other and provisions of the Bundaberg City Plan.</p>	
<p>P4 Planting and other landscape treatments must not decrease the safety or security of pedestrians</p>	<p>A4.1 Landscaping which includes recognised Crime Prevention Through Environmental Design (CPTED) principles is provided.</p>	<p>The proposed landscaping will not effect the safety or security of pedestrians along the front of the subject site.</p>	
<p>P5 Landscaping must be designed and implemented to conserve water usage.</p>	<p>A5.1 Landscaping includes species recognised for their low water requirements; and A5.2 Landscaping is provided with a controlled underground or drip irrigation system. Any such system is to be fitted with an approved backflow prevention device.</p>	<p>All landscaping will be provided in accordance the provisions of the Bundaberg City Plan.</p>	
<p>P6 Landscaping must incorporate appropriate species in appropriate locations.</p>	<p>A6.1 Landscaping uses species indigenous to the area (the Plant Species List contained within Councils Landscaping Planning Scheme Policy is a guide to species selection).</p>	<p>All landscaping will use indigenous species where possible in accordance with Council's Landscaping Planning Scheme Policy.</p>	
<p>P7 Landscaping on land adjoining a State-controlled road corridor is to be provided to enhance the visual amenity along the</p>	<p>P7.1 Landscaping complies with the requirements of the Department of Main Roads- Road Landscape Manual</p>	<p>N/A Walla Street is not a state controlled road.</p>	

Performance Criteria		Solutions		Proposal	Council Use
corridor, whilst maintaining traffic safety and efficiency.					
P8 Landscaping must be established and maintained so as to continue to fulfil its intended function:		A8.1 Landscaping is to be completed prior to the premises being occupied and is to be maintained while ever the use of the premises for the purpose necessitating the landscaping continues		Proposed landscaping will be completed and maintained in accordance with this and other provisions of the Bundaberg City Plan.	

5.1.2.5 Vehicle Parking and Access Code

PURPOSE OF THE CODE

"To ensure that vehicle parking and access areas, passenger set down / pickup areas and goods loading / unloading facilities are provided in a safe and efficient manner, and that the off-site impacts of these activities are within acceptable limits."

The table below is an assessment of the proposed development in accordance with the Performance Criteria and Solutions of the Vehicle Parking and Access Code.

Performance Criteria	Solutions	Proposal	Council Use
P1 Off-site impacts of lighting and noise in vehicle access and parking areas must be within acceptable limits.	<p>A1.1 Illumination levels at a distance of 1.5m outside the site do not exceed 8 lux; and</p> <p>A1.2 Vehicle access or parking does not produce noise exceeding background noise level plus 5db(A) where the site adjoins a commercial premises), or background noise level plus 3dB(A) (where the site adjoins a noise sensitive place); and</p> <p>A1.3 A screen fence with no gaps is provided between car park areas and residential uses.</p>	<p>All associated lighting for the proposed substation will only be turned on in the event of night-time switching operations or emergency situations.</p> <p>Access to the development will be directly via Walla Street, and provided in accordance with the relevant provisions of the Bundaberg City Plan. Service vehicles will enter the site on an as needs basis. Access to the site will be restricted to authorised personal only, through the use of a front security gate on Walla Street.</p>	
P2 Vehicle access form the external traffic network to the site to on-site vehicle parking, passenger set down / pickup areas and goods loading / unloading areas must be provided in a manner which doesn't no disrupt the safe and efficient	<p>A2.1 Vehicle access to the site is provided in accordance with Australian Standard AS2890: and</p> <p>A2.2 Vehicle manoeuvring space is provided on the site to enable vehicles to enter and leave in the site in forward gear</p>	<p>Access to the development will be via Walla Street, and provided in accordance with both the relevant Australian Standards and relevant provisions of the Bundaberg City Plan. Service vehicles will enter the site on</p>	

Performance Criteria		Solutions		Proposal	Council Use
functioning of the external traffic network.				an as needs basis only and will be capable of leaving the site in a forward gear.	
P3 Sufficient parking spaces must be provided for the number and type of vehicles likely to be associated with the development.		A3.1 The number of parking space set out in Table 4.7 is provided exclusively for parking on the site in accordance with Australian Standard AS2890; and A3.2 Vehicle parking areas are sign posted as visit or customer parking.		No designated parking spaces are proposed as part of this application. Service vehicles will not be on site for extended periods and do not require a designated parking area.	
P4 on-site vehicle parking and access areas must provide safe and efficient circulation of vehicles and pedestrians		A4.1 The design, construction and operation of vehicle parking and access areas is in accordance with the Australian Standard AS2890; and A4.2 Car parking and access thereto is to be constructed with asphalt, bituminous seal, concrete or pavers and line marked into parking bays		No designated parking spaces are proposed as part of this application. Service vehicles will not be on site for extended periods and will not require a designated parking area.	
P5 On-site vehicle parking areas must be landscaped in a manner that enhances the character of the locality.		A5.1 A landscaping strip 1m wide is provided along all side boundaries between vehicle parking areas and any buildings or structures. A landscaped strip 2m wide is provided along all road frontages. This landscaping is provided in accordance with the Landscaping code; and A5.2 Shade trees are provided for surface car parking at the rate of a tree for each 6 parking spaces.		No designated parking spaces are proposed as part of this application. Service vehicles will not be on site for extended periods and do not require a designated parking area. However, a 5m wide landscaping buffer will be provided along the front boundary of the subject site as part of the application.	
				N/A No designated parking spaces are proposed as part of this application. Service vehicles will not be on site for	

Performance Criteria	Solutions	Proposal	Council Use
<p>P6 All vehicle loading and unloading activities must be carried out in a safe and efficient manner.</p>	<p>A6.1 The design and operation of vehicle loading and unloading areas is in accordance with Australian Standard AS2890; and A6.2 Manoeuvring areas for the collection of solid waste are provided in accordance with Austroads- Design Vehicles and turning Templates to accommodate the Design Single Unit truck/Bus (2.5m for turning speed up to 5km/h</p>	<p>extended periods and do not require a designated parking area. Therefore shade trees in parking areas will not be required. Service vehicles will enter the site on an as needs basis. Access to the site will be restricted to authorised personal only, through the use of security gates on the Walla Street access point. No waste will be produced on site, therefore access to the site for waste disposal is not required.</p>	
<p>P7 The road providing access to the site must be of an appropriate standard to service the proposed site use.</p>	<p>A7.1 Development traffic is within the function of the street to which vehicle access is proposed as defined in tables 4,5 and 4.6 of the Loc Reconfiguration Code</p>	<p>Walla Street is of a standard suitable for the proposal. The proposal will not effect the traffic volumes along this street.</p>	

6.0 OTHER PLANNING CONSIDERATIONS

6.1 Referral Agencies

The development application does not trigger referral in accordance with the *Integrated Planning Act 1997* and the *Integrated Planning Regulation 1998*.

6.2 Services

As mentioned previously, all required services are currently available to the site, and are of sufficient capacity to accommodate the proposed development.

7.0 CONCLUSION

7.1 Grounds for Approval

This planning report demonstrates that approval for a Material Change of Use for Community Infrastructure is warranted subject to the imposition of reasonable and relevant conditions on the following basis:-

- the proposed development complies with the provisions set out in the applicable codes of the Bundaberg City Plan;
- the proposed development will provide integral infrastructure services to the Bundaberg area;
- current services are near capacity and unable to cope with future demand;
- four (4) possible locations were investigated for the proposed substation. The subject site was determined to be the most suitable in regards to potential flooding, proximity to residential areas and existing network;
- the subject site has been previously been identified as an 'electrical works reserve';
- the proposed use and associated infrastructure will not impose any negative impacts on adjoining properties;
- all necessary infrastructure services will be connected to the site in accordance with the Planning Scheme requirements;
- additional landscaping will be provided and where possible existing vegetation will be retained to ensure minimal impacts are imposed on the existing landscape of the of the surrounding area;
- any environmental or social issues imposed as a result of the proposed development will be successfully managed through appropriate design of the substation and the inclusion of suitable landscaping;
- the site is not identified on the Regional Ecosystem System Mapping or Essential Habitat Mapping as including any Of Concern, or Remnant Endangered Regional Ecosystems; and,
- the proposed development will have limited impact on the existing amenity of the surrounding area.


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July 2007

7.0 CONCLUSION

7.1 Grounds for Approval

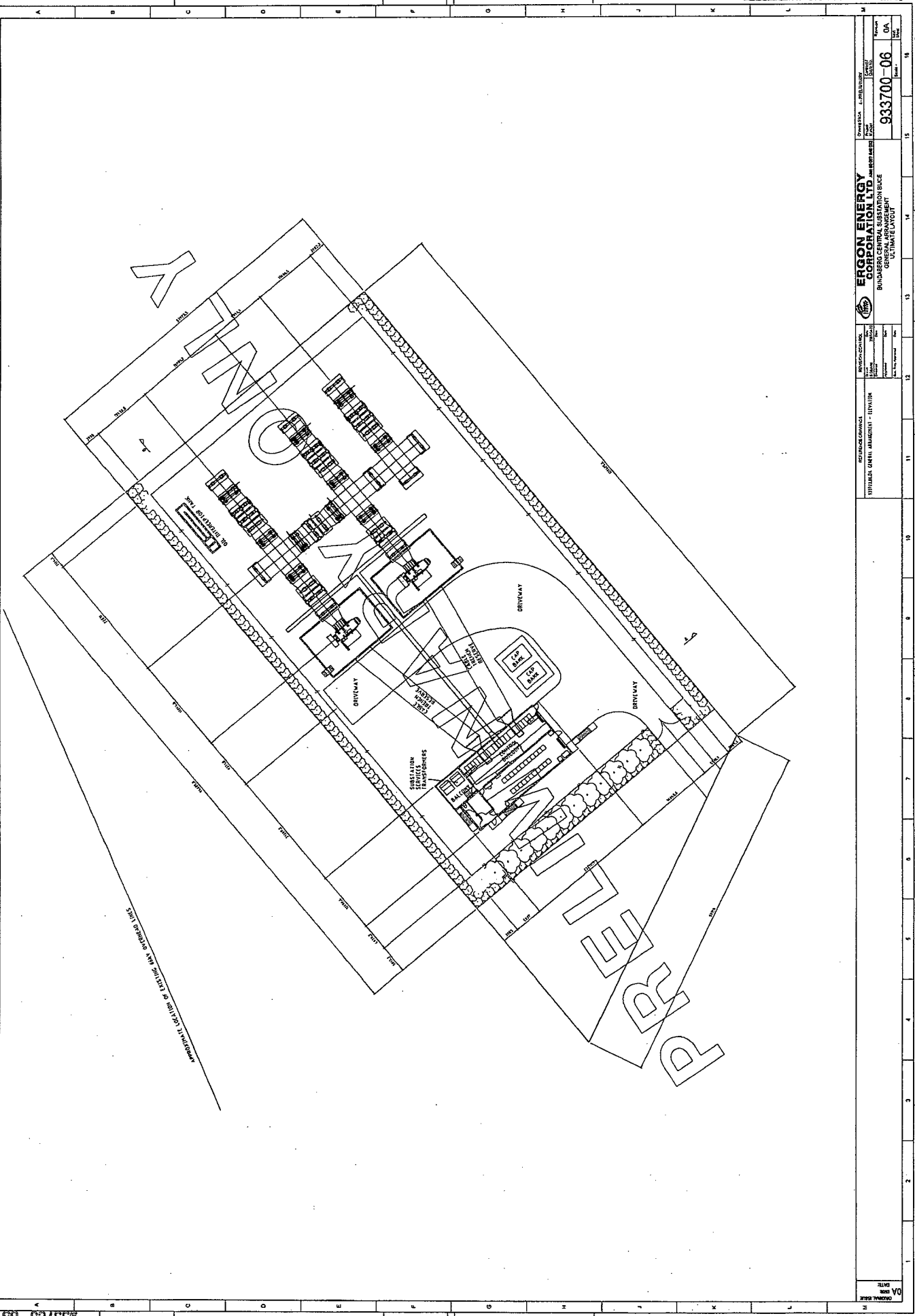
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- the proposed development will provide integral infrastructure services to the Bundaberg area;
- current services are near capacity and unable to cope with future demand;
- four (4) possible locations were investigated for the proposed substation. The subject site was determined to be the most suitable in regards to potential flooding, proximity to residential areas and existing network;
- the subject site has been previously been identified as an 'electrical works reserve';
- the proposed use and associated infrastructure will not impose any negative impacts on adjoining properties;
- all necessary infrastructure services will be connected to the site in accordance with the Planning Scheme requirements;
- additional landscaping will be provided and where possible existing vegetation will be retained to ensure minimal impacts are imposed on the existing landscape of the of the surrounding area;
- any environmental or social issues imposed as a result of the proposed development will be successfully managed through appropriate design of the substation and the inclusion of suitable landscaping;
- the site is not identified on the Regional Ecosystem System Mapping or Essential Habitat Mapping as including any Of Concern, or Remnant Endangered Regional Ecosystems; and,
- the proposed development will have limited impact on the existing amenity of the surrounding area.

Schomburgk Planning Pty Ltd
July 2007

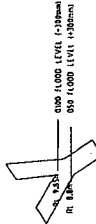
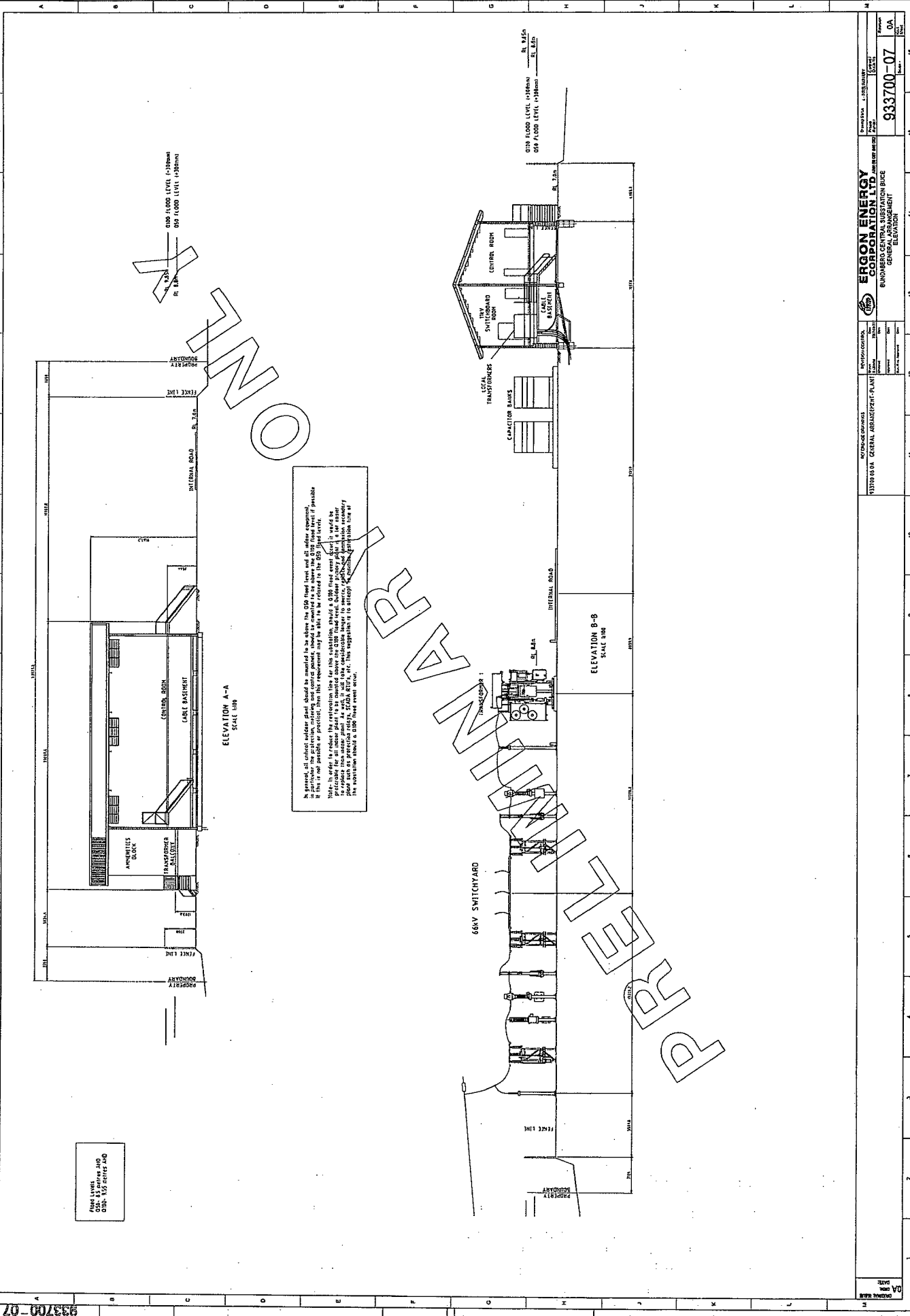
APPENDIX I

**Site Layout
& Elevations**



933700-06

DATE	
ORIGINATOR	
PROJECT NO.	933700-06
PROJECT NAME	ERGON ENERGY CORPORATION LTD BUNDABERG CENTRAL SUBSTATION ELEC GAS SUPPLY ULTIMATE LAYOUT
DESIGNER	
CHECKER	
DATE	
SCALE	
PROJECT NO.	
PROJECT NAME	
DESIGNER	
CHECKER	
DATE	
SCALE	



In order to reduce the risk of flooding, the substation should be elevated to the 0.50 flood level. If this is not possible or practical, then this requirement may be relaxed to the 0.0 flood level. Note: In order to reduce the retention time for this substation, provide a 0.50 flood level. It would be to prevent the water from rising. As a result, it will take considerable longer to erect, and the retention capacity will be reduced. This suggestion is to mitigate the risk of flooding. The substation should be elevated to the 0.50 flood level.

ELEVATION A-A
SCALE 1:100

ELEVATION B-B
SCALE 1:100

FLOOD LEVELS
0.50 FLOOD LEVEL (+1.00mm)
0.0 FLOOD LEVEL (+1.00mm)

933700-07

ERCON ENERGY CORPORATION LTD. SUNNYSIDE CENTRAL SUBSTATION BUICE GENERAL ARRANGEMENT		PROJECT NO. 933700-07	DATE 04/18/2011
DRAWN BY J. L. BROWN	CHECKED BY J. L. BROWN	PROJECT NO. 933700-07	DATE 04/18/2011
PROJECT NO. 933700-07	PROJECT NAME SUNNYSIDE CENTRAL SUBSTATION BUICE	PROJECT NO. 933700-07	DATE 04/18/2011

APPENDIX II

Title Search

CURRENT RESERVE SEARCH

NATURAL RESOURCES AND WATER, QUEENSLAND

Request No: 118909131

Search Date: 03/05/2007 14:28

Title Reference: 49008020

Date Created: 20/07/1957

PAGE: 1548

Opening Ref: SG 57-20680

Purpose: ELECTRICAL WORKS

Sub-Purpose:

Local Name:

Address: WALLA STREET, BUNDABERG

County (R) No: R902 COOK

File Ref: RES 9910

TRUSTEES

WIDE BAY-BURNETT ELECTRICITY BOARD GAZETTED ON
11/11/1978 PAGE 893

LAND DESCRIPTION

LOT 144 CROWN PLAN CK1925 GAZETTED ON 09/09/1967 PAGE 87
County of COOK Parish of BUNDABERG
Local Government: BUNDABERG CITY

Area: 0.607500 Ha. (SURVEYED)

EASEMENTS AND ENCUMBRANCES

ADMINISTRATIVE ADVICES - NIL

UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

** End of Current Reserve Search **

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Requested By: PUBLIC ACCESS GLOBALX INFORMTN

Based on the Property Location Index provided with the permission of the State of Queensland (Department of Natural Resources, Mines & Energy) (Current as at Sept 2006)

While every care is taken to ensure the accuracy of this data The State of Queensland (Department of Natural Resources, Mines & Energy) makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

Contaminated Land Search

QLD ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)

Transaction ID: 937529 EMR Site Id: 18 May 2007
This response relates to a search request received for the site:
Lot: 144 Plan: CK1925

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

**Note: Searches may be conducted online through the State Government Website
www.smartservice.qld.gov.au or Citec Confirm www.confirm.com.au.**

If you have any queries in relation to this search please phone ([REDACTED]

[REDACTED]
Registrar, Contaminated Land Unit

"NL-2"



BUNDABERG CITY COUNCIL

RECEIVED
28 AUG 2007

322.2007.19107.1
346:RAS
T3-15/08/07
Enquiries to: [REDACTED]

BY:.....

24th August, 2007

Messrs. Ergon Energy Corporation Pty. Ltd.
[REDACTED]
Schomburgk Planning Pty. Ltd.
P.O. Box 612
MOOLOOLABA QLD 4557

Dear Sirs,

Re: Development Application for Material Change of Use – Code Assessment – Ergon Energy Corporation Pty. Ltd. (Applicant/Owners) – For the Use of Land described as Lot 144 on C.K. 1925, County Cook, Parish Bundaberg, situated at 26 Walla Street, Bundaberg South, in a "Community" Zone. Proposed Use: "Electrical Sub-Station".

Council's Letter and Acknowledgment Notice dated 23rd July, 2007, refers.

Your Development Application for Material Change of Use – Code Assessment, lodged on 12th July, 2007, as above-described, was considered by Council (the Assessment Manager) at its Meeting of 23rd August, 2007, and I have to advise that Council Resolved as follows:-

That pursuant to the Provisions of "The Integrated Planning Act 1997", the Application be approved with Conditions and the attached Decision Notice – Code Assessment be issued to the Applicant – and this matter referred to the Chief Executive Officer for attention.

Adverting to Item 6 of the Decision Notice – "Rights of Appeal" – I am attaching hereto for information Copy of extract Pages from "The Integrated Planning Act 1997".

..2.

Ergon Energy Corporation Pty. Ltd.
C/- [REDACTED]
Schomburgk Planning Pty. Ltd.
P.O. Box 612
MOOLOOLABA QLD 4557

24th August, 2007

Council (the Assessment Manager) awaits receipt of your Company's written Notice relating to the matter of any Applicant Appeal.

Your attention is respectfully drawn to the requirement to obtain further Development Permits as detailed in Para. 4 of the Decision Notice, viz:-

"4. Further Development Permits Required -

- (a) *Development Permit for Building Works (for all new works);*
- (b) *Development Application for Compliance Permit for Sanitary Plumbing and Drainage Works to Bundaberg City Council, along with the relevant fees, together with a hydraulic layout of the proposed development;*
- (c) *Development Application for Operational Works for the driveway and retaining wall to Bundaberg City Council specification. As part of this Application, the Applicant will need to include a 'Development Construction Management Plan' to address construction issues of erosion control, traffic, dust, access and public complaints;".*

Yours faithfully

[REDACTED]
[REDACTED]
Chief Executive Officer

Enclosures:

- * Decision Notice
- * Copy Approved Plan
- * Copy Sections - "The Integrated Planning Act 1997"



BUNDABERG CITY COUNCIL

DECISION NOTICE – CODE ASSESSMENT – APPROVAL

To:

Messrs. Ergon Energy Corporation Pty. Ltd.
C/- M [REDACTED]
Schomburgk Planning Pty. Ltd.
P.O. Box 612
MOOLOOLABA QLD 4557

The Development Application for Material Change of Use – Code Assessment:–

For: **Electrical Sub-Station** – in accordance with the attached Ergon Energy Corporation's Plan No. 933700-06 Rev 0A and 933700-07 Rev 0A; and the Conditions contained in this Decision Notice;

At: **26 Walla Street, Bundaberg South** – Land described as Lot 144 on C.K. 1925, County Cook, Parish Bundaberg;

has been assessed and is approved with Conditions. The Decision was made by Bundaberg City Council on 23rd August, 2007.

The following Schedule provides all the relevant details:–

1. **Referral / Concurrence Agencies** – Not applicable.

2. **Conditions** –

(A) **Assessment Manager's Conditions**

General

- (1) Compliance with the requirements of the Planning Scheme for Bundaberg City;
- (2) The Defined Flood Event for the site is Q_{50ARI} (2% AEP) – being RL8.5 metres AHD. Essential services infrastructure:–
 - (a) is to be located above the Defined Flood Event; or

..2.

- (b) located below the Defined Flood Event is to be designed and constructed to exclude floodwater intrusion/infiltration; and
- (c) is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the Defined Flood Event.

Note: The Q_{100ARI} (1% AEP) level for the site is RL9.25 metres AHD.

Water

- (3) The Applicant will be required to provide a metered property (water) service sized to cater for on-site development fire fighting and water supply requirements of the proposed use. It is the Applicant's responsibility to engage a hydraulic consultant to design a water supply system to cater for the proposed development;

Sewerage

- (4) The Applicant shall make arrangements with Bundaberg City Council for the provision of new points of connection, with all work being at the full cost of the Applicant;

Roadworks and Footpaths

- (5) Installation of an industrial driveway slab access in accordance with IMEAQ Standard Drawing R0051 for vehicular access to the site. This driveway shall extend from the existing kerb and channel across the footpath to the property boundary. Works shall include re-grading of the grassed area to suit the new levels, with topsoiling and grass seeding to disturbed areas, as well as fill material to the footpath to remove potential trip hazards;
- How for* ✕ (6) The Applicant will be required to re-linemark/remove the existing car parking bays in Walla Street which will be made obsolete by the proposed driveway access to the facility;
- (7) Any damage occasioned to the kerb and channel, footpath and/or roadways shall be reinstated/repared at the completion of all works;

Landscaping

(8) Landscaping

- (i) Landscaping of the site is to consist of the construction of permanent garden beds planted with trees and shrubs, with particular attention to the street frontage of the site.

Landscaping is to be completed prior to the premises being occupied and is to be maintained while the use of the premises for the "approved use" continues;

- (ii) Landscaping is to be designed, established and maintained to be environmentally responsive and enhance the appearance of the development;

- (iii) Landscaping is to include species recognised for their low water requirements and is to be provided with an approved controlled underground or drip watering system.

Any such system shall be fitted with an approved testable backflow prevention device at the Applicant's expense. Please liaise with Council's Building Services and Water Operations Sections in this regard;

Lighting

- (9) External lighting is to be directed and shielded so as not to cause nuisance to nearby residents or passing motorists;

Air Conditioners

- (10) (i) Any air conditioning units shall be designed, installed, maintained, and operated so that noise emissions are within the limits imposed by the Environmental Protection Act, Regulations and Policies;
- (ii) Condensate from air conditioning units is to discharge to the sewer system;

Fencing

- (11) Construction of a 1.8 metre high (minimum) security fence to all boundaries of the subject site. This fence is to be located on the Applicant's side of the boundary and constructed at the Applicant's expense;

Other

- (12) Any placement of fill material within the subject land, not associated with a building platform, shall comply with the Planning Scheme for Bundaberg City's "Filling and Excavation Code";
- (13) All filling shall be contained within the site. Filling shall not extend onto the Council footpath and a retaining wall or batter within the site will be required at the property frontage to achieve this;
- (14) All Conditions contained in this Decision Notice are to be completed/complied with before Use of the Land for the "Approved Use" commences.



(B) **Referral / Concurrence Agency Conditions** – Not applicable.

3. **Approval Type** – Development Permit for Material Change of Use.

4. **Further Development Permits Required** –

- (a) Development Permit for Building Works (for all new works);
- (b) Development Application for Compliance Permit for Sanitary Plumbing and Drainage Works to Bundaberg City Council, along with the relevant fees, together with a hydraulic layout of the proposed development; ..4.

-
- (c) Development Application for Operational Works for the driveway and retaining wall to Bundaberg City Council specification. As part of this Application, the Applicant will need to include a 'Development Construction Management Plan' to address construction issues of erosion control, traffic, dust, access and public complaints;
5. **Compliance with Codes for Self Assessable Development – The Applicant may need to comply with the following codes for Self Assessable Development related to the Development Approved – Nil.**
6. **Rights of Appeal –**
- (A) **Appeals by Applicants** – An Applicant may appeal to the Court against any part of the decision, the code identified, or the length of the currency period. An Applicant Appeal must be started within Twenty (20) Business Days after the date the Decision Notice or Negotiated Decision Notice is given to the Applicant.
- (B) See attached extract Pages from the "Integrated Planning Act 1997".
7. **Assessment Manager** – Bundaberg City Council.



Chief Executive Officer
24th August, 2007

"NL-3"



**ERGON ENERGY CORPORATION
LIMITED**

*Report on the Preliminary Investigation of the suitability of
the Walla Street Site Bundaberg City for the purposes of
constructing a 66kV/11kV Substation*

October 2005

BUNDABERG CITY- WALLA STREET- SUBSTATION PROPOSAL

Report on Preliminary Investigation of suitability of Electrical Works Reserve R.902 for purposes of Construction of a 66kV/11kV Substation.

Description of Site being Investigated

Property description:- Electrical Works Reserve R.902 (GG 1967.3.87), Lot 144 on CK1925, Town & Parish of Bundaberg, County of Cook

Address: 26 Walla Street Bundaberg. Q 4670

Area: 6075 square metres.

Dimensions of Lot: Width- 54 metres
Depth- 100 to 125 metres

Zoning: Special Purposes (Alteration in use attracting a Code Assessable Application only -advertising for objections & direct consultation not required by local authority)

Situation: About 2 km east of Bundaberg Post Office

Access: Bitumen with concrete kerbing & channelling.

Site Description: The site is elevated by filling at the road frontage falling to the rear. Land adjacent to the south east is of a similar elevation with the land adjacent to the balance boundaries being lower in elevation and hence more flood prone.

Locality: Predominantly public use with limited industrial and residential use within sight of the land.

Structural Improvements: Nil. However a locked shipping container (reportedly the property of Bundaberg City Council) is sited near the Walla Street road frontage

Noise Levels: Walla Street comprises a quite busy near city road with a high volume of traffic providing a sufficiently high level of background noise to alleviate any reasonable concerns re the added noise of EE's proposed use.

Flood Levels: The adopted Burnett River flood level for this property is 8.5 metres AHD. From viewing Bundaberg City Council Flood Maps plus nearby and adjoining usage, it is likely that only minimal filling would be required to raise the site above the required flood level. This however should be checked with the Local Authority after arranging an appropriate survey report on the relative levels.

Adjoining Usage & Possible Conflict/Objections: The adjoining usage comprises a local government controlled open skating construction and BMX (push) bike track to the north-west, open state school playing fields to the north-east, a vegetation conservation strip as part of the south-east usage with the balance south-east usage being a Boy Scouts Association Hall. The owners or controllers of these activities are identified later in this report but initial inspections and internal discussions reveal that none of these uses are 24hours a day/7days a week. Furthermore this site is likely to be of sufficient size (6075m²) to avoid conflict if project construction and communications are planned appropriately.

A small number of residences are sited on the opposite side of Walla Street. However, with Walla Street having a road dedication width of 30 metres and the external dimensions of EE's site comprising 112 metres (average) x 54 metres sufficient distance exists to alleviate any reasonable concerns or objection (subject to EE adopting a suitable design layout).

Existing 66kV/11kV Network Access: As per the accompanying network layout sketch (Attachment No. 4) the north-west corner of the lot is adjacent to a 66 kV line which traverses both the adjoining parkland and a school playing field. Advice from local EE operations is that the required 11kV output supply can be delivered via the Walla Street frontage in both directions with possibly two feeders heading north-west and a single feeder heading south-east.

Risk of Vandalism: As Lot 144 is surrounded by open space usage in the main it is possible that some vandalism could occur after construction. Appropriate fence and barrier design/construction should assist in limiting this exposure.

Matters External to Site

Contaminated Land Register, Native Title, Cultural Heritage and Vegetation Management Act Implications:

As a matter of process, searches are currently underway for the above items. However as the land is completely cleared of vegetation and appears to have been filled the Contaminated Land Register search is probably the only obvious check of any consequence.

Other Sites investigated: Nil at this time. However it is not likely that a site of similar size and access attributes to the subject lot, sited adjacent to both the 66kV & 11kV networks and similar flood heights would be available within this close proximity of Bundaberg City. Of note is that the adjoining Scouts Association lot of some 1012m² in area has a recorded unimproved value of \$195,000. EE's Lot 144 is six times the size (6075m²) and is quite comparable in all other features, hence a similarly sized and situated lot (if available) would attract considerable monetary value.

Adjoining Landowners/Controllers:-

- Lot 3 CP851648 – Bundaberg City Council Parkland – State Reserve
- Lot 2 CP851648 - State School Sporting Field – Department of Education representing The State of Queensland- PO Box 33, Brisbane Albert Street BC Q 4002
- Lot 158 CK1925- The Scout Association of Australia, PO Box 374, Bundaberg. Q 4670

CONCLUSION/RECOMMENDATION

Subject to confirmation by elevation surveys of capability of construction above recommended flood heights the site appears quite suitable for Ergon Energy's intended use as a 66kV/11kV substation.

Following receipt of satisfactory flood level survey advice preliminary concept designs could be prepared with emphasis on aesthetic appeal comprising modern building design, sufficient width (visually) vegetation verges and appropriate timber

batten fencing. (*Possible recent examples:- Agnes Waters, Point Vernon and Highfields Sub Station Concepts and Designs*)

The Bundaberg City Council could then be approached with a view to preliminary discussions relative to arranging preparation then lodging a Code Assessable application. (*A Town Planning Consultant or relevantly qualified internal personnel should be engaged to prepare the application*).

Given satisfactory support from the Bundaberg City Council the appropriate EE personnel could then visit the balance adjoining and nearby landowners to provide advice and pictorial demonstrations of our intended use prior to lodging the Code Assessable town planning application.

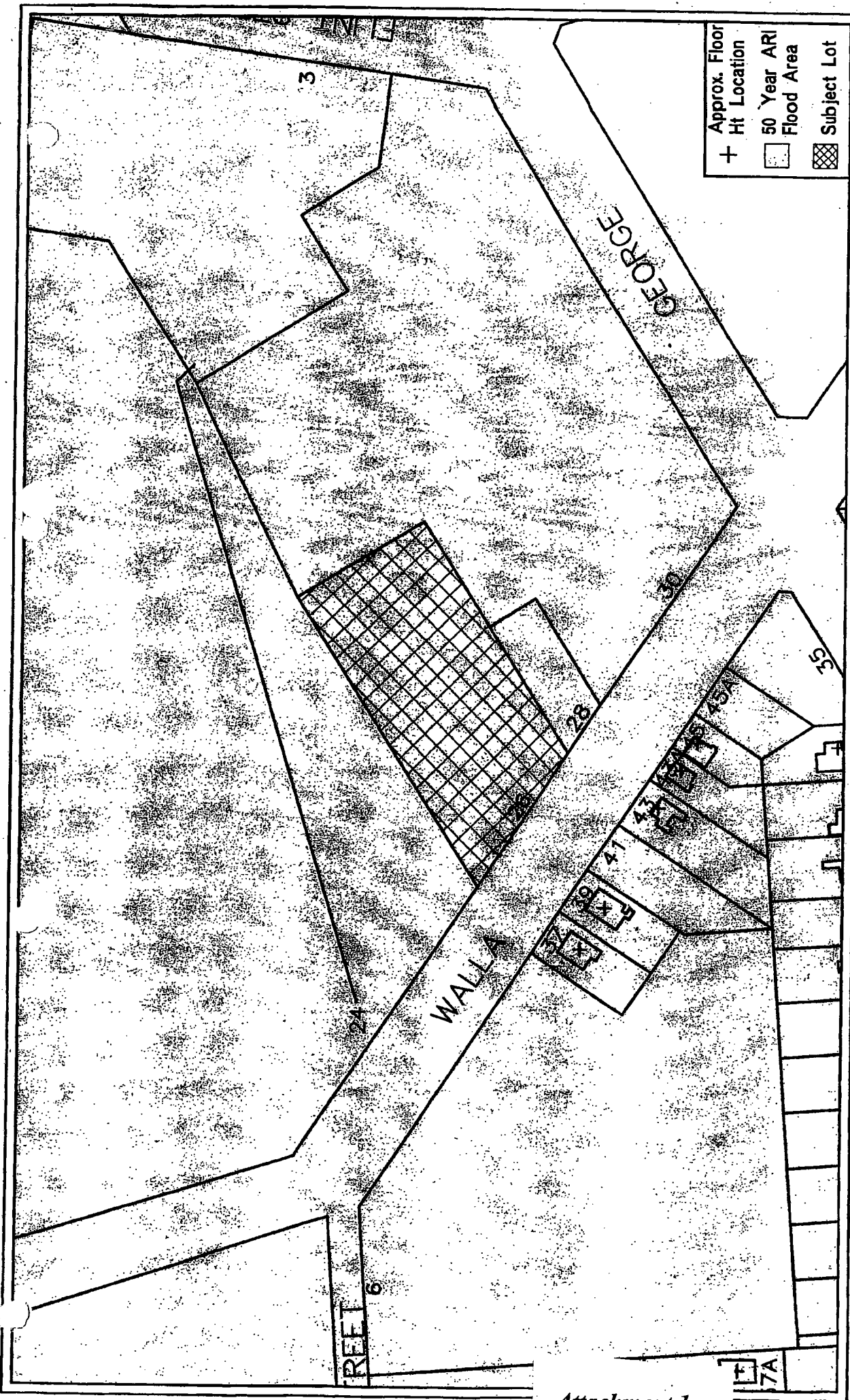
Hopefully, the project will then proceed from design to finality without adverse articles in the press and the associated time consuming preparation of correspondence relnying to objections etc.

Position: Property Officer

Address: Level 8, 133 Mary Street, Brisbane Q. 4000

ATTACHMENTS:-

1. Site location sketch
2. Cadastral map of site & adjoining RP descriptions
3. Cadastral locality map
4. Ergon Energy 66kV network map
5. Burnett River 2% Annual Excedance Flooding Probability map
6. Extract of Bundaberg CC City Plan for Community Activity Code
7. Letter dated 23 May 2005-Bundaberg CC advising of flood heights



+	Approx. Floor Ht Location
□	50 Year ARI Flood Area
▣	Subject Lot

Map No: 2081

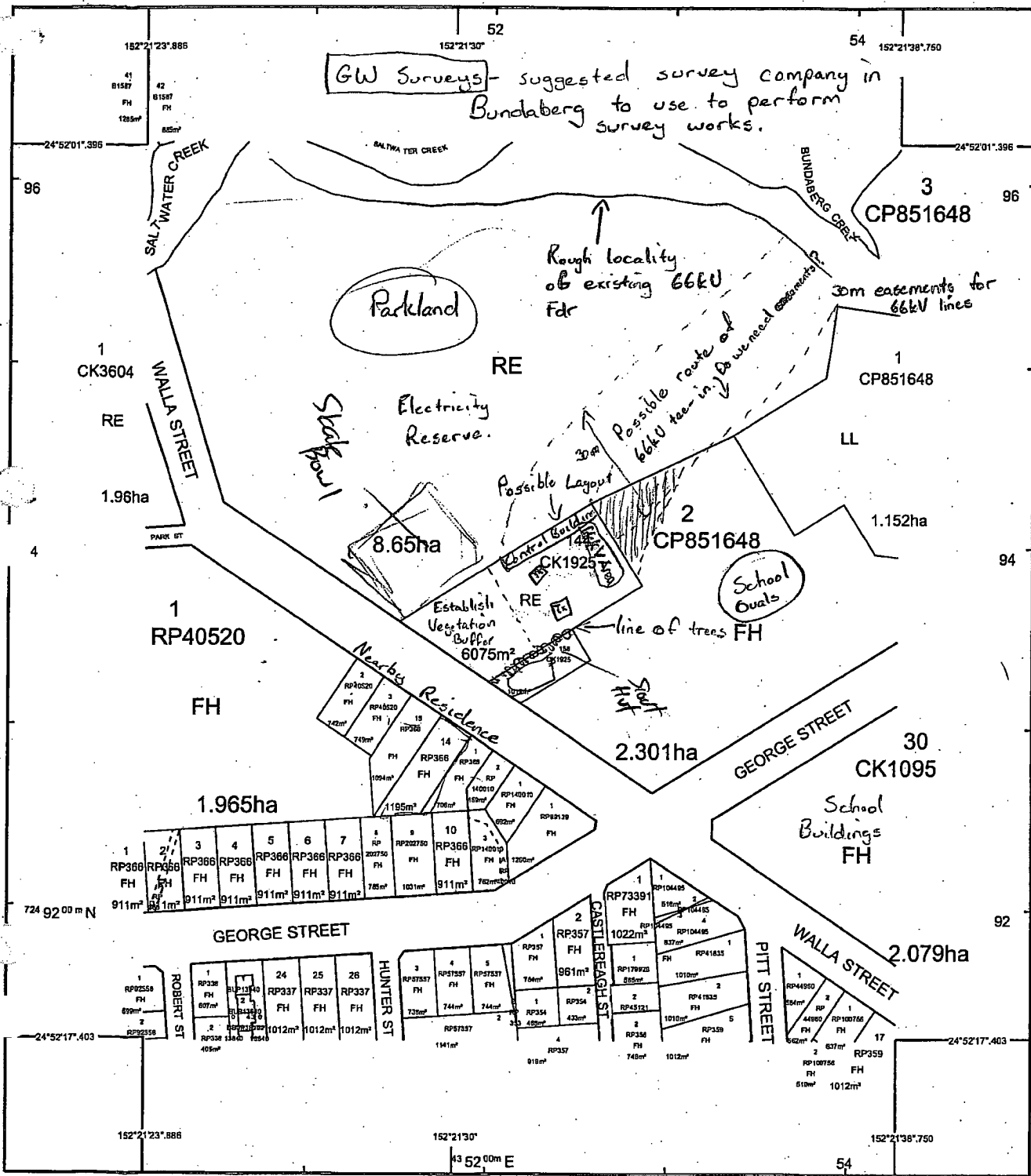
CK1925/144

26 WALLA ST

© The State of Queensland (Department of Natural Resources & Mines) 2005
 Based on Cadastral Data provided with the permission of the Department of Natural Resources & Mines (January/2005). The information contained within this document is given without acceptance of responsibility for its accuracy. The Council of the City of Bundaberg (and its officers, servants and agents), contract and agree to supply information only on a basis (January/2005).



Bundaberg
City Council



STANDARD MAP NUMBER
9348-24223



MAP WINDOW POSITION & NEAREST LOCALITY
152°21'31".216
24°52'07".400
BUNDABERG
1.79 KM

SUBJECT PARCEL DESCRIPTION

DCDB	
Lot/Plan	144/CK1925
Area/Volume	6075m ²
Tenure	RESERVE
Local Government	BUNDABERG CITY
Locality	BUNDABERG SOUTH
Parish	BUNDABERG
County	COOK
Parcel/Segment	72/36058

CLIENT SERVICE STANDARDS

PRINTED (dd/mm/yyyy) 05/10/2005

DCDB 04/10/2005

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For further information on SmartMap products visit <http://www.nrm.qld.gov.au/property/mapping/tdnmap>

SmartMap

An External Product of SmartMap Information Services
Based upon an extraction from the Digital Cadastral Data Base



Queensland Government

Natural Resources and Mines

(c) The State of Queensland, Natural Resources and Mines. 2005



4.2.7 Community Activity Code

PURPOSE OF THE CODE

To ensure that the development of community activities, special uses and utilities limit the adverse impacts on nearby properties and the environment.

PERFORMANCE CRITERIA AND ACCEPTABLE/PROBABLE SOLUTIONS

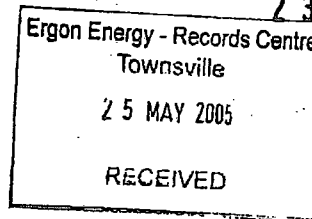
PERFORMANCE CRITERIA		SOLUTIONS	
<i>The purpose of the code may be achieved if the following criteria are satisfied.</i>		SELF-ASSESSMENT - Acceptable Solutions (<i>illustrate how compliance with the Performance Criteria is to be achieved</i>) CODE ASSESSMENT – Probable Solutions (<i>illustrate how compliance with the Performance Criteria may be achieved</i>)	
P1	All community activities, special uses and utilities must be provided with an acceptable standard of infrastructure.	A1.1	Infrastructure is provided in accordance with the <u>Infrastructure Services Code</u> ; and
P2	The design and siting of community buildings and associated operational works must complement the character of nearby development.	A2.1	Where a development site is adjoining or opposite residential areas, a 5m wide buffer along the interface boundary of the site is landscaped in accordance with the <u>Landscaping Code</u> ; and
		A2.2	A minimum 3m wide landscaped area is provided along side and rear boundaries adjoining land in the Residential A or Residential B Precinct in accordance with the <u>Landscaping Code</u> ; and
		A2.3	The main entrance to the building is visible from, and directly accessible from the street; and
		A2.4	Building setbacks are 6m from the main street boundaries and 3m from other boundaries; and
		A2.5	Signage is developed in accordance with the <u>Signs Code</u> .
P3	Hours of operation must be appropriate for the area in which the use is operated.	A3.1	With the exception of emergency services and hospitals, Community Activities being undertaken in, adjoining or opposite a Residential A or Residential B Precinct are confined within the hours of 6:00 am to 10:00pm.
P4	Emissions from the use must be within acceptable limits.	A4.1	External lighting is provided in accordance with Australian Standard AS 2560; and
		A4.2	Illuminated signs are in accordance with the requirements of the <u>Signs Code</u> ; and
		A4.3	Any noise produced by the use does not exceed the background noise level plus 10dB(A) (6am-10pm) or background noise level plus 3dB(A) (10pm-6am) measured as the adjusted maximum sound pressure level at any noise sensitive place.
P5	Sufficient carparking and vehicle access must be provided.	A5.1	On-site carparking and vehicle access is provided in accordance with the <u>Vehicle Parking and Access Code</u> .

Bundaberg City Council

346:AWF:AMW

FILE No.	5500003	9901
PAPER No.	5951	003373
PREVIOUS No.		
SEQUENCE No.		

THE WIDE BAY-BURNETT ELECTRICITY BOARD
ATTN: CAROL SLATTERY
SENIOR PROPERTY ADMIN OFFICER
ERGON ENERGY CORPORATION LTD
P O BOX 1090 TOWNSVILLE
4810



Dear Sir/Madam

**Re: Your Property at 26 WALLA ST
Described as L144/CK1925:RESERVE/902:PAR BUNDABERG**

As you may be aware Bundaberg City Council has been reviewing flood levels within the City associated with Burnett River flooding. In the past, historical records of the 1942 flood have been used to determine floods levels. Floods of a similar magnitude or higher were also recorded in 1875, 1890 and 1893.

This review has been necessitated because of many factors including changes to the river catchment, changes to its channel and floodplain and inconsistencies with the historical records.

Preliminary maps were released for public comment in August 2002. Following a significant response from the public, Council directed its consultant engineers to undertake further studies as well as detailed mapping and surveying. As part of this process every house floor level likely to be affected has been surveyed.

Council has now adopted flood levels based on a Burnett River flood of 50 year average recurrence interval (ARI). The levels now adopted are generally slightly below those released for comment in August 2002.

Attached is a map of your property at 26 WALLA ST showing the area of inundation as shaded.

Council's records do not show a floor height for any house on this property. The adopted Burnett River 50 year ARI flood level for your property is 8.5 metres AHD.

Council's previously adopted Burnett River flood level for your property was 8.2 metres AHD.

If you wish further information regarding this issue you may contact Council on the following special number [REDACTED] to make an appointment to see an Officer.

Yours faithfully

[REDACTED]

Chief Executive Officer

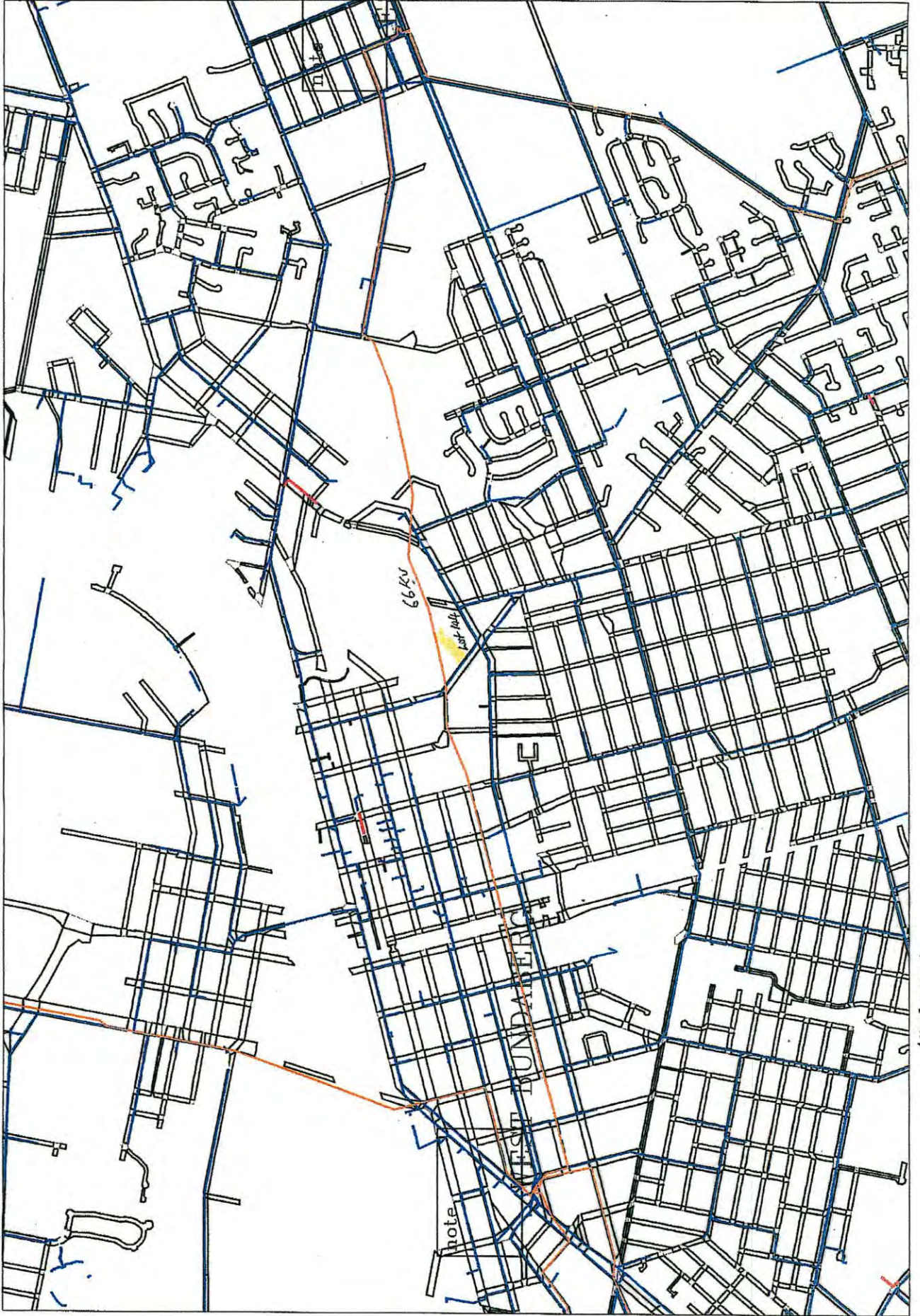
(Map No. 2081)

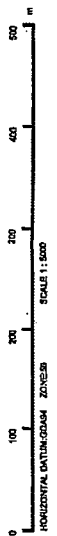
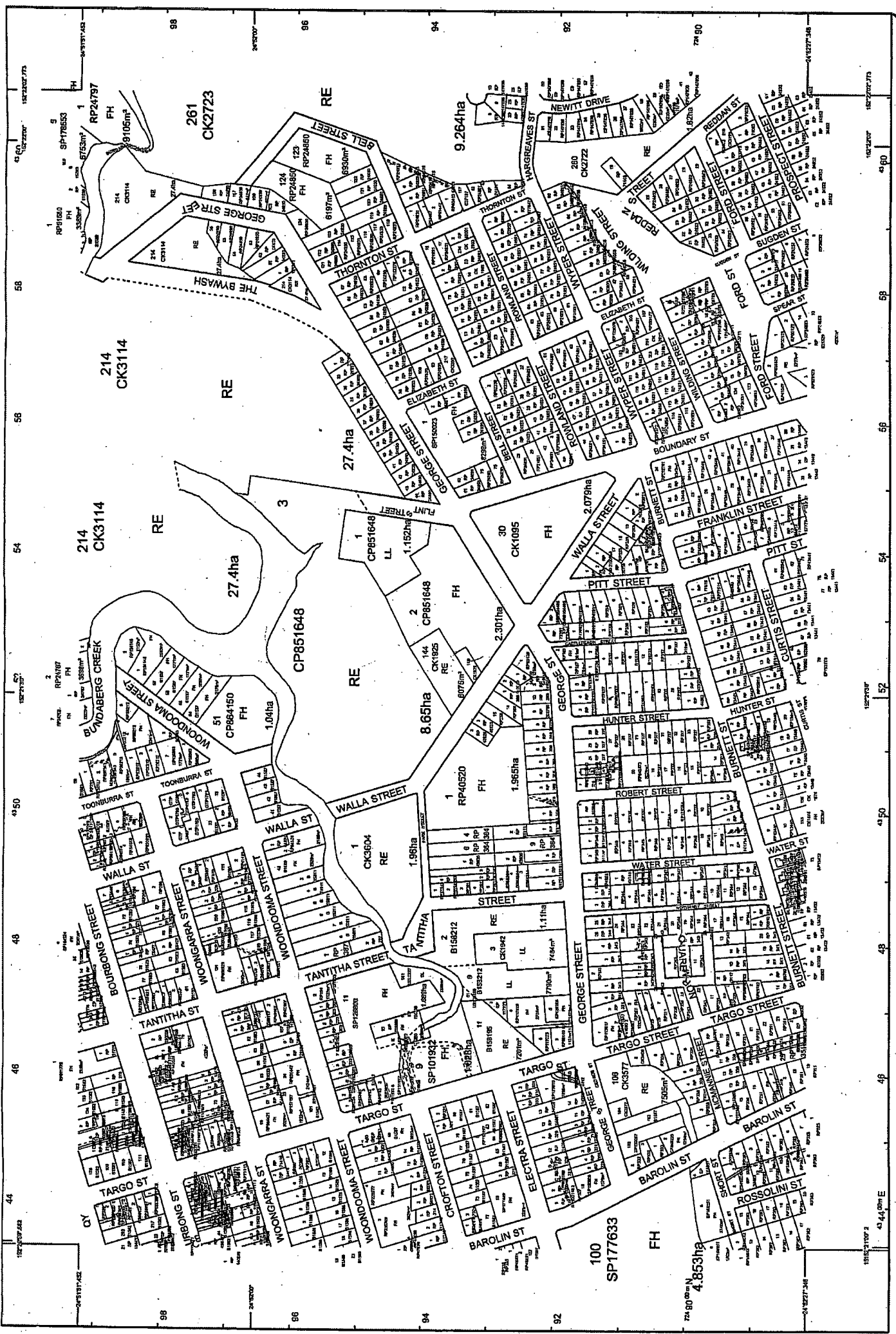
All communications to be addressed to the Chief Executive Officer

Postal Address: P.O. Box 538, Bundaberg, Qld., 4670
Street Address: 188-190 Bourbong Street, Bundaberg, 4670
Website: www.bundaberg.qld.gov.au
E-mail: ceo@bundaberg.qld.gov.au

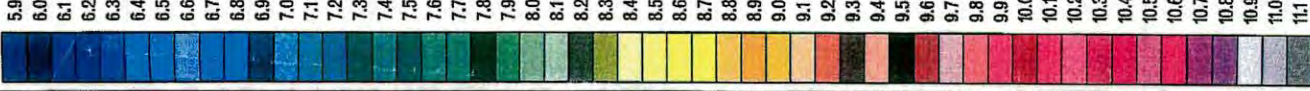
Attachment 7 (2)

ABN 45 538 587 150
Telephone: (07) 4153 9999
(07) 4153 9222
Facsimile: (07) 4152 9155

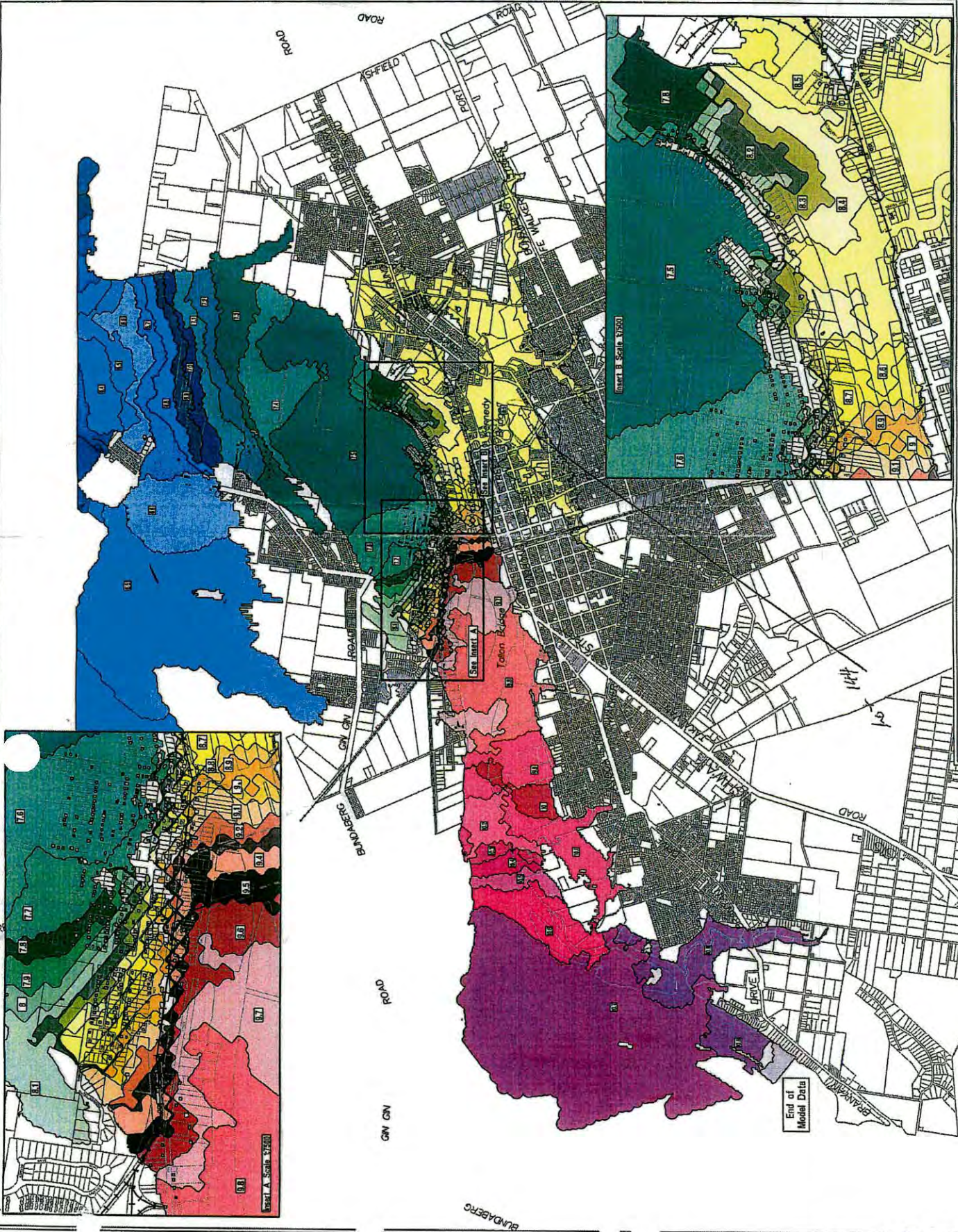




Legend



Heights are in meters (Australian Height Datum)



**Bundaberg City Council
Burnett River 2% Annual
Exceedance Probability Flood**

This map was prepared by the Bundaberg City Council in accordance with the provisions of the Department of Water Resources (DWR) 2000. It is intended to provide a visual representation of the flood risk to the community. The map is not intended to be used as a basis for any legal proceedings. The Bundaberg City Council is not responsible for any loss or damage arising from the use of this map. The Bundaberg City Council is not responsible for any loss or damage arising from the use of this map. The Bundaberg City Council is not responsible for any loss or damage arising from the use of this map.



MEMORANDUM

TO	[REDACTED]	[REDACTED]
FROM	[REDACTED]	DATE 14 August 2006
SUBJECT	Alternate Bundaberg City Sub Site Selection	
		FILE AV004319

Flood free areas within Bundaberg City Precincts

I refer to your request for further investigation to locate a suitable flood free site (Q100 event) within the Bundaberg City precincts.

Whilst no accurate mapping of the location of flood free areas within Bundaberg City appears to be available, advice from Bundaberg City Council Town Planning Department indicated that inner city areas sited north of Crofton Street and East of Walla Street were most likely to be the least flood affected. This is the commercial and retail centre and sites are either securely held or keenly sought after.

I inspected all sites and made enquiry of inner city real estate agents. Indications given were that no flood free sites of a suitable area and location were available.

Town planning advice was also given that areas immediately adjacent to the western side of the city railway station were also likely to be less flood affected. This locality is medium to high density residential in the main (unsuited to substation positioning) and substantial difficulty or opposition would be encountered in connecting into the existing 66kV network. Also feeding out the 11kV supply lines would pose difficulties due to the rail corridor causing obstruction between supply and the main area to be served with enhanced power supply.

Flood free areas to the east of Bundaberg City Precincts

The East Bundaberg Industrial area was investigated (centred around Steptoe Street) but no suitable sites were found. A potential vendor offered Lot 162 on CK1310, area 4.199 ha, to Ergon for \$875,000. Approx 40% of this lot appears as flood free in a Q50 event, however as the site is quite close (as the crow flies) to Walker Street East 66kV/11kV substation, it probably does not offer a viable alternative.

Other near city sites offered and or investigated (all flood affected to various degrees in a Q100 event).

- 1) Lots 3 – 6 on RP 117028 – Fronts Targo Street near George Street Corner – Approx 7000m2 including watercourse. Possibly floods to a depth of 6 metres (visual inspection only) in a Q100 event. Indicated price- \$200,000
- 2) Lots 54 to 56 B1587- Approx 6000m2 – Floods to a similar height to our existing lot but town planning advice is that these lots lie in the flood breakout path so any filling would be resisted. Indicated Price- \$290,000
- 3) Part Lot 1 RP40520 – Fronts Walla Street – Diagonally opposite Ergon's current site- Lot 144 on CK1925. This lot has been the subject of internal (Ergon) discussion as a potential source of a substitute lot. It should be noted that in the main Lot 1 on RP40520 suffers similar flooding to our current lot (144). An application for retail development was lodged with Bundaberg City Council approx 2 weeks ago. Although the application is still to be considered, indications are that the depth of fill likely to be required is only to a Q50 event. I spoke to a representative of the company (Mr [REDACTED]) which lodged the application on behalf of the

landowner and was advised that it was unlikely that a suitably site could be made available to Ergon if the development was approved. An adjoining pan-handled surplus lot with an area of 1012m² was also discussed but was discarded due to it's small size and lack of potential line access both inward & distribution.

Discussion with Bundaberg City Town Planner [REDACTED]

I discussed all of the above issues with Mr. [REDACTED] based on various levels of investigation for about 20 minutes. Whilst [REDACTED] was short on time due to other meeting commitments, he made an observation that from a town planning viewpoint our existing site was probably the most suited in the locality due to lack of conflicting use, the ease of conveyance of lines both inwards and outwards and more importantly little likelihood of future applications to develop the immediately surrounding land. This later point was raised as Ergon is a referral agency under the Integrated Planning Act adding complexity to future developments within 200 metres.

Hugh also advised that as our intended use of Lot 144 falls within the bounds of Community Infrastructure, the lands current zoning would attract a Code Assessable rating under IPA which does not require community consultation or advertising.

Access during Q100 floods

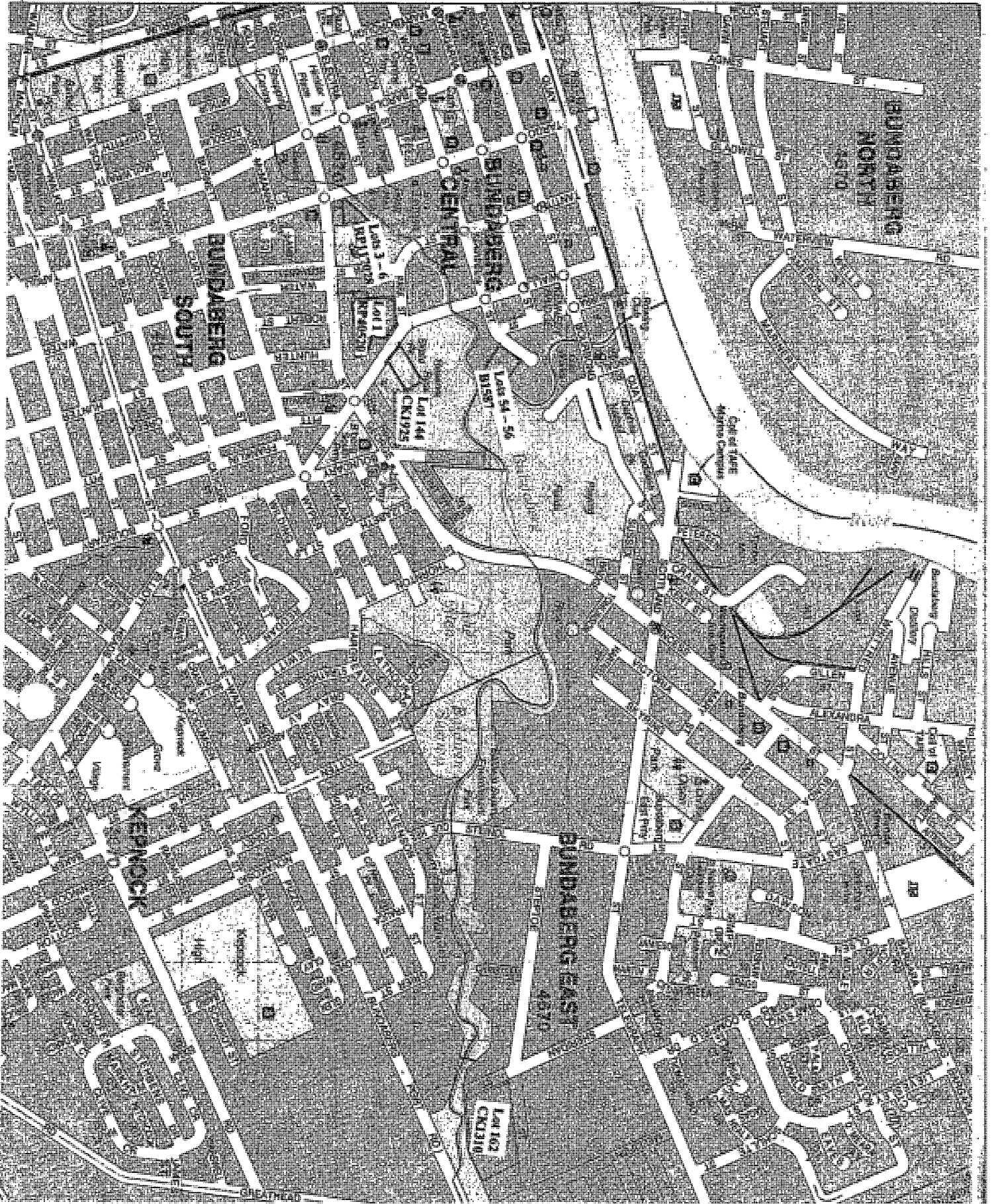
It is not likely that any of the near city available sites investigated could be accessed by vehicle in a Q100 event. However it is also interesting to note the that the existing FE Walker Street substation would most likely have the same disability. It is constructed on land several metres higher than the lands Walker Street frontage which appears to be mapped as flood prone in a Q50 event.

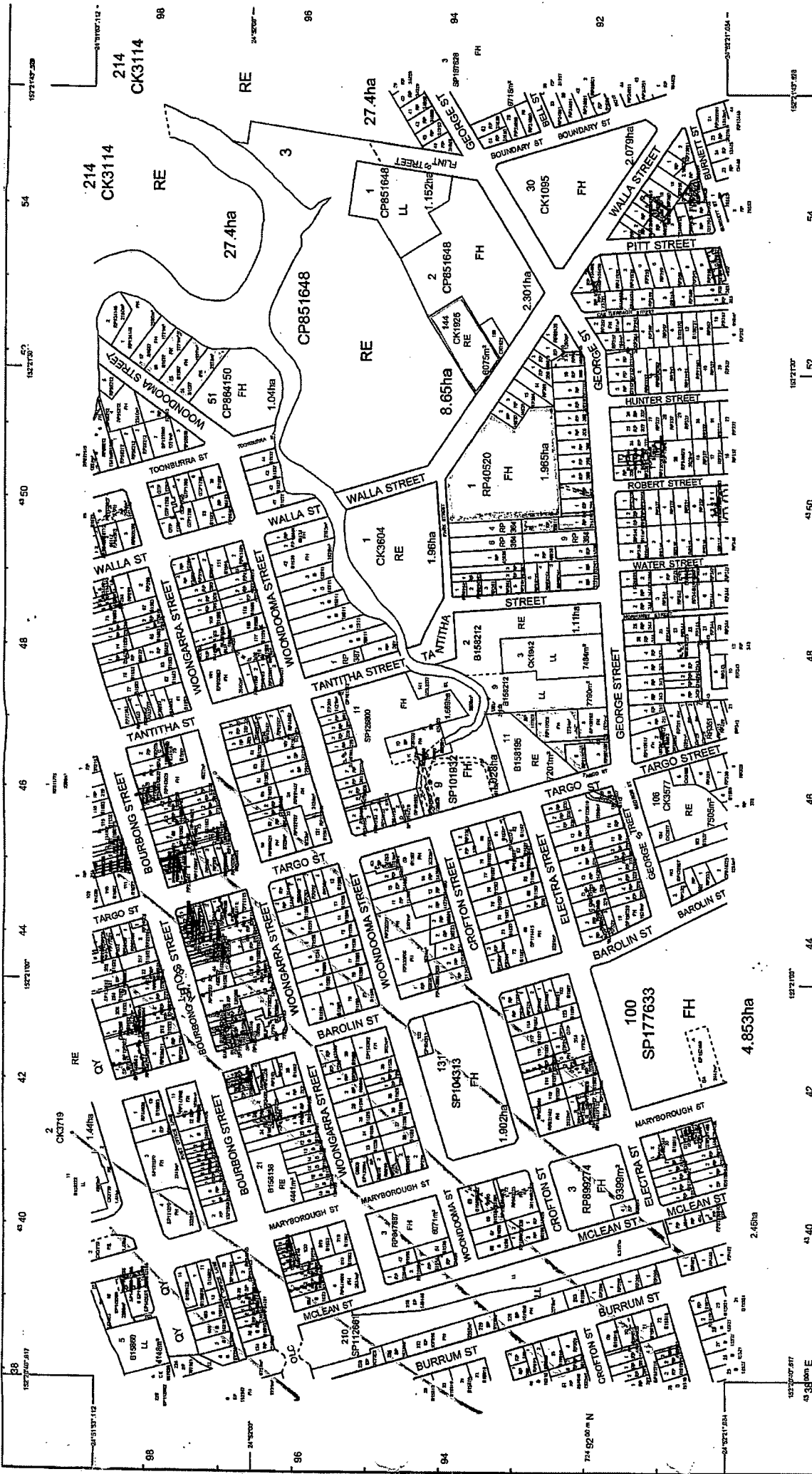
Recommendation

I recommend that the use the currently owned site be reconsidered with a view to utilising the currently adopted modular substation design supported on steel posts of sufficient height to clear a Q100 event with remote controlled emergency switching installed.

[REDACTED]
[REDACTED]
Property Officer

encl





Flood Free Preliminary

Lot 144

Site Investigation

Bundaberg City

CLIENT SERVICE STANDARDS

PRINTED (date/year) or version

DIC08 04/08/2008

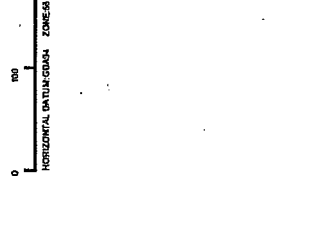
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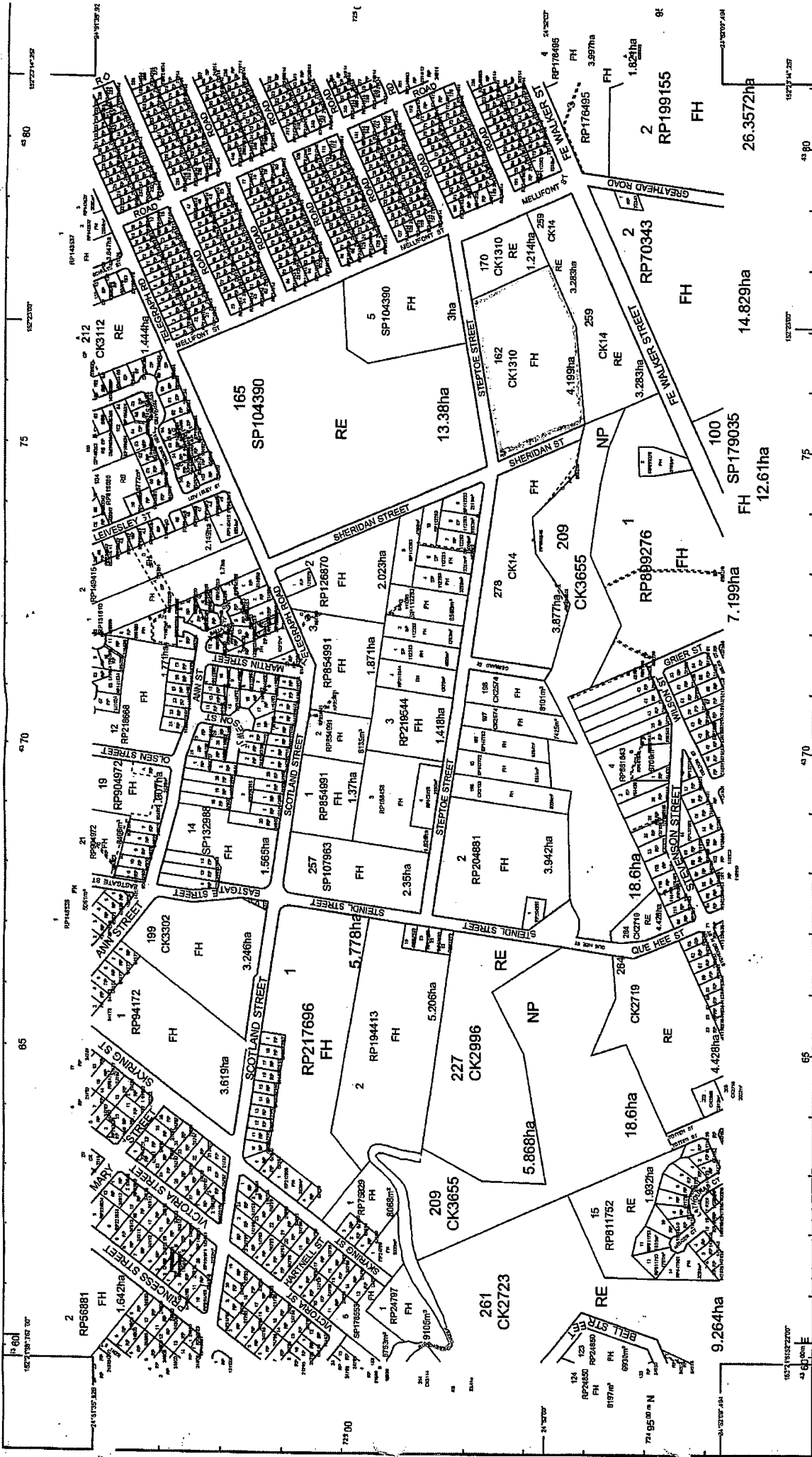
SUBJECT PARCEL DESCRIPTION

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Lot/Plan	101/1
Area/Volume	EASEMENT
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Local Government	BUNDABERG CENTRAL
Locality	BUNDABERG
Perth	6200
County	177237
Postcode	

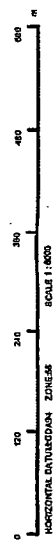
STANDARD MAP NUMBER
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MAP WINDOW POSITION & NEAREST LOCATION

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East Bundamba



SUBJECT PARCEL DESCRIPTION

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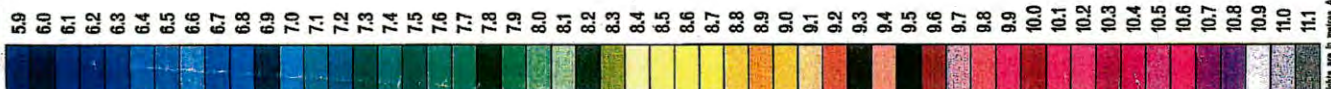
STANDARD MAP NUMBER
 9348-21333
 MAP NUMBER PREFIXES &
 NEAREST LOCATION

CLIENT SERVICE STANDARDS
 PRINTED (date/time) 17/02/2008

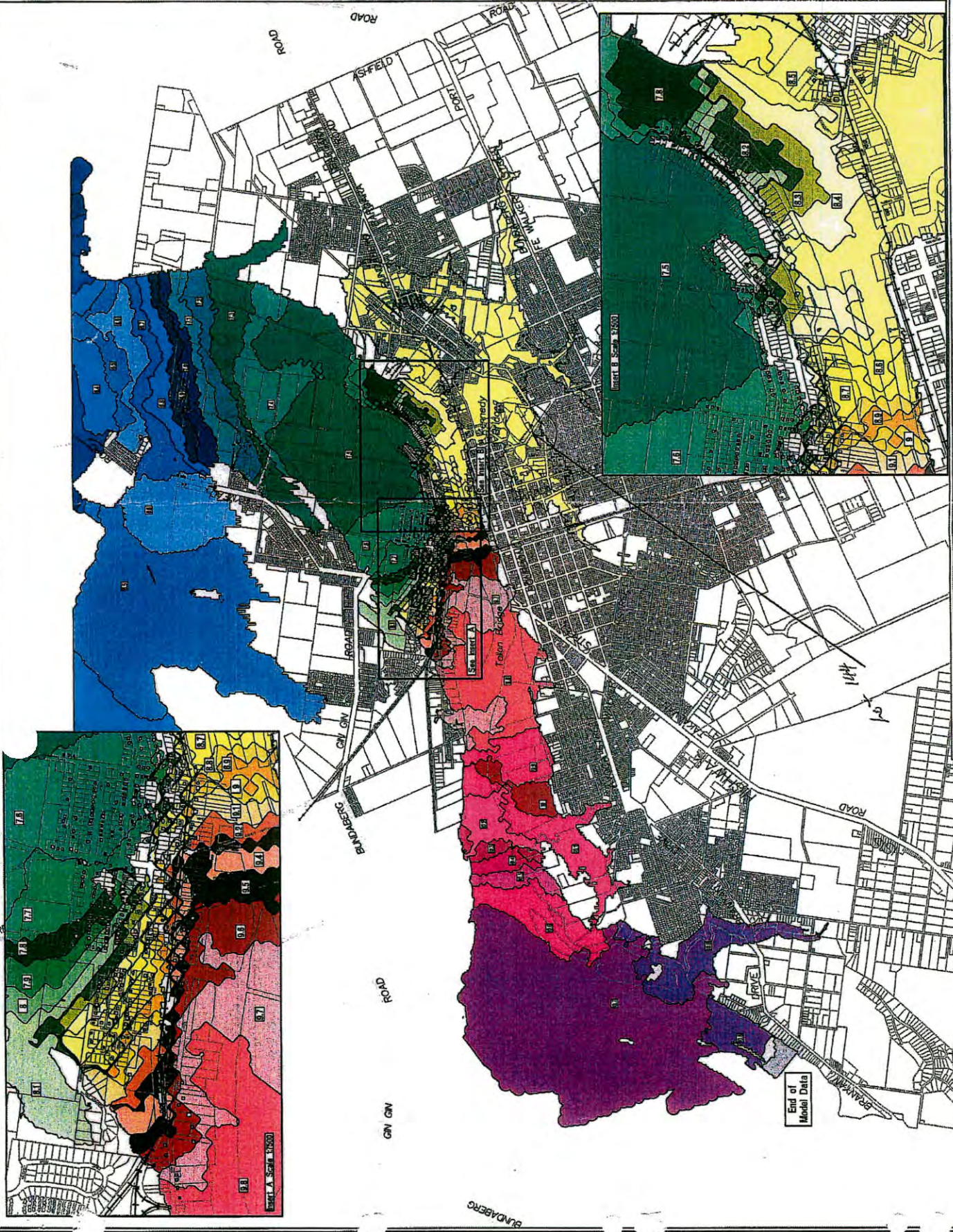
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Legend



Heights are in meters Australian Height Datum.
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 Burnet 3630 VIC
 Burnet 3630 VIC
 Burnet 3630 VIC



Burnett River 2% Annual Exceedance Probability Flood

This map shows the 2% Annual Exceedance Probability Flood (AEP) for the Burnett River. The map is based on the results of a hydraulic modelling study conducted by the City of Burnet in 2011. The map shows the extent of the flood and the depth of the water. The map is for information only and should not be used for any other purpose. The City of Burnet is not responsible for any loss or damage caused by the use of this map.

Burnet City Council
 City Council

"NL-5"



THE DESIGN, SUPPLY (MINOR ITEMS), CONSTRUCTION, TESTING, AND PRE-COMMISSIONING
OF
BUNDABERG CENTRAL 66/11KV SUBSTATION

WORKS SPECIFICATION

SECTION 1: SCOPE OF WORKS AND GENERAL INFORMATION

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TABLE 1-6 HUMIDITY AND DEW POINT	ERROR! BOOKMARK NOT DEFINED.

1.3.1.3 METERING – PRINCIPAL SUPPLY

The Principal will supply as free issue to the Contractor, Panel Meters for Statistical, Revenue, and Check metering, and ESAA test blocks as specified in Section 8, Clause 8.2 of the Specification and as indicated on Drawing 933700-05.

1.4 FLOOD MITIGATION

Flood Levels

Q50- 8.5 metres AHD (One in Fifty year flood height)

Q100- 9.55 metres AHD (One in One Hundred year flood Height)

All critical outdoor plant will shall be mounted above (minimum +300mm) the Q50 flood level and all indoor equipment, in particular the protection, metering and control panels, shall be mounted be above (minimum +300mm) the Q100 flood level.

Building Construction

Will be of a block or brick construction. Council may prefer some facades, etc be put on the building so the building fits in with the heritage look of the area.

The design of the building will need special consideration regarding how best to layout the building internally to achieve minimum heights for indoor plant as stated below.

The internal layout of the building should adopt a similar layout to that of the Z6 standard zone substation.

Indoor 11kV switchboard

The building shall be designed so the height of the switchboard is at least at Q100 +300mm flood level.

Indoor Protection, Control and Metering panels

The building shall be designed so the height of these panels are at least above Q100 +300mm flood level.

Consideration should be given to provision of stands below the protection, control and metering panels to raise the bottom of the panels to above the Q100 flood level. If stands are used to raise the control panels, then a mobile platform shall need to be provided to ensure staff can safely access all panel mounted equipment.

Primary outdoor 66kV equipment as follows shall be mounted at least at Q100 +300mm flood level.

- Current transformers
- Voltage transformers
- Circuit breakers

The height of structures for plant will need to be checked to ensure that these minimum mounting height are achieved. If not, footing heights may need to be increased.

Marshalling Boxes

Marshalling boxes associated with the above equipment need not necessarily be positioned above the Q50 flood level. These boxes should however be mounted as high as practically possible on the given structures without impinging of electrical and safety exclusion zones. If the mounting height of these boxes is too high for easy access from the ground, then platforms should be provided to enable easy access to these boxes for work and access purposes.

Control and indication panels

Control and indication panels associated with the 66kV CB's shall be mounted to the side of the CB's and separate structures. These panels shall be mounted at a height above the Q50 flood level. To enable easy access to these panels, platforms should be provided to enable easy access to these boxes for work and access purposes.

Isolators, earth switches and busbar shall mounted at an adequate height. In general, these items will be mounted at a height >4 metres from substation ground level, i.e. >11 metres AHD so these will be well above the Q100 flood level.

Power Transformers-

The Power transformers shall be mounted on 0.5m high plinths within the bunded area so the bottom of the main tank is at a height of 7.5 metres AHD. Note: When ordering the transformers the Principal will specify that the control and marshalling boxes are mounted at a height of at least 1.0 metres above the bottom of the main tank. This will mean that the bottom of these cubicles are at a height of 8.5m AHD. Some water around the main tank of the tx shall not be an issue.

If the mounting height of these boxes is too high for easy access from the ground, then platforms should be provided to enable easy access to these boxes for work and access purposes.

Note- Because of limited space available on site, the walls of the bunded area may need to be raised to ensure all oil sprays are captured.

Outdoor 11/0.415kV Local supply tx's-

These transformers are considered to be critical plant and are to be mounted on structures above the Q50 flood level.

Adequate platforms, stairways, etc will need to be provided to ensure staff can safely access and egress the plant.

Outdoor 11kV Capacitor Banks-

Capacitor Banks are considered non-critical plant for the purposes of operating the substation. If weight or size prevent these items of plant from being positioned on structures to be above the Q50 flood level, then these items of plant may be mounted on the finished ground.

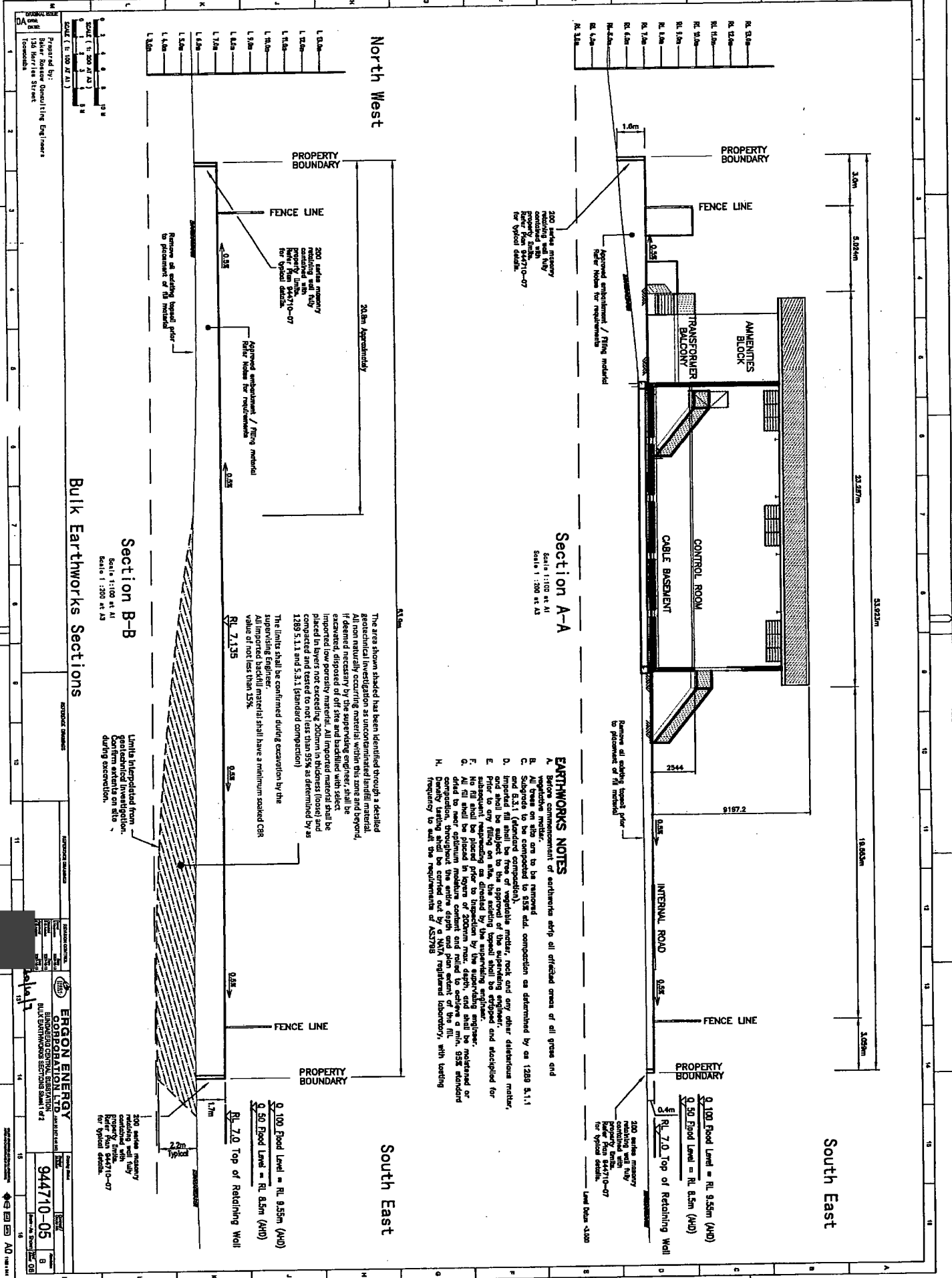
1.5 CONTRACTOR / PRINCIPAL RESPONSIBILITIES AND INTERFACE POINTS**1.5.1 RESPONSIBILITIES**

The extent of the Contractor's and Principal's responsibilities is set out in Table 1-3. Table 1-2 explains the terms and abbreviations used in Table 1-3.

Table 1-1 Terms and Definitions for Table 1-3

Term	Meaning
P	Principal
C	Contractor
Supply	By Principal: All nominated equipment will be provided FOT at the respective Substation. By Contractor: The delivery to site of the items of equipment to be supplied by the Contractor.
Install	Installation work (by Contractor) on site including crange and final positioning of equipment.
Terminate	Making off and termination of cabling according to current usual practice or as otherwise set out in the Specification or the approved drawings of the Contractor.
Check	Checking for correctness of assembly, mechanical operation, or connection.
Test	Testing as set out on the Contractor's approved Inspection and Test Plans; and any other testing to prove the plant or equipment meets all the requirements of this Specification, relevant Standards and the drawings. It will include, among other things, insulation tests, injection tests, and applied HV tests.
Commission	Energising or placing into service following "Test", including any further tests (such as metering accuracy), as set out in the Contractor's approved Inspection and Test Plan, or as required by the Specification. The equipment does not have to be placed into commercial service to be "commissioned".
Live	Energised or capable of being energised by normal HV operation.

"NL-6"



Section A-A
Scale 1:100 at A1
Scale 1:200 at A2

- EARTHWORKS NOTES**
- Before commencement of earthworks strip all overhead areas of all grass and weeds.
 - All trees on site are to be removed.
 - Subgrade to be compacted to 95% std. compaction as determined by as 1289 5.1.1 and 5.1.1 (standard compaction).
 - Imported fill shall be free of vegetable matter, rock and any other deleterious matter.
 - Subgrade to be compacted to 95% std. compaction as determined by as 1289 5.1.1 and 5.1.1 (standard compaction).
 - Prior to any filling on site, the existing topsoil shall be stripped and stockpiled for subsequent reworking as directed by the supervising engineer.
 - No fill shall be placed in a region containing and liable to achieve a min. 95% standard compaction, throughout the entire depth and plan extent of the fill.
 - Density testing shall be carried out by a WVA registered laboratory, with testing frequency to suit the requirements of AS5798.

North West

South East

Section B-B
Scale 1:100 at B1
Scale 1:200 at B2

Bulk Earthworks Sections

Limits interpolated from geotechnical investigation. Confirm extents on site during excavation.

200 socket masonry retaining wall fully property limits. Refer Plan 944710-07 for typical details.

0.100 Road Level = RL 9.55m (A40)
0.50 Road Level = RL 8.5m (A40)
RL 7.0 Top of Retaining Wall

The limits shall be confirmed during excavation by the supervising engineer. All imported backfill materials shall have a minimum soaked CSR value of not less than 15%.

200 socket masonry retaining wall fully property limits. Refer Plan 944710-07 for typical details.

Approved embankment / Filling material. Refer Notes for requirements.

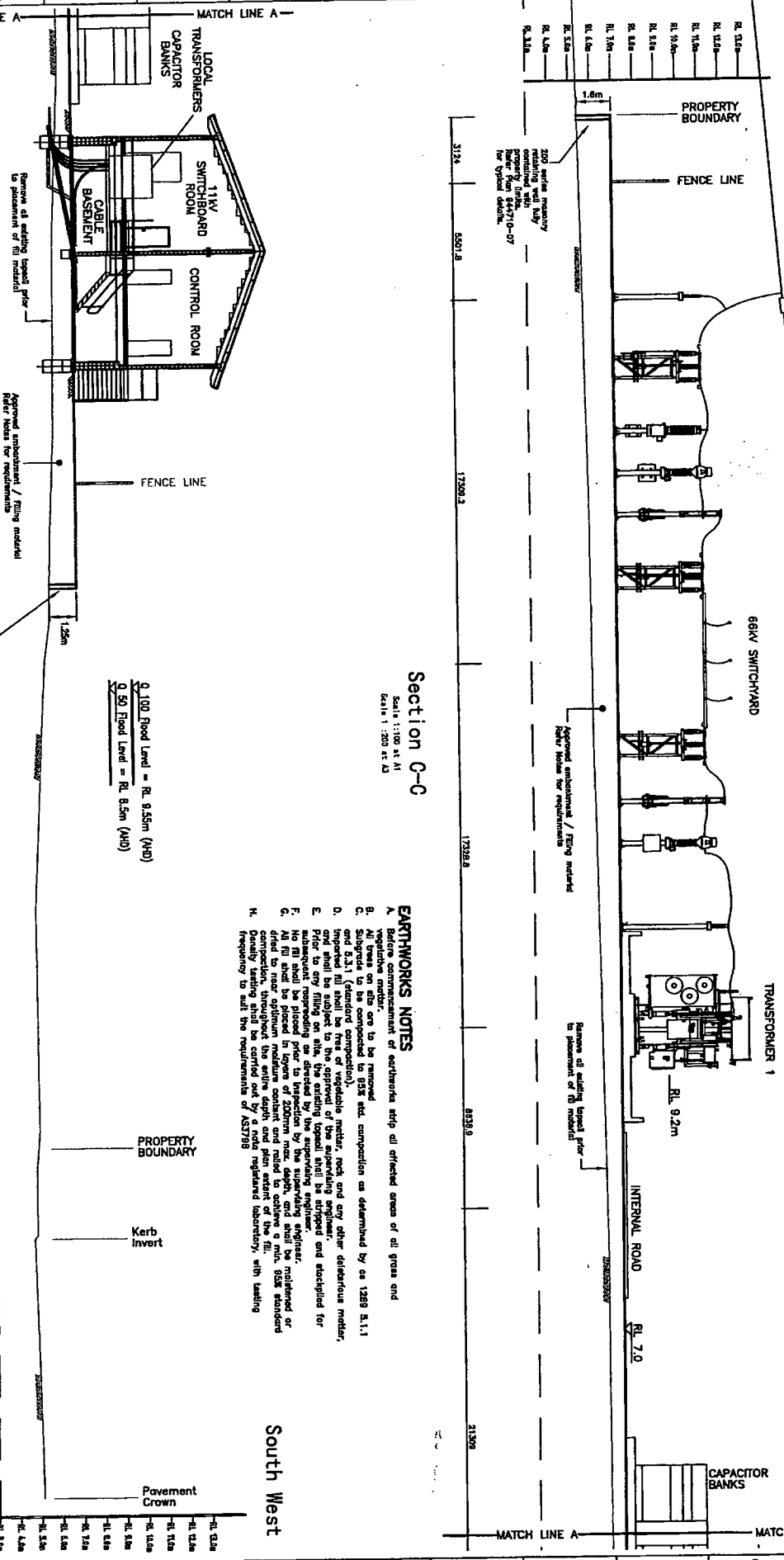
200 socket masonry retaining wall fully property limits. Refer Plan 944710-07 for typical details. Level above +1000

Remove all existing topsoil prior to placement of fill material.

Prepared by:
Saker Soonee Consulting Engineers
128 Marjorie Street
Sydney NSW

ERIGON ENERGY
BULK EARTHWORKS SECTIONS
BULK EARTHWORKS SECTIONS SHEET #2
944710-05
Scale: 1:100 at B1, 1:200 at B2

North East



Section C-C

Scale 1:100 at A1
Scale 1:200 at A3

9.100 Flood Level = RL 9.55m (MAD)
9.90 Flood Level = RL 8.5m (MAD)

Section C-C

Scale 1:100 at A1
Scale 1:200 at A3

Bulk Earthworks Sections

- EARTHWORKS NOTES**
- A. Before commencement of earthworks strip all affected areas of all grass and topsoil.
 - B. All trees on site are to be removed.
 - C. Subgrade to be compacted to 95% wet compaction as determined by BS 1289 5.1.1 and 5.3.1 (standard compaction).
 - D. Imported fill shall be free of vegetable matter, rock and any other deleterious matter.
 - E. Prior to any filling on site, the existing topsoil shall be stripped and stockpiled for subsequent reworking as directed by the supervising engineer.
 - F. No fill shall be placed in layers constant and rolled to achieve a min. 95% standard compaction, throughout the entire depth and plan extent of the fill.
 - G. All fill shall be placed in layers constant and rolled to achieve a min. 95% standard compaction, throughout the entire depth and plan extent of the fill.
 - H. Density testing shall be carried out by a note registered laboratory, with testing frequency to suit the requirements of BS3799.

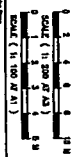
South West

Prepared by:
Baker Mason Consulting Engineers
130 North Street
Chesham

2023/24

FRON ENERGY
A DIVISION OF
FRON HOLDINGS LTD
BULK EARTHWORKS SECTION SHEET 1 OF 2

944710-06



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