



APPENDIX S –
SERVICING STRATEGY REPORT FOR
275 ADAMS RD, LUDDENHAM

SERVICING STRATEGY REPORT FOR **275 ADAMS RD, LUDDENHAM**

PROJECT NO: 7472



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Prepared By: DARREN FLYNNDate: 13/06/2020Approved: ARRON TANOAIDate: 17/07/2020**Base Template:**

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External Issue

Revision Control Register			
DSR Version No:	Issue Date:	Issued To:	Name:
FINAL DRAFT	13/6/2020	Coombes	PB
FINAL	16/6/2020	Coombes	PB
FINAL V2	17/06/2020	Coombes	PB
FINAL V3	08/07/2020	Coombes	PB
FINAL V4	17/07/2020	Coombes	PB

Cover: Perspective View of the Resource Recovery Centre (Reid Campbell Sheet 1190066_ DA_000)

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1. EXECUTIVE SUMMARY

Indesco was engaged to prepare a Services Strategy Report for a proposal by Coombes Property Group and KLF Holdings Pty Ltd to develop an Advance Resource Recovery Centre (ARRC) at 275 Adams Road, Luddenham, which is currently host an existing shale/clay quarry. The proposal relates to Stage 2 of the long-term development vision below:

- Stage 1: Completion of approved shale extraction activities and preparation of the void for rehabilitation.
- Stage 2: Establishment of a technology led ARRC and rehabilitation of the void.
- Stage 3: Development of a sustainable and high-tech agribusiness hub and continued investment in the ARRC research and development.

To support the proposed ARRC, augmentations, lead-ins and service connections to the site will be required. Some temporary services for water and wastewater are proposed until appropriate connections are available in the future.

Applications have been made to Sydney Water for sewer and potable water connections, and to Endeavour Energy for electrical connections.

Endeavour Energy has replied to the technical review request made and has confirmed that there is spare capacity in the existing electrical network to support the proposed ARRC and Stage 3a development and a supply solution will be available for the future Stage 3b.

2. BACKGROUND DOCUMENTATION

A list of background services documentation reviewed by Indesco Pty Ltd (Indesco) in preparation of this report, is outlined in Table 1 below.

Table 1 Background Documentation

Item	Author	Format	Date	Revision
DBYD: Potable Water and Wastewater	Sydney Water Corporation	Plans	01/06/2020	Seq No: 98217196
DBYD: Electrical	Endeavour Energy	Plans	01/06/2020	Seq No: 98217194
DBYD: Telecommunications	Telstra and NBN Corporation	Plans	12/06/2020	Seq No: 9821797

3. INTRODUCTION

CFT No 13 Pty Ltd, a member of Coombes Property Group (CPG), has recently acquired the property at 275 Adams Road, Luddenham NSW (Lot 3 in DP 623799, 'the site') within the Liverpool City Council municipality. The site is host to an existing shale/clay quarry.

CPG owns, develops, and manages a national portfolio of office, retail, entertainment, land, and other assets. The company's business model is to retain long-term ownership and control of all its assets. CPG has the following staged vision to the long-term development of the site:

- **Stage 1** Quarry Reactivation: **Solving a problem.** CPG intends to responsibly avoid the sterilization of the remaining natural resource by completing the extraction of shale which is important to the local construction industry as a raw material used by brick manufacturers in Western Sydney. Following the completion of approved extraction activities, the void would be prepared for rehabilitation.
- **Stage 2** Advanced Resource Recovery Centre (ARRC) and Quarry Rehabilitation: **A smart way to fill the void.** CPG in partnership with KLF Holdings Pty Ltd (KLF) and in collaboration between the circular economy industry and the material science research sector, intends to establish a technology-led approach to resource recovery, management, and reuse of Western Sydney's construction waste, and repurposing those materials that cannot be recovered for use to rehabilitate the void. This will provide a sustainable and economically viable method of rehabilitating the void for development.
- **Stage 3** High Value Employment Generating Development: **Transform the land to deliver high value agribusiness jobs.** CPG intends to develop the rehabilitated site into a sustainable and high-tech agribusiness hub supporting food production, processing, freight transport, warehousing, and distribution, whilst continuing to invest in the resource recovery research and development initiatives. This will deliver the vision of a technology-led agribusiness precinct as part of the Aerotropolis that balances its valuable assets including proximity to the future Western Sydney Airport (WSA) and Outer Sydney Orbital.

This servicing strategy report relates to the establishment of the ARRC in Stage 2 (the project) described above.



Figure 1 Nearmap Aerial showing site boundaries

3.1 DEVELOPMENT STAGING

Stage 1 of the long-term development of the site involves the finalisation of quarrying activities only. No development works form part of this stage.

Stages 2 and 3 of the long-term development of the site involve the establishment of large warehouses for a variety of uses, including industrial and agribusiness. The staging envisaged for the project is outlined in Table 2.

Table 2 Development Staging

Stage	Development	Supply Required/Connection Date
1	Finalisation of quarrying activities	Existing power to site is adequate and no potable water is required.
2	Warehouse No. 1 (ARRC)	Q1 2022
3a	Warehouses No. 2A, 2B (Future Agribusiness/Industrial)	Q4 2022
3b	Warehouses No. 2C, 3A, 3B, 3C, 3D (Future Agribusiness/Industrial)	2035+

The envisaged staging and expected implementation of services for the project is outlined in Table 3.

Table 3 Staging of Services and Infrastructure

Stage	Services Delivered	Expected Delivery
2 (ARRC)	<ul style="list-style-type: none"> 1x 1,000kVA kiosk substations to service Stage 2 only; 100kL potable water storage to service Stage 2 only; Sewerage Treatment Plant (STP) to service Stage 2 only; and 2.6ML fire protection services storage to service ARRC site. 	Q1 2022
3a	<ul style="list-style-type: none"> 1x 1,000kVA kiosk substations to service Stage 3a; 50kL potable water storage to service Stage 3a only; and Likely delivery of trunk potable water to the area. 	About 2024
3b	<ul style="list-style-type: none"> Likely delivery of trunk sewer to the area; 2x 1,000kVA kiosk substation to service Stage 3b; and 200kL potable water storage to service Stage 3b. 	2026
3b	<ul style="list-style-type: none"> Connection to authority water mains for potable water to service whole site and removal of on-site storage; and Connection to authority sewer mains to service whole site and removal of on-site storage/STP. 	2035

The development staging is reflected in the figure 2 below.

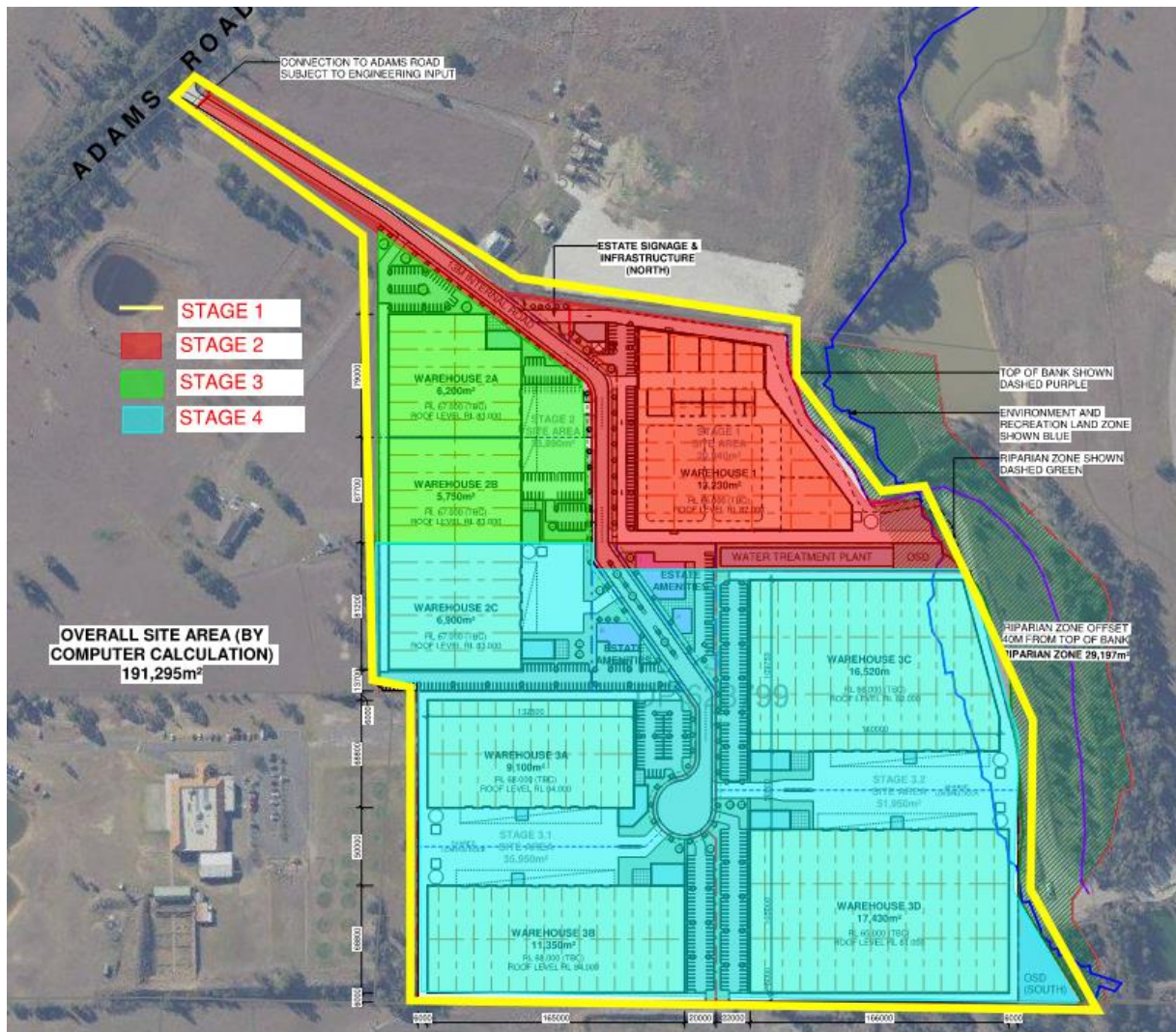


Figure 2 Development Staging Plan

4. SERVICING STRATEGIES

4.1 POTABLE WATER SERVICING

Based on Sydney Water's HYDRA GIS mapping, the closest potable water main is a DN150 (diameter) watermain in Elizabeth Drive, over 1.5km away from the development site



Figure 3 Sydney Water HYDRA Map

Preliminary water usage calculations indicate that Stage 2 will require minimum 100kL water storage refilled max each week.

The approximate tank size will be 7m diameter and 4m high. There will be dual pumps required for delivery to the warehouse, with a low level filtration plant. All pumps and the filtration plant shall be installed within a weather and vandal proof enclosure. Final system details (treatment, storage etc.) will be subject to a water management report. The storage tank will be located so as it will have truck access for delivery of water supply.

Stage 3a will require minimum 50kL water storage refilled max each week.

Stage 3b requirements will be subject to further design development, however, will likely be approximately 200kL.

It is likely that delivery of trunk potable water mains will be delivered in the area in 2022 and the site will be able available to receive connections to service the entire site in 2035 – followed by removal of on-site storage options.

A Feasibility Application was submitted to Sydney Water on the 5 June 2020 to confirm if there are any proposed upgrade works planned in the area and/or what is required to connect the site to an authority water main.

We are currently awaiting response from Sydney Water and shall update this Servicing Strategy Report when advised.

4.2 WASTEWATER SERVICING

Based on Sydney Water's HYDRA GIS mapping and DBYD plans there are no sewer connections currently available within the vicinity of the site. However, Sydney Water currently has new infrastructure planned over the next five (5) years for the area, including to service the new WSA. This network forms part of the greater west growth services plan, however the release dates are not available at this time.

It is our understanding that the adjacent WSA will have its own private pressure sewer and private wastewater treatment plant which will not service any surrounding properties. It is also our understanding that a new regional centralised wastewater treatment plant by Sydney Water to service the Upper South Creek catchment will be delivered and operational by 2026.

To accommodate the proposed staged development on site, the use of sewerage treatment plant (STP) (e.g. septic holding tank) is planned. The STP will require maintenance/pump out on a monthly basis.

For Stage 2, the STP will consist of 3m³ storage and operation network with irrigation tank which shall be approximately 9m long by 2m wide and 2.7m deep. The proposed treatment system is based on an eloywater oxyfix treatment system. This system treats the effluent which can then receive pump out as part of operations, or alternatively used for irrigation – however, it is not proposed to irrigate the effluent in this case. The final design and specification will be subject to the wastewater report.

FEATURES



Figure 4 Oxy Fix Sewage (wastewater) Treatment Plant/Septic Tank Schematic

With the successful implementation of this STP in Stage 2 – it is likely this system and any associated network improvements will be rolled-out and implemented to accommodate and service Stage 3.

It is likely that delivery of trunk wastewater water mains will be delivered in the area in 2026 and the site will be able available to receive connections to service the entire site in 2035 – followed by removal of on-site storage/STP options.

A Feasibility Application was submitted to Sydney Water 5 June 2020 to confirm if there are any proposed upgrade works planned in the area and/or what is required to connect the site to an authority sewer main.

We are currently awaiting response from Sydney Water and shall update this Servicing Strategy Report when advised.

4.3 ELECTRICAL SERVICING

There are existing aerial HV and LV cabling reticulating along Adams Road.

The site is currently supplied from the aerial LV network via a pole mounted transformer.



Figure 5 An image showing the Aerial low Voltage Network and Pole Mounted Transformer on Adams Rd

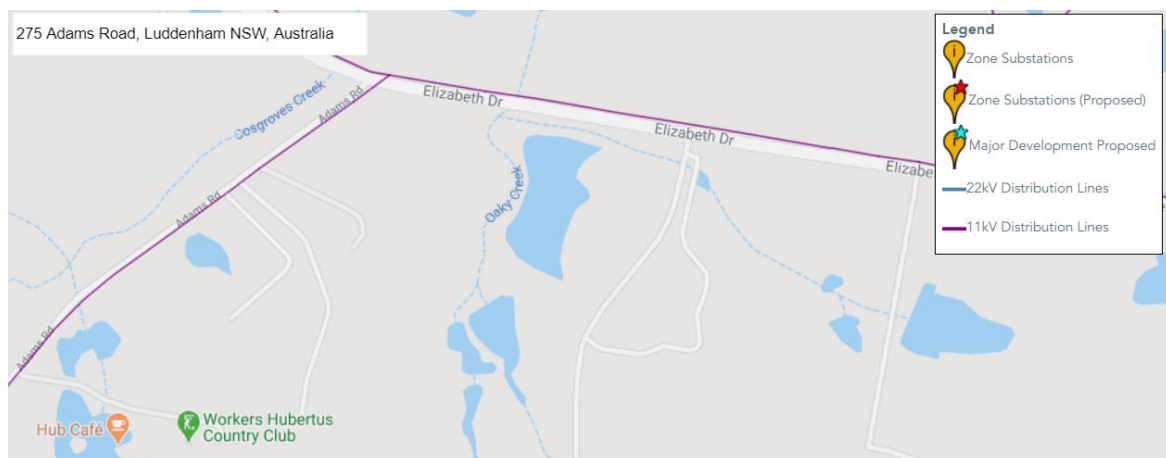


Figure 6 Image showing 11kV Distribution Lines on Adams Rd.

The aerial HV network tees off from Adams Road to supply an adjacent site.

Preliminary electrical maximum demand calculations indicate Stages 2 and 3a will each require a minimum 1x 1,000 kVA substations to accommodate the proposed and likely developments.

Standard requirements for kiosk substation locations will be followed during the detailed design.

Easement for a 1,000kVA kiosk substation is 5500 (W) x 2750 (D). The easement must be on firm ground (i.e. not above a basement level), must not contain any landscaping (except for grass or woodchips) and must be "open to sky". Additionally, a 2000 (W) easement is required from the site boundary to the kiosk substation for HV cabling and 24hr, 7 day a week unimpeded 27 ton truck access with dimensions 4000 (W) x 4000 (H).

The kiosk must not be located within;

- 1:100 flood level or in stormwater paths
- 10000 of an external fire hydrant/fire pumps etc
- 6000 of any ventilation opening
- 3000 of any part of a building unless it is 120/120/120 FRL & 2kPa blast
- 3000 from site boundary unless provided with
- 120/120/120 FRL & 2kPa blast wall
- 3000 of any glazing and fire exits
- 5000 to water tanks

Depending on operating times, street lighting may be provided at the intersection of Adams Road and for access road. The site access shall have street lighting spaced at 20m centres.

Preliminary electrical maximum demand calculations indicate that an additional 2x 1,000 kVA substations will be required to accommodate the proposed Stage 3b developments in the future.

A technical enquiry was submitted to Endeavour Energy on 1 June 2020 to understand the following:

1. What capacity is available in the existing aerial HV feeder along Adams Rd;
2. What works will be required to accommodate the initial 2x 1,000kVA kiosk substations;
3. What further works will be required to accommodate an additional 2x 1,000kVA kiosk substations in the future; and
4. Are there any other works planned for the area that will impact the proposed works.

Endeavour Energy has confirmed via their reply to the technical review request dated 16 June 2020 that preliminary analysis indicates that at presently there are two 11kV feeder, namely KC1236 Clifton Avenue and A098 Luddenham & Aux No.2 respectively, supplying the surrounding areas and determines that 11kV feeder KC1236 has been operating at full loaded while 11kV feeder A098 may have some spare capacity to support the proposed ARRC and Stage 3a.

For the Stage 1 (ARRC, nominated as stage 2 in our report) and Stage 2 (3a in this report):

- Stage 1 and Stage 2 developments with total load 1.9MVA will be supplied by feeder A098 Luddenham & Aux No.2 from Luddenham ZS.
- Establish 2 x 1000kVA padmount substation (PM Sub) side by side in the allocated area of the Warehouse 1 site as proposed.
- Provide additional easement for future 11/22kV auto-transformer either beside these two PM subs or in a separate easement in front of Warehouse 2A office directly opposite these two PM Subs
- Provide PM Sub No.1 with 2 x 22kV feeder switchgears and 11kV transformer.
- Provide PM Sub No.2 with 2 x 22kV feeder switchgears and 11kV transformer.
- Install 2 x 240Cu XLPE 22kV cables from UGOH poles in Adams Road within TYPE
- 06 ducts and remove OH.
- Provide TYPE 06 ducts along one side of new road from PM Subs to the end of the cul-de-sac
- Provide TYPE 06 road crossing at Adams Road and extending between both UGOH poles.
- Provide TYPE 06 road crossing at location of future 11/22kV Auto-Transformer.
- Provide TYPE 06 road crossing at future PM Sub No.3
- Provide TYPE 06 road crossing at future PM Sub No.4.

This is shown in the following Method of Supply Diagram in Figure 8.

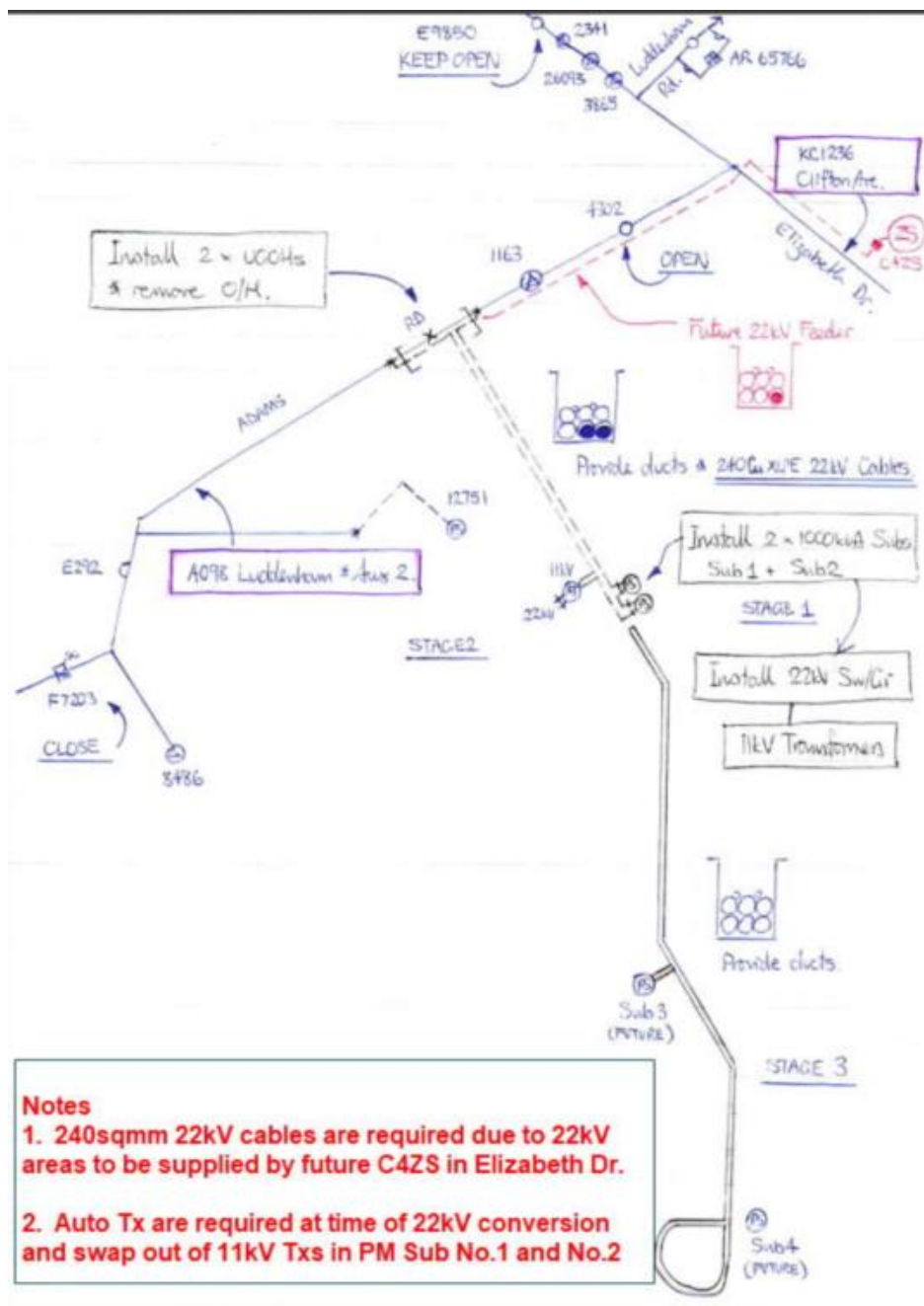


Figure 7: Method of Supply Diagram

For the future Stage 3b development Endeavour Energy has confirmed a supply solution will be assessed at the time of future need. This may be an extension of feeder X881 Badgerys Creek Rd & Aux No.2 from an appropriate location if spare capacity is available.

Presently Endeavour Energy plans to establish a new zone substation called C4ZS when required by development activity and will provide 22kV distribution capacity into the immediate area including along Adams Road. From online mapping, the closest future Zone Substation in the vicinity of the development is proposed at the WSA (Aerotropolis).

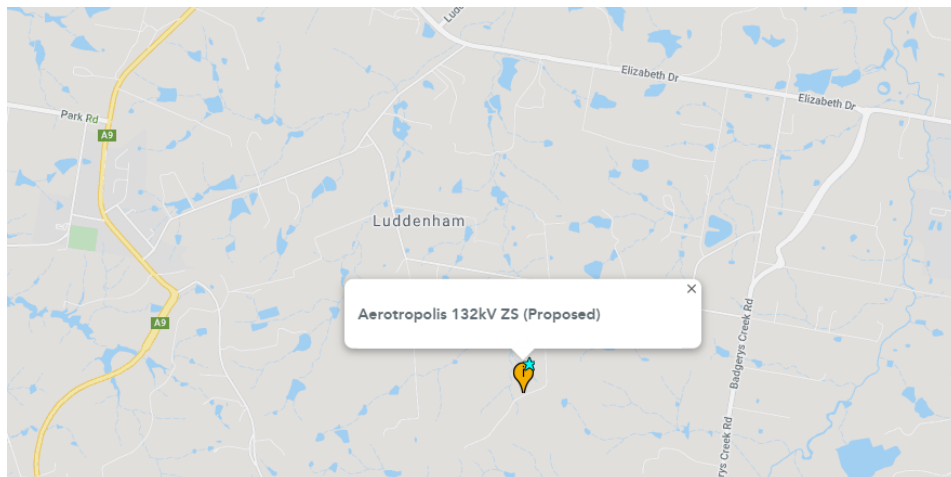


Figure 8 Image showing the future 132kV Zone Substation for the future WSA Aerotropolis.

4.4 TELECOMMUNICATION SERVICING

Based on Telstra DBYD plans, connection to the telecommunications copper network is available and currently provided to the site.

From the NBN Co. website, the site is able to connect to the National Broadband Network via Sky Muster technology which is described as follows:

“The Sky Muster™ satellite service delivers the nbn™ broadband access network to homes and businesses in regional and remote Australia, via two state-of-the-art satellites. So, people across mainland Australia and Tasmania, and remote islands such as Norfolk Island, Christmas Island, Lord Howe Island and the Cocos (Keeling) Islands can now enjoy nbn™ powered plans through Sky Muster™ satellite providers. As well as the roof satellite dish installed on the home or business, Sky Muster™ satellite connections also require an nbn™ supplied modem to be installed at the point where the cable from the satellite dish enters the premises. This device requires power to operate, and can only be installed by an approved nbn™ installer or provider.”

4.5 GAS SERVICING

Gas servicing has not been investigated as part of this report and currently not required by the proposed staged development uses on site.

4.6 FIRE AND INCIDENT MANAGEMENT

Fire services provisions exceed the requirements for the BCA and the recommendations within the “Fire Safety in Waste Facilities” guideline V02.01 dated 23.10.19 prepared by Fire and Rescue NSW.

The fire protection system will include a ring main of attack hydrants along the access road that surrounds the building. Additionally, a high hazard sprinkler system will be provided throughout the facility. The booster assembly will be provided adjacent to the turning area to provide more than adequate space for appliance hardstand and additional equipment as required.

Dual water storage will be provided and dedicated for firefighting activities. This will include duty standby diesel and electric pump system

We note that the site is in the jurisdiction of the local airport fire brigade. As such, prior to finalising the design, we will liaise with the local airport fire brigade and fire and rescue NSW to determine the details of the proposed fire protection strategy and complete the design accordingly. Refer to Appendix D for Concept Fire Management Plan.

5. CONCLUSION

This report has investigated and provided information regarding the servicing requirements for the proposed developments at 275 Adams Road, Luddenham.

To support the proposed ARRC, augmentations, lead-ins and service connections to the site will be required. Some temporary services for water and wastewater are proposed until appropriate connections are available in the future.

Applications have been made to Sydney Water for sewer and potable water connections, and to Endeavour Energy for electrical connections.

Endeavour Energy have confirmed there is spare capacity to support the proposed ARRC and Stage 3a with a proposed method of supply being provided. Endeavour Energy have also confirmed that for the future Stage 3b a supply solution will be assessed at the time of future need with an option to extend a future feeder to the site.

This report will be updated after a response from Sydney Water has been made to inform the overall servicing strategy.

APPENDIX A – SYDNEY WATER FEASIBILITY APPLICATION

APPLICATION ENTRY

An application fee will be charged as per standard schedule of charges. Additional charges may also be incurred.

CASE INFORMATION	
Application Number	185346
Application Type	<input type="text"/>
<i>This is not a formal application. Sydney Water will issue an advice letter "Guidance Note for Proposed Development" in due course. The advice is provided as a guide only, is current at the date of issue and may be subject to change.</i>	
Associated Cases	<input type="text"/>
Agent Contact	Jude Latimer
Agent Contact Phone	4648 0666
Agent Reference	<input type="text" value="220195"/>

DEVELOPER SAME AS THE APPLICANT?
Is the developer the same as the applicant?
Yes <input type="radio"/> No <input checked="" type="radio"/>

APPLICANT INFORMATION			
Search Type	<input type="text"/>		
Name	BUILDING SERVICES ENGINEERS	ABN	
Address	Level 2 121 Walker Street, NORTH SYDNEY 2060	Phone	

DEVELOPER INFORMATION			
Search Type	<input type="text"/>		
Name	COOMBES PROPERTY GROUP	ABN	
Address	Lvl 2, 2 Grosvenor Street, BONDI JUNCTION 2022	Phone	

HYDRA DATA AUTO POPULATION	
Hydra Download Number	<input type="text" value="2006051205"/> <input type="button" value="Auto-Populate"/>

LEAD ADDRESS			
Section Number	<input type="text"/>	Street Number	<input type="text" value="275"/>
Street Name	<input type="text" value="ADAMS RD"/>	Comment	<input type="text"/>
Suburb	<input type="text"/>	Comment	<input type="text"/>
Cross Street	<input type="text"/>		

LGA	<input type="text"/>	Comment	<input type="text"/>
UBD Edition	<input type="text"/>		
UBD Map	<input type="text"/>	UBD Reference	<input type="text"/>
Plan Number (s)	<input type="text"/> ?	Lot Number (s)	<input type="text"/>

DEVELOPMENT LOCATIONS

Property Number	Lot or Portion Number	Section Number	Plan Type and Number	Lot Area Sq m	Street Number	Street Name	Suburb	Lead Address
4550223	3		DP623799	190680.83	275	ADAMS RD	Luddenham	●

Total Calculated Area (Sq M)	<input type="text"/>	Comment	<input type="text"/>
Total Number of Lot/Portion Nos flagged for Development	<input type="text"/>	Comment	<input type="text"/>

PROPERTY USE

Lot Status	<input type="text"/>
------------	----------------------


Current Property Type	Delete	Comment
COMMERCIAL	<input type="text"/>	<input type="text"/>
<input type="text"/>	Add Current Property Type	

Describe Current and Proposed Development:

Proposed staged warehousing development. Client is seeking release of infrastructure and maps of proposed assets.

PROPOSED DEVELOPMENT

Development Type	<input type="text"/>
Development sub type	<input type="text"/>
Is it 'Serviced apartments'?	Yes ● No
Stage Number	<input type="text"/> of <input type="text"/>
Stage Name	<input type="text"/>
Subdivision required?	Yes ● No
Total Dwellings	<input type="text"/>
Attach Subdivision Plan	A100 - CONCEPT MASTERPLAN (D)_DWG_200527-Layout1.zip
Attach Development Plan	CN185346FS.zip
Attach Additional Application Information Form	Application Additional 17.zip

CONSENT INFORMATION	
Consent Authority	<input type="text"/>
Development Consent Number	<input type="text"/>
Consent Date	<input type="text"/> 
Attach Consent Document	<input type="text"/>
Attach Stormwater Analysis	<input type="text"/>
Total Impervious Surface Area	<input type="text"/>

EXPECTED REQUIREMENTS FOR THE PROPOSED DEVELOPMENT	
Water	
Maximum demand	<input type="text"/> KL/Day
Average demand	<input type="text"/> KL/Day
Peak demand	<input type="text"/> L/Sec
Recycled Water	
Maximum demand	<input type="text"/> KL/Day
Average demand	<input type="text"/> KL/Day
Peak demand	<input type="text"/> L/Sec
Waste Water	
Maximum discharge	<input type="text"/> KL/Day
Average discharge	<input type="text"/> KL/Day
Peak simultaneous discharge	<input type="text"/> L/Sec
Irrigation Systems	
Maximum demand	<input type="text"/> L/Day
Average demand	<input type="text"/> L/Day
Peak demand	<input type="text"/> L/Sec
Automatic Timer	<input type="text"/>
Proposed Pattern of Usage:	
<input type="text"/>	

Process Water	
Maximum demand	<input type="text"/> L/Day
Average demand	<input type="text"/> L/Day
Peak demand	<input type="text"/> L/Sec
Proposed Pattern of Usage:	
<input type="text"/>	

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Other Requirements

Air-conditioning make-up water	<input type="text"/>	L/Sec
Proposed meter size	<input type="text"/>	mm

Any other relevant information affecting usage:

--

Fire Fighting Requirements

Fire Hose Reel	<input type="text"/>	Number
Fire Hydrant	<input type="text"/>	L/Sec
Fire Sprinkler	<input type="text"/>	L/Sec
Wall Drencher	<input type="text"/>	L/Sec



APPENDIX B – ENDEVOUR ENERGY TECHNICAL REVIEW REQUEST

Technical Review Request

Please return completed form along with all attachments to: Endeavour Energy, PO Box 811 Seven Hills NSW 1730
Email: cwadmin@endeavourenergy.com.au | Fax: 02 9853 7925 | For enquiries about this form, please contact 02 9853 7977

This form can be used for requesting technical assistance to determine preliminary connection requirements prior to lodging a formal application for large or complex developments including master planning for major projects or subdivisions, embedded networks, asset relocations and embedded generator connections.

Site Details

Lot / DP No. 3 / 623799 Street No. 275 Street Name Adams Road
Suburb/Town Luddenham Postcode 2745 UBD Ref _____
Nearest Substation: Unknown Pole/Pillar Unknown Cross Street Elizabeth Drive
Retailer NMI for Existing Sites: Unknown (existing LV connection) (Can be found on your electricity bill)

Retail Customer or Developer Details

Name / Company Coombes Property Group Contact Person Pascal Bobillier
Street No. Level 5, 2 Street Name Grosvenor Street
PO Box 177 Suburb / Town Bondi Junction Post Code 1355
Phone 02 9389 6111 Mobile _____ Fax _____
Email: pascal@coombesgroup.com.au

Applicant / Applicant's Representative Details

Name / Company Building Services Engineers Contact Person Stuart Johnson
Street No. Level 2, 121 Street Name Walker Street
PO Box _____ Suburb / Town North Sydney Post Code 2060
Phone _____ Mobile 0402 337 072 Fax _____
Email: stuart.johnson@bse.com.au
Preferred method of contact: ☐ Mail ☐ Phone ☒ Email

Nature of Request

The existing site at 275 Adams Rd Luddenham is proposed to be redeveloped in stages. From the information available, this shall initially include 2x 1,000kVA kiosk substations and then an additional 2x 1,000kVA kiosk substations in the future. There appears to be an existing aerial HV feeder along Adams Rd. We understand that there are other major works being undertaken in the area. We request confirmation of the following:

1. what capacity is available in the existing aerial HV feeder along Adams Rd
2. what works will be required to accommodate the initial 2x 1,000kVA kiosk substations
3. what further works will be required to accommodate an additional 2x 1,000kVA kiosk substations in the future

4. are there any other works planned for the area that will impact our proposed works
Attached are a preliminary staging plan, site markup, survey and maximum demand calculation for your information. Please contact me if any further information/clarification is required.

Please Note: To ensure an accurate and meaningful response, please provide detailed information describing the proposed development and attachments to support this request. Endeavour Energy will use all reasonable endeavours to keep confidential any information provided as part of this request as required under Clause 8.6 of the National Electricity Rules.

The Customer/Developer is the Landowner: ☒ Yes ☐ No

☒ I am authorised by the customer/proponent to make enquiry to Endeavour Energy for this development.

Important Information

Planning for supply to large or complex developments including master planning for major projects, subdivisions or establishment of embedded networks, asset relocations or connection of large embedded generators, these often involve options analysis and consideration of longer term network development. Preliminary information regarding conditions of supply can be obtained prior to lodging an application for connection services by submitting a Technical Review Request.

A technical review may involve a simple or complex enquiry or the provision of a detailed planning study. A corresponding ancillary network service charge, Preliminary Enquiry Service fee for the provision of these services applies and can be found in our Network Price List Ancillary Network Services (ANS). ANS fees are approved annually by the Australian Energy Regulator and typically change each financial year.

If you are able to submit an application for connection service, this may represent a more cost-effective option as an application will require a similar review of supply availability or connection/network requirements in order to receive a binding offer to proceed.

Simple requests for technical review are basic reviews of existing data systems to provide a summary response. Complex requests require input from Endeavour Energy internal stakeholders and specialist project management services to determine likely connection voltage, connection point, available capacity and/or required connection assets provided in a detailed response. The table below generally represents minimum hours applied for typical requests.

Common types of requests for technical review	Preliminary Enquiry Service fee category	Minimum hours
All simple	Simple	1
Connection of Load at LV	Complex	5
Subdivision up to 300 lots	Complex	5
Asset Relocations without Transmission	Complex	5
Master Planning without Transmission	Complex	9
Master Planning with Transmission	Complex	11

APPENDIX C – ENDEVOUR ENERGY TECHNICAL REVIEW REQUEST REPLY

16 June 2020

Endeavour Energy Ref: ENL3756 – 2014/02306/001

Building Services Engineers P/L
Level 2, 121 Walker Street
NORTH SYDNEY
NSW 2060

Attention: Stuart Johnson

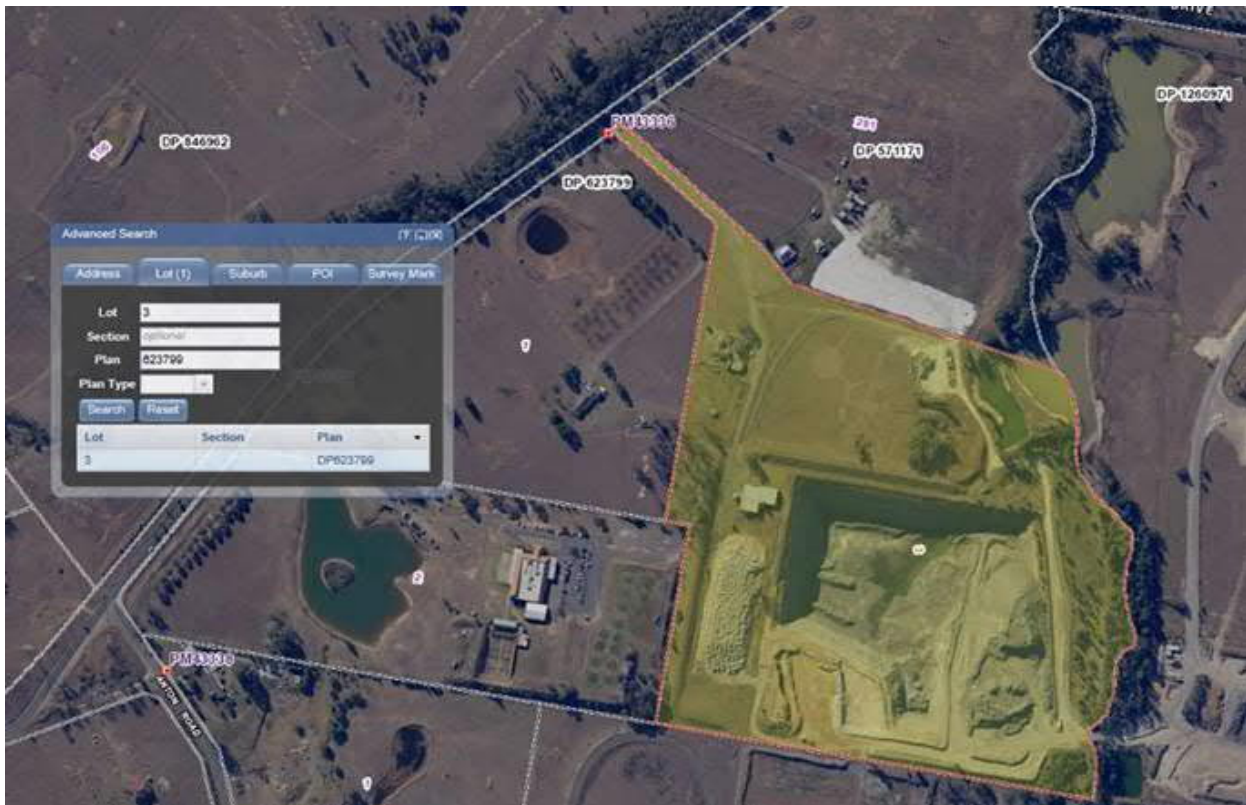
ENL3756 – TECHNICAL REVIEW REQUEST | LOT 3 DP 623799, 275 ADAMS ROAD, LUDDENHAM

Dear Stuart,

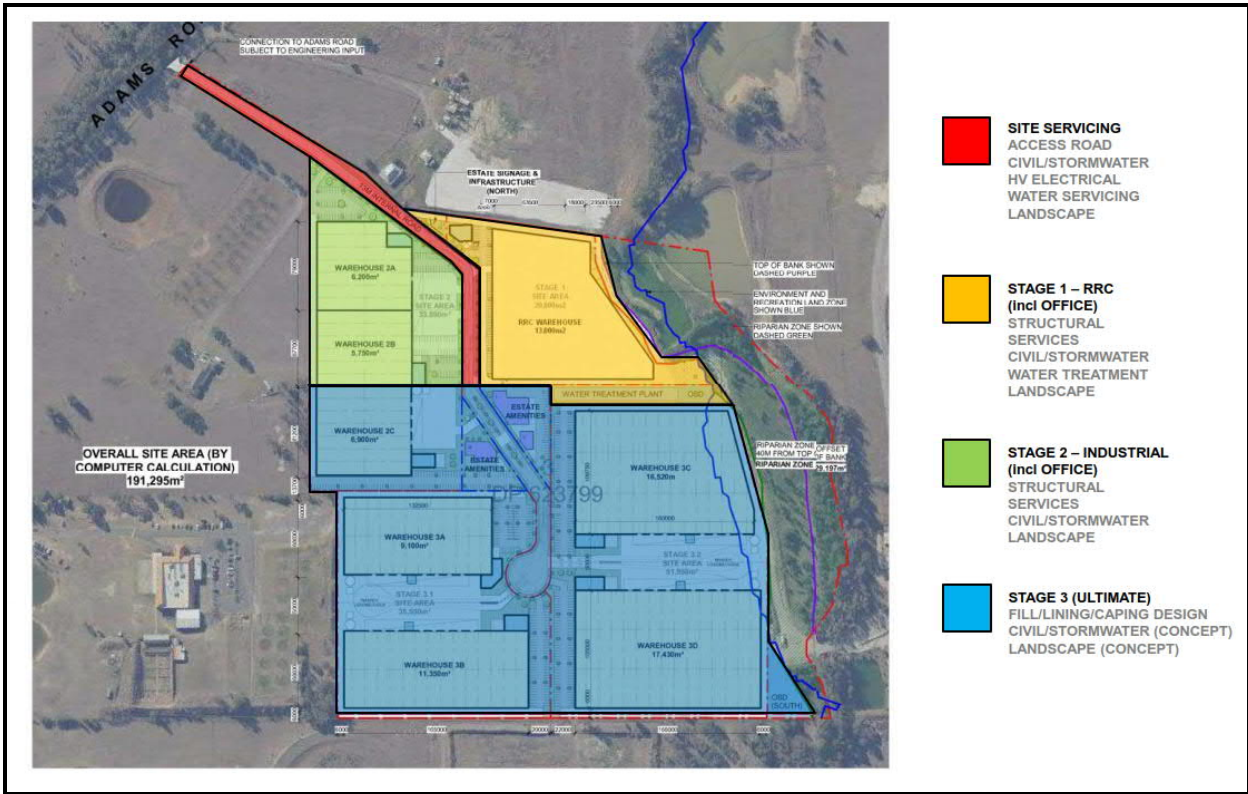
Thank you for your enquiry regarding the proposed industrial development at the above address. This enquiry has been registered under our reference numbers – ENL3756. Please quote this number for all future correspondence.

Endeavour Energy acknowledges that proposed industrial development will consist of 3 stages and initial supply required date will be 1st quarter 2022.

Development Site



Project Development Staging Plan



Estimated Maximum Load Calculation and Supply Date

Stage	Developments	Estimated Load (kVA)	Accumulated Load (kVA)	Supply Date
1	Warehouse 1 + Site 1 + WTP	1562.12	1562.12	Q1 2022
2	Warehouse 2A -2C + Site 2	360.02	1922.14	Q4 2022
3	Warehouse 3A -3D + Site 3 + Amenities	979.66	2901.8	2035+

Existing Network Analysis

Preliminary analysis indicates that at presently there are two 11kV feeder, namely KC1236 Clifton Avenue and A098 Luddenham & Aux No.2 respectively, supplying the surrounding areas and determines that 11kV feeder KC1236 has been operating at full loaded while 11kV feeder A098 may have some spare capacity to support the proposed Stage 1 and Stage 2 developments.

Refer to **Appendix A – Existing 11kV Network** for information

Presently Endeavour Energy plans to establish a new zone substation called **C4ZS** when required by development activity and will provide 22kV distribution capacity into the immediate area including along Adams Road.

Possible Supply Arrangements and Conditions

1. Stage 1 & 2 Development

- a) Stage 1 and Stage 2 developments with total load 1.9MVA will be supplied by feeder A098 Luddenham & Aux No.2 from Luddenham ZS.
- b) Establish 2 x 1000kVA padmount substation (PM Sub) side by side in the allocated area of the Warehouse 1 site as proposed.
- c) Provide additional easement for future 11/22kV auto-transformer either beside these two PM subs or in a separate easement in front of Warehouse 2A office directly opposite these two PM Subs
- d) Provide PM Sub No.1 with 2 x 22kV feeder switchgears and 11kV transformer.
- e) Provide PM Sub No.2 with 2 x 22kV feeder switchgears and 11kV transformer.
- f) Install 2 x **240Cu XLPE 22kV cables** from UGOH poles in Adams Road within TYPE 06 ducts and remove OH.
- g) Provide TYPE 06 ducts along one side of new road from PM Subs to the end of the cul-de-sac.
- h) Provide TYPE 06 road crossing at Adams Road and extending between both UGOH poles.
- i) Provide TYPE 06 road crossing at location of future 11/22kV Auto-Transformer.
- j) Provide TYPE 06 road crossing at future PM Sub No.3
- k) Provide TYPE 06 road crossing at future PM Sub No.4.

Detail shall refer to **Appendix B - MOS diagram** for reference.

2. Stage 3 Development

A supply solution will be assessed at the time of future need. This may be an extension of feeder **X881 Badgerys Creek Rd & Aux No.2** from an appropriate location if spare capacity is available. There is a possibility of no spare capacity at that time due to other load applications connecting to this feeder in Badgerys Creek Rd proper.

Hope this assists for the meantime and this advice provided is in response to an enquiry only and does not constitute a formal method of supply. An application must be submitted and subsequent designs have been certified or approvals granted will Endeavour Energy reserve capacity on the network.

Should you have any questions regarding this response to your request for technical review, please contact me.

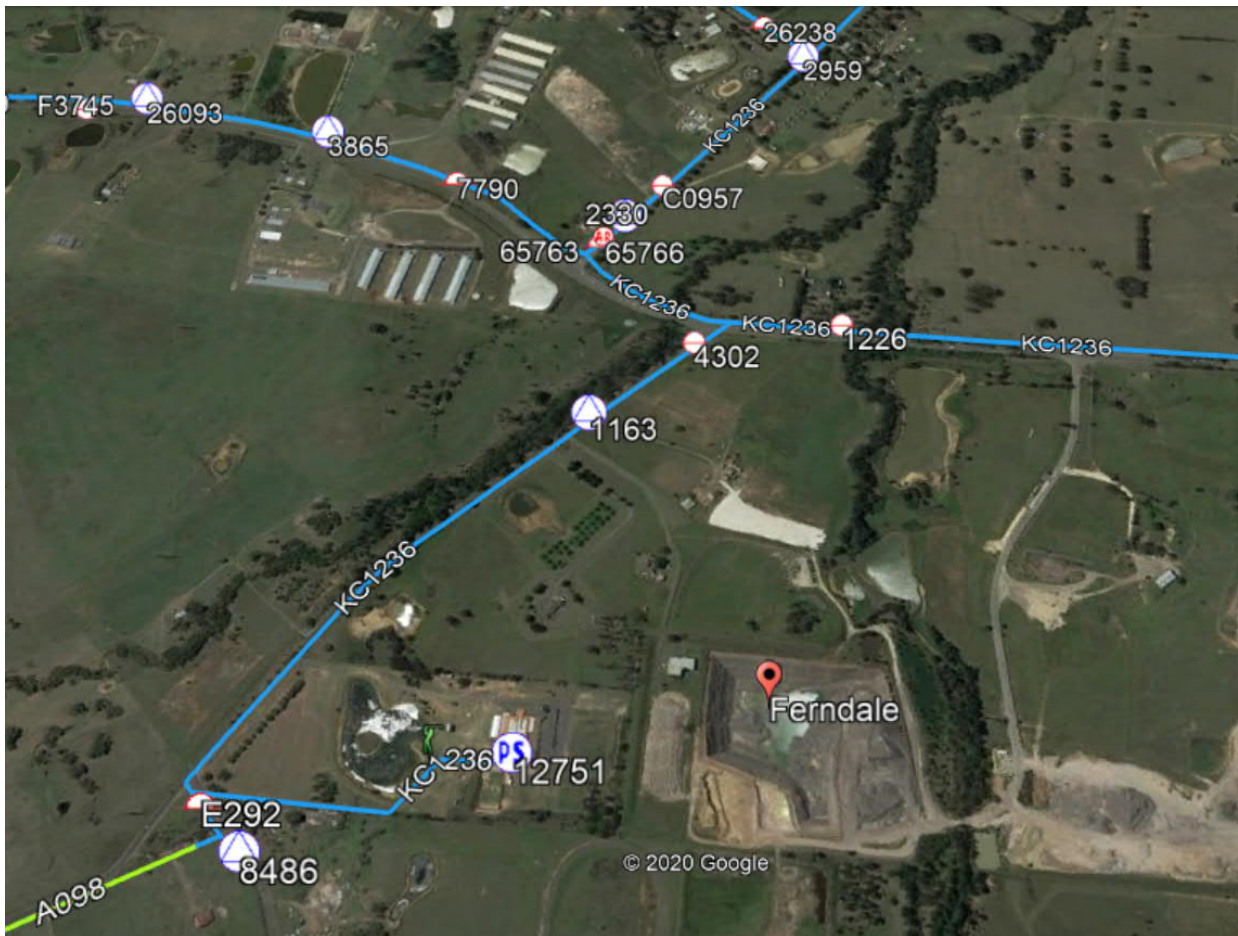
Yours faithfully,

David HO

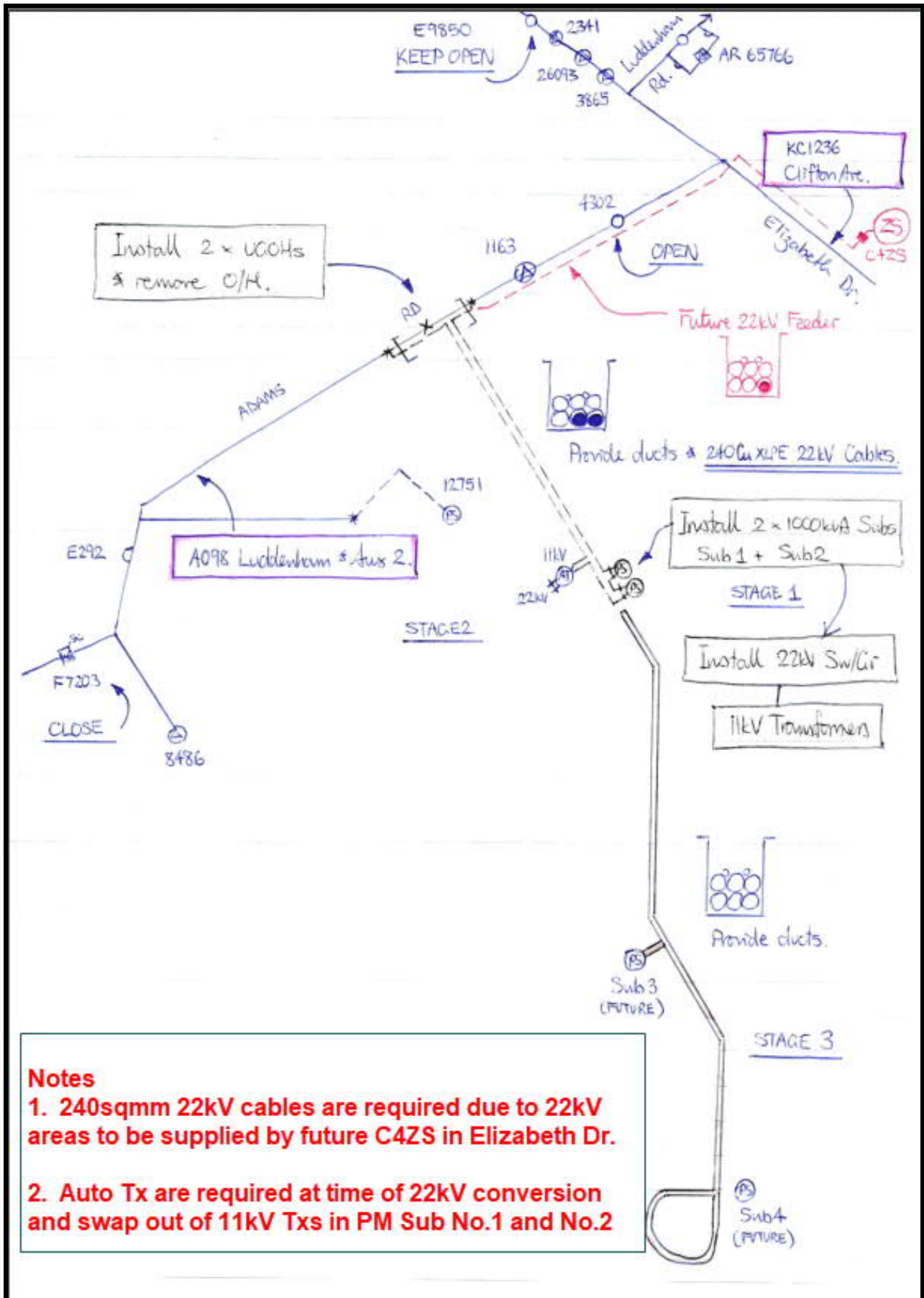
David Ho
Contestable Works Project Manager | Network Connections

☎ Direct: (02) 9853 7901 | ✉ Email: david.ho@endeavourenergy.com.au

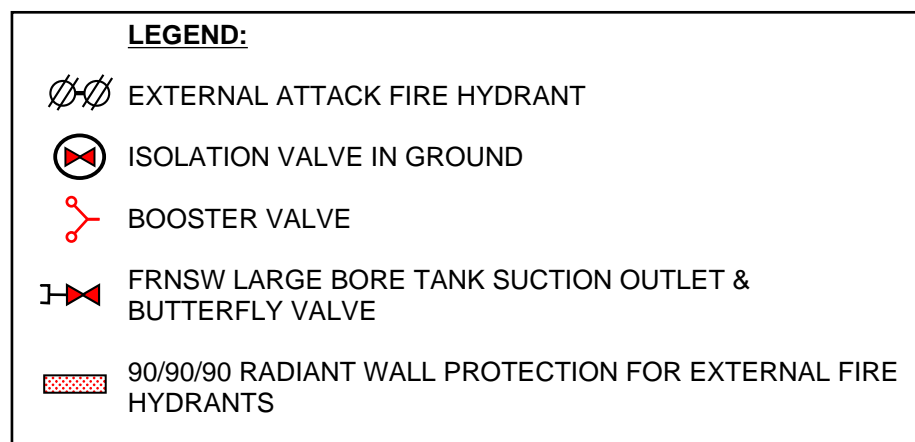
Appendix A - Existing 11kV Network



Appendix B - MOS diagram



APPENDIX D – CONCEPT FIRE MANAGEMENT PLAN



DESIGN CRITERIA

THE FIRE SERVICES REQUIREMENTS HAVE BEEN BASED ON THE FOLLOWING. WHERE THE

- FIRE SPRINKLERS TO BE PROVIDED IN ACCORDANCE WITH AS2118.1 - 2017
- FIRE HYDRANTS TO BE PROVIDED IN ACCORDANCE WITH AS2419.1-2005
- FIRE HOSE REELS TO BE PROVIDED IN ACCORDANCE WITH AS2441 - 2005

FIRE HYDRANTS:

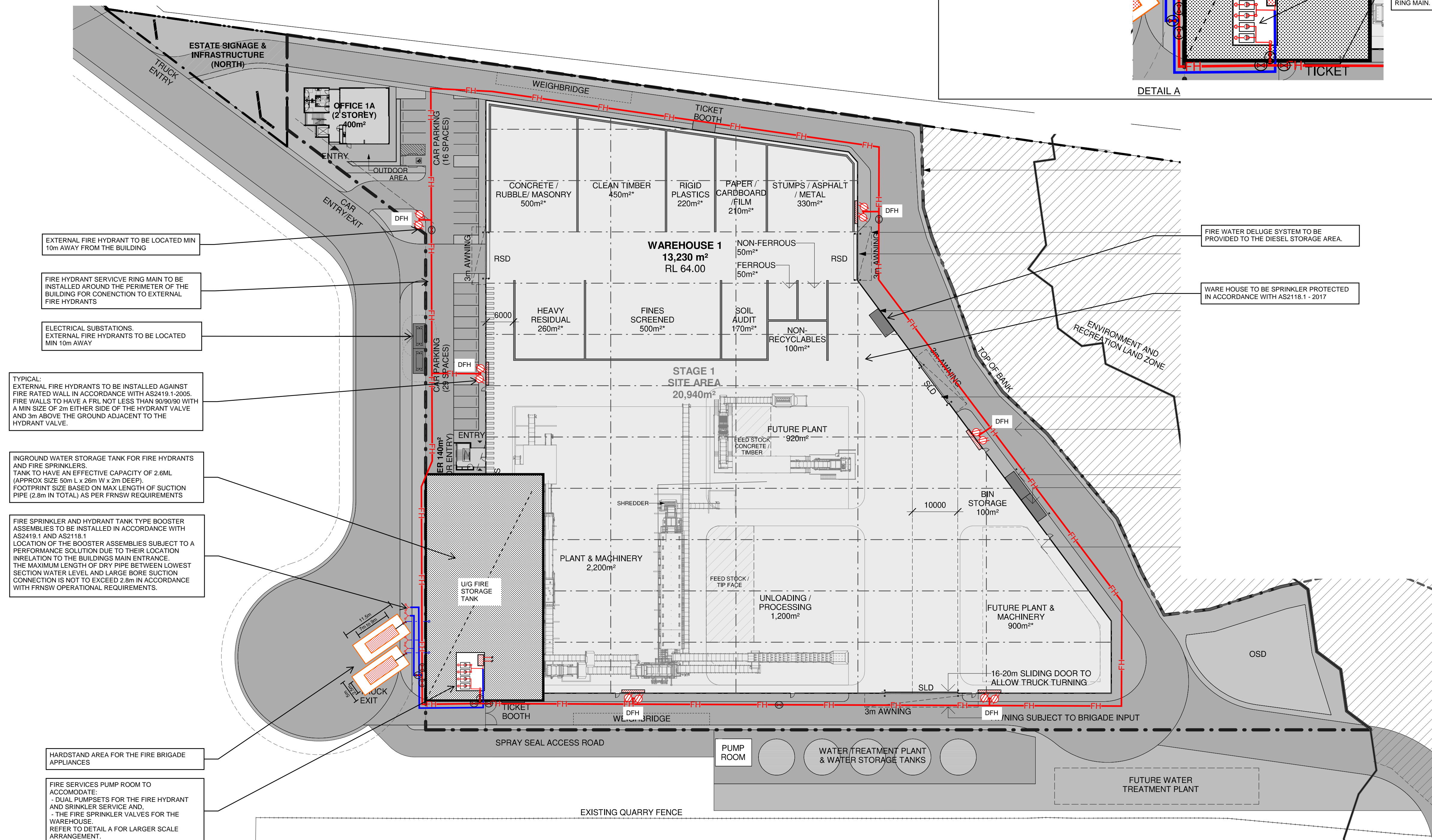
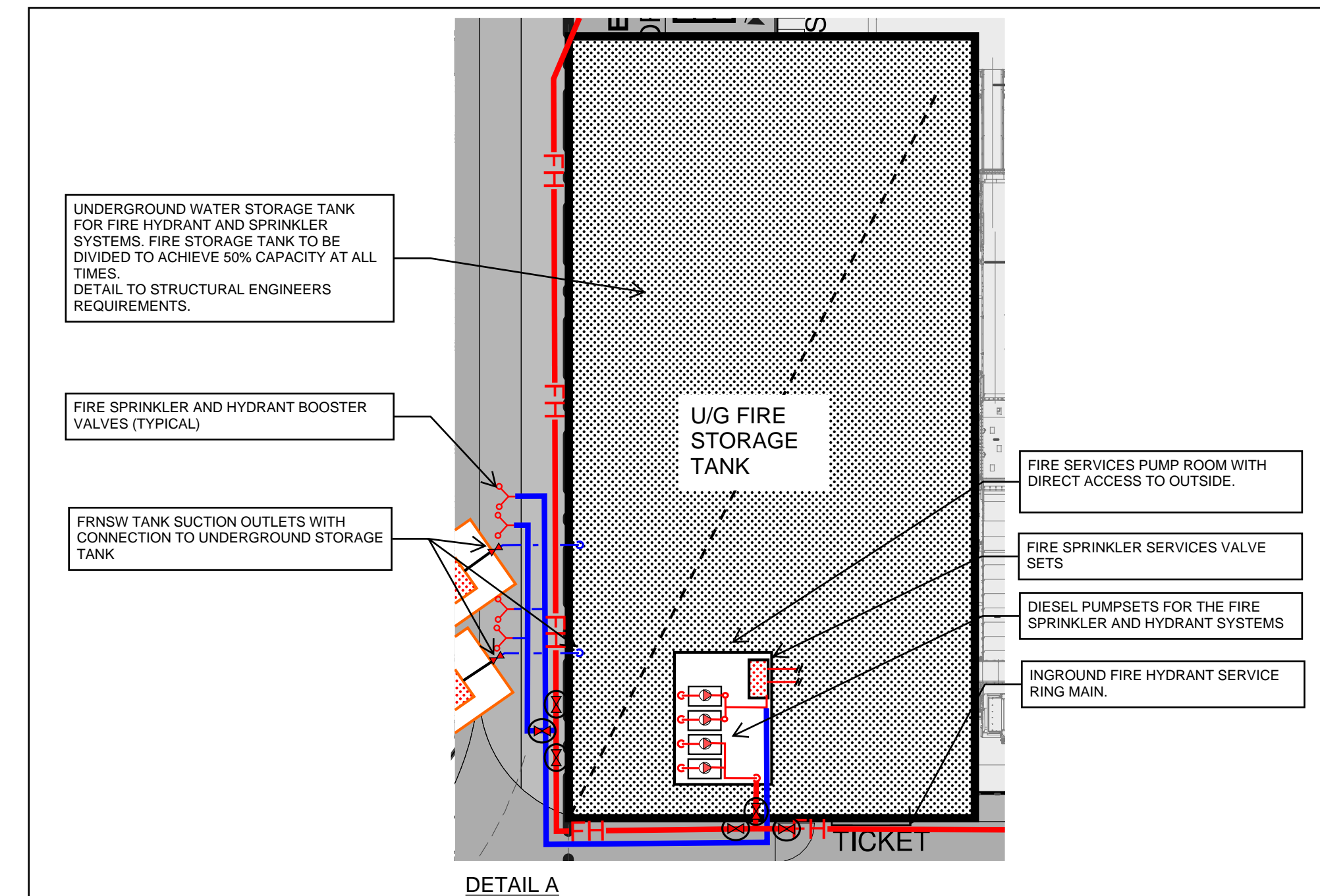
- WAREHOUSE / PROCESS PLANT > 10,000m² - 3 HYDRANTS OPERATING = 30L/s

FIRE SPRINKLERS:

- SPRINKLER PROTECTION FOR STORAGE / PROCESS PLANT - HIGH HAZARD SYSTEM
- PROTECTION REQUIREMENTS FOR MAXIMUM STORAGE HEIGHT CURRENTLY UNDER DEVELOPMENT
- COMMODITIES - CATEGORY 6
- ROOF HEIGHT - 12m
- SYSTEM DEMAND - MIN 16,560L/min FOR 2 HOUR PERIOD.

NOTES:

- EXTERNAL WALL WETTING SPRINKLERS HAVE NOT BEEN NOTED AND WILL NEED TO BE CAPTURED AS PART OF DETAILED DESIGN.
- FIRE HOSE REELS TO BE PROVIDED THROUGHOUT THE WAREHOUSE TO ACHIEVE COMPLIANCE WITH AS2441.
 - HYDRANTS AND HOSE REELS SHALL BE INSTALLED FOR PROTECTION OF STOCK PILES. FINAL LOCATION OF STOCK PILES TO BE CONFIRMED.
 - SPRINKLER SYSTEM REQUIREMENTS HAVE BEEN BASED ON PLASTICS AND RUBBER COMMODITIES. THIS REQUIRES CONFIRMATION.



B	CONCEPT ISSUE	17.07.20
A	CONCEPT ISSUE	16.07.20
REV	DESCRIPTION	DATE

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CONTRACTOR MUST CHECK ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK OR PREPARING ANY SHOP DRAWINGS. SHOP DRAWINGS MUST BE SUBMITTED AND APPROVED BEFORE MANUFACTURE. THIS DRAWING IS THE PROPERTY OF BUILDING SERVICES ENGINEERS AND SUBJECT TO RETURN ON REQUEST.

PROJECT
PROPOSED INDUSTRIAL
DEVELOPMENT
275 ADAMS ROAD LUDDENHAM NSW

SITE PLAN

FIRE SERVICES CONCEPT

SCALE: N.T.S.		DATE: 17.07.20	
DRAWN: WP		DESIGNED: WP	
NORTH	PROJECT No: 20200416	DRAWING No: FSK01	ISSUE: B

DRAFT ISSUE - NOT FOR TENDER