Report

Infrastructure Management Plan

JINDABYNE CENTRAL SCHOOL
School Infrastructure NSW

CONFIDENTIAL

Revision: C - FINAL
Issued: 15 December 2021

Norman Disney & Young
A TETRA TECH COMPANY

Table of Contents

1 INTRODUCTION

This Infrastructure Management Plan accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) in support of an application for a State Significant Development (SSD No 15788005). The SSDA is for a new education campus at Jindabyne, comprising of a new primary and high school, located at the Jindabyne Sport and Recreation Centre (JSRC).

This report addresses the Secretary's Environmental Assessment Requirements (SEARs), notably:

Item	Action to Address the Requirement
A site plan showing all infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process).	This IMP report details the hydraulic and electrical services infrastructure available to service the proposed development. This report also includes details regarding augmentation / amplifications required to service the proposed development Refer to relevant engineering discipline section.
14. Utilities In consultation with relevant service providers: • assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site. • identify any infrastructure upgrades required off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained. • provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development.	

2 PROPOSAL

The proposed development is for the construction of the Jindabyne Education Campus comprising a new primary school and a new high school at Jindabyne (the proposal). The proposal is located within the JSRC located at 207 Barry Way (the site) and will accommodate approximately 925 students with the capacity for expansion in the future.

The new primary school will be located generally in the northern portion of the site whilst the new high school will to the south of the site. While the schools are inherently separate identities, with separate student entries, opportunities for integration are provided in a central shared plaza with co-located school administration facilities, as identified in Figure 1 below. This outdoor learning space is activated by the school canteen (shared) and separate core facilities including the primary school hall and library, and the high school gym and library, and provides opportunities for shared community use.

The new primary school will provide for a Core 21 school. This will comprise of 20 home base units and 2 support learning units, administration and staff facilities, covered outdoor learning area (COLA), hall, staff and student amenities, out of school care facilities, library and special programs. Landscaped areas include active and passive open space play areas, and a games court.

The new high school will provide for a stream 2 high school. This is to comprise of 20 general/specialised learning spaces and support learning units, administration and staff facilities, covered outdoor learning area (COLA), hall, staff and student amenities, library, an agricultural learning unit. Landscaped areas include active and passive open space play areas, a sports field and multipurpose games courts.

A new access driveway is proposed off Barry way Road along the western boundary of the site and includes car parking, bus and private vehicle drop-off zones, and delivery zones.

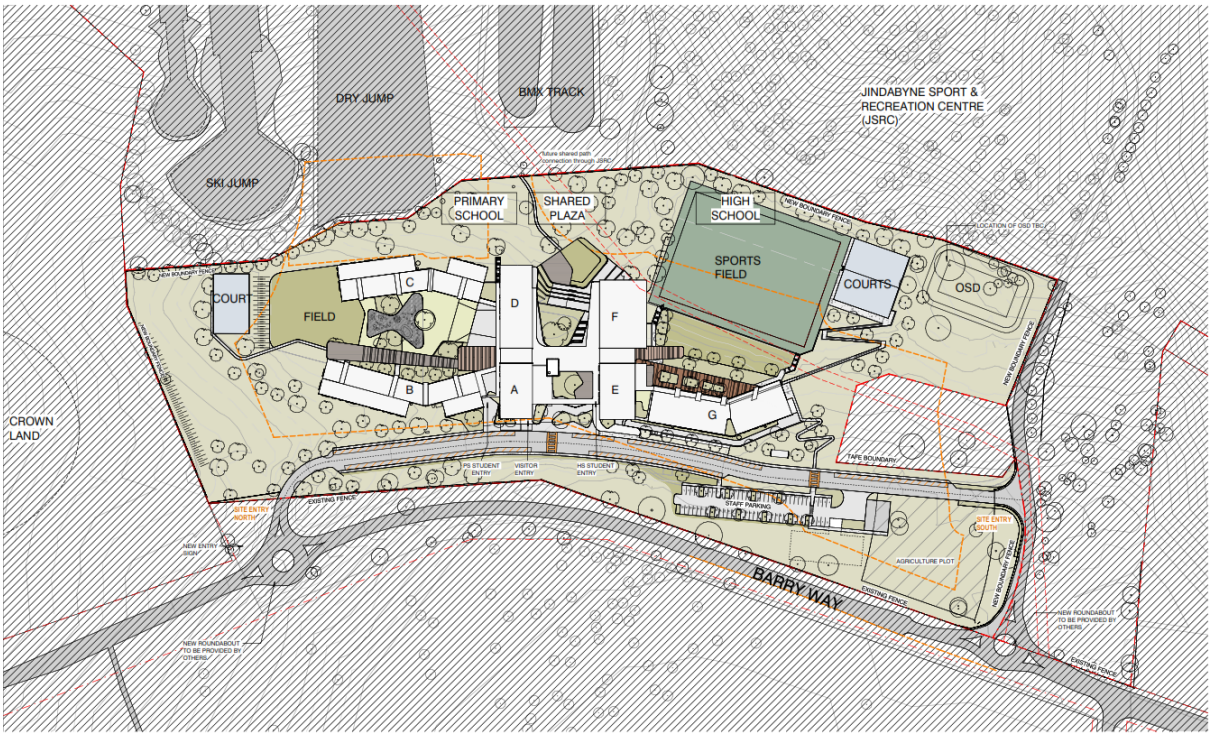


Figure 1 Proposed site plan
Source: DJRD

3 SITE DESCRIPTION

The site of the proposed new education campus at Jindabyne is located within the western extent of the existing JSRC at 207 Barry Way (101 DP1019527). The site is located within the Snowy Monaro Regional Council local government area and is approximately 2.2km south of the Jindabyne town Centre. A site aerial is provided in Figure 2.

The site is approximately 9ha in size, containing a former golf course and three existing workers cottages which were occupied during the construction of the Snowy Hydro Scheme. The majority of the site is undeveloped and contains maintained grasslands and scattered trees. Much of the surrounding land comprises remnant grassland, woodland and agricultural land.

As identified above, the site is within the existing JSRC which is a high performance and community sport centre located directly east of the site. The JSRC has a range of sporting facilities including a synthetic running track, cycling track, netball and tennis courts, fitness and indoor sports centres, and sporting ovals, as well as other services and accommodation facilities. The newly constructed BMX track is located directly east of the site with the new ski jump currently under construction to the northeast.

TAFE NSW have recently lodged a development application for a Connected Learning Centre (CLC) and Mobile Training Unit (MTU) which is proposed to the south of the site. The CLC and MTU will utilise interactive, digitally enabled, flexible, and multipurposed learning environments to provide high-quality training and learning experiences accommodating a maximum of 20-25 students and 3 teachers.

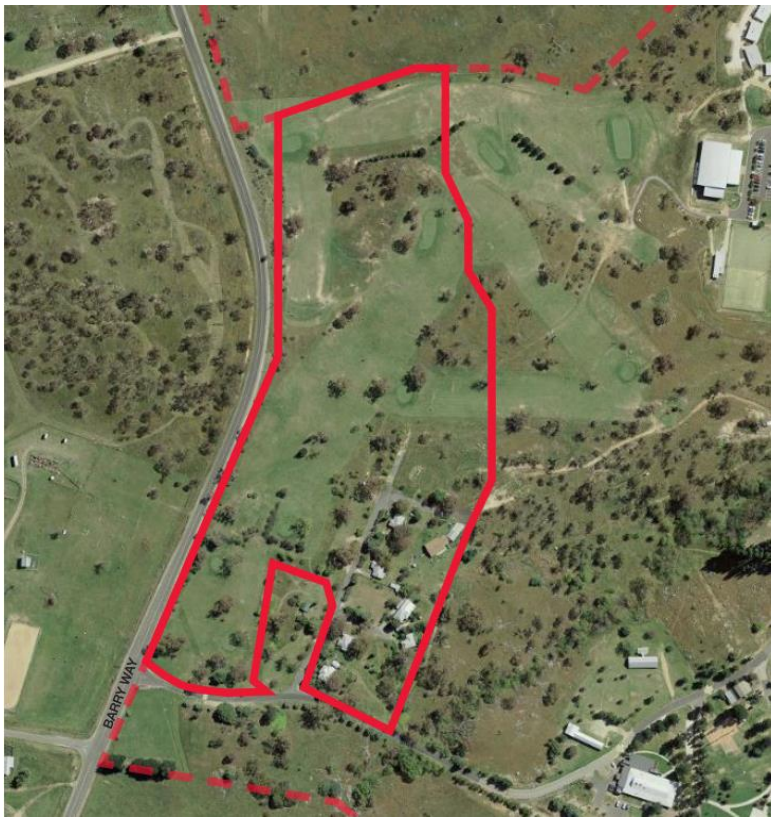


Figure 2: Site aerial - new education campus within the Jindabyne Sport and Recreation Centre.
Source: DJRD

4 INFRASTRUCTURE DEMANDS

The maximum demand for the site is as follows:

Sl No.	Service	Unit	Maximum Demand	Remarks
1.	Electricity	KVA	1,186	Based on AS3000
2.	Potable Water	l/s	4.09	peak
3.	Sewer Drainage	872 FU ADWF = 0.4 l/s PDWF = 1.7 l/s		Snowy Monaro Council Average Water Usage Data Approximate number based on previous school projects. To be confirmed upon finalizing fixtures
4.	Fire Hydrant	l/s	30	AS2419.1-2005 Approximate number based on architectural layouts. To be confirmed by the BCA report.
5.	Fire Sprinklers	No sprinklers required		
6.	Fire Drenchers	No drenchers required		
7.	Natural Gas	MJ/h	2320	F&B, Domestic Hot Water Plant

5 INFRASTRUCTURE OVERVIEW

5.1 Potable Water Services

The following information has been provided and sourced to inform this report and our assessment of the Potable Water Service.

- Dial Before You Dig
- Discussions with the Snowy Monaro Regional Council
- Site survey

Snowy Monaro Regional Council owns and operates the potable water infrastructure on Barry Way that is available for connection.

5.1.1 Existing Potable Water Services

The site has frontage to the following Snowy Monaro Regional Council water mains:

- DN300 CICL main within Barry Road;

Refer to figure H1 for details.

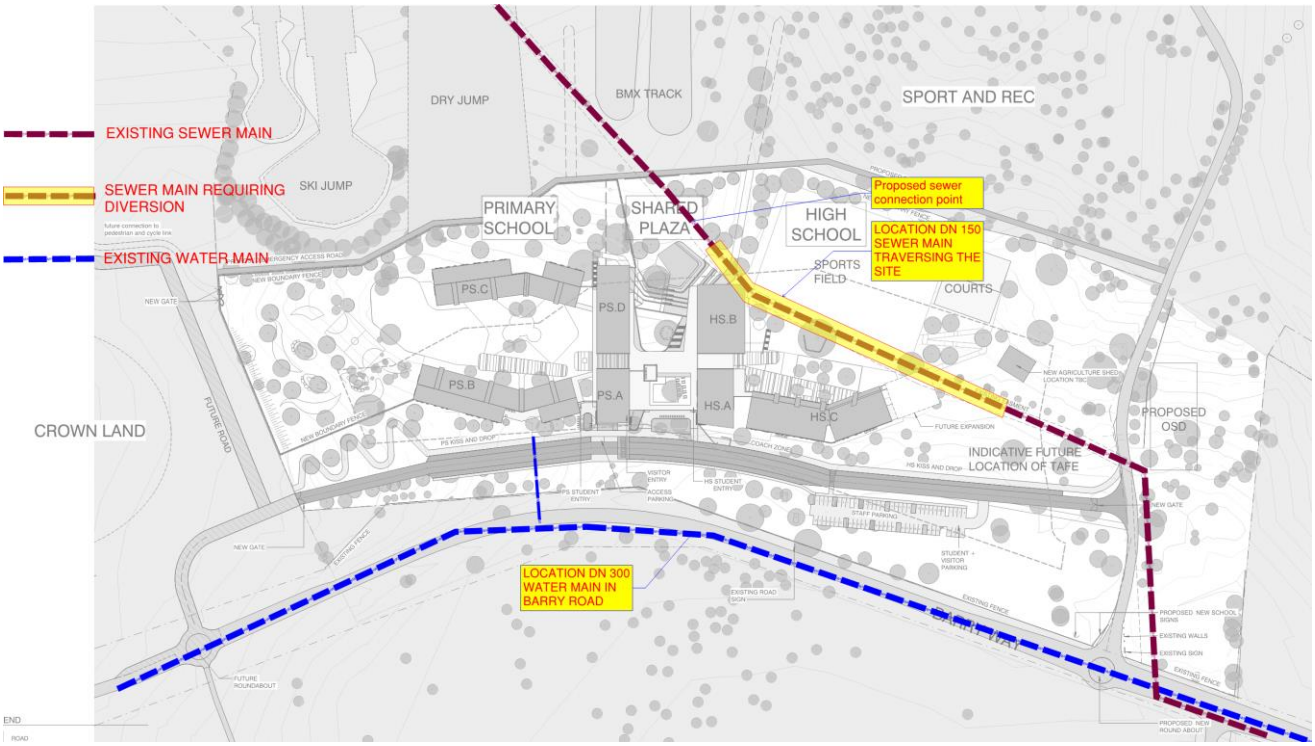


Figure H1: Snowy Monaro Council Infrastructure

5.1.2 Proposed Potable Water Supply

A new potable water connection shall be made to the existing Snowy Monaro Council potable water main located within Barry Road as shown on Figure H1. Final connection location to be confirmed upon application for a new connection to the council.

The incoming potable cold water supply shall be provided with a suitable backflow prevention device and water meter assembly in accordance with the requirements of Snowy Monaro Council. Potable cold water supply shall then reticulate to all fixtures and tapware. Private water sub-meters will be provided downstream of the local water supply authority meter in accordance with ESD and EFSG requirements.

Refer to Figure H2 for site arrangement.

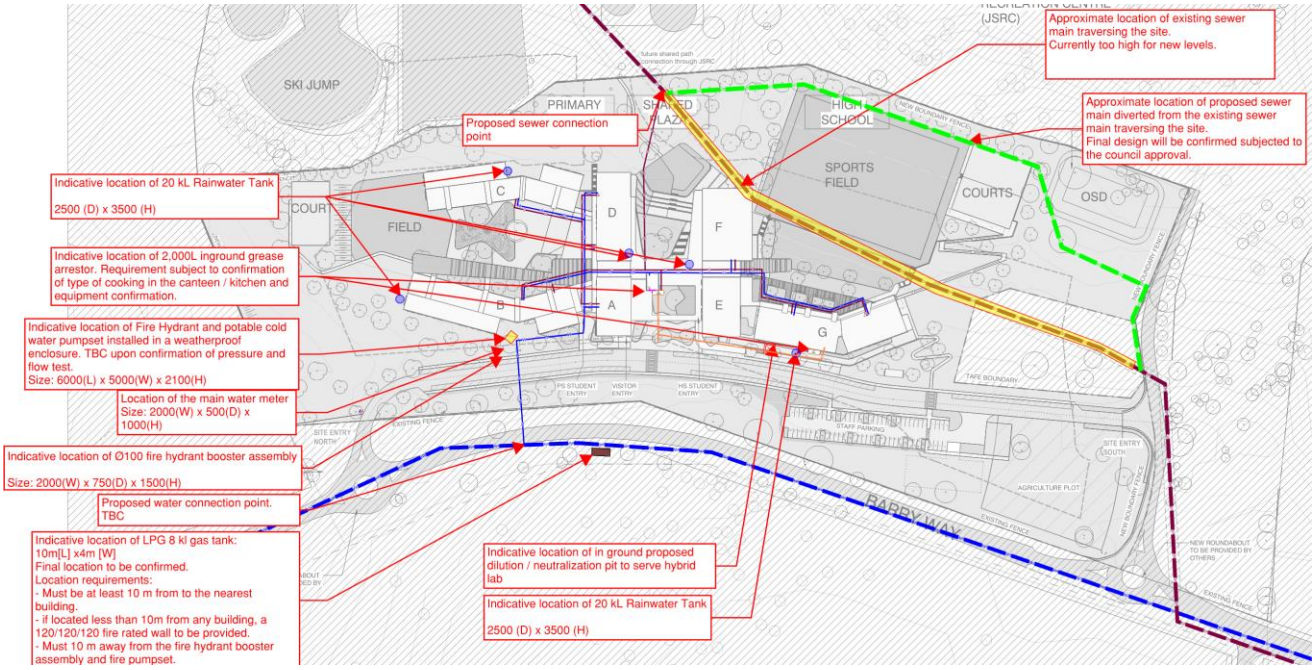


Figure H2 Hydraulics Infrastructure

5.2 Sewer Drainage Services

Gravity sewer drainage systems will collect waste water and effluent from all fixtures, fittings and appliances from the proposed buildings and discharge into the authority sewer main shown below.

The proposed development will connect into the existing DN 150 sewer main traversing the site.

The sewer connection shall be completed with boundary trap, overflow relief gully and an IPMF. Venting to waste pipes will be provided to maintain fixture trap seals and adequate flow throughout the systems.

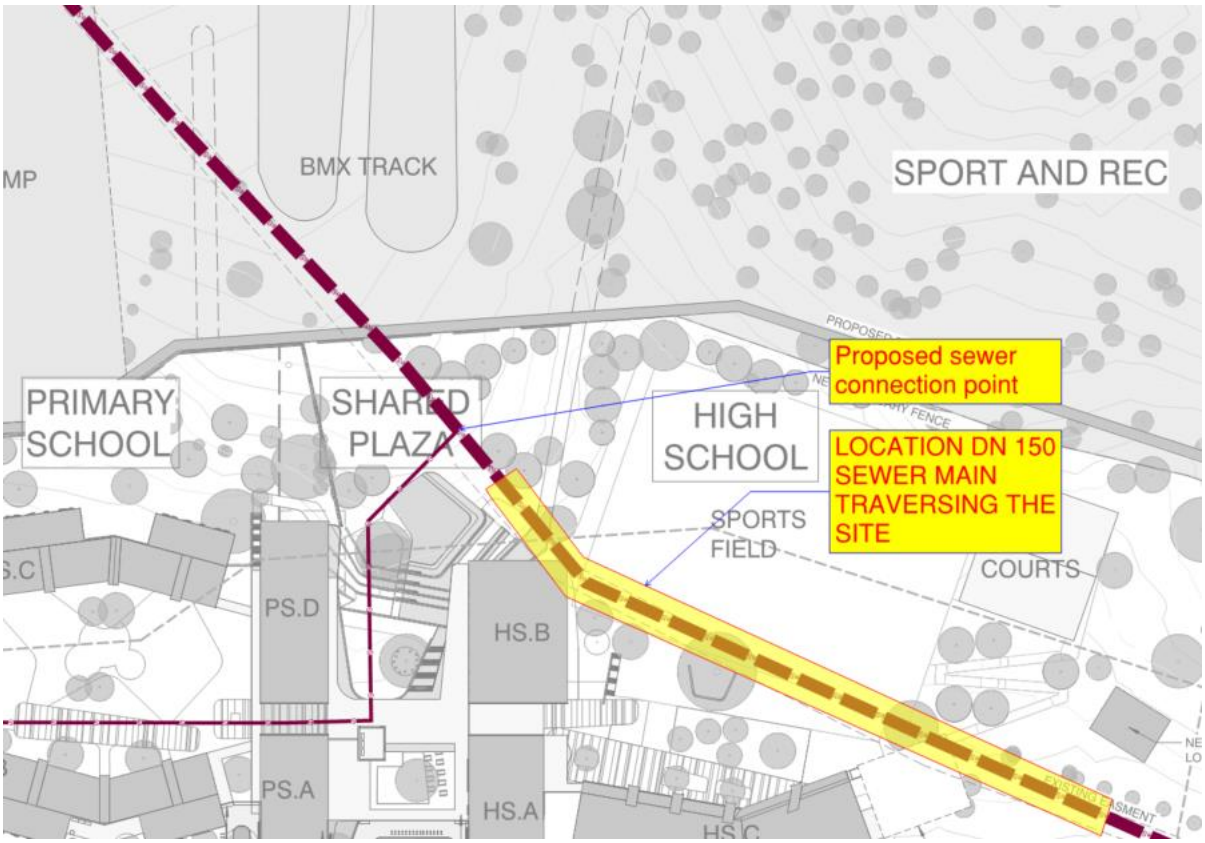


Figure H3 Sewer Connection

The existing sewer line traversing the site will be modified to suit the new building locaiton and site levels. The realignment will consider access for maintenance and minimise the amount of access required to the site and where absolutely necessary access points will be in low student traffic areas accessible by service vehicles. Refer to the hydraulic infrastructure drawing in Appendix A.

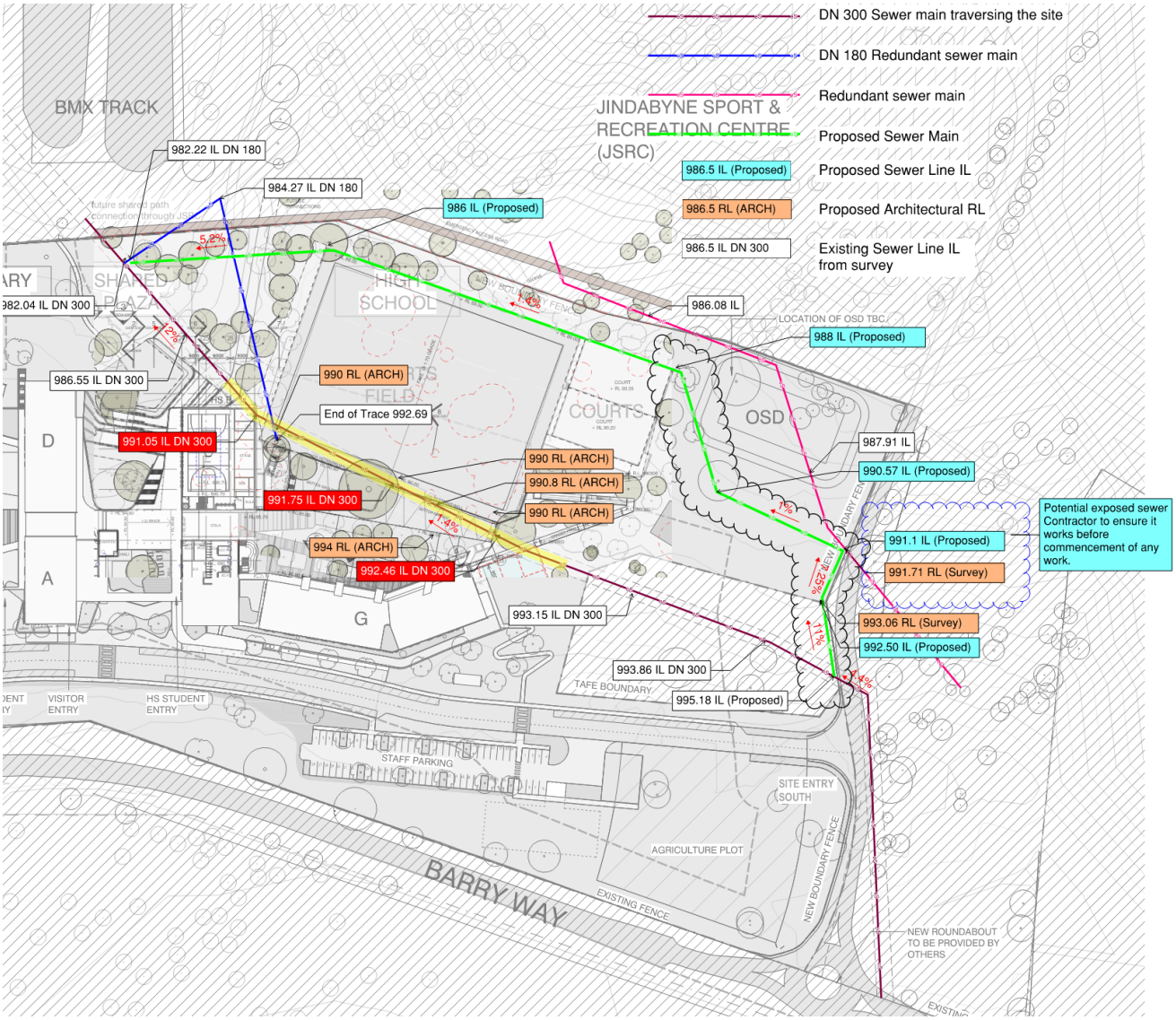


Figure H4 Sewer realignment

5.3 Gas Services

The following information has been provided and sourced to inform this report and our assessment of the Natural Gas Service.

- Dial Before You Dig

5.3.1 Existing Gas Supply

There is no natural gas infrastructure in the vicinity of the site available for connection or extension.

5.3.2 Proposed Gas Supply

8kL LPG gas tank will be provided for the proposed new school to meet the gas demands. Final location of the tank must be coordinated during detailed design.

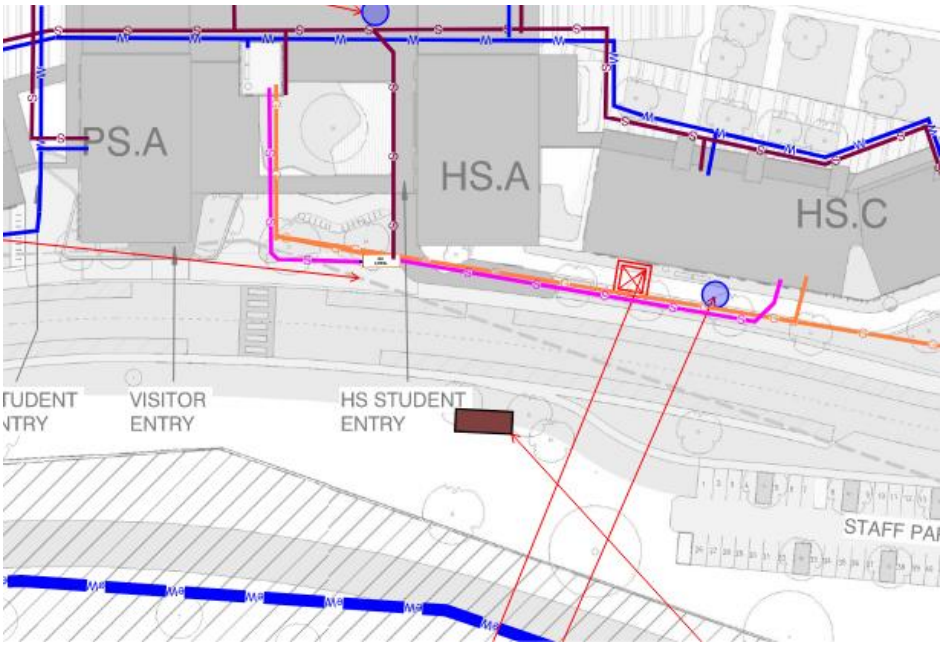


Figure H3 LPG Gas Provision

5.4 Electrical High Voltage Services

5.4.1 Existing High Voltage Supply

Currently, there is an existing pole mounted substation which is located where the proposed sports field will be. This existing pole mounted substation is providing power to nearby developments that are proposed to be demolished, and it is too small to cater for the required load of the site; therefore, it is proposed to be demolished as shown on the electrical infrastructure site plan below.

5.4.2 Proposed High Voltage Supply

The electrical supply to the site is proposed to be from a new Essential Energy padmount substation.

The new Essential Energy padmount substation is proposed to be located adjacent to the multimedia and AV workshop building as shown in Figure E1.

Location is to be adjacent to a driveway/road since the utility provider requires unimpeded access to the substation at all times.

The current maximum demand, 1,186kVA signifies that a one 1500kVA Essential Energy padmount substation will be required to serve the development.

The consumer mains cabling reticulation will be via underground electrical conduits and pits to the site's main switchboard (MSB), which will be located inside the main switchboard room (MSR). It is proposed that the MSR will be located in an adjacent building closer to the substation's location.

A high voltage easement will be required from the coupling point on Barry Way to the new transformer location in front of the site.

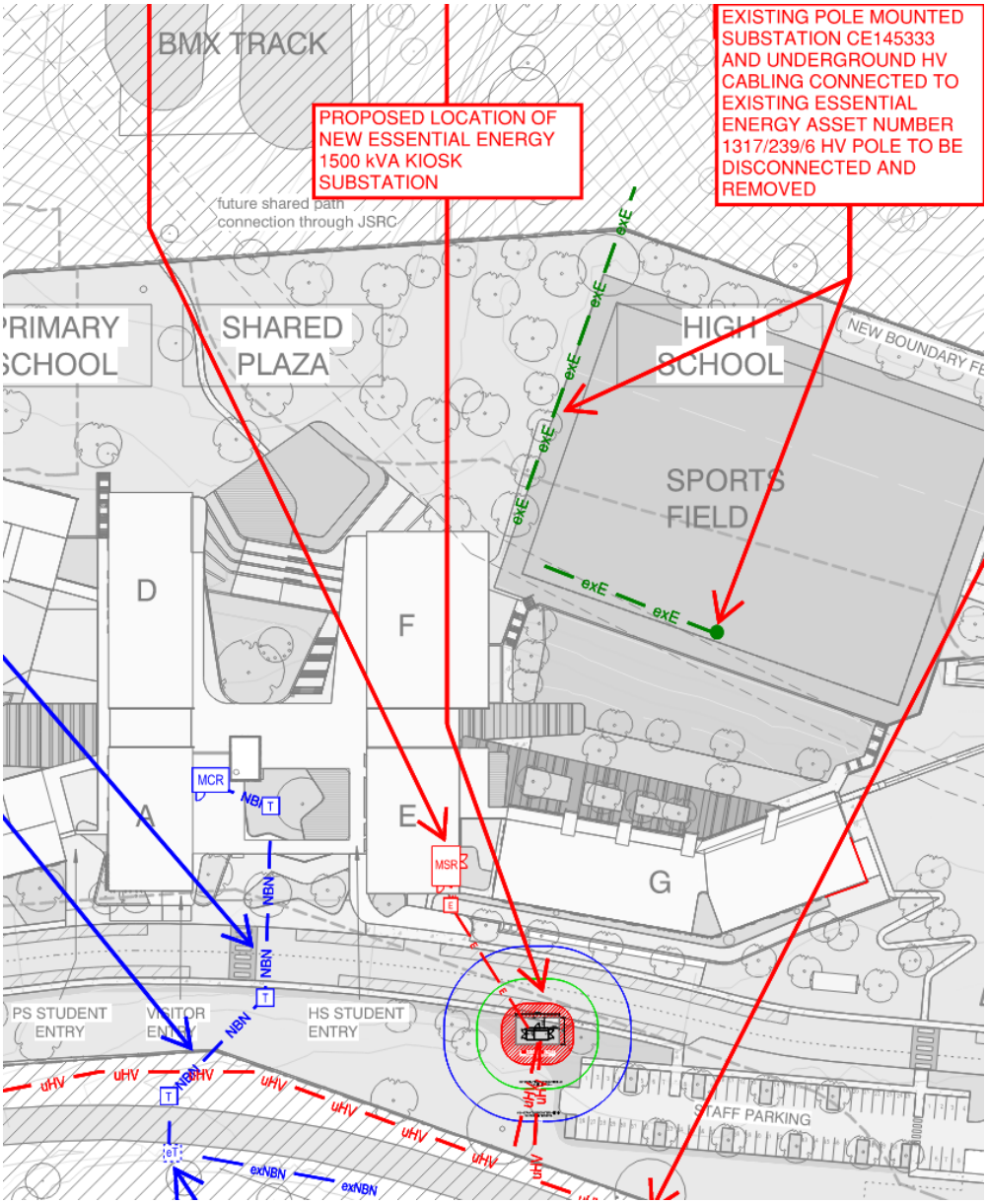


Figure E1: Electrical Infrastructure Site Plan

5.4.3 Authorities

A application for connection has been submitted and a Design Information Package (DIP) has been received from Essential Energy.

The new connection requires approx. 1.2km of new HV network extension to the North & South of the site.

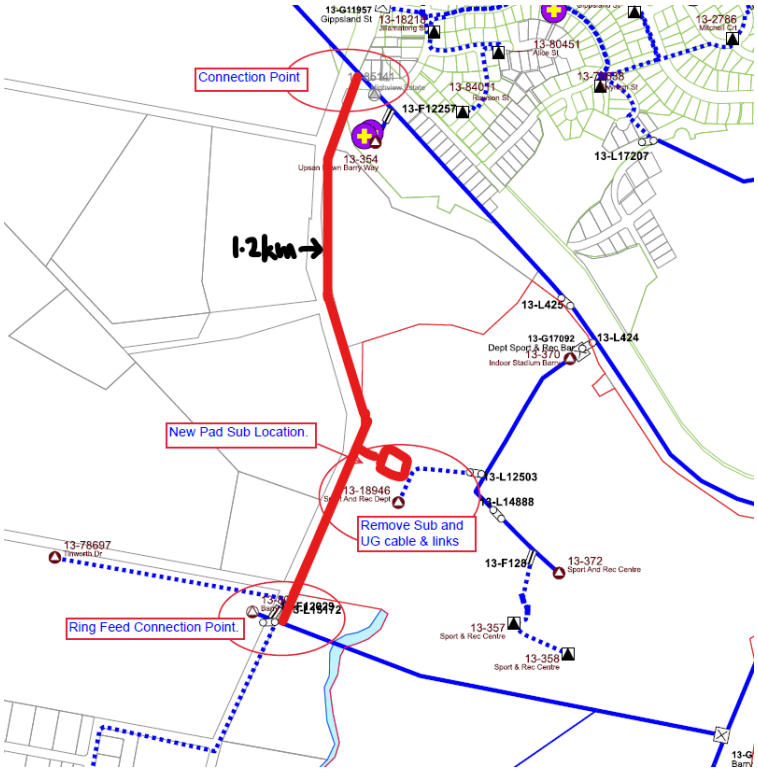


Figure E2: Electrical Infrastructure Region Plan

Associated ASP Level 3 design works will be required.

5.4.4 Photovoltaic Solar Power (PV system)

A 70kW photovoltaic (PV) solar power grid-connect rooftop system shall be provided to offset power consumption costs at the school.

The PV system will require approval from Essential Energy, an application to connect the PV system will be required detailing the installed system. This will be undertaken by the appointed contractor.

5.5 Communication Services

5.5.1 Incoming Communication Services

Based on DBYD documentation, there is an existing Telstra/NBN pit in front of the site and existing underground conduits alongside Barry Way.

The site will be provided with a Telstra Fibre connection (separate to the NBN) which shall service:

- GWIP Service (Government Wideband Internet Protocol)
- Provides connectivity from the school to the departments systems located in the NSW Government Data Centres
- TID Service (Telstra Internet Direct)
  - Provides connectivity from the school to the internet
  - Provides telephone services using SIP and VOIP phones

It is proposed that new NBN/Telstra pits and lead-in conduits will be terminated in a new main communications room to be located in the Admin building, which is a preferred location as this building is secure, staff-only area on the campus. New pits and associated underground conduits are proposed to be installed as per Figure E2 below for Lead-in optic fibre reticulation.

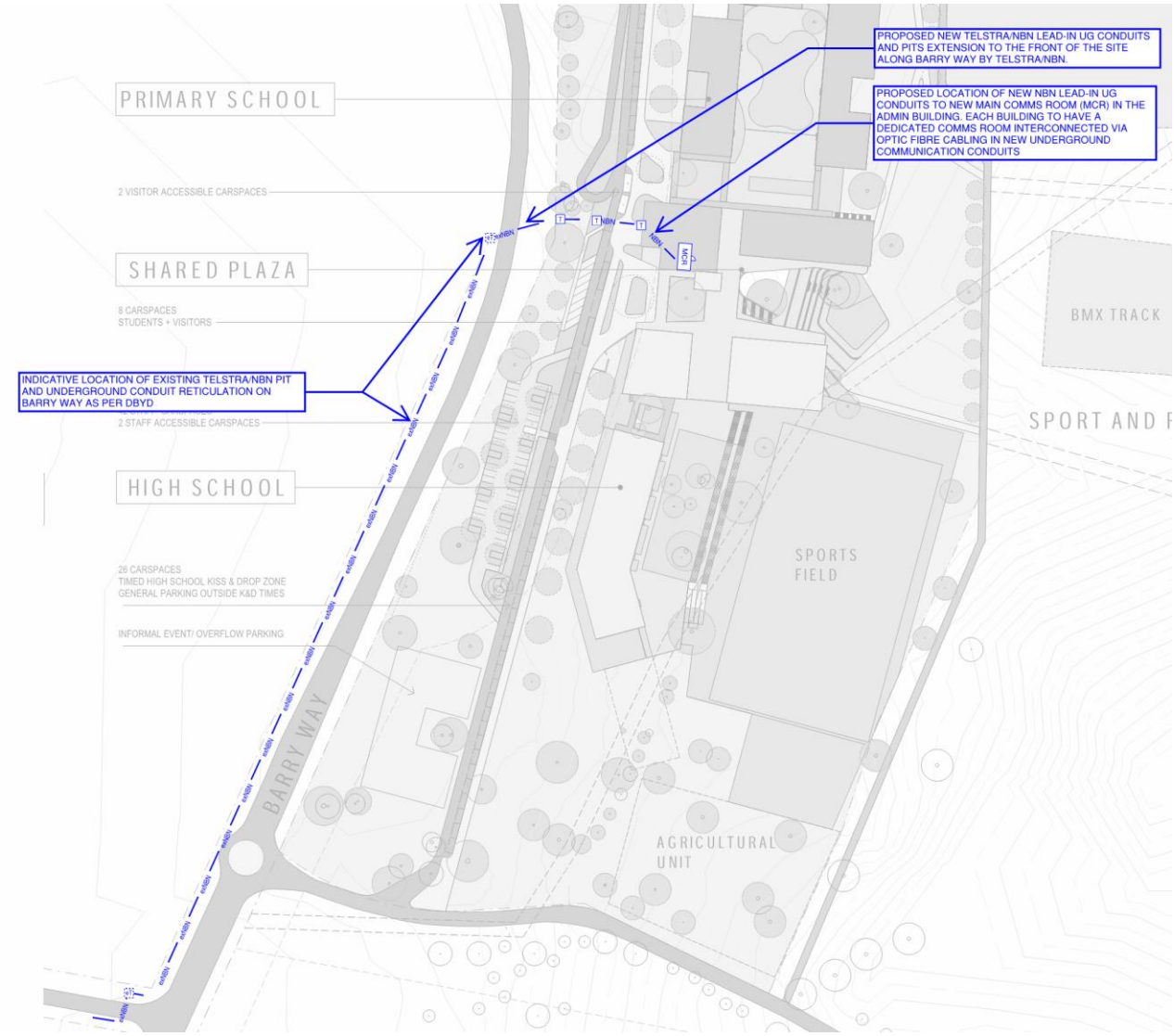


Figure E2: Communications Infrastructure Site Plan

5.5.2 Authorities

An NBN application has been lodged to request this connection and has been denied since the site can be serviced by Fixed Wireless or Sky Muster instead via underground cabling as proposed. However, we have been looking for alternative solutions after have approached NBN personnel, and a new application is currently under evaluation.

6 INFRASTRUCTURE DELIVERY AND STAGING

There are no particular staging requirements for the infrastructure works.

The below table outlines the approval pathways, time lines and funding responsibilities of the different authority approvals required for the Project.

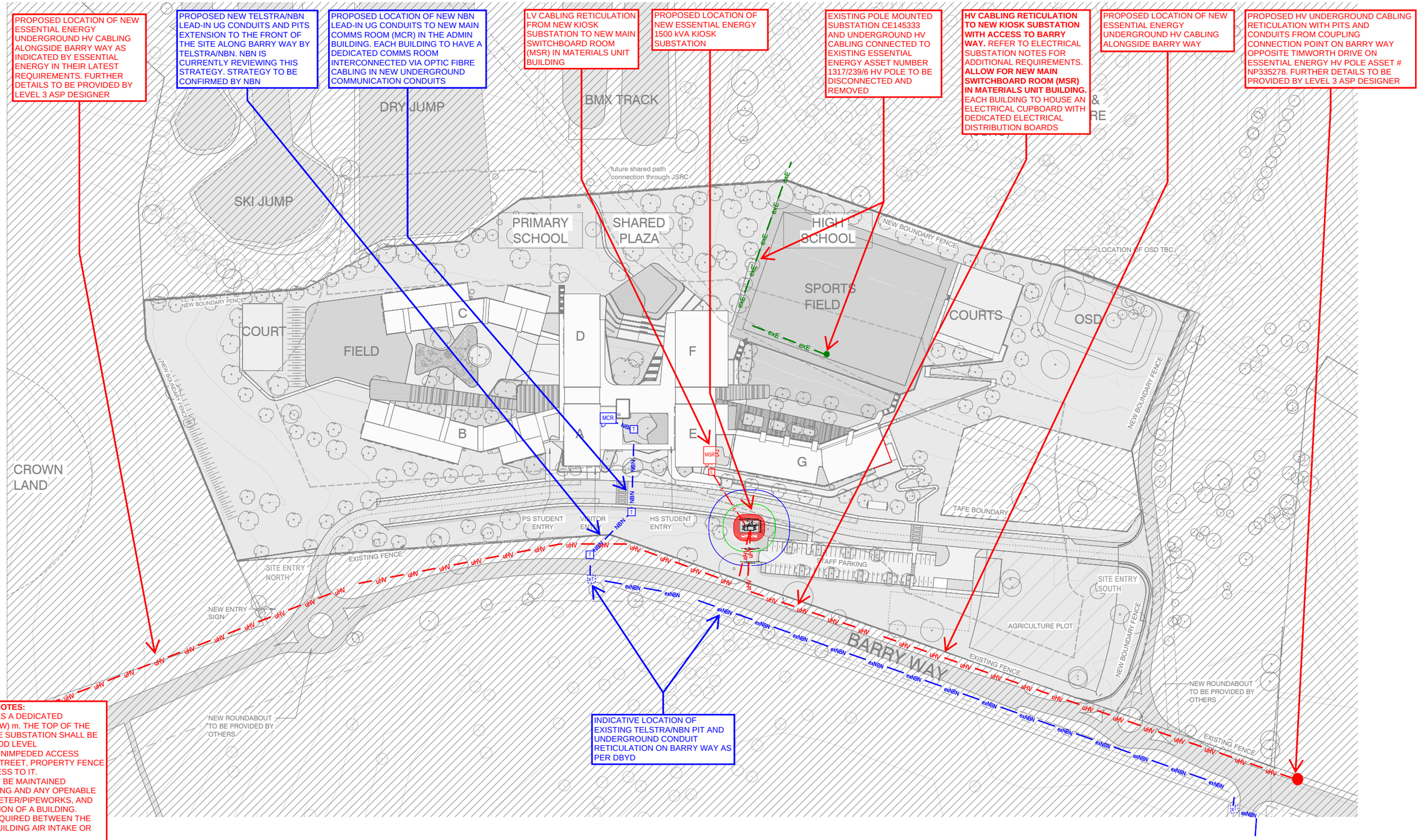
Service	Authority	Process	Funding Responsibility
Power	Essential Energy	– Engage Level 3 Designer (complete) – Submit application for connection (complete) – Receive Design Brief (complete) – ASP Design and 40 day notice – Submit Design – Authority review – Resubmit design – Authority approval – Construction	Project / Builder
Communications	NBN	– Submit application (complete) – 15 days for offer – Client accepts offer – NBN Design, appointed builder engages accredited installer.	Project / Builder
Communications	Telstra	– Submit application – 15 days for offer – Client accepts offer – Telstra Design and Construct	NSW Department of Education
Water & Sewer	Snowy Monaro Regional Council	– Apply to SMRC – Authority review and approval – Water meter procurement by contractor – Builder to manage construction	Project / Builder
Natural Gas	Elgas or the like	– School Infrastructure NSW to form a commercial arrangement. – Elgas or similar bulk distributer to supply and install tank. – Builder to manage install and completion with supplier	Project / Builder

7 CONCLUSION

The project can be adequately serviced by power, telecommunications, water, sewer and gas services.

Electrical services infrastructure upgrades have been identified as required to service this development.

APPENDIX A INFRASTRUCTURE PLAN



ELECTRICAL SUBSTATION NOTES:
- THE SUBSTATION REQUIRES A DEDICATED EASEMENT OF 5.5 (L) x 2.75 (W) m. THE TOP OF THE CONCRETE FOOTING OF THE SUBSTATION SHALL BE ABOVE THE 1:100 YEAR FLOOD LEVEL
- SUBSTATION MUST HAVE UNIMPEDED ACCESS DIRECTLY FROM A PUBLIC STREET, PROPERTY FENCE MUST NOT BLOCK THE ACCESS TO IT.
- A CLEARANCE OF 3m MUST BE MAINTAINED BETWEEN THE KIOSK HOUSING AND ANY OPENABLE OR FIXED WINDOWS, GAS METER/PIPEWORKS, AND ANY NON-FIRE RATED PORTION OF A BUILDING.
- A CLEARANCE OF 6m IS REQUIRED BETWEEN THE KIOSK HOUSING AND ANY BUILDING AIR INTAKE OR EXHAUST OPENINGS.
- A CLEARANCE OF 10m IS REQUIRED BETWEEN THE SUBSTATION AND ANY EXTERNAL FIRE HYDRANTS OR BOOSTER ASSEMBLIES.
- PERIMETER FENCE/WALL TO GO BEHIND SUBSTATION EASEMENT TO PROVIDE FREE ACCESS FROM BARRY WAY TO ESSENTIAL ENERGY.

SCHEMATIC DESIGN

Norman Disney & Young — A TETRA TECH COMPANY

This drawing is for information purposes only

Project: Jindabyne Central School - Schematic Design

Title: Electrical and Communications Site Plan

Document Number: ESK-001

Project No: S38867-001	Drawn: K.F	Date: 15.12.21	Scale: n/a	Rev: B

	AUTHORISED
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LANDSCAPE ARCHITECT: SITE IMAGE Landscape Architects — Level 1, 3-5 Baptist Street, Redfern, 2016, T +61 2 8332 5600

SERVICES: Norman Disney & Young — Level 1, 60 Miller Street, North Sydney, 2060, T +61 2 9928 6800

PROJECT MANAGER: Colliers — Level 30 Grosvenor Place, 255 George Street, Sydney 2000, T +61 2 9257 0222, F +61 2 9257 0288

STRUCTURE & CIVIL: Cardno — Level 9, The Forum, 203 Pacific Highway, St Leonards, 2065, T +61 2 9496 7700

This drawing should be read in conjunction with all relevant contracts, specifications and drawings. Dimensions are in millimetres. Levels are metres. Do not scale off drawings. Use figured dimensions only. Check dimensions on Site. Report discrepancies immediately.

Scale 1: 1000 @ A1

0 10000 20000 50000

PROJECT: JINDABYNE EDUCATION CAMPUS

207 BARRY WAY
JINDABYNE

CLIENT: NSW GOVERNMENT Education

AUTHORISED FOR ISSUE

DIRECTOR DATE

ARCHITECT: djrd architects

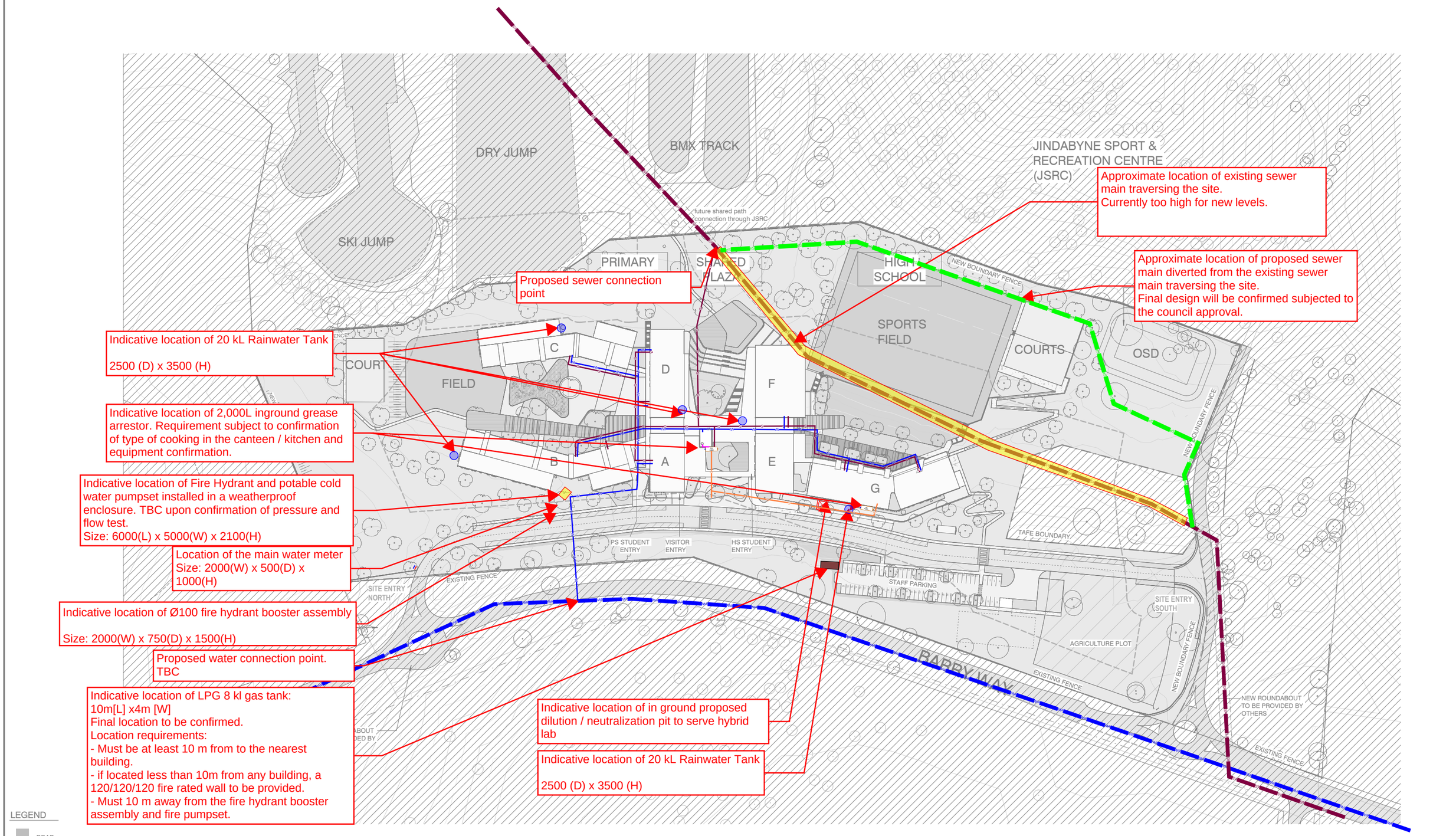
T +612 9319 2955
ABN: 48 942 921 969
Nominated Architects: Andrew Hipwell 6562, Daniel Beekwilder 6192

63 Myrtle Street, Chippendale NSW 2008, Sydney Australia, djrd.com.au

DRAWN BY	SCALE	SHEET SIZE	ORIGIN DATE
Author	As indicated	A1	05/03/21

DESCRIPTION: PROPOSED SITE PLAN

PROJECT No	DRAWING No	REVISION
20 415	SSDA.0101	L



LEGEND

- ROAD
- AREA OUTSIDE OF SCOPE
- SITE BOUNDARY
- LOT BOUNDARY
- APZ - ASSET PROTECTION ZONE

SCHEMATIC DESIGN

Norman Disney & Young — A TETRA TECH COMPANY

This drawing is for information purposes only.

Project: Jindabyne Central School - Schematic Design

Title: HYDRAULIC Site Plan

Document Number: HYD-SK-001

Project No: S38867-001	Drawn: CL	Date: 15.12.21	Scale: n/a	Rev: B

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LANDSCAPE ARCHITECT: SITE IMAGE Landscape Architects — Level 1, 3-5 Baptist Street Redfern, 2016 T +61 2 8332 5600

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Scale 1: 1000 @ A1

0 10000 20000 50000

PROJECT: JINDABYNE EDUCATION CAMPUS

207 BARRY WAY
JINDABYNE

CLIENT: NSW GOVERNMENT Education

AUTHORISED FOR ISSUE

DIRECTOR DATE

ARCHITECT: djrd architects

T +612 9319 2955
ABN: 48 942 921 969
Nominated Architects: Andrew Hipwell 6562 Daniel Beekwilder 6192

63 Myrtle Street Chippendale NSW 2008 Sydney Australia djrd.com.au

DRAWN BY	SCALE	SHEET SIZE	ORIGIN DATE
Author	As indicated	A1	05/03/21

DESCRIPTION: PROPOSED SITE PLAN

PROJECT No	DRAWING No	REVISION
20 415	SSDA.0101	L

APPENDIX B ESSENTIAL ENERGY SUPPLY OFFER

DESIGN INFORMATION PACKAGE
FOR SITE REF: ST-0002019 207 Barry Way Jindabyne - NSW Department of Education

Design Information Issue Date:

DEP AUSTRALIA PTY LTD ATF DEP CONSULTING UNIT TRUST T/AS DEP CONSULTING
Suite 4/12 Laycock Ave
CRONULLA NSW 2230

Introduction

Thank you for your application requesting electrical reticulation design information for the proposed supply to Lot 101, DP 1019527

Site Address: 207 Barry Way
Jindabyne NSW 2627

Connection Applicant Name: Jim Lewis

General

1. The site reference ST-0002019 has been established and shall be used for all future reference and payment transactions.

2. The content of this Design Information Package has been compiled on the basis of certain conditions and restrictions. The designer shall incorporate these requirements within the electrical reticulation design prepared for presentation to Essential Energy.

3. The Design Information Package will be valid for a period of 180 days from the above date. If an updated package is required, submit a new request for Design Information.

4. Essential Energy is providing this information in good faith, to assist you to complete designs for certification. Essential Energy cannot and does not warrant the accuracy or completeness of the information and does not accept any liability for inaccuracies or lack of information. It is the responsibility of the applicant or Accredited Service Provider to independently confirm the accuracy or otherwise, of any information.

Connection Point & Specific Design Information

The regulatory category for the project is: **Commercial and Industrial Developments**

The nominated connection point on the network will be at Asset No: **1317/248 and NP428575 and NP428576**

Connection Point Voltage**: 11,000 Volts 3Ø**

A connection application has not been submitted. This Design Information Package is based on the information supplied with the request.

A connection contract must be in place into prior to submitting a design package for certification. If the information supplied with the connection application does not match the information supplied with the request for design information, Essential Energy may require the Design Information Package to be reissued and additional charges may apply.

Existing Asset Details

Existing Asset Custom Notes: **Our records show that,**

- HV conductor between poles 1317/247 and 1317/248 is Cherry 6/4.75+7/1.60 ACSR/GZ.

- HV UG cable being installed in project CW120223 is 240mm 3c Al XLPE.

- HV OH conductor at pole 1323/33/22/7 is Hydrogen 7/4.50 AAAC.

- HV UG cable to Sub 13-1830 is 240mm 3c Al XLPE.

The existing Low Voltage Conductor is: Not Applicable

The existing Substation is: **Not Applicable**

- Existing Substation HV Fuses are: **Not Applicable**
- Existing Substation LV Fuses are: **Not Applicable**

New Asset Details

The Minimum size for the New HV conductor / cable required: **11kV 240mm 3 Core AL XLPE**

New Asset Custom Notes:

The New Substation size required is: **1500 kVA 3Ø**

- New Asset Custom Notes:
- New Asset Custom Notes:

Refer to CEOS5099 – Distribution: Transformer Fusing

Pre-Allocation of Asset Labels are provided under a separate Asset Label Request. Please submit your Asset Label request through the portal.

Primary Tap setting

Primary Tap setting for this transformer is to be included on the drawing for certification.

The primary tap setting for this transformer: 11275/433/250

Earth Fault Protection Settings for Neutron Earthing Analysis

Site Asset Number: **New substation site**
Phase to Earth fault level at site (Amps): **2323**
X/R ratio at site: **2.174**
Number of interconnected Substations: **0**
Estimated number of connections per substation: **1**
SEF Active: **Yes**

Upstream protective device: **Details** in table below

Device No	Device Type	Iset (A)	TMS	Curve Type	DMT	Instantaneous (A)	Minimum Time (s)	SEF Current (A)	SEF Time (s)	Additional Time (s)
JIN22	Relay	50	0.25	IEC SI	0	0	0	10	10	0

Does the development require Earth Grid?:No

Site Specific Comments:

The application to provide supply to Lot 101 DP 1019527 has been assessed and the following site-specific design information is provided to enable a design to be developed.
The information provided within this DIP is based on the concept plan and supporting documents within the application. Should the project requirements change the DIP will need to be re-issued.

The proposed connection point does not have the capacity to supply the development. Supply will need to be from the North, from the JIN22 Jindabyne East Feeder. It would be acceptable to install HV overhead or HV underground in the road reserve along Barry Way.
The proposed connection point will be in the road reserve in the vicinity of Barry Way and Jillamatong St., refer to certified plans for project 121143 and 120223 for proposed works in the area that will change the network.

If HV overhead is to be installed, it will be acceptable to install a new pole in the road reserve between pole 1317/248 and NP428575 being installed in project 120223 to extend the overhead network.
The proposed UG streetlight columns at the intersection of Barry Way and Jillamatong St, will need to be considered if an OH line to installed close to that location. Ref. to project 121143.
The designer/developer should be aware there is an aerodrome in the vicinity to the South and they would need to liaise with the appropriate authorities if installing overhead assets.

If HV underground is to be installed, it will be necessary to install a switching station in the vicinity of NP428576 being installed in project 120223.
Install the padmount substation in an easement at the front boundary of the lot, as per CEOP8046.
Essential Energy's standard HV reticulation for commercial underground networks is a feeder rated ring main system which requires the HV mains to be looped in and out of the substation sites to provide standard reliability. To provide this, install a HV switching station in the vicinity of pole 1323/33/22/7. Re-route the cable to substation 13-1830 into the switching station. Install a new section of cable from the switching station to 13-L15172 and provide a Normally open point from the new padmount substation.
As proposed remove substation 13-18946, however, it will need to be confirmed that the substation doesn't supply any buildings that will remain and are not part of the school. Remove the underground HV to pole 1317/239/6.

The HV and LV circuit breaker settings will need to be adjusted. Please request CB protection settings for the type of CB to be fitted into the ordered substation, (ABB or Schneider are used by Essential Energy).
The ASP is to provide CB details prior to submitting the outage request so that settings can be calculated and installed prior to commissioning.

Any portion of a building that is within 3 metres of the pad sub is required to have a 2-hour rated fire rating. Windows or glass blocks are not permitted in in this zone.

Pad mount substations are required to be located such that they will not be subject to damage by vehicles. This must comply with the requirements of CEOM7098 2.14.15 Protection from Vehicles. A heavy truck with a vehicle mounted crane is needed to install or remove the pad sub for future maintenance. The access route needs to be a minimum of 4m wide and have a minimum of 5m headroom to allow the heavy truck to access the pad sub and operate the crane. Access to the site is to be 24/7.

An LV connection application confirming the required load shall be submitted prior to certification of the project. Please supply a copy of the LV connection offer with the design submission.

Notifications to be sent to all residents adjacent to the work area (e.g., new poles, conductor upgrades, etc.). Please detail the customers notified of the proposed works in Essential Energy's Review of Environmental Factors worksheet (CEOF1070.02) Section 1.14 and provide evidence of customer consultation in the Design Submission.

Our records show that,
- HV conductor between poles 1317/247 and 1317/248 is Cherry 6/4.75+7/1.60 ACSR/GZ.
- HV UG cable being installed in project CW120223 is 240mm 3c Al XLPE.
- HV OH conductor at pole 1323/33/22/7 is Hydrogen 7/4.50 AAAC.
- HV UG cable to Sub 13-1830 is 240mm 3c Al XLPE.

Zone Substation: Jindabyne 66/33/11
Feeder: JIN22 Jindabyne East
SEF:

The nearest Essential Energy Depot is: **Jindabyne**

Project Funding to be displayed in DIP : **No**

Essential Energy's records indicate that there is not a pre-existing pioneer scheme attached to the infrastructure where you request a connection.

Ancillary Network Service (ANS) Charges

Compulsory network fees for this project are calculated in accordance with the Australian Energy Regulator (AER), Charges for Ancillary Network Services (ANS).

Your client is to be advised of any compulsory network fees that are applicable to this project.

Other fees that may be applied to this project are listed in the document titled 'Price Schedule for Ancillary Network Services that can be found at Essential Energy's website: (http://www.essentialenergy.com.au/content/electricity-network-pricing-and-information).

*** Note - ANS fees exclude GST and are subject to annual price increases in accordance with the National Regulatory Framework. Care should be taken to select the fee appropriate to this project type. Design certification fees will be based on the date of receipt of a complete and correct submission for certification. All other fees will be based on the work completion date. (eg. date of outage, commissioning, inspection).**

GENERAL DESIGN INFORMATION

Design Standards

Applicable Essential Energy design standards include:

- CEOM7001 – Network Services – Design Construction Drawings,
- CEOM7097 – Overhead Design Manual,
- CEOM7098 – Underground Design Manual
- CECM1000.70 - Environmental Impact Assessment NSW
- CEOM5113.02 - High Voltage A.C. Distribution Earthing

Other applicable standards or regulations include:

- Work Health and Safety Act 2011 (NSW)
- Work Health and Safety Regulation 2011 (NSW)
- Electricity Supply Act 1995 (NSW)
- Environmental Planning and Assessment Act 1979 (NSW)
- AS/NZS 7000:2010 Overhead Line Design
- AS1158 : Road Lighting
- AS 2067: Power installations exceeding 1kV A.C.
- Energy Networks Association EG-0 Power System Earthing Guide.
- Appropriate WorkCover NSW standards, guides and directives.
- Appropriate Environmental Protection Authority of NSW standards, guides and directives.

Network Optimisation

The Level 3 ASP must ensure that the design is carried out in such a way as to optimise future network operating and maintenance costs rather than solely minimising initial connection costs. Consideration should be given to utilising or upgrading existing assets (eg. poles and transformers) where possible.

When assessing connection proposals, Essential Energy will use network optimisation considerations to determine which connection proposals are acceptable.

Other Services

The Level 3 ASP must carry out a Dial Before You Dig search and is responsible for ensuring that the design does not impact on other services, e.g. telecommunication, gas, water etc. DYBD information should be clearly shown on the design.

In the event the works or design needs to be varied, amended or rectified due to a conflict with other services, the Level 3 ASP is responsible for any subsequent redesign required.

The Level 3 ASP must also ensure that the design will not conflict with proposed services to be installed in conjunction with the development.

Materials

All materials specified in the design must comply with CEOM7004 – Materials Inventory: Contestability (Approved)

Non-standard materials may only be used with written permission from Essential Energy. Please submit requests to the Contestable Design & Certification department with full details justification and engineering certification where required.

All assets to be removed from the Essential Energy network within this project are to be nominated on the operational form CEOF 2098 and returned to the Essential Energy regional store located **Cooma.** The stores contact for this project is **Steve Valentine** who can be contacted during office hours on **02 6455 4105.** This requirement should be clearly noted on the project design.

Work Health and Safety

The Work Health and Safety Act 2011 (NSW) and the Work Health and Safety Regulation 2011 (NSW) assign significant responsibilities to designers, constructors and the person who commissions the works.

Regulation 295 of the Work Health and Safety Regulation 2011 requires a designer to provide a designer safety report to the person who commissioned the design. For the purpose of this legislation the connection applicant is the person who commissions the design and Essential Energy is the entity who will take ownership of the assets upon connection to the network.

A copy of the designer safety report must be included with every design or design amendment submitted to Essential Energy for certification.

At a minimum, the Designer Safety Report must include:

- a description of the purpose for which the plant or structure was designed;
- the results of any calculations, testing, analysis or examination;
- any conditions necessary to ensure that the plant, or structure is without risks to health and safety when used for a purpose for which it was designed, or when carrying out any activity related to the plant or structure such as construction, maintenance, and demolition.

The Designer Safety Report should be written with an appropriate level of detail to match the size and complexity of the project.

The Level 3 ASP should link or attach the Designer Safety Report to the design construction plans (and other relevant documents) to ensure the safety information contained within the report is considered by future parties who may work on the designed assets (e.g. during construction, maintenance, decommissioning, demolition etc. phases of the asset lifecycle).

Easements

The Level 3 ASP should consider easements requirements during the design route analysis.

The customer is responsible for all costs associated with the easement creation including solicitor fees, surveying costs and compensation payable to affected landowners.

Where easements are to be created outside of land to be subdivided, satisfactory arrangements must be in place prior to submitting a design package for certification. For further information, please refer to CEOP8046 Network Planning: Easement Requirements.

Easements over Crown land, Crown roads or waterways must be obtained by Essential Energy through the compulsory acquisition process, in accordance with the procedures set out in the Land Acquisition (Just Terms Compensation) Act 1991 (NSW). Please contact the Contestable Design & Certification team for further advice or go to the Easements area of the Essential Energy website which contains an information sheet for crown land easements.

Approvals

The Level 3 ASP must seek approvals from the local council, all road controlling authorities and any land occupier affected by the proposed electrical works. The Electricity Supply Act 1995 (NSW), State Environmental Planning Policy (Infrastructure) 2007 (NSW) and the Roads Act 1993 (NSW) have specific requirements in this regard.

In accordance with Section 45 of the Electricity Supply Act, notification of the proposed works must be given to the local council. The council is allowed up to 40 days to comment and the ASP required must duly consider all responses received.

In accordance with Regulation 42 of the State Environmental Planning Policy (Infrastructure) 2007, notification of proposed substations, or works on an existing substation, must be given to both the local council and to occupiers of all adjacent land. The council and adjacent land owners are allowed up to 21 days to comment. The Level 3 ASP must duly consider all responses received.

For works in, on or over a classified road, Section 138 of the Roads Act requires the proponent to obtain consent from the appropriate road controlling authority, and either consent, or concurrence from the RMS.

Copies of notices to the local council and occupiers of adjacent land, any comments received or a letter stating that no response was received, and any required consent letters are to be provided to Essential Energy with the certification package.

Copies of notices to the RMS (and other road controlling authorities where applicable) and the written consent received must be provided to Essential Energy with the certification package for any works on classified roads.

Design Certification

Please note the following information regarding design package submissions:

1. In addition to specific requirements outlined in aforementioned clauses, the design package shall be prepared in accordance with the technical design requirements as specified in Essential Energy's Design and Construction standards.

2. All relevant documents shall be submitted with the design for certification. (see Required Documents Schedule)

3. Essential Energy will carry out an initial review of the design package and issue certification of the design drawing to indicate that the package is compliant.

4. If it is found that the design package is not compliant with Essential Energy's technical or drawing standards, or specific design requirements, a rejection notice will be issued outlining the reasons for rejection. Design rechecking charges will be applied.

5. Certification will remain valid for a period of 6 months. If construction of the proposed works has not commenced before this period expires, the design package must be updated and re-submitted for certification prior to submission of the Notice to Commence Construction.

In certifying any design, Essential Energy makes no warranty, express or implied, that the design is:

1. Fit for its intended purpose
2. Suitable for the site conditions
3. Free of design defects (i.e. errors and omissions)

The Level 3 ASP (and Level 1 ASP at commencement of construction) acknowledges that Essential Energy has not inspected the site, and therefore, is unfamiliar with the site conditions.

Design certification is granted exclusively based on the submitted design with respect to the construction standards in force at the time. It has no reference to any underlying assumptions or conditions.

Responsibility for the correctness and suitability of the design remains with the Level 3 ASP after certification. Essential Energy will request the Level 3 ASP to correct any design defects discovered after certification is granted and resubmit the design package for certification. Design rechecking charges will be applied.

Environmental

Environmental Impact Assessment

An environmental impact assessment of the project will be required. The assessment is to be completed in accordance with Essential Energy's Environmental Impact Assessment (EIA) Policy CECM1000.70.

A completed *CEOF1070.01 Environmental Impact Assessment: Screening Worksheet*, and *CEOF1070.02 Review of Environmental Factors Worksheet*, must be submitted with design construction plans and other documents for certification by Essential Energy. An information *sheet CEOH1070.02a REF Worksheet: Information Sheet for use by Accredited Service Providers* is available in Essential Energy's online document library to assist ASPs with the completion of CEOF1070.02.

Please ensure ALL required supporting documentation such as threatened species searches, evidence of community consultation, and notifications to council are included.

Please note, Essential Energy is offering Environmental Impact Assessment training for Level 3 ASPs in early 2017. From 1 July, 2017, this training will be mandatory for any person that completing an EIA for a contestable works project.

Substation Sites

Substations must comply with the requirements of Essential Energy standard construction drawings and design manuals. Level 3 ASPs are reminded of the following requirements:

General:

- Unimpeded access is to be provided for Essential Energy vehicles and staff to substation sites. All substations shall be placed in a location which allows access for a crane borer/erector.
- All padmount substations that are to be installed above the 1:100 year flood level for the local area. Evidence that this requirement is satisfied is to be obtained from the local council, and made available to Essential Energy.
- If an existing substation structure is being altered for any reason, then the structure is to be brought up to the current Essential Energy standards.

Earthing:

- All earthing shall comply with the Essential Energy's policy CEOM5113.02 High Voltage A.C. Distribution Earthing Procedure.
- All earthing designs shall be based on Essential Energy's distribution earthing design software package (Neutron). A copy of the Neutron software package is available on request through neutron@essentialenergy.com.au.
- Level 3 ASPs are required to print an Earthing Report from Neutron and submit it with the design construction drawings for certification.
- Full details of the earthing design must be included on the design drawing.
- Should the customer be upgrading an existing substation, then the suitability of the existing earthing should be assessed for compliance with the current standards. If the existing earthing does not comply, it must be upgraded accordingly.

Street Lighting

For projects containing public street lighting, the Level 3 ASP must include a completed CEOF6127 – Public Lighting: Installation and Connection Consent in their design package submitted for certification. CEOF6127 must be signed by an authorised officer of the local council.

CEOF6127 formalises council's agreement:

- That the street lighting design must comply with AS1158.
- To pay annual charges for the lighting applicable from the date of energisation.
- To any other project specific requirements.

The requirement to submit CEOF6127 applies to both new lighting and upgrades of existing lighting.

Preventing Interference to Other Network Customers

Level 3 ASPs must be aware:

All motor starting must comply with the NSW Service and Installation Rules. Motors will require an approved form of reduced current starting, and motor re-starting to be delayed or non-automatic (manual) following a power outage.

Large motors, arc furnaces, rectifiers (e.g. welders), large inverters, single phase to three phase converters, x-ray machines etc. can degrade the power quality at the customer's own installation and cause adverse effects to the supply of other customers and to Essential Energy's equipment e.g. interference with the frequency injection signal.

The effects from such equipment on power quality may include:

- Voltage sags and swells;
- Harmonics & Inter-harmonics;
- Voltage fluctuations;
- Voltage unbalance;
- Impulsive and oscillatory transients;
- Notching.

Any new load must comply with the relevant Australian Standards, NSW Service and Installation Rules and the Electricity Supply Act 1995 to prevent interference to other customers and electrical equipment.

Level 3 ASPs must notify Essential Energy if it is determined that the customer's load is likely to cause interference to Essential Energy's network.

Please ensure the following mandatory Schedule of Documents are included with your Design Certification Request' should you proceed to submit a Design Certification Request:

☒Electrical Plan For Certification (in pdf and dwg format)

☐LVDROP Calculations/Report

☐Profile Design Report and Tip Load Calculations

☒Neutron Earthing Report

☒Designer Safety Report

☐Vegetation Clearing Management Plan

☒Evidence of Easement Creation or Deed of Agreement

☐RMS/Other Authority Notification

☐RMS/Other Authority Consent

☒CEOF9082 - Customer Funded Project - Consent Form

☒CEOF9093 - Consent Form - Schedule of Works Required

☐CEOF6127 - Public Lighting - Installation and Connection Consent

☒CEOF6283 - Contestable Works - Pioneer Scheme Application

☒CEOF1070-01 - Environmental Impact Assessment - Screening Worksheet

☒CEOF1070.02 - Review of Environmental Factors Worksheet

☐CEOF2098 - Company Form (Network) Returned Redundant Materials Check List

☒AHIMS Report

☒Flora/Fauna Search Results

☒Dial Before You Dig (DBYD)Report/Reference Number

☒Enhancement Letters

☒Section 45 Notifications

☒Section 45 Responses

List of attachments:

☒Smallworld

☒PowerOn

☐Pole Data

☐Environmental Report

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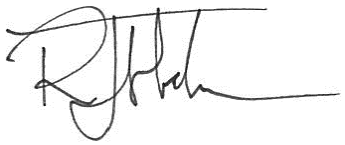

Verification By: Ryan Hahn

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