Scott Hay

From: Cornelis Duba <Cornelis.Duba@endeavourenergy.com.au>
Sent: Thursday, 22 November 2018 10:50 AM
To: DPE CSE Information Planning Mailbox
Cc: Scott Hay
Subject: NSW Planning & Environment Saints Peter and Paul Assyrian Primary School, 17-19 Kosovich Place, Cecil Park (SSD 9210)
Attachments: Endeavour Energy MDI0044 Easements and Property Tenure.pdf; Endeavour Energy Guide to Fencing, Retaining Walls & Maintenance Around ....pdf; ENA_emf_what_do_we_know_final 20160902.pdf; Work-near-overhead-power-lines-code-of-practice.pdf; Work_near_underground_assets_guide.pdf; Safety+on+the+job.pdf; FactSheet_Building_Conctruction+web.pdf; FactSheet_Plumber_web.pdf

The Secretary
NSW Planning & Environment

ATTENTION: Scott Hay, School Infrastructure Assessments

Dear Sir or Madam

I refer to the Department's letter of 7 November 2018 regarding the Notice of Exhibition for Development Application SSD 9210 Saints Peter and Paul Assyrian Primary School, 17-19 Kosovich Place, Cecil Park (Lots 2320 & 2321 DP 1223137) in the Fairfield local government area.

The proposal involves:

- site preparation works including bulk earthworks and soil remediation;
- construction of a new primary school for 665 students;
- construction of outdoor open play areas, sports courts, sports fields and landscaping;
- construction of car parking and driveways; and
- landscaping and associated works.

Submissions needed to be made to the Department by 5 December 2018.

As shown in the below site plan from Endeavour Energy's G/Net master facility model (and extract from Google Maps Street View) there are:

- No easements over the site benefitting Endeavour Energy (active easements are indicated by red hatching).
- Low voltage overhead power lines to the road verge / roadway.
- No existing electricity infrastructure / customer connection point to the site.

Please note the location, extent and type of any electricity infrastructure, boundaries etc. shown on the plan is indicative only. Generally (depending on the scale and/or features selected), low voltage (normally not exceeding 1,000 volts) is indicated by blue lines and high voltage (normally exceeding 1,000 volts but for Endeavour Energy's network not exceeding 132,000 volts / 132 kV) by red lines (these lines can appear as solid or dashed and where there are multiple lines / cables only the higher voltage may be shown). This plan only shows the Endeavour Energy network and does not show electricity infrastructure belonging to other authorities or customers owned electrical equipment beyond the customer connection point / point of supply to the property. This plan is not a 'Dial Before You Dig' plan under the provisions of Part 5E 'Protection of underground electricity power lines' of the *Electricity Supply Act 1995* (NSW).

Subject to the following recommendations and comments Endeavour Energy has no objection to the Development Application.

- Network Capacity / Connection

Endeavour Energy has noted the following in the Environmental Impact Statement and Electrical Infrastructure Assessment:

6.12.1 ELECTRICAL INFRASTRUCTURE

An Electrical Infrastructure Assessment (**Appendix 31**) has been prepared by JHA Consulting Engine and details the required initiatives to provide suitable electrical power to the proposed school (and for construction).

Existing electrical services in the vicinity of the site include high and low voltage infrastructure along southern side of Kosovich Place within public land road reserve as an overhead conductor netw arrangement. An existing pole mounted substation adjacent to Lot 2319 provides low voltage supplies the surrounding lots. No existing underground networks or assets have been indicated along Kosov Place. The two (2) lots comprising the proposed school site do not have existing electrical infrastructu supplies.

To support the development of the site, new electrical infrastructure will be required and is proposed be delivered in the form of a single consolidated electrical supply arrangement for all stages. Accordin a new padmount substation is proposed to be installed on site, adjacent to the site boundary a Kosovich Place (refer **Figure 24** for location). The location of the substation has been informed by following considerations:

- Direct vehicular and personnel access to the padmount substation from public space without need of a right-of-way path to enter the site.
- Direct access to new Endeavour Energy high voltage cabling proposed for installation within Kosovich Place road verge for substation connection, without the need of easements encumber private land.
- Minimisation of site ground impacts for easement zones over Endeavour Energy assets.

To enable the installation of the proposed padmount substation, it is anticipated the existing high volta network will need to be extended along Kosovich Place, potentially for the extent back to Wallgrove Ro This would involve excavation along the southern Kosovich Place verge for installation of new condu and cables.

It is noted that Endeavour Energy is the electricity supply authority for the area, and accordingly electrical infrastructure works are to be undertaken in accordance with Endeavour Energy requireme and network standards. All electrical supply arrangements are dependent on Endeavour Energy revi and approvals during both the design and construction phases of the project.

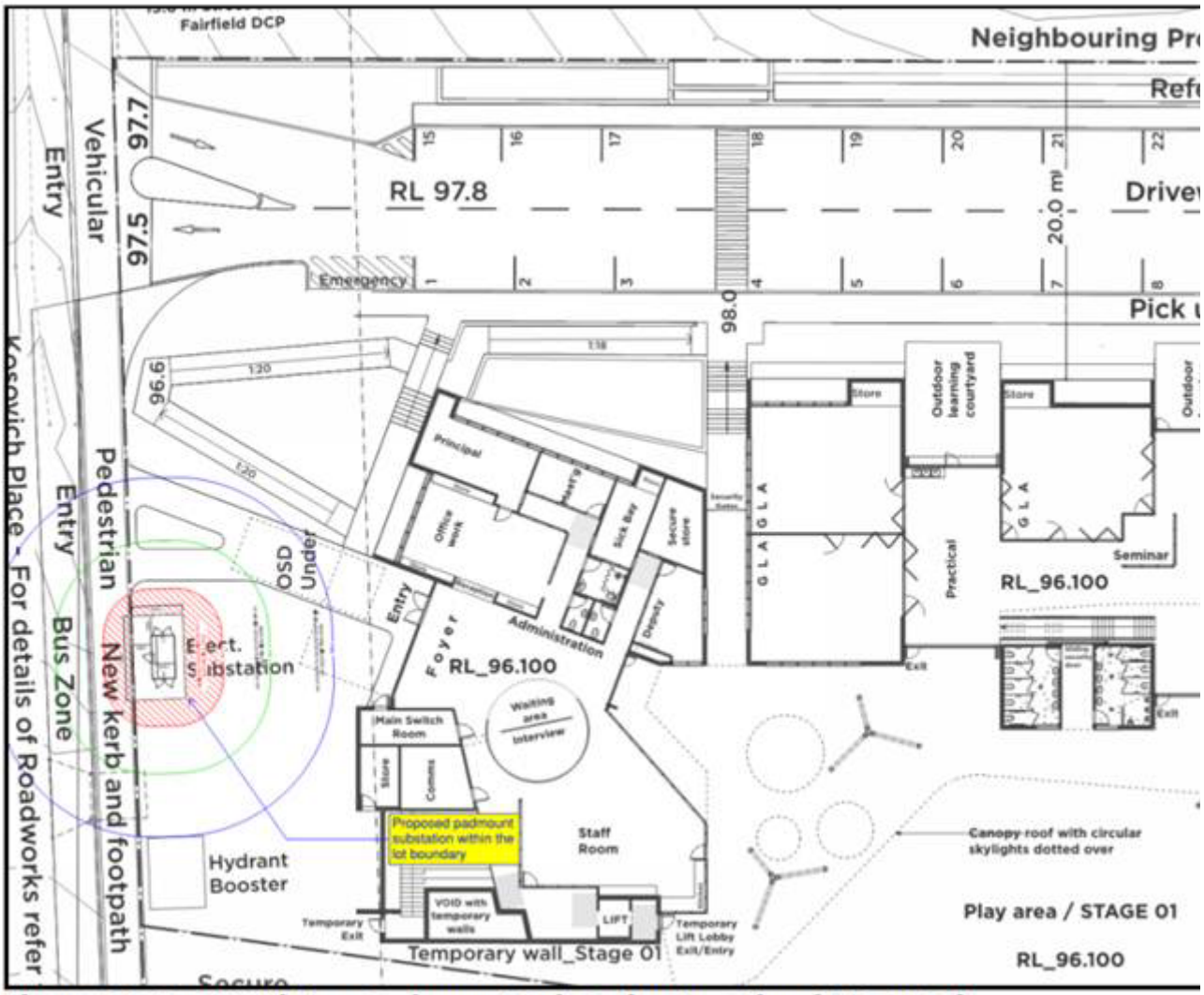

Figure 24. Proposed New Padmount Substation Location (JHA 2018)

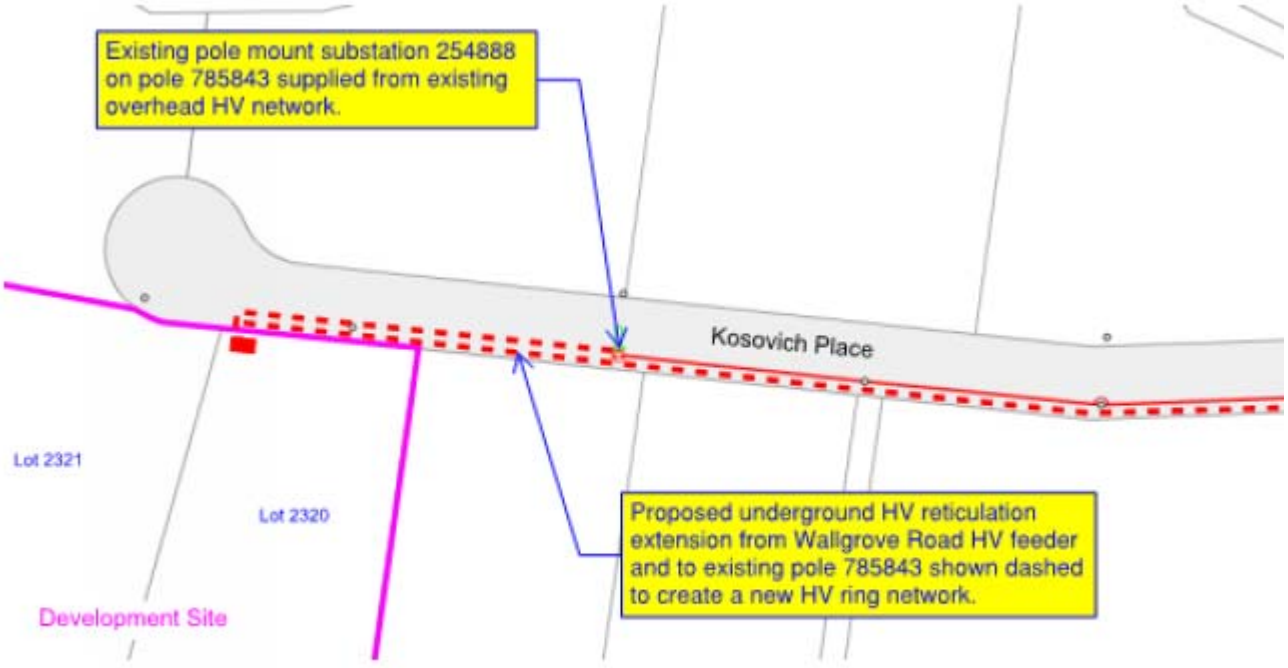

Figure 3 – Proposed HV Installation for New Padmount Substation

Endeavour Energy has also noted that the Electrical Infrastructure Assessment indicates that 'Supply Offer received to date'. As such, Endeavour Energy's Network Connections Branch are managing the conditions of supply with the proponent and their authorised service provider (ASP). However the applicant will need to contact Endeavour Energy's Network Connections Branch (via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm) if this Development Application Results in an electricity load that is outside of the existing Supply / Connection Offer requiring the incorporation of the additional load for consideration. This is due to load being based on a desktop assessment using an After Diversity Maximum Demand (AMMD) where demand is aggregated over a large number of customers providing an ADMD for the site / per lot. Depending on the actual development proposed for the site, the ADMD provided may not be sufficient and the proposed design may need to be amended / upgraded.

In regards to the existing pole mounted substation no. 25488 (indicated by the symbol  on the site plan from Endeavour Energy's G/Net master facility model), these have comparatively limited capacity of 25 kilovolt amperes (kVA) up to a maximum of 400 kVA where as a newer padmount substation can accommodate loads from 315 kVA up to 1,500 kVA ie. there is a significant variation in the number and type of premises able to be connected to a substation. Pole mounted substation no. 25488 currently has 5 customer connection points servicing 6 premises and is not intended to or capable of supplying a significant urban development of this nature.

In regards to the easement and restrictions required for the padmount substation, please refer to the attached copy of Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights'.

- Streetlighting

With the significant increase in both vehicular and pedestrian traffic, given the existing streetlighting is designed for a non-urban environment, the streetlighting for the proposed development should be reviewed and if necessary upgraded to comply with the series of standards applying to the lighting of roads and public spaces set out in with Australian/New Zealand Standard AS/NZS 1158: 2010 'Lighting for roads and public spaces' as updated from time to time.

Whilst the determination of the appropriate lighting rests with the road controlling authority, Endeavour Energy as a Public Lighting Service Provider is responsible for operating and maintaining the streetlights on behalf of local councils, Roads and Maritime Services and other utilities in accordance with the NSW Public Lighting Code, January 2006 (Code). Endeavour Energy recognises that well designed, maintained and managed Public Lighting offers a safe, secure and attractive visual environment for pedestrians and drivers during times of inadequate natural light.

For any Code implementation and administration / technical matters please contact Endeavour Energy's Substation Mains Assets Section via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm or email mainsenquiry@endeavourenergy.com.au .

- Earthing

The construction of any building or structure (including fencing, signage, flag poles, hoardings etc.) whether temporary or permanent that is connected to or in close proximity to Endeavour Energy's electrical network is required to comply with Australian/New Zealand Standard AS/NZS 3000:2018 'Electrical installations' as updated from time to time. This Standard sets out requirements for the design, construction and verification of electrical installations, including ensuring there is adequate connection to the earth. Inadequate connection to the earth to allow a leaking/fault current to flow into the grounding system and be properly dissipated places persons, equipment connected to the network and the electricity network itself at risk from electric shock, fire and physical injury.

Endeavour Energy's 'Design certification checklist for ASP L3' the design must comply with Endeavour Energy's 'Earthing Design Instruction EDI 001 – Earthing design risk assessment' in which schools are regarded as a 'special location' – please see the following extract of EDI 001.

Special location
The "special" location category implies an area within close proximity to or within a premise wh
there is a high likelihood that shoes will not be worn and/or the risks associated with the earthin
system has the potential to be exposed to a number of people simultaneously through contact
affected metalwork. This includes (but is not limited to) schools, pre-schools, day care centres,
aquatic centres, recreational swimming areas and beaches.

The applicant should check with their ASP responsible for the network connection to the site that the padmount substation earthing has been designed to comply with the 'special location' requirements under EDI 100.

Endeavour Energy has also noted that the underground onsite stormwater detention basin (OSD) is partially located within the 'Separation of Swimming Pools to an Earth Grid' restriction for a padmount substation. Whilst this restriction is only applicable for bodies of water where swimming is likely to occur, the OSD will require regular maintenance and repair which may entail working in a wet / damp environment with limited access and/or substantial depth. Although this is not likely to be a significant issue / risk, the applicant's ASP may wish to consider this in their earthing design.

- Vegetation Management

The planting of large trees in the vicinity of electricity infrastructure is not supported by Endeavour Energy. Suitable planting needs to be undertaken in proximity of electricity infrastructure. Larger trees should be planted well away from electricity infrastructure and even with underground cables, be installed with a root barrier around the root ball of the plant. Landscaping that interferes with electricity infrastructure could become a potential safety risk, restrict access, reduce light levels from streetlights or result in the interruption of supply may become subject to Endeavour Energy's Vegetation Management program and/or the provisions of the *Electricity Supply Act 1995* (NSW) Section 48 'Interference with electricity works by trees' by which under certain circumstances the cost of carrying out such work may be recovered.

In regards to the future padmount substation required for the site, please find attached for the applicant's reference a copy of Endeavour Energy's 'Guide to Fencing, Retaining Walls and Maintenance Around Padmount Substations'.

- Prudent Avoidance

The electricity network is operational 24/7/365 ie. all day, every day of the year. The electricity industry has adopted a policy of prudent avoidance by doing what can be done without undue inconvenience and at modest expense to avert the possible risk to health from exposure to emissions form electricity infrastructure such as electric and magnetic fields (EMF) and noise which generally increase the higher the voltage ie. Endeavour Energy's network ranges from low voltage (normally not exceeding 1,000 volts) to high voltage (normally exceeding 1,000 volts but not exceeding 132,000 volts / 132 kV).

In practical terms this means that when designing new transmission and distribution facilities, consideration is given to locating them where exposure to the more sensitive uses is reduced and increasing separation distances. These emissions are generally not an issue but with Council's permitting or encouraging development with higher density, reduced setbacks and increased building heights, new development can impact on existing electricity infrastructure.

Where development is proposed in the vicinity of electricity infrastructure, Endeavour Energy is not responsible for any amelioration measures for such emissions that may impact on the nearby proposed development. Endeavour Energy believes that likewise Council should also adopt a policy of prudent avoidance by the siting of more sensitive uses away from any electricity infrastructure – including any possible future electricity infrastructure required to facilitate the proposed development.

Please find attached a copy of Energy Networks Association's 'Electric & Magnetic Fields – What We Know, January 2016' which can also be accessed via the Energy networks Australia website at https://www.energynetworks.com.au/electric-and-magnetic-fields and provides the following advice:

> *Electric fields are strongest closest to their source, and their strength diminishes rapidly as we move away from the source.*
>
> *The level of a magnetic field depends on the amount of the current (measured in amps), and decreases rapidly once we move away from the source.*

Exposure to electric and magnetic fields (EMF) may be encountered in specific situations such as near substations, underground cables, specialised electrical equipment, or at elevated locations near lines. However, as the strengths of EMFs decrease rapidly with distance from the source, typical exposure associated with Endeavour Energy's activities and assets given the required easement widths, safety clearances etc. and having a maximum voltage of 132,000 volt / 132 kV, will with the observance of these separation distances should not exceed the recommended public exposure limits.

- Dial Before You Dig

Before commencing any underground activity the applicant is required to obtain advice from the ***Dial Before You Dig*** **1100** service in accordance with the requirements of the *Electricity Supply Act 1995* (NSW) and associated Regulations. This should be obtained by the applicant not only to identify the location of any underground electrical or other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

- Public Safety

As the proposed development will involve work near electricity infrastructure, workers run the risk of receiving an electric shock and causing substantial damage to plant and equipment. I have attached Endeavour Energy's public safety training resources, which were developed to help general public / workers to understand why you may be at risk and what you can do to work safely. The public safety training resources are also available via Endeavour Energy's website via the following link:

> http://www.endeavourenergy.com.au/wps/wcm/connect/ee/nsw/nsw+homepage/communitynav/safety/safety+brochures .

If the applicant has any concerns over the proposed works in proximity of the Endeavour Energy's electricity infrastructure, as part of a public safety initiative Endeavour Energy has set up an email account that is accessible by a range of multiple stakeholders across the company in order to provide more effective lines of communication with the general public who may be undertaking construction activities in proximity of electricity infrastructure such as builders, construction industry workers etc. The email address is Construction.Works@endeavourenergy.com.au .

- Emergency Contact

In case of an emergency relating to Endeavour Energy's electrical network, the applicant should note the Emergencies Telephone is 131 003 which can be contacted 24 hours/7 days.

I appreciate that not all the foregoing issues are immediately relevant or significant to the Development Application, however, Endeavour Energy's preference is to alert proponents / applicants of the potential matters that may arise as development occurs closer to the existing and future required electricity infrastructure on and in proximity of the site.

Could you please pass on a copy of this submission and the attached resources to the applicant? Should you wish to discuss this matter, or have any questions, please do not hesitate to contact me or the contacts identified above in relation to the various matters. Due to the high number of development application / planning proposal notifications

submitted to Endeavour Energy, to ensure a response contact by email to property.development@endeavourenergy.com.au is preferred.

Yours faithfully
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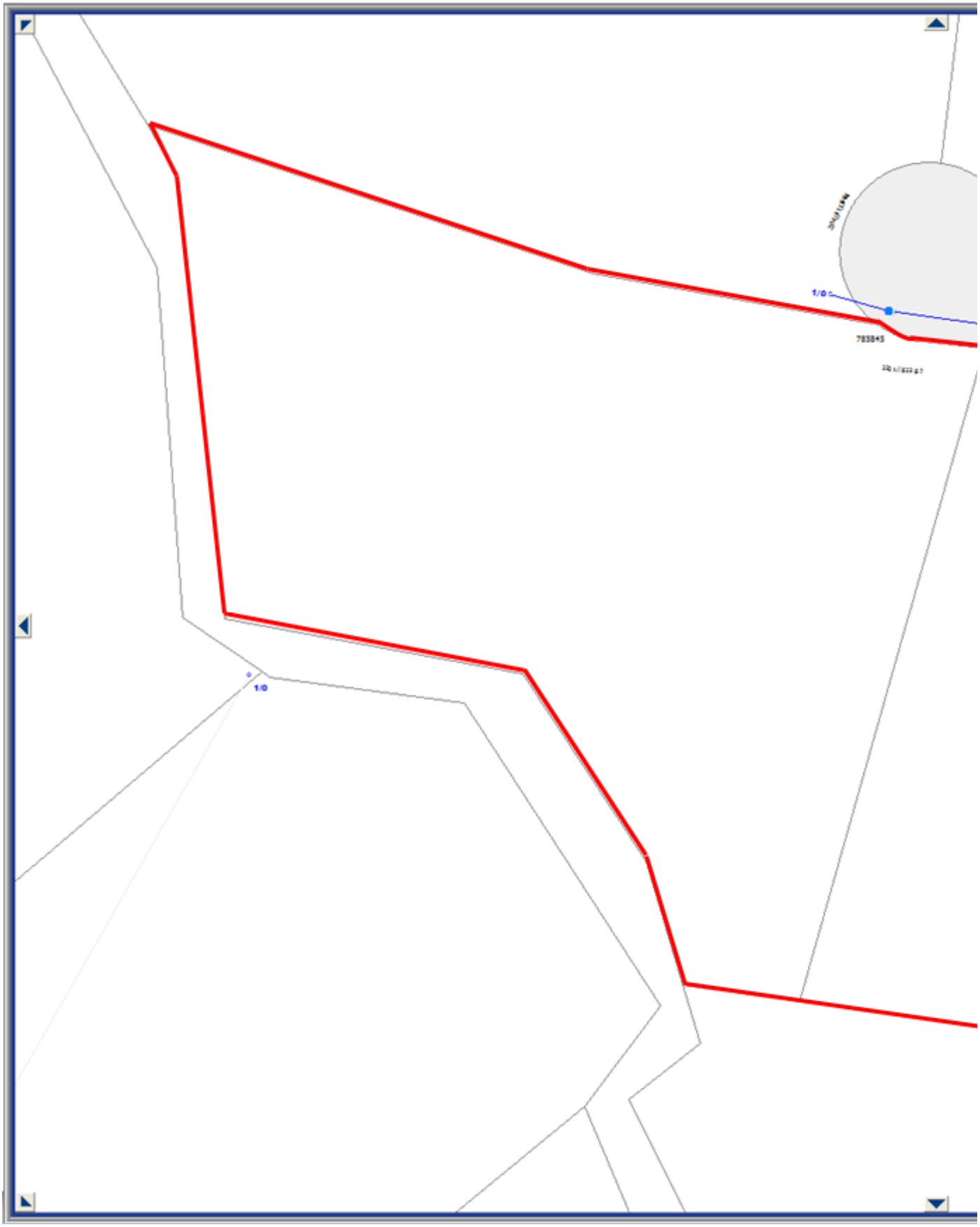
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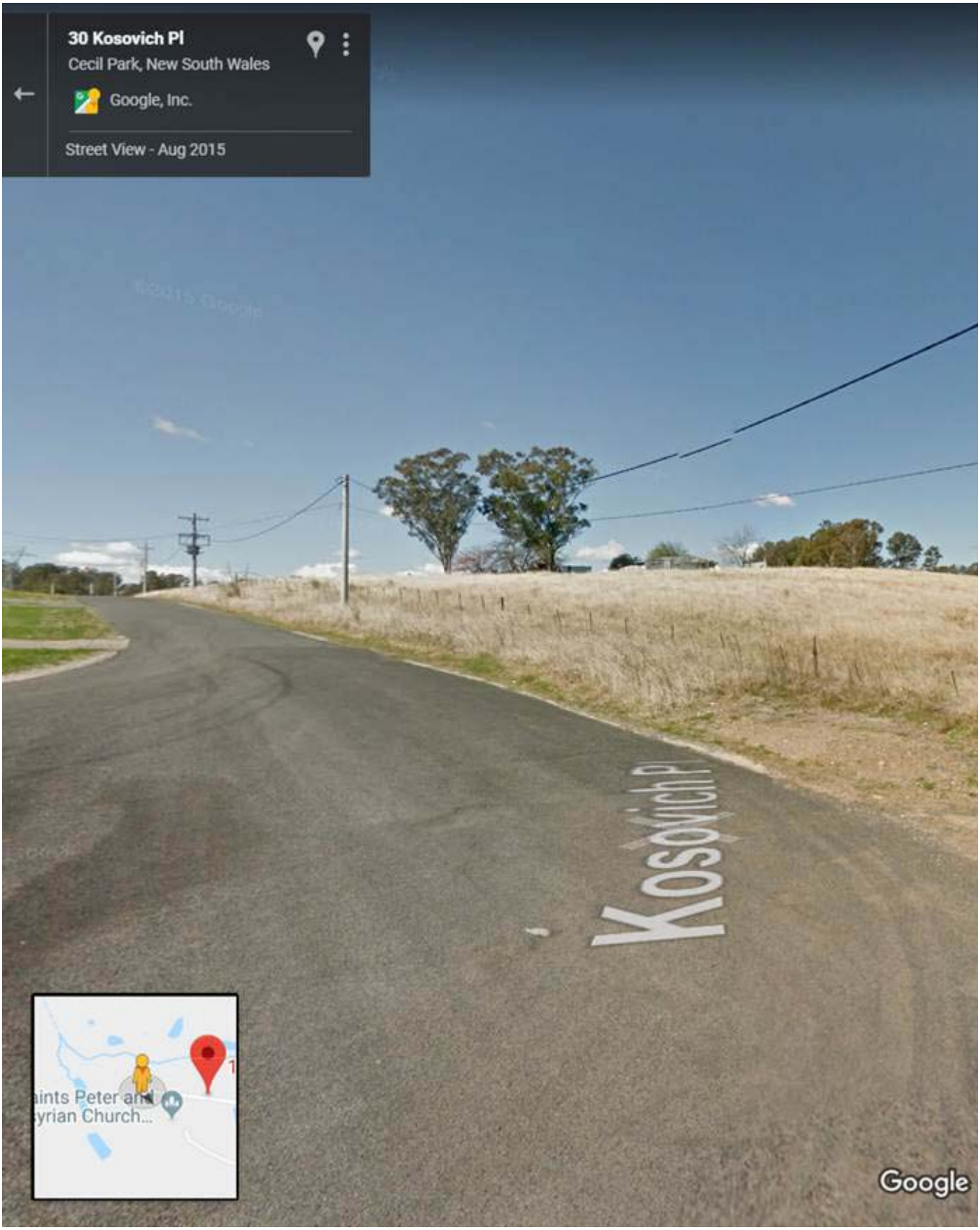
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