

Jason Maslen

From: Cornelis Duba <Cornelis.Duba@endeavourenergy.com.au>
Sent: Thursday, 27 September 2018 4:28 PM
To: DPE CSE Information Planning Mailbox
Cc: Megan Fu; Philip Wilson
Subject: NSW Planning & Environment Notice of Exhibition State Significant Development SSD 9241 RE Campbelltown Hospital Redevelopment Stage 2
Attachments: Endeavour Energy MDI0044 Easements and Property Tenure.pdf; Endeavour Energy MDI+0028am2 Underground distribution network design.pdf; emf-what-we-know-jan-2014-final_1_1.pdf; Work_near_underground_assets_guide.pdf; Work-near-overhead-power-lines-code-of-practice.pdf; Safety+on+the+job.pdf; FactSheet_Building_Construction+web.pdf; FactSheet_Plumber_web.pdf

The Secretary
NSW Planning & Environment

ATTENTION: Megan Fu, Social Infrastructure Assessments

Dear Sir or Madam

I refer to the Department's letter of 27 August 2018 regarding State Significant Development SSD 9241 at Therry Road, Campbelltown (Lot 6 DP 1058047) for 'Campbelltown Hospital Redevelopment Stage 2'. Submissions needed to be made to the Department by 26 September 2018. I apologise for the late submission but trust that Endeavour Energy's recommendations and comments will still be considered.

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

- 11,000 volt / 11 kV underground cables coming from both Parkside Crescent and Appin Road (overhead power lines from across the road) to two meters and high voltage customer substation no. 13121 which are not held under easement.
- Padmount substation no. 34577 and associated 11 kV underground cables off northern side Parkside Crescent which are not held under easement.
- Easement for padmount substation no. 25227 adjoining the northern boundary with SP 78688.
- Two easements off north eastern side of Parkside Crescent / Central Road for low voltage underground cables going to streetlights on the site.
- Easement for padmount substation no. 25430 on the southern side of near Central Road.
- Easement for switch station no. 15493 and associated 11 kV high voltage underground cables on the north eastern corner of Therry Road and Central Road.
- Low voltage and 11 kV high voltage underground cables to Therry Road, Central Road and Parkside Crescent road verges / roadways.

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).

In regards to the padmount / high voltage customer substations and associated underground cabling on the site are not held under easement, they are protected assets under the *Electricity Supply Act 1995* (NSW) Section 53 'Protection of certain electricity works'. The owner or occupier of the land cannot take any action by reason of the presence or operation of the electricity works in, on or over the land ie. they cannot remove the electricity infrastructure from the property. These protected assets are managed on the same basis as if an easement was in existence.

In accordance with the attached copy of Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights', and as shown in the following extract of Table 1 – 'Minimum easement widths':

- The padmount substation requires a minimum easement of 2.75 x 5.5 metres (centred in accordance with the substation layout /orientation).
- The low voltage and 11 kV underground cables (assumed to have no concrete protection unless proven otherwise) requires a 3 metre minimum easement width ie. 1.5 metres to both sides of the centre line of the cable ducts.

Table 1 - Minimum easement widths

	Voltage	Asset Type	Construction	Mini Easem
Underground Assets	400V - 22kV		Underbore / Ducted / Direct buried	
		Cables	Ducted < 100m and with concrete protection <i>(min 50 mm concrete cover at standard burial depth)</i>	
Other	-	Padmount Substation		2.75 <i>(see clau</i>

The following is a summary of the usual / main terms of Endeavour Energy's electrical easements requiring that the land owner:

- Not install or permit to be installed any services or structures within the easement site.
- Not alter the surface level of the easement site.
- Not do or permit to be done anything that restricts access to the easement site without the prior written permission of Endeavour Energy and in accordance with such conditions as Endeavour Energy may reasonably impose.

Endeavour Energy's preference is for no activities or encroachments to occur within its easement areas. Most activities are prohibited within the padmount substation easement area. If any proposed works (other than those approved / certified by Endeavour Energy's Network Connections Branch as part of an enquiry / application for load) which encroach/affect Endeavour Energy's easements or protected assets, contact must first be made with the Endeavour Energy's Easements Officer, Philip Wilson, on direct telephone 9853 7110 or alternately by email Philip.Wilson@endeavourenergy.com.au or Easements@endeavourenergy.com.au .

Subject to the foregoing and 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 – Part 2:

4.8 Services and Utilities

4.8.1 Electricity

JHA Consulting Engineers has confirmed the electrical supply requirements for the proposal at **Apper** existing network will be augmented with an additional switching station proposed. New underground c connect to two (2) new chamber substations within the CSB. One of the chamber substations will hou: 1500KVA transformers and will be connected to the new HV feeder. The other chamber substation will (1) 1500KVA transformer and will be connected to the existing HV feeder for the site.

The Infrastructure Report Electrical Services contains the following advice:

3.3 Endeavour Application

Preliminary advice from Endeavour Energy indicates the maximum demand of 9MVA is in exce: the hospital's current capacity. Endeavour has reported the sites current capacity is 4.5MVA (1 Feeder).

High level discussions and a formal application to Endeavour has resulted in feedback that a new feeder will need to be installed to serve the development. At the time of writing this report distributor had yet to indicate where the new HV feeder will reticulate from external to the site.

Refer to Appendix A for a copy of correspondence with Endeavour Energy.

Endeavour Energy's Network Connections Branch have advised that as Campbelltown Hospital is a high voltage customer, the site is covered by a High Voltage Operational and Maintenance Protocol between Endeavour Energy and the Customer regarding the provision of high voltage supply to the site. The Protocol indicates a capacity of the supply of the installation which is adequate for the Customer's then requirements. Should any further increase in loads be required, contact must be made with Endeavour Energy's Network Connections Branch who will inform the Customer of the requirements in this regard.

Endeavour Energy's Network Connections Branch are now processing the additional load supply application (Endeavour Energy reference Urban Local Government ULL2745) for Campbelltown Hospital.

Depending on the outcome of the assessment, any required padmount or indoor / chamber substation will need to be located within the property (in a suitable and accessible location) and be protected (including any associated cabling) by an easement and associated restrictions benefiting and gifted to Endeavour Energy. Please refer to Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights'. Further details are available by contacting Endeavour Energy's Network Connections Branch via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm or on Endeavour Energy's website under 'Home > Residential and business > Connecting to our network' via the following link:

<http://www.endeavourenergy.com.au/>

Generally it is the Level 3 Accredited Service Provider's (ASP) responsibility (engaged by the developer) to make sure that the substation location and design complies with Endeavour Energy's standards the suitability of access, safety clearances, fire ratings, flooding etc. As a condition of the Development Application consent Council should request the submission of documentary evidence from Endeavour Energy confirming that satisfactory arrangements have been made for the connection of electricity and the design requirements for the substation, prior to the release of the Construction Certificate / commencement of works.

Please also find attached for the applicant's information copies of Endeavour Energy's:

- Mains Construction Instruction MCI 0006 'Underground distribution construction standards manual', Section 7 'Substations & Switching Stations'.
- Mains Design Instruction MDI 0028 'Underground distribution network design'.

- Earthing

The construction of any building or structure (including fencing, signage, flag poles 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 3000:2007 'Electrical installations' to ensure that there is adequate connection to the earth. Inadequate connection to the earth places persons, equipment connected to the network and the electricity network itself at risk if there is a leaking/fault current which cannot flow into the grounding system and be properly dissipated.

- 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 from 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. 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. Even with less sensitive non-residential development, Endeavour Energy believes that a policy of prudent avoidance should be considered.

Please find attached a copy of ENA's 'Electric & Magnetic Fields – What We Know, January 2014' which can also be accessed via the ENA's website at <http://www.ena.asn.au/> and provides the following advice:

Localised EMFs may also be encountered in specific situations such as near substations, underground cables, specialised electrical equipment, or at elevated locations near lines. Note that the strengths of EMFs decrease rapidly with distance from the source.

Typical magnetic field measurements 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 not exceed the recommended magnetic field public exposure limits.

- Network Access

It is imperative that the access to the existing electrical infrastructure within the precincts is maintained at all times. To ensure that supply electricity is available to the community, access to the electricity infrastructure may be required at any time. Restricted access to electricity infrastructure by maintenance workers causes delays in power restoration and may have severe consequences in the event of an emergency.

- 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. Only low growing shrubs not exceeding 3.0 metres in height, ground covers and smaller shrubs, with non-invasive root systems are the best plants to use. Larger trees should be planted well away from electricity infrastructure (at least the same distance from overhead power lines as their potential full grown height) and even with underground cables, be installed with a root barrier around the root ball of the plant. Landscaping that interferes with electricity infrastructure may become a potential safety risk, cause of bush fire, restrict access or result in the interruption of

supply. Such landscaping may be 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.

Please find attached for the applicant's reference a copy Endeavour Energy's 'Guide to Fencing, Retaining Walls and Maintenance Around Padmount Substations'.

- 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 and other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

- Excavation

Applicant should be advised of the following object of Section 49A 'Excavation work affecting electricity works' of the of *Electricity Supply Act 1995* (NSW) covering the carrying out or proposed carrying out of excavation work in, on or near Endeavour Energy's electrical infrastructure.

Electricity Supply Act 1995 No 94

Current version for 8 January 2016 to date (accessed 30 March 2016 at 08:12)

[Part 5](#) > [Division 2](#) > [Section 49A](#)

49A Excavation work affecting electricity works

- (1) This section applies if a network operator has reasonable cause to believe that the carrying out or proposed carrying out of excavation work:
 - (a) could destroy, damage or interfere with those works, or
 - (b) could make those works become a potential cause of bush fire or a potential risk to public safety.
- (2) In those circumstances, a network operator may serve a written notice on the person carrying out or proposing to carry out the excavation work:
 - (a) to modify the excavation work, or
 - (b) not to carry out the excavation work, but only if the network operator is of the opinion that modifying the excavation work would be likely to result in interference with, the electricity works concerned or in preventing those works becoming a potential cause of bush fire or a potential risk to public safety.

Excavation in proximity of electricity infrastructure can affect its integrity. If any excavation work affects Endeavour Energy's electricity infrastructure, prior contact must be made to Endeavour Energy's Regional Service Central via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm or alternately email Regional.ServicesCentral@endeavourenergy.com.au .

- Demolition

Demolition work is to be carried out in accordance with Australian Standard AS 2601—2001: 'The demolition of structures'. All electric cables or apparatus which are liable to be a source of danger, other than a cable or apparatus used for the demolition works shall be disconnected ie. the existing customer service lines will need to be isolated and/or removed during demolition. Appropriate care must be taken to not otherwise interfere with any electrical infrastructure on or in the vicinity of the site eg. streetlight columns, power poles, overhead power lines and underground cables etc.

- Asbestos

Endeavour Energy's G/Net master facility model indicates that the site is in an area identified or suspected of having asbestos or asbestos containing materials (ACM) present in the electricity network. Whilst Endeavour

Energy's underground detail is not complete within G/Net in some areas, in older communities, cement piping was regularly used for the electricity distribution system and in some instances containing asbestos to strengthen the pipe; for insulation; lightness and cost saving.

When undertaking works on or in the vicinity of Endeavour Energy's electricity network, asbestos or ACM must be identified by a competent person employed by or contracted to the applicant and an asbestos management plan, including its proper disposal, is required whenever construction works has the potential to impact asbestos or ACM.

The company's potential locations of asbestos to which construction / electricity workers could be exposed include:

- o customer meter boards;
- o conduits in ground;
- o padmount substation culvert end panels; and
- o joint connection boxes and connection pits.

Further details are available by contacting Endeavour Energy's Safety & Environmental Services Branch via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm.

- Demolition

Demolition work is to be carried out in accordance with Australian Standard AS 2601—2001 'The demolition of structures'. All electric cables or apparatus which are liable to be a source of danger, other than a cable or apparatus used for the demolition works shall be disconnected ie. the existing customer service lines will need to be isolated and/or removed during demolition. Appropriate care must be taken to not otherwise interfere with any electrical infrastructure on or in the vicinity of the site eg. streetlight columns, power poles, overhead and underground cables etc.

- Public Safety

Workers involved in work near electricity infrastructure 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 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 may be directly relevant or significant to the Development Application. However, Endeavour Energy's preference is to alert proponents / applicants of the potential matters that may arise should development within closer proximity of the existing and/or required electricity infrastructure needed to facilitate the proposed development on or in the vicinity of the site occur.

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@endeavourenergy.com.au is preferred.

Yours faithfully

Cornelis Duba

Development Application Specialist

Network Environment & Assessment

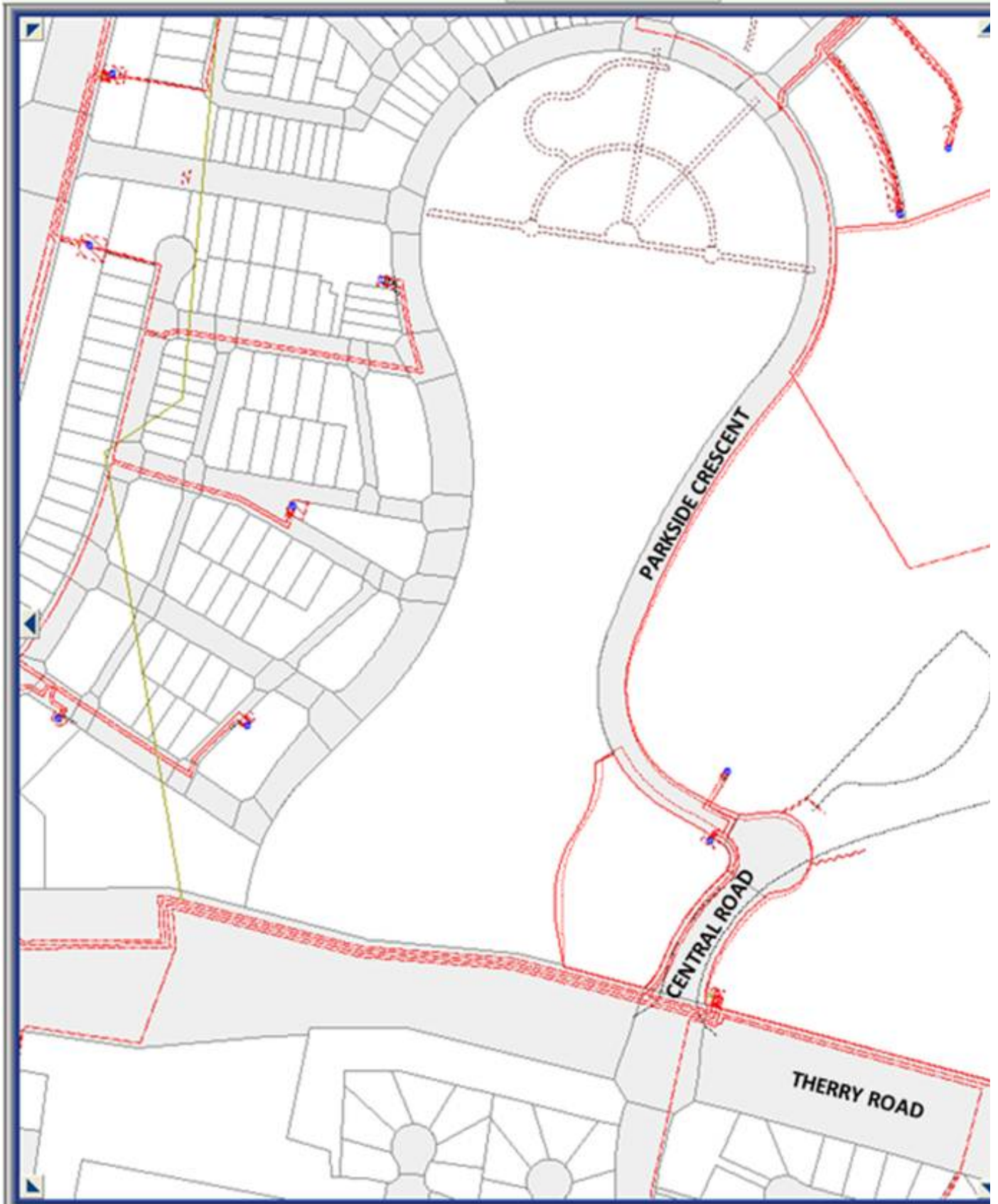
T: 9853 7896

E: cornelis.duba@endeavourenergy.com.au

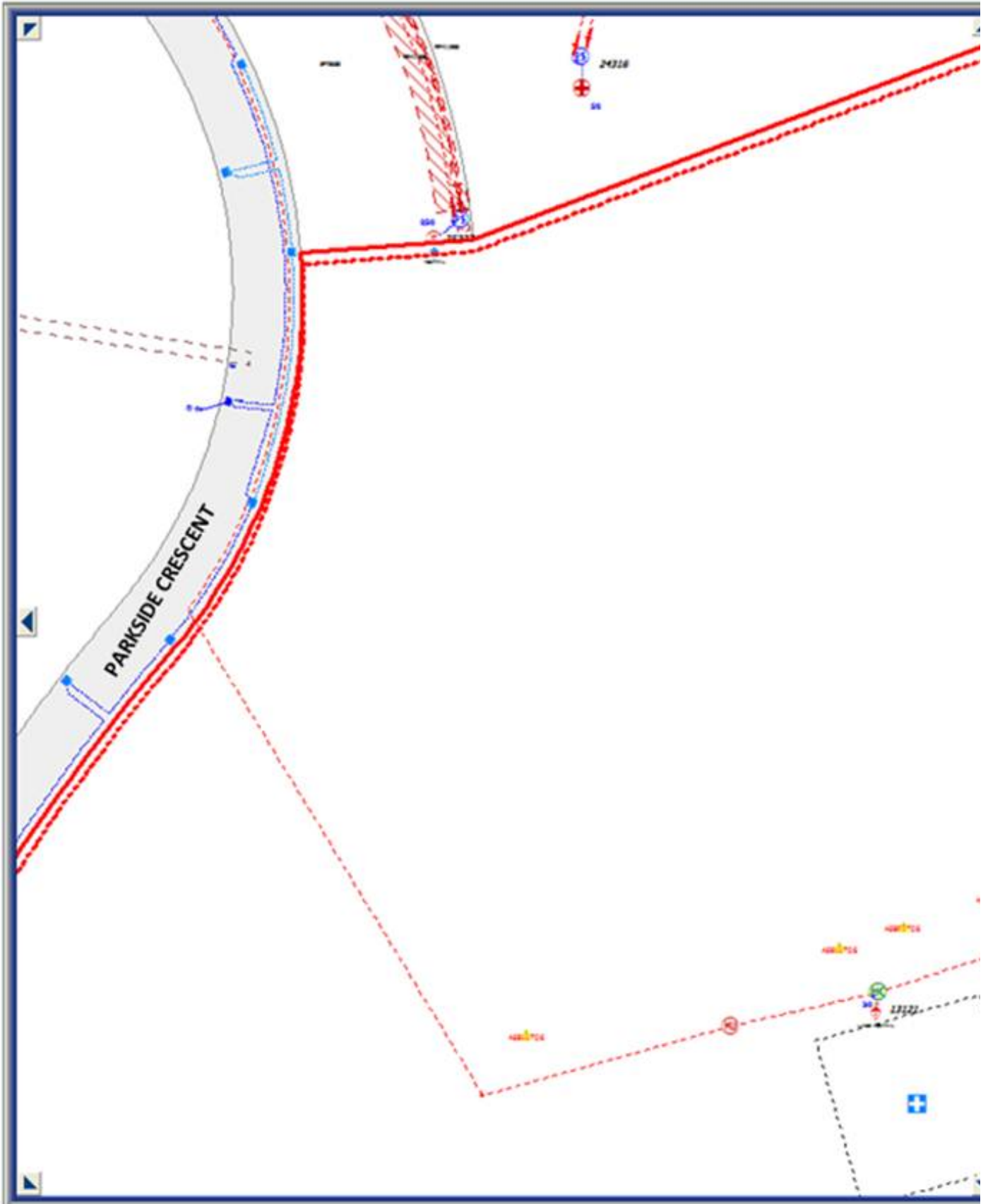
51 Huntingwood Drive, Huntingwood NSW 2148

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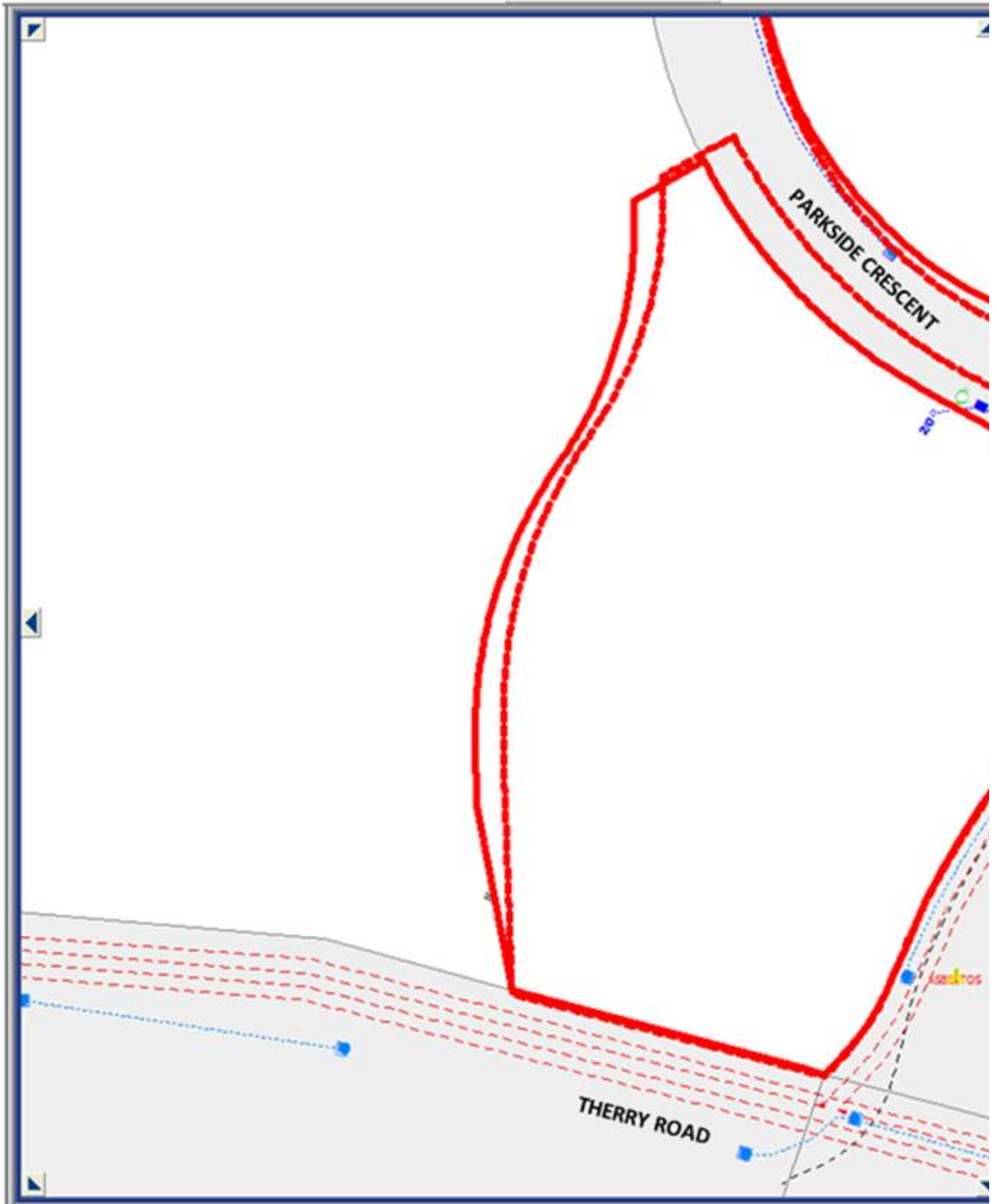




G3E_FID	Feature Name	Component Name	
79273551	Crown Parcel	Crown Parcel Find	1
63800462	Crown Parcel	Crown Parcel Find	1
63800460	Crown Parcel	Crown Parcel Find	1







Campbelltown, New South Wales



Google, Inc.

Street View - Jul 2017





