Annie Leung

From: Annie Leung
Sent: Monday, 20 August 2018 4:49 PM
To: 'Kerrie Symonds'
Subject: FW: NSW Department of Planning and Environment Notice of Exhibition Tallawong Station Precinct South (SSD 9063)
Attachments: Endeavour Energy MDI0044 Easements and Property Tenure.pdf; emf-what-we-know-jan-2014-final_1_1.pdf; Endeavour Energy Guide to Fencing, Retaining Walls & Maintenance Around ....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

Hi Kerrie

One last submission from Endeavour Energy.

Regards,

Annie

From: Ellen Sessini **On Behalf Of** DPE CSE Information Planning Mailbox
Sent: Thursday, 9 August 2018 1:51 PM
To: DPE CSE MCU SEC Mailbox <mcu.sec@planning.nsw.gov.au>
Subject: FW: NSW Department of Planning and Environment Notice of Exhibition Tallawong Station Precinct South (SSD 9063)

From: Cornelis Duba [mailto:Cornelis.Duba@endeavourenergy.com.au]
Sent: Thursday, 9 August 2018 1:18 PM
To: DPE CSE Information Planning Mailbox
Cc: Simon Lawton ; Steven Baker
Subject: NSW Department of Planning and Environment Notice of Exhibition Tallawong Station Precinct South (SSD 9063)

The Secretary
NSW Planning & Environment

ATTENTION: Annie Leung, Team Leader, Key Sites Assessments

Dear Sir or Madam

I refer to the Department's letter of 10 July 2018 regarding Concept State Significant Development Application (SSD) for the Tallawong Station Precinct South, located at 69-79 Schofields Road, Rouse Hill in the Blacktown Local Government Area (Lots 13, 14 & 15 DP 1168129, Lot 10 DP 1185116) for a mixed-use precinct located south of the approved Tallawong Station comprising:

- Maximum building envelopes for up to 16 buildings, including building heights up to 8 storeys, street-walls and setbacks;
- Allocation of up to 85,000m2 of residential and 9,000m2 of non-residential gross floor area;
- An indicative residential yield of 1,100 dwellings, including affordable housing;
- Road layouts, landscape concept for public and private domain, including a 2,900m2 central park; and

- Allocation of car parking and bicycle parking rates.

Note: the application is for concept only and does not including any construction works.

Submissions need to be made to the Department by 9 August 2018.

As shown in the below site plans from Endeavour Energy's G/Net master facility model there are:

- No easements over the site benefitting Endeavour Energy (active easements are indicated by red hatching).
- To the Schofields Road road verge / roadway:
    - Low voltage underground cables.
    - 11,000 volt / 11 kV high voltage underground cables to the corner of Cudgegong Road.
- To the Cudgegong Road road verge / roadway:
    - Low voltage underground cables.
    - Low voltage overhead power lines.
- Underground earth cables and underground pilot cables (carrying protection signals or communications between substations) to the both Schofields Road and Cudgegong Road.
- The Cudgegong Road frontage of the site is opposite Endeavour Energy's Rouse Hill Switching Station at 83 Schofields Road Rouse Hill (Lot 1 DP 1175409) and 132,000 volt / 132 kV overhead Feeder 9JA – Vineyard to Rouse Hill Switching Station.

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).

As an adjoining or nearby owners and occupiers, the main area of concern which Endeavour Energy has is in relation to the access arrangements to the Rouse Hill Switching Station.

Endeavour Energy has noted the following in the Environmental Impact Statement:

> 1.3.2. Relationship between SSI-5414 Approved Works and Concept Proposal
>
> The approved works under the *North West Rail Link – Stations, Rail Infrastructure and Systems* CSSI (SSI_5414) are as follows:
>
> - Widening and realignment of Cudgegong Road from Schofields Road to just north of the rail corridor to provide two traffic lanes in each direction

The road widening and realignment being illustrated in the following extract of the Urban Design Report.

Access to the Rouse Hill Switching Station has previously been affected by the road widening and/or realignment of both Schofields Road (the original site access) and Cudgegong Road. As a result of these previous road works the current access to the site is off Cudgegong Road with a crossing over the original road alignment which is shown in the following extracts of Google Maps Street View.

Access to Rouse Hill Switching Station needs to be maintained at all times. Endeavour Energy will require reasonable notice if any of the road works will affect the access to the site to ensure arrangements are in place to maintain access ie. particularly in the event of an emergency. For safety and security reasons access to the site is restricted. Should access to the site be required by any consultants or contractors, it can only occur with Endeavour Energy's prior consent and under direct supervision.

For any enquiries in regards to Endeavour Energy's Rouse Hill Switching Station please contact:

- Simon Lawton, Strategic Property Manager, on direct telephone 9853 7819 or alternately email SIMON.LAWTON@endeavourenergy.com.au and/or Property@endeavourenergy.com.au

for any property tenure issues.

- Steven Baker, Transmission Manager North, on direct telephone 9853 7101 or alternately email Steven.Baker@endeavourenergy.com.au and/or Regional.ServicesNorth@endeavourenergy.com.au for any access or technical issues.

As Endeavour Energy's Rouse Hill Switching Station is a non-habitable building / site it is comparatively less impacted by the proposed development of the Precinct. Endeavour Energy is not necessarily opposed to the Development Application but in regards to the appropriate development controls and the impact of the proposed development on adjoining or nearby owners and occupiers, it will leave such determination to the Department / Council.

In regards to Endeavour Energy's role as an electricity supply authority, subject to the following recommendations and comments Endeavour Energy has no objection to the Development Application.

- Network Capacity / Connection

In regards to the availability of electricity supply to sites within the Precinct, the availability of supply to a site is based on a wide range of factors eg. the age and design of the network; other development in the locality utilising previously spare capacity within the local network; the progress of nearby / surrounding sites including electricity infrastructure works eg. a smaller and isolated development that may not of its own accord require a padmount substation may require a padmount substation to facilitate the development and from which the spare capacity is made available to subsequent nearby development. Older / above ground areas of the network utilising pole mounted substations 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 (typically 500 kVA) ie. there is a significant variation in the number and type of premises able to be connected to a substation.

In due course the applicant for the future proposed development of the sites within the Precinct will need to submit an application for connection of load via Endeavour Energy's Network Connections Branch to carry out the final load assessment and the method of supply will be determined. Depending on the outcome of the assessment, any required padmount or indoor / chamber substation/s 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/

- Urban Residential Subdivision

Urban residential subdivision of a site is subject to Endeavour Energy Underground Residential Distribution (URD) policy. Endeavour Energy's Company Policy 9.2.5 'Network Asset Design', includes the following requirements for electricity connections to new residential subdivisions:

5.11.1.1 Urban areas

Reticulation of new residential subdivisions will be underground. In non-bushfire prone areas lines within existing overhead areas can be overhead, unless underground lines are cost just or required by local council requirements.

Where underground reticulation is required on a feeder that supplies a mixture of industrial, commercial and/or residential loads, the standard of underground construction will apply to a types of load within that development.

Where ducting is used, adequate spare ducts and easements must be provided at the outset cover the final load requirements of the entire development plan.

Extensions to the existing overhead 11kV/22kV network must generally be underground. Bar will be used for conductor replacements and augmentations except in treed areas where CC NMSHVABC must be used.

Extensions to the existing overhead LV network and augmentations must either be undergro ABC. Conductor replacements greater than 100m in route length must utilise aerial bundled

CCT = Covered conductor thick with insulation fully rated for the voltage on the conductor.
NMSHVABC = Non-metallic Screened High Voltage Aerial Bundled Cable.

Table 2 – Distribution Network Design Parameters Summary

Limits	Urban	Industrial and commercial	Non-urban
Default HV reticulation	U/G	U/G	O/H
Default LV reticulation	U/G	U/G	O/H – ABC

Non-urban
Any area that is identified as rural land zoning

- Location of Electricity Easements

The incorporation of electricity easements into privately owned lots eg. for padmount substations and associated underground cables likely to be required to facilitate the proposed development, is generally problematic for both Endeavour Energy and the future landowners and requires additional easement management to ensure no uncontrolled activities / encroachments occur within the easement area. Accordingly Endeavour Energy's recommendation is that whenever reasonably possible, easements be entirely incorporated into public reserves and not burden private lots (except where they are remnant lots or not subject to development). Endeavour Energy's preference is to have continuity of its easements over the most direct and practicable route affecting the least number of lots as possible. Therefore it generally does not support the incorporation of easements into to multiple / privately owned lots.

The future proposed substation locations on a site will require a detailed assessment to consider the suitability of access, safety clearances, fire ratings, flooding (please refer to the following point 'Flooding and Drainage) impact on adjoining properties etc. For example, to avoid the creation of restrictions on the adjoining site the development shown in the following extract of Google Maps Street View is of a site in Liverpool required the installation of a fire wall next to the padmount substation. Whilst meeting the fire rating requirements etc. from an aesthetics perspective this is not an attractive outcome. Restricted access to the substation by maintenance workers causes delays in power restoration and may have severe consequences in the event of an emergency. Delays to accessing electricity infrastructure due to traffic congestion may also have severe consequences in the event of an emergency.

Fire wall constructed for padmount substation in Liverpool. Source: Google Maps Street View.

- Flooding and Drainage

Endeavour Energy has noted that the Environmental Impact Statement indicates that a Flood Impact Assessment has been undertaken by AECOM which identifies that the site is located outside the 1% and PMF flood extent of Second Ponds Creek to the east with flood modelling of the local overland flow paths has been undertaken to identify the 1% AEP flood level with 50% blockage of stormwater pipe network and a 15% increase in rainfall intensity to reflect possible climate change impacts.

Distribution substation should not be subject to flood inundation ie. the padmount substation cubicles are weather proof not flood proof. Endeavour Energy's Mains Construction Instruction MCI 0006 'Underground distribution construction standards manual' Section 7 'Substation and switching stations' provides the following details of the requirements for new padmount substation locations in flood prone land.

7.1.6 Flooding and drainage

Substations are to be located such that the risk of flooding or stormwater damage is minimal.

As a minimum the level at the top of the transformer footing, HV and LV switchgear, shall not be lower than the 1:100 year flood level.

All drains within the substation site area or in the vicinity shall be properly maintained to avoid the possibility of water damage to Endeavour Energy's equipment.

In areas where, as determined by the Network Substation Manager, there is a high water table or a heightened risk of flooding, indoor substations will not be permitted.

All materials used in the construction below the substation (ground level) shall be capable of withstanding prolonged immersion in water without swelling or deterioration.

Figure 51 - Example substation raised above 1:100 flood level

- Bushfire

Endeavour Energy has noted that the Environmental Impact Statement indicates that 'Parts of the site are identified as "Category 1 Bushfire Prone Vegetation" and "100 metre wide buffer zone to the Category 1 Bushfire Prone Vegetation" under the Blacktown Bushfire Prone Land Map'. The accompanying Bushfire Protection Assessment assessing the impacts of the proposal against the NSW Rural Fire Service (RFS) publication Planning for Bushfire Protection 2006 providing the following advice (please also refer to the above point 'Urban Residential Subdivision'):

> **5.3 Bushfire Protection Assessment for the proposed Medium Density Residential Development.**
>
> The performance criteria for the proposed medium density residential [infill] component of the development are:
>
> ***(5) Water & Utility Services:***
>
> Gas & electricity services are located underground.

The following is an extract of Endeavour Energy's Company Policy 9.1.1 Bushfire Risk Management:

9.1.1 BUSHFIRE RISK MANAGEMENT

1.0 POLICY STATEMENT

The company is committed to the application of prudent asset management strategies to reduce the risk of bushfires caused by network assets and aerial consumer mains to as low as reasonably practicable (ALARP) level. The company is also committed to mitigating, the associated risk to network assets and customer supply reliability during times of bushfire whilst achieving practical safety, reliability, quality of supply, efficient investment and environmental outcomes. The company is committed to compliance with relevant acts, regulations and codes.

Accordingly the network required to service the proposed development must be fit for purpose and meet the technical specifications, design, construction and commissioning standards based on Endeavour Energy's risk assessment associated with the implementation and use of the network connection / infrastructure for a bushfire prone site. In assessing bushfire risk, Endeavour Energy has traditionally focused on the likelihood of its network starting a bushfire, which is a function of the condition of the network. Risk control has focused on reducing the likelihood of fire ignition by implementing good design and maintenance practices. However safety risks associated with the loss of electricity supply are also considered.

- 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 and the electricity network at risk.

Endeavour Energy is committed to ensuring that its activities and assets conform to all relevant International and Australian Standards, Energy Networks Association (ENA) Standards and NSW legislation. Whilst the earthing of the rouse Hill Switching Station has accordingly been designed within the site boundaries, adjoining properties still need to ensure that any building or structure is adequately earthed to prevent electromagnetic induction and transferred voltage hazards.

- Prudent Avoidance

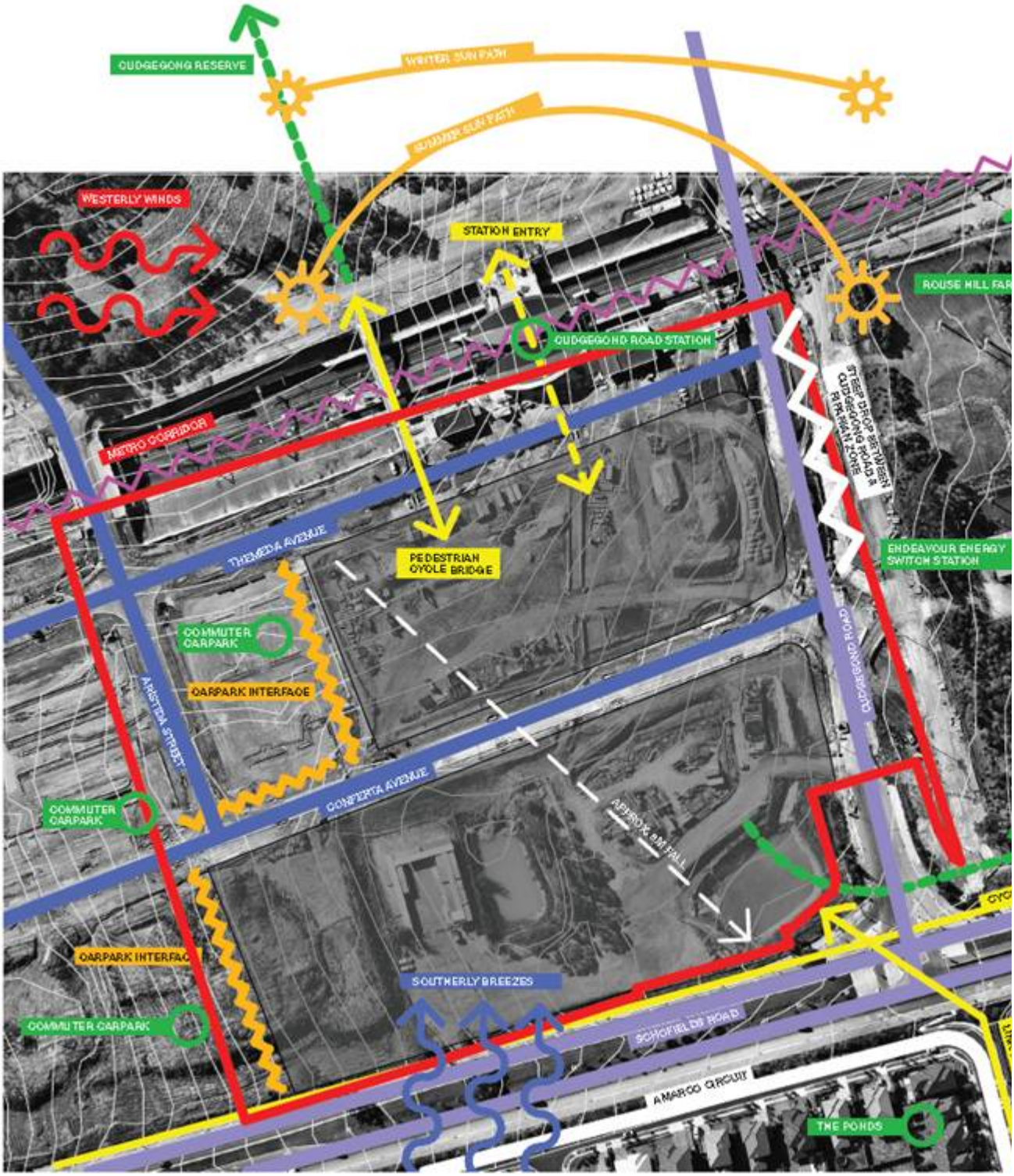
The electricity network is operational 24/7/365 ie. all day, every day of the year. The electricity industry has adopted a policy of prudent avoidance by doing what can be done without undue inconvenience and at modest expense to avert the possible risk to health from exposure to emissions form electricity 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.

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.

Endeavour Energy has noted that the Environmental Impact Statement does not appear to mention the proximity to Rouse Hill Switching Station or Feeder 9JA. The Urban Design Report as shown in the following extract of the Site Analysis Plan shows 'Endeavour Energy Switch Station' but there appears to be no detail / discussion about a 'complimentary interface' between the Rouse Hill Switching Station / Feeder 9JA and the buildings to the opposite side of Cudgegong Road.



- 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.

In regards to the future padmount substations required to facilitate the proposed development please refer to the attached copy of 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 or other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

- 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

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 may be directly relevant or significant to the rezoning proposal, 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 proposed electricity infrastructure required to facilitate the proposed development on or in the vicinity of the Precinct occur.

Should you wish to discuss this matter, or have any questions, please do not hesitate to contact me or the telephone numbers identified in the above in relation to the various matters. As I am working on different projects across the company's franchise area, to ensure a response contact by email is preferred.

Yours faithfully
Cornelis Duba
Development Application Review

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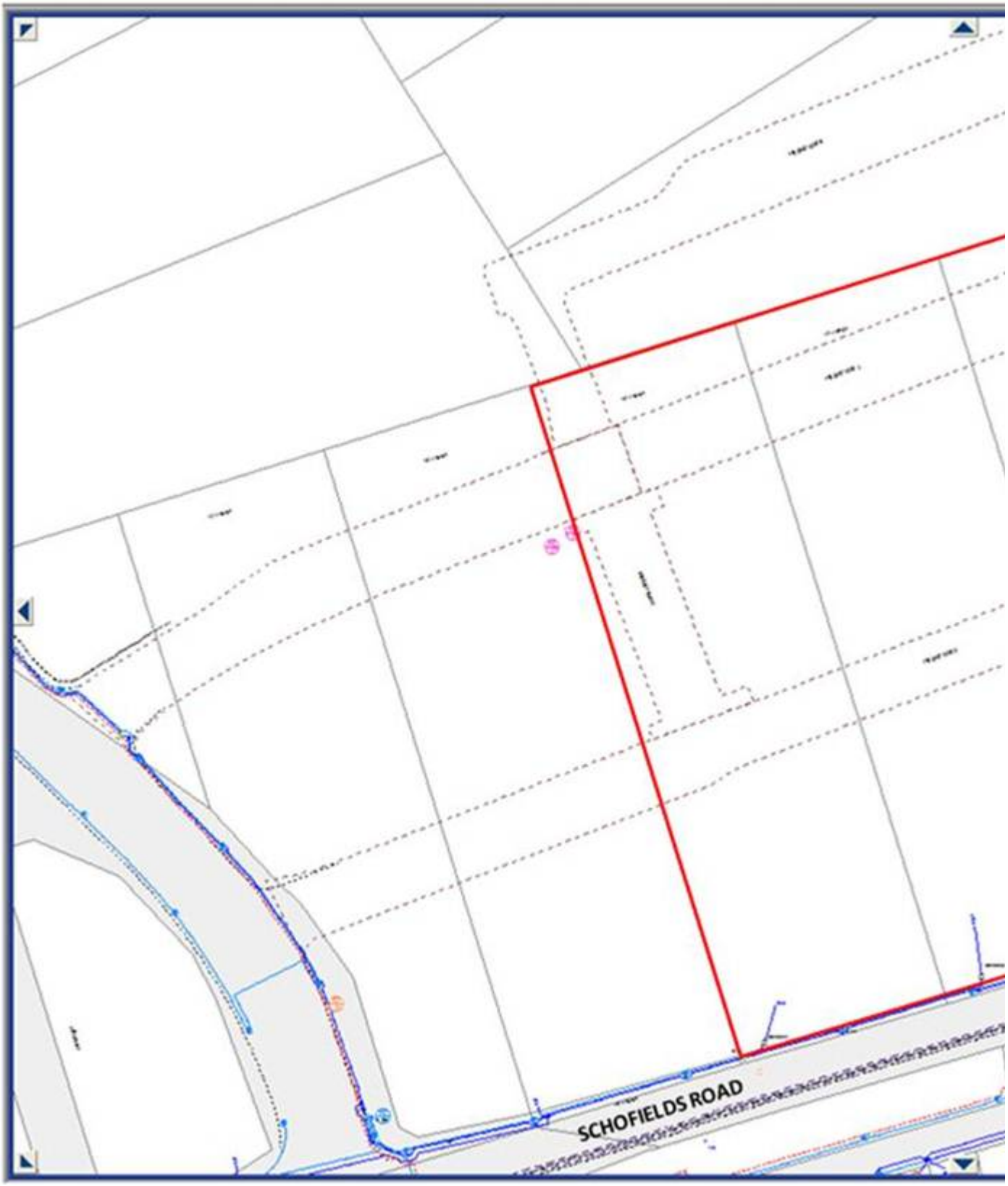
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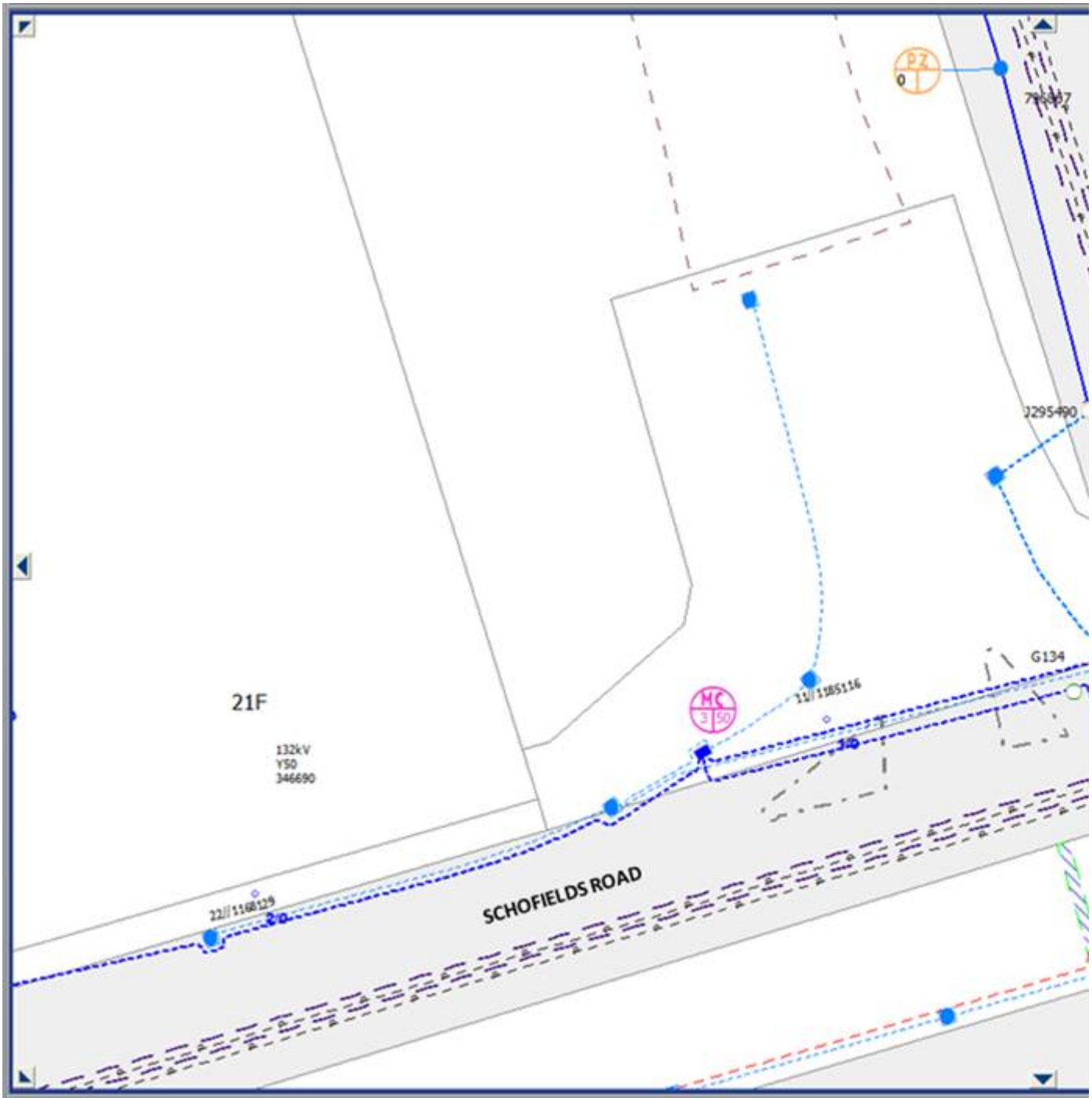
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