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Sydney Business Park
Sydney Business Park
27-Mar-2018

TransGrid 330kV Clearance Analysis for Proposed ASICS Facility

TransGrid Line 20 – Tower 37 to 39 Ground Clearance

Revision 1 – 27-Mar-2018
Prepared for – Sydney Business Park – ABN: 0

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Client: Sydney Business Park

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Prepared by

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Reviewed by	Kevin Zhang

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
1	15-Mar-2018	First Issue	Colin Brown Technical Director – Energy	Signed
2	27-Mar-2018	Second Issue	Colin Brown Technical Director – Energy	

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1.0 Project Overview and Inputs

1.1 Project Scope

Sydney Business Park ASICS Facility is proposed to be developed at 4 Darling Street, Marsden Park (Part Lot 303 & 304, and Lot 305 in DP 1213756). The construction and operation of the ASICS Facility including warehouse, ancillary offices, showroom and retail outlet, sports playing field and courts and ancillary infrastructure and services. There is an existing TransGrid 330kV aerial transmission Line Feeder 20 that crosses over the proposed private sports field and carparks, located at southeast corner of the lot. The development is located between towers 37, 38 and 39.

AECOM carried out the electrical clearance analysis and easement requirements assessment for the proposed development. The results of this assessment are detailed in the report below.

1.2 Project Inputs

AECOM has been provided with the following to be used for clearance analysis:

- TransGrid Line 20 PLS-CADD model created from Aerial Laser Survey (ALS) – Provided by TransGrid
- Proposed Development Plan at Part Lot 303 & 304, and Lot 305 in DP 1213756.
- Ground elevation of the proposed site

1.3 Line 20 Details

Details of the aerial transmission line are as follows:

- Line number: 20
- Nominal voltage: 330kV
- Spans: Two span, 37 to 38 and 38 to 39
- Tower construction: Single Circuit
- Conductor type: Moose ACSR/GZ 54/7/139
- Surveyed conductor tension: 24% UTS @ 5°C
- Maximum operating temperature: 120°C

2.0 Clearance Assessment

2.1 Ground Clearance

As per client provided 3D CAD file, the proposed ground levels below the TransGrid Line are between AHD 31.91m and 35.75m.

The following table shows the minimum clearances from the 330kV conductor at 120°C to the proposed ground:

Table 1 Clearance to Ground – Span 37 to 38 & 38 to 39

Span	Minimum Clearance to TIN (m)
37-38	9.01
38-39	8.01

The clearance requirement for 330kV aerial lines to ground in Sydney Business Park has been confirmed with TransGrid to be 8.0m. Therefore, the required ground clearance is achieved.

A profile and 3D view of this area with the transmission line Feeder 20 and the proposed development is shown in **Appendix A**. A detail clearance table has been provided, refer to Appendix B. The minimum clearance is shown in Figure 1 below between Towers 38 to 39.

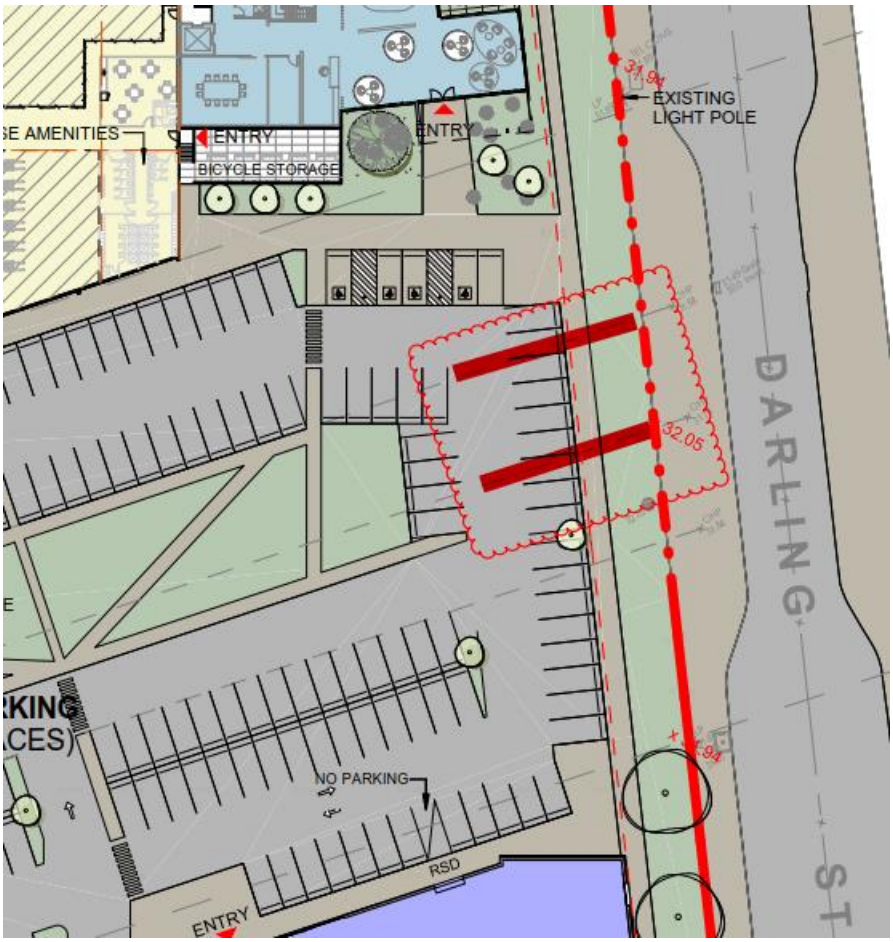


Figure 1: Preliminary Site Layout Plan with Clouded Minimum Ground Clearance Area

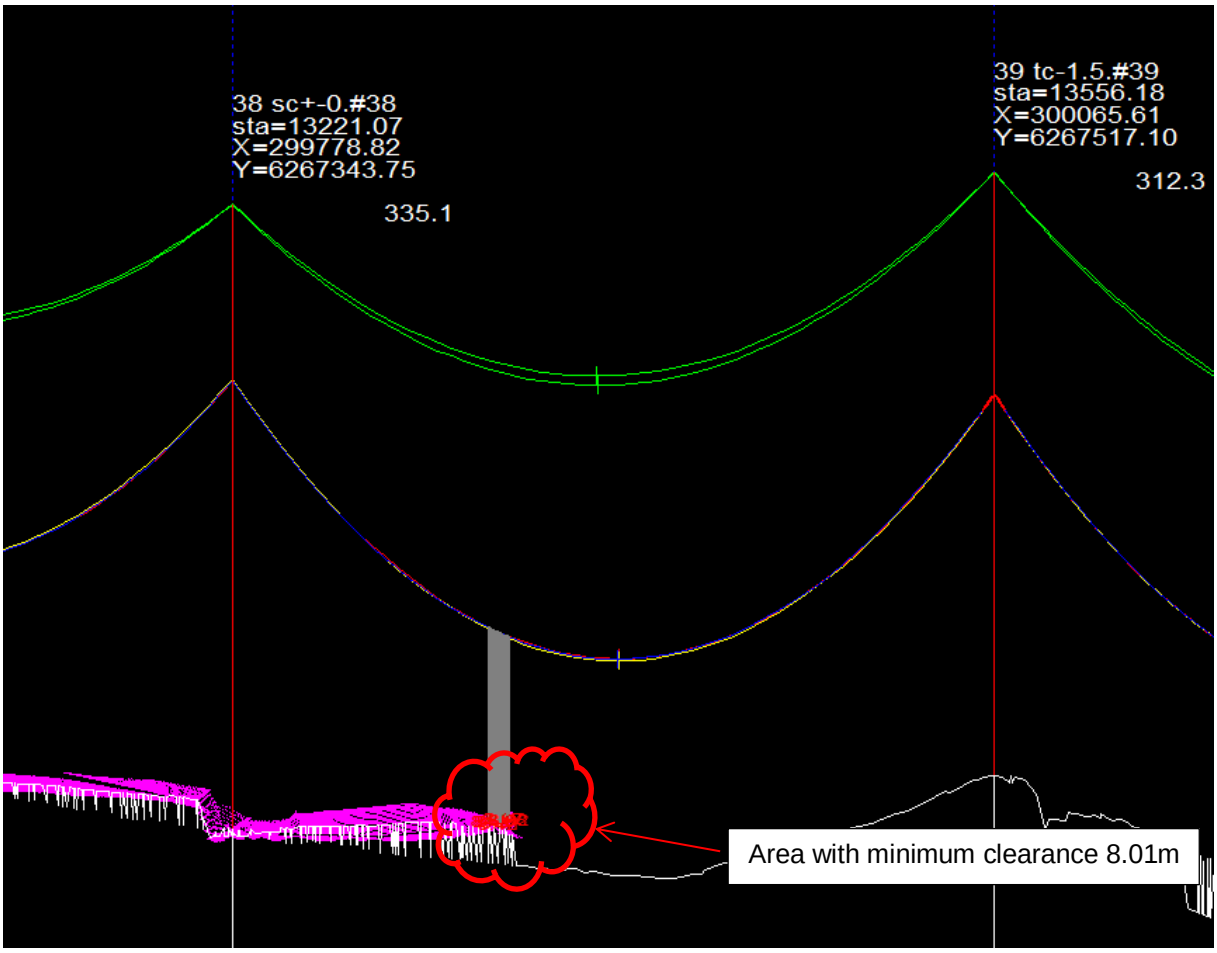
3.0 Summary

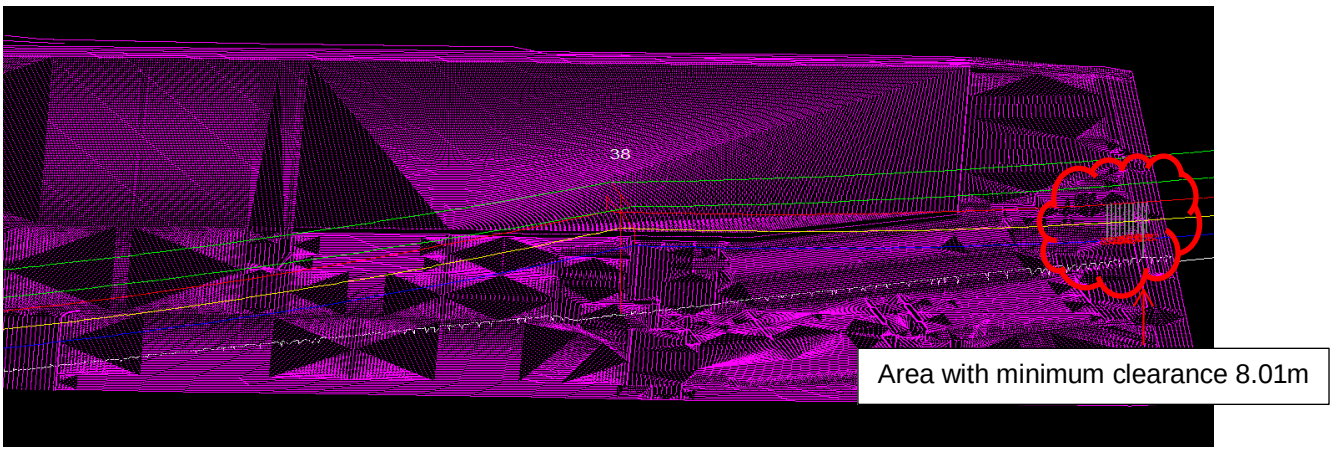
The proposed development under TransGrid Transmission line Feeder 20 between spans 37, 38 and 39 does achieve the 8.0m clearance requirement to the ground surface with the line at maximum operating temperature. No modification of the development plan and/or civil design is required.

Appendix A

Profile & 3D views

Appendix A Profile & 3D views





Note: The minimum Clearance shown in this profile & 3D view is 8.01m to the ground.

Appendix B

Clearance Table

Appendix B Clearance Table

Back Structure			Ahead Structure			Weather Case	Wire	Wire	Wire	Ground	Clearance
	Set	Phase		Set	Phase		X (m)	Y (m)	Z (m)	Z (m)	(m)
38	1	1	39	1	1	Tmax	299869.9	6267411	41.135	32.655	8.48
38	1	1	39	1	1	Tmax	299870.8	6267412	41.089	32.642	8.447
38	1	1	39	1	1	Tmax	299871.7	6267412	41.042	32.629	8.413
38	1	1	39	1	1	Tmax	299872.5	6267413	40.996	32.617	8.379
38	1	1	39	1	1	Tmax	299873.4	6267414	40.95	32.529	8.421
38	1	1	39	1	1	Tmax	299874.2	6267414	40.904	32.593	8.311
38	1	1	39	1	1	Tmax	299875.1	6267415	40.862	32.738	8.124
38	1	1	39	1	1	Tmax	299875.9	6267415	40.821	32.752	8.069
38	1	1	39	1	1	Tmax	299876.8	6267416	40.779	32.702	8.077
38	1	1	39	1	1	Tmax	299877.6	6267416	40.738	32.716	8.021
38	2	1	39	2	1	Tmax	299879.7	6267405	40.825	32.55	8.274