

Appendix A Design Plans

PROSPECT RESERVOIR - COMMUNICATIONS TOWER

DWG No.	DWG TITLE
SHEET 1	DRAWING TITLE AND LOCATION PLAN
SHEET 2	OVERALL SITE PLAN
SHEET 3	OVERALL SECTIONAL VIEW 1
SHEET 4	OVERALL SECTIONAL VIEW 2
SHEET 5	DETAILED SITE PLAN
SHEET 6	DETAILED SITE PLAN - ELEVATIONS
SHEET 7	SITE PLAN - CUT & FILL



LOCATION PLAN

AMENDMENTS						
<table border="1"> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> <tr> <td>1</td> <td>DESIGN</td> <td>14/12/22</td> </tr> </table>	NO.	DESCRIPTION	DATE	1	DESIGN	14/12/22
NO.	DESCRIPTION	DATE				
1	DESIGN	14/12/22				

HISTORY						
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1	DESIGN	14/12/22				

REVISION A
ORIGINAL ISSUE

CONCEPT DESIGN

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ORIGINAL SCALE AS SHOWN	APPROVED
DESIGNED PJB	DATE 14/12/22
DRAWN PJB	
CHECKED	

PROSPECT RESERVOIR COMMUNICATIONS TOWER DRAWING TITLE AND LOCATION PLAN

REFERENCE DRAWINGS	
DO NOT SCALE DIMENSIONS IN MILLIMETRES	AUTHORISED/CERTIFIED
DESIGN MANAGER CIVIL & SECONDARY	
A1	528567
SHEET No 1 OF 7 SHEETS	



OVERALL SITE PLAN
SCALE 1:500

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CHECKED			

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PROSPECT RESERVOIR COMMUNICATIONS TOWER OVERALL SITE PLAN

REFERENCE DRAWINGS		AUTHORISED/CERTIFIED	
DO NOT SCALE DIMENSIONS IN MILLIMETRES		DESIGN MANAGER CIVIL & SECONDARY	
A1	528567	SHEET No 2 OF 7 SHEETS	

AMENDMENTS	DESIGNER	DATE
A	PJB	14/12/22

HISTORY	REVISION	DESCRIPTION
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AMENDMENTS	
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A	REVISION A ORIGINAL ISSUE

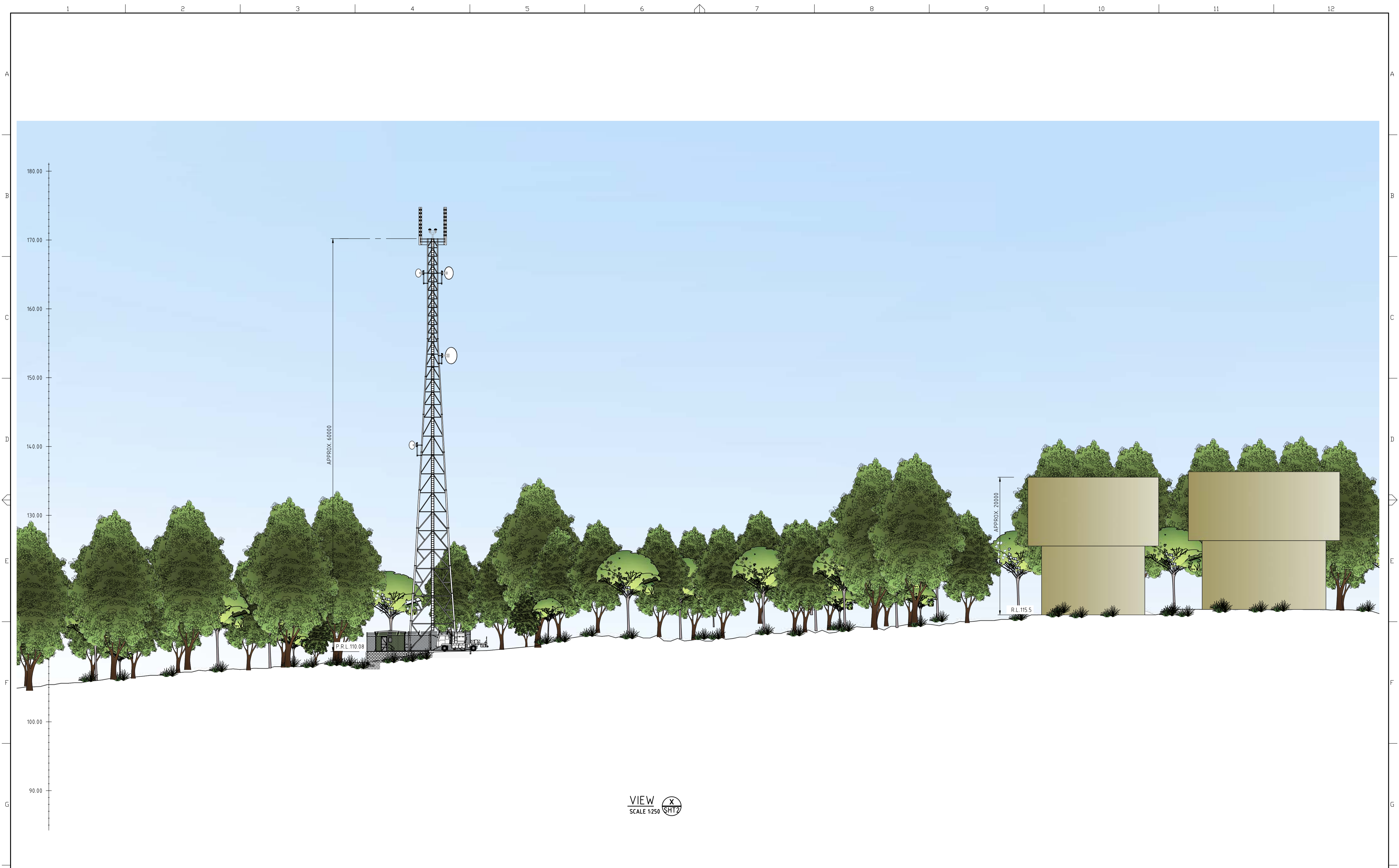
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DESIGNER	DATE
PJB	14/12/22

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CHECKED			

PROSPECT RESERVOIR COMMUNICATIONS TOWER OVERALL SECTIONAL VIEW 1

DO NOT SCALE DIMENSIONS IN MILLIMETRES		REFERENCE DRAWINGS	
AUTHORISED/CERTIFIED		DESIGN MANAGER CIVIL & SECONDARY	
A1	528567	SHEET No 3 OF 7 SHEETS	



VIEW X
SCALE 1:250

AMENDMENTS						
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ISSUE No.	DESCRIPTION	DATE				
1	DESIGN	14/12/22				

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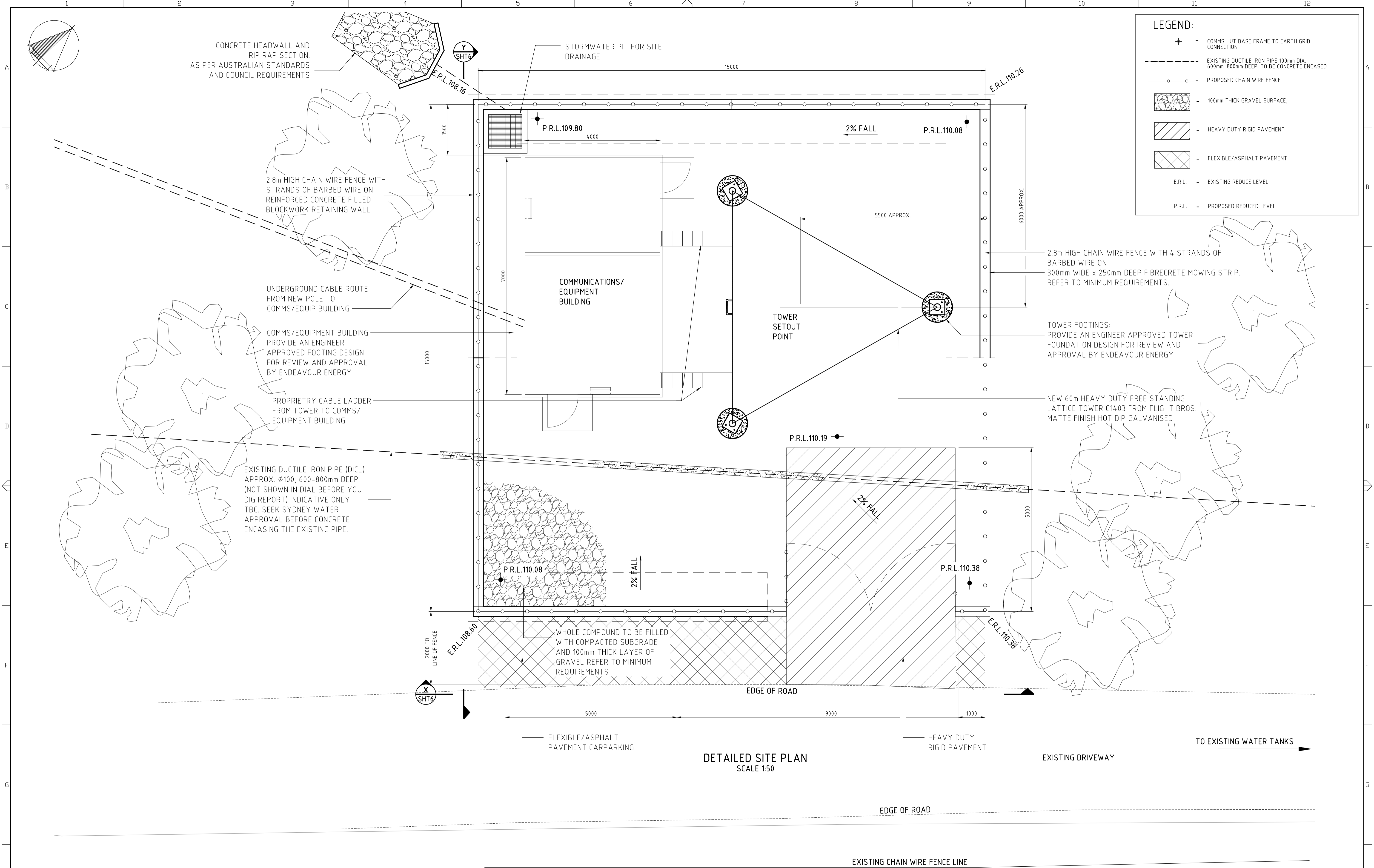
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PROSPECT RESERVOIR COMMUNICATIONS TOWER OVERALL SECTIONAL VIEW 2

REFERENCE DRAWINGS		AUTHORISED/CERTIFIED	
DO NOT SCALE DIMENSIONS IN MILLIMETRES			
DESIGN MANAGER CIVIL & SECONDARY			
A1	528567	SHEET No 4 OF 7 SHEETS	



LEGEND:

- COMMS HUT BASE FRAME TO EARTH GRID CONNECTION
- EXISTING DUCTILE IRON PIPE 100mm DIA. 600mm-800mm DEEP. TO BE CONCRETE ENCASED
- PROPOSED CHAIN WIRE FENCE
- 100mm THICK GRAVEL SURFACE,
- HEAVY DUTY RIGID PAVEMENT
- FLEXIBLE/ASPHALT PAVEMENT
- E.R.L. - EXISTING REDUCE LEVEL
- P.R.L. - PROPOSED REDUCED LEVEL

DETAILED SITE PLAN
SCALE 1:50

CONCEPT DESIGN

AMENDMENTS	
DESIGN NO.	DESIGN JOB
DRN	BONHELP
REV	DATE
A	14/12/22

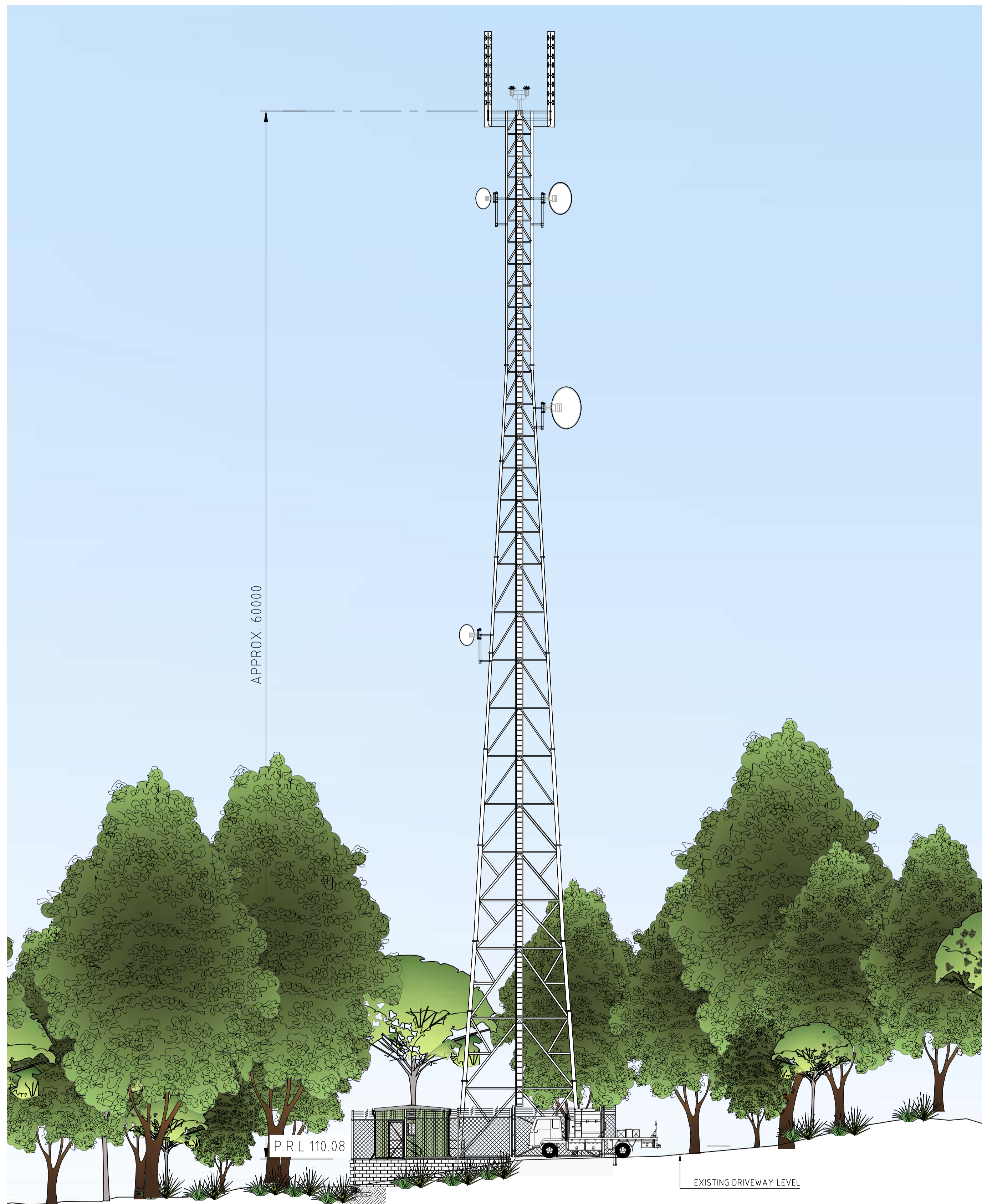
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REVISION A	ORIGINAL ISSUE

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	DESIGNED	DATE
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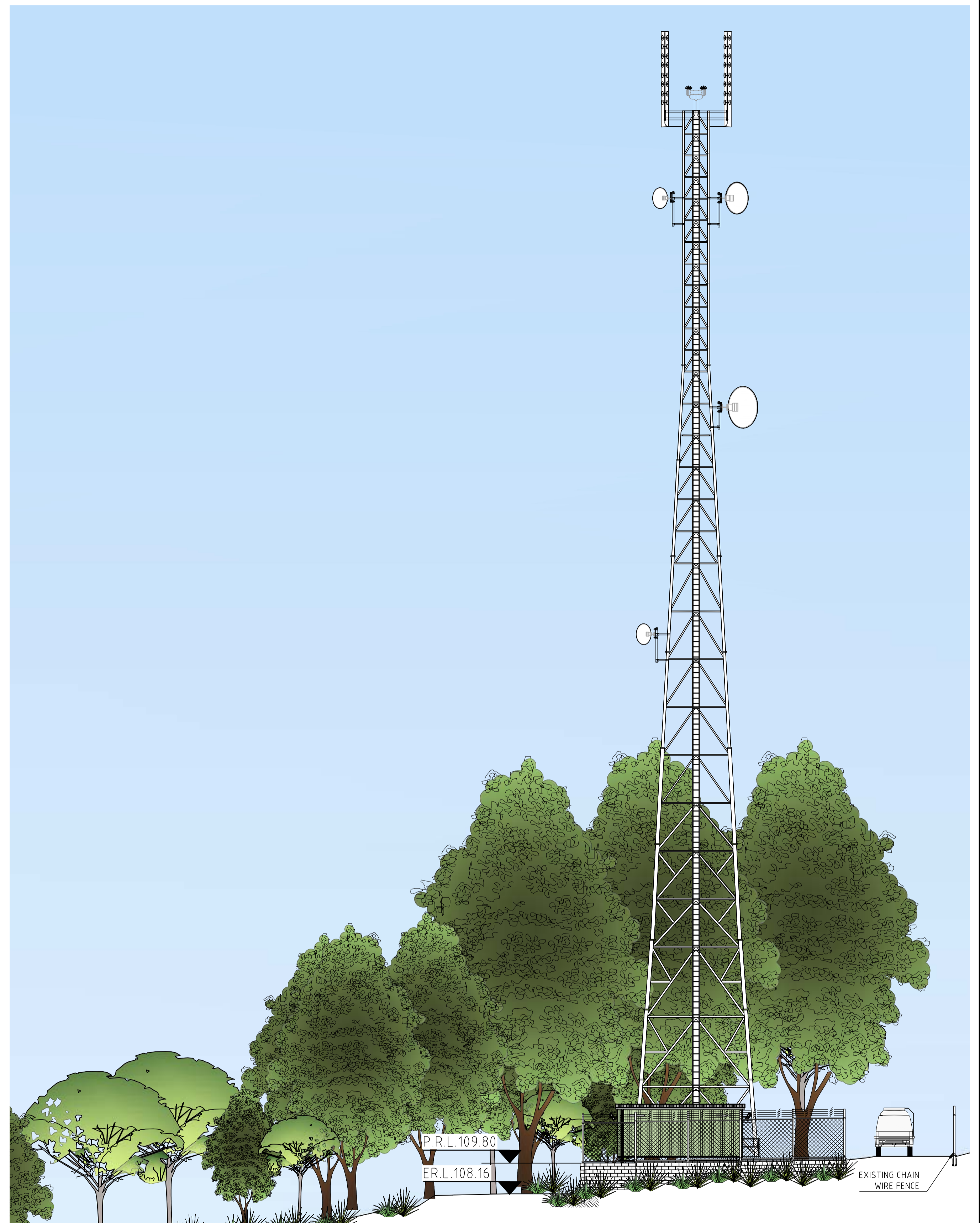
Endeavour Energy

PROSPECT RESERVOIR COMMUNICATIONS TOWER DETAILED SITE PLAN

DO NOT SCALE DIMENSIONS IN MILLIMETRES		AUTHORISED/CERTIFIED
A1	528567	DESIGN MANAGER CIVIL & SECONDARY
SHEET No 5 OF 7 SHEETS		



VIEW X
SCALE 1:150



VIEW Y
SCALE 1:150

AMENDMENTS	DESIGNER	DATE
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HISTORY	REVISION	DESCRIPTION
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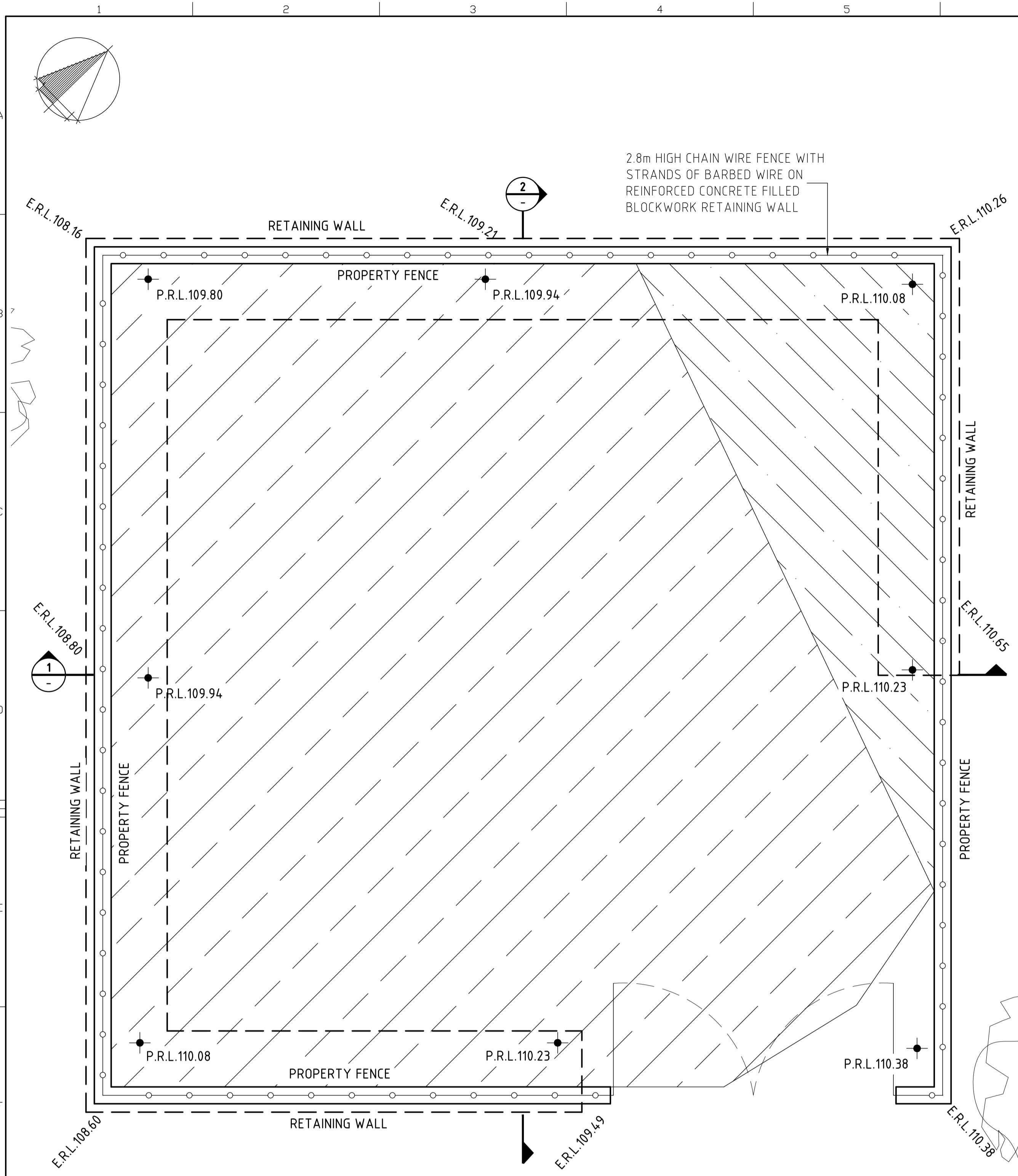
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DRAWN	PJB		
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PROSPECT RESERVOIR COMMUNICATIONS TOWER
DETAILED SITE PLAN - ELEVATIONS

DO NOT SCALE DIMENSIONS IN MILLIMETRES	REFERENCE DRAWINGS
A1	528567
SHEET No 6 OF 7 SHEETS	

CONCEPT DESIGN



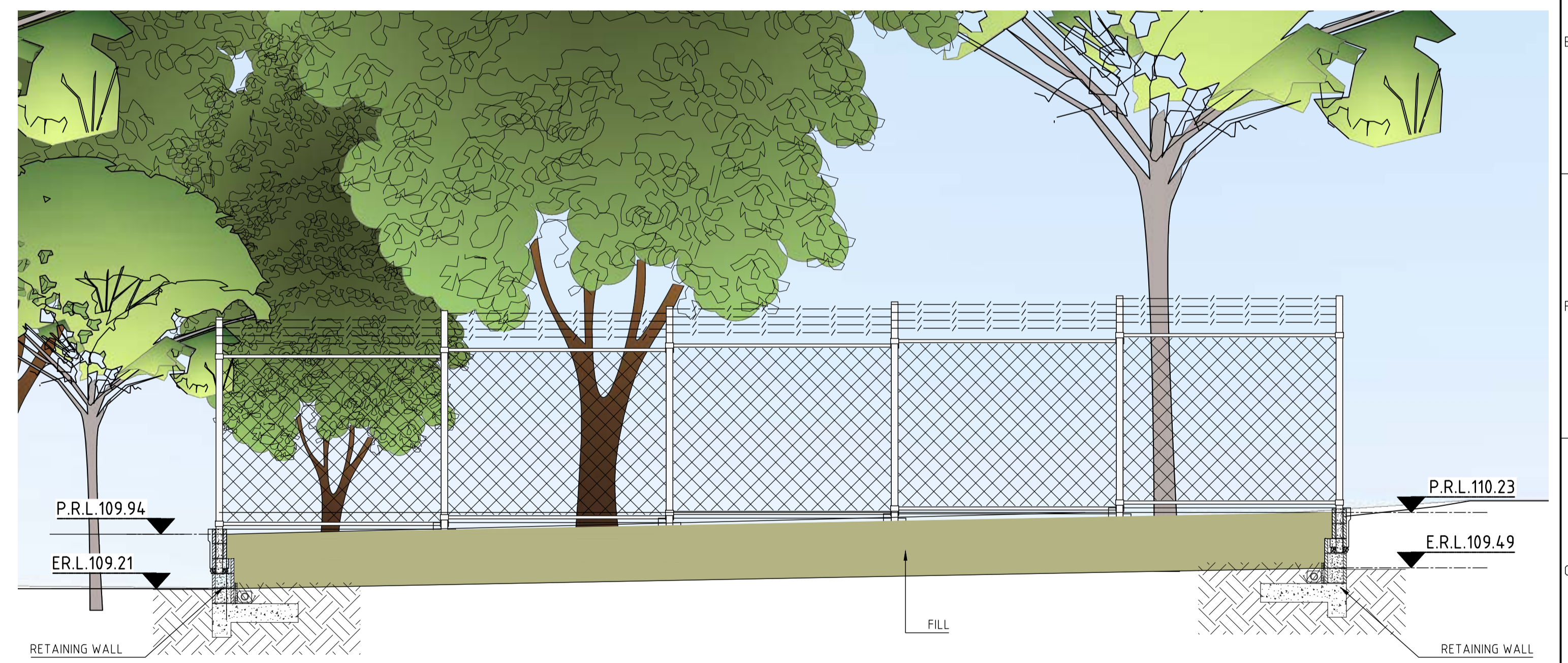
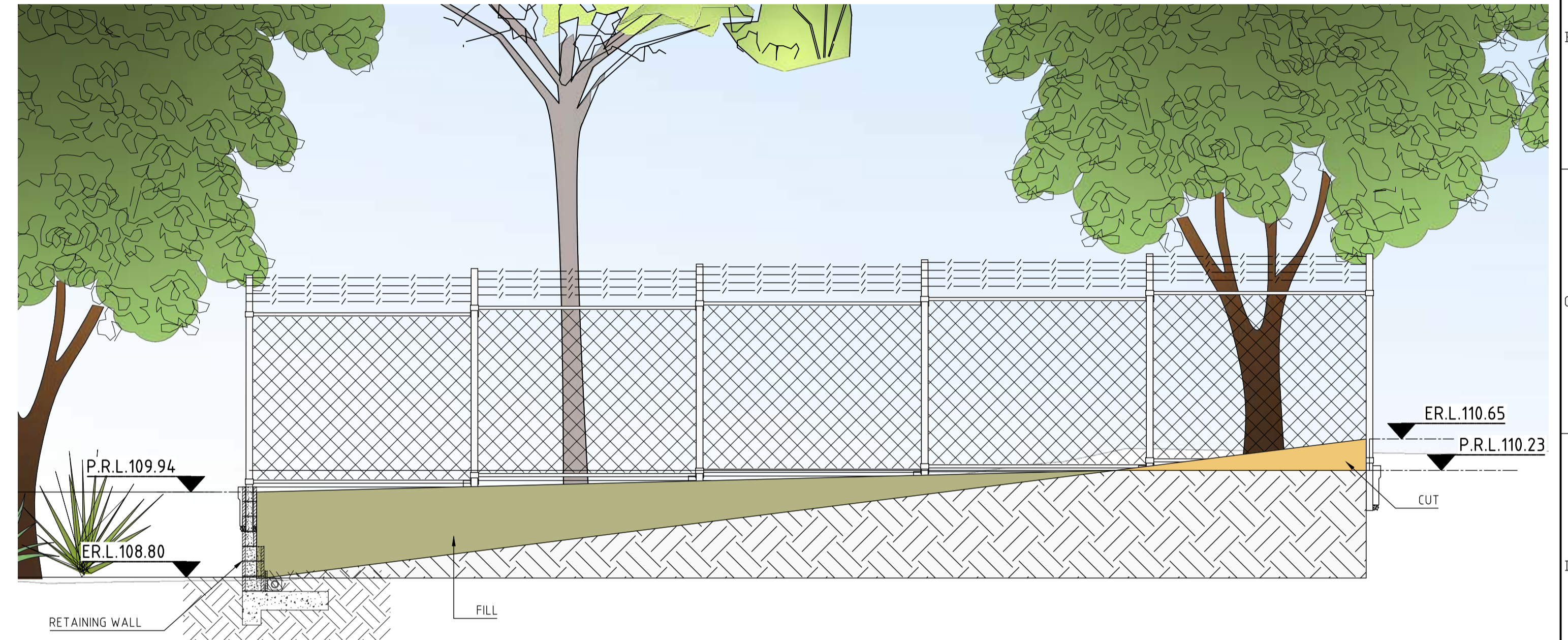
LEGEND:

CUT

FILL

E.R.L. - EXISTING REDUCE LEVEL

P.R.L. - PROPOSED REDUCED LEVEL



AMENDMENTS	
DESIGN	DESIGN
CHKD	CHKD
APPD	APPD
HISTORY	
REVISION A	ORIGINAL ISSUE

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	DESIGNED	DATE
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	DRAWN	PJB
	CHECKED	

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PROSPECT RESERVOIR COMMUNICATIONS TOWER
SITE PLAN - CUT & FILL

REFERENCE DRAWINGS	
DO NOT SCALE DIMENSIONS IN MILLIMETRES	AUTHORISED/CERTIFIED
A1	528567
SHEET No 7 OF 7 SHEETS	



PROSPECT RESERVOIR
 COMMUNICATION TOWER- APZ PLAN
 SCALE 1:500

PRELIMINARY
 NOT FOR CONSTRUCTION
 REVISION 1
 DATE: 28/10/23

REVISIONS	NO.	DATE	DESCRIPTION

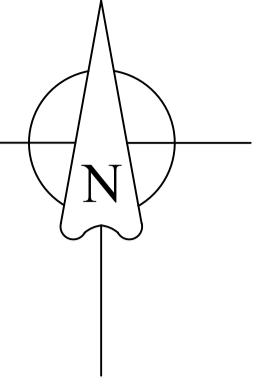
PROJECT NO.	
DATE	28/10/23



PROSPECT RESERVOIR
 COMMUNICATIONS TOWER
 APZ PLAN

DO NOT SCALE
 UNLESS INDICATED

A1 SK-003



FINAL 33kV CIRCUIT

NOT TO SCALE

- EXISTING TR OVERHEAD MAINS FDR 435 - BLACKTOWN TO BOSSLEY PARK TEE QUARRIES
- - - EXISTING TR UNDERGROUND MAINS FDR 435 - BLACKTOWN TO BOSSLEY PARK TEE QUARRIES
- - - ERECT 3 x 7/4.50 AAC 'MERCURY' CONDUCTOR (BETWEEN POLES '1' AND '2')
R.L. 7m C.L. 30m. SLACK SPAN (TENSION @ 2% CBL @ 5°C TABLE 1)

SAP DATA URBAN OH SUB 96001	
HV DOF	231947
TRF 1	10004450
LV ISOLATOR	231948
LV BUSBAR	37528
F1 - FUSE LABEL	403332
F2 - FUSE LABEL	-----

TR CONDUCTOR REFERENCE	
CODE	SIZE & TYPE
J74	- 2 x 19/3.25 AAC (2 x 19/0.128) 2 x (OH) 33 kV
W81	- 630mm ² Cu 1C XLPE/PVC/HDPE Screened (UG) 33kV

CONDUCTOR STRINGING TABLE 1										
STRAIN SECTION	POLE '1' TO '2'		TENSION (%CBL) @ 5°C							2%
DESIGN SPAN	POLE '1' TO '2'		RULING SPAN (m)							7.0
CONDUCTOR	1 x 7/4.50 AAC 'MERCURY' (NO CREEP COMPENSATION REQUIRED)									
TEMPERATURE (°C)	0	5	10	15	20	25	30	35	40	
TENSION (kN)	0.65	0.34	0.24	0.19	0.16	0.15	0.13	0.12	0.11	
SAG (m)	0.03	0.05	0.07	0.08	0.10	0.11	0.12	0.13	0.14	

ATTENTION
REGIONAL STAFF TO NOTIFY NETWORK DATA DAILY WHEN CABLE WORK IS IN PROGRESS.
TELEPHONE: EXT. - 0298536664 or 0478403699

FINAL LV CIRCUIT

NOT TO SCALE

- x - x - x - INSTALL 1kV 240mm sq Al 4C XLPE/PVC
R.L. 63m CL. 80m

TO BLACKTOWN TS EARTH GRID

FINAL OHEW & EARTHING CIRCUIT

NOT TO SCALE

- EXISTING OHEW
- - - ERECT 1 x 7/4.50 AAC 'MERCURY' OHEW CONDUCTOR (BETWEEN POLES '1' AND '2') R.L. 7m C.L. 10m
TENSION @ 2% CBL @ 5°C TABLE 1
- + INSTALL 33kV POLE/SUBSTATION EARTH (REFER EARTHING DIAGRAM)

OHEW CONDUCTOR REFERENCE	
CODE	SIZE & TYPE
N90	- 18.1mm dia 48 fibre OPGW 185mm ² (OH)

ADSS/COMMS CONDUCTOR REFERENCE	
CODE	SIZE & TYPE
M9	- 48 core OPGW (18.1mm dia)
Z45	- 60 core UGFO pilot

FINAL FIBRE CIRCUIT

NOT TO SCALE

- x - x - x - INSTALL FIBRE OPTIC 144 CORE CABLE FROM: UGOH POLE 1 TO PROPOSED COMMS HUT
R.L. - 70 m C.L. - 220m
- JOINT/SPLICE

TERMINATE AT FIBRE PANEL.
(TO BE TERMINATED BY OTHERS)

ESTABLISH FIBRE UGFOH ON POLE 1, RE-TERMINATE IN EXISTING SPLICE JOINT BOX TO EXISTING OH OPGW

DISCONNECT EX UGFO PILOT CABLE FROM BOSSLEY PARK TS ON POLE 1 SPLICE JOINT BOX. DROP DOWN CABLE & LAY IN NEW TRENCH TOWARDS POLE SUB & ESTABLISH JOINT IN UG P8 PIT, EXTEND NEW UGFO CABLE TO HUT.

- P8 PIT CAN BE ORDERED FROM VINIDEX OR MASCOT ENGINEERING.
- LID TO BE STEEL LOCKABLE TYPE.
- USE MIN 50mm HD PVC DUCTS TO DIRECT CABLES INTO PIT.

WORKS COMPLETED/FIELD BOOK

CONSTRUCTED BY: _____
WORKS COMPLETED: _____
SIGNATURE: _____ DATE: _____
INSPECTED BY: _____
SIGNATURE: _____ DATE: _____

ASSET RECORDING

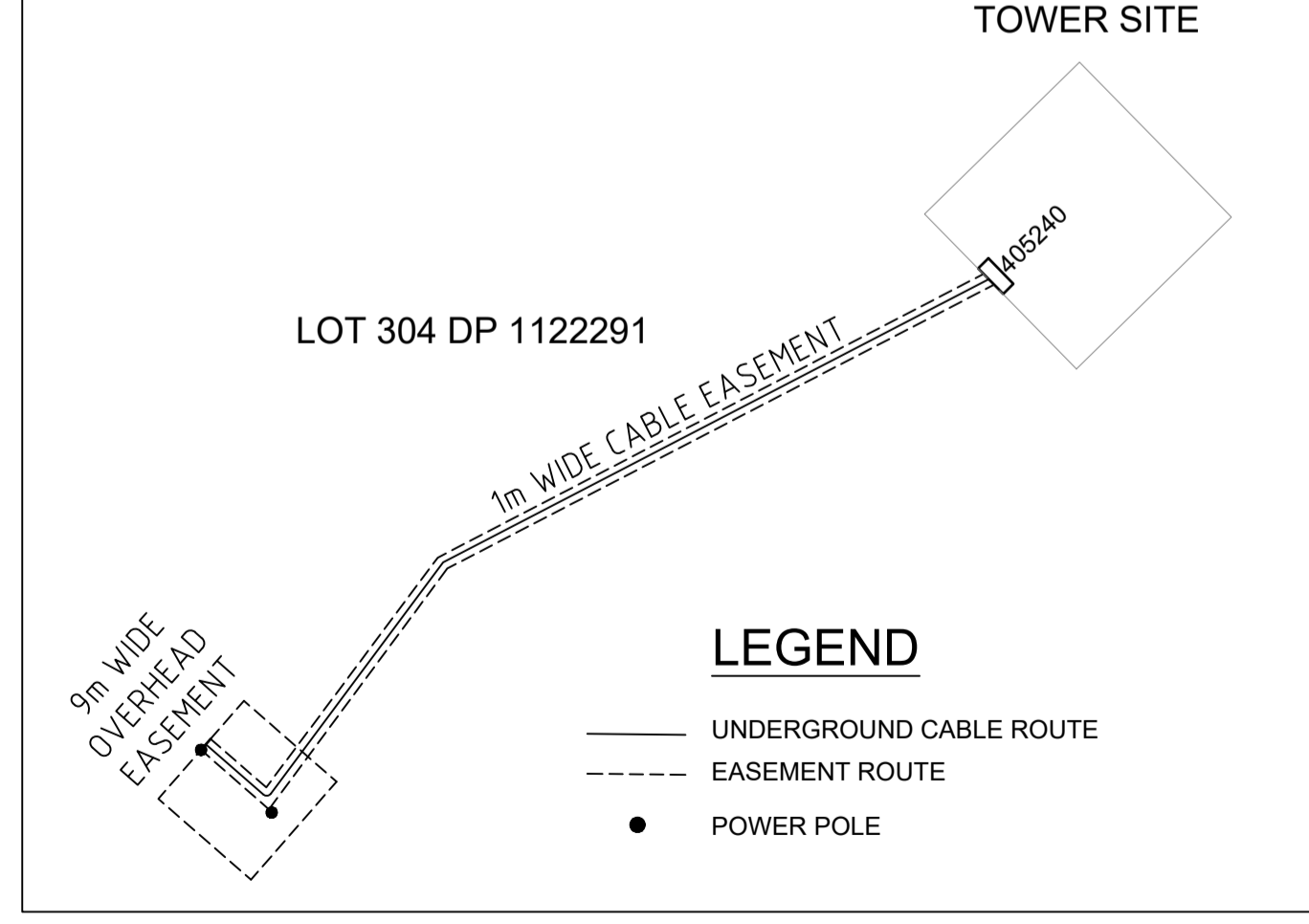
I: _____
OF: _____
CONTACT No.: _____

HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004.

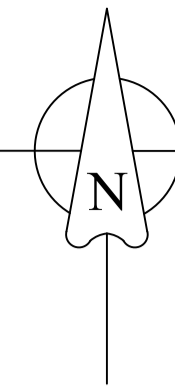
SIGNATURE: _____
DATE: _____

OH & UG EASEMENT DIAGRAM

NOT TO SCALE

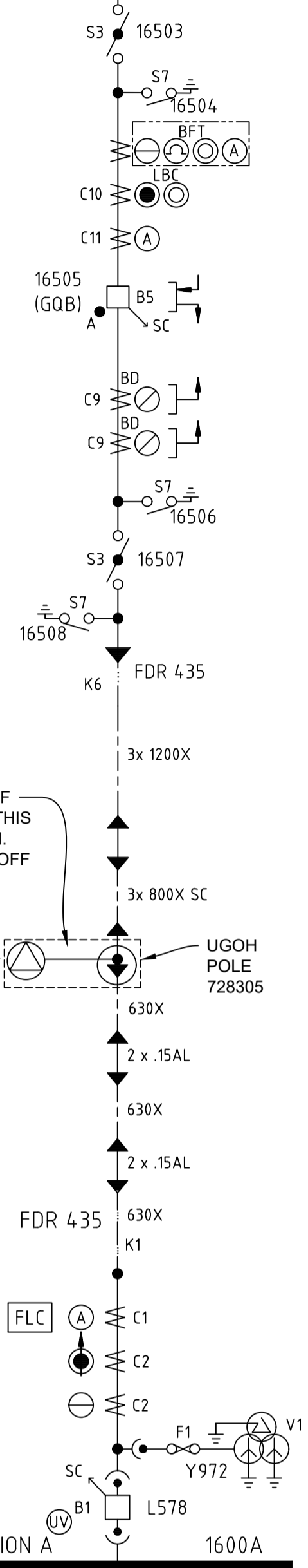


AMENDMENTS ORIGINAL ISSUE DRAFT No. 01	FOR CONSTRUCTION		TEMPLATE VERSION No. 5.20 <small>© THIS DRAWING AND THE COPYRIGHT THEREIN IS THE PROPERTY OF ENDEAVOUR ENERGY AND MAY NOT BE COPIED, REPRODUCED, DISTRIBUTED, LOANED OR USED WITHOUT THE WRITTEN CONSENT OF ENDEAVOUR ENERGY</small>	REFERENCE DRAWING'S		WORK ORDERS		CAMS File No.	ORIGINAL SCALE 1:500	DO NOT SCALE DIMENSIONS IN METRES	WILLIAM LAWSON DRIVE PROSPECT NCC-000742-001 ESTABLISH POLE MOUNTED SUBSTATION HUNTINGWOOD COMMS TOWER RELOCATION		Endeavour Energy		
				GENERAL	OVERHEAD	EE DEPOT	KINGS PARK	DRAWN						MJ	
				UNDERGROUND	UNDERGROUND	EE REGION	BLACKTOWN TS/T8	DATE						19/10/22	
				SUBSTATIONS	LOCAL GOV AREA	BLACKTOWN	CHD	J.V.S(15/12/22)						DESIGN	MJ
94368	1	2	3	4	5	6	7	8	9	10	11	12	A1	527137	A
												SHEET No 2 OF 3 SHEETS			



33kV FDR 435 LLD
NTS

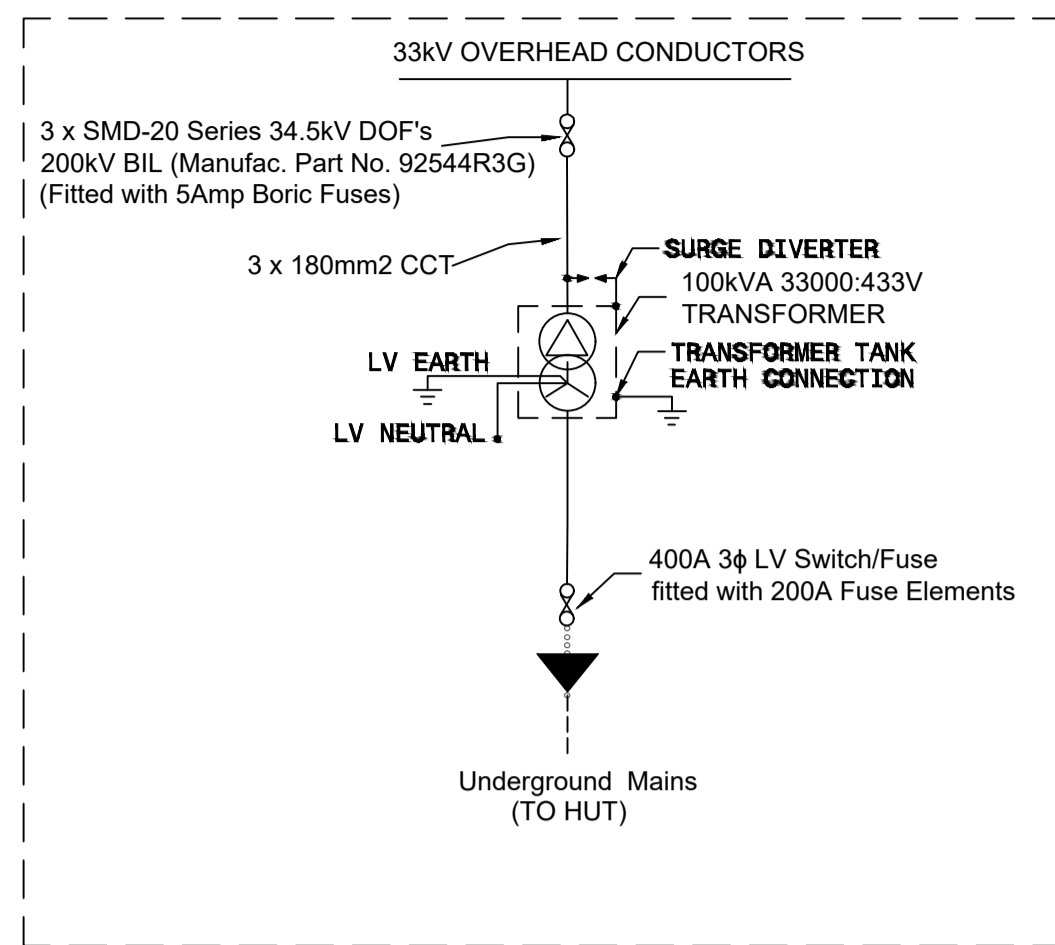
BLACKTOWN TS 33kV
BUS SECTION 3



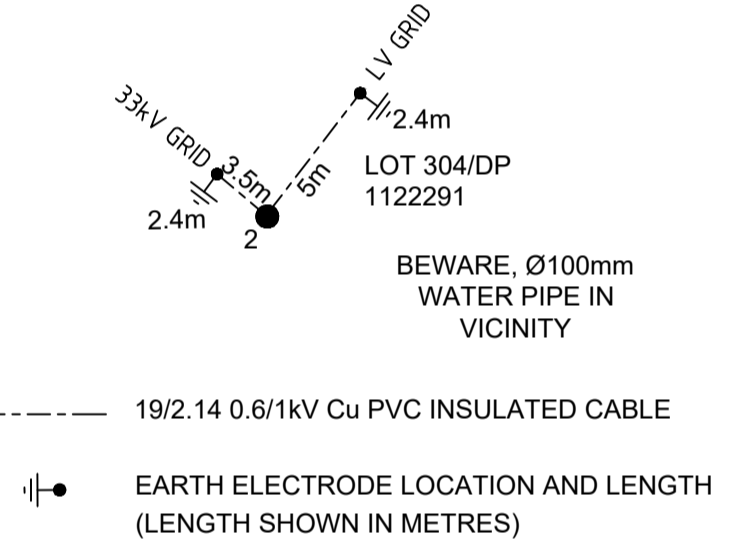
SCOPE OF WORKS IN THIS SECTION
7/4.5AAC T-OFF TO SUB
NEW POLE SUB 96001
UGOH POLE 728305

BOSSLEY PARK ZS
33kV
BUS SECTION A

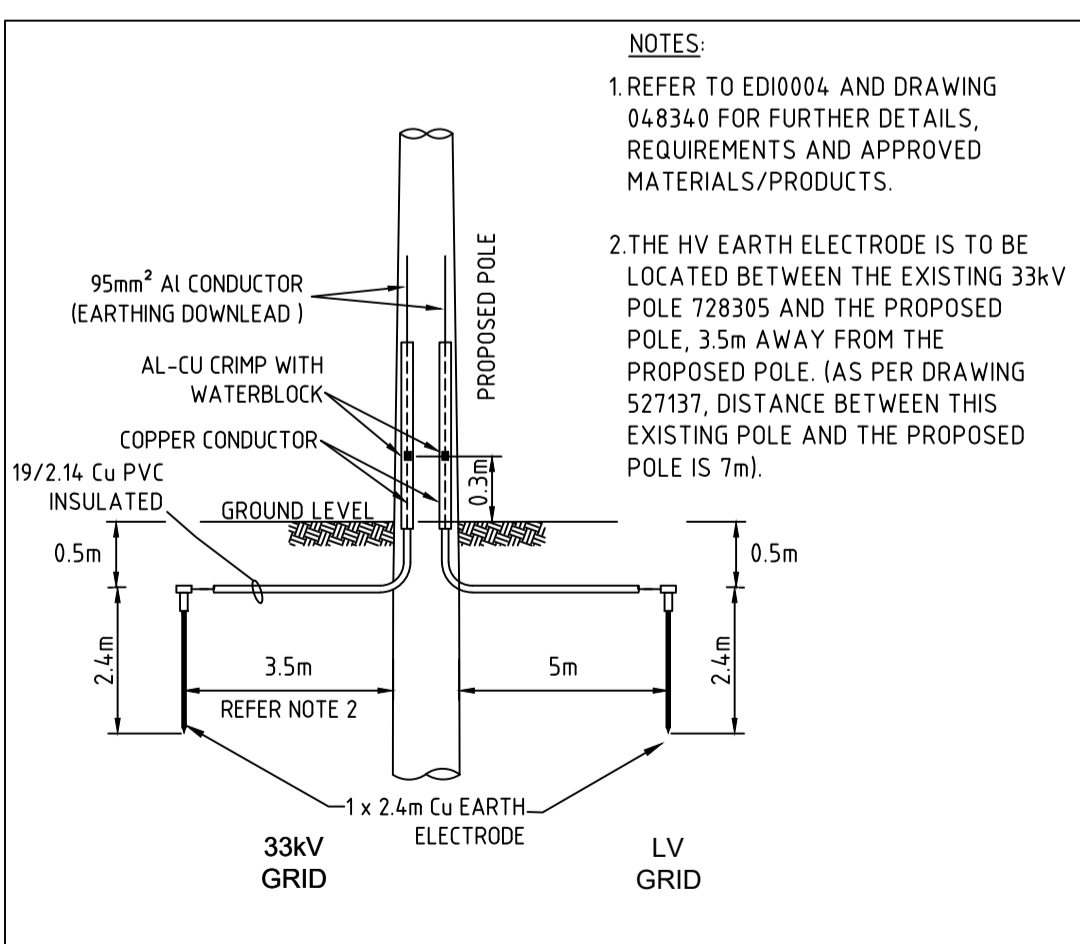
Pole Substation Single Line Diagram



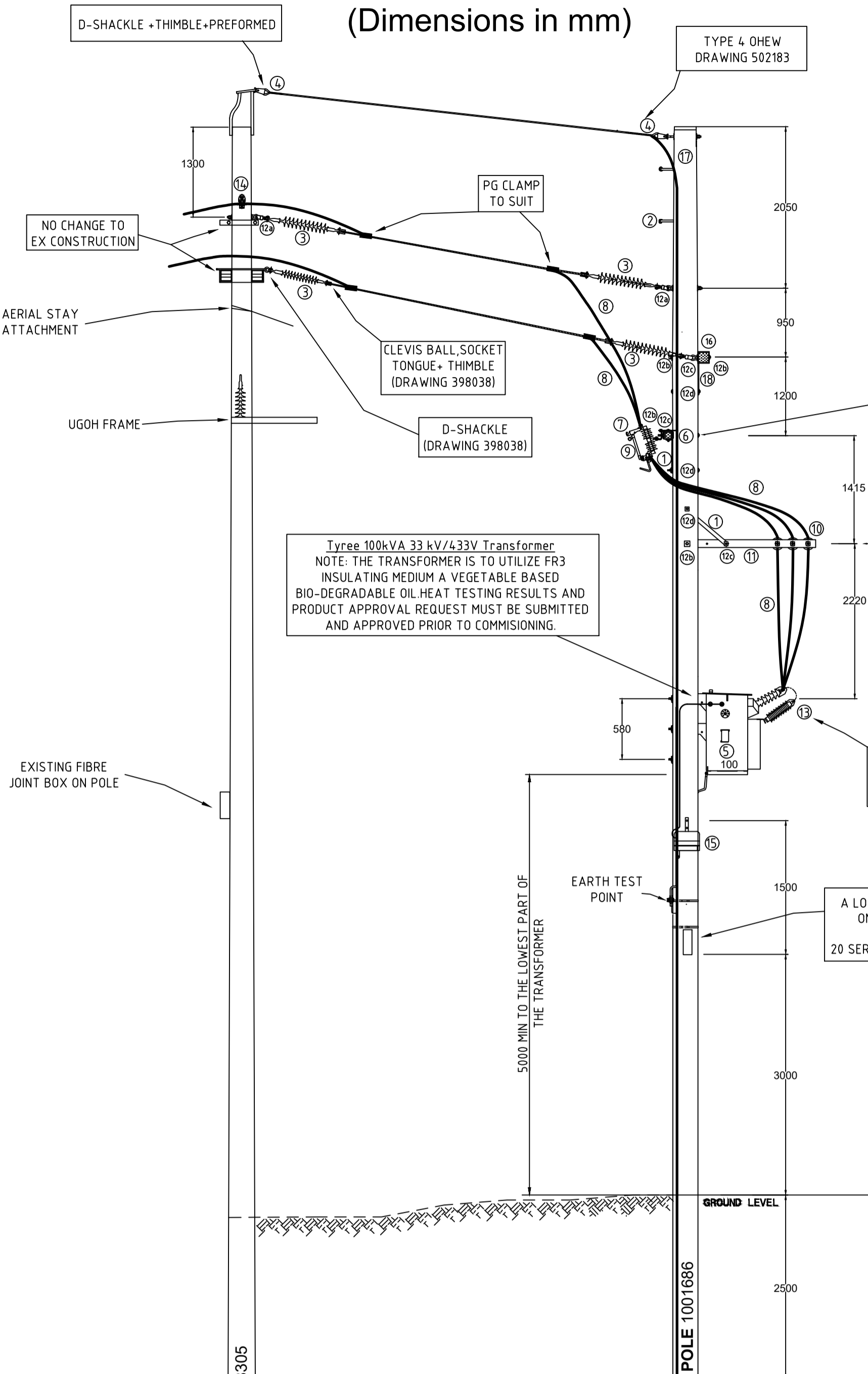
EARTHING PLAN POLE '2'
NOT TO SCALE



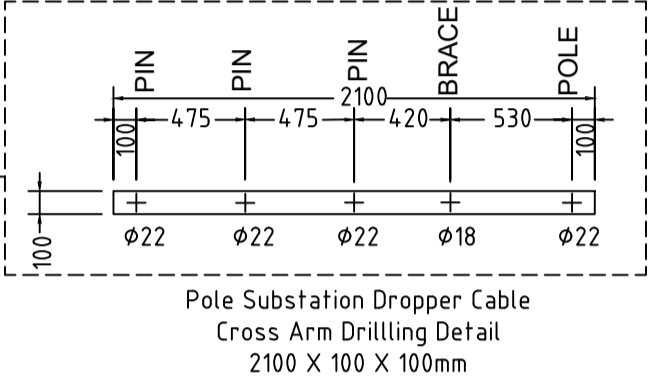
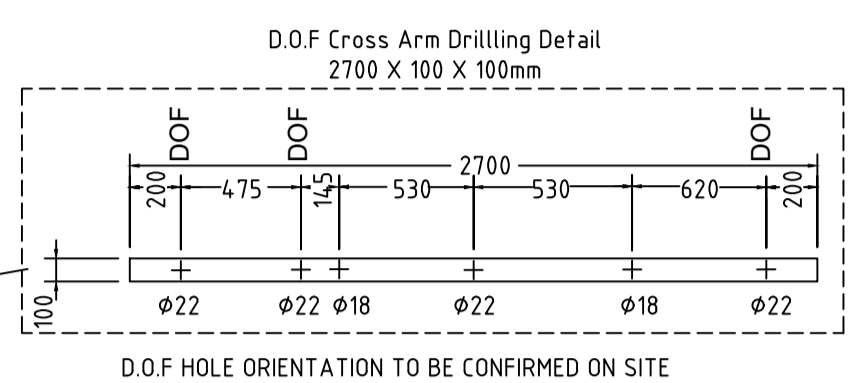
SEPARATE EARTH ROD LAYOUT (INDICATIVE)
NOT TO SCALE



Side Elevation- NTS
(Dimensions in mm)



Note
A MINIMUM OF 380mm MUST BE MAINTAINED BETWEEN ALL EXPOSED ACTIVE COMPONENTS AND EARTHED PARTS OF THE POLE OR STRUCTURE MEASURED TO THE CLOSEST POINT AS PER MDI0031 TABLE 17 5.4.2 TO PREVENT FLASHOVER



Tyree 100kVA 33 kV/433V Transformer
NOTE: THE TRANSFORMER IS TO UTILIZE FR3 INSULATING MEDIUM A VEGETABLE BASED BIO-DEGRADABLE OIL HEAT TESTING RESULTS AND PRODUCT APPROVAL REQUEST MUST BE SUBMITTED AND APPROVED PRIOR TO COMMISSIONING.

MODIFICATIONS REQUIRED FOR THE S.A BRACKET TO SUIT ON POLE & THE BASE TO BE REMOVED.

A LOCKABLE BOX IS TO BE MOUNTED ON POLE 3.0m ABOVE GROUND CONTAINING THE 3 SPARE 20 SERIES 5AMP FUSE LINK CARTRIDGES

SUBSTATION SEPARATE EARTHING DETAIL
SCALE: NTS

HV EARTHING DETAILS			
Soil Resistivity	Layer 1	11.52	Depth (m)
	Layer 2	144.95	∞
Designed Earth Resistance Limit (Ohm)	4-10		
Measured Earth Resistance (Ohm)	1		
Number of Electrodes	1		
Insulated Depth (m)	0.5		
Length of Bare Electrode (m)	2.4		
Connector Type (CAD or Crimp)	Crimp		
Location Category: F- Frequented, R-Remote, S-Sp	Re mote		
What Design Tool Used?	CDEGS		
Fault Level (kA)	7.33		
LV EARTHING DETAILS			
Designed Maximum Earth Resistance (Ohm)	4-10		
Measured Earth Resistance (Ohm)	1		
Number of Electrodes	1		
Length of Bare Electrode (m)	2.4		
Connector Type (CAD or Crimp)	Crimp		

HV EARTH MINIMUM SEPARATION (m)				
	Design	Actual	Design	Actual
TD/MEN	5		Telecom	90
TDB	4		Pipes	5
TDU	3.5		HV-LV	5

WORKS COMPLETED/FIELD BOOK

CONSTRUCTED BY: _____
 WORKS COMPLETED: _____
 SIGNATURE: _____ DATE: _____
 INSPECTED BY: _____
 SIGNATURE: _____ DATE: _____

ASSET RECORDING

I: _____
 OF: _____
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HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004.

SIGNATURE: _____
 DATE: _____

Components in Addition to Standards Pole Substation

ITEM	PART No.	DWG No	DESCRIPTION	QUANTITY
1	SB14.34.2	011962	BRACE CROSSARM (750mm x 6mm)	3
2	1561802	370399	POLE STEP	A/R
3	ALR002	398038	INSULATOR LONG ROD ASSEMBLY	6
4	-	502183	OHEW ASSEMBLY TYPE 4	2
5	-	-	33kV/433V POLE MOUNTED TRANSFORMER (100kVA)	1
6	-	-	TIMBER CROSSARM 2700X100X100mm (UNDRILLED)	1
7	1000002154	-	S&C 20 SERIES DOF'S PART NO. 92544R3G	3
8	11000001028	-	WIRE, 7/4.75 CCT, 120MM2, GREY, 6.35/11KV	A/R
9	1000002265	20 SERIES	FUSE ELEMENT 5A (PART NO. 614.006) "INCLUDES 3 SPARES"	6
10	1014559/1017639	015366C	33kV PIN INSULATOR & PIN	3/3
11	-	-	TIMBER CROSSARM 2100X100X100mm (UNDRILLED)	1
12a	ATP007	054798	M20 EYEBOLT ASSEMBLY FOR POLE	2
12b	ATP009	054798	M20 EYEBOLT ASSEMBLY FOR CROSSARM	3
12c	ATP010	054798	M16 BOLT ASSEMBLY FOR CROSSARM BRACE	5
12d	ATP011	054798	M16 COACH SCREW ASSEMBLY FOR CROSSARM BRACE	3
13	1550516		33KV SURGE ARRESTER	3
14	ALP004	398035	66kV POST INSULATOR	1
15	1548841/1143866	332001	400A 3 φ LV SWITCH FUSE F/W 3 x 200A FUSE ELEMENTS	1/3
16	SC14.819	052796	CROSSARM TYPE C3 STEEL RHS 152x 152 x 3000 LG	1
17	6000000197		POLE - WOOD IMPREGNATED 17m/12kN	1
18	1018620	054790	BRACE CROSSARM 915 LG	2