

#### Works Completed / Field Book

Constructed By: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

#### Asset Recording

I: \_\_\_\_\_  
 of: \_\_\_\_\_  
 Contact No: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

#### Certified by Endeavour Energy

Amendment: \_\_\_\_\_  
 Date Approved: \_\_\_\_\_  
 Examiner's Signature: \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
This Certification is issued subject to Endeavour Energy's Standard Certification Terms.

#### DUCT DECLARATION

I: \_\_\_\_\_  
 of \_\_\_\_\_  
 Contact Number: \_\_\_\_\_  
 Hereby certify that the ducts shown on this drawing have been installed in accordance with this drawing & Endeavour Energy Standards MDC0028 & MDC006. The duct depths and locations at each end have been correctly marked on this drawing as per Endeavour Energy standard S420004.  
 The installation of the ducts was:  
 Commenced on: \_\_\_\_\_  
 & completed on: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
Level 1 Surveyor registered under Surveying & Spatial Information ACT 2004.

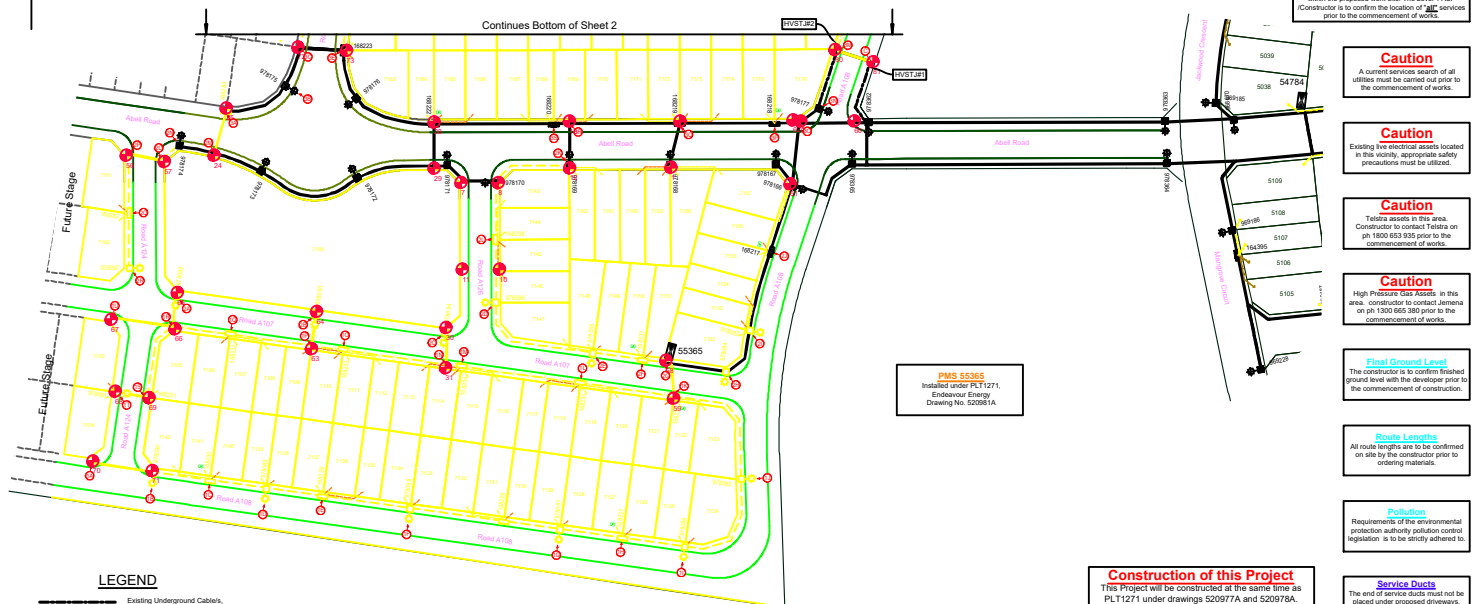
#### Duct Installation Acceptance By the ASP

I have accepted the conduits marked up on this drawing in compliance with S420004 and confirm that:  
 All conduits installed by the ASP are:  
 • in accordance with MDC0028 & MDC006,  
 • are correct as per the WAE marked up design drawing provided.  
 All conduit groups installed by the developer where accessed by the ASP during construction have been checked by the ASP and I verify that:  
 • string lines are installed within all the conduits,  
 • continuity of all conduits was confirmed,  
 • all ends of conduits have been sealed as per standards,  
 • exposed ducts at open ends appear to be installed in accordance with MDC0028 and MDC006.  
 The installation of duct was verified by me on \_\_\_\_\_  
 \_\_\_\_\_  
 Level 1 ASP Company Competent Person.

AMENDMENTS A ORIGINAL ISSUE DRAFT No. 01	 <b>powerline design</b> POWER LINE DESIGN PTY LTD PO BOX 338 Millington NSW 2517 PH (02) 4872 1929 Fax (02) 4872 1245 Australia Design Number 14891 14891 20107 20114	The preparation of this design has been undertaken with due consideration to the existing services. The project construction is solely responsible for verifying the exact location of existing services and performing any works prior to commencing construction. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design.	I, _____ hereby certify that I am a duly qualified and licensed Professional Engineer in accordance with the provisions of the Professional Engineers Act 2003 and the Professional Engineers Regulation 2003. I am a member of the Institution of Engineers Australia. My registration number is _____ and my licence number is _____. I have prepared this design in accordance with the requirements of the Engineering Council of Australia.	Reference Drawings S20979A URS23984 - Electrical Reticulation S20981A PLT1271 - Electrical Reticulation	Work Orders General Overhead Underground Substations	CAP / SAMP No. URS23984 AM Project No. USD/Penguin Ref No. 146-A3 GIS Map No. U7369-6 HV OP Diagram Marsden Park Blacktown City Local Government Area	ORIGINAL SCALE 1:1000 DO NOT SCALE Dimensions in Meters Drawn: Michael J.B. Date: 08-03-2021 Cvd: Michael J.B. Design: Michael J.B.	Off Abell Road, MARSDEN PARK URS23984 Duct, Trench and Easement	 <b>Endeavour Energy</b> A1 520978 A SHEET No. 2 OF 2 SHEETS
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# Site Plan - South

Scale 1:1000



### LEGEND

- Existing Underground Conduits
- Existing Conduits (Ducts)
- Proposed New Conduits (Ducts)
- Street Light Trenching
- Low Voltage Trenching
- High Voltage Trenching
- 40mm P.V.C. Service Conduits
- Existing Service Mains
- Final Substation Location
- Existing Pole
- Proposed Pole Excavation location
- 4.5m Enlarged Base Column & 3.0m Eaten Outreach
- Type 2 Ringbolt (Type 2 Fixing)
- Colour Powdercoated Black
- Proposed Pole Excavation location
- 8.5m Enlarged Base Column & 4.5m Curved Pipe Outreach
- Type 2 Ringbolt (Universal Fixing)
- Colour Powdercoated Black
- Existing Column
- Proposed New Streetlight Lantern
- Existing Streetlight Lantern
- Proposed New Padmount Substation
- Existing Padmount Substation
- Point Indicator

### Trench Length

High Voltage Trenching	1200m
Low Voltage Trenching	24m
Street Light Trenching	90m
Road Crossing	90m
<b>Total</b>	<b>3974m</b>

### Authorisation of Estimate Value of Endeavour Energy Funded Assets

Signed: \_\_\_\_\_

Print Name: \_\_\_\_\_

Service Number: \_\_\_\_\_

Funding Amount: \$ \_\_\_\_\_

Date: \_\_\_\_\_

### Funding Arrangements for Scope of Works

ASP Level 1 Electrical Works	Customer Funded	Customer
Endeavour Energy Supplied Materials	Non-Constructable Works	Customer Funded
Endeavour Energy Funded & Constructed	Constructable Works	Customer Funded
Endeavour Energy Funded & Level 1 ASP Constructed - Reimbursement (incl GST)	Constructable Works	Customer Funded
Year 01 Capital Contribution (incl GST & charges)	Customer Funded	Customer
Year 02 Capital Contribution (incl GST & charges)	Customer Funded	Customer

### Pioneer Cool Share Reimbursement Scheme - Expiry Date: N/A

Asset	Asset Class	Unit	Quantity	Net Asset Capacity (kVA)	Original Customer Utilization (kVA)	Maximum Reimbursement Amount (\$)
HV Mains	N/A	kVA	0	0	0	N/A
LV Mains	N/A	kVA	0	0	0	N/A
Substation	N/A	kVA	0	0	0	N/A

### Design Compliance and Indemnity

The design complies with Endeavour Energy relevant standards as listed at the end of this document. The design is intended to be used in accordance with the relevant Endeavour Energy Network Standards and Connection Policy.

**Caution**  
Existing live electrical assets located in this vicinity, appropriate safety precautions must be utilised.

**Caution**  
High Voltage (HV) cables in this area. The contractor is to confirm the location of HV services prior to the commencement of works.

**Caution**  
Final Ground Level  
The contractor is to confirm finished ground level with the developer prior to the commencement of construction.

**Caution**  
Route Lengths  
All route lengths are to be confirmed on site by the contractor prior to entering materials.

**Pollution**  
Requirements of the environmental protection authority pollution control legislation is to be strictly adhered to.

**Service Date**  
The end of service ducts must not be placed under proposed driveways (Refer to Developer Representative for details for details).

**Service Work**  
All service works to be carried out by an authorised level 2 ASP in accordance with the New South Wales Service & Installation Rules, Australian Standards and all other relevant standards.

### Works Completed / Field Book

Constructed By: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Inspected By: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Asset Recording

of: \_\_\_\_\_

Contact No: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Certified by Endeavour Energy

Amendment: \_\_\_\_\_

Date Approved: \_\_\_\_\_

Examiner's Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

This Certification is issued subject to Endeavour Energy's Standard Certification Terms.

### APPROVAL TO CONNECT TO PUBLIC LIGHTING

Reviewers Name: \_\_\_\_\_

Date Approved: \_\_\_\_\_

Reviewers Signature: \_\_\_\_\_

- ### Notes
- This drawing is to be read in conjunction with the relevant Endeavour Energy Network Standards and Connection Policy.
  - Endeavour Energy Contract Phase: 110181.
  - Design certification shall lapse where:
    - (i) notice of intent has not been received within six (6) months of this certification, or
    - (ii) construction has been interrupted for more than six (6) months.
 Where design certification has lapsed the design must be re-certified for certification by the accredited designer.
  - Accredited Service Provider to notify Endeavour Energy asset date customer department daily when cable works in progress. (gh: 131 081)
  - ATTENTION:** Permanent survey marks may exist in this area. These are to be located by a surveyor prior to commencement of work.
  - ATTENTION:** All trenching works must be checked before construction.
  - ATTENTION:** The preparation of this design has been undertaken giving due consideration to the location of existing services. The Contractor is however responsible for the verification of services and permanent survey marks prior to the commencement of construction. No responsibility for liability will be accepted by the designer for damage to existing services as a result of this design.
  - WARNING:** Use Endeavour Energy cables & other services in this area. Please contact "Dial Before You Dig" on telephone: 1100 for searches two days prior to excavation.
  - Material Quantities Specified on this Design:** The quantities & dimensions specified on this design are based on design information supplied and site conditions at the time of the design. As quantities and dimensions are subject to change, the Contractor must check all quantities and dimensions on site prior to tendering and prior to construction.
  - Reimbursements:** Reimbursements will be paid to the nominated party on the letter of intent after the works have been completed and the letter of acceptance has been issued. The reimbursed amount is shown in the "Funding Arrangements for Scope of Work table". Any disagreement with the amount should be resolved with Endeavour Energy prior to the commencement of works.
  - Operational Limitations:** Where approved alternatives, installation to any customer's supply must be avoided. The following alternatives should be considered:
    - mobile generators and substations,
    - use of alternative,
    - use of alternative,
    - work practices/standards,
    - the cost to be funded by the customer/developer.
  - Environmental Management plan:** EEMP EMD001 is part of this design (refer to EEA for details).
  - Pollution Controls:** All the requirements of the Environmental Protection Authority pollution control legislation is to be strictly adhered to.
  - Aboriginal Heritage:** If during construction of this project the contractor or developer becomes aware of any previously unidentified Aboriginal Cultural Objects, all work likely to affect the objects shall cease immediately, and the Office of Environment & Heritage shall be notified immediately in accordance with section 146 of the Heritage Act 1977. Works shall not recommence until written authorisation from the NSW Office of Environment and Heritage has been issued, in addition to written consent from the local Aboriginal Land Council.
  - Heritage:** If during construction of this project the contractor or developer becomes aware of any previously unidentified heritage objects, all work likely to affect the objects shall cease immediately, and the Office of Environment & Heritage shall be notified immediately in accordance with Section 146 of the Heritage Act 1977. Works shall not recommence until written authorisation from the NSW Office of Environment and Heritage has been issued, in addition to written consent from the local Aboriginal Land Council.
  - Telecommunications:** Telecommunications assets are NOT affected by the proposed works.
  - Existing Assets:** Have all the existing assets been field checked and are accurate at the time of design? **YES**

### KEY DOCUMENTS TABLE

The Certification of this project is supported by the following key documents.

Document Name	Notation Date
Summary Environmental Report - FAT308 (EM0001)	19 January 2021
Site Design Report	19 January 2021

### This Drawing Supplies 284 + 1 Residue Lots (Subdivision of Lot 3, DP1230408)

C.A.P. No.	File No.	Lot Numbers	No. of Lots	Developer	Developers Representative	Contact No.
URS23984	202003041001	Lot 7101 to 7384	284	Woongah Park Pty Limited	Tara Bamford (J. Wapsham Price)	(02) 4720 3319

<p>POWER LINE DESIGN PTY LTD PO BOX 338 MtSiding NSW 2575 Ph: (02) 4827 1020 Fax: (02) 4827 1242 Approved Designer Number: 2486   ADR: 0107-01-04</p>	<p>The preparation of this design has been undertaken giving due consideration to the existing services. The contractor is to confirm the location of HV services prior to the commencement of works. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design.</p> <p>Power Line Design Ref: 3510</p>	<p>Reference Drawings</p> <table border="1"> <tr> <th>Ref</th> <th>Description</th> <th>General</th> </tr> <tr> <td>S20978A</td> <td>URS23984 - Duct Trench &amp; Easement</td> <td>General</td> </tr> <tr> <td>S20981A</td> <td>PL12171 - Electrical Reticulation</td> <td>Overhead</td> </tr> <tr> <td></td> <td></td> <td>Underground</td> </tr> <tr> <td></td> <td></td> <td>Substations</td> </tr> </table>	Ref	Description	General	S20978A	URS23984 - Duct Trench & Easement	General	S20981A	PL12171 - Electrical Reticulation	Overhead			Underground			Substations	<p>Work Orders</p> <table border="1"> <tr> <th>Work Order</th> <th>General</th> </tr> <tr> <td>AM Project No.</td> <td>URS23984</td> </tr> <tr> <td>UBD/Penguin Ref No.</td> <td>146-A3</td> </tr> <tr> <td>GIS Map No.</td> <td>U7369-6</td> </tr> <tr> <td>HV OP Diagram</td> <td>Marsden Park</td> </tr> <tr> <td>Local Government Area</td> <td>Blacktown City</td> </tr> </table>	Work Order	General	AM Project No.	URS23984	UBD/Penguin Ref No.	146-A3	GIS Map No.	U7369-6	HV OP Diagram	Marsden Park	Local Government Area	Blacktown City	<p>CAP / SAMP No.</p> <table border="1"> <tr> <th>AM Project No.</th> <th>URS23984</th> </tr> <tr> <th>UBD/Penguin Ref No.</th> <th>146-A3</th> </tr> <tr> <th>GIS Map No.</th> <th>U7369-6</th> </tr> <tr> <th>HV OP Diagram</th> <th>Marsden Park</th> </tr> <tr> <th>Local Government Area</th> <th>Blacktown City</th> </tr> </table>	AM Project No.	URS23984	UBD/Penguin Ref No.	146-A3	GIS Map No.	U7369-6	HV OP Diagram	Marsden Park	Local Government Area	Blacktown City	<p>ORIGINAL SCALE 1:1000</p> <p>DO NOT SCALE</p> <p>Dimensions in Meters</p> <p>Off Abell Road, MARSDEN PARK URS23984</p> <p>Electrical Reticulation</p>	<p>Endeavour Energy</p> <p>520979</p> <p>SHEET No. 1 OF 11 SHEETS</p>
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NO.	DESCRIPTION	DATE																																									
1	ISSUE	01																																									

# Site Plan - North

Scale 1:1000

**Establish Proposed PMS No. 55368**

- Transformer: 500kVA (11000/433V)
- HV Switchgear: Siemens 8DJH, Type: "RTR"
- HV Fuses: 12kV, 50Amp (Full Range)
- LV Switchgear: Weber CAT 1, Config: "FFIFF"
- LV Fuses: LV 250A (DIN, size 2)
- Cubicle: Size 14
- Earthing: Common (refer Earth Design)

**Establish Proposed PMS No. 55367**

- Transformer: 500kVA (11000/433V)
- HV Switchgear: Siemens 8DJH, Type: "RTR"
- HV Fuses: 12kV, 50Amp (Full Range)
- LV Switchgear: Weber CAT 1, Config: "FFIFF"
- LV Fuses: LV 250A (DIN, size 2)
- Cubicle: Size 14
- Earthing: Common (refer Earth Design)

**Establish Proposed PMS No. 55363**

- Transformer: 500kVA (11000/433V)
- HV Switchgear: Siemens 8DJH, Type: "RTR"
- HV Fuses: 12kV, 50Amp (Full Range)
- LV Switchgear: Weber CAT 1, Config: "FFIFF"
- LV Fuses: LV 250A (DIN, size 2)
- Cubicle: Size 14
- Earthing: Common (refer Earth Design)

**DIAL BEFORE YOU DIG**

Ref: 20795600 Date: 18 December, 2020

DBYO searches indicates the presence of services within the proposed work-site. The Level 1 ASP /Constructor is to confirm the location of "all" services prior to the commencement of works.

**Caution**

A current services search of all utilities must be carried out prior to the commencement of works.

**Caution**

Existing live electrical assets located in this vicinity, appropriate safety precautions must be utilized.

**Caution**

Telstra assets in this area. Constructor to contact Telstra on ph 1800 653 935 prior to the commencement of works.

**Caution**

High Pressure Gas Assets in this area. constructor to contact Jemena on ph 1300 665 380 prior to the commencement of works.

**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 in accordance with Endeavour Energy's Standard SAD 004.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Certified by Endeavour Energy**

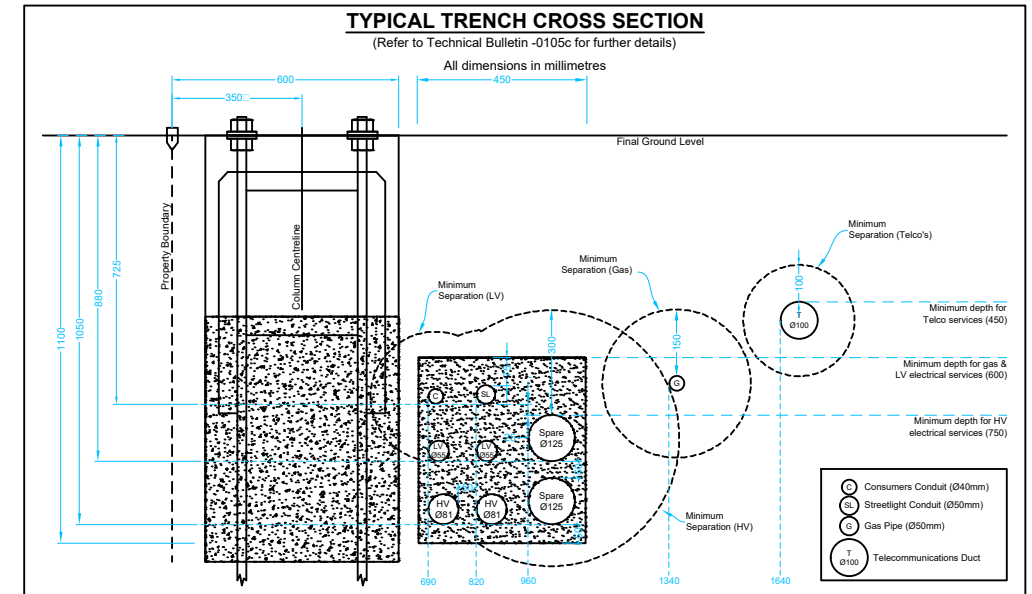
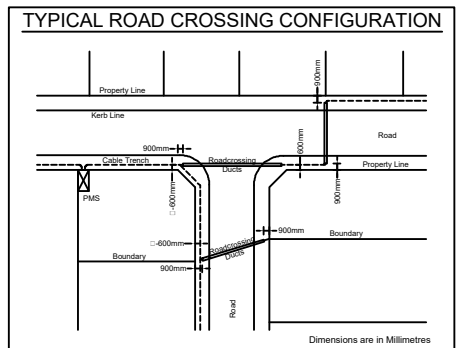
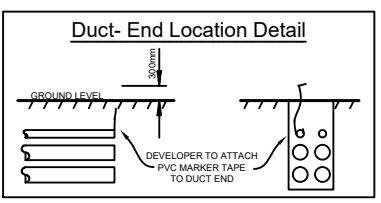
Amendment: \_\_\_\_\_

Date Approved: \_\_\_\_\_

Examiner's Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

This Certification is issued subject to Endeavour Energy's Standard Certification Terms.



- LEGEND**
- Existing Underground Cable/s
  - Existing Conduits (Ducts)
  - Proposed New Conduits (Ducts)
  - Street Light Trenching
  - Low Voltage Trenching
  - High Voltage Trenching
  - Lay 40mm P.V.C. Service Conduits
  - Existing Service Mains
  - Pillar Excavation Location
  - Existing Pillar
  - Proposed Column Excavation location
  - 4.5m Enlarged Base Column & 3.0m Eden Outreach
  - Type 2 Ragbolt (Type 2 Footing)
  - Colour Powdercoated Black
  - Proposed Column Excavation location
  - 8.5m Enlarged Base Column & 4.5m Curved Pipe Outreach
  - Type 2 Ragbolt (Universal Footing)
  - Colour Powdercoated Black
  - Existing Column
  - Proposed New Streetlight Lantern
  - Existing Streetlight Lantern
  - Proposed New Padmount Substation
  - Existing Padmount Substation
  - Point Indicator

**Trench Length**

High Voltage Trenching	1250m
Low Voltage Trenching	1760m
Street Light Trenching	24m
Road Crossing	940m
<b>Total</b>	<b>3974m</b>

**Establish Proposed PMS No. 55366**

- Transformer: 500kVA (11000/433V)
- HV Switchgear: Siemens 8DJH, Type: "RTR"
- HV Fuses: 12kV, 50Amp (Full Range)
- LV Switchgear: Weber CAT 1, Config: "FFIFF"
- LV Fuses: LV 250A (DIN, size 2)
- Cubicle: Size 14
- Earthing: Common (refer Earth Design)

Scale 1:1000

0m 10m 20m 30m 40m 50m 60m 70m 80m 90m 100m

AMENDMENTS	ORIGINAL ISSUE	DRAFT No. 01
Land and Property Information 2015		

**powerlinedesign**

POWER LINE DESIGN PTY LTD  
 PO BOX 338 Millmerrong NSW 2575  
 Ph (02) 4872 1920 Fax (02) 4872 1240  
 Accredited Designer Number 2486 / ABN: 33107 591 846

The preparation of this design has been undertaken giving due consideration to the existing services. The project constructor is wholly responsible for verifying the exact location of existing services and permanent survey marks prior to commencing construction. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design.

Power Line Design Ref: 3510

THIS DRAWING IS THE PROPERTY OF ENDEAVOUR ENERGY AND MAY NOT BE COPIED, REPRODUCED, DISTRIBUTED, LOANED OR USED WITHOUT THE WRITTEN CONSENT OF ENDEAVOUR ENERGY

Reference Drawings		Work Orders		CAP / SAMP No.	URS23984
520978A	URS23984 - Duct Trench & Easement	General	Overhead	AM Project No.	
520981A	PLT1271 - Electrical Reticulation	Underground	Substations	UBD/Penguin Ref No.	146-A3
				GIS Map No.	U7369-6
				HV OP Diagram	Marsden Park
				Local Government Area	Blacktown City

ORIGINAL SCALE	1:1000
Drawn	Michael.J.B
Date	08-03-2021
Ch'd	Michael.J.B

**DO NOT SCALE**

Dimensions in Meters

Off Abell Road, MARSDEN PARK URS23984

Electrical Reticulation

**Endeavour Energy**

**A1 520979 A**

SHEET No 2 OF 11 SHEETS

# Final HV Circuit

Not to Scale  
11kV Area

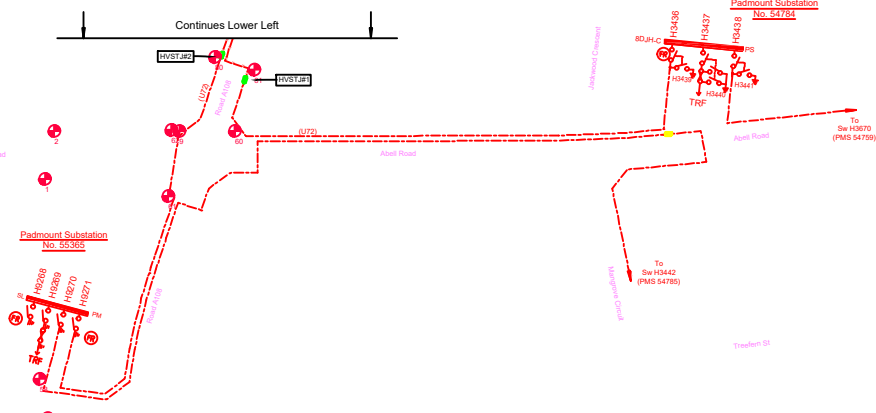
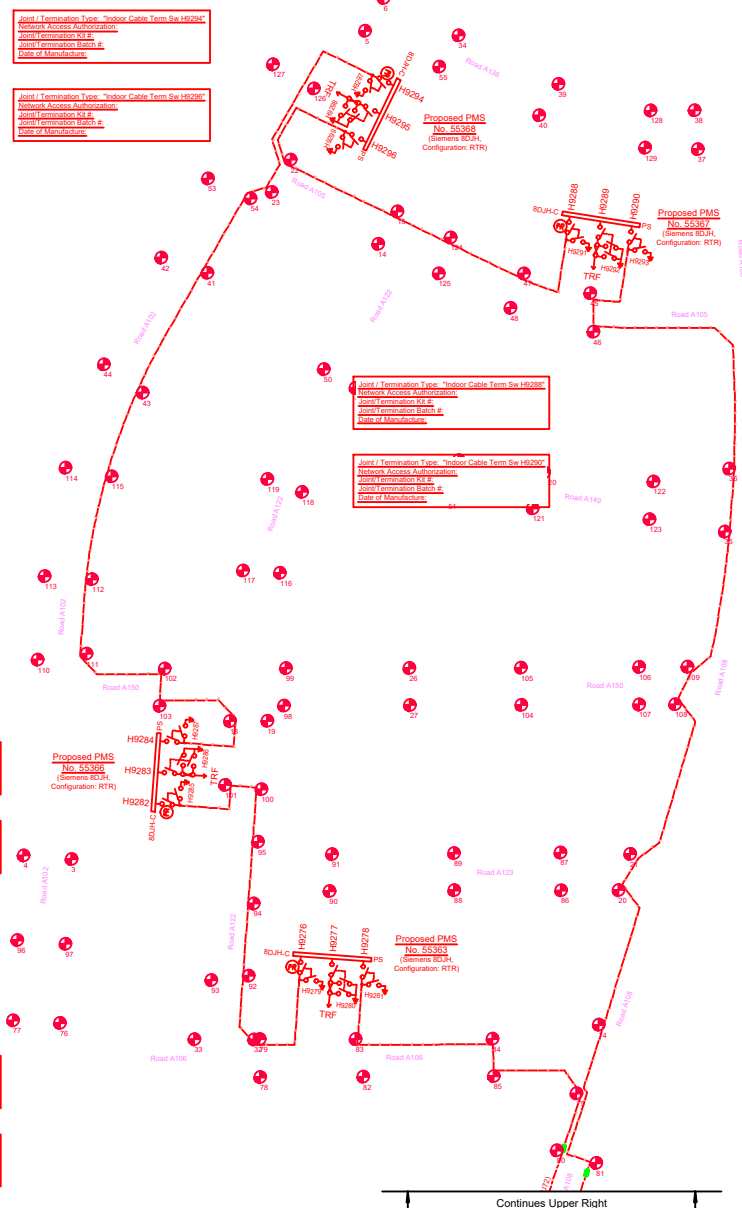
**South Marsden Park ZS**  
Reference: (S4) 1  
Feeder: M01102 Northshore C1  
19 Fault level @ SLR 54759 5.25kA

<b>Works Completed / Field Book</b>	
Constructed By:	_____
Works Completed:	_____
Signature:	_____ Date: _____
Inspected By:	_____
Signature:	_____ Date: _____
<b>Asset Recording</b>	
I:	_____
of:	_____
Contact No:	_____
I hereby certify that assets marked on built on this drawing have been recorded in accordance with Endeavour Energy's Standard S40 004.	
Signature:	_____ Date: _____

<b>Certified by Endeavour Energy</b>	
Amendment:	_____
Date Approved:	_____
Examiner's Signature:	_____
Print Name:	_____
This Certification is issued subject to Endeavour Energy's Standard Certification Terms.	

### LEGEND

- Existing Underground Cables
- Install 11kV 240mm<sup>2</sup> Al 3-Core XLPE/PVC/HDPE Cable (U72)  
R.L. 1192m, C.L. 1251m
- Straight Through Joint (STJ)



AMENDMENTS A DATE: 01/08/2021 DRAWN BY: 01	 <b>POWER LINE DESIGN PTY LTD</b> PO BOX 338 MtPeters NSW 2070 PH (02) 4872 1920 Fax (02) 4872 1240 Australian Design Number: 14861, 14862, 20107, 20114, 1484	The preparation of this design has been undertaken with due consideration to the existing services and proposed works. The project contractor is solely responsible for verifying the exact location of existing services and proposed works prior to commencing construction. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design.	 MICHAEL J B PROFESSIONAL ENGINEER ELECTRICAL No. 14861, 14862, 20107, 20114, 1484	Reference Drawings	Work Orders	CAP / SAMP No.	URS23984	ORIGINAL SCALE 1:1000 DO NOT SCALE Dimensions in Meters Drawn: Michael J B Date: 08-03-2021 Cvd: Michael J B Design: Michael J B	Off Abell Road, MARSDEN PARK, URS23984 Electrical Retulation	 <b>520979</b> SHEET No. 3 OF 11 SHEETS
				S20978A URS23984 - Duct Trench & Easement S20981A PLT1271 - Electrical Retulation	General Overhead Underground Substations	AM Project No. USD/Penguin Ref No. GIS Map No. HV OP Diagram Local Government Area	URS23984 146-A3 U7309-6 Marsden Park Blacktown City			

# Final LV Circuit - North

Not to Scale

**New Labels Sub. 55368**

R	Pillar 18272
T	Transformer
U	Pillar 18271
V	Pillar 18270

**New Labels Sub. 55366**

R	Pillar 18251
T	Transformer
U	Pillar 18252
V	Pillar 18254

**New Labels Sub. 55363**

R	Pillar 18242
T	Transformer
U	Pillar 18241
V	Pillar 18239

### LEGEND

- Existing Underground Cables
- Install 240mm<sup>2</sup> A+4 Core XLPE/PVC Cable (T84) R.L. 300mm, C.L. 420mm
- Install 150mm<sup>2</sup> Cu 4-Core XLPE/PVC Cable (T84) R.L. 120mm, C.L. 150mm
- Install 160mm<sup>2</sup> Cu 2-Core XLPE/PVC Cable In 50mm Conduit and 4 Splice Street Cordons R.L. 60mm, C.L. 75mm
- LV Isolation Switch/Links (NIC)
- Pillar Earth
- Proposed New Street Light Lumen - 17W StreetLED
- Proposed New Street Light Lumen - 82W StreetLED
- Lumen Number - Proposed Asset
- Column Number - Proposed Asset (PEC Controlled)
- Lumen Number - Existing Asset
- Column Number - Existing Asset (PEC Controlled)

10mm Supply to Col 978105  
To terminate to P&S side of Link Pillar 182266

**New Labels Sub. 55367**

R	Pillar 18233
T	Transformer
U	Pillar 18232
V	Pillar 18231

### LEGEND FOR LV VOLTAGE DROP

Vd = Voltage drop for normal supply @ 100% ADM  
Emergency / backup voltage drop @ 60% ADM

VdE	Source Substation - Fuse Strip	Backed Up Substation - Fuse Strip
1	55368_S	55367_U
2	55367_U	55368_S
3	55368_S	55366_V
4	55366_V	55368_S
5	55365_U	55363_R
6	55363_R	55365_U
7	55368_S	55366_V
8	55366_V	55368_S
9	55368_S	55363_U
10	55363_U	55368_S
11	55368_U	55363_S
12	55367_S	55368_U
13	55368_U	55367_S
14	55366_V	55367_V
15	55367_V	55366_V
16	55366_R	55367_R
17	55367_R	55366_R

The ADM for each lot is 0.5 kVA.

### Works Completed / Field Book

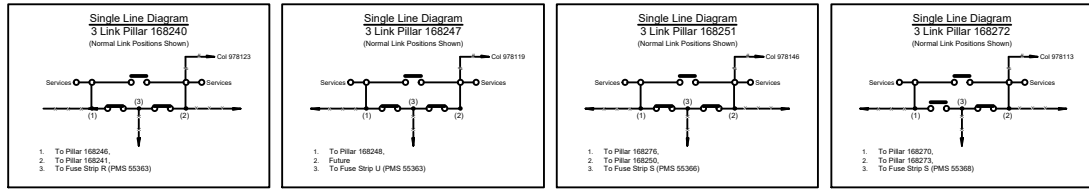
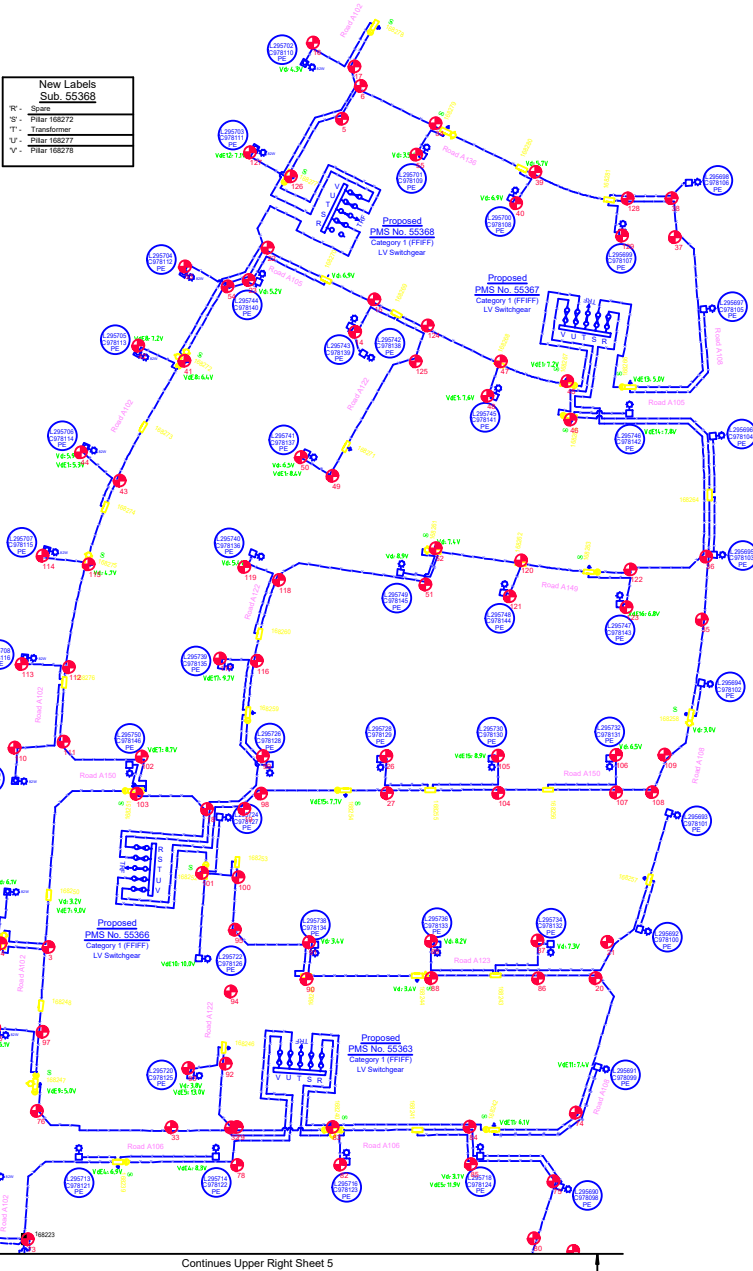
Constructed By: \_\_\_\_\_  
 Works Completed: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Asset Recording

I: \_\_\_\_\_  
 of: \_\_\_\_\_  
 Contact No: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Certified by Endeavour Energy

Amendment: \_\_\_\_\_  
 Date Approved: \_\_\_\_\_  
 Examiner's Signature: \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
This Certification is issued subject to Endeavour Energy's Standard Certification Terms.



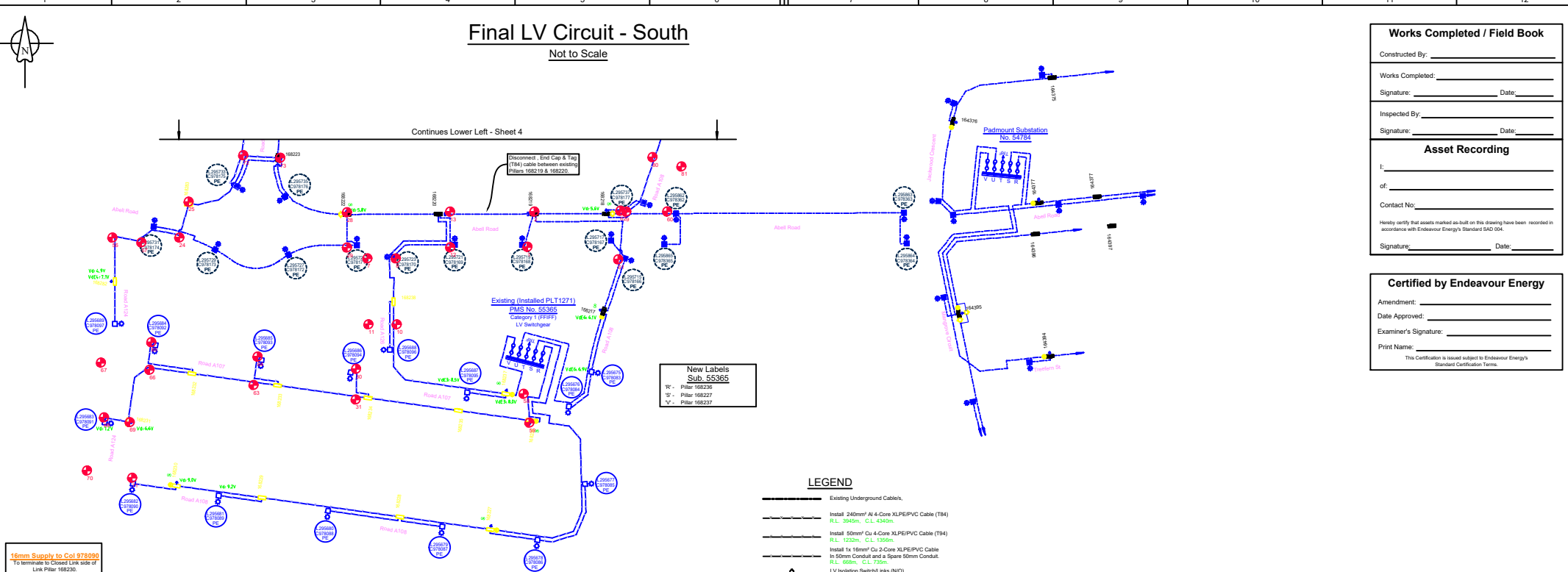
### Lighting Equipment & Billing Schedule

Date	Luminaire Number	Support Number	Description	Luminaire Part No.	Rate	QTY	Description	Part No.	Footing	Rate	QTY	Description	Part No.	Rate	QTY	Mounting	Category	Charge To		
																			Column / Pole	Outreach / Bracket
New	29575 - 29579	97803 - 97810	17W StreetLED (Guard)	AL899G05L17	889	7	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	27	3.0m Curved Pipe Outreach	E/3.0CP525	955	27	15°	PRS	6.5m	Black	Blacktown City Council
New	29572 - 29574	97810 - 97812	82W StreetLED (Guard)	PL9000L84	900	11	6.5m Enlarged Base Column	E/6.5.E.B	Type 2 Universal (9.0m, 10.0m)	955	11	4.5m Curved Pipe Outreach	E/4.5CP5	955	11	15°	V5	10.5m	Black	Blacktown City Council
New	29573	97812	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29574	97812	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29575	97813	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29578	97814	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29570	97815	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29572	97816	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29574	97817	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29576	97818	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29578	97819	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29570	97820	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29572	97821	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29574	97822	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29576	97823	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29578	97824	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29570	97825	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29572	97826	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29574	97827	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29576	97828	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29578	97829	17W StreetLED (Guard)	AL899G05L17	889	1	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	1	3.0m Curved Pipe Outreach	E/3.0CP525	955	1	15°	PRS	6.5m	Black	Blacktown City Council
New	29570 - 29579	97834 - 97840	17W StreetLED (Guard)	AL899G05L17	889	11	4.5m Enlarged Base Column	E/4.5.E.B	Type 2 Type 2 (+0.0m)	955	13	3.0m Curved Pipe Outreach	E/3.0CP525	955	13	15°	PRS	6.5m	Black	Blacktown City Council

AMENDMENTS ORIGINAL ISSUE DRAWING No. 01	<b>POWER LINE DESIGN PTY LTD</b> PO BOX 338 MtPeters NSW 2070 PH (02) 4872 1929 Fax (02) 4872 1240 Accredited Design Number 1885 1886 20107 201 184	The preparation of this design has been undertaken with due consideration to the existing services. The project contractor is solely responsible for verifying the exact location of existing services and performing any works prior to commencing construction. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design.	I hereby certify that I am a duly qualified Professional Engineer in accordance with the provisions of the Professional Engineers Act 2003 and the Professional Engineers Regulation 2003. My registration number is 123456789.	Reference Drawings S20978A URS23984 - Duct Trench & Easement S20981A PLT1271 - Electrical Relocation	Work Orders General Overhead Underground Substations	CAP / SAMP No. AM Project No. USD/Penguin Ref No. GIS Map No. HV/OP Diagram Local Government Area	URS23984 146-A3 U7329-6 Marsden Park Blacktown City	ORIGINAL SCALE 1:1000 Drawn: Michael J B Date: 08-03-2021 Cvt: Michael J B	DO NOT SCALE Dimensions in Meters Design: Michael J B	Off Abell Road, MARSDEN PARK URS23984 Electrical Relocation	A1 <b>520979</b> A SHEET No. 4 OF 11 SHEETS
				Power Line Design Ref: 3510	84545						

# Final LV Circuit - South

Not to Scale



15mm Supply to Col 978099  
To terminate to Colored Link side of  
Link Pillar 168226

New Labels  
Sub. 55365  
R - Pillar 168226  
S - Pillar 168227  
V - Pillar 168237

**LEGEND FOR LV VOLTAGE DROP**  
Vd = Voltage drop for normal supply @ 100% ADM  
Emergency / backup voltage drop @ 60% ADM

VdE:	Source Substation - Fuse Strip	Backed Up Substation - Fuse Strip
1	55368_S	55367_U
2	55367_U	55368_S
3	55363_V	55365_V
4	55365_V	55363_V
5	55368_U	55363_R
6	55363_R	55368_U
7	55368_S	55366_S
8	55366_S	55368_S
9	55368_S	55363_U
10	55363_S	55366_U
11	55366_U	55363_S
12	55367_S	55368_U
13	55368_U	55367_S
14	55368_V	55367_V
15	55367_V	55368_V
16	55368_R	55367_R
17	55367_R	55368_R

The ADM for each lot is 6.5 kVA.

- LEGEND**
- Existing Underground Cable
  - Install 240mm<sup>2</sup> A 4 Core XLPE/PVC Cable (T&A)  
R.L. 3450m, C.L. 430m
  - Install 50mm<sup>2</sup> Cu 4 Core XLPE/PVC Cable (T&A)  
R.L. 1230m, C.L. 1350m
  - Install 16mm<sup>2</sup> Cu 2 Core XLPE/PVC Cable  
in 50mm Conduit and a Spare 50mm Conduit.  
R.L. 850m, C.L. 750m
  - LV Isolation Switch/Links (NO)
  - LV Isolation Switch/Links (NC)
  - Pillar Earth
  - Proposed New Street Light Lament - 17W StreetLED
  - Proposed New Street Light Lament - 82W StreetLED
  - Lament Number - Proposed Asset  
Column Number - Proposed Asset  
(PE Controlled)
  - Lament Number - Existing Asset  
Column Number - Existing Asset  
(PE Controlled)

**Works Completed / Field Book**

Constructed By: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Inspected By: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Asset Recording**

I: \_\_\_\_\_  
of: \_\_\_\_\_  
Contact No: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Certified by Endeavour Energy**

Amendment: \_\_\_\_\_  
Date Approved: \_\_\_\_\_  
Examiner's Signature: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
This Certification is issued subject to Endeavour Energy's Standard Certification Terms.

AMENDMENTS ORIGINAL ISSUE DRAFT No. 01	 <b>POWER LINE DESIGN PTY LTD</b> PO BOX 338 MtPeters NSW 2071 Ph (02) 4872 1929 Fax (02) 4872 1240 Australian Design Number 1489, 20107 241 144	The preparation of this design has been undertaken with due consideration to the existing services. The project construction is safety responsible for verify the exact location of existing services and permanent survey marks prior to commencing construction. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design. <b>Power Line Design Ref: 3510</b>	 I am a Professional Engineer registered with the Engineering Council of Australia (ECOA) and the Engineering Council of New South Wales (ECNSW). I am not responsible for the design or construction of any work undertaken by me or my firm. I am not responsible for the design or construction of any work undertaken by me or my firm. I am not responsible for the design or construction of any work undertaken by me or my firm.	Reference Drawings S20978A URS23984 - Duct Trench & Easement S20981A PLT1271 - Electrical Reticalulation	Work Orders General Overhead Underground Substations	CAP / SAMP No. URS23984 AM Project No. UBD/Penguin Ref No. 146-A3 GIS Map No. U7309-6 HV OP Diagram Marsden Park Local Government Area Blacktown City	ORIGINAL SCALE 1:1000 Drawn Michael J.B Date 08-03-2021 Cvd Michael J.B Design Michael J.B	<b>DO NOT SCALE</b> Dimensions in Meters	Off Abell Road, MARSDEN PARK URS23984 Electrical Reticalulation	 <b>A1 520979 A</b> SHEET No 5 OF 11 SHEETS		
				84545	1	2	3	4	5	6	7	8

Duct Breakdown Table										
Route	Configuration	Route Length	Duct Re-Imbursement			Duct Usage Charge				
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)	No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
1A → 1B	New Road Crossing	26m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1B → 1C	Footpath Trenching	23m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1C → 1D	Footpath Trenching	23m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1D → 1E	Footpath Trenching	23m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1E → 1F	Footpath Trenching	35m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1F → 1G	Footpath Trenching	60m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1G → 1H	Footpath Trenching	25m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1H → 1I	Footpath Trenching	25m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1I → 1J	Footpath Trenching	41m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1J → 1K	Footpath Trenching	50m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1K → 1L	Footpath Trenching	38m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1L → 1M	Footpath Trenching	48m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1M → 1N	Footpath Trenching	6m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1N → 1O	Footpath Trenching	42m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1O → 1P	Footpath Trenching	13m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0	0	\$0	0	\$0
Total			0	\$0	0	\$0	0	\$0	0	\$0

Duct Breakdown Table - Continued										
Route	Configuration	Route Length	Duct Re-Imbursement			Duct Usage Charge				
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)	No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
1P → 1Q	Footpath Trenching	33m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1Q → 1R	Footpath Trenching	22m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1R → 1S	Footpath Trenching	30m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1S → 1T	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1T → 1U	New Road Crossing	26m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1U → 1V	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1V → 1W	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1W → 1X	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1X → 1Y	Footpath Trenching	48m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1Y → 1Z	Footpath Trenching	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
1Z → 2A	Footpath Trenching	10m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2A → 2B	New Road Crossing	18m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2B → 2C	Existing Footpath Allocation	18m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2C → 2D	Existing Footpath Allocation	33m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2D → 2E	Footpath Trenching	53m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0	0	\$0	0	\$0
Total			0	\$0	0	\$0	0	\$0	0	\$0

Duct Breakdown Table - Continued										
Route	Configuration	Route Length	Duct Re-Imbursement			Duct Usage Charge				
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)	No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
2L → 2M	Footpath Trenching	25m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2M → 2N	Footpath Trenching Adjacent Existing	14m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2N → 2O	Footpath Trenching	7m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2O → 2P	New Road Crossing	18m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2P → 2Q	Footpath Trenching	23m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2Q → 2R	Footpath Trenching	22m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2R → 2S	Existing Road Crossing	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2S → 2T	New Road Crossing	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2T → 2U	Existing Footpath Allocation	26m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2U → 2V	Existing Footpath Allocation	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2V → 2W	Footpath Trenching	23m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2W → 2X	Footpath Trenching	42m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2X → 2Y	Footpath Trenching	15m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2Y → 2Z	Footpath Trenching	38m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2Z → 3A	Footpath Trenching	6m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0	0	\$0	0	\$0
Total			0	\$0	0	\$0	0	\$0	0	\$0

**Works Completed / Field Book**

Constructed By: \_\_\_\_\_

Works Completed: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Inspected By: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Asset Recording**

I, \_\_\_\_\_

of \_\_\_\_\_

Contact No: \_\_\_\_\_

Heavily certify that assets marked as built on this drawing have been recorded in accordance with Endeavour Energy's Standard S40 004.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Certified by Endeavour Energy**

Amendment: \_\_\_\_\_

Date Approved: \_\_\_\_\_

Examiner's Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

This Certification is issued subject to Endeavour Energy's Standard Certification Terms.

**Conduit / Cable Legend**

- LV Cable - Direct Buried.
- HV Cable - Direct Buried.
- 50mm Duct - Spare.
- 50mm Duct - with Existing Cable.
- 50mm Duct - with New LV Cable.
- 125mm Duct - with Existing LV Cable.
- 125mm Duct - with New LV Cable.
- 125mm Duct - with New HV Cable.
- 125mm Duct - Spare.
- 125mm Duct - Spare - EE Funded.

AMENDMENTS ORIGINAL ISSUE DRAFT No. 01	 <b>POWER LINE DESIGN PTY LTD</b> PO BOX 338 Millersburg NSW 2570 PH (02) 4872 1920 Fax (02) 4872 1240 Accredited Design Number 1485, 1486, 20107, 24114	The preparation of this design has been undertaken with due consideration to the existing services. The project contractor is solely responsible for verifying the exact location of existing services and performing any necessary works prior to commencing construction. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design. <b>Power Line Design Ref: 3510</b>	 Reference Drawings S20978A URS23984 - Duct Trench & Easement S20981A PLT1271 - Electrical Relocation	Work Orders General Overhead Underground Substations	CAP / SAMP No. URS23984 AM Project No. UBD/Penguin Ref No. 146-A3 GIS Map No. U7309-6 HV OP Diagram Marsden Park Blacktown City Local Government Area	ORIGINAL SCALE 1:1000 DO NOT SCALE Dimensions in Meters Drawn: Michael J.B. Date: 08-03-2021 Cvd: Michael J.B. Design: Michael J.B.	Off Abell Road, MARSDEN PARK URS23984 Electrical Relocation	 <b>A1 520979 A</b> SHEET No. 6 OF 11 SHEETS



Duct Breakdown Table - Continued										
Route	Configuration	Route Length	Duct Re-Imbursement			Duct Usage Charge				
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)	No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
3I → 4A	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3J → 4C	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3K → 4E	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3K → 3L	Footpath Trenching	34m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3L → 4G	New Road Crossing	29m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3L → 3M	Footpath Trenching	22m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3M → 3N	Existing Footpath Allocation	24m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3N → 3O	Existing Footpath Allocation	8m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3O → 3P	Existing Footpath Allocation	9m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3R → 3S	Existing Footpath Allocation	6m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
3M → C	Existing Road Crossing	17m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4A → 4B	Footpath Trenching	21m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4B → 4C	Footpath Trenching	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4C → 4D	Footpath Trenching	33m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4D → 4E	Footpath Trenching	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0	0	\$0	0	\$0
Total			0	\$0	0	\$0	0	\$0	0	\$0

Duct Breakdown Table - Continued										
Route	Configuration	Route Length	Duct Re-Imbursement			Duct Usage Charge				
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)	No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
4E → 4F	Footpath Trenching	10m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4F → 4G	Footpath Trenching	32m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4G → 4H	Footpath Trenching	19m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4H → 4I	Footpath Trenching	35m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4I → 4J	Footpath Trenching	22m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4J → 4K	Footpath Trenching	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4K → 4L	Footpath Trenching	25m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4L → 4M	Footpath Trenching	5m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4M → 4N	Footpath Trenching	43m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4O → 4P	Footpath Trenching	21m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4P → 4Q	Footpath Trenching	6m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
4Q → 4A	Footpath Trenching	26m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5A → 5B	Footpath Trenching	30m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5A → 4O	New Road Crossing	26m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5B → 4N	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0	0	\$0	0	\$0
Total			0	\$0	0	\$0	0	\$0	0	\$0

Duct Breakdown Table - Continued										
Route	Configuration	Route Length	Duct Re-Imbursement			Duct Usage Charge				
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)	No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
5C → 4L	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5D → 4J	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5D → 5E	Footpath Trenching	6m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5F → 5G	Footpath Trenching	8m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5G → 4I	Footpath Trenching	17m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5G → 5H	Footpath Trenching	19m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5H → 5I	Footpath Trenching	27m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5I → 5J	Footpath Trenching	8m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5J → 5K	Footpath Trenching	14m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5K → 5L	Footpath Trenching	26m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5L → 5M	Footpath Trenching	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5M → 5N	Footpath Trenching	25m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5N → 5O	Footpath Trenching	18m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5O → 5P	Footpath Trenching	15m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
5P → 5Q	Footpath Trenching	33m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0	0	\$0	0	\$0
Total			0	\$0	0	\$0	0	\$0	0	\$0

**Works Completed / Field Book**

Constructed By: \_\_\_\_\_  
 Works Completed: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Inspected By: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Asset Recording**

I: \_\_\_\_\_  
 of: \_\_\_\_\_  
 Contact No: \_\_\_\_\_

Heavily certify that assets marked as built on this drawing have been recorded in accordance with Endeavour Energy's Standard S40 004.  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Certified by Endeavour Energy**

Amendment: \_\_\_\_\_  
 Date Approved: \_\_\_\_\_  
 Examiner's Signature: \_\_\_\_\_  
 Print Name: \_\_\_\_\_

This Certification is issued subject to Endeavour Energy's Standard Certification Terms.

**Conduit / Cable Legend**

- LV Cable - Direct Buried.
- HV Cable - Direct Buried.
- 50mm Duct - Spare.
- 50mm Duct - with Existing Cable.
- 50mm Duct - with New LV Cable.
- 125mm Duct - with Existing LV Cable.
- 125mm Duct - with Existing HV Cable.
- 125mm Duct - with New LV Cable.
- 125mm Duct - with New HV Cable.
- 125mm Duct - Spare.
- 125mm Duct - Spare - EE Funded.

AMENDMENTS A DRAFT No. 01	<b>POWER LINE DESIGN PTY LTD</b> PO BOX 338 Millersburg NSW 2570 PH (02) 4872 1920 Fax (02) 4872 1240 Australian Design Number 14861 14861 20107 241 1486	The preparation of this design has been undertaken with due consideration to the existing services. The project contractor is solely responsible for verifying the exact location of existing services and performing any necessary works prior to commencing construction. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design. <b>Power Line Design Ref: 3510</b>	I, _____ PROFESSIONAL ENGINEER ELECTRICAL ENGINEERING No. _____ EXP. DATE _____	Reference Drawings S20978A URS23984 - Duct Trench & Easement S20981A PLT1271 - Electrical Relocation	Work Orders General Overhead Underground Substations	CAP / SAMP No. AM Project No. USD/Penguin Ref No. GIS Map No. HV OP Diagram Local Government Area	URS23984 146-A3 U7369-6 Marsden Park Blacktown City	ORIGINAL SCALE 1:1000 Drawn: Michael J.B. Date: 08-03-2021 Cvd: Michael J.B.	DO NOT SCALE Dimensions in Meters Design: Michael J.B.	Off Abell Road, MARSDEN PARK URS23984 Electrical Relocation	A1 <b>520979</b> A SHEET No 7 OF 11 SHEETS	
				84545	1	2	3	4	5	6	7	8



Duct Breakdown Table - Continued										
Route	Configuration	Route Length	Duct Re-Imbursement				Duct Usage Charge			
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)	No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
8E → 8F	Footpath Trenching	32m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8F → 8G	Footpath Trenching	28m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8G → 8H	Footpath Trenching	2m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8H → 8I	Footpath Trenching	23m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8I → 8J	Footpath Trenching	51m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8J → 8K	Footpath Trenching	30m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8K → 8L	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8L → 8M	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8M → 8N	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8N → 8O	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8O → 8P	Footpath Trenching	30m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8P → 8Q	New Road Crossing	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8P → 8Q	Footpath Trenching	14m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8Q → 8A	Footpath Trenching	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0	0	\$0	0	\$0
Total				\$0		\$0		\$0		\$0

Duct Breakdown Table - Continued										
Route	Configuration	Route Length	Duct Re-Imbursement				Duct Usage Charge			
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)	No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
9A → 9B	Footpath Trenching	8m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9B → 9C	Footpath Trenching	17m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9C → 9D	Footpath Trenching	7m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9D → 9E	Footpath Trenching	30m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9E → 9F	Footpath Trenching	5m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9F → 9G	Footpath Trenching	32m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9G → 9H	Footpath Trenching	5m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9H → 9I	Footpath Trenching	32m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9I → 9J	Footpath Trenching	7m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9J → 9K	Footpath Trenching	18m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9J → 9L	New Road Crossing	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9L → 8S	Footpath Trenching	6m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8A → 8N	New Road Crossing	16m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8N → 8O	Footpath Trenching	8m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
8O → 8P	New Road Crossing	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0	0	\$0	0	\$0
Total				\$0		\$0		\$0		\$0

Duct Breakdown Table - Continued										
Route	Configuration	Route Length	Duct Re-Imbursement				Duct Usage Charge			
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)	No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
9O → 9Q	Footpath Trenching	33m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9Q → 9R	New Road Crossing	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9Q → 9S	Footpath Trenching	31m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9S → 9T	Footpath Trenching	23m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9T → 9U	New Road Crossing	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9U → 9V	Footpath Trenching	11m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9V → 9W	Footpath Trenching	23m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9W → 9X	New Road Crossing	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9X → 9Y	Footpath Trenching	40m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9Y → 9Z	New Road Crossing	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
9Y → B	Footpath Trenching	6m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
B → A	Footpath Trenching	23m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
A → 0Z	New Road Crossing	20m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
0Z → 0Y	Footpath Trenching	13m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
A → 0G	Footpath Trenching	33m	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0	0	\$0	0	\$0
Total				\$0		\$0		\$0		\$0

**Works Completed / Field Book**

Constructed By: \_\_\_\_\_  
 Works Completed: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Inspected By: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Asset Recording**

I, \_\_\_\_\_  
 of \_\_\_\_\_  
 Contact No: \_\_\_\_\_  
 I hereby certify that assets marked as built on this drawing have been recorded in accordance with Endeavour Energy's Standard S40 004.  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Certified by Endeavour Energy**

Amendment: \_\_\_\_\_  
 Date Approved: \_\_\_\_\_  
 Examiner's Signature: \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
This Certification is issued subject to Endeavour Energy's Standard Certification Terms.

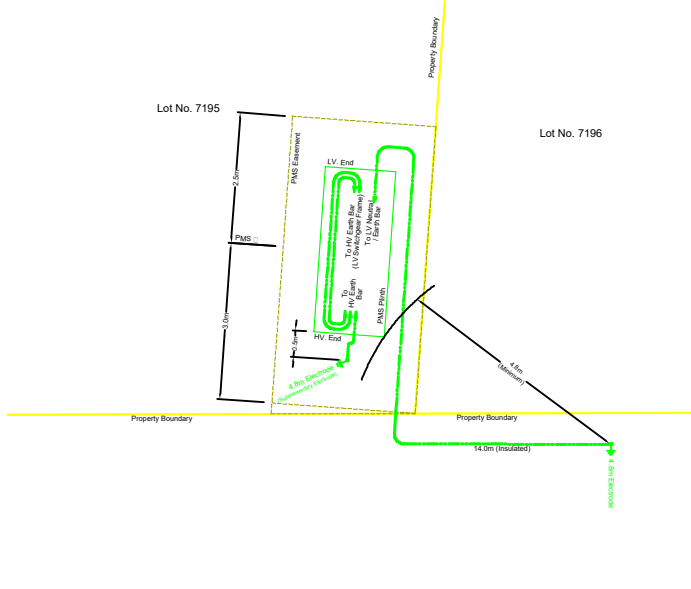
**Conduit / Cable Legend**

- LV Cable - Direct Buried.
- HV Cable - Direct Buried.
- 50mm Duct - Spare.
- 50mm Duct - with Existing Cable.
- 50mm Duct - with New LV Cable.
- 125mm Duct - with Existing HV Cable.
- 125mm Duct - with New LV Cable.
- 125mm Duct - Spare.
- 125mm Duct - Spare - EE Funded.

AMENDMENTS A DRAFT No. 01	 <b>POWER LINE DESIGN PTY LTD</b> PO BOX 338 Millersburg NSW 2570 PH (02) 4872 1929 Fax (02) 4872 1240 Accredited Design Number 2465 1489 20107 241 144	The preparation of this design has been undertaken with due consideration to the existing services. The project contractor is solely responsible for verifying the exact location of existing services and performing any necessary works prior to commencing construction. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design. <b>Power Line Design Ref: 3510</b>	 Reference Drawings S20978A URS23984 - Duct Trench & Easement S20981A PLT1271 - Electrical Relocation	Work Orders General Overhead Underground Substations	CAP / SAMP No. AM Project No. USD/Penguin Ref No. GIS Map No. HV OP Diagram Local Government Area	URS23984 146-A3 U7369-6 Marsden Park Blacktown City	ORIGINAL SCALE 1:1000 DO NOT SCALE Dimensions in Meters Drawn: Michael J B Date: 08-03-2021 Design: Michael J B	Off Abell Road, MARSDEN PARK URS23984 Electrical Relocation	 <b>A1 520979 A</b> SHEET No 9 OF 11 SHEETS

**Padmount Substation PMS 55363  
Common Earth Configuration**  
Not to Scale  
Earthing Construction to EDI-0006  
Information Updated After Commissioning on

Earthing design is based on the requirements of Endeavour Energy's EDI105 & ED101.  
Any modifications to this earthing design must be approved in writing by the designer.



**LEGEND**

192.14 (70mm<sup>2</sup>) Insulated PVC/PVC Annealed Cu Cable  
Earth Electrode Location & Length  
(Length of bare electrode shown in meters)

**Common Earthed PMS**  
2x Insulated copper links to be installed between the HV Busbar mounted on the LV frame & the LV Neutral Earth bar

HV Earth Minimum Separation			
Design	Actual	Design	Actual
TDMEN	0.0m	>5.0m	0.0m
TDB	0.0m	>5.0m	0.0m
TDU	0.0m	>5.0m	4.8m

**EARTHING DETAILS**

Soil Resistivity (Ohm.m)	Layer 1	28.17 Ω	Depth (m)	0.30m
	Layer 2	16.0 Ω		1.00m
Design Earth Resistance (Ohms)				7 Ω
Measured Earth Resistance (Ohms)				
Number of Electrodes (Excluding Supplementary Electrodes)				1
Length of Bare Electrode (m)				4.8
Insulated Depth (m)				5.8
Connector Type (CAD or CRAMP)				Crimp
Location Category (F-frequent, R-rare, S-special)				F
What Design Tools Used?				EC
HV Fault Level (kA)				5.25kA
Is this the first Asset from Zone Substation? (If Yes, check ZIS Earthing Configuration)				N
Are Cable Screens of Incoming Cable Bonded to Distribution Substation Earth Bar?				Yes

**Duct Breakdown Table - Continued**

Route	Configuration	Route Length	Duct Re-Imbursement		Duct Usage Charge	
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
0G → OH	New Road Crossing	16m	0	\$0.00	0	\$0.00
0H → OW	Footpath Trenching	64m	0	\$0.00	0	\$0.00
0W → OU	Footpath Trenching	20m	0	\$0.00	0	\$0.00
0U → OV	New Road Crossing	20m	0	\$0.00	0	\$0.00
0V → OX	Footpath Trenching	20m	0	\$0.00	0	\$0.00
0U → OT	Footpath Trenching	23m	0	\$0.00	0	\$0.00
0T → OR	Footpath Trenching	10m	0	\$0.00	0	\$0.00
0R → OS	New Road Crossing	20m	0	\$0.00	0	\$0.00
0R → OQ	Footpath Trenching	20m	0	\$0.00	0	\$0.00
0Q → OO	Footpath Trenching	11m	0	\$0.00	0	\$0.00
0O → OP	New Road Crossing	20m	0	\$0.00	0	\$0.00
0O → ON	Footpath Trenching	52m	0	\$0.00	0	\$0.00
0N → 4A	New Road Crossing	26m	0	\$0.00	0	\$0.00
0M → 4Q	New Road Crossing	16m	0	\$0.00	0	\$0.00
0L → OK	Footpath Trenching	33m	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0
Total				\$0		\$0

**Duct Breakdown Table - Continued**

Route	Configuration	Route Length	Duct Re-Imbursement		Duct Usage Charge	
			No. of 50mm Ducts	Amount (@ \$6/m)	No. of 125mm Ducts	Amount (@ \$23/m)
0K → 0J	Footpath Trenching	17m	0	\$0.00	0	\$0.00
0J → 0I	Footpath Trenching	8m	0	\$0.00	0	\$0.00
0I → 5R	New Road Crossing	16m	0	\$0.00	0	\$0.00
0I → OH	Footpath Trenching	30m	0	\$0.00	0	\$0.00
3C → 3E	Existing Road Crossing	21m	0	\$0.00	0	\$0.00
Sub Totals			0	\$0	0	\$0
Total				\$0		\$0
Grand Total				\$0.00		\$0.00

**Conduit / Cable Legend**

- LV Cable - Direct Buried
- HV Cable - Direct Buried
- 50mm Duct - Spare
- 50mm Duct - with Existing Cable
- 50mm Duct - with New LV Cable
- 125mm Duct - with Existing LV Cable
- 125mm Duct - with Existing HV Cable
- 125mm Duct - with New LV Cable
- 125mm Duct - with New HV Cable
- 125mm Duct - Spare
- 125mm Duct - Spare - EE Funded

**Works Completed / Field Book**

Constructed By: \_\_\_\_\_  
 Works Completed: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
**Asset Recording**  
 I: \_\_\_\_\_  
 of: \_\_\_\_\_  
 Contact No: \_\_\_\_\_  
 Please verify that assets marked as built on this drawing have been recorded in accordance with Endeavour Energy's Standard S40 004.  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Certified by Endeavour Energy**

Amendment: \_\_\_\_\_  
 Date Approved: \_\_\_\_\_  
 Examiner's Signature: \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
This Certification is issued subject to Endeavour Energy's Standard Certification Terms.

Reference: Land and Property Information 2016

AMENDMENTS  
 ORIGINAL ISSUE  
 DRAFT No. 01

**powerline design**  
 POWER LINE DESIGN PTY LTD  
 PO BOX 138 Millersburg NSW 2171  
 PH (02) 4872 1920 Fax (02) 4872 1245  
 Australian Design Number: 1485 2107 241 144

The preparation of this design has been undertaken with due consideration to the existing services. The project construction is solely responsible for verifying the exact location of existing services and performing any necessary works prior to commencing construction. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design.  
**Power Line Design Ref: 3510**

END EARTHING DESIGN  
 END EARTHING DESIGN  
 END EARTHING DESIGN

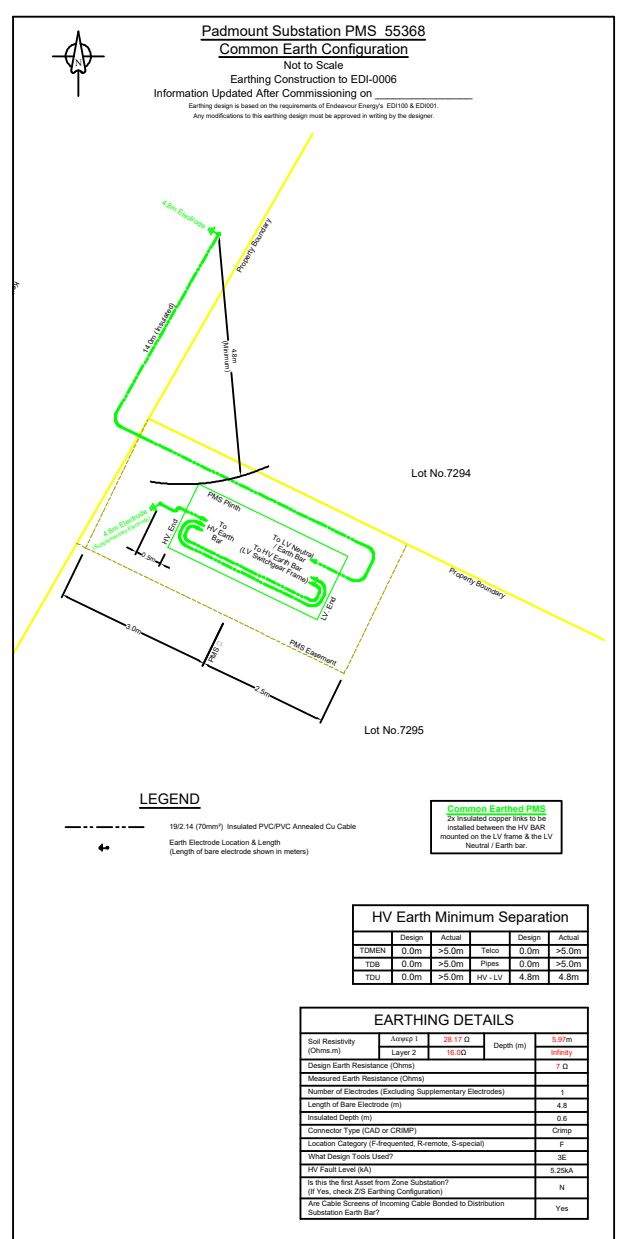
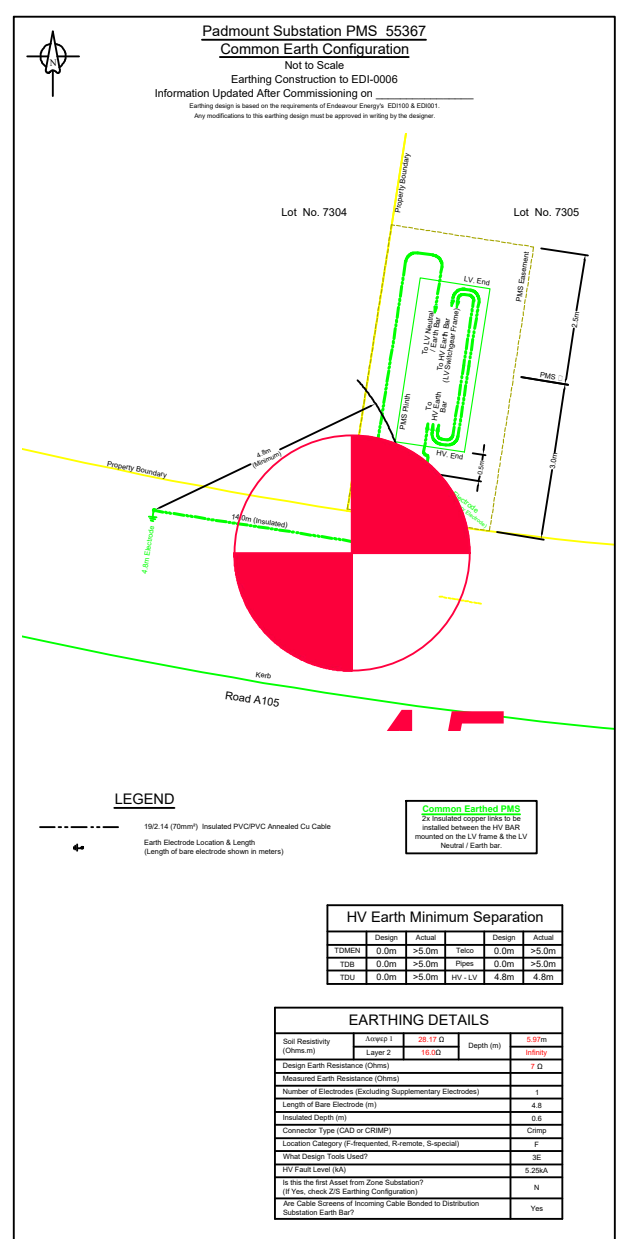
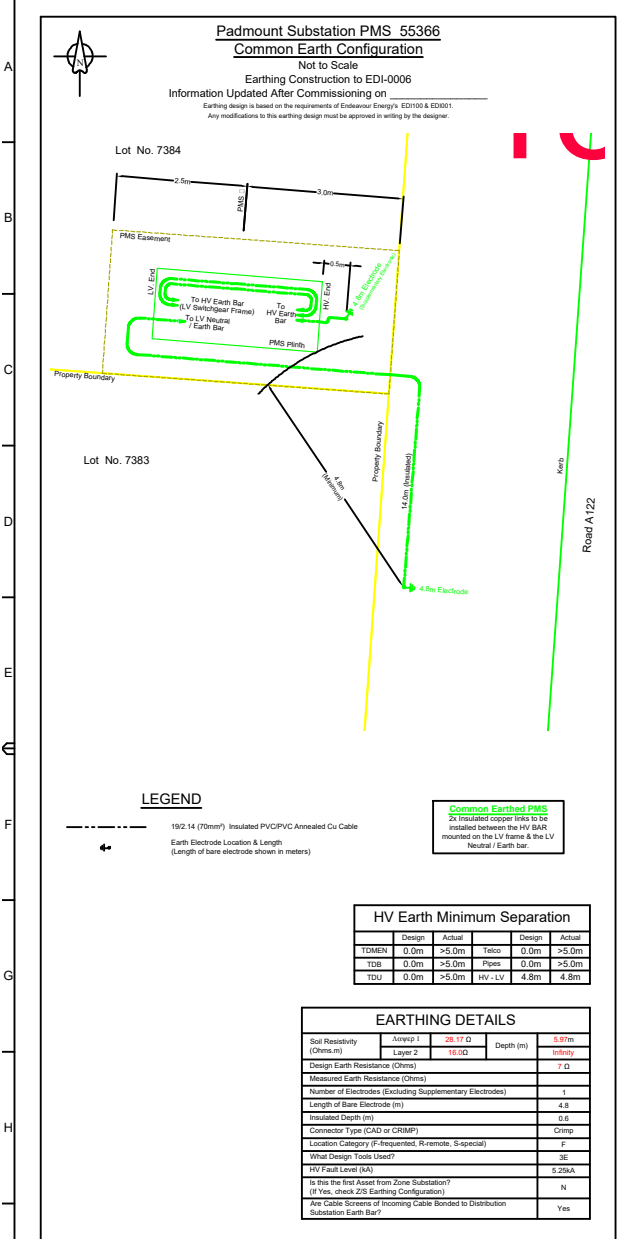
Reference Drawings	Work Orders	CAP / SAMP No.	URS23984
S20978A URS23984 - Duct Trench & Easement	General	AM Project No.	
S20981A PLT1271 - Electrical Relocation	Overhead	USD/Penguin Ref No.	146-A3
	Underground	CIS Map No.	U7369-E
	Substations	HV OP Diagram	Marsden Park
		Local Government Area	Blacktown City

ORIGINAL SCALE 1:1000	DO NOT SCALE
Drawn: Michael J.B	Dimensions in Meters
Date: 08-03-2021	
City: Michael J.B	Design: Michael J.B

Off Abell Road, MARSDEN PARK URS23984  
 Electrical Relocation

**Endeavour Energy**  
 SHEET No 10 OF 11 SHEETS

**Endeavour Energy**  
 A1 520979 A  
 SHEET No 10 OF 11 SHEETS



#### Works Completed / Field Book

Constructed By: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Inspected By: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

#### Asset Recording

I: \_\_\_\_\_  
of: \_\_\_\_\_  
Contact No: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

#### Certified by Endeavour Energy

Amendment: \_\_\_\_\_  
Date Approved: \_\_\_\_\_  
Examiner's Signature: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
This Certification is issued subject to Endeavour Energy's Standard Certification Terms.

WAE Survey Coordinate Table							
ID	Quality Level	Asset	Property Line	Cover	Easting	Northing	AHD Height
1	A	WAE Duct	0.85	1.1	295621.55	6268637.48	23.08
2	A	WAE Duct	0.74	1.46	295625.13	6268655.82	23.13
3	A	WAE Duct	0.77	1.11	295500.89	6268795.60	21.32
4	A	WAE Duct	0.84	1.1	295482.55	6268796.99	21.30
5	A	WAE Duct	1	1.2	295613.19	6269112.57	20.17
6	A	WAE Duct	0.8	1.05	295620.33	6269125.13	20.37
7	A	WAE Duct	0.4	1.1	295538.28	6268631.45	21.77
8	A	WAE Duct	0.8	1	295553.09	6268631.41	21.79
9	A	WAE Duct	1	1.52	295672.99	6268655.81	21.74
10	A	WAE Duct	0.45	1.41	295553.54	6268597.10	21.95
11	A	WAE Duct	0.85	1.05	295538.82	6268597.11	22.30
12	A	WAE Duct	0.72	1.2	295581.38	6268637.24	22.05
13	A	WAE Duct	0.7	1.25	295581.28	6268655.80	22.05
14	A	WAE Duct	0.85	1.2	295618.24	6269031.01	18.79
15	A	WAE Duct	0.77	1.06	295625.59	6269043.43	18.92
16	A	WAE Duct	0.88	0.87	295602.10	6269141.73	20.86
17	A	WAE Duct	0.8	1.05	295617.96	6269132.56	20.64
18	A	WAE Duct	0.9	0.93	295561.51	6268848.42	20.04
19	A	WAE Duct	0.82	1.1	295575.84	6268848.52	19.87
20	A	WAE Duct	0.85	1.04	295710.22	6268783.74	19.21
21	A	WAE Duct	1.3	0.96	295714.66	6268797.58	19.36
22	A	WAE Duct	0.82	1	295584.73	6269063.25	20.44
23	A	WAE Duct	1.15	0.9	295577.52	6269050.87	20.30
24	A	WAE Duct	0.78	1.44	295440.43	6268642.29	21.59
25	A	WAE Duct	0.63	1.32	295445.25	6268660.97	21.76
26	A	WAE Duct	0.95	1.35	295630.17	6268868.71	19.42
27	A	WAE Duct	0.85	1.17	295630.37	6268854.52	19.59
28	A	WAE Duct	0.9	1.4	295527.65	6268655.46	21.70
29	A	WAE Duct	0.75	1.1	295527.66	6268637.12	21.97
30	A	WAE Duct	0.8	1.1	295532.38	6268573.97	23.07
31	A	WAE Duct	0.5	1.03	295532.18	6268557.99	23.14
32	A	WAE Duct	0.77	1.07	295570.74	6268726.60	20.65
33	A	WAE Duct	0.8	1.17	295547.91	6268726.67	20.81
34	A	WAE Duct	0.94	0.9	295648.99	6269110.82	19.77
35	A	WAE Duct	1.05	1.03	295750.86	6268920.93	18.66
36	A	WAE Duct	1	0.9	295752.56	6268945.03	18.59
37	A	WAE Duct	0.5	1.14	295740.55	6269067.27	17.32
38	A	WAE Duct	0.8	1.2	295739.32	6269082.15	17.21
39	A	WAE Duct	0.95	1.04	295687.22	6269092.23	18.60
40	A	WAE Duct	1.04	0.9	295679.85	6269080.24	18.78
41	A	WAE Duct	1.03	1.05	295552.89	6269019.95	20.94
42	A	WAE Duct	0.77	1.07	295535.23	6269025.75	20.89
43	A	WAE Duct	0.88	1.16	295528.12	6268974.09	21.05
44	A	WAE Duct	1.11	1	295513.27	6268984.91	21.19
45	A	WAE Duct	0.8	1.08	295699.38	6269012.18	18.16
46	A	WAE Duct	0.8	1.06	295700.61	6268997.44	18.14
47	A	WAE Duct	0.97	0.98	295674.00	6269019.70	18.50
48	A	WAE Duct	0.9	0.8	295668.86	6269006.53	18.65
49	A	WAE Duct	1	0.88	295609.52	6268975.92	19.26
50	A	WAE Duct	1	1.05	295597.46	6268983.09	19.09
51	A	WAE Duct	0.78	1.05	295645.12	6268934.35	18.90
52	A	WAE Duct	0.9	1.14	295649.05	6268948.24	18.80
53	A	WAE Duct	1.14	1.4	295553.10	6269056.06	20.65
54	A	WAE Duct	0.93	1.15	295569.40	6269048.44	20.92
55	A	WAE Duct	1.05	1.02	295641.59	6269098.84	19.63
56	A	WAE Duct	0.7	1.32	295405.60	6268642.29	21.33
57	A	WAE Duct	1	1.2	295420.68	6268639.78	21.52
58	A	WAE Duct	0.74	1.46	295619.54	6268560.98	21.83
59	A	WAE Duct	0.8	1.26	295622.58	6268545.94	21.98
60	A	WAE Duct	1	1.3	295694.24	6268655.87	21.69
61	A	WAE Duct	0.8	0.9	295668.76	6268630.96	22.15
62	A	WAE Duct	0.55	1.47	295669.93	6268656.25	21.82
63	A	WAE Duct	0.5	1.33	295479.04	6268565.55	23.37
64	A	WAE Duct	0.6	1.06	295481.09	6268580.34	23.63

WAE Survey Coordinate Table							
ID	Quality Level	Asset	Property Line	Cover	Easting	Northing	AHD Height
65	A	WAE Duct	0.8	1.12	295425.83	6268587.85	24.06
66	A	WAE Duct	0.8	1.47	295424.91	6268573.47	23.71
67	A	WAE Duct	0.9	1.07	295399.61	6268577.22	24.10
68	A	WAE Duct	0.85	1.2	295401.22	6268548.71	24.29
69	A	WAE Duct	1.1	1.1	295414.62	6268546.17	24.03
70	A	WAE Duct	1	1.2	295392.35	6268521.04	24.65
71	A	WAE Duct	1	1.25	295415.89	6268517.26	24.43
72	A	WAE Duct	0.7	1.31	295473.66	6268685.17	21.21
73	A	WAE Duct	0.67	1.2	295492.95	6268683.80	21.36
74	A	WAE Duct	1	1.36	295702.66	6268732.25	19.82
75	A	WAE Duct	1	1.4	295694.14	6268706.01	20.36
76	A	WAE Duct	0.7	1.34	295496.44	6268732.88	21.15
77	A	WAE Duct	1.3	1.4	295478.49	6268733.90	21.04
78	A	WAE Duct	0.7	1.3	295573.07	6268712.19	20.51
79	A	WAE Duct	0.77	1.07	295572.91	6268726.73	20.69
80	A	WAE Duct	0.76	1.04	295686.61	6268684.17	21.26
81	A	WAE Duct	0.81	0.9	295701.68	6268679.31	21.28
82	A	WAE Duct	0.74	1.14	295612.51	6268712.35	20.40
83	A	WAE Duct	0.87	1.33	295609.59	6268726.74	20.23
84	A	WAE Duct	0.88	1.04	295662.00	6268726.88	20.16
85	A	WAE Duct	0.8	1.1	295662.47	6268712.54	20.09
86	A	WAE Duct	0.85	1.05	295688.23	6268783.67	19.30
87	A	WAE Duct	0.7	1.14	295687.99	6268798.13	19.22
88	A	WAE Duct	1	1	295647.34	6268783.72	19.65
89	A	WAE Duct	0.8	1.13	295647.25	6268797.90	19.51
90	A	WAE Duct	0.8	1.07	295599.62	6268783.36	19.90
91	A	WAE Duct	1.1	1.22	295600.55	6268797.48	19.74
92	A	WAE Duct	0.94	1.07	295568.68	6268750.98	20.52
93	A	WAE Duct	0.9	0.9	295554.36	6268749.31	20.74
94	A	WAE Duct	1	1.35	295570.60	6268778.59	20.03
95	A	WAE Duct	1	1.2	295572.23	6268802.26	20.02
96	A	WAE Duct	0.76	1.27	295480.13	6268764.61	21.20
97	A	WAE Duct	0.75	1.33	295498.56	6268763.17	21.16
98	A	WAE Duct	0.8	1.35	295582.19	6268854.32	19.78
99	A	WAE Duct	0.9	1.37	295582.94	6268868.68	19.81
100	A	WAE Duct	1.2	1.05	295573.57	6268822.34	20.02
101	A	WAE Duct	0.8	0.9	295559.63	6268823.96	20.22
102	A	WAE Duct	0.9	1	295536.53	6268868.50	20.60
103	A	WAE Duct	0.87	0.95	295534.55	6268854.27	20.70
104	A	WAE Duct	0.81	1.1	295672.99	6268854.59	19.28
105	A	WAE Duct	0.93	1.2	295672.86	6268868.85	19.22
106	A	WAE Duct	0.78	1.14	295718.07	6268869.12	18.88
107	A	WAE Duct	0.86	1.2	295718.08	6268854.77	18.82
108	A	WAE Duct	0.9	1.27	295731.87	6268854.86	18.66
109	A	WAE Duct	0.7	0.94	295736.60	6268869.25	18.98
110	A	WAE Duct	0.8	1.1	295487.92	6268871.91	21.14
111	A	WAE Duct	0.73	1.15	295506.62	6268874.22	21.08
112	A	WAE Duct	0.87	1.27	295508.71	6268902.73	21.01
113	A	WAE Duct	1	1.3	295490.59	6268903.88	20.94
114	A	WAE Duct	1	1.12	295498.57	6268945.38	20.98
115	A	WAE Duct	1.08	1.1	295516.24	6268942.06	21.01
116	A	WAE Duct	1	1.18	295580.63	6268905.14	19.62
117	A	WAE Duct	0.95	1.04	295566.50	6268906.01	19.77
118	A	WAE Duct	1	1.18	295589.09	6268936.09	19.40
119	A	WAE Duct	0.85	1.13	295575.83	6268941.03	19.44
120	A	WAE Duct	0.83	1.03	295681.74	6268943.57	18.68
121	A	WAE Duct	0.9	0.9	295677.36	6268929.80	18.82
122	A	WAE Duct	0.84	1.12	295723.58	6268940.08	18.29
123	A	WAE Duct	0.74	1.1	295722.08	6268925.65	18.31
124	A	WAE Duct	0.83	1.13	295645.96	6269033.47	18.61
125	A	WAE Duct	0.82	0.95	295641.41	6269019.73	18.88
126	A	WAE Duct	0.9	1.24	295593.64	6269090.50	20.72
127	A	WAE Duct	0.89	1.2	295577.94	6269099.72	20.76
128	A	WAE Duct	0.9	0.9	295722.48	6269082.08	17.71
129	A	WAE Duct	0.8	1	295720.39	6269067.84	17.76

**Works Completed / Field Book**

Constructed By: \_\_\_\_\_

Works Completed: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Inspected By: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Asset Recording**

I, \_\_\_\_\_

of \_\_\_\_\_

Contact No: \_\_\_\_\_

Needs verify that assets marked on this drawing have been recorded in accordance with Endeavour Energy's Standard SAG 004.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Certified by Endeavour Energy**

Amendment: \_\_\_\_\_

Date Approved: \_\_\_\_\_

Examiner's Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

This Certification is issued subject to Endeavour Energy's Standard Certification Terms.

AMENDMENTS ORIGINAL ISSUE DRAFT No. 01	 <b>POWER LINE DESIGN PTY LTD</b> PO BOX 138 Millersburg NSW 2171 PH (02) 4872 1920 Fax (02) 4872 1240 Australian Design Number 14851 14851 21007 241 144	 The preparation of this design has been undertaken with the consideration of the existing services. The project construction is strictly responsible for verifying the exact location of existing services and permanent survey marks prior to commencing construction. No responsibility or liability will be accepted by the designer of this project for damage to existing services as a result of this design. <b>Power Line Design Ref: 3510</b>	 Reference Drawings S20079A URS23984 - Duct Trench & Easement S20081A PLT1271 - Electrical Relocation	Work Orders General Overhead Underground Substations	CAP / SAMP No. URS23984 AM Project No. USD/Penguin Ref No. 146-A3 GIS Map No. U7309-6 HV OP Diagram Marsden Park Local Government Area Blacktown City	 ORIGINAL SCALE 1:1000 DO NOT SCALE Dimensions in Meters Drawn Michael J.B Date 08-03-2021 Cvt Michael J.B Design Michael J.B	Off Abell Road, MARSDEN PARK URS23984 Co-ordinate Table  <b>520979</b> SHEET No. 1 OF 1 SHEETS