

Padmount Substation Easement Requirements
The easement shall be flat & level over the entire easement area, and above the 1:100 year flood level.
Services such as drains, piping or wiring are not permitted to pass through either the substation easement or the ground below it. (Refer to MCI 0006, Section 7.2 for details)

Breakaway Links
Breakaway links must be used during each cable pull. The link must be of a lesser value than the maximum cable pulling tension. (Refer MDI0028).

Existing Conduits
All conduits are to be mandrelled, proven clear, free of foreign material, and deformation prior to the installation of cables.

Proposed Ducts/Conduits
All Proposed 125mm ducts / conduits are to have a minimum 750mm cover. (in accordance with MDI0028)

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

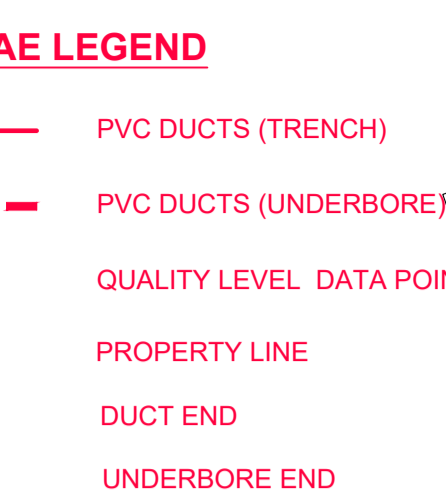
Minimum Bending Radius
Minimum Bending Radius for (1/2") cable:
• 1950mm during mechanical installation,
1170mm when installed by hand.

Streetlight
Ensure all streetlight columns comply with MDI0028 clause 4.10.

Streetlight LV Supply
All active conductors extending from LV pillars to service streetlight columns to be fitted with a 16A in line fuse.

Vegetation
Vegetation to be cleared in accordance with Endeavour Energy's documents MMD013 and EMS0004 "Vegetation Management".

Streetlight Columns
All streetlight columns are to be installed 350mm from the property boundaries unless otherwise indicated.



Establish Proposed PMS No. 36132

- Transformer: 500kVA (11000:433V),
- HV Switchgear: Siemens 8DJH, Type: "RTRR",
- HV Fuses: 12kV, 63A HRC (I-type),
- LV Switchgear: Weber CAT 1, Config: "FFIFF",
- LV Fuses: LV 250A (DIN, size 2)
- Cubicle: Size 14,
- Earthing: Common (Standard Grid 1x 4.8m Electrodes)

DIAL BEFORE YOU DIG
Ref: 12159985 Date: 10 Apr 2017
DBYD 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.

- WAE NOTES**
- ONLY CHANGES MARKED UP IN RED ARE PART OF THIS ASSET RECORDING.
 - ALL SURFACE ASSETS WERE RECORDED AT LEVEL QUALITY "C".
 - HV CIRCUIT HAS BEEN AMENDED AS PER INSPECTION. REFER TO HV CIRCUIT FOR DETAILS.
 - LV CIRCUIT HAS BEEN AMENDED AS PER INSPECTION. REFER TO LV CIRCUIT FOR DETAILS.
 - DUCT TABLE HAS BEEN AMENDED AS PER INSPECTION. REFER TO DUCT SCHEDULE FOR DETAILS.

Establish Proposed PMS No. 36126

- Transformer: 500kVA (11000:433V),
- HV Switchgear: Siemens 8DJH, Type: "RTR",
- HV Fuses: 12kV, 63A HRC (I-type),
- LV Switchgear: Weber CAT 1, Config: "FFIFF",
- LV Fuses: LV 250A (DIN, size 2)
- Cubicle: Size 14,
- Earthing: Common (Standard Grid 1x 4.8m Electrodes)

This Drawing Supplies 355 Lots (Subdivision of Lot 3, DP 1225885)

C.A.P. No.	File No.	Lot Numbers	No. of Lots	Developer	Developers Representative	Contact No.
URS19233	2017/00535/001	2001-2355, Residue Lot 2357, 2361 & Drainage Reserve 2356	355	Winton Property Group	Tana Sainsbury (J Wyndham Prince Pty Ltd)	(02) 4720 - 3319

KEY DOCUMENTS TABLE
The Certification of this project is supported by the following key documents

Document Name	Notation Date
Summary Environmental Report part of EMS 0001	06 DEC 2017
Safe Design Report	06 DEC 2017

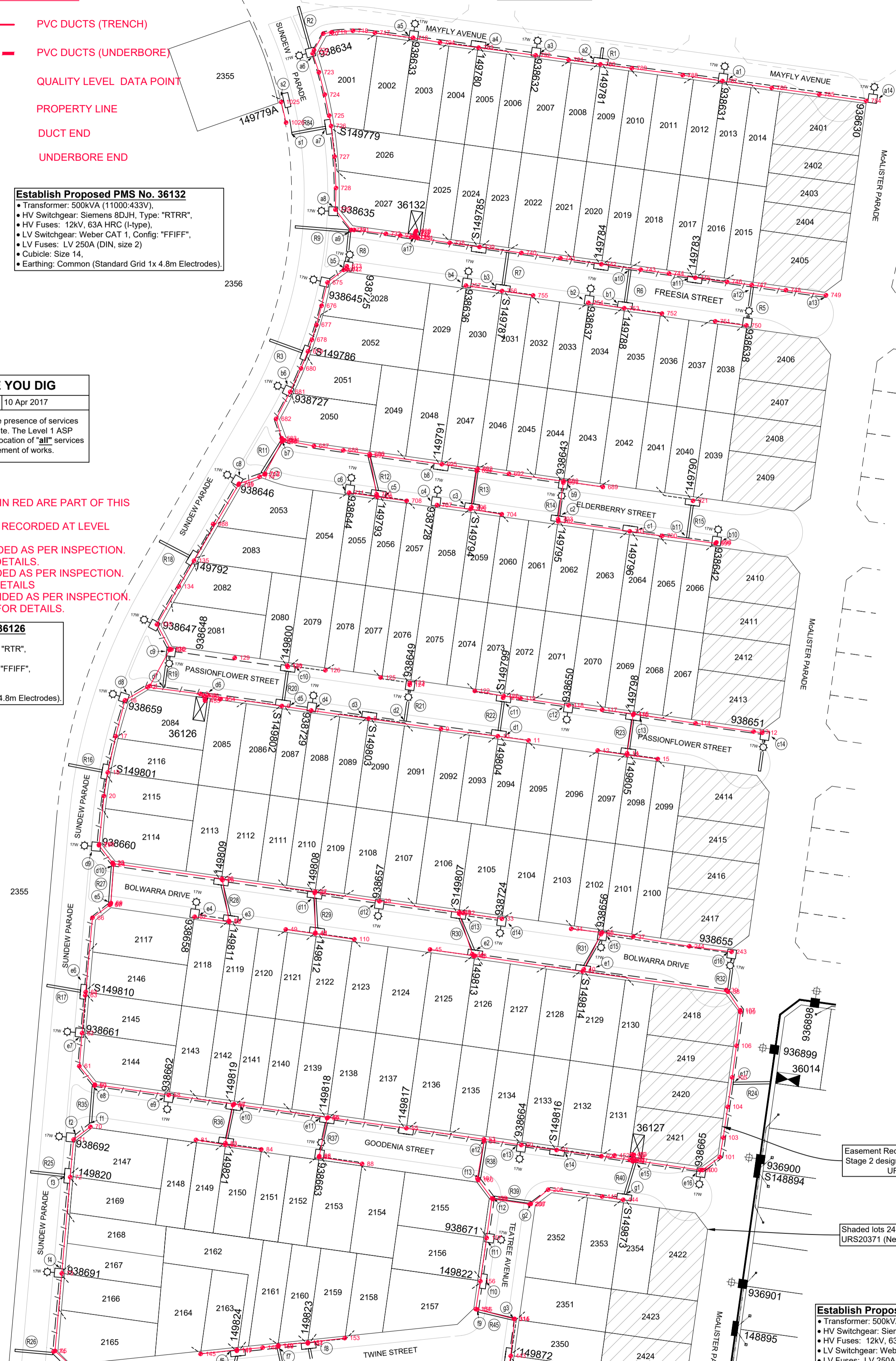
Endeavour Energy Funded & Level 1 ASP Constructed - Reimbursement (exc GST)

Trenching & Ducts	
- (T&R) HV Light Trenching & Reinstatement 140m	\$14140.00
- 8 x HV 11kV Excavate for STJ	\$536.00
- (LD) Lay HV 125mm Ducts in Trench 140m	\$840.00
- (D) Lay HV Ducts in SL/LV Trench 2403m	\$55269.00
Lay Cable	
- (PC) Pull HV Cable Through Duct 1004m	\$4016.00
- (LC) Lay HV Cable Directly Buried in Trench 2086m	\$20860.00
- (C) 11kV 240mm ² Cu 3C XLPE/PVC/HDPE 117m	\$9828.00
- (C) 11kV 240mm ² Al 3C XLPE 2973m	\$98109.00
Joints	
- 8 x STJ in Trench (HV)	\$11816.00
- 21 x PM Sub Term (HV)	\$64071.00
Non Contestable Terminations	
- 1 x Zone Substation Access and Supervision	\$3963.00
- 1 x Protection Setting	\$4768.00
- 1 x Testing Prior to Commissioning	\$5412.00
- 1 x Zone Sub 11kV CB Termination	\$4300.00
Padmount Substation	
- Install 7 x New PM Substation	\$20020.00
- Install 7 x Sub Culvert	\$16240.00
- 7 x LV Switchgear CAT 1 FFIFF	\$47579.00
- 4 x Siemens RTRR HV Switchgear	\$68616.00
- 3 x Siemens RTR HV Switchgear	\$32235.00
- 7 x Size 14 Fibreglass Cubicle	\$27496.00
- 7 x PM Substation Culvert	\$8561.00
- 7 x Plinth	\$9831.00
- 7 x Value of 500kVA 11kV Transformer only	\$95179.00
Total	\$627185.00

FUNDING ARRANGEMENTS FOR SCOPE OF WORKS

ASP Level 1 Electrical Works	Customer Funded Non-Contestable Works	Customer Funded Contestable Works	Customer
Endeavour Energy Supplied Materials	Customer Funded Non-Contestable Works	Customer Funded Contestable Works	Customer
NIL	<ul style="list-style-type: none"> • All works associated with the inspection, testing, switching and the commissioning associated with this project. • All works associated with the inspection, testing, switching and the commissioning associated with this project. • Zone Substation Access & Supervision for cable installation. • Zone Substation Protection settings. • Testing of cables prior to commissioning. • 11kV Zone Substation Cable terminations. 	<ul style="list-style-type: none"> • Plegging of easements, property boundaries and infrastructure locations. • Registering of Easements. • Provide Site Access. • Own Service and Service connections. • Confirm ground levels. 	<ul style="list-style-type: none"> Including but not limited to: • Registering of easements, property boundaries and infrastructure locations. • Registering of Easements. • Provide Site Access. • Own Service and Service connections. • Confirm ground levels.
Endeavour Energy Funded & Constructed	Customer Funded Contestable Works	Existing Duct Usage Charges (exc GST)	Customer
Works Required Prior to Completion of Customer Contestable Project NIL	<ul style="list-style-type: none"> • Substation establishment & installation. • Excavation & Trenching. • Under-bores. • Duct installation. • Cable Installation (Pulling & Laying). • Cable Joining. • Installation of Earthing. • Removal of Redundant Assets. 	NIL	NIL
Endeavour Energy Funded & Level 1 ASP Constructed - Reimbursement (exc GST)	Customer Funded Contestable Works	Existing Duct Usage Charges (exc GST)	Customer
(see breakdown above) Total EE Capital Contributions (exc PM & Design) \$ 627,185.00 Total EE Capital Contribution (HV Reimbursed) \$688,023.00	<ul style="list-style-type: none"> • Substation establishment & installation. • Excavation & Trenching. • Under-bores. • Duct installation. • Cable Installation (Pulling & Laying). • Cable Joining. • Installation of Earthing. • Removal of Redundant Assets. 	NIL	30 March 2018 Assets to be Returned to the nearest Endeavour Energy Depot by Level 1 ASP. NIL

Site Plan - North
Scale 1:1000



DESIGN COMPLIANCE AND INDEMNITY
This design complies with Endeavour Energy's relevant standards as current at this time & as listed on the Endeavour Energy Accredited Service Provider's internet site. These standards include, but are not limited to:

- CP: Connection Policy,
- EMS: Environmental Management Standard,
- MCI: Mains Construction Instruction,
- MDI: Mains Design Instruction,
- PDI: Protection Design Instruction,
- SDI: Substation Design Instruction,
- SADI: Design Drawing Standard,
- MMI: Mains Maintenance Instruction,
- SMI: Substation Maintenance Instruction,
- LDI: Public Lighting Electrical Design Element.

Additionally, where relevant, the design complies with AS/NZS7000 "Overhead Line Design - Detailed Procedures" published by The Australian Standards.

Power Line Design Pty Ltd indemnifies Endeavour Energy for any loss or damage resulting from non-compliance of the design with the above standards.

Signed: Michael Baranowski
Name: Michael Baranowski
Service Provider Number: 2486 Date: 20.03.2018

WORK COMPLETED / FIELD BOOK
CONSTRUCTED BY: C.J. DOYLE CONTRACTING
WORKS COMPLETED: TERRY GLASS
SIGNATURE: TERRY GLASS, DATE: 28/03/18(LV)
INSPECTED BY: DANIEL McMULLAN
SIGNATURE: DANIEL McMULLAN, DATE: 28/03/18(LV)

ASSET RECORDING
I, Michael PULLING, OF C.J. DOYLE CONTRACTING, CONTACT No. 8784-1900, HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004. SIGNATURE: Michael PULLING, DATE: 28/03/18(LV)

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: _____

This Approval is issued subject to Endeavour Energy's General Terms & Conditions for Connection of Public Lighting and is specifically for drawing No. _____ Amendment: _____

AUTHORISATION OF ESTIMATE VALUE OF ENDEAVOUR ENERGY FUNDED ASSETS
Signed: _____
Print Name: _____
Service Number: _____
Funding Amount: \$ _____
Date: _____

Notes

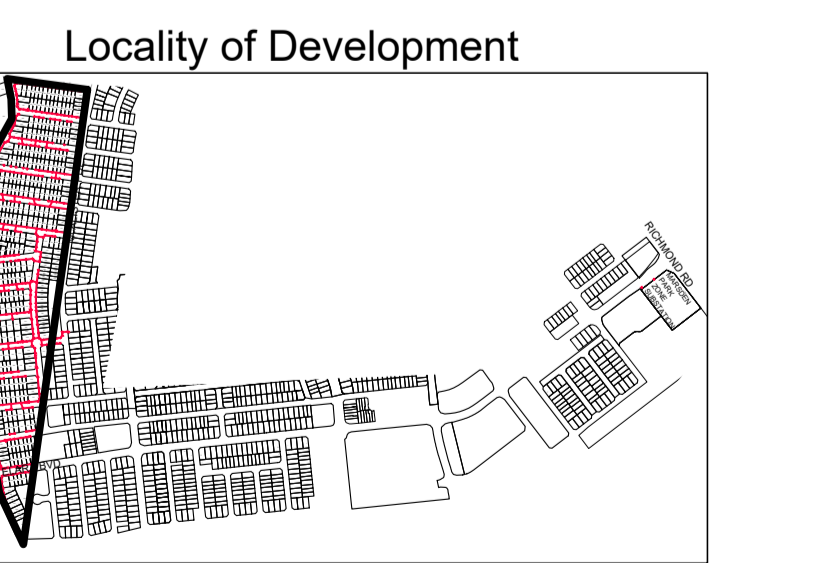
- This drawing is to be read in conjunction with the relevant Endeavour Energy Network Standards and Connection Policy.
- Endeavour Energy Contact Phone: 131081.
- Design certification shall lapse where:
 - notice of intent has not been received within six (6) months of this certification, or
 - construction has been interrupted for more than six (6) months.
 where design certification has lapsed the design must be resubmitted for verification by the accredited designer.
- Accredited Service Provider to notify Endeavour Energy asset data customer department daily when cable works is in progress. (ph. 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 services searches must be checked before construction.
- ATTENTION:** The preparation of this design has been undertaken giving due consideration to the location of existing services. The Constructor is however responsible for the verification of services and permanent survey marks prior to the commencement of construction. No responsibility or liability will be accepted by the designer for damage to existing services as a result of this design.
- WARNING:** Live 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 or 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 Constructor 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:** Unless approved otherwise, interruption to any customer's supply must be avoided, the following alternatives should be considered:
 - mobile generators and substations,
 - live line work,
 - design alternatives,
 - low voltage parallels,
 - work practices/standards,
 - the cost is to be funded by the customer/developer.
- Environmental Management plan:** EMP EMS001 is part of this design (refer to EIA 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 constructor or developer becomes aware of any previously unidentified Aboriginal object(s), all work likely to affect the object(s) shall cease immediately, and the Office of Environment & Heritage shall be notified immediately in accordance with section 89a of the National Parks & Wildlife ACT 1974. Works shall not recommence until written authorization 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 constructor or developer becomes aware of any previously unidentified heritage object(s), all work likely to affect the object(s) shall cease immediately, and the Heritage Council of NSW shall be notified immediately in accordance with Section 146 of the Heritage Act 1917. Works shall not recommence until written authorization from the heritage council has been issued.
- 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**

Trench Length

High Voltage Trenching	1463 m
Low Voltage Trenching	2196 m
Street Light Trenching	313 m
Roadcrossing Trenching	1338 m
Existing Ducts Replaced	193 m
Total (exc Road Crossings)	5503 m

Pioneer Cost Share Reimbursement SCHEME - Expiry Date : N/A
Pro-Rata Reimbursement for Customer's Load Over 50kVA

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

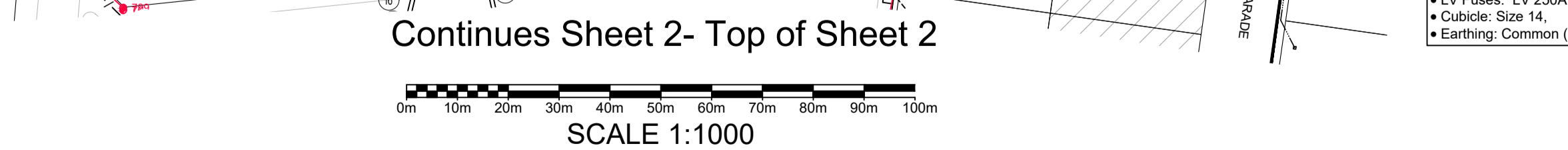


WARNING
Telstra assets in this area. Constructor to contact Telstra on ph 1800 653 935 prior to the commencement of works.

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

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

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



AMENDMENTS	Reference Drawings	Work Orders	CAP / SAMP No.	Original Scale	DO NOT SCALE	Dimensions in Metres	Location	Project Details
A Original Issue B 20.03.2017 STAGING PLAN 1 & 2 DRAWN: Z MOORE C 20.03.2017 STAGING PLAN 3 & 4 DRAWN: J.A. CHICK: M.J.B D 20.03.2018 REVISED STAGING FROM 3D MODEL DRAWN: J.A. CHICK: M.J.B E Existing sites on Elmer Blvd Drawing: J.A. CHICK: M.J.B	URS17427 500805A RETIC URS17428 500803A RETIC URS18956 504827A RETIC URS17974 502648A RETIC URS18495 503195A RETIC	NUL0572 408751A RETIC 388896C RETIC 505358D DTE	URS19233 AM Project No. 2017/00535/001 HV Switching UBD/Penguin Ref No. C11 128 GIS Map No. U82674 HV OP Diagram MARDSEN PARK Local Government Area BLACKTOWN CITY	ORIGINAL SCALE 1:1000 Drawn Z MOORE Date 20.03.2018 Checked Michael.J.B	DO NOT SCALE DIMENSIONS IN METRES Design Michael.J.B	RICHMOND ROAD MARDSEN PARK URS19233 RESIDENTIAL SUBDIVISION LOT 3 DP 1225885 ELECTRICAL RETICULATION		A1 505359 D Sheet No 1 of 27 Sheets #3437

Site Plan - Central

Scale 1:1000

Shaded lots 2401-2429 are supplied under C.A.P No. URS20371

Continues Sheet 1- Bottom of Sheet 1



Establish Proposed PMS No. 36129

- Transformer: 500kVA (11000/433V).
- HV Switchgear: Siemens 8DJH, Type: "RTRR".
- HV Fuses: 12kV, 63A HRC (I-type).
- LV Switchgear: Weber CAT 1, Config: "FFIFF".
- LV Fuses: LV 250A (DIN, size 2)
- Cubicle: Size 14.
- Earthing: Common (Standard Grid 1x 4.8m Electrodes).

Establish Proposed PMS No. 36130

- Transformer: 500kVA (11000/433V).
- HV Switchgear: Siemens 8DJH, Type: "RTRR".
- HV Fuses: 12kV, 63A HRC (I-type).
- LV Switchgear: Weber CAT 1, Config: "FFIFF".
- LV Fuses: LV 250A (DIN, size 2)
- Cubicle: Size 14.
- Earthing: Common (Standard Grid 1x 4.8m Electrodes).

Establish Proposed PMS No. 36128

- Transformer: 500kVA (11000/433V).
- HV Switchgear: Siemens 8DJH, Type: "RTR".
- HV Fuses: 12kV, 63A HRC (I-type).
- LV Switchgear: Weber CAT 1, Config: "FFIFF".
- LV Fuses: LV 250A (DIN, size 2)
- Cubicle: Size 14.
- Earthing: Common (Standard Grid 1x 4.8m Electrodes).

LEGEND

- Existing Underground Cables
- Existing Conduits (Ducts)
- Install Proposed Conduits (Ducts)
- High Voltage Trenching
- Low Voltage Trenching
- Street Light Trenching
- Lay 40mm P.V.C. Service Conduits
- Proposed Pillar Excavation Location
- Existing Pillar Location
- Proposed Column Excavation location
- 5.5m Enlarged Base Column & 3.0m Eden Outreach
- Type 2 Ragbolt (Type 2 Footing)
- Colour Powder Coated Black
- Proposed Column Excavation location
- 10m Enlarged Base Column & 4.5m Eden Outreach
- Type 2 Ragbolt (Universal Footing)
- Colour Powder Coated Black
- Existing Column
- Install Proposed Street Light Lantern
- 17W StreetLED Luminaries
- Install Proposed Street Light Lantern
- 82W LED Gerard V5 Luminaries
- Existing Street Light Lantern
- Establish Proposed Padmount Substation
- Existing Padmount Substation
- Customer Connection Point (CCP)

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY **C.J. DOYLE CONTRACTING**

WORKS COMPLETED BY **TERRY GLASS**

SIGNATURE **TERRY GLASS**, DATE **28/03/18(LV)**

INSPECTED BY **DANIEL McMULLAN**

SIGNATURE _____, DATE _____

ASSET RECORDING

I **MICHAEL PULLING**

OF **C.J. DOYLE CONTRACTING**

CONTACT No. **8784-1900**

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

SIGNATURE **MICHAEL PULLING**, DATE **28/03/18(LV)**

CERTIFIED BY ENDEAVOUR ENERGY

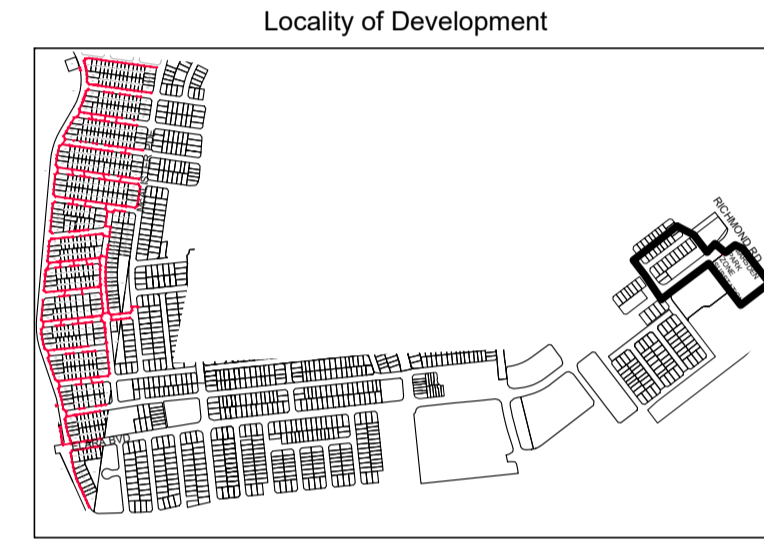
Amendment: _____

Date Approved: _____

Examiner's Signature: _____

Print Name: _____

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

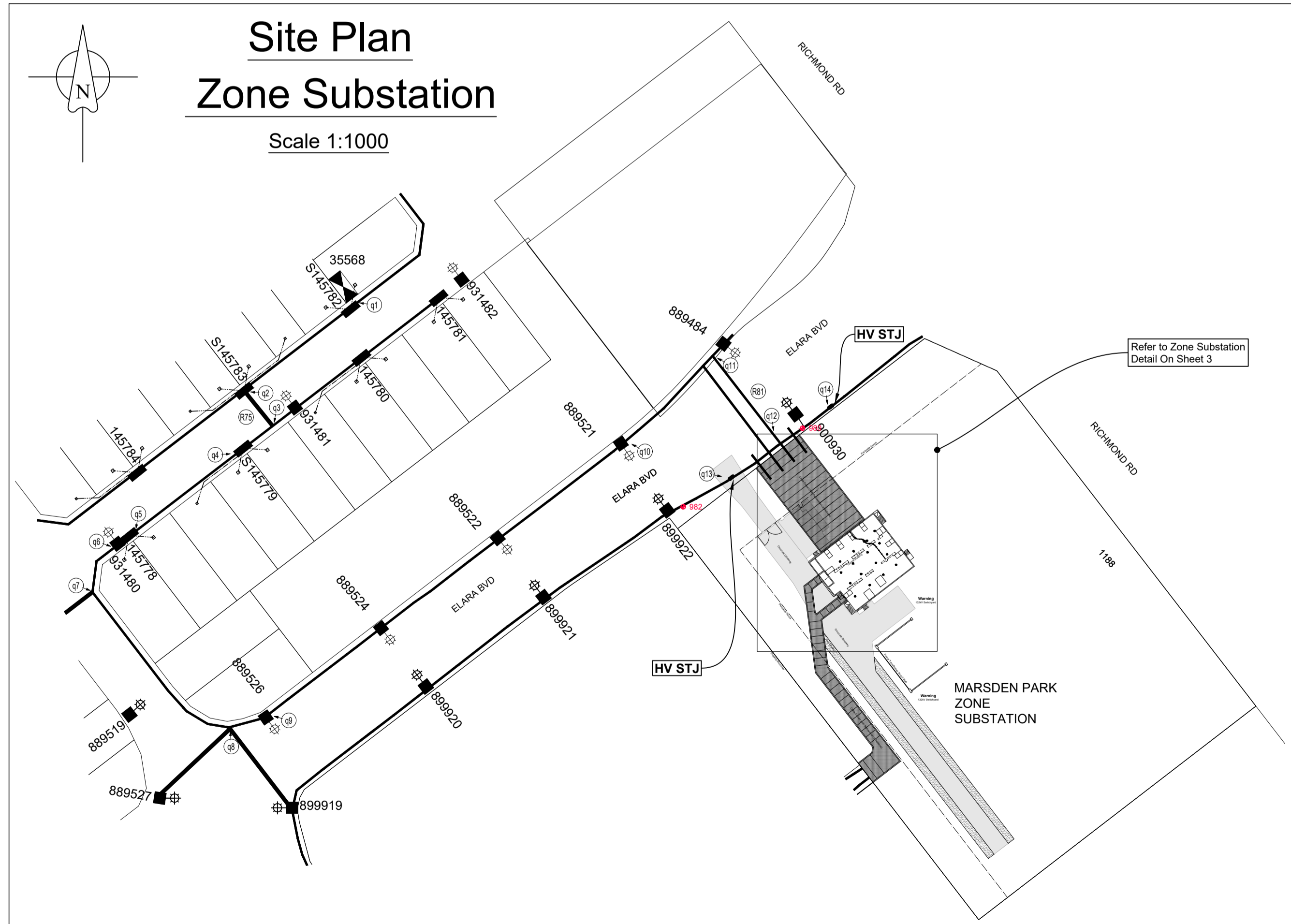


SCALE 1:1000

Continues Sheet 3- Top of Sheet 3

Site Plan Zone Substation

Scale 1:1000



AMENDMENTS	Original Issue
A	23.10.2017 STAGING PLAN 1 & 2 DRAWN: Z. MOORE CHECKED: M.J.B.
B	20.03.2018 REMOVE STAGE 2 FROM DESIGN: Z. MOORE CHECKED: M.J.B.
C	20.03.2018 Existing assets on Elmore Blvd corrected: J.A. Drawn: J.A. Checked: M.J.B.
D	20.03.2018

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.

powerline design

POWER LINE DESIGN PTY LTD
PO BOX 338 Mittagong NSW 2575
PH (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2488 / ADRN 33107 591 846

Reference Drawings	Work Orders
URS17427 500805A RETIC	General
URS17428 500803A RETIC	Overhead
URS18956 504827A RETIC	Underground
URS17974 502648A RETIC	Substations
URS18495 503195A RETIC	

CAP / SAMP No.	URS19233
AM Project No.	2017/00535/001
HV Switching	
UBD/Penguin Ref No.	C11 126
GIS Map No.	U82674
HV OP Diagram	MARSDEN PARK
Local Government Area	BLACKTOWN CITY

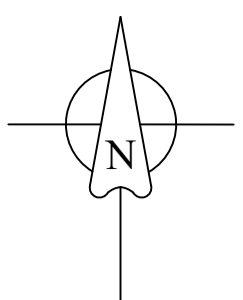
ORIGINAL SCALE	1:1000
DO NOT SCALE DIMENSIONS IN METRES	
Drawn	Z MOORE
Date	20.03.2018
Checked	Michael J.B
Design	Michael J.B

RICHMOND ROAD
MARSDEN PARK
URS19233
RESIDENTIAL SUBDIVISION
LOT 3 DP 1225885
ELECTRICAL RETICULATION

Endeavour Energy

A1 505359 D

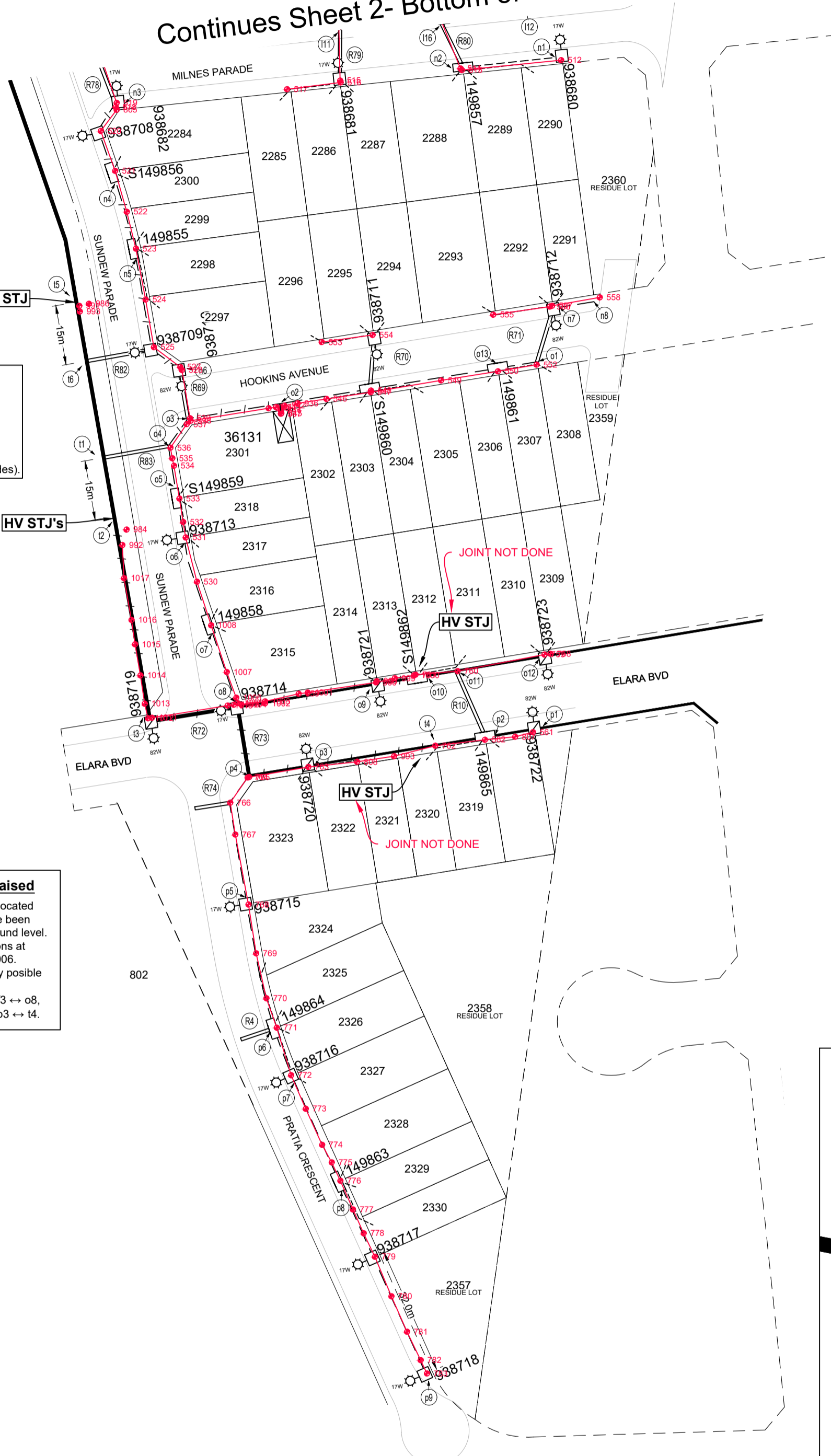
Sheet No 2 of 27 Sheets



Site Plan - South

Scale 1:1000

Continues Sheet 2- Bottom of Sheet 2



Establish Proposed PMS No. 36131

- Transformer: 500kVA (11000:415V)
- HV Switchgear: Siemens 8DJH, Type: "RTRR"
- HV Fuses: 12kV, 63A HRC (I-type)
- LV Switchgear: Weber CAT 1, Config: "FFIFF"
- LV Fuses: LV 250A (DIN, size 2)
- Cubicle: Size 14
- Earthing: Common (Standard Grid 1x 4.8m Electrodes)

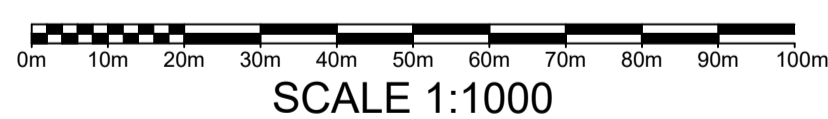
Existing Conduits & Cables to be Raised

Existing underground assets (cables/conduits) located between the reference points listed below have been installed well below standard depth at the final ground level.

New assets are to be installed at these locations at standard depths in accordance with MIC0006.

The existing assets shall be removed if practically possible through these locations.

The sections effected are as follows: f2 ↔ f3, f3 ↔ o8, o8 ↔ o9, o9 ↔ o10, o8 ↔ p4, p4 ↔ p3, and p3 ↔ p4.



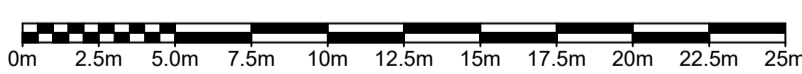
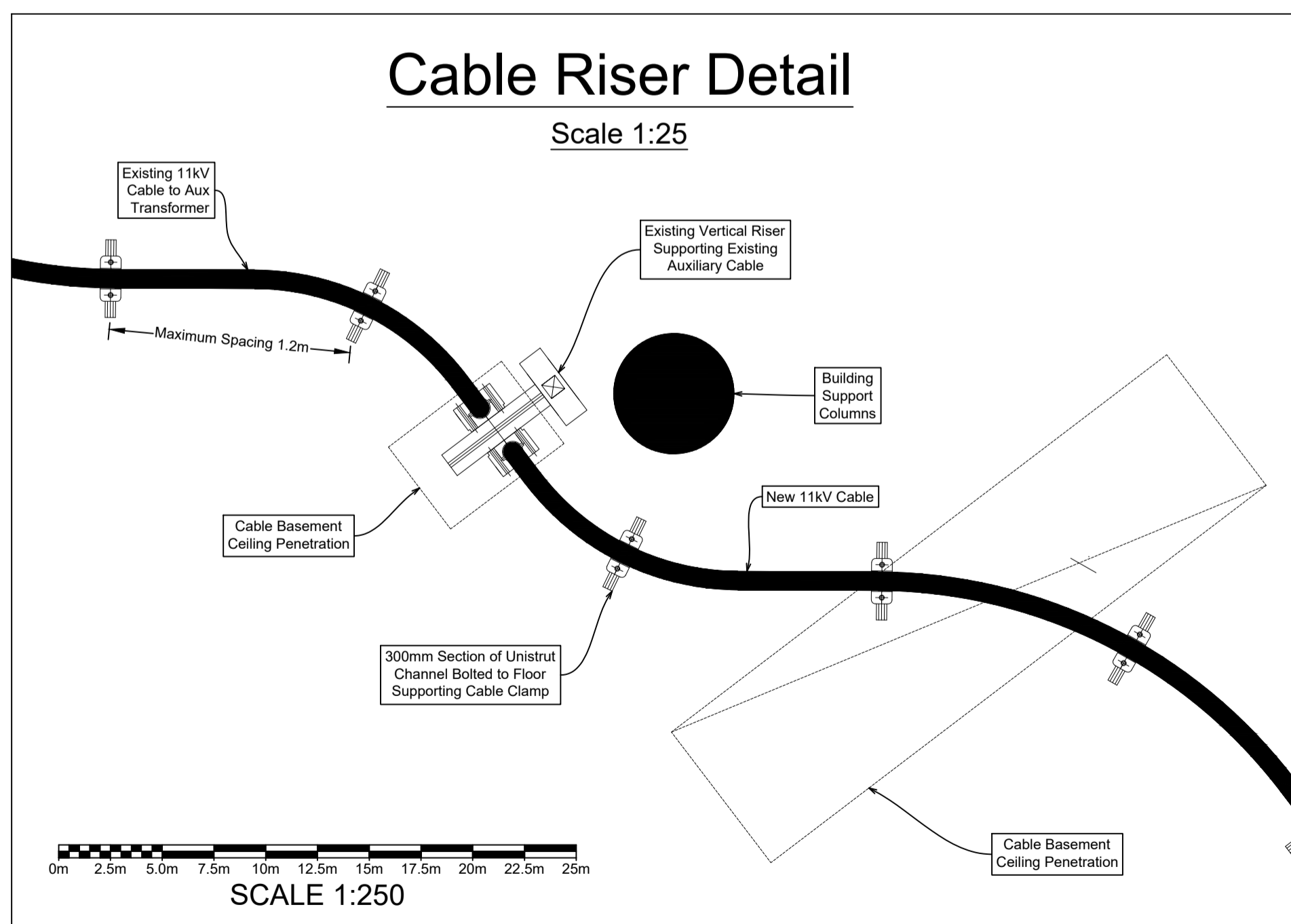
SCALE 1:1000

LEGEND

- Existing Underground Cable/s
- Existing Conduits (Ducts)
- Install Proposed Conduits (Ducts)
- Replace Existing HV & LV Conduits (Ducts) and Cables
- High Voltage Trenching
- Low Voltage Trenching
- Street Light Trenching
- Lay 40mm P.V.C. Service Conduits
- Proposed Pillar Excavation Location
- Existing Pillar Location
- Proposed Column Excavation location
- Existing Column
- Install Proposed Street Light Lantern
- Existing Street Light Lantern
- Establish Proposed Padmount Substation
- Existing Padmount Substation
- Customer Connection Point (CCP)

Cable Riser Detail

Scale 1:25



SCALE 1:250

CERTIFIED BY ENDEAVOUR ENERGY

Amendment: _____

Date Approved: _____

Examiner's Signature: _____

Print Name: _____

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

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY C.J. DOYLE CONTRACTING

WORKS COMPLETED TERRY GLASS

SIGNATURE TERRY GLASS DATE 28/03/18(LV)

INSPECTED BY DANIEL McMULLAN

SIGNATURE _____ DATE _____

ASSET RECORDING

BY MICHAEL PULLING

OF C.J. DOYLE CONTRACTING

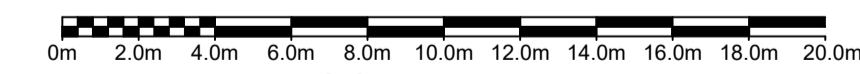
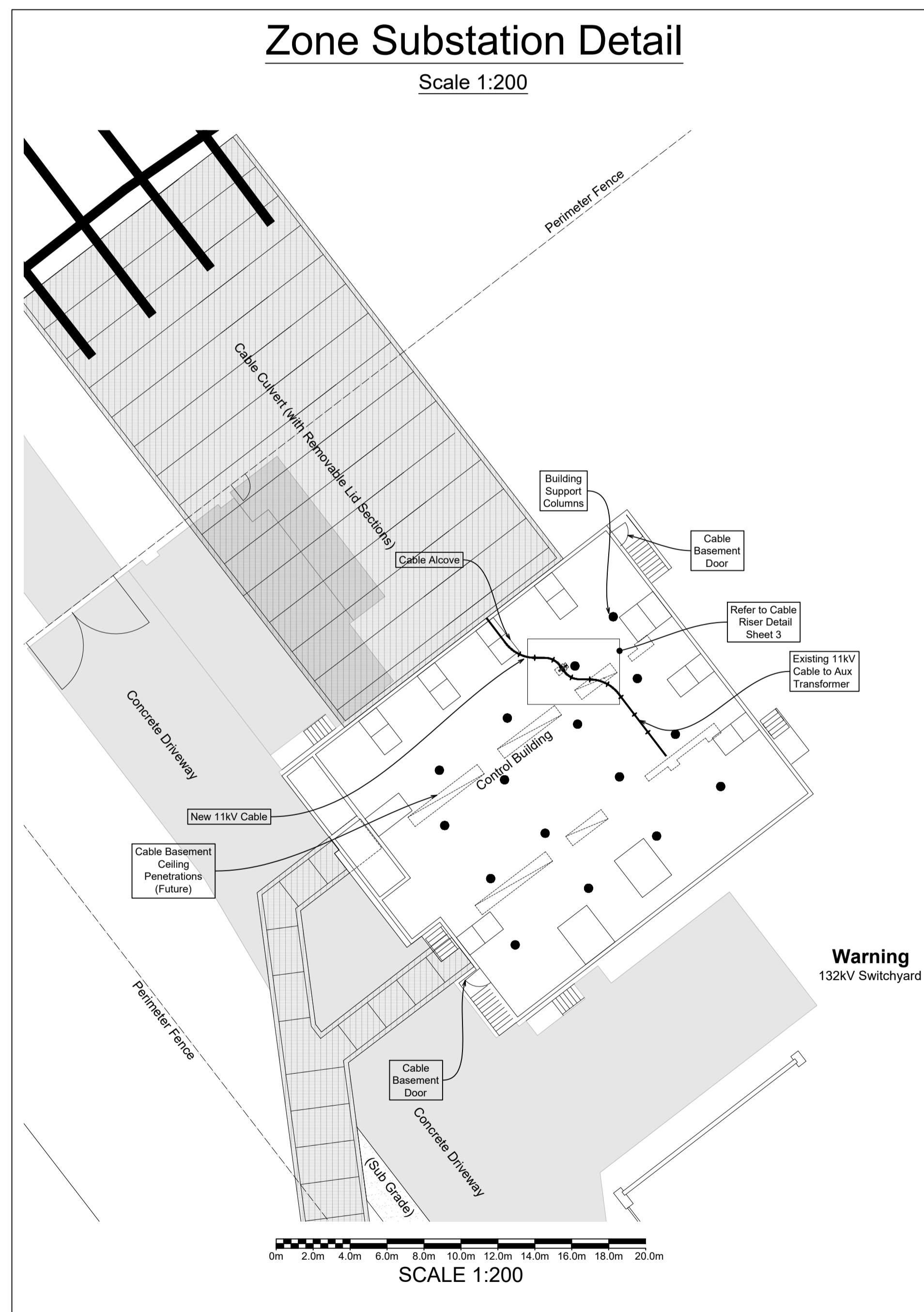
CONTACT No. 8784-1900

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

SIGNATURE MICHAEL PULLING DATE 28/03/18(LV)

Zone Substation Detail

Scale 1:200



SCALE 1:200

Warning
132kV Switchyard

AMENDMENTS	Original Issue
A	23.10.2017 STAGING PLAN 1 & 2 DRAWN: Z MOORE CHECKED: M.J.B
B	20.03.2018 REMOVE STAGE 2 FROM DESIGN: Z MOORE CHECKED: M.J.B
C	20.03.2018 Existing site on Elara Blvd
D	20.03.2018 Existing site on Elara Blvd

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.

powerline design

POWER LINE DESIGN PTY LTD
PO BOX 338 Mittagong NSW 2575
Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ABN: 33197 991 846

Reference Drawings	Work Orders	CAP / SAMP No.	URS19233
URS17427 500805A RETIC	NUL0572 500653A RETIC	General	AM Project No. 2017/00535/001
URS17428 500803A RETIC	URS16140 408751A RETIC	Overhead	HV Switching
URS18956 504827A RETIC	URS14178 388896C RETIC	Underground	UBD/Penguin Ref No. C11 126
URS17974 502648A RETIC	URS19233 505358D DTE	Substations	GIS Map No. U82674
URS18495 503195A RETIC			HV OP Diagram MARDEN PARK
			Local Government Area BLACKTOWN CITY

ORIGINAL SCALE	1:1000
Drawn	Z MOORE
Date	20.03.2018
Checked	Michael J.B

DO NOT SCALE

DIMENSIONS IN METRES

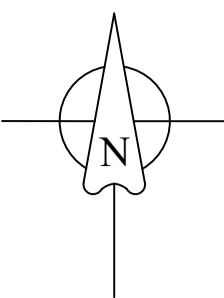
RICHMOND ROAD
MARDEN PARK
URS19233
RESIDENTIAL SUBDIVISION
LOT 3 DP 1225885
ELECTRICAL RETICULATION

Endeavour Energy

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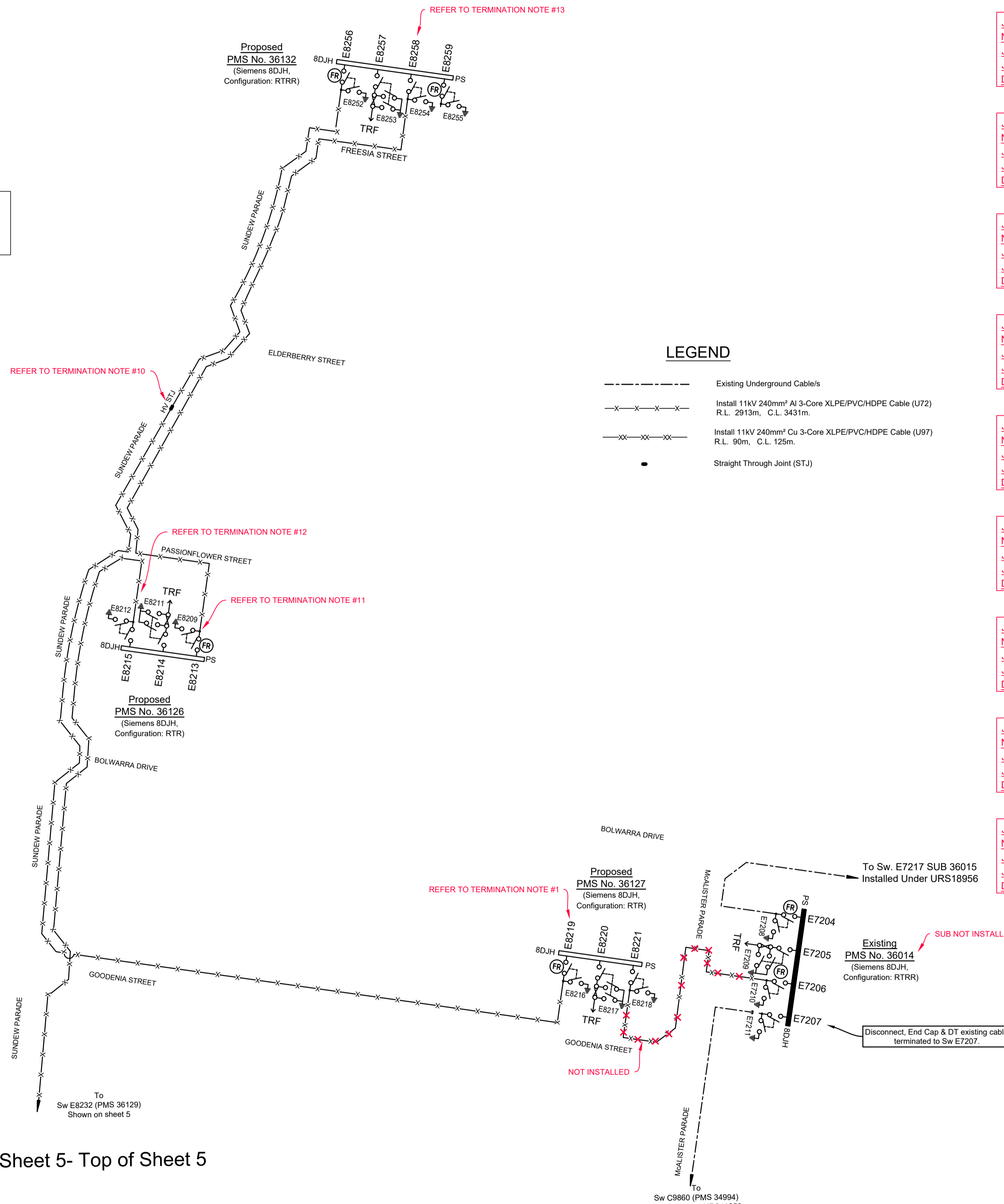
Sheet No 3 of 27 Sheets

#3437



Final HV Circuit

Not to Scale
11kV Area



MARSDEN PARK ZONE SUB
Reference: 3-D
Feeder: 11kV Feeder MS1132
"Westway Ave"

LEGEND

- Existing Underground Cable/s
- x-x-x-x-x- Install 11kV 240mm² Al 3-Core XLPE/PVC/HDPE Cable (U72)
R.L. 2913m, C.L. 3431m.
- x-x-x-x-x- Install 11kV 240mm² Cu 3-Core XLPE/PVC/HDPE Cable (U97)
R.L. 90m, C.L. 125m.
- Straight Through Joint (STJ)

Continues Sheet 5- Top of Sheet 5

TERMINATION NOTE #1
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0085292
DATE OF MANUFACTURE:

TERMINATION NOTE #11
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 1584
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0080844
DATE OF MANUFACTURE:

TERMINATION NOTE #2
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: K480TB18-300-EE1-3
JOINT/TERMINATION BATCH #: SN0085218
DATE OF MANUFACTURE:

TERMINATION NOTE #12
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 1584
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0080808
DATE OF MANUFACTURE:

TERMINATION NOTE #3
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0085219
DATE OF MANUFACTURE:

TERMINATION NOTE #13
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 1584
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0085207
DATE OF MANUFACTURE:

TERMINATION NOTE #4
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0085206
DATE OF MANUFACTURE:

TERMINATION NOTE #14
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0080832
DATE OF MANUFACTURE:

TERMINATION NOTE #5
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 254226
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0085221
DATE OF MANUFACTURE:

TERMINATION NOTE #15
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0080851
DATE OF MANUFACTURE:

TERMINATION NOTE #6
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0080811
DATE OF MANUFACTURE:

TERMINATION NOTE #16
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0080830
DATE OF MANUFACTURE:

TERMINATION NOTE #7
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0080790
DATE OF MANUFACTURE:

TERMINATION NOTE #17
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 1584
JOINT/TERMINATION KIT #: MXSU-P101
JOINT/TERMINATION BATCH #: CZ2315-000
DATE OF MANUFACTURE: 31/01/2018

TERMINATION NOTE #8
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 254226
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0085220
DATE OF MANUFACTURE:

TERMINATION NOTE #18
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 1584
JOINT/TERMINATION KIT #: MXSU-P101
JOINT/TERMINATION BATCH #: CZ2315-000
DATE OF MANUFACTURE: 08/01/2018

TERMINATION NOTE #9
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 254226
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0080797
DATE OF MANUFACTURE:

TERMINATION NOTE #19
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 1584
JOINT/TERMINATION KIT #: MXSU-P101
JOINT/TERMINATION BATCH #: CZ2315-000
DATE OF MANUFACTURE: 31/01/2018

TERMINATION NOTE #10
JOINT/TERMINATION TYPE: HV STJ
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: MXSU-P101
JOINT/TERMINATION BATCH #: CZ2315-000
DATE OF MANUFACTURE: 13/06/2017

TERMINATION NOTE #20
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 1584
JOINT/TERMINATION KIT #: MXSU-P101
JOINT/TERMINATION BATCH #: CZ2315-000
DATE OF MANUFACTURE:

CERTIFIED BY ENDEAVOUR ENERGY
AMENDMENT: _____
DATE APPROVED: _____
EXAMINER'S SIGNATURE: _____
PRINT NAME: _____
THIS CERTIFICATION IS ISSUED SUBJECT TO ENDEAVOUR ENERGY'S STANDARD CERTIFICATION TERMS

TERMINATION NOTE #21
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0080849
DATE OF MANUFACTURE:

TERMINATION NOTE #22
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 1584
JOINT/TERMINATION KIT #: K480TB18-300-EE01-3
JOINT/TERMINATION BATCH #: SN0080816
DATE OF MANUFACTURE:

TERMINATION NOTE #23
JOINT/TERMINATION TYPE: HV STJ
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: MXSU-P101
JOINT/TERMINATION BATCH #: CZ2315-000
DATE OF MANUFACTURE: 08/01/2018

TERMINATION NOTE #24
JOINT/TERMINATION TYPE: INDOOR TERMINATION
NETWORK ACCESS AUTHORISATION: 252055
JOINT/TERMINATION KIT #: MXSU-P101
JOINT/TERMINATION BATCH #: CZ2315-000
DATE OF MANUFACTURE:

TERMINATION NOTE #25
JOINT/TERMINATION TYPE: HV STJ
NETWORK ACCESS AUTHORISATION: 1584
JOINT/TERMINATION KIT #: MXSU-P101
JOINT/TERMINATION BATCH #: CZ2315-000
DATE OF MANUFACTURE: 31/01/2018

TERMINATION NOTE #26
JOINT/TERMINATION TYPE: HV STJ
NETWORK ACCESS AUTHORISATION: 1584
JOINT/TERMINATION KIT #: MXSU-P101
JOINT/TERMINATION BATCH #: CZ2315-000
DATE OF MANUFACTURE: 08/01/2018

TERMINATION NOTE #27
JOINT/TERMINATION TYPE: HV STJ
NETWORK ACCESS AUTHORISATION: 1347
JOINT/TERMINATION KIT #: MXSU-P101
JOINT/TERMINATION BATCH #: CZ2315-000
DATE OF MANUFACTURE: 31/01/2018

WORK COMPLETED / FIELD BOOK
CONSTRUCTED BY: C.J. DOYLE CONTRACTING
WORKS COMPLETED: TERRY GLASS
SIGNATURE: TERRY GLASS, DATE 28/03/18(LV)
INSPECTED BY: DANIEL McMULLAN
SIGNATURE: _____, DATE _____
ASSET RECORDING
MICHAEL PULLING
OF C.J. DOYLE CONTRACTING
CONTACT No: 8784-1900
HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004 28/03/18(LV)
SIGNATURE: MICHAEL PULLING, DATE: _____

This project is located within a 11kV area.

AMENDMENTS	Original Issue	20.10.2017	20.03.2018
A	20.10.2017	STAGING PLAN 1 & 2	DRAWN: Z MOORE
B	20.10.2017	REMOVED STAGE 2 FROM PLAN 1 & 2	DESIGN: Z MOORE
C	20.10.2017	REMOVED STAGE 2 FROM PLAN 1 & 2	DESIGN: Z MOORE
D	20.03.2018	Existing slots on Elena Blvd	Checked: M.L.B.

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.

powerline design

POWER LINE DESIGN PTY LTD
PO BOX 338 Mittagong NSW 2575
Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ADR: 3197 991 846

Reference Drawings	Work Orders	CAP / SAMP No.	URS19233
URS17427	500805A RETIC	NUL0572	500653A RETIC
URS17428	500803A RETIC	URS16140	408751A RETIC
URS18956	504827A RETIC	URS14178	388896C RETIC
URS17974	502648A RETIC	URS19233	505358D DTE
URS18495	503195A RETIC		

ORIGINAL SCALE NTS

Drawn: Z MOORE
Date: 20.03.2018
Checked: Michael J.B.

DO NOT SCALE DIMENSIONS IN METRES

Design: Michael J.B.

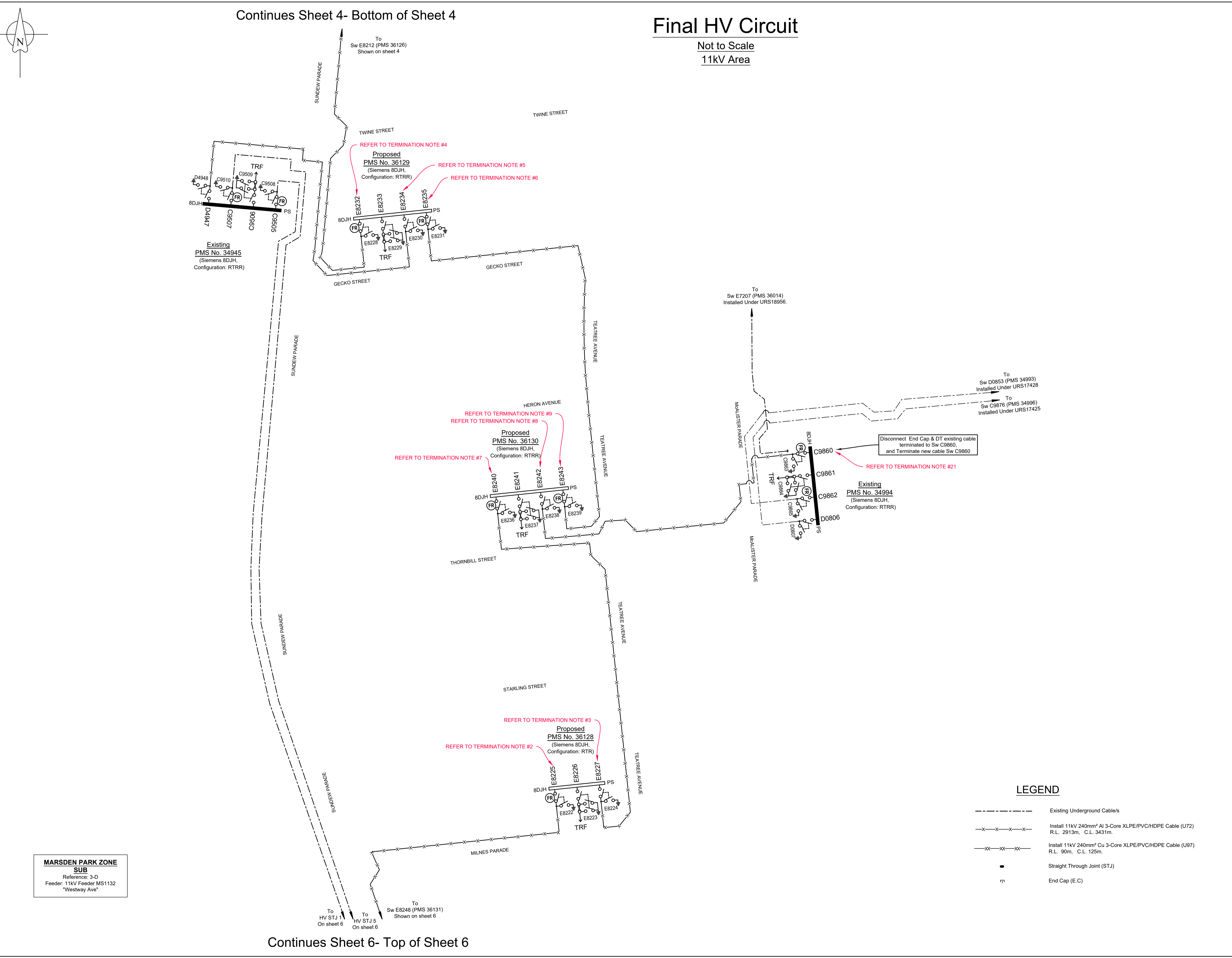
RICHMOND ROAD MARSDEN PARK URS19233 RESIDENTIAL SUBDIVISION LOT 3 DP 1225885 ELECTRICAL RETICULATION

Endeavour Energy

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Sheet No 4 of 27 Sheets

#3437



CERTIFIED BY ENDEAVOUR ENERGY

AMENDMENT: _____

DATE APPROVED: _____

EXAMINER'S SIGNATURE: _____

PRINT NAME: _____

THIS CERTIFICATION IS ISSUED SUBJECT TO ENDEAVOUR ENERGY'S STANDARD CERTIFICATION TERMS

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY **C.J. DOYLE CONTRACTING**

WORKS COMPLETED **TERRY GLASS**

SIGNATURE **TERRY GLASS**, DATE **28/03/18(LV)**

INSPECTED BY **DANIEL McMULLAN**

SIGNATURE _____, DATE _____

ASSET RECORDING

BY **MICHAEL PULLING**

OF **C.J. DOYLE CONTRACTING**

CONTACT No. **8784-1900**

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

SIGNATURE **MICHAEL PULLING**, DATE **28/03/18(LV)**

AMENDMENTS	Original Issue
A	23.10.2017 STAGING PLAN 1 & 2 DRAWN: Z. MOORE CHECKED: M.J.B.
B	20.03.2018 REMOVED STAGE 2 FROM DESIGN DESIGN: Z. MOORE CHECKED: M.J.B.
C	20.03.2018 Existing site on Elina Blvd Drawn: J.A. Checked: M.J.B.
D	20.03.2018 Existing site on Elina Blvd Drawn: J.A. Checked: M.J.B.

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.

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PO BOX 338 Mittagong NSW 2575
Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ABRN: 33197 991 846

Reference Drawings	Work Orders
URS17427 500805A RETIC	General
URS17428 500803A RETIC	Overhead
URS18956 504827A RETIC	Underground
URS17974 502648A RETIC	Substations
URS18495 503195A RETIC	

CAP / SAMP No.	URS19233
AM Project No.	2017/00535/001
HV Switching	
UBD/Penguin Ref No.	C11 126
GIS Map No.	U82674
HV OP Diagram	MARSDEN PARK
Local Government Area	BLACKTOWN CITY

Drawn	Z MOORE
Date	20.03.2018
Checked	Michael.J.B
Design	Michael.J.B

DO NOT SCALE
DIMENSIONS IN METRES

RICHMOND ROAD MARSDEN PARK URS19233 RESIDENTIAL SUBDIVISION LOT 3 DP 1225885 ELECTRICAL RETICULATION

Endeavour Energy

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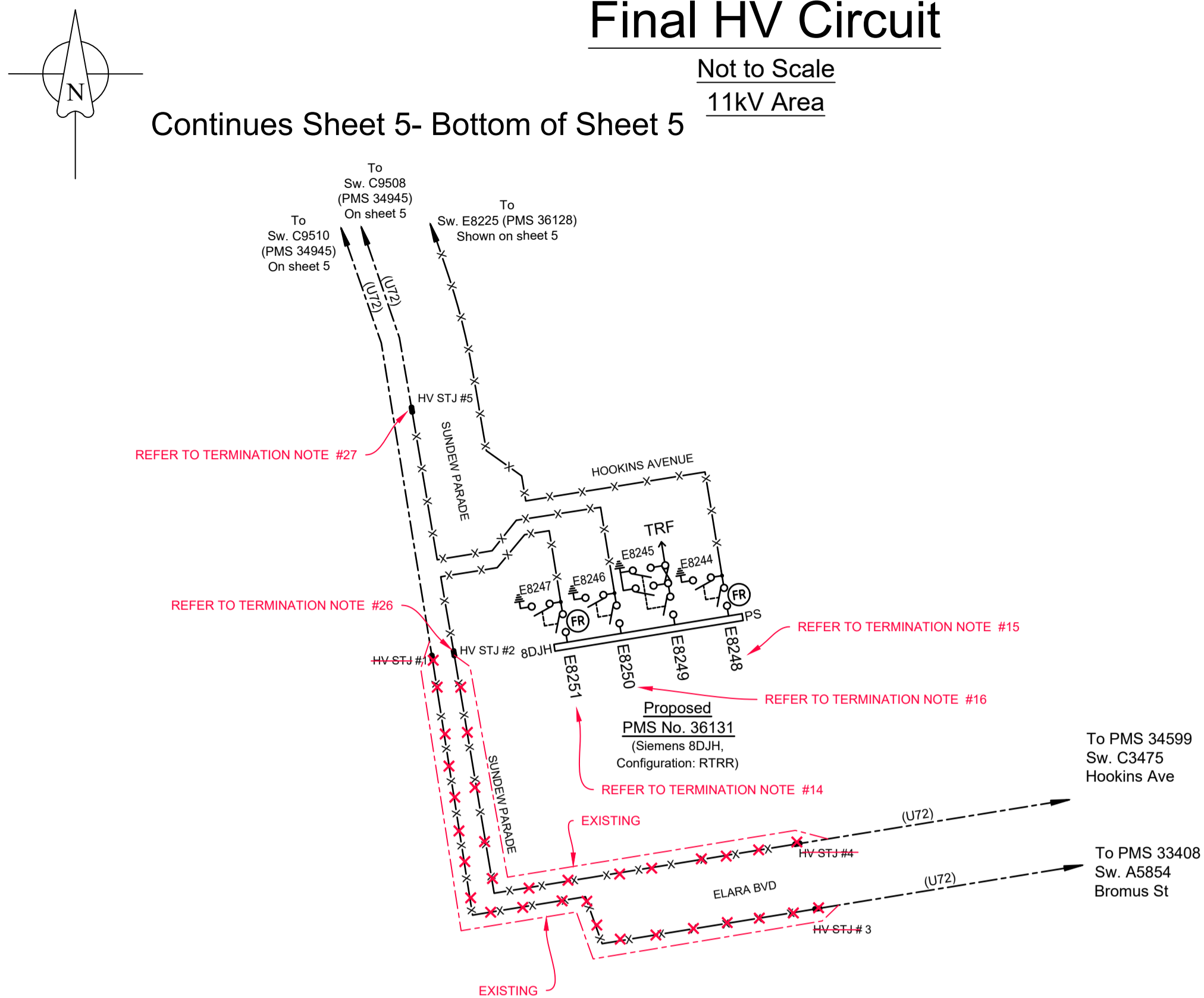
Sheet No 5 of 27 Sheets

#3437

Final HV Circuit

Not to Scale
11kV Area

Continues Sheet 5- Bottom of Sheet 5



LEGEND

- Existing Underground Cable/s
- x-x-x- Install 11kV 240mm² Al 3-Core XLPE/PVC/HDPE Cable (U72)
R.L. 2913m, C.L. 3431m.
- Straight Through Joint (STJ)

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY C.J. DOYLE CONTRACTING

WORKS COMPLETED BY TERRY GLASS

SIGNATURE TERRY GLASS DATE 28/03/18(LV)

INSPECTED BY DANIEL McMULLAN

SIGNATURE _____ DATE _____

ASSET RECORDING

I MICHAEL PULLING

OF C.J. DOYLE CONTRACTING

CONTACT No 8784-1900

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

SIGNATURE MICHAEL PULLING DATE 28/03/18(LV)

CERTIFIED BY ENDEAVOUR ENERGY

AMENDMENT: _____

DATE APPROVED: _____

EXAMINER'S SIGNATURE: _____

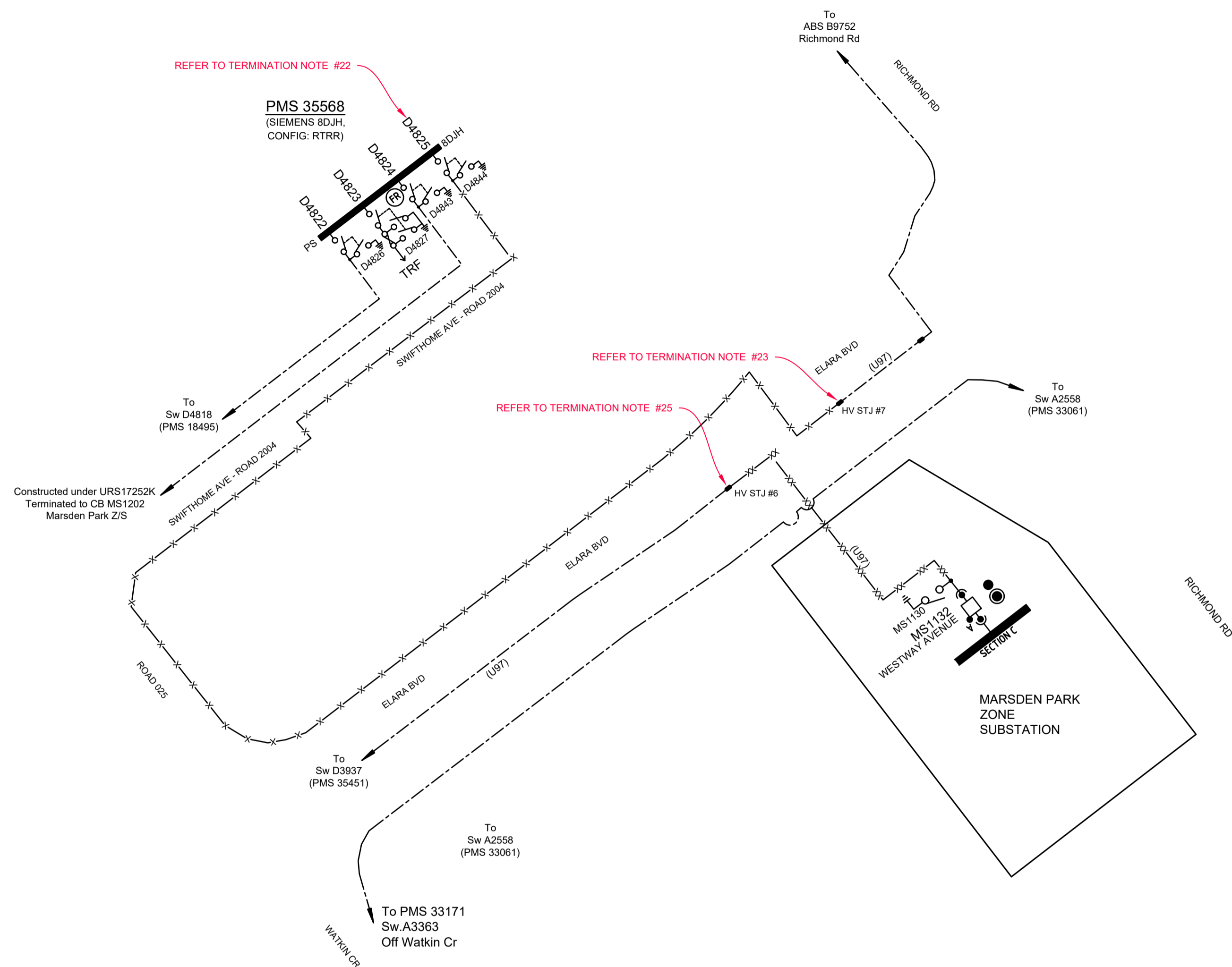
PRINT NAME: _____

THIS CERTIFICATION IS ISSUED SUBJECT TO ENDEAVOUR ENERGY'S STANDARD CERTIFICATION TERMS

ALL ROUTE LENGTHS ARE TO BE CONFIRMED ON SITE BY THE CONSTRUCTOR PRIOR TO ORDERING MATERIALS.

Final HV Circuit

Not to Scale
11kV Area



LEGEND

- Existing Underground Cable/s
- x-x-x- Install 11kV 240mm² Al 3-Core XLPE/PVC/HDPE Cable (U72)
R.L. 2913m, C.L. 3431m.
- x-x-x- Install 11kV 240mm² Cu 3-Core XLPE/PVC/HDPE Cable (U97)
R.L. 90m, C.L. 125m.
- Straight Through Joint (STJ)

This project is located within a 11kV area.

ROUTE LENGTHS
All route lengths are to be confirmed on site by the constructor prior to ordering materials.

AMENDMENTS	Original Issue	23.10.2017	NO STAGING PLAN 1 & 2	20.03.2018	REVISIONS
A	Original Issue	23.10.2017	NO STAGING PLAN 1 & 2	20.03.2018	REVISIONS
B	20.03.2018	20.03.2018	20.03.2018	20.03.2018	20.03.2018
C	20.03.2018	20.03.2018	20.03.2018	20.03.2018	20.03.2018
D	20.03.2018	20.03.2018	20.03.2018	20.03.2018	20.03.2018

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.

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POWER LINE DESIGN PTY LTD
PO BOX 338 Mittagong NSW 2575
Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ABN: 33197 591 846

Reference Drawings				Work Orders	
URS17427	500805A RETIC	NUL0572	500653A RETIC	General	
URS17428	500803A RETIC	URS16140	408751A RETIC	Overhead	
URS18956	504827A RETIC	URS14178	388896C RETIC	Underground	
URS17974	502648A RETIC	URS19233	505358D DTE	Substations	
URS18495	503195A RETIC				

CAP / SAMP No.	URS19233	ORIGINAL SCALE	NTS
AM Project No.	2017/00535/001	Drawn	Z MOORE
HV Switching		Date	20.03.2018
UBD/Penguin Ref No.	C11 126	Checked	Michael.J.B
GIS Map No.	U82674	Design	Michael.J.B
HV OP Diagram	MARSDEN PARK		
Local Government Area	BLACKTOWN CITY		

DO NOT SCALE
DIMENSIONS IN METRES

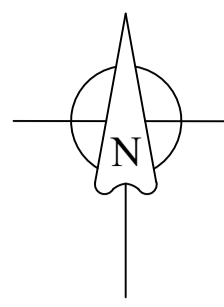
RICHMOND ROAD MARSDEN PARK URS19233 RESIDENTIAL SUBDIVISION LOT 3 DP 1225885 ELECTRICAL RETICULATION

Endeavour Energy

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Sheet No 6 of 27 Sheets

#3437



FINAL LV CIRCUIT

NOT TO SCALE

LEGEND

- Existing Overhead Mains
- Existing Underground Cables
- Install 240mm² Al 4-Core XLPE/PVC Cable (T84)
R.L. 5659m, C.L. 6780m.
- Install 50mm² Cu 4-Core XLPE/PVC Cable (T94)
R.L. 629m, C.L. 745m.
- Install 1x 16mm² Cu 2-Core XLPE/PVC Cable
In 50mm Conduit
R.L. 1549m, C.L. 1820m.
- LV Isolation Switch/Links (N/O)
- LV Isolation Switch/Links (N/C)
- Pillar Earth
- Underground / Overhead (UG/OH)
- Existing Street Light Lantern
- Install New Street Light Lantern - 17W StreetLED P4
- Install New Street Light Lantern - 82W LED Gerad V5
- Lantern Number - New Asset
Column Number - New Asset
(PE Controlled)
- Lantern Number - Existing Asset
Column Number - Existing Asset
(PE Controlled)

New Labels PMS 36132	
R -	Pillar S149787
S -	Pillar S149785
T -	TRANSFORMER
U -	Pillar S149779
V -	Pillar S149786

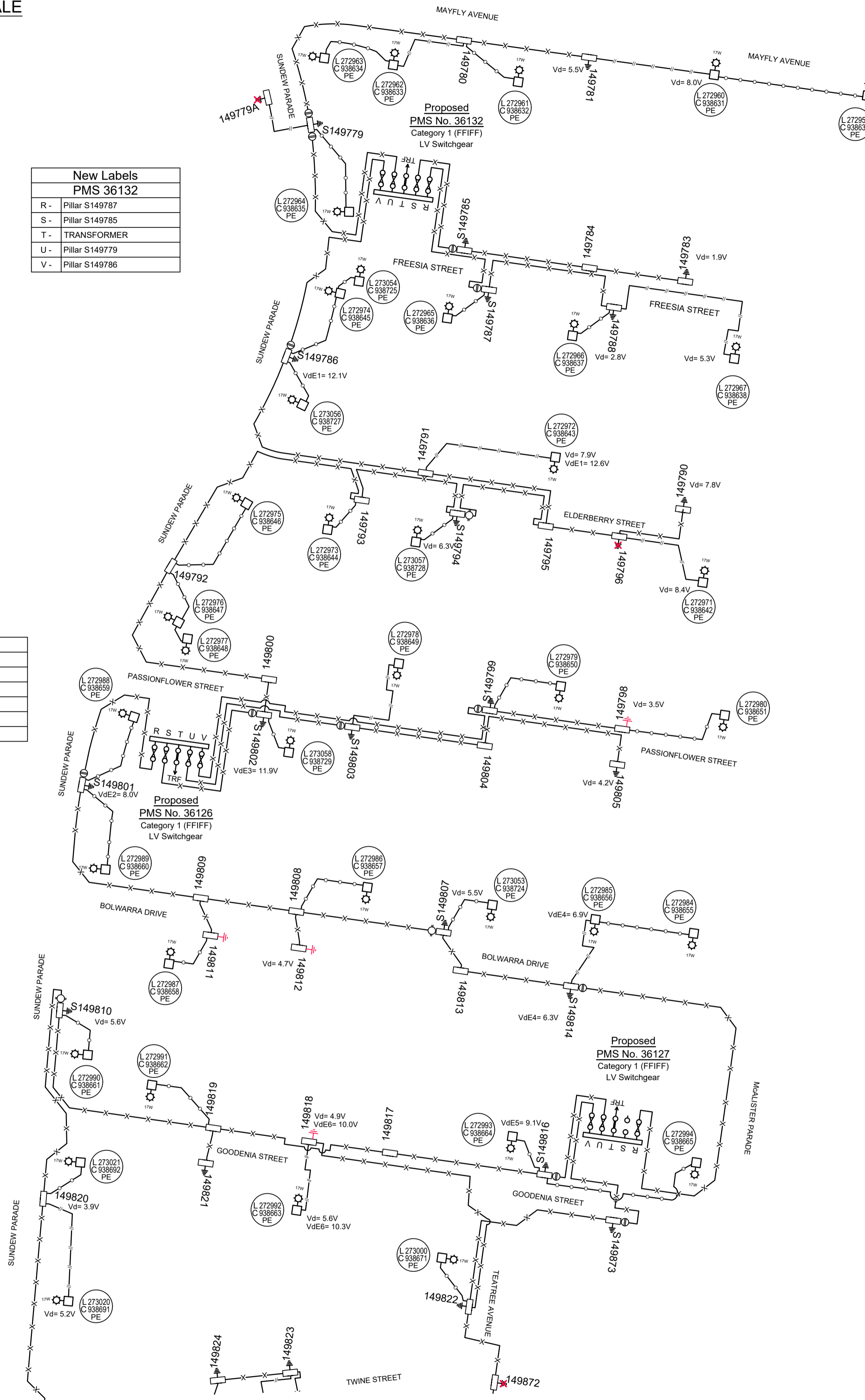
New Labels PMS 36126	
R -	Pillar S149801
S -	Pillar S149802
T -	TRANSFORMER
U -	Pillar S149803
V -	Pillar S149799

New Labels PMS 36127	
R -	Pillar S149814
S -	Spare N/O
T -	TRANSFORMER
U -	Pillar S149816
V -	Pillar S149873

Legend for LV Voltage Drop

Voltage Drop Calculations
Based on an ADM of 6.5kVA ADM
Vd = Voltage drop for normal supply @ 100% ADM
Emergency / backup voltage drop @ 60 of 6.5kVA% ADM (3.9kVA)

Source Substation - Fuse Strip	Backed Up Substation - Fuse Strip
VdE1	PMS 36132-V
VdE2	PMS 36126-R
VdE3	PMS 36126-S
VdE4	PMS 36127-R
VdE5	PMS 36127-U
VdE6	PMS 36127-V
VdE7	PMS 36129-R
VdE8	PMS 36129-S
VdE9	PMS 36129-U
VdE10	PMS 36129-V
VdE11	PMS 36130-R
VdE12	PMS 36130-S
VdE13	PMS 36130-U
VdE14	PMS 36128-U
VdE15	PMS 36128-V
VdE16	PMS 36131-S



Continues Sheet 8- Top of Sheet 8

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY C.J. DOYLE CONTRACTING

WORKS COMPLETED TERRY GLASS

SIGNATURE TERRY GLASS DATE 28/03/18(LV)

INSPECTED BY DANIEL McMULLAN

SIGNATURE _____ DATE _____

ASSET RECORDING

I MICHAEL PULLING

OF C.J. DOYLE CONTRACTING

CONTACT No 8784-1900

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

SIGNATURE MICHAEL PULLING DATE 28/03/18(LV)

CERTIFIED BY ENDEAVOUR ENERGY

Amendment: _____

Date Approved: _____

Examiner's Signature: _____

Print Name: _____

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

ALL ROUTE LENGTHS ARE TO BE CONFIRMED ON SITE BY THE CONSTRUCTOR PRIOR TO ORDERING MATERIALS.

AMENDMENTS	Original Issue
A	23.10.2017 STAGING PLAN 1 & 2 DRAWN: Z. MOORE
B	23.10.2017 STAGING PLAN 1 & 2 DRAWN: Z. MOORE
C	20.03.2018 REMOVE STAGE 2 FROM DESIGN Z. MOORE
D	20.03.2018 Existing site on Elma Blvd Drawn: J.A. Corrected original CHKC: M.J.B

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.

powerline design

POWER LINE DESIGN PTY LTD
PO BOX 338 Mittagong NSW 2575
Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ABN: 33197 591 846

Reference Drawings	Work Orders	CAP / SAMP No.	URS19233
URS17427 500805A RETIC	NUL0572	500653A RETIC	General
URS17428 500803A RETIC	URS16140	408751A RETIC	Overhead
URS18956 504827A RETIC	URS14178	388896C RETIC	Underground
URS17974 502648A RETIC	URS19233	505358D DTE	Substations
URS18495 503195A RETIC			

AM Project No.	2017/00535/001
HV Switching	
UBD/Penguin Ref No.	C11 126
GIS Map No.	U82674
HV OP Diagram	MARSDEN PARK
Local Government Area	BLACKTOWN CITY

DO NOT SCALE

DIMENSIONS IN METRES

Drawn: **Z MOORE**

Date: **20.03.2018**

Checked: **Michael.J.B**

Design: **Michael.J.B**

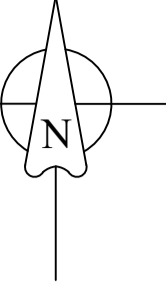
**RICHMOND ROAD
MARSDEN PARK
URS19233
RESIDENTIAL SUBDIVISION
LOT 3 DP 1225885
ELECTRICAL RETICULATION**

Endeavour Energy

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Sheet No 7 of 27 Sheets

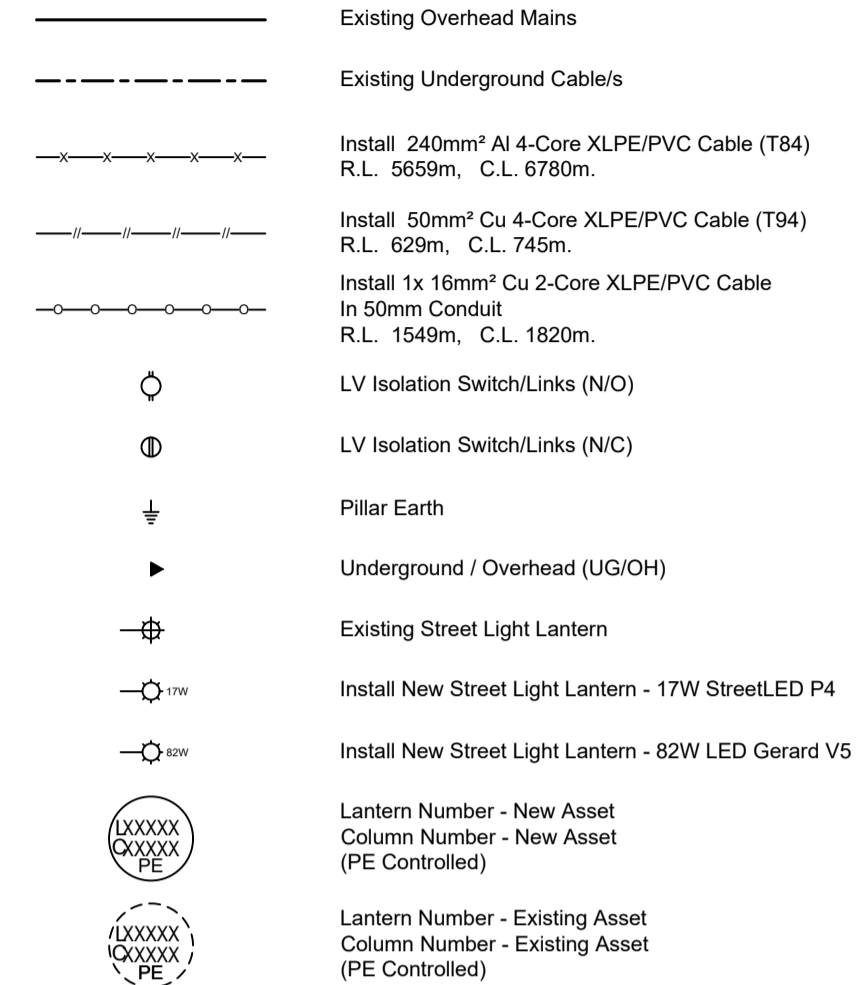
#3437



FINAL LV CIRCUIT

NOT TO SCALE

LEGEND



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.

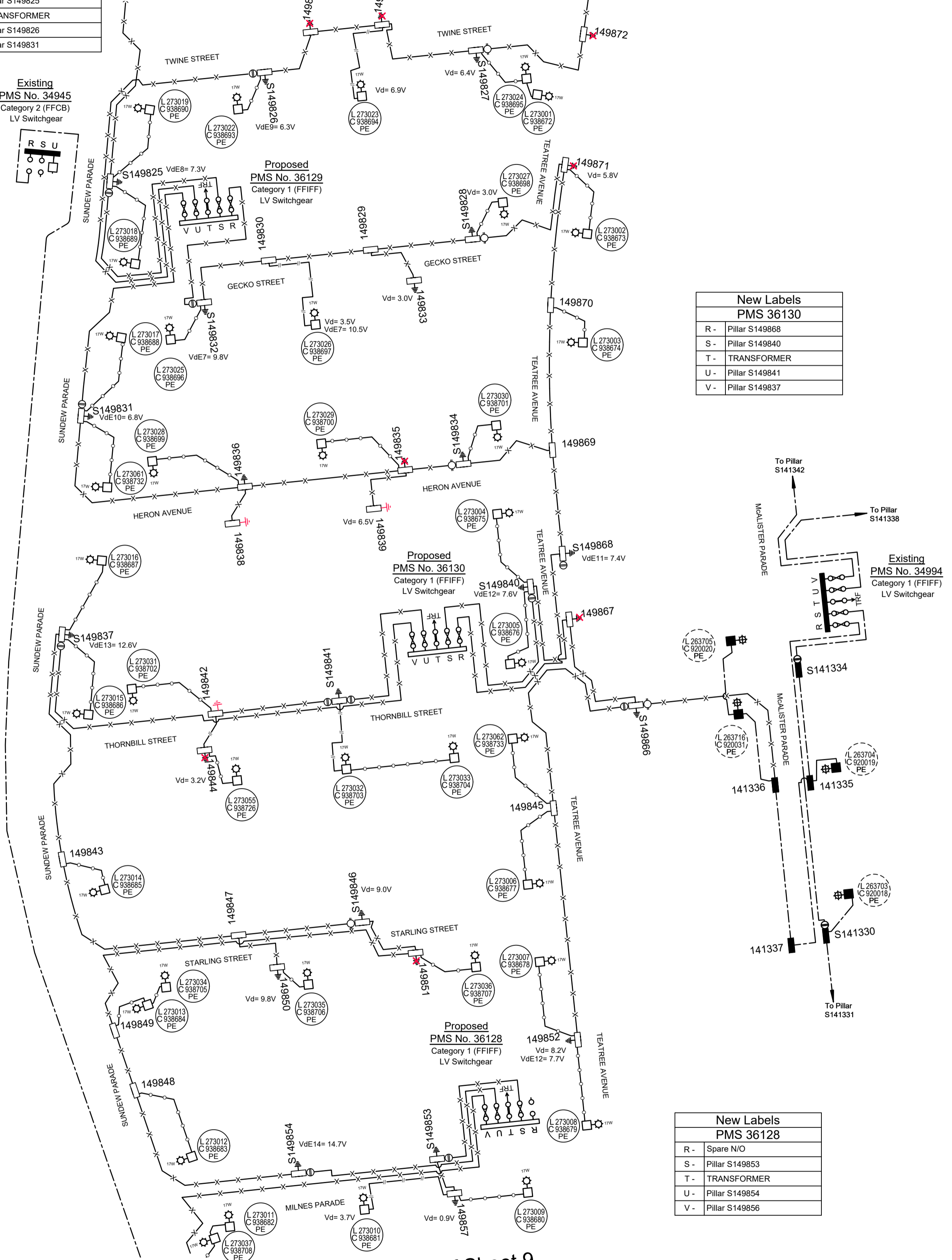
SERVICE DUCTS
The end of service ducts must not be placed under proposed driveways. (Refer to Developers Representative for details for details)

ALL ROUTE LENGTHS ARE TO BE CONFIRMED ON SITE BY THE CONSTRUCTOR PRIOR TO ORDERING MATERIALS.

**New Labels
PMS 36129**

R -	Pillar S149832
S -	Pillar S149825
T -	TRANSFORMER
U -	Pillar S149826
V -	Pillar S149831

Continues Sheet 7 - Bottom of Sheet 7



**New Labels
PMS 36130**

R -	Pillar S149868
S -	Pillar S149840
T -	TRANSFORMER
U -	Pillar S149841
V -	Pillar S149837

**New Labels
PMS 36128**

R -	Spare N/O
S -	Pillar S149853
T -	TRANSFORMER
U -	Pillar S149854
V -	Pillar S149856

Continues Sheet 9 - Top of Sheet 9

Lighting Equipment & Billing Schedule

Lighting Design Refer	State	Luminaire Number	Support Number	Luminaire				Column / Pole				Outreach / Bracket				Upcast Angle	Category	Column Colour	Charge To
				Description	Part No.	Rate Code	QTY	Description	Part No.	Footings Bolt / Foundation	Rate Code	QTY	Description	Part No.	Rate Code				
1	New	272959	938630	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
2	New	272960	938631	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
3	New	272961	938632	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
4	New	272962	938633	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
5	New	272963	938634	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
6	New	272964	938635	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
7	New	273054	938725	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
8	New	272965	938636	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
9	New	272966	938637	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
10	New	272967	938638	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
11	New	272974	938645	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
12	New	273056	938727	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
13	New	272975	938646	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
14	New	272973	938644	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
15	New	273057	938728	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
16	New	272972	938643	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
17	New	272971	938642	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
18	New	272976	938647	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
19	New	272977	938648	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
20	New	273058	938729	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
21	New	272978	938649	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
22	New	272979	938650	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
23	New	272980	938651	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
24	New	272988	938659	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
25	New	272989	938660	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
26	New	272987	938658	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
27	New	272986	938657	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
28	New	273053	938724	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council
29	New	272985	938656	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 /Type 2 (<9.0m)	995	1	3.0m Eden Outreach	IE3.OSOR/EDN	991	5'	P4	Powdercoated Black	Blacktown City Council

AMENDMENTS	A	Original Issue	<p>POWER LINE DESIGN PTY LTD PO BOX 338 Mittagong NSW 2575 Ph (02) 4872 1920 Fax (02) 4872 1240 Accredited Designer Number 2486 / ADRN: 33197 591 846</p>	<table border="1"> <tr><td>URS17427</td><td>500805A RETIC</td><td>NUL0572</td><td>500653A RETIC</td></tr> <tr><td>URS17428</td><td>500803A RETIC</td><td>URS16140</td><td>408751A RETIC</td></tr> <tr><td>URS18956</td><td>504827A RETIC</td><td>URS14178</td><td>388896C RETIC</td></tr> <tr><td>URS17974</td><td>502648A RETIC</td><td>URS19233</td><td>505358D DTE</td></tr> <tr><td>URS18495</td><td>503195A RETIC</td><td></td><td></td></tr> </table>	URS17427	500805A RETIC	NUL0572	500653A RETIC	URS17428	500803A RETIC	URS16140	408751A RETIC	URS18956	504827A RETIC	URS14178	388896C RETIC	URS17974	502648A RETIC	URS19233	505358D DTE	URS18495	503195A RETIC			<table border="1"> <tr><td colspan="2">Work Orders</td></tr> <tr><td>General</td><td>Overhead</td></tr> <tr><td>Underground</td><td>Substations</td></tr> </table>	Work Orders		General	Overhead	Underground	Substations	<table border="1"> <tr><td>CAP / SAMP No.</td><td>URS19233</td></tr> <tr><td>AM Project No.</td><td>2017/00535001</td></tr> <tr><td>HV Switching</td><td></td></tr> <tr><td>UBD/Penguin Ref No.</td><td>C11 126</td></tr> <tr><td>GIS Map No.</td><td>U82674</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>	CAP / SAMP No.	URS19233	AM Project No.	2017/00535001	HV Switching		UBD/Penguin Ref No.	C11 126	GIS Map No.	U82674	HV OP Diagram	MARSDEN PARK	Local Government Area	BLACKTOWN CITY	<table border="1"> <tr><td>ORIGINAL SCALE</td><td>1:1000</td></tr> <tr><td>Drawn</td><td>Z MOORE</td></tr> <tr><td>Date</td><td>20.03.2018</td></tr> <tr><td>Checked</td><td>Michael.J.B</td></tr> </table>	ORIGINAL SCALE	1:1000	Drawn	Z MOORE	Date	20.03.2018	Checked	Michael.J.B	<p>DO NOT SCALE DIMENSIONS IN METRES</p> <p>Design: Michael.J.B</p>	<p>RICHMOND ROAD MARSDEN PARK URS19233 RESIDENTIAL SUBDIVISION LOT 3 DP 1225885 ELECTRICAL RETICULATION</p>	<p>A1 505359 D</p> <p>Sheet No 8 of 27 Sheets</p>
	URS17427	500805A RETIC			NUL0572	500653A RETIC																																																				
	URS17428	500803A RETIC			URS16140	408751A RETIC																																																				
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Date	20.03.2018																																																									
Checked	Michael.J.B																																																									
B	20.10.2017 STAGING PLAN 1 & 2 DRAWN: Z MOORE SAID: M.J.B																																																									
C	REMOVAL STAGE 2 FROM 20.03.2018 DESIGN: Z MOORE CHKD: M.J.B																																																									

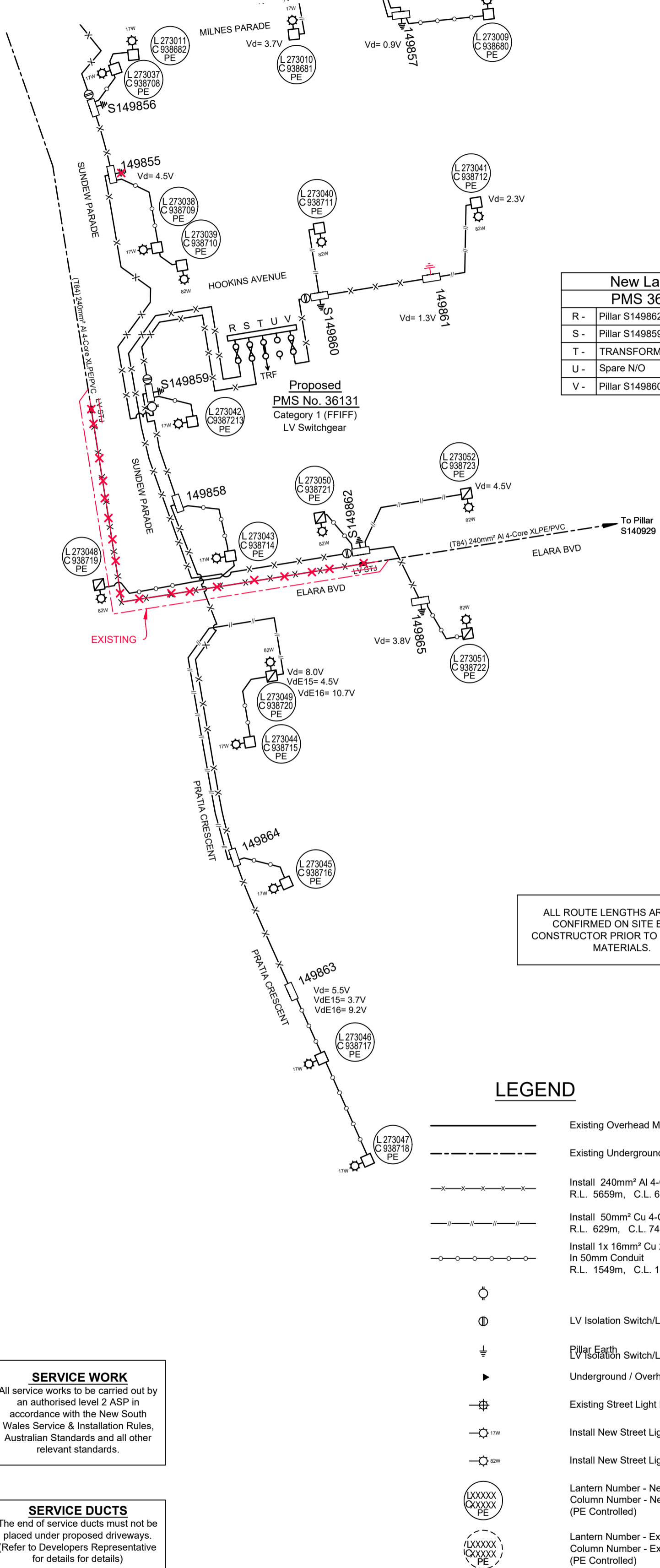
THE PREPARATION OF THIS DESIGN HAS BEEN UNDERTAKEN GIVING DUE CONSIDERATION TO THE EXISTING SERVICES. THE PROJECT CONSTRUCTOR IS WHOLLY RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF EXISTING SERVICES AND PERMANENT SURVEY MARKS PRIOR TO COMMENCING CONSTRUCTION. NO RESPONSIBILITY OR LIABILITY WILL BE ACCEPTED BY THE DESIGNER OF THIS PROJECT FOR DAMAGE TO EXISTING SERVICES AS A RESULT OF THIS DESIGN.

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

FINAL LV CIRCUIT

NOT TO SCALE

Continues Sheet 8- Bottom of Sheet 8



R -	Pillar S149862
S -	Pillar S149859
T -	TRANSFORMER
U -	Spare N/O
V -	Pillar S149860

ALL ROUTE LENGTHS ARE TO BE CONFIRMED ON SITE BY THE CONSTRUCTOR PRIOR TO ORDERING MATERIALS.

LEGEND

- Existing Overhead Mains
- Existing Underground Cables
- Install 240mm² Al 4-Core XLPE/PVC Cable (T84) R.L. 569m, C.L. 678m.
- Install 50mm² Cu 4-Core XLPE/PVC Cable (T94) R.L. 62m, C.L. 745m.
- Install 1x 16mm² Cu 2-Core XLPE/PVC Cable in 50mm Conduit R.L. 154m, C.L. 182m.
- LV Isolation Switch/Links (N/C)
- Pillar Earth LV Isolation Switch/Links (N/O)
- Underground / Overhead (UG/OH)
- Existing Street Light Lantern
- Install New Street Light Lantern - 17W StreetLED P4
- Install New Street Light Lantern - 82W LED Gerard V5
- Lantern Number - New Asset
- Lantern Number - Existing Asset

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.

SERVICE DUCTS
The end of service ducts must not be placed under proposed driveways (Refer to Developers Representative for details for details).

Lighting Equipment & Billing Schedule

Lighting Design Ref	State	Luminaire Number	Support Number	Luminaire				Column / Pole				Outreach / Bracket				Upcast Angle	Category	Column Colour	Charge To	
				Description	Part No.	Rate Code	QTY	Description	Part No.	Footing Bolt / Foundation	Rate Code	QTY	Description	Part No.	Rate Code					QTY
30	New	272984	938655	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 / Type 2	(+9.0m)	995	1	3.0m Eden Outreach	IE3.0SOR/EDN	991	5"	P4	Powdercoated Black	Blacktown City Council
91	New	273001	938672	17W StreetLED (Gerard)	JLB99G05L17	889	1	5.5m Enlarged Base Column	IE/5.5.EB	Type 2 / Type 2	(+9.0m)	995	1	3.0m Eden Outreach	IE3.0SOR/EDN	991	5"	P4	Powdercoated Black	Blacktown City Council

WORK COMPLETED / FIELD BOOK
 CONSTRUCTED BY C.J. DOYLE CONTRACTING
 WORKS COMPLETEDTERRY GLASS.....
 SIGNATURE TERRY GLASS DATE 28/03/18(LV)
 INSPECTED BY DANIEL McMULLAN
 SIGNATURE DATE
ASSET RECORDING
 I, MICHAEL PULLING
 OF C.J. DOYLE CONTRACTING
 CONTACT No. 8784-1900
 HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 004.
 SIGNATURE MICHAEL PULLING DATE 28/03/18(LV)

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	23.10.2017	DATE OF STAGING PLAN I & 2	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN
A	Original Issue	23.10.2017	DATE OF STAGING PLAN I & 2	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN
B	DATE OF STAGING PLAN I & 2	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN
C	DATE OF DESIGN	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN
D	DATE OF DESIGN	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN	20.03.2018	DATE OF DESIGN

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.

powerlinedesign
 POWER LINE DESIGN PTY LTD
 PO BOX 338 Mittagong NSW 2575
 Ph (02) 4872 1920 Fax (02) 4872 1240
 Accredited Designer Number 2486 / ABN: 33197 591 846

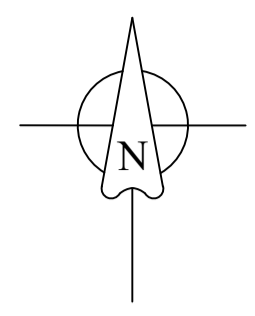
Reference Drawings	Work Orders
URS17427 500805A RETIC	General
URS17428 500803A RETIC	Overhead
URS18956 504827A RETIC	Underground
URS17974 502648A RETIC	Substations
URS18495 503195A RETIC	
NUL0572	
500653A RETIC	
URS16140	
408751A RETIC	
URS14178	
388896C RETIC	
URS19233	
505358D DTE	

CAP / SAMP No.	URS19233
AM Project No.	2017/00535/001
HV Switching	
UBD/Penguin Ref No.	C11 126
GIS Map No.	U82674
HV OP Diagram	MARSDEN PARK
Local Government Area	BLACKTOWN CITY

ORIGINAL SCALE	1:1000
Drawn	Z MOORE
Date	20.03.2018
Checked	Michael J.B
Design	Michael J.B

RICHMOND ROAD
MARSDEN PARK
 URS19233
 RESIDENTIAL SUBDIVISION
 LOT 3 DP 1225885
 ELECTRICAL RETICULATION

Endeavour Energy
 A1 505359 D
 Sheet No 9 of 27 Sheets #3437



Earthing Design PMS No 36132

Common Earth Configuration
Not to Scale

Earthing design is based on the requirements of Endeavour Energy's EDI100 & EDI001. Any modifications to this earthing design must be approved in writing by the designer. (Refer to Endeavour Energy's Standards EDI001, EDI100, and drawing 348261A.)

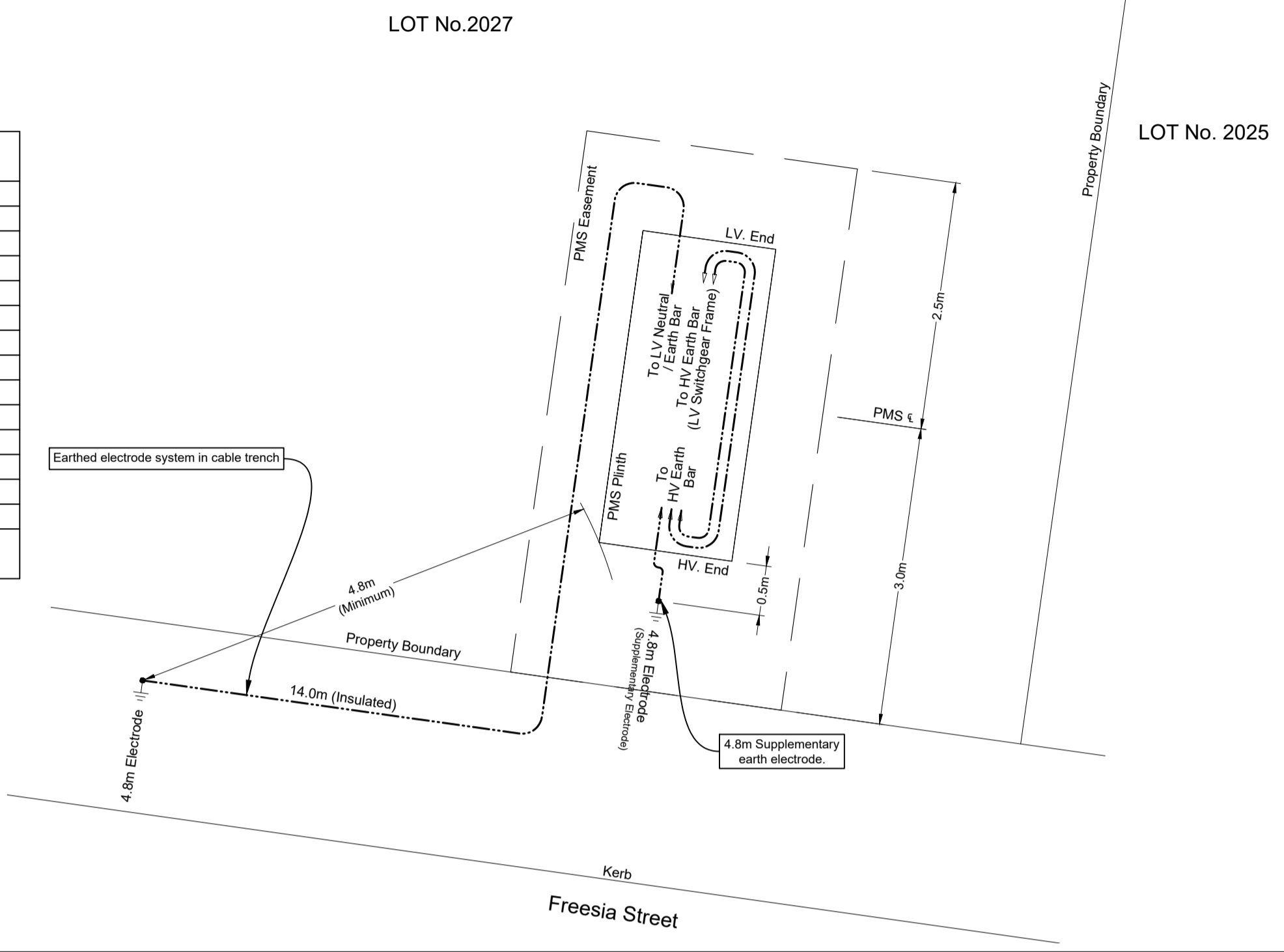
COMMON EARTHED PMS
2x Insulated copper links to be installed between the HV BAR mounted on the LV frame & the LV Neutral / Earth bar.

EARTHING WARNING LABELS
Earth warning labels and tags are to be installed in accordance with clause 5.3.6.4 & Drawing 348245A (EDI 100).

EARTHING DATA TO BE CAPTURE TO GIS	
Substation No.	36132
Installation Type	Underground
Earthing System Type	Common
Soil Resistivity Average in Ohms (p1, Depth)	23.37 Ω.m @ 2.49 m
Soil Resistivity Average in Ohms (p2)	9.7 Ω.m
Combined Earth Resistance in Ohms (Common Earthing)	3.16 Ω
Size / No. of Combined Electrodes (Common Earthing)	4.8m Electrodes x 1
Size / No. of the Supplementary Electrode	4.8m Electrode x 1
Bonding Conductor Size in mm ² (Insulated / Bare)	70mm ² Cu
Connection Type (CADWeld OR Crimp)	Crimp
Ambient Temperature / Weather Condition	24 °C
Date of Soil Test	27/04/2017
Length of MEN Connection Cable (in metres)	N/A
Total Length of Earth System Cable (Incl. Insulated & Bare in Metres)	25 m
Measured Earth Resistance in Ohms (Measured by L1 ASP on Commissioning)	2.40 Ω

LEGEND

- 19/2.14 (70mm²) PVC/PVC Annealed Cu Cable
- 19/2.14 (70mm²) Bare Annealed Cu Cable
- Earth Electrode Location & Length (Length of bare electrode shown in metres)



CERTIFIED BY ENDEAVOUR ENERGY

Amendment: _____
 Date Approved: _____
 Examiner's Signature: _____
 Print Name: _____

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

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY C.J. DOYLE CONTRACTING

WORKS COMPLETED TERRY GLASS

SIGNATURE TERRY GLASS DATE 28/03/18(LV)

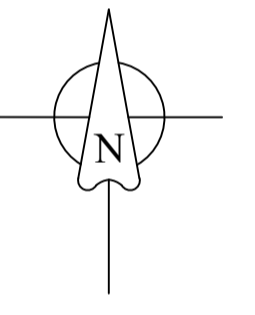
INSPECTED BY DANIEL McMULLAN

SIGNATURE _____ DATE _____

ASSET RECORDING

MICHAEL PULLING
 OF C.J. DOYLE CONTRACTING
 CONTACT No 8784-1900

HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAO 0004. 28/03/18(LV)
 SIGNATURE MICHAEL PULLING DATE _____



Earthing Design PMS No 36126

Common Earth Configuration
Not to Scale

Earthing design is based on the requirements of Endeavour Energy's EDI100 & EDI001. Any modifications to this earthing design must be approved in writing by the designer. (Refer to Endeavour Energy's Standards EDI001, EDI100, and drawing 348261A.)

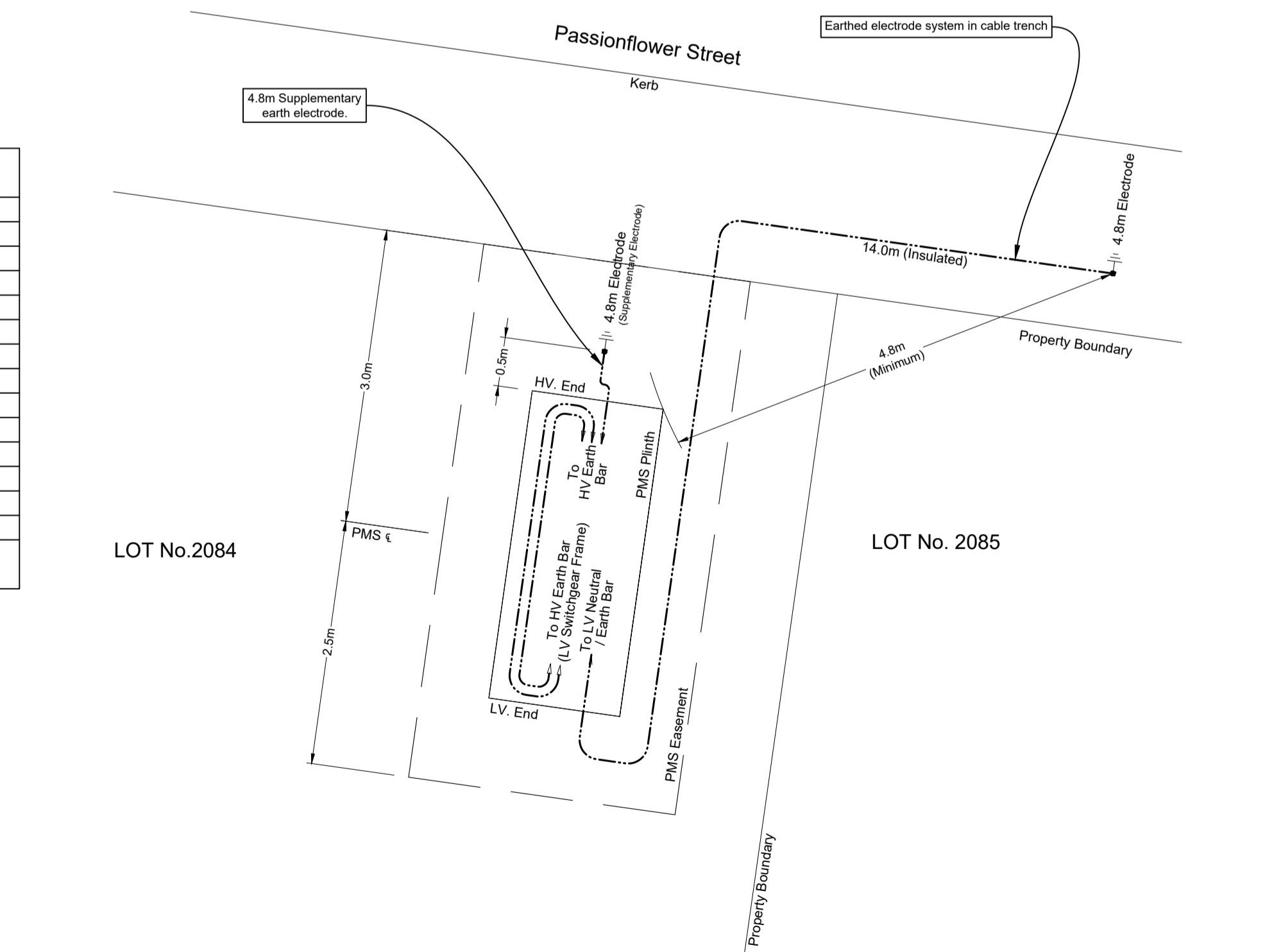
COMMON EARTHED PMS
2x Insulated copper links to be installed between the HV BAR mounted on the LV frame & the LV Neutral / Earth bar.

EARTHING WARNING LABELS
Earth warning labels and tags are to be installed in accordance with clause 5.3.6.4 & Drawing 348245A (EDI 100).

EARTHING DATA TO BE CAPTURE TO GIS	
Substation No.	36126
Installation Type	Underground
Earthing System Type	Common
Soil Resistivity Average in Ohms (p1, Depth)	23.37 Ω.m @ 2.49 m
Soil Resistivity Average in Ohms (p2)	9.7 Ω.m
Combined Earth Resistance in Ohms (Common Earthing)	3.16 Ω
Size / No. of Combined Electrodes (Common Earthing)	4.8m Electrodes x 1
Size / No. of the Supplementary Electrode	4.8m Electrode x 1
Bonding Conductor Size in mm ² (Insulated / Bare)	70mm ² Cu
Connection Type (CADWeld OR Crimp)	Crimp
Ambient Temperature / Weather Condition	24 °C
Date of Soil Test	27/04/2017
Length of MEN Connection Cable (in metres)	N/A
Total Length of Earth System Cable (Incl. Insulated & Bare in Metres)	25 m
Measured Earth Resistance in Ohms (Measured by L1 ASP on Commissioning)	1.70 Ω

LEGEND

- 19/2.14 (70mm²) PVC/PVC Annealed Cu Cable
- 19/2.14 (70mm²) Bare Annealed Cu Cable
- Earth Electrode Location & Length (Length of bare electrode shown in metres)



Earthing Design PMS No 36127

Common Earth Configuration
Not to Scale

Earthing design is based on the requirements of Endeavour Energy's EDI100 & EDI001. Any modifications to this earthing design must be approved in writing by the designer. (Refer to Endeavour Energy's Standards EDI001, EDI100, and drawing 348261A.)

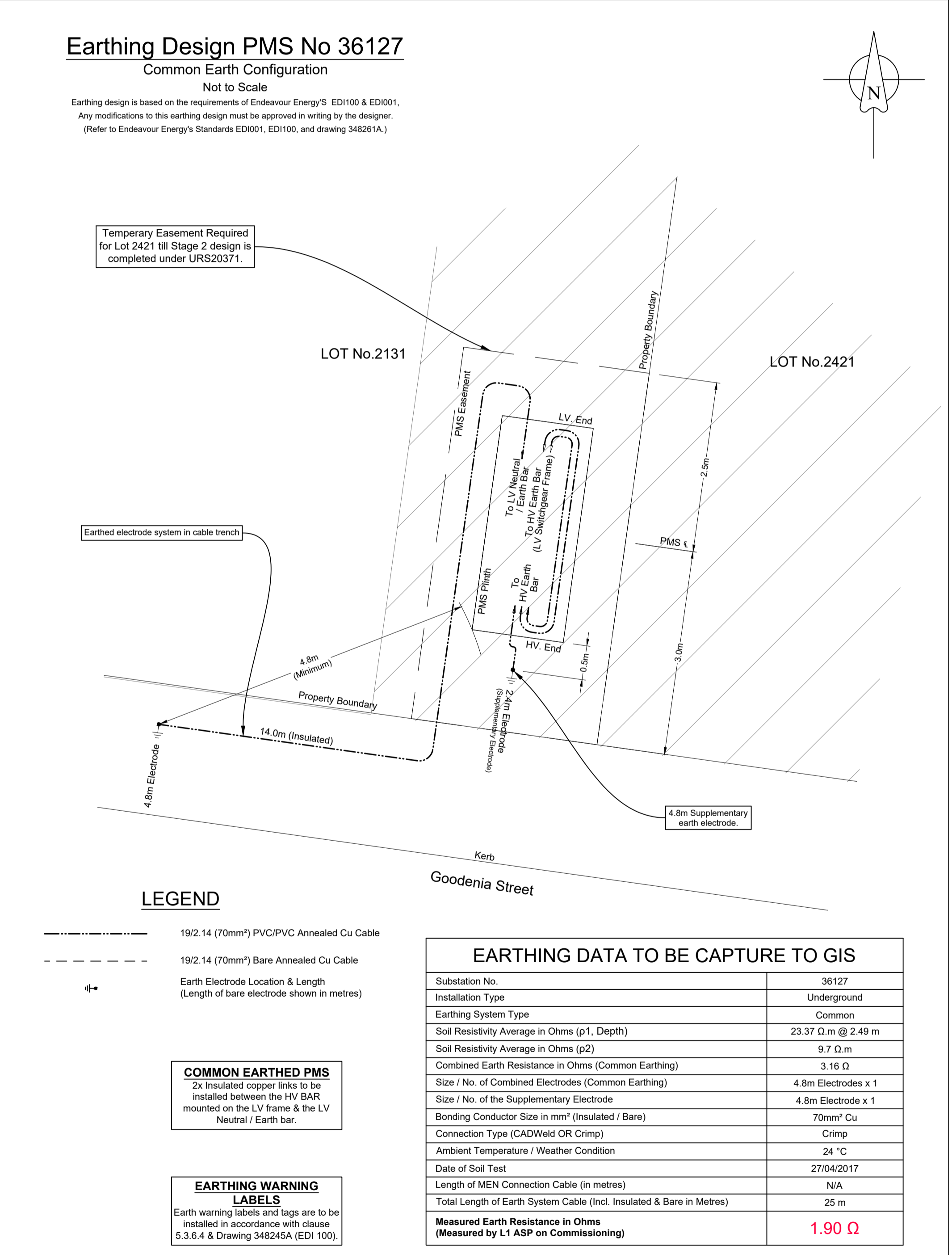
Temporary Easement Required for Lot 2421 till Stage 2 design is completed under URS20371.

LEGEND

- 19/2.14 (70mm²) PVC/PVC Annealed Cu Cable
- 19/2.14 (70mm²) Bare Annealed Cu Cable
- Earth Electrode Location & Length (Length of bare electrode shown in metres)

COMMON EARTHED PMS
2x Insulated copper links to be installed between the HV BAR mounted on the LV frame & the LV Neutral / Earth bar.

EARTHING WARNING LABELS
Earth warning labels and tags are to be installed in accordance with clause 5.3.6.4 & Drawing 348245A (EDI 100).



EARTHING DATA TO BE CAPTURE TO GIS	
Substation No.	36127
Installation Type	Underground
Earthing System Type	Common
Soil Resistivity Average in Ohms (p1, Depth)	23.37 Ω.m @ 2.49 m
Soil Resistivity Average in Ohms (p2)	9.7 Ω.m
Combined Earth Resistance in Ohms (Common Earthing)	3.16 Ω
Size / No. of Combined Electrodes (Common Earthing)	4.8m Electrodes x 1
Size / No. of the Supplementary Electrode	4.8m Electrode x 1
Bonding Conductor Size in mm ² (Insulated / Bare)	70mm ² Cu
Connection Type (CADWeld OR Crimp)	Crimp
Ambient Temperature / Weather Condition	24 °C
Date of Soil Test	27/04/2017
Length of MEN Connection Cable (in metres)	N/A
Total Length of Earth System Cable (Incl. Insulated & Bare in Metres)	25 m
Measured Earth Resistance in Ohms (Measured by L1 ASP on Commissioning)	1.90 Ω

AMENDMENTS	Original Issue
A	23.10.2017 - STAGING PLAN 1 & 2 DRAWN: Z MOORE
B	26.03.2018 - CHKD: M.J.B
C	REMOVED STAGE 2 FROM DESIGN: Z MOORE
D	20.03.2018 - Existing site on Elina Blvd (Correct Origin) Drawn: J.A. CHKC: M.J.B

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 PTY LTD
PO BOX 338 Mittagong NSW 2575
Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ABN: 33197 591 846

Reference Drawings	Work Orders
URS17427 500805A RETIC	General
URS17428 500803A RETIC	Overhead
URS18956 504827A RETIC	Underground
URS17974 502648A RETIC	Substations
URS18495 503195A RETIC	

CAP / SAMP No.	URS19233
AM Project No.	2017/00535/001
HV Switching	
UBD/Penguin Ref No.	C11 126
GIS Map No.	U82674
HV OP Diagram	MARSDEN PARK
Local Government Area	BLACKTOWN CITY

ORIGINAL SCALE	DO NOT SCALE
NTS	DIMENSIONS IN METRES
Drawn: Z MOORE	Design: Michael.J.B
Date: 20.03.2018	
Checked: Michael.J.B	

RICHMOND ROAD
MARSDEN PARK
URS19233
RESIDENTIAL SUBDIVISION
LOT 3 DP 1225885
ELECTRICAL RETICULATION

A1 505359 D

Sheet No 10 of 27 Sheets

Earthing Design PMS No 36129

Common Earth Configuration
Not to Scale

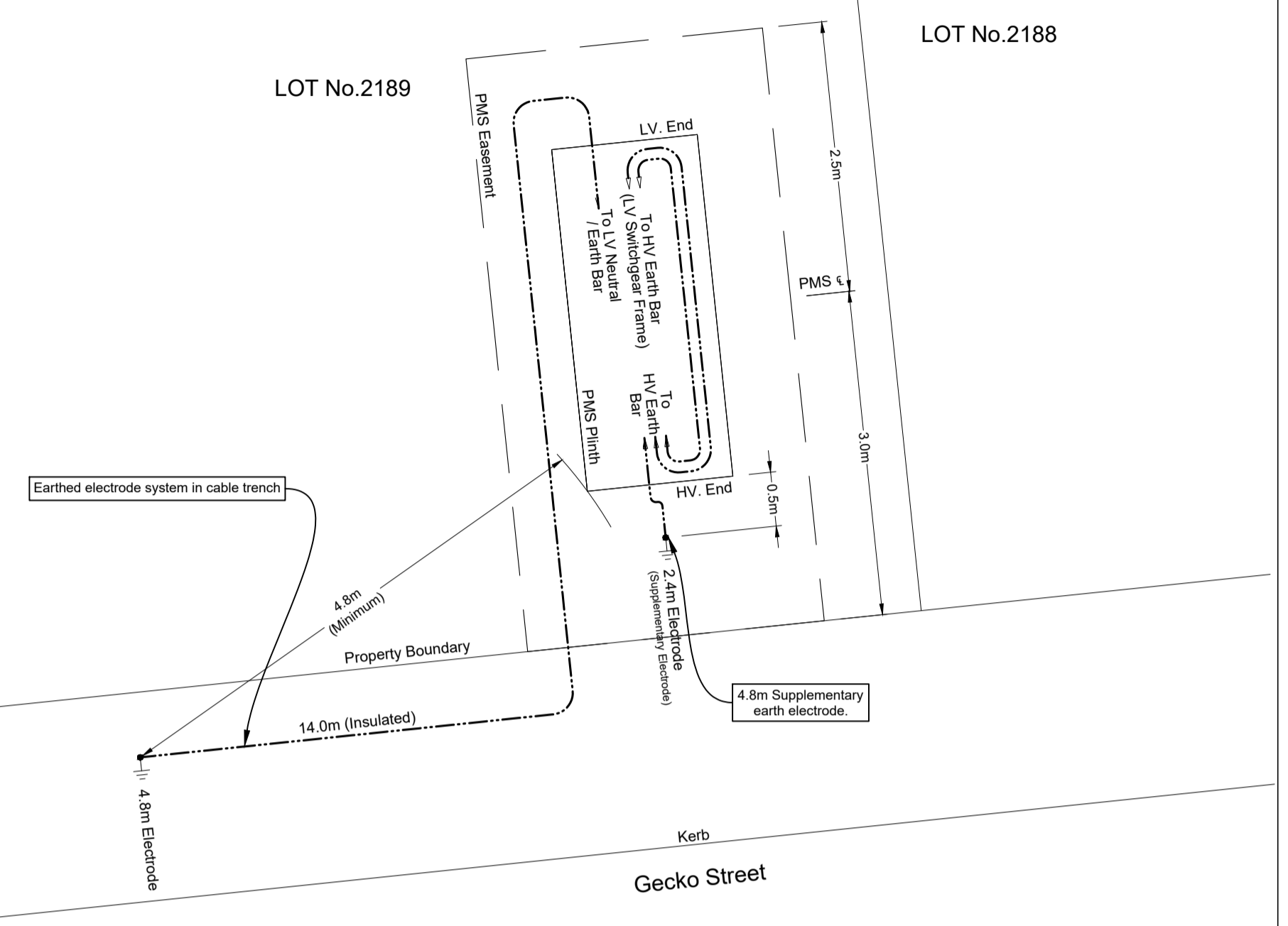
Earthing design is based on the requirements of Endeavour Energy's EDI100 & EDI001. Any modifications to this earthing design must be approved in writing by the designer. (Refer to Endeavour Energy's Standards EDI001, EDI100, and drawing 348261A.)

COMMON EARTHED PMS
2x Insulated copper links to be installed between the HV BAR mounted on the LV frame & the LV Neutral / Earth bar.

EARTHING WARNING LABELS
Earth warning labels and tags are to be installed in accordance with clause 5.3.6.4 & Drawing 348245A (EDI 100).

EARTHING DATA TO BE CAPTURE TO GIS

Substation No.	36129
Installation Type	Underground
Earthing System Type	Common
Soil Resistivity Average in Ohms (p1, Depth)	23.37 Ω.m @ 2.49 m
Soil Resistivity Average in Ohms (p2)	9.7 Ω.m
Combined Earth Resistance in Ohms (Common Earthing)	3.16 Ω
Size / No. of Combined Electrodes (Common Earthing)	4.8m Electrodes x 1
Size / No. of the Supplementary Electrode	4.8m Electrode x 1
Bonding Conductor Size in mm² (Insulated / Bare)	70mm² Cu
Connection Type (CADWeld OR Crimp)	Crimp
Ambient Temperature / Weather Condition	24 °C
Date of Soil Test	27/04/2017
Length of MEN Connection Cable (in metres)	N/A
Total Length of Earth System Cable (Incl. Insulated & Bare in Metres)	25 m
Measured Earth Resistance in Ohms (Measured by L1 ASP on Commissioning)	1.40 Ω



LEGEND

- 19/2.14 (70mm²) PVC/PVC Annealed Cu Cable
- 19/2.14 (70mm²) Bare Annealed Cu Cable
- Earth Electrode Location & Length (Length of bare electrode shown in metres)

CERTIFIED BY ENDEAVOUR ENERGY

Amendment: _____
Date Approved: _____
Examiner's Signature: _____
Print Name: _____

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

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY C.J. DOYLE CONTRACTING

WORKS COMPLETED TERRY GLASS

SIGNATURE TERRY GLASS DATE 28/03/18(LV)

INSPECTED BY DANIEL McMULLAN

SIGNATURE _____ DATE _____

ASSET RECORDING

J. MICHAEL PULLING

OF C.J. DOYLE CONTRACTING

CONTACT No 8784-1900

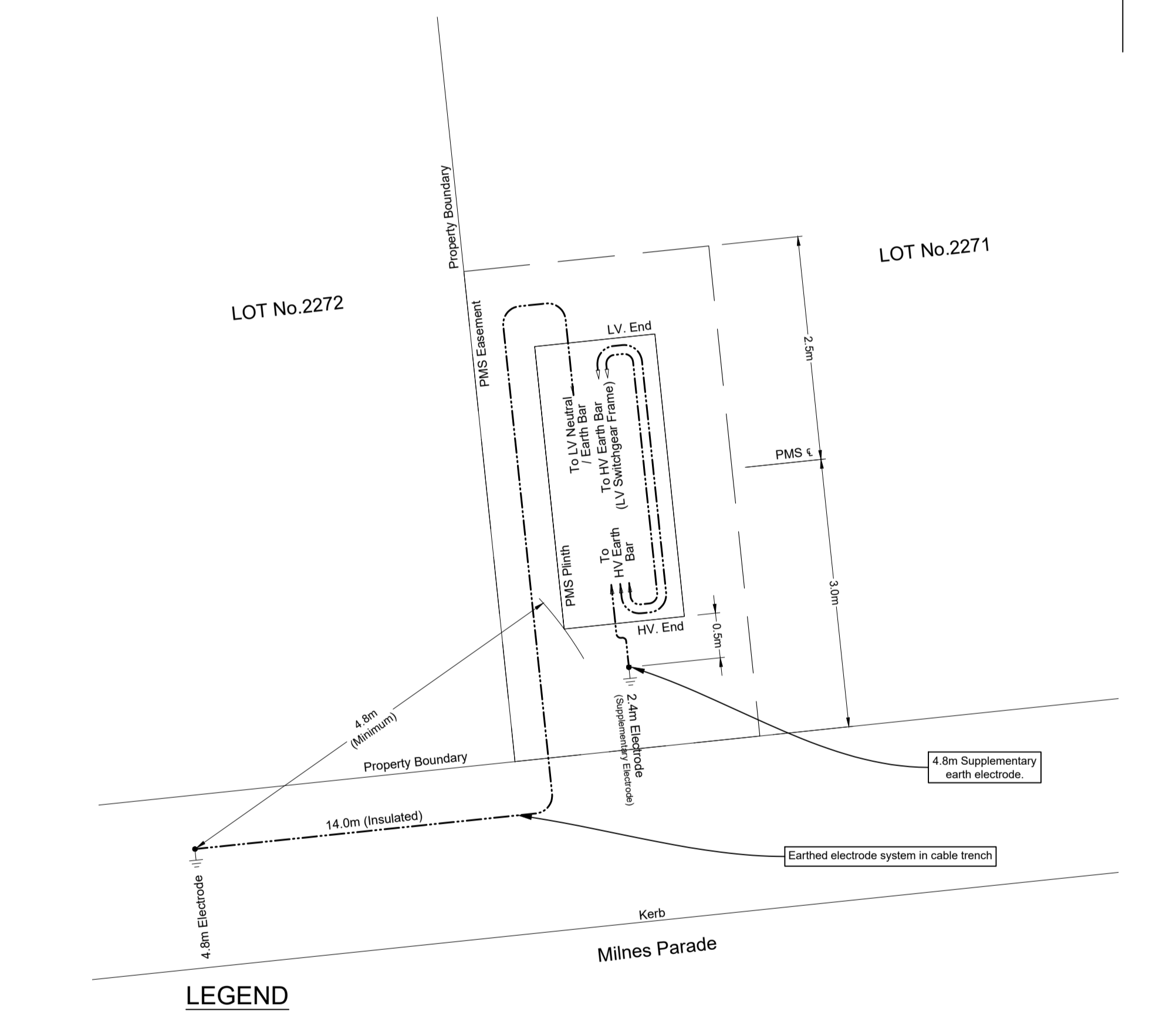
HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004.

SIGNATURE MICHAEL PULLING DATE 28/03/18(LV)

Earthing Design PMS No 36128

Common Earth Configuration
Not to Scale

Earthing design is based on the requirements of Endeavour Energy's EDI100 & EDI001. Any modifications to this earthing design must be approved in writing by the designer. (Refer to Endeavour Energy's Standards EDI001, EDI100, and drawing 348261A.)



LEGEND

- 19/2.14 (70mm²) PVC/PVC Annealed Cu Cable
- 19/2.14 (70mm²) Bare Annealed Cu Cable
- Earth Electrode Location & Length (Length of bare electrode shown in metres)

COMMON EARTHED PMS
2x Insulated copper links to be installed between the HV BAR mounted on the LV frame & the LV Neutral / Earth bar.

EARTHING WARNING LABELS
Earth warning labels and tags are to be installed in accordance with clause 5.3.6.4 & Drawing 348245A (EDI 100).

EARTHING DATA TO BE CAPTURE TO GIS

Substation No.	36128
Installation Type	Underground
Earthing System Type	Common
Soil Resistivity Average in Ohms (p1, Depth)	23.37 Ω.m @ 2.49 m
Soil Resistivity Average in Ohms (p2)	9.7 Ω.m
Combined Earth Resistance in Ohms (Common Earthing)	3.16 Ω
Size / No. of Combined Electrodes (Common Earthing)	4.8m Electrodes x 1
Size / No. of the Supplementary Electrode	4.8m Electrode x 1
Bonding Conductor Size in mm² (Insulated / Bare)	70mm² Cu
Connection Type (CADWeld OR Crimp)	Crimp
Ambient Temperature / Weather Condition	24 °C
Date of Soil Test	27/04/2017
Length of MEN Connection Cable (in metres)	N/A
Total Length of Earth System Cable (Incl. Insulated & Bare in Metres)	25 m
Measured Earth Resistance in Ohms (Measured by L1 ASP on Commissioning)	1.40 Ω

Earthing Design PMS No 36130

Common Earth Configuration
Not to Scale

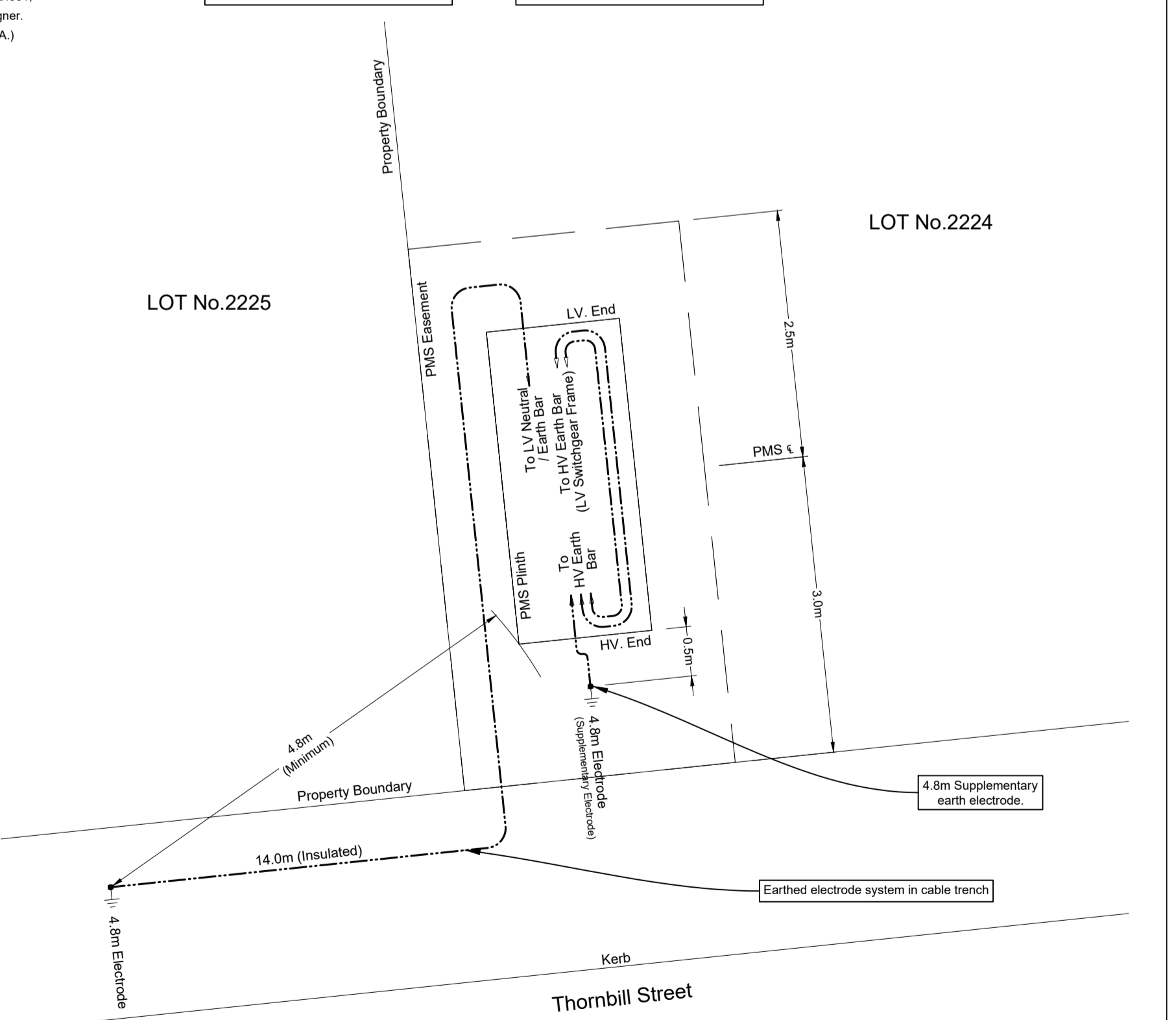
Earthing design is based on the requirements of Endeavour Energy's EDI100 & EDI001. Any modifications to this earthing design must be approved in writing by the designer. (Refer to Endeavour Energy's Standards EDI001, EDI100, and drawing 348261A.)

COMMON EARTHED PMS
2x Insulated copper links to be installed between the HV BAR mounted on the LV frame & the LV Neutral / Earth bar.

EARTHING WARNING LABELS
Earth warning labels and tags are to be installed in accordance with clause 5.3.6.4 & Drawing 348245A (EDI 100).

EARTHING DATA TO BE CAPTURE TO GIS

Substation No.	36130
Installation Type	Underground
Earthing System Type	Common
Soil Resistivity Average in Ohms (p1, Depth)	23.37 Ω.m @ 2.49 m
Soil Resistivity Average in Ohms (p2)	9.7 Ω.m
Combined Earth Resistance in Ohms (Common Earthing)	3.16 Ω
Size / No. of Combined Electrodes (Common Earthing)	4.8m Electrodes x 1
Size / No. of the Supplementary Electrode	4.8m Electrode x 1
Bonding Conductor Size in mm² (Insulated / Bare)	70mm² Cu
Connection Type (CADWeld OR Crimp)	Crimp
Ambient Temperature / Weather Condition	24 °C
Date of Soil Test	27/04/2017
Length of MEN Connection Cable (in metres)	N/A
Total Length of Earth System Cable (Incl. Insulated & Bare in Metres)	25 m
Measured Earth Resistance in Ohms (Measured by L1 ASP on Commissioning)	1.90 Ω



LEGEND

- 19/2.14 (70mm²) PVC/PVC Annealed Cu Cable
- 19/2.14 (70mm²) Bare Annealed Cu Cable
- Earth Electrode Location & Length (Length of bare electrode shown in metres)

AMENDMENTS	Original Issue
A	23.10.2017 - STAGING PLAN 1 & 2
B	20.03.2018 - DRAWN: Z MOORE
C	20.03.2018 - REMOVE STAGE 2 FROM DESIGN
D	20.03.2018 - Existing state on Elina Blvd

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.

powerline design

POWER LINE DESIGN PTY LTD
PO BOX 338 Mittagong NSW 2575
Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ABRN: 31197 591 846

Reference Drawings	URS17427	500805A RETIC	NUL0572	500653A RETIC	General
	URS17428	500803A RETIC	URS16140	408751A RETIC	Overhead
	URS18956	504827A RETIC	URS14178	388896C RETIC	Underground
	URS17974	502648A RETIC	URS19233	505358D DTE	Substations
	URS18495	503195A RETIC			

Work Orders	General
CAP / SAMP No.	URS19233
AM Project No.	2017/00535/001
HV Switching	
UBD/Penguin Ref No.	C11 126
GIS Map No.	U82674
HV OP Diagram	MARSDEN PARK
Local Government Area	BLACKTOWN CITY

DO NOT SCALE
DIMENSIONS IN METRES

ORIGINAL SCALE NTS

Drawn: Z MOORE
Date: 20.03.2018
Checked: Michael J.B
Design: Michael J.B

Richmond Road Marsden Park URS19233 Residential Subdivision Lot 3 DP 1225885 Electrical Reticulation

Endeavour Energy

A1 505359 D

Sheet No 11 of 27 Sheets

Earthing Design PMS No 36131

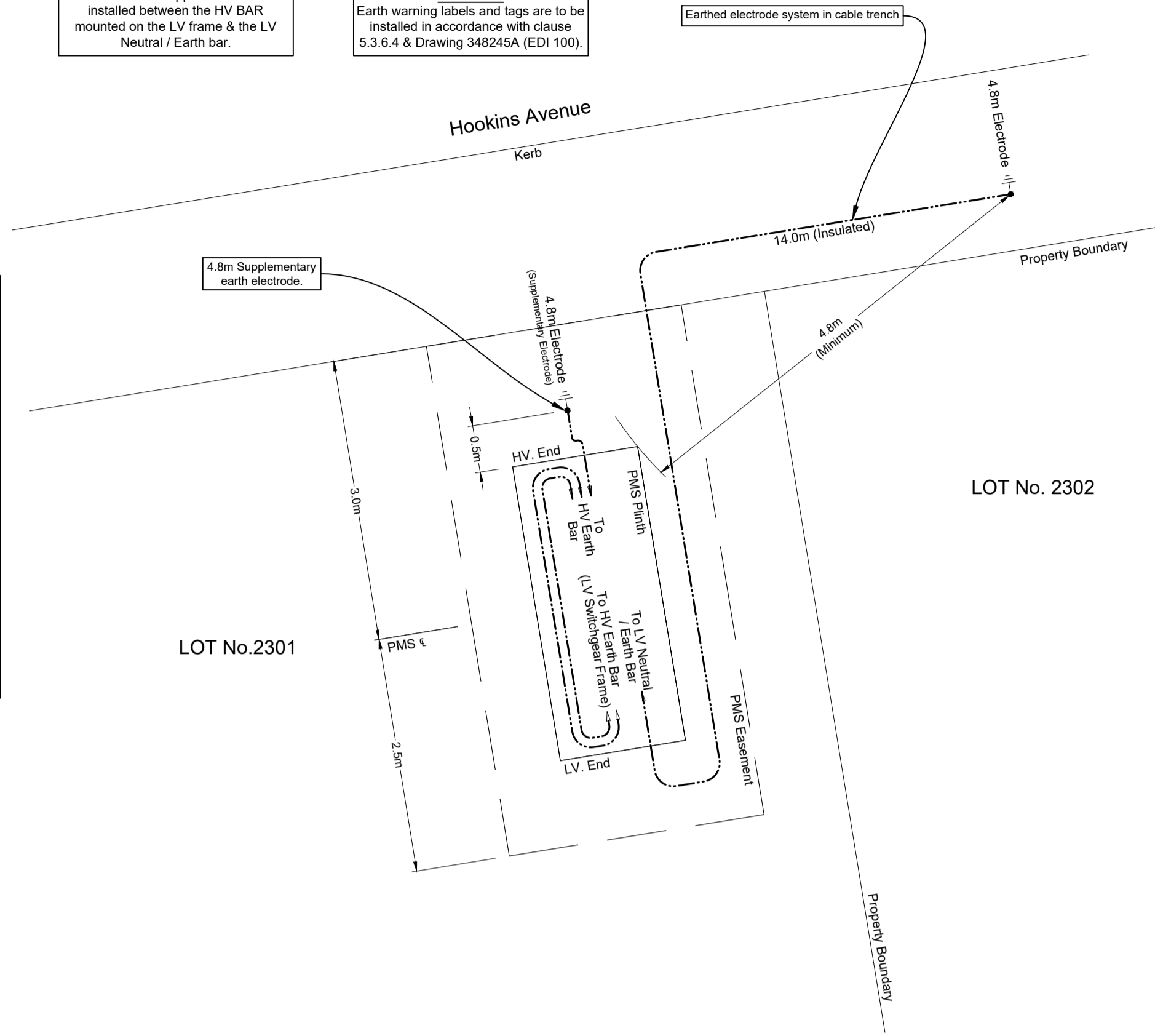
Common Earth Configuration

Not to Scale

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COMMON EARTHED PMS
2x insulated copper links to be installed between the HV BAR mounted on the LV frame & the LV Neutral / Earth bar.

EARTHING WARNING LABELS
Earth warning labels and tags are to be installed in accordance with clause 5.3.6.4 & Drawing 348245A (EDI 100).



EARTHING DATA TO BE CAPTURE TO GIS	
Substation No.	36131
Installation Type	Underground
Earthing System Type	Common
Soil Resistivity Average in Ohms (ρ1, Depth)	23.37 Ω.m @ 2.49 m
Soil Resistivity Average in Ohms (ρ2)	9.7 Ω.m
Combined Earth Resistance in Ohms (Common Earthing)	3.16 Ω
Size / No. of Combined Electrodes (Common Earthing)	4.8m Electrodes x 1
Size / No. of the Supplementary Electrode	4.8m Electrode x 1
Bonding Conductor Size in mm² (Insulated / Bare)	70mm² Cu
Connection Type (CADWeld OR Crimp)	Crimp
Ambient Temperature / Weather Condition	24 °C
Date of Soil Test	27/04/2017
Length of MEN Connection Cable (in metres)	N/A
Total Length of Earth System Cable (Incl. Insulated & Bare in Metres)	25 m
Measured Earth Resistance in Ohms (Measured by L1 ASP on Commissioning)	1.40 Ω

LEGEND

----- 19/2.14 (70mm²) PVC/PVC Annealed Cu Cable

- - - - - 19/2.14 (70mm²) Bare Annealed Cu Cable

⚡ Earth Electrode Location & Length (Length of bare electrode shown in metres)

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY C.J. DOYLE CONTRACTING

WORKS COMPLETED TERRY GLASS

SIGNATURE TERRY GLASS DATE 28/03/18(LV)

INSPECTED BY DANIEL McMULLAN

SIGNATURE _____ DATE _____

ASSET RECORDING

I MICHAEL PULLING

OF C.J. DOYLE CONTRACTING

CONTACT No. 8784-1900

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

SIGNATURE MICHAEL PULLING DATE 28/03/18(LV)

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
A	23.10.2017 NO STAGING PLAN 1 & 2 DRAWN: Z MOORE CHKD: M.J.B.
B	20.03.2018 REMOVE STAGE 2 FROM DESIGN DRAWN: Z MOORE CHKD: M.J.B.
C	20.03.2018 Existing site on Elena Blvd Correct Origin Drawn: J.A. CHKD: M.J.B.
D	

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.

powerline design

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Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ABN: 33197 991 846

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Reference Drawings				Work Orders		CAP / SAMP No.	URS19233
URS17427	500805A RETIC	NUL0572	500653A RETIC	General		AM Project No.	2017/00535/001
URS17428	500803A RETIC	URS16140	408751A RETIC	Overhead		HV Switching	
URS18956	504827A RETIC	URS14178	388896C RETIC	Underground		UBD/Penguin Ref No.	C11 126
URS17974	502648A RETIC	URS19233	505358D DTE	Substations		GIS Map No.	U82674
URS18495	503195A RETIC					HV OP Diagram	MARSDEN PARK
						Local Government Area	BLACKTOWN CITY

ORIGINAL SCALE NTS

Drawn: Z MOORE

Date: 20.03.2018

Checked: Michael.J.B

Design: Michael.J.B

DO NOT SCALE

DIMENSIONS IN METRES

RICHMOND ROAD
MARSDEN PARK
URS19233
RESIDENTIAL SUBDIVISION
LOT 3 DP 1225885
ELECTRICAL RETICULATION

Endeavour Energy

A1 505359 D

Sheet No 12 of 27 Sheets

#3437

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement LD: Lay HV 125mm Ducts in Trench LC: Lay HV Cable - Directly Buried in Trench PC: Lay Cable - Pull Conductor through Ducts C: Cable - Materials D: Lay HV duct in SL/LV Trench *All length entered in meters (m)											
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (AI)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
a1-a2 X	New Footpath Ducts	43	-	-	-	-	-	-	-	-	-
R1 ✓	New Road Crossing	9	-	-	-	-	-	-	-	-	-
a2-a3 X	New Footpath Ducts	23	-	-	-	-	-	-	-	-	-
a3-a4 X	New Footpath Ducts	20	-	-	-	-	-	-	-	-	-
a4-a5 X	New Footpath Ducts	23	-	-	-	-	-	-	-	-	-
a5-a6 X	New Footpath Ducts	37	-	-	-	-	-	-	-	-	-
R2 ✓	New Road Crossing	19	-	-	-	-	-	-	-	-	-
a6-a7 X	New Footpath Ducts	26	-	-	-	-	-	-	-	-	-
a7-a8 X	New Footpath Ducts	29	-	-	-	-	-	-	-	-	-
a8-a9 X	New Footpath Ducts	8	-	-	-	-	-	-	-	-	-
R9 ✓	New Road Crossing	22	-	-	-	-	-	-	-	-	-
R8 X	New Road Crossing	16	-	-	-	32	32	-	48	-	-
a9-a17 X	New Footpath Ducts	22	-	-	44	-	44	-	22	-	-
R7 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
Running Total:			0m	0m	44m	32m	76m	0m	70m	-	-

Continue Duct Breakdown Table Upper Right

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement LD: Lay HV 125mm Ducts in Trench LC: Lay HV Cable - Directly Buried in Trench PC: Lay Cable - Pull Conductor through Ducts C: Cable - Materials D: Lay HV duct in SL/LV Trench *All length entered in meters (m)											
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (AI)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
R6 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
a17-a10 X	New Footpath Ducts	75	-	-	-	-	-	-	-	-	-
a10-a11 X	New Footpath Ducts	23	-	-	-	-	-	-	-	-	-
R5 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
a11-a12 X	New Footpath Ducts	20	-	-	-	-	-	-	-	-	-
a12-a13 ✓	New Footpath Ducts	25	-	-	-	-	-	-	-	-	-
a1-a14 ✓	New Footpath Ducts	50	-	-	-	-	-	-	-	-	-
b1-b2 ✓	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-
b3-b4 ✓	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-
b5-b6 X	New Footpath Ducts	48	-	-	96	-	96	-	48	-	-
R3 ✓	New Road Crossing	17	-	-	-	-	-	-	-	-	-
b6-b7 X	New Footpath Ducts	17	-	-	34	-	34	-	17	-	-
R11 X	New Road Crossing	16	-	-	-	32	32	-	48	-	-
b7-b8 X	New Footpath Ducts	53	-	-	-	-	-	-	-	-	-
Running Total:			0m	0m	174m	64m	238m	0m	183m	-	-

Continue Duct Breakdown Table Sheet 14

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY **C.J. DOYLE CONTRACTING**

WORKS COMPLETED **TERRY GLASS**

SIGNATURE **TERRY GLASS** DATE **28/03/18(LV)**

INSPECTED BY **DANIEL McMULLAN**

SIGNATURE _____ DATE _____

ASSET RECORDING

I, **MICHAEL PULLING**

OF **C.J. DOYLE CONTRACTING**

CONTACT No. **8784-1900**

HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004 28/03/18(LV)

SIGNATURE **MICHAEL PULLING** DATE _____

CERTIFIED BY ENDEAVOUR ENERGY

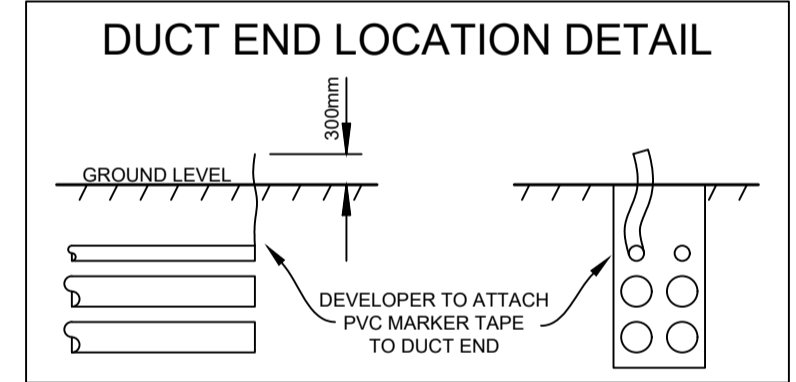
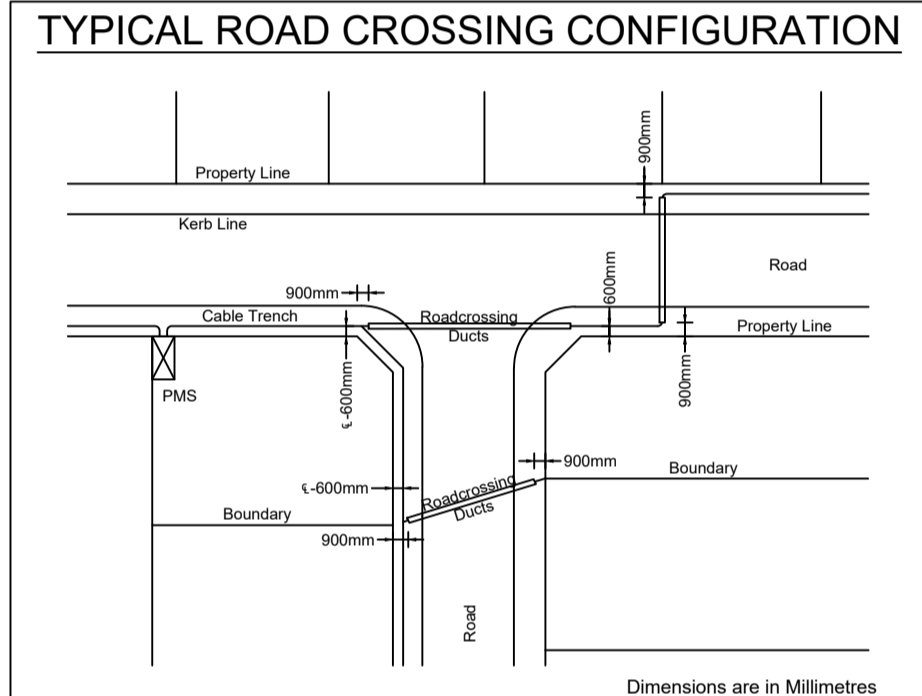
Amendment: _____

Date Approved: _____

Examiner's Signature: _____

Print Name: _____

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



EXISTING CONDUITS
All conduits are to be mandrelled, proven clear, free of foreign material, and deformation prior to the installation of cables.

SERVICE DUCTS
The end of service ducts must not be placed under proposed driveways. (Refer to Developers Representative for details)

NEW DUCTS/CONDUITS
All new 125mm ducts / conduits are to have a minimum 750mm cover. (in accordance with MDI0028)

DUCT REQUIREMENTS
A continuous spare 125mm duct is to be installed in all trenches where HV and LV mains cables are installed. (maximum of 1x HV & 1x LV)

TRENCH LEGEND

●	50mm Duct - with Existing Cable
○	50mm Duct - with New SL Cable
⊖	125mm Duct - Spare (Developers Use)
⊖	Cable to be Removed from 125mm Duct
○	LV Cable (Direct Buried)
○	HV Cable (Direct Buried)
○	125mm Duct - Spare
○	125mm Duct - with Existing Cable
○	125mm Duct - with New Cable
○	125mm Duct - Mandatory Spare
⊖	New Trench

AMENDMENTS	Original Issue	DATE	BY	REASON
A	23.10.2017	DRYAN MOORE	J.B.	STAGING
B	20.03.2018	DRYAN MOORE	J.B.	REMOVE STAGE 2 FROM
C	20.03.2018	DRYAN MOORE	J.B.	REMOVE STAGE 2 FROM
D	20.03.2018	DRYAN MOORE	J.B.	REMOVE STAGE 2 FROM

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.

powerline design

POWER LINE DESIGN PTY LTD
PO BOX 338 Mittagong NSW 2575
Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ADR: 33197 591 846

Reference Drawings				Work Orders		CAP / SAMP No.		ORIGINAL SCALE NTS	DO NOT SCALE DIMENSIONS IN METRES
URS17427	500805A RETIC	NUL0572	500653A RETIC	General		URS19233			
URS17428	500803A RETIC	URS16140	408751A RETIC	Overhead		AM Project No.	2017/00535/001	Z MOORE	20.03.2018
URS18956	504827A RETIC	URS14178	388896C RETIC	Underground		UBD/Penguin Ref No.	C11 126		
URS17974	502648A RETIC	URS19233	505358D DTE	Substations		GIS Map No.	U82674	Michael J.B	Design
URS18495	503195A RETIC					HV OP Diagram	MARSDEN PARK		
						Local Government Area	BLACKTOWN CITY		

ENDEAVOUR ENERGY

A1

505359 D

Sheet No 13 of 27 Sheets

**RICHMOND ROAD
MARSDEN PARK
URS19233
RESIDENTIAL SUBDIVISION
LOT 3 DP 1225885
ELECTRICAL RETICULATION**

#3437

Urban Subdivision Related Reimbursement - Duct and Cable Schedule											
Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
			LD: Lay HV 125mm Ducts in Trench C: Cable - Materials					LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench			
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
R12 X	New Road Crossing	17	-	-	-	-	-	-	-	-	-
b8-b9 X	New Footpath Ducts	43	-	-	-	-	-	-	-	-	-
R13 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
R14 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
b10-b11 X	New Footpath Ducts	10	-	-	-	-	-	-	-	-	-
R15 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
b11-c1 X	New Footpath Ducts	20	-	-	-	-	-	-	-	-	-
c1-c2 X	New Footpath Ducts	25	-	-	-	-	-	-	-	-	-
c3-c4 ✓	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-
c5-c6 ✓	New Footpath Ducts	10	-	-	-	-	-	-	-	-	-
c7-c8 X	New Footpath Ducts	8	-	-	16	-	16	-	8	-	-
c8-c9 X	New Footpath Ducts	64	-	-	128	-	128	-	64	-	-
R18 ✓	New Road Crossing	17	-	-	-	-	-	-	-	-	-
R19 X	New Road Crossing	16	-	-	-	32	32	-	48	-	-
Running Total:			0m	0m	318m	96m	414m	0m	303m	-	-

Continue Duct Breakdown Table Upper Right

Urban Subdivision Related Reimbursement - Duct and Cable Schedule											
Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
			LD: Lay HV 125mm Ducts in Trench C: Cable - Materials					LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench			
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
c9-c10 X	New Footpath Ducts	41	-	-	-	-	-	-	-	-	-
R20 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
R21 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
R22 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
c11-c12 X	New Footpath Ducts	23	-	-	-	-	-	-	-	-	-
c12-c13 X	New Footpath Ducts	23	-	-	-	-	-	-	-	-	-
R23 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
c13-c14 X	New Footpath Ducts	45	-	-	-	-	-	-	-	-	-
d1-d2 X	New Footpath Ducts	33	-	-	-	-	-	-	-	-	-
d2-d3 X	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-
d3-d4 X	New Footpath Ducts	20	-	-	-	-	-	-	-	-	-
d4-d5 X	New Footpath Ducts	10	-	-	-	-	-	-	-	-	-
d5-d6 X	New Footpath Ducts	28	-	-	-	-	-	-	-	-	-
d6-d7 X	New Footpath Ducts	14	-	-	28	-	28	-	14	-	-
Running Total:			0m	0m	346m	96m	442m	0m	317m	-	-

Continue Duct Breakdown Table Sheet 15

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY: C.J. DOYLE CONTRACTING

WORKS COMPLETED: TERRY GLASS

SIGNATURE: TERRY GLASS DATE: 28/03/18(LV)

INSPECTED BY: DANIEL McMULLAN

SIGNATURE: _____ DATE: _____

ASSET RECORDING

I, MICHAEL PULLING

OF C.J. DOYLE CONTRACTING

CONTACT No: 8784-1900

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

SIGNATURE: MICHAEL PULLING DATE: 28/03/18(LV)

CERTIFIED BY ENDEAVOUR ENERGY

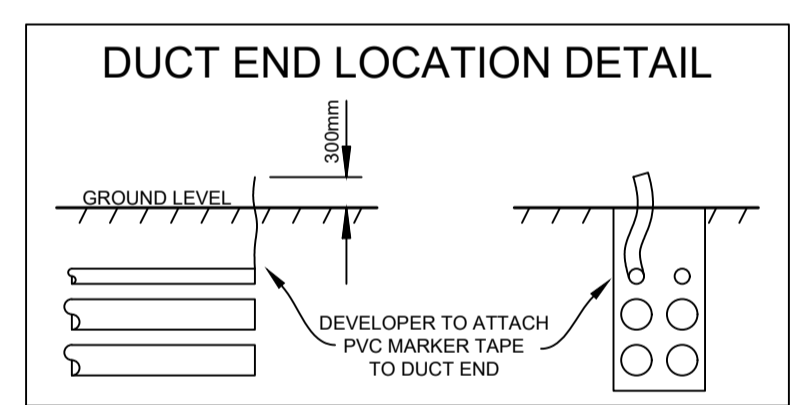
Amendment: _____

Date Approved: _____

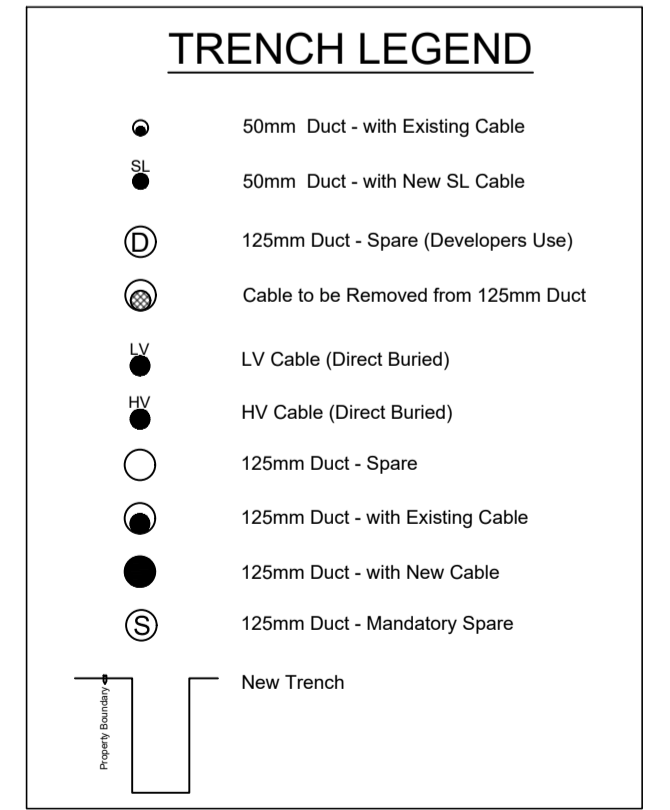
Examiner's Signature: _____

Print Name: _____

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



- EXISTING CONDUITS**
All conduits are to be mandrelled, proven clear, free of foreign material, and deformation prior to the installation of cables.
- SERVICE DUCTS**
The end of service ducts must not be placed under proposed driveways. (Refer to Developers Representative for details)
- NEW DUCTS/CONDUITS**
All new 125mm ducts / conduits are to have a minimum 750mm cover. (in accordance with MDI0028)
- DUCT REQUIREMENTS**
A continuous spare 125mm duct is to be installed in all branches where HV and LV main cables are installed. (maximum of 1x HV & 1x LV)



AMENDMENTS	Original Issue	Drawn	Checked
A	23.10.2017 - STAGING PLAN 1 & 2	Z MOORE	J.B
B	23.10.2017 - STAGING PLAN 1 & 2	Z MOORE	J.B
C	20.03.2018 - REMOVE STAGE 2 FROM STAGING PLAN 1 & 2	Z MOORE	J.B
D	20.03.2018 - Existing data on Elms Blvd	Z MOORE	J.B

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.

powerline design

POWER LINE DESIGN PTY LTD
PO BOX 338 Mittagong NSW 2575
Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ABN: 33197 591 846

4.3

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Reference Drawings				Work Orders		CAP / SAMP No.		ORIGINAL SCALE		DO NOT SCALE	
URS17427	500805A RETIC	NUL0572	500653A RETIC	General	AM Project No.	2017/00535/001	Drawn	Z MOORE	DIMENSIONS IN METRES		
URS17428	500803A RETIC	URS16140	408751A RETIC	Overhead	HV Switching		Date	20.03.2018	Design		
URS18956	504827A RETIC	URS14178	388896C RETIC	Underground	UBD/Penguin Ref No.	C11 128	Checked	Michael J.B	Michael J.B		
URS17974	502648A RETIC	URS19233	505358D DTE	Substations	GIS Map No.	U82674					
URS18495	503195A RETIC				HV OP Diagram	MARSDEN PARK					
					Local Government Area	BLACKTOWN CITY					

DO NOT SCALE

Richmond Road
Marsden Park
URS19233
RESIDENTIAL SUBDIVISION
LOT 3 DP 1225885
ELECTRICAL RETICULATION

Endeavour Energy

A1 505359 D

Sheet No 14 of 27 Sheets

#3437

Urban Subdivision Related Reimbursement - Duct and Cable Schedule													
Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)								LD: Lay HV 125mm Ducts in Trench C: Cable - Materials				LC: Lay HV Cable - Directly Buried in Trench PC: Lay HV duct in SL/LV Trench	
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)		
d7-d8 X	New Footpath Ducts	14	-	-	28	-	28	-	14	-	-		
d8-d9 X	New Footpath Ducts	51	-	-	102	-	102	-	51	-	-		
R16 ✓	New Road Crossing	17	-	-	-	-	-	-	-	-	-		
d9-d10 X	New Footpath Ducts	8	-	-	16	-	16	-	8	-	-		
R27 X	New Road Crossing	16	-	-	-	32	32	-	48	-	-		
d10-d11 X	New Footpath Ducts	70	-	-	-	-	-	-	-	-	-		
R28 X	New Road Crossing	17	-	-	-	-	-	-	-	-	-		
R29 X	New Road Crossing	17	-	-	-	-	-	-	-	-	-		
d11-d12 X	New Footpath Ducts	23	-	-	-	-	-	-	-	-	-		
d12-d13 X	New Footpath Ducts	28	-	-	-	-	-	-	-	-	-		
R30 X	New Road Crossing	18	-	-	-	-	-	-	-	-	-		
d13-d14 ✓	New Footpath Ducts	15	-	-	-	-	-	-	-	-	-		
R31 X	New Road Crossing	17	-	-	-	-	-	-	-	-	-		
d15-d16 ✓	New Footpath Ducts	45	-	-	-	-	-	-	-	-	-		
Running Total:			0m	0m	492m	128m	620m	0m	438m	-	-		

Continue Duct Breakdown Table Upper Right

Urban Subdivision Related Reimbursement - Duct and Cable Schedule													
Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)								LD: Lay HV 125mm Ducts in Trench C: Cable - Materials				LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench	
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)		
e1-e2 X	New Footpath Ducts	38	-	-	-	-	-	-	-	-	-		
e3-e4 ✓	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-		
e5-e6 ✓	New Footpath Ducts	32	32	32	64	-	64	-	-	-	-		
R17 X	New Road Crossing	17	-	-	-	-	-	-	-	-	-		
e6-e7 X	New Footpath Ducts	14	-	-	28	-	28	-	14	-	-		
e7-e8 X	New Footpath Ducts	19	-	-	38	-	38	-	19	-	-		
R35 X	New Road Crossing	16	-	-	-	16	16	-	32	-	-		
e8-e9 X	New Footpath Ducts	26	-	-	26	-	26	-	26	-	-		
e9-e10 X	New Footpath Ducts	23	-	-	23	-	23	-	23	-	-		
R36 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-		
e10-e11 X	New Footpath Ducts	33	-	-	33	-	33	-	33	-	-		
R37 ✓	New Road Crossing	16	-	-	-	-	-	-	-	-	-		
e11-e12 X	New Footpath Ducts	55	-	-	55	-	55	-	55	-	-		
R38 ✓	New Road Crossing	16	-	-	-	-	-	-	-	-	-		
Running Total:			32m	32m	759m	144m	903m	0m	640m	-	-		

Continue Duct Breakdown Table Sheet 16

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY **C.J. DOYLE CONTRACTING**
 WORKS COMPLETED **TERRY GLASS**
 SIGNATURE **TERRY GLASS** DATE **28/03/18(LV)**

INSPECTED BY **DANIEL McMULLAN**
 SIGNATURE _____ DATE _____

ASSET RECORDING

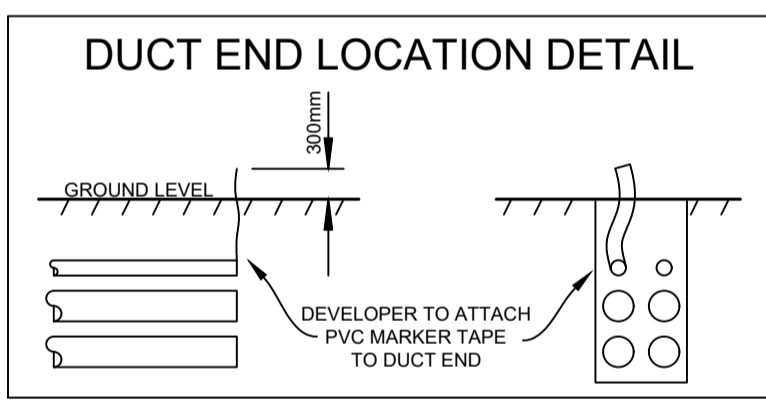
I **MICHAEL PULLING**
 OF **C.J. DOYLE CONTRACTING**
 CONTACT No **8784-1900**

HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004
 SIGNATURE **MICHAEL PULLING** DATE **28/03/18(LV)**

CERTIFIED BY ENDEAVOUR ENERGY

Amendment: _____
 Date Approved: _____
 Examiner's Signature: _____
 Print Name: _____

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



- EXISTING CONDUITS**
 All conduits are to be mandrelled, proven clear, free of foreign material, and deformation prior to the installation of cables.
- SERVICE DUCTS**
 The end of service ducts must not be placed under proposed driveways. (Refer to Developers Representative for details)
- NEW DUCTS/CONDUITS**
 All new 125mm ducts / conduits are to have a minimum 750mm cover. (in accordance with MD10028)
- DUCT REQUIREMENTS**
 A continuous spare 125mm duct is to be installed in all trenches where HV and LV mains cables are installed. (maximum of 1x HV & 1x LV)

- TRENCH LEGEND**
- 50mm Duct - with Existing Cable
 - 50mm Duct - with New SL Cable
 - ⊙ 125mm Duct - Spare (Developers Use)
 - ⊙ Cable to be Removed from 125mm Duct
 - LV Cable (Direct Buried)
 - HV Cable (Direct Buried)
 - 125mm Duct - Spare
 - 125mm Duct - with Existing Cable
 - 125mm Duct - with New Cable
 - ⊙ 125mm Duct - Mandatory Spare
 - New Trench

AMENDMENTS	DATE	ISSUE
A	20.10.2017	STAGING PLAN 1 & 2
B	20.10.2017	REVISIONS
C	20.10.2017	REVISIONS
D	20.03.2018	Existing data on Elna Blvd

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.

powerline design
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 Accredited Designer Number 2486 / ABN: 33197 591 846

Reference Drawings	Work Orders
URS17427	General
URS17428	Overhead
URS18956	Underground
URS17974	Substations
URS18495	

CAP / SAMP No.	URS19233
AM Project No.	2017/00535/001
HV Switching	
UBD/Penguin Ref No.	C11 126
GIS Map No.	U82674
HV OP Diagram	MARSDEN PARK
Local Government Area	BLACKTOWN CITY

ORIGINAL SCALE	NTS
Drawn	Z MOORE
Date	20.03.2018
Checked	Michael J.B
Design	Michael J.B

RICHMOND ROAD
MARSDEN PARK
URS19233
RESIDENTIAL SUBDIVISION
LOT 3 DP 1225885
ELECTRICAL RETICULATION

Endeavour Energy

A1 505359 D

Sheet No 15 of 27 Sheets

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
			LD: Lay HV 125mm Ducts in Trench C: Cable - Materials					LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench			
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
e12-e13 X	New Footpath Ducts	13	-	-	13	-	13	-	13	-	-
e13-e14 X	New Footpath Ducts	13	-	-	13	-	13	-	13	-	-
e14-e15 X	New Footpath Ducts	28	-	-	28	-	28	-	28	-	-
R40 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
e15-e16 X	New Footpath Ducts	23	-	-	23	-	23	-	23	-	-
e16-e17 X	New Footpath Ducts	32	-	-	32	-	32	-	32	-	-
e17-e1 X	New Footpath Ducts	82	-	-	-	-	-	-	-	-	-
R24 ✓	New Road Crossing	16	-	-	-	16	16	-	32	-	-
f1-f2 X	New Footpath Ducts	7	-	-	7	-	7	-	7	-	-
f2-f3 X	New Footpath Ducts	13	-	-	13	-	13	-	13	-	-
R25 ✓	New Road Crossing	17	-	-	-	-	-	-	-	-	-
f3-f4 X	New Footpath Ducts	34	-	-	34	-	34	-	34	-	-
f4-f5 X	New Footpath Ducts	34	-	-	34	-	34	-	34	-	-
R26 ✓	New Road Crossing	17	-	-	-	-	-	-	-	-	-
Running Total:			32m	32m	956m	160m	1116m	0m	869m	-	-

Continue Duct Breakdown Table Upper Right

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

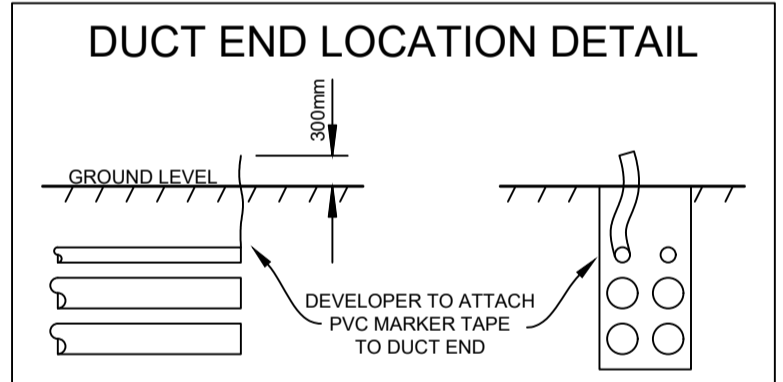
Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
			LD: Lay HV 125mm Ducts in Trench C: Cable - Materials					LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench			
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
R32 X	New Road Crossing	17	-	-	-	17	17	-	34	-	-
R47 X	New Road Crossing	17	-	-	-	-	-	-	-	-	-
f6-f7 X	New Footpath Ducts	15	-	-	-	-	-	-	-	-	-
R48 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
f7-f8 X	New Footpath Ducts	11	-	-	-	-	-	-	-	-	-
R49 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
R45 ✓	New Road Crossing	16	-	-	-	-	-	-	-	-	-
f9-f10 X	New Footpath Ducts	10	-	-	-	-	-	-	-	-	-
f10-f11 X	New Footpath Ducts	15	-	-	-	-	-	-	-	-	-
f11-f12 X	New Footpath Ducts	14	-	-	-	-	-	-	-	-	-
f12-f13 X	New Footpath Ducts	8	-	-	-	-	-	-	-	-	-
R39 X	New Road Crossing	16	-	-	-	-	-	-	-	-	-
g1-g2 X	New Footpath Ducts	32	-	-	-	-	-	-	-	-	-
g3-g4 X	New Footpath Ducts	25	-	-	-	-	-	-	-	-	-
Running Total:			32m	32m	956m	177m	1133m	0m	903m	-	-

Continue Duct Breakdown Table Sheet 17

WORK COMPLETED / FIELD BOOK
 CONSTRUCTED BY: **C.J. DOYLE CONTRACTING**
 WORKS COMPLETED: **TERRY GLASS**
 SIGNATURE: **TERRY GLASS** DATE: **29/03/18(LV)**
 INSPECTED BY: **DANIEL McMULLAN**
 SIGNATURE: _____ DATE: _____

ASSET RECORDING
 I, **MICHAEL PULLING**
 OF **C.J. DOYLE CONTRACTING**
 CONTACT No. **8784-1900**
 HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAG 0004.
 SIGNATURE: **MICHAEL PULLING** 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.

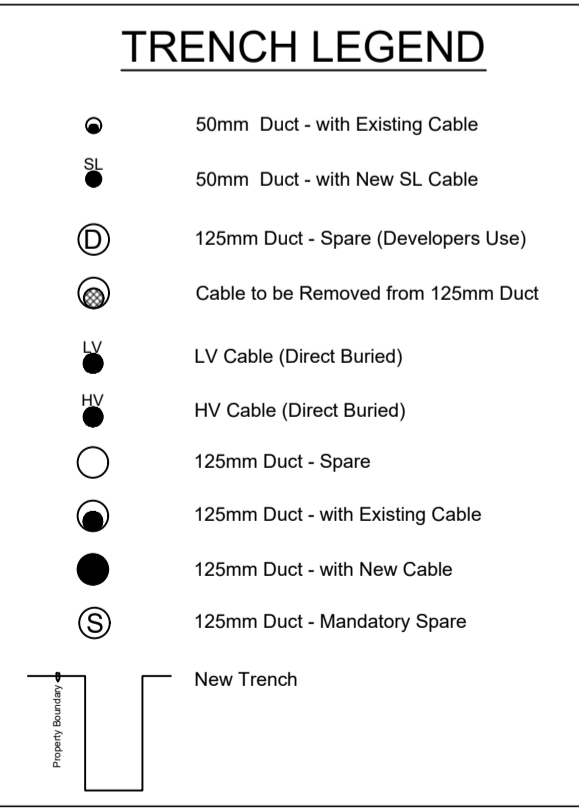


EXISTING CONDUITS
 All conduits are to be mandrelled, proven clear, free of foreign material, and deformation prior to the installation of cables.

SERVICE DUCTS
 The end of service ducts must not be placed under proposed driveways. (Refer to Developers Representative for details)

NEW DUCTS/CONDUITS
 All new 125mm ducts / conduits are to have a minimum 750mm cover (in accordance with MDI0028)

DUCT REQUIREMENTS
 A continuous spare 125mm duct is to be installed in all trenches where HV and LV mains cables are installed. (maximum of 1x HV & 1x LV)



AMENDMENTS	Original Issue	23.10.2017	STAGING PLAN 1 & 2	Drawn: Z MOORE	Checked: J.A.
B	23.10.2017	STAGING PLAN 1 & 2	Drawn: Z MOORE	Checked: J.A.	Checked: M.J.B.
C	20.03.2018	RENAME STAGE 2 FROM STAGING PLAN 1 & 2	Drawn: Z MOORE	Checked: J.A.	Checked: M.J.B.
D	20.03.2018	Existing state on Elina Blvd	Drawn: J.A.	Checked: M.J.B.	Checked: M.J.B.

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.

powerline design
 POWER LINE DESIGN PTY LTD
 PO BOX 338 Mittagong NSW 2575
 Ph (02) 4872 1920 Fax (02) 4872 1240
 Accredited Designer Number 2486 / ABN: 33197 591 846

Reference Drawings	Work Orders	CAP / SAMP No.	URS19233	ORIGINAL SCALE NTS
URS17427 500805A RETIC	General	AM Project No.	2017/00535/001	Drawn: Z MOORE Date: 20.03.2018 Checked: Michael J.B.
URS17428 500803A RETIC	Overhead	HV Switching		
URS18956 504827A RETIC	Underground	UBD/Penguin Ref No.	C11 126	
URS17974 502648A RETIC	Substations	GIS Map No.	U82674	
URS19233 505358D DTE		HV OP Diagram	MARSDEN PARK	
URS18495 503195A RETIC		Local Government Area	BLACKTOWN CITY	

DO NOT SCALE DIMENSIONS IN METRES

RICHMOND ROAD MARSDEN PARK URS19233 RESIDENTIAL SUBDIVISION LOT 3 DP 1225885 ELECTRICAL RETICULATION

Endeavour Energy

A1 505359 D

Sheet No 16 of 27 Sheets

#3437

Urban Subdivision Related Reimbursement - Duct and Cable Schedule											
Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
R33 ✓	New Road Crossing	16	-	-	-	-	-	-	-	-	-
g5-g6 ✗	New Footpath Ducts	23	-	-	-	-	-	-	-	-	-
R34 ✓	New Road Crossing	17	-	-	-	-	-	-	-	-	-
g6-g7 ✗	New Footpath Ducts	26	-	-	-	-	-	-	-	-	-
g7-g8 ✗	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-
g8-g9 ✗	New Footpath Ducts	95	-	-	-	-	-	-	-	-	-
R41 ✓	New Road Crossing	17	-	-	-	-	-	-	-	-	-
g9-g10 ✗	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-
R42 ✗	New Road Crossing	16	-	-	-	16	16	-	32	-	-
g10-g11 ✗	New Footpath Ducts	8	-	-	8	-	8	-	8	-	-
R43 ✗	New Road Crossing	17	-	-	-	-	-	-	-	-	-
g11-g12 ✓	New Footpath Ducts	50	50	50	50	-	50	-	-	-	-
g12-g13 ✗	Existing Ducts	8	-	-	-	8	8	-	-	-	-
g13-g14 ✓	New Footpath Ducts	8	8	8	8	-	8	-	-	-	-
Running Total:			90m	90m	1022m	201m	1223m	0m	943m	-	-

Continue Duct Breakdown Table Upper Right

Urban Subdivision Related Reimbursement - Duct and Cable Schedule											
Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
R44 ✗	New Road Crossing	16	-	-	-	16	16	-	32	-	-
h1-h2 ✗	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-
h2-h3 ✗	New Footpath Ducts	10	-	-	-	-	-	-	-	-	-
h3-h4 ✗	New Footpath Ducts	34	-	-	-	-	-	-	-	-	-
h4-h5 ✗	New Footpath Ducts	8	-	-	8	-	8	-	8	-	-
h5-h6 ✗	New Footpath Ducts	13	-	-	13	-	13	-	13	-	-
R50 ✓	New Road Crossing	17	-	-	-	17	17	-	34	-	-
h6-h7 ✗	New Footpath Ducts	39	-	-	78	-	78	-	39	-	-
h7-h8 ✗	New Footpath Ducts	6	-	-	12	-	12	-	6	-	-
R51 ✓	New Road Crossing	17	-	-	-	-	-	-	-	-	-
h8-h9 ✗	New Footpath Ducts	28	-	-	56	-	56	-	28	-	-
R52 ✗	New Road Crossing	17	-	-	-	-	-	-	-	-	-
h9-h10 ✗	New Footpath Ducts	23	-	-	23	-	23	-	23	-	-
h10-h11 ✗	New Footpath Ducts	13	-	-	13	-	13	-	13	-	-
Running Total:			90m	90m	1225m	234m	1459m	0m	1139m	-	-

Continue Duct Breakdown Table Sheet 18

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY: C.J. DOYLE CONTRACTING

WORKS COMPLETED BY: TERRY GLASS

SIGNATURE: TERRY GLASS DATE: 28/03/18(LV)

INSPECTED BY: DANIEL McMULLAN

SIGNATURE: _____ DATE: _____

ASSET RECORDING

I: MICHAEL PULLING

OF: C.J. DOYLE CONTRACTING

CONTACT No: 8784-1900

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

SIGNATURE: MICHAEL PULLING DATE: _____

CERTIFIED BY ENDEAVOUR ENERGY

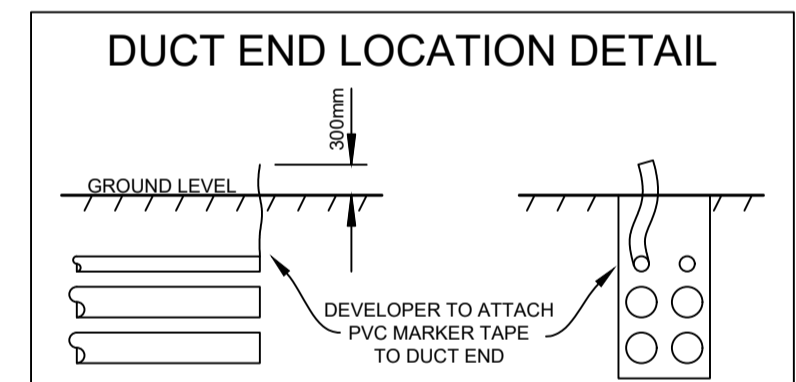
Amendment: _____

Date Approved: _____

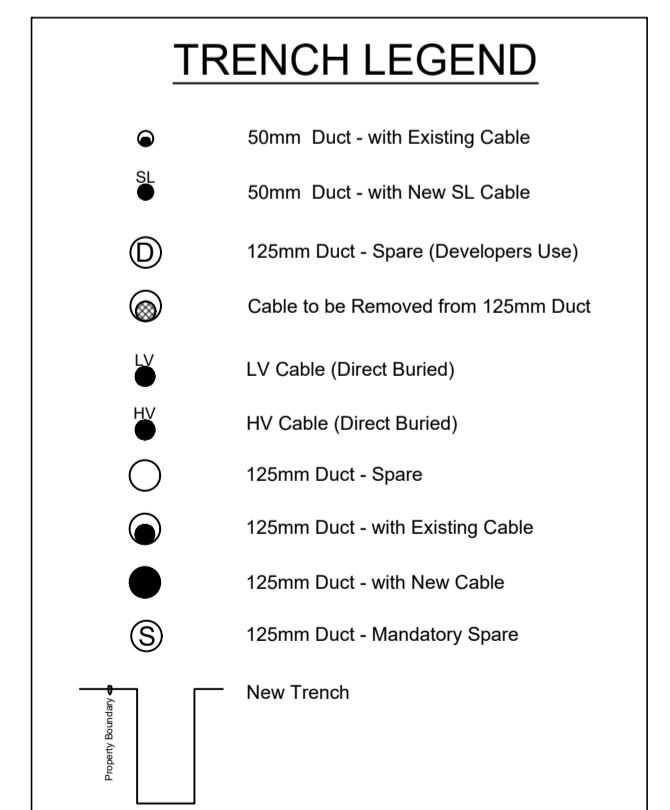
Examiner's Signature: _____

Print Name: _____

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



- EXISTING CONDUITS**
All conduits are to be mandrelled, proven clear, free of foreign material, and deformation prior to the installation of cables.
- SERVICE DUCTS**
The end of service ducts must not be placed under proposed driveways. (Refer to Developers Representative for details)
- NEW DUCTS/CONDUITS**
All new 125mm ducts / conduits are to have a minimum 750mm cover (in accordance with MDI0028)
- DUCT REQUIREMENTS**
A continuous spare 125mm duct is to be installed in all trenches where HV and LV mains cables are installed. (maximum of 1x HV & 1x LV)



AMENDMENTS	Original Issue	23.10.2017	AS STAGING PLAN 1 & 2	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE
A	Original Issue	23.10.2017	AS STAGING PLAN 1 & 2	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE
B	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018
C	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018
D	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018	REVISION 2 MOORE	20.03.2018

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powerline design

POWER LINE DESIGN PTY LTD
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Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ABN: 33197 591 846

Reference Drawings				Work Orders	
URS17427	500805A RETIC	NU10572	500653A RETIC	General	
URS17428	500803A RETIC	URS16140	408751A RETIC	Overhead	
URS18956	504827A RETIC	URS14178	388896C RETIC	Underground	
URS17974	502648A RETIC	URS19233	505358D DTE	Substations	
URS18495	503195A RETIC				

CAP / SAMP No.		ORIGINAL SCALE	
URS19233		NTS	
AM Project No.	2017/00535/001	Drawn	Z MOORE
HV Switching		Date	20.03.2018
UBD/Penguin Ref No.	C11 126	Checked	Michael.J.B
GIS Map No.	U82674	Design	Michael.J.B
HV OP Diagram	MARSDEN PARK		
Local Government Area	BLACKTOWN CITY		

DO NOT SCALE

DIMENSIONS IN METRES

RICHMOND ROAD MARSDEN PARK URS19233 RESIDENTIAL SUBDIVISION LOT 3 DP 1225885 ELECTRICAL RETICULATION

Endeavour Energy

A1 505359 D

Sheet No 17 of 27 Sheets

#3437

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	LD: Lay HV 125mm Ducts in Trench C: Cable - Materials				LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench			
				Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
R53 X	New Road Crossing	16	-	-	-	-	-	-	-	-	
h11-h12 X	New Footpath Ducts	23	-	-	23	-	23	-	-	-	
h12-h13 X	New Footpath Ducts	10	-	-	10	-	10	-	-	-	
R54 X	New Road Crossing	17	-	-	-	-	-	-	-	-	
h13-h14 X	New Footpath Ducts	25	-	-	25	-	25	-	-	-	
h14-h15 X	New Footpath Ducts	11	-	-	11	-	11	-	-	-	
R55 ✓	New Road Crossing	22	-	-	-	22	22	-	44	-	
h15-h16 X	New Footpath Ducts	7	-	-	-	-	-	-	-	-	
h17-h18 X	New Footpath Ducts	23	-	-	-	-	-	-	-	-	
h18-h19 X	New Footpath Ducts	30	-	-	-	-	-	-	-	-	
i1-i2 ✓	New Footpath Ducts	13	-	-	-	-	-	-	-	-	
i3-i4 X	New Footpath Ducts	8	-	-	-	-	-	-	-	-	
i4-i5 X	New Footpath Ducts	52	-	-	-	-	-	-	-	-	
R56 ✓	New Road Crossing	14	-	-	-	-	-	-	-	-	
Running Total:			90m	90m	1294m	256m	1550m	0m	1252m	-	

Continue Duct Breakdown Table Upper Right

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	LD: Lay HV 125mm Ducts in Trench C: Cable - Materials				LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench			
				Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
i5-i6 X	New Footpath Ducts	28	-	-	-	-	-	-	-	-	
i6-i7 X	New Footpath Ducts	31	-	-	-	-	-	-	-	-	
R59 X	New Road Crossing	17	-	-	-	-	-	-	-	-	
i7-i8 X	New Footpath Ducts	28	-	-	-	-	-	-	-	-	
i8-i9 X	New Footpath Ducts	15	-	-	-	-	-	-	-	-	
R60 ✓	New Road Crossing	16	-	-	-	-	-	-	-	-	
i9-i10 X	New Footpath Ducts	13	-	-	-	-	-	-	-	-	
i10-i11 X	New Footpath Ducts	20	-	-	-	-	-	-	-	-	
i11-i12 X	New Footpath Ducts	12	-	-	-	-	-	-	-	-	
i12-i13 X	New Footpath Ducts	8	-	-	-	-	-	-	-	-	
R46 ✓	New Road Crossing	26	-	-	-	26	26	-	52	-	
i13-i14 ✓	New Footpath Ducts	50	50	50	50	-	50	-	-	-	
j1-j2 ✓	New Footpath Ducts	26	-	-	-	-	-	-	-	-	
R56 ✓	New Road Crossing	14	-	-	-	-	-	-	-	-	
Running Total:			140m	140m	1344m	282m	1626m	0m	1304m	-	

Continue Duct Breakdown Table Sheet 19

WORK COMPLETED / FIELD BOOK

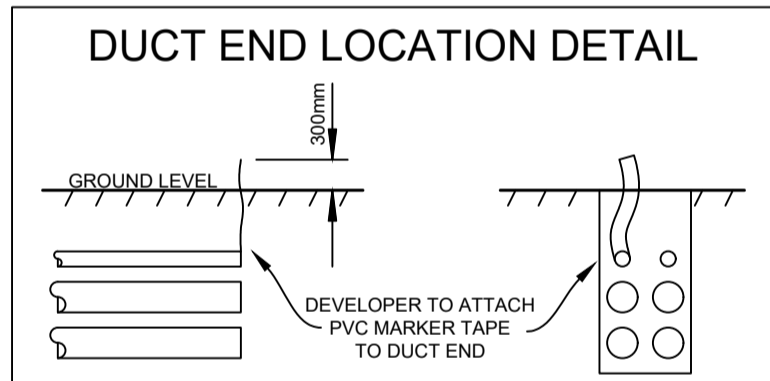
CONSTRUCTED BY **C.J. DOYLE CONTRACTING**
 WORKS COMPLETED BY **TERRY GLASS**
 SIGNATURE **TERRY GLASS** DATE **28/03/18(LV)**

INSPECTED BY **DANIEL McMULLAN**
 SIGNATURE **DANIEL McMULLAN** DATE **28/03/18(LV)**

ASSET RECORDING
 I, **MICHAEL PULLING**
 OF **C.J. DOYLE CONTRACTING**
 CONTACT No **8784-1900**
 HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 004.
 SIGNATURE **MICHAEL PULLING** DATE **28/03/18(LV)**

CERTIFIED BY ENDEAVOUR ENERGY

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

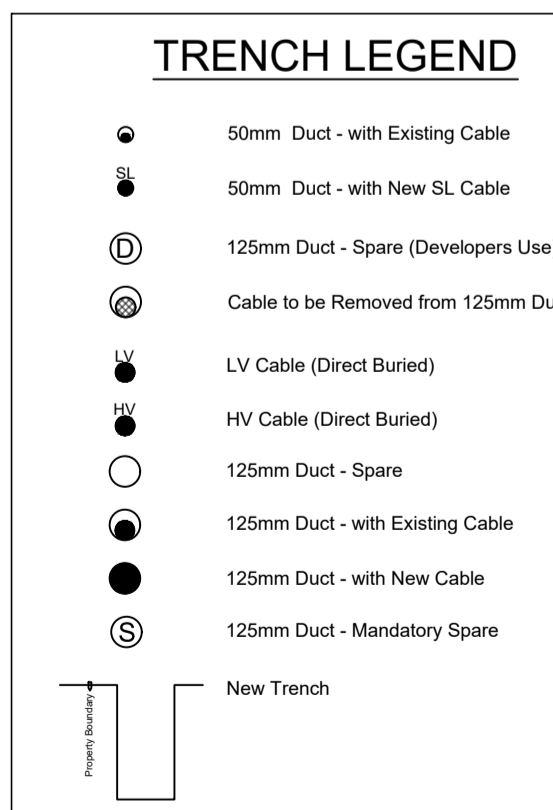


EXISTING CONDUITS
 All conduits are to be mandrelled, proven clear, free of foreign material, and deformation prior to the installation of cables.

SERVICE DUCTS
 The end of service ducts must not be placed under proposed driveways. (Refer to Developers Representative for details)

NEW DUCTS/CONDUITS
 All new 125mm ducts / conduits are to have a minimum 750mm cover (in accordance with MDI0028)

DUCT REQUIREMENTS
 A continuous spare 125mm duct is to be installed in all trenches where HV and LV mains cables are installed. (maximum of 1x HV & 1x LV)



AMENDMENTS	Original Issue	23.10.2017	STAGING PLAN 1 & 2	20.03.2018	REVISION STAGE 2 FROM STAGING PLAN 1 & 2	20.03.2018	REVISION STAGE 2 FROM STAGING PLAN 1 & 2	20.03.2018	REVISION STAGE 2 FROM STAGING PLAN 1 & 2	20.03.2018	REVISION STAGE 2 FROM STAGING PLAN 1 & 2
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 Accredited Designer Number 2486 / ABN: 33197 591 846

Reference Drawings	Work Orders
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URS17428 500803A RETIC	Overhead
URS18956 504827A RETIC	Underground
URS17974 502648A RETIC	Substations
URS18495 503195A RETIC	

CAP / SAMP No.	URS19233
AM Project No.	2017/00535/001
HV Switching	
UBD/Penguin Ref No.	C11 126
GIS Map No.	U82674
HV OP Diagram	MARSDEN PARK
Local Government Area	BLACKTOWN CITY

ORIGINAL SCALE NTS
 Drawn **Z MOORE**
 Date **20.03.2018**
 Checked **Michael J.B**

DO NOT SCALE DIMENSIONS IN METRES
 Design **Michael J.B**

RICHMOND ROAD MARSDEN PARK URS19233 RESIDENTIAL SUBDIVISION LOT 3 DP 1225885 ELECTRICAL RETICULATION

Endeavour Energy
A1 505359 D
 Sheet No 18 of 27 Sheets
#3437

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
LD: Lay HV 125mm Ducts in Trench C: Cable - Materials											
LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench											
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
j2-j3	New Footpath Ducts	26	-	-	-	-	-	-	-	-	-
j3-j4	New Footpath Ducts	7	-	-	-	-	-	-	-	-	-
R57	New Road Crossing	17	-	-	-	-	-	-	-	-	-
j4-j5	New Footpath Ducts	21	-	-	-	-	-	-	-	-	-
j5-j6	New Footpath Ducts	28	-	-	-	-	-	-	-	-	-
R65	New Road Crossing	17	-	-	-	-	-	-	-	-	-
j6-j7	New Footpath Ducts	82	-	-	-	-	-	-	-	-	-
R66	New Road Crossing	16	-	-	-	-	-	-	-	-	-
R67	New Road Crossing	16	-	-	-	16	16	-	32	-	-
j7-j8	New Footpath Ducts	23	-	-	69	-	69	-	23	-	-
j8-j9	New Footpath Ducts	8	-	-	16	-	16	-	8	-	-
j9-j10	New Footpath Ducts	25	-	-	25	-	25	-	25	-	-
j10-j11	New Footpath Ducts	25	-	-	25	-	25	-	25	-	-
k1-k2	New Footpath Ducts	37	-	-	-	-	-	-	-	-	-
Running Total:			140m	140m	1479m	298m	1777m	0m	1417m	-	-

Continue Duct Breakdown Table Upper Right

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

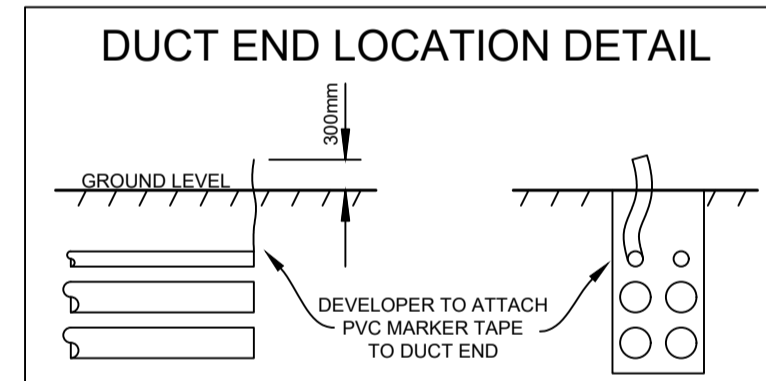
Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
LD: Lay HV 125mm Ducts in Trench C: Cable - Materials											
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k3-k4	New Footpath Ducts	10	-	-	-	-	-	-	-	-	-
k5-k6	New Footpath Ducts	33	-	-	-	-	-	-	-	-	-
R61	New Road Crossing	14	-	-	-	-	-	-	-	-	-
k6-k7	New Footpath Ducts	14	-	-	-	-	-	-	-	-	-
k7-k8	New Footpath Ducts	21	-	-	-	-	-	-	-	-	-
R62	New Road Crossing	17	-	-	-	-	-	-	-	-	-
k8-k9	New Footpath Ducts	46	-	-	-	-	-	-	-	-	-
k9-k10	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-
R63	New Road Crossing	16	-	-	-	-	-	-	-	-	-
k10-k11	New Footpath Ducts	30	-	-	-	-	-	-	-	-	-
R64	New Road Crossing	17	-	-	-	-	-	-	-	-	-
R76	New Road Crossing	26	-	-	-	26	26	-	52	-	-
k12-k13	New Footpath Ducts	50	-	-	50	-	50	-	50	-	-
R68	New Road Crossing	16	-	-	-	-	-	-	-	-	-
Running Total:			140m	140m	1529m	324m	1853m	0m	1519m	-	-

Continue Duct Breakdown Table Sheet 20

WORK COMPLETED / FIELD BOOK
 CONSTRUCTED BY **C.J. DOYLE CONTRACTING**
 WORKS COMPLETED BY **TERRY GLASS**
 SIGNATURE **TERRY GLASS** DATE **28/03/18(LV)**
 INSPECTED BY **DANIEL McMULLAN**
 SIGNATURE _____ DATE _____

ASSET RECORDING
 I **MICHAEL PULLING**
 OF **C.J. DOYLE CONTRACTING**
 CONTACT No. **8784-1900**
 HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004.
 SIGNATURE **MICHAEL PULLING** DATE **28/03/18(LV)**

CERTIFIED BY ENDEAVOUR ENERGY
 Amendment: _____
 Date Approved: _____
 Examiner's Signature: _____
 Print Name: _____
This Certification is issued subject to Endeavour Energy's Standard Certification Terms.

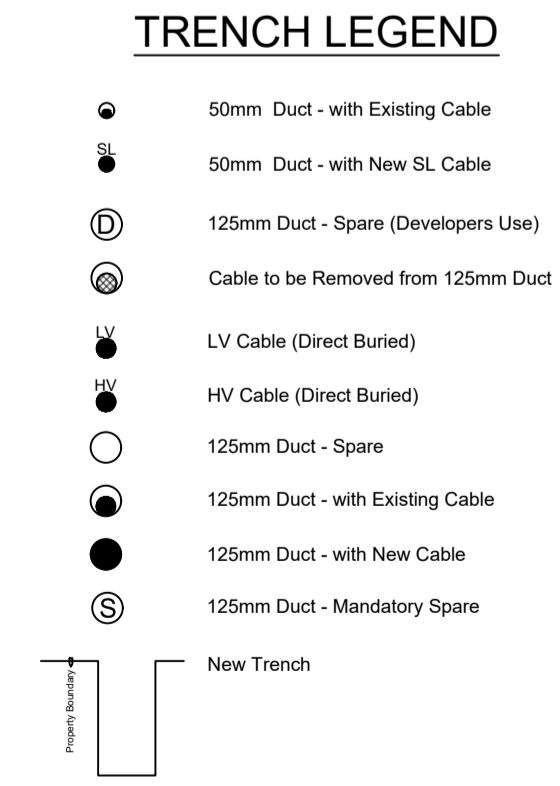


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AMENDMENTS	Original Issue	23.10.2017	STAGING PLAN 1 & 2	Drawn: Z MOORE	Checked: J.A.
AMENDMENTS	REVISION	20.03.2018	REVISION	Drawn: J.A.	Checked: M.L.B.

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.

powerline design
 POWER LINE DESIGN PTY LTD
 PO BOX 338 Mittagong NSW 2575
 Ph (02) 4872 1920 Fax (02) 4872 1240
 Accredited Designer Number 2486 / ABN: 33197 991 846

Reference Drawings	Work Orders
URS17427 500805A RETIC	General
URS17428 504803A RETIC	Overhead
URS18956 504827A RETIC	Underground
URS17974 502648A RETIC	Substations
URS18495 503195A RETIC	

CAP / SAMP No.	URS19233
AM Project No.	2017/00535/001
HV Switching	
UBD/Penguin Ref No.	C11 126
GIS Map No.	U82674
HV OP Diagram	MARSDEN PARK
Local Government Area	BLACKTOWN CITY

ORIGINAL SCALE	NTS
DO NOT SCALE	
DIMENSIONS IN METRES	
Drawn	Z MOORE
Date	20.03.2018
Checked	Michael J.B
Design	Michael J.B

**RICHMOND ROAD
 MARSDEN PARK
 URS19233
 RESIDENTIAL SUBDIVISION
 LOT 3 DP 1225885
 ELECTRICAL RETICULATION**

A1

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Sheet No 19 of 27 Sheets

Endeavour Energy

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	LD: Lay HV 125mm Ducts in Trench C: Cable - Materials				LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench			
				Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
k13-k14 X	New Footpath Ducts	8	-	-	8	-	8	-	8	-	
I1-I2 ✓	New Footpath Ducts	20	-	-	-	-	-	-	-	-	
I2-I3 X	New Footpath Ducts	13	-	-	-	-	-	-	-	-	
I4-I5 ✓	New Footpath Ducts	10	-	-	-	-	-	-	-	-	
I6-I7 X	New Footpath Ducts	16	-	-	-	-	-	-	-	-	
R77 ✓	New Road Crossing	14	-	-	-	-	-	-	-	-	
I7-I8 X	New Footpath Ducts	22	-	-	-	-	-	-	-	-	
I8-I9 X	New Footpath Ducts	28	-	-	-	-	-	-	-	-	
I9-I10 X	New Footpath Ducts	8	-	-	-	-	-	-	-	-	
R78 X	New Road Crossing	17	-	-	-	17	17	-	34	-	
I10-I11 X	New Footpath Ducts	61	-	-	61	-	61	-	61	-	
R79 ✓	New Road Crossing	17	-	-	-	-	-	-	-	-	
I11-I16 ✓	New Footpath Ducts	25	-	-	25	-	25	-	25	-	
I16-I12 ✓	New Footpath Ducts	22	-	-	22	-	22	-	22	-	
Running Total:			140m	140m	1645m	341m	1986m	0m	1669m	-	

Continue Duct Breakdown Table Upper Right

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	LD: Lay HV 125mm Ducts in Trench C: Cable - Materials				LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench			
				Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
R80 X	New Road Crossing	17	-	-	-	-	-	-	-	-	
I12-I13 ✓	New Footpath Ducts	31	-	-	31	-	31	-	31	-	
I13-I14 X	New Footpath Ducts	29	-	-	-	-	29	-	29	-	
I14-I15 X	New Footpath Ducts	29	-	-	-	-	29	-	29	-	
m1-m2 X	Existing Ducts	33	-	-	-	-	-	-	-	-	
m2-m3 X	New Footpath Ducts	38	-	-	-	-	-	-	-	-	
m3-m4 X	New Footpath Ducts	13	-	-	-	-	-	-	-	-	
n1-n2 ✓	New Footpath Ducts	25	-	-	-	-	-	-	-	-	
n3-n4 X	New Footpath Ducts	17	-	-	17	-	17	-	17	-	
n4-n5 X	New Footpath Ducts	21	-	-	-	-	21	-	21	-	
n5-n6 X	New Footpath Ducts	33	-	-	-	-	33	-	33	-	
n7-n8 ✓	New Footpath Ducts	11	-	-	-	-	-	-	-	-	
R82 ✓	New Road Crossing	18	-	-	-	-	-	-	-	-	
R69 X	New Road Crossing	16	-	-	-	-	16	16	-	32	
Running Total:			140m	140m	1805m	357m	2162m	0m	1861m	-	

Continue Duct Breakdown Table Sheet 21

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY **C.J. DOYLE CONTRACTING**

WORKS COMPLETED **TERRY GLASS**

SIGNATURE **TERRY GLASS**, DATE **28/03/18(LV)**

INSPECTED BY **DANIEL McMULLAN**

SIGNATURE _____, DATE _____

ASSET RECORDING

I **MICHAEL PULLING**

OF **C.J. DOYLE CONTRACTING**

CONTACT No **8784-1900**

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

SIGNATURE **MICHAEL PULLING**, DATE **28/03/18(LV)**

CERTIFIED BY ENDEAVOUR ENERGY

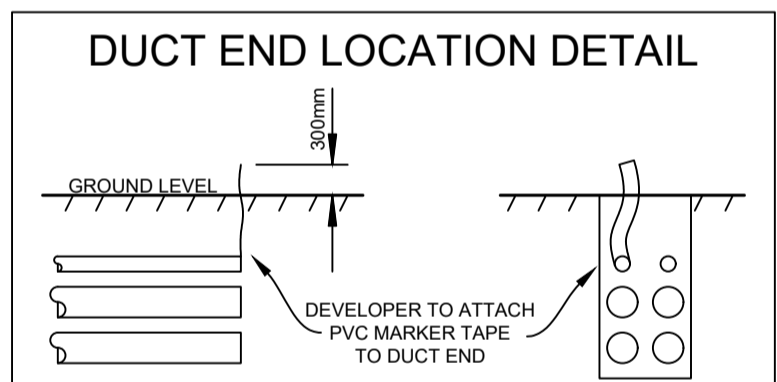
Amendment: _____

Date Approved: _____

Examiner's Signature: _____

Print Name: _____

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



EXISTING CONDUITS
All conduits are to be mandrelled, proven clear, free of foreign material, and deformation prior to the installation of cables.

SERVICE DUCTS
The end of service ducts must not be placed under proposed driveways. (Refer to Developers Representative for details)

NEW DUCTS/CONDUITS
All new 125mm ducts / conduits are to have a minimum 750mm cover (in accordance with MDI0028)

DUCT REQUIREMENTS
A continuous spare 125mm duct is to be installed in all trenches where HV and LV mains cables are installed. (maximum of 1x HV & 1x LV)

TRENCH LEGEND

- 50mm Duct - with Existing Cable
- 50mm Duct - with New SL Cable
- 125mm Duct - Spare (Developers Use)
- Cable to be Removed from 125mm Duct
- LV Cable (Direct Buried)
- HV Cable (Direct Buried)
- 125mm Duct - Spare
- 125mm Duct - with Existing Cable
- 125mm Duct - with New Cable
- 125mm Duct - Mandatory Spare
- New Trench

AMENDMENTS	Original Issue	20.10.2017 NO STAGING PLAN 1 & 2 DRAWN: Z MOORE CHECKED: M.J.B.	20.03.2018 REMOVE STAGE 2 FROM DESIGN CHKD: M.J.B.	20.03.2018 Existing state on Elana Blvd Drawn: J.A. CHKD: M.J.B.
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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.

powerline design

POWER LINE DESIGN PTY LTD
PO BOX 338 Mittagong NSW 2575
Ph (02) 4872 1920 Fax (02) 4872 1240
Accredited Designer Number 2486 / ABN: 33197 591 846

Reference Drawings				Work Orders		CAP / SAMP No.		ORIGINAL SCALE NTS	
URS17427	500805A RETIC	NUL0572	500653A RETIC	General		URS19233		AM Project No.	2017/00535/001
URS17428	500803A RETIC	URS16140	408751A RETIC	Overhead		HV Switching		UBD/Penguin Ref No.	C11 126
URS18956	504827A RETIC	URS14178	388896C RETIC	Underground		GIS Map No.	U82674	Drawn	Z MOORE
URS17974	502648A RETIC	URS19233	505358D DTE	Substations		HV OP Diagram	MARSDEN PARK	Date	20.03.2018
URS18495	503195A RETIC					Local Government Area	BLACKTOWN CITY	Checked	Michael.J.B

DO NOT SCALE

DIMENSIONS IN METRES

Design: Michael.J.B

**RICHMOND ROAD
MARSDEN PARK
URS19233
RESIDENTIAL SUBDIVISION
LOT 3 DP 1225885
ELECTRICAL RETICULATION**

Endeavour Energy

A1 505359 D

Sheet No 20 of 27 Sheets

#3437

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
			LD: Lay HV 125mm Ducts in Trench C: Cable - Materials				LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench				
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
R70 X	New Road Crossing	17	-	-	-	-	-	-	-	-	-
R71 X	New Road Crossing	18	-	-	-	-	-	-	-	-	-
o1-o13 X	New Footpath Ducts	10	-	-	-	-	-	-	-	-	-
o13-o2 ✓	New Footpath Ducts	56	-	-	-	-	-	-	-	-	-
o2-o3 X	New Footpath Ducts	23	-	-	69	-	69	-	23	-	-
o3-o4 X	New Footpath Ducts	7	-	-	14	-	14	-	7	-	-
R83 X	New Road Crossing	18	-	-	-	36	36	-	54	-	-
o4-o5 X	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-
o5-o6 X	New Footpath Ducts	10	-	-	-	-	-	-	-	-	-
o6-o7 X	New Footpath Ducts	23	-	-	-	-	-	-	-	-	-
o7-o8 X	New Footpath Ducts	21	-	-	-	-	-	-	-	-	-
R72 ✓	Replace Existing Ducts	25	-	-	-	50	50	-	100	-	-
R73 ✓	Replace Existing Ducts	22	-	-	-	22	22	-	66	-	-
Running Total:		140m	140m	1888m	465m	2353m	0m	2111m	-	-	-

Continue Duct Breakdown Table Upper Right

Urban Subdivision Related Reimbursement - Duct and Cable Schedule

Duct and Cable Schedule codes: T&R: HV Light trenching & reinstatement PC: Lay Cable - Pull Conductor through Ducts *All length entered in meters (m)											
			LD: Lay HV 125mm Ducts in Trench C: Cable - Materials				LC: Lay HV Cable - Directly Buried in Trench D: Lay HV duct in SL/LV Trench				
Nodes	Configuration	Route Length (m)	HV Trench & Reinstatement (T&R)	Lay Duct (LD)	Lay Cable (LC)	Pull Cable (PC)	Cable (C) (Al)	Cable (C) (Cu)	Duct (D)	Other Duct Reimbursement (m) x (\$)	Existing Duct Usage (m) x (\$)
o8-o9 X	Replace Existing Ducts	35	-	-	35	-	35	-	70	-	-
o9-o10 X	Replace Existing Ducts	10	-	-	10	-	10	-	20	-	-
o10-o11 ✓	Existing Ducts	10	-	-	-	-	-	-	-	-	-
R10 X	New Road Crossing	21	-	-	-	-	-	-	-	-	-
o11-o12 ✓	Existing Ducts	23	-	-	-	-	-	-	-	-	-
p1-p2 ✓	Existing Ducts	13	-	-	-	-	-	-	-	-	-
p3-p4 X	Replace Existing Ducts	15	-	-	15	-	15	-	30	-	-
p4-p5 X	New Footpath Ducts	32	-	-	-	-	-	-	-	-	-
R74 ✓	New Road Crossing	14	-	-	-	-	-	-	-	-	-
p5-p6 X	New Footpath Ducts	32	-	-	-	-	-	-	-	-	-
R4 ✓	New Road Crossing	14	-	-	-	-	-	-	-	-	-
p6-p7 X	New Footpath Ducts	13	-	-	-	-	-	-	-	-	-
Running Total:		140m	140m	1948m	465m	2413m	0m	2231m	-	-	-

Continue Duct Breakdown Table Sheet 22

WORK COMPLETED / FIELD BOOK

CONSTRUCTED BY **C.J. DOYLE CONTRACTING**
 WORKS COMPLETED **TERRY GLASS**
 SIGNATURE **TERRY GLASS**, DATE **28/03/18(LV)**
 INSPECTED BY **DANIEL McMULLAN**
 SIGNATURE _____, DATE _____

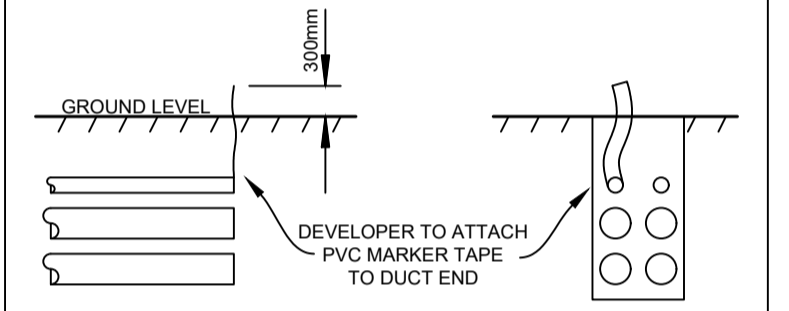
ASSET RECORDING

I, **MICHAEL PULLING**
 OF **C.J. DOYLE CONTRACTING**
 CONTACT No. **8784-1900**
 HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004.
 SIGNATURE **MICHAEL PULLING**, DATE **28/03/18(LV)**

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 END LOCATION DETAIL



Ducts
 Existing ducts and cables at a depth of greater than 1.2m are to be removed and replaced at the correct depth as indicated.

Ducts
 All new ducts joining existing duct routes are to be made continuous to ensure cables can be pulled through without excavation.

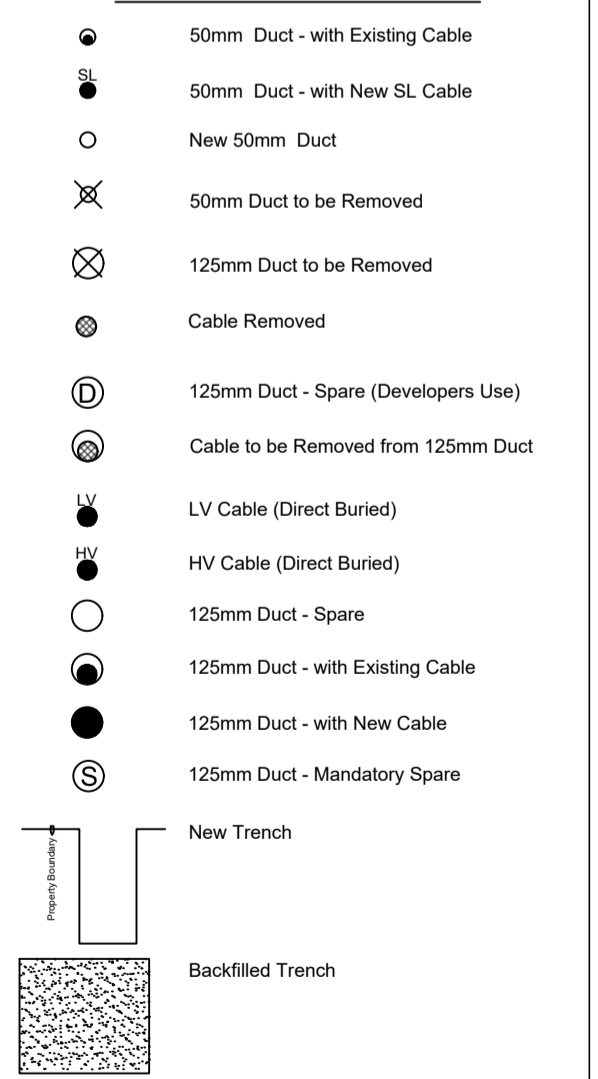
EXISTING CONDUITS
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SERVICE DUCTS
 The end of service ducts must not be placed under proposed driveways. (Refer to Developers Representative for details)

NEW DUCTS/CONDUITS
 All new 125mm ducts / conduits are to have a minimum 750mm cover. (in accordance with MDI0028)

DUCT REQUIREMENTS
 A continuous spare 125mm duct is to be installed in all trenches where HV and LV mains cables are installed. (maximum of 1x HV & 1x LV)

TRENCH LEGEND



AMENDMENTS	Original Issue	23.10.2017 - STAGING PLAN 1 & 2	23.10.2017 - DRAWN: Z MOORE	23.10.2017 - CHECKED: M.J.B	20.03.2018 - REVISED STAGE 2 FROM STAGING PLAN 1 & 2	20.03.2018 - DESIGN: Z MOORE	20.03.2018 - CHECKED: M.J.B	20.03.2018 - Existing state on Elgin Blvd	20.03.2018 - Drawn: J.A	20.03.2018 - Checked: M.J.B
A										
B										
C										
D										

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 Accredited Designer Number 2486 / ABN: 33197 591 846

Reference Drawings				Work Orders		CAP / SAMP No.		ORIGINAL SCALE		DO NOT SCALE	
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URS17428	504803A RETIC	URS16140	408751A RETIC	Overhead				HV Switching		Date	20.03.2018
URS18956	504827A RETIC	URS14178	388896C RETIC	Underground		UBD/Penguin Ref No.	C11 126	GIS Map No.	U82674	Checked	Michael.J.B
URS17974	502648A RETIC	URS19233	505358D DTE	Substations		HV OP Diagram	MARSDEN PARK	Local Government Area	BLACKTOWN CITY	Design	Michael.J.B
URS18495	503195A RETIC										

DO NOT SCALE
 DIMENSIONS IN METRES

RICHMOND ROAD
MARSDEN PARK
URS19233
RESIDENTIAL SUBDIVISION
LOT 3 DP 1225885
ELECTRICAL RETICULATION

Endeavour Energy
A1 505359 D
 Sheet No 21 of 27 Sheets
#3437

WAE SURVEY COORDINATE TABLE - MGA 56								
ID	QUALITY LEVEL	ASSET	PROPERTY LINE (m)	COVER (m)	NOTES	EASTING	NORTHING	AHD HEIGHT
1	A	ROAD CROSSING	N/A	N/A		296700.210	6270169.120	17.90
2	A	ROUTE	0.90	-0.75		296699.460	6270168.750	17.96
3	A	DUCT END	0.90	-0.75		296717.620	6270166.390	18.42
4	A	DUCT END	0.90	-0.75		296720.240	6270165.870	18.33
5	A	ROUTE	0.90	-0.75		296724.580	6270164.670	18.61
6	A	ROUTE	1.16	-0.75		296745.680	6270162.220	19.02
7	A	ROUTE	0.87	-0.75		296755.790	6270160.690	19.49
8	A	ROUTE	0.93	-0.75		296775.520	6270157.910	19.94
9	A	ROUTE	0.82	-0.75		296800.430	6270154.330	20.47
10	A	DUCT END	1.06	-0.75		296820.000	6270151.840	20.63
11	A	ROUTE	1.12	-0.75		296830.590	6270150.370	21.18
12	A	ROUTE	1.10	-0.75		296854.380	6270146.910	21.83
13	A	ROUTE	1.06	-0.75		296864.600	6270145.400	21.65
14	A	ROAD CROSSING	N/A	N/A		296864.520	6270145.970	21.55
15	A	ROUTE	0.90	-0.75		296875.040	6270144.000	22.35
16	A	ROUTE	1.19	-0.75		296891.690	6270164.210	17.88
17	A	ROUTE	0.97	-0.75		296888.470	6270151.850	17.85
18	A	ROUTE	1.00	-0.75		296885.760	6270139.380	18.02
20	A	ROUTE	0.99	-0.75		296884.450	6270131.260	18.10
21	A	ROUTE	1.03	-0.75		296882.690	6270114.310	18.19
22	A	ROUTE	0.90	-0.75		296887.390	6270108.260	18.43
23	A	DUCT END	0.90	-0.75		296887.510	6270108.020	18.40
24	A	ROAD CROSSING	N/A	N/A		296887.740	6270107.620	18.42
25	A	ROAD CROSSING	N/A	N/A		296725.240	6270102.320	19.10
26	A	ROUTE	0.90	-0.75		296725.020	6270102.770	19.20
27	A	ROUTE	0.72	-0.75		296757.140	6270098.320	19.71
28	A	ROAD CROSSING	N/A	N/A		296756.990	6270097.870	19.63
29	A	ROUTE	1.04	-0.75		296779.260	6270095.040	20.55
30	A	ROUTE	0.88	-0.75		296806.760	6270091.250	20.68
31	A	ROAD CROSSING	N/A	N/A		296806.740	6270090.740	20.65
32	A	DUCT END	0.94	-0.75		296808.150	6270090.990	20.59
33	A	ROUTE	1.03	-0.75		296821.430	6270089.010	21.24
34	A	ROUTE	1.08	-0.75		296845.270	6270085.540	21.82
35	A	ROUTE	0.82	-0.75		296855.880	6270084.290	22.00
36	A	ROAD CROSSING	N/A	N/A		296855.540	6270083.710	21.83
37	A	ROUTE	0.77	-0.75		296866.640	6270082.830	22.28
38	A	ROUTE	0.90	-0.75		296899.260	6270063.900	23.20
39	A	ROAD CROSSING	N/A	N/A		296898.640	6270064.460	23.08
40	A	ROAD CROSSING	N/A	N/A		296849.600	6270071.580	21.75
41	A	ROUTE	0.85	-0.75		296849.200	6270070.880	21.77
42	A	ROUTE	0.84	-0.75		296811.760	6270076.130	21.07
43	A	DUCT END	1.02	-0.75		296812.190	6270076.250	21.09
44	A	ROAD CROSSING	N/A	N/A		296811.250	6270076.850	21.04
45	A	ROUTE	0.99	-0.75		296796.680	6270078.420	20.95
47	A	ROUTE	0.85	-0.75		296757.230	6270083.880	19.91
48	A	ROAD CROSSING	N/A	N/A		296757.210	6270084.210	19.88
49	A	ROUTE	0.90	-0.75		296747.010	6270085.330	19.70
50	A	ROUTE	0.85	-0.75		296727.590	6270087.960	19.15
51	A	ROAD CROSSING	N/A	N/A		296727.430	6270088.310	18.99
52	A	ROUTE	0.94	-0.75		296715.660	6270089.700	19.26
53	A	ROUTE	1.00	-0.75		296815.200	6270013.130	20.54
54	A	ROAD CROSSING	N/A	N/A		296815.270	6270012.430	20.53
55	A	ROUTE	0.97	-0.75		296788.570	6270016.930	20.26
56	A	ROUTE	1.12	-0.75		296761.510	6270020.610	19.56
57	A	ROUTE	1.05	-0.75		296729.200	6270025.230	18.90
58	A	ROUTE	1.18	-0.75		296706.740	6270028.360	18.50
59	A	ROAD CROSSING	N/A	N/A		296681.260	6270031.560	17.84
60	A	ROUTE	0.90	-0.75		296681.270	6270031.910	17.83
61	A	ROUTE	0.90	-0.75		296675.970	6270038.310	18.10
62	A	ROUTE	1.03	-0.75		296676.920	6270049.660	18.31
63	A	DUCT END	1.00	-0.75		296678.020	6270062.640	18.18
64	A	ROUTE	0.98	-0.75		296678.150	6270063.830	18.09
66	A	ROUTE	0.90	-0.75		296680.480	6270089.350	18.30
67	A	ROUTE	0.90	-0.75		296686.430	6270093.790	17.99
68	A	ROUTE	0.90	-0.75		296686.720	6270093.980	18.14
69	A	ROAD CROSSING	N/A	N/A		296686.830	6270094.410	18.23
70	A	ROUTE	0.90	-0.75		296679.740	6270017.410	18.12
71	A	ROUTE	0.71	-0.75		296673.990	6270013.010	18.40
72	A	ROUTE	0.73	-0.75		296672.800	6270000.090	18.23
73	A	ROUTE	0.96	-0.75		296669.900	6269966.960	17.74
74	A	ROAD CROSSING	N/A	N/A		296667.100	6269940.050	17.23
75	A	ROUTE	0.90	-0.75		296667.600	6269940.260	17.12
76	A	ROUTE	0.90	-0.75		296672.890	6269934.910	17.09
77	A	ROUTE	1.14	-0.75		296665.160	6269914.280	16.98
78	A	ROUTE	0.90	-0.75		296670.830	6269920.240	17.17
79	A	ROAD CROSSING	N/A	N/A		296671.420	6269920.680	17.21
80	A	DUCT END	0.90	-0.75		296671.990	6269920.550	17.11
81	A	ROUTE	0.90	-0.75		296716.090	6270012.900	18.91
82	A	ROUTE	0.68	-0.75		296726.260	6270011.220	18.87
83	A	ROAD CROSSING	N/A	N/A		296726.240	6270011.780	18.83
84	A	ROUTE	0.81	-0.75		296738.590	6270009.620	19.50
85	A	ROAD CROSSING	N/A	N/A		296728.860	6270024.880	18.66
86	A	ROAD CROSSING	N/A	N/A		296758.560	6270007.340	19.30

WAE SURVEY COORDINATE TABLE - MGA 56								
ID	QUALITY LEVEL	ASSET	PROPERTY LINE (m)	COVER (m)	NOTES	EASTING	NORTHING	AHD HEIGHT
87	A	ROUTE	0.98	-0.75		296758.460	6270007.000	19.30
88	A	ROUTE	0.90	-0.75		296773.290	6270004.660	20.20
89	A	ROAD CROSSING	N/A	N/A		296761.250	6270020.350	19.46
90	A	ROUTE	1.17	-0.75		296828.130	6270011.130	20.77
91	A	ROUTE	1.24	-0.75		296840.270	6270009.410	21.16
92	A	ROUTE	1.21	-0.75		296855.670	6270007.270	21.93
93	A	ROUTE	1.06	-0.75		296866.600	6270005.870	22.16
94	A	ROUTE	N/A	-0.75		296866.660	6270006.880	22.27
95	A	ROUTE	N/A	-0.75		296866.860	6270007.740	22.35
96	A	DUCT END	1.04	-0.75		296865.440	6270006.060	22.21
97	A	DUCT END	1.06	-0.75		296867.660	6270005.730	22.24
98	A	ROAD CROSSING	N/A	N/A		296866.620	6270005.490	22.32
99	A	DUCT END	1.14	-0.75		296889.650	6270002.540	23.12
100	A	ROUTE	1.12	-0.75		296890.460	6270002.550	23.08
101	A	ROUTE	0.90	-0.75		296896.440	6270006.980	23.10
103	A	ROUTE	0.90	-0.75		296897.640	6270013.660	23.05
104	A	ROUTE	0.90	-0.75		296899.160	6270024.290	23.00
105	A	DUCT END	0.90	-0.75		296900.680	6270034.420	22.98
106	A	ROUTE	0.90	-0.75		296902.160	6270045.300	23.02
107	A	ROUTE	0.90	-0.75		296903.450	6270057.500	23.15
109	A	DUCT END	0.90	-0.75		296903.560	6270056.910	23.09
110	A	ROUTE	0.80	-0.75		296770.630	6270081.930	20.29
112	A	DUCT END	1.22	-0.75		296911.050	6270153.040	22.56
113	A	ROUTE	1.23	-0.75		296908.070	6270153.440	22.60
114	A	ROUTE	1.13	-0.75		296888.070	6270156.290	22.41
115	A	DUCT END	0.85	-0.75		296866.830	6270159.520	21.54
116	A	ROAD CROSSING	N/A	N/A		296866.620	6270159.210	21.59
117	A	ROUTE	0.95	-0.75		296855.940	6270160.940	21.57
118	A	ROUTE	1.05	-0.75		296844.390	6270162.480	21.28
119	A	ROUTE	0.97	-0.75		296827.840	6270164.870	20.85
120	A	DUCT END	0.98	-0.75		296822.030	6270165.680	20.37
121	A	ROAD CROSSING	N/A	N/A		296821.850	6270165.060	20.48
122	A	ROUTE	0.63	-0.75		296812.080	6270167.430	20.54
123	A	DUCT END	1.07	-0.75		296789.730	6270170.150	19.70
124	A	ROAD CROSSING	N/A	N/A		296789.690	6270169.500	19.61
125	A	ROUTE	0.61	-0.75		296779.700	6270172.030	19.66
126	A	ROUTE	0.79	-0.75		296760.660	6270174.550	19.31
127	A	ROAD CROSSING	N/A	N/A		296747.680	6270175.700	18.51
128	A	DUCT END	1.04	-0.75		296747.490	6270176.150	18.43
129	A	ROUTE	0.98	-0.75		296729.470	6270178.810	18.47
130	A	ROUTE	1.22	-0.75		296707.240	6270181.830	17.68
131	A	ROAD CROSSING	N/A	N/A		296707.040	6270181.570	17.72
132	A	DUCT END	1.25	-0.75		296707.670	6270181.670	17.61
133	A	ROUTE	1.27	-0.75		296702.700	6270190.340	17.60
134	A	ROUTE	1.07	-0.75		296710.200	6270203.340	17.30
135	A	ROUTE	0.90	-0.75		296715.420	6270212.220	17.22
140	A	ROUTE	1.23	-0.75		296660.100	6269862.720	16.82
141	A	ROUTE	0.90	-0.75		296661.850	6269874.820	16.78
142	A	ROUTE	0.87	-0.75		296663.690	6269888.360	16.89
143	A	ROUTE	1.17	-0.75		296663.930	6269901.350	16.56
144	A	ROAD CROSSING	N/A	N/A		296663.650	6269901.370	16.85
145	A	ROUTE	0.90	-0.75		296717.710	6269939.240	18.93
146	A	DUCT END	0.88	-0.75		296730.190	6269940.650	18.84
147	A	ROAD CROSSING	N/A	N/A		296730.190	6269940.290	18.97
148	A	ROUTE	1.00	-0.75		296739.070	6269941.400	19.16
149	A	ROUTE	0.78	-0.75		296744.420	6269942.160	19.26
150	A	ROAD CROSSING	N/A	N/A		296744.500	6269941.800	19.24
151	A	ROAD CROSSING	N/A	N/A		296754.650	6269942.860	19.42
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WAE SURVEY COORDINATE TABLE - MGA 56								
ID	QUALITY LEVEL	ASSET	PROPERTY LINE (m)	COVER (m)	NOTES	EASTING	NORTHING	AHD HEIGHT
188	A	ROAD CROSSING	N/A	N/A		296761.300	6269866.800	20.21
189	A	ROUTE	1.03	-0.75		296761.210	6269867.330	20.12
190	A	ROUTE	1.08	-0.75		296776.810	6269868.920	20.71
191	A	ROUTE	0.90	-0.75		296778.140	6269854.840	20.93
192	A	ROUTE	0.92	-0.75		296765.500	6269853.590	20.17
193	A	ROAD CROSSING	N/A	N/A		296765.510	6269853.930	20.25
194	A	ROUTE	0.84	-0.75		296741.490	6269851.030	19.77
195	A	ROUTE	0.93	-0.75		296730.900	6269850.020	19.01
196	A	ROAD CROSSING	N/A	N/A		296730.840	6269850.650	19.04
197	A	ROUTE	0.81	-0.75		296720.150	6269848.780	19.05
198	A	ROUTE	1.05	-0.75		296694.220	6269846.340	17.86
199	A	ROAD CROSSING	N/A	N/A		296694.350	6269847.180	17.92
200	A	ROUTE	0.58	-0.75		296681.890	6269844.550	17.88
201	A	ROAD CROSSING	N/A	N/A		296660.450	6269843.400	17.02
202	A	ROUTE	0.90	-0.75		296660.510	6269843.070	17.05
203	A	ROUTE	0.90	-0.75		296658.770	6269839.800	17.19
204	A	ROUTE	1.35	-0.75		296655.820	6269837.090	17.17
205	A	ROUTE	0.90	-0.75		296654.650	6269826.750	17.17
206	A	ROAD CROSSING	N/A	N/A		296831.010	6269990.760	20.61
207	A	ROUTE	0.90	-0.75		296831.360	6269990.820	20.67
208	A	ROUTE	0.90	-0.75		296837.330	6269995.750	21.31
243	C	ROUTE	1.21	-0.75		296900.500	6270077.660	23.02
244	C	ROUTE	1.35	-0.75		296885.950	6270079.540	22.63
269	A	ROUTE	0.90	-0.75		296654.320	6269821.780	17.09
271	A	ROUTE	0.94	-0.75		296653.060	6269808.630	17.13
272	A	ROUTE	0.86	-0.75		296651.190	6269785.590	17.52
273	A	ROUTE	1.04	-0.75		296651.240	6269784.790	17.58
274	A	ROUTE	0.90	-0.75		296656.360	6269780.140	17.91
275	A	ROUTE	0.91	-0.75		296677.620	6269782.270	18.53
276	A	ROUTE	0.83	-0.75		296697.110	6269784.310	18.17
277	A	ROUTE	0.80	-0.75		296707.570	6269785.400	19.26
278	A	ROAD CROSSING	N/A	N/A		296707.630	6269785.080	19.31
279	A	ROUTE	1.12	-0.75		296735.220	6269788.160	20.39
280	A	ROUTE	1.07	-0.75		296750.200	6269789.730	20.52
281	A	ROAD CROSSING	N/A	N/A		296750.230	6269789.330	20.55
282	A	ROUTE	0.99	-0.75		296762.550	6269791.050	21.00
283	A	ROUTE	0.88	-0.75		296782.530	6269793.210	21.66
284	A	ROUTE	1.03	-0.75		296794.250	6269794.330	22.05
285	A	ROUTE	1.29	-0.75		296794.950	6269794.420	22.11
286	A	ROUTE	0.90	-0.75		296799.440	6269800.180	21.79
287	A	ROUTE	0.90	-0.75		296799.730	6269800.120	21.98
288	A	ROUTE	0.90	-0.75		296799.910	6269800.670	21.91
289	A	ROAD CROSSING	N/A	N/A		296799.870	6269799.830	22.08
290	A	ROAD CROSSING	N/A	N/A		296800.310	6269800.560	22.00
291	A	ROUTE	0.90	-0.75		296798.900	6269815.810	21.85
292	A	ROUTE	0.90	-0.75		296798.980	6269838.930	21.66
293	A	ROUTE	0.90	-0.75		296799.580	6269851.210	21.56
294	A	ROAD CROSSING	N/A	N/A		296799.570	6269851.490	21.62
295	A	ROAD CROSSING	N/A	N/A		296796.480	6269869.780	21.27
296	A	DUCT END	1.40	-0.75		296796.130	6269870.670	21.29
297	A	ROUTE	1.45	-0.75		296796.900	6269870.780	21.33
298	A	ROUTE	0.90	-0.75		296801.600	6269875.370	21.42
299	A	ROUTE	0.90	-0.75		296802.530	6269875.830	21.41
300	A	ROAD CROSSING	N/A	N/A		296802.700	6269875.900	21.61
301	A	ROUTE	0.90	-0.75		296679.540	6269921.170	17.78
302	A	ROUTE	1.02	-0.75		296704.710	6269923.800	18.50
303	A	ROUTE	0.80	-0.75		296714.770	6269924.610	18.65
304	C	DUCT END	0.81	-0.75		296727.650	6269925.960	18.64
305	A	ROUTE	1.04	-0.75		296747.120	6269928.230	19.17
306	A	ROUTE	0.82	-0.75		296768.460	6269930.260	19.94
308	A	ROUTE	0.83	-0.75		296786.820	6269932.210	20.44
309	A	ROUTE	0.98	-0.75		296803.560	6269934.030	20.75
310	A	ROUTE	1.23	-0.75		296804.270	6269934.080	20.82
311	A	ROUTE	1.06	-0.75		296808.900	6269929.090	21.18
312	A	ROUTE	0.85	-0.75		296808.750	6269928.660	21.20
313	A	ROAD CROSSING	N/A	N/A		296809.730	6269928.490	21.03
314	A	ROAD CROSSING	N/A	N/A		296825.600	6269951.290	20.81
315	A	ROUTE	0.90	-0.75		296825.780	6269951.290	20.88
316	A	ROUTE	1.52	-0.75		296822.300	6269926.420	21.33
317	A	ROAD CROSSING	N/A	N/A		296822.220	6269926.360	21.29
318	A	ROAD CROSSING	N/A	N/A		296814.590	6269872.330	21.57
319	A	ROUTE	1.69	-0.75		296814.780	6269872.340	21.53
330	A	DUCT END	0.90	-0.75		296779.770	6269716.250	22.07
331	A	ROUTE	0.90	-0.75		296788.140	6269717.280	22.35
332	A	ROUTE	0.90	-0.75		296801.630	6269718.820	22.09
333	A	ROUTE	0.90	-0.75		296802.270	6269719.020	22.28
334	A	ROAD CROSSING	N/A	N/A		296801.660	6269718.560	22.14
335	A	ROUTE	1.22	-0.75		296807.230	6269724.670	22.29
336	A	ROAD CROSSING	N/A	N/A		296807.540	6269725.380	22.54
337	A	DUCT END	1.06	-0.75		296807.150	6269725.400	22.45
338	A	ROUTE	1.09	-0.75		296805.930	6269737.260	22.71
339	A	DUCT END	1.04	-0.75		296804.470	6269750.570	22.69
340	A	ROUTE	1.15	-0.75		296802.030	6269774.960	22.27

WAE SURVEY COORDINATE TABLE - MGA 56								
ID	QUALITY LEVEL	ASSET	PROPERTY LINE (m)	COVER (m)	NOTES	EASTING	NORTHING	AHD HEIGHT
341	A	ROAD CROSSING	N/A	N/A		296801.810	6269775.790	22.32
342	A	ROUTE	0.90	-0.75		296819.790	6269904.300	21.34
343	A	ROUTE	0.72	-0.75		296818.460	6269893.910	21.47
344	A	DUCT END	1.06	-0.75		296818.060	6269893.420	21.57
346	A	ROUTE	1.20	-0.75		296815.230	6269872.030	21.70
347	A	ROUTE	1.19	-0.75		296813.280	6269846.150	21.92
348	A	ROUTE	1.11	-0.75		296812.870	6269833.760	22.17
349	A	ROUTE	0.90	-0.75		296812.850	6269817.250	22.34
350	A	ROUTE	0.90	-0.75		296813.200	6269807.290	22.40
351	A	ROUTE	1.04	-0.75		296813.990	6269797.060	22.27
352	A	ROAD CROSSING	N/A	N/A		296813.500	6269797.250	22.24
353	A	ROUTE	1.35	-0.75		296815.220	6269780.790	22.63
354	A	ROUTE	1.11	-0.75		296817.320	6269761.420	22.72
355	A	ROUTE	1.14	-0.75		296819.650	6269739.030	22.91
356	A	ROAD CROSSING	N/A	N/A		296820.490	6269726.810	22.87
357	A	DUCT END	0.90	-0.75		296820.920	6269727.180	22.80
358	A	ROUTE	0.90	-0.75		296821.030	6269726.330	22.58
359	A	DUCT END	0.90	-0.75		296827.530	6269721.250	22.51
360	A	ROUTE	0.90	-0.75		296827.030	6269721.210	22.47
361	A	ROAD CROSSING	N/A	N/A		296827.710	6269721.000	22.64
362	A	ROUTE	0.90	-0.75		296832.550	6269721.770	22.79
363	A	ROUTE	0.90	-0.75		296778.580	6269716.980	22.04
364	A	ROUTE	N/A	N/A		296778.150	6269718.250	22.15
365	A	DUCT END	1.07	-0.75		296777.370	6269716.040	21.97
366	A	ROUTE	1.06	-0.75		296765.440	6269714.830	22.00
367	A	ROUTE	1.01	-0.75		296740.190	6269712.270	21.14
368	A	ROAD CROSSING	N/A	N/A		296740.200	6269711.800	21.11
369	A	ROUTE	1.16	-0.75		296713.990	6269709.440	20.73
370	A	ROUTE	0.95	-0.75		296697.600	6269707.890	20.23
371	A	ROAD CROSSING	N/A	N/A		296697.420	6269707.150	19.98
372	A	ROUTE	1.19	-0.75		296670.450	6269704.890	19.63
373	A	ROAD CROSSING	N/A	N/A		296649.760	6269702.620	18.76
374	A	ROUTE	0.90	-0.75		296649.060	6269703.040	18.83
375	A	ROUTE	1.68	-0.75		296644.110	6269707.840	18.81
377	A	DUCT END	0.91	-0.75		296646.600	6269733.930	18.12
378	A	ROUTE	0.98	-0.75		296648.760	6269759.350	18.10
379	A	ROUTE	0.90	-0.75		296691.050	6269769.390	19.31
380	A	ROUTE	0.72	-0.75		296704.060	6269770.600	19.28
381	A	ROAD CROSSING	N/A	N/A		296704.220	6269771.470	19.22
382	A	ROUTE	0.86	-0.75		296715.920	6269771.960	19.97
383	A	ROUTE	1.11	-0.75		296751.940	6269775.920	20.61
384	A	ROAD CROSSING	N/A	N/A		296751.950	6269776.310	20.59
385	A	ROUTE	0.90	-0.75		296683.770	6269692.090	20.07
386	A	ROUTE	0.68	-0.75		296694.350	6269693.120	20.04
387	A	ROAD CROSSING	N/A	N/A		296694.710	6269694.150	19.91
388	A	ROUTE	1.22	-0.75		296704.020	6269694.550	20.47
389	A	ROUTE	1.19	-0.75		296726.140	6269696.810	21.08
390	A	ROUTE	1.19	-0.75		296741.600	6269698.400	21.30
391	A	ROAD CROSSING	N/A	N/A		296741.690	6269699.280	21.09
392	A	ROUTE	1.17	-0.75		296760.320	6269700.410	21.96
393	A	ROUTE	1.21	-0.75		296777.400	6269702.310	22.11
394	A	ROUTE	0.90	-0.75		296803.330	6269705.580	22.79
395	A	ROAD CROSSING	N/A	N/A		296803.160	6269705.890	22.83
396	A	ROUTE	1.52	-0.75		296810.270	6269699.880	22.98
397	A	ROUTE	0.90	-0.75		296850.200	6269723.770	23.11
398	A	ROUTE	0.90	-0.75		296866.020	6269725.280	23.56
399	A	ROUTE	0.90	-0.75		296877.590	6269726.710	23.56

WAE SURVEY COORDINATE TABLE - MGA 56. Table with columns: ID, QUALITY LEVEL, ASSET, PROPERTY LINE (m), COVER (m), NOTES, EASTING, NORTHING, AHD HEIGHT. Contains 98 rows of survey data.

WAE SURVEY COORDINATE TABLE - MGA 56. Table with columns: ID, QUALITY LEVEL, ASSET, PROPERTY LINE (m), COVER (m), NOTES, EASTING, NORTHING, AHD HEIGHT. Contains 26 rows of survey data.

WORK COMPLETED / FIELD BOOK. Includes fields for CONSTRUCTED BY (C.J. DOYLE CONTRACTING), WORKS COMPLETED (TERRY GLASS), SIGNATURE, INSPECTED BY (DANIEL McMULLAN), and SIGNATURE.

ASSET RECORDING. Includes fields for MICHAEL PULLING, OF (C.J. DOYLE CONTRACTING), CONTACT No (8784-1900), and SIGNATURE (MICHAEL PULLING).

CERTIFIED BY ENDEAVOUR ENERGY. Includes fields for Amendment, Date Approved, Examiner's Signature, and Print Name.

AMENDMENTS table with columns A-D, Original Issue, and Description of changes.

POWER LINE DESIGN PTY LTD logo and contact information, including address in Mittagong NSW 2575.

Reference Drawings and Work Orders table listing various drawing titles and their locations.

Original Scale and Dimensions table listing scale types, dates, and names.

RICHMOND ROAD MARS DEN PARK URS19233 RESIDENTIAL SUBDIVISION LOT 3 DP 1225885 ELECTRICAL RETICULATION

Endeavour Energy logo and project identification details, including drawing number A1/505359 and sheet count 27 of 27.