

**WORK COMPLETED / FIELD BOOK**

CONSTRUCTED BY .....

WORKS COMPLETED .....

SIGNATURE ..... DATE .....

INSPECTED BY .....

SIGNATURE ..... DATE .....

**ASSET RECORDING**

I, .....

OF .....

CONTACT No. ....

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

SIGNATURE ..... DATE .....

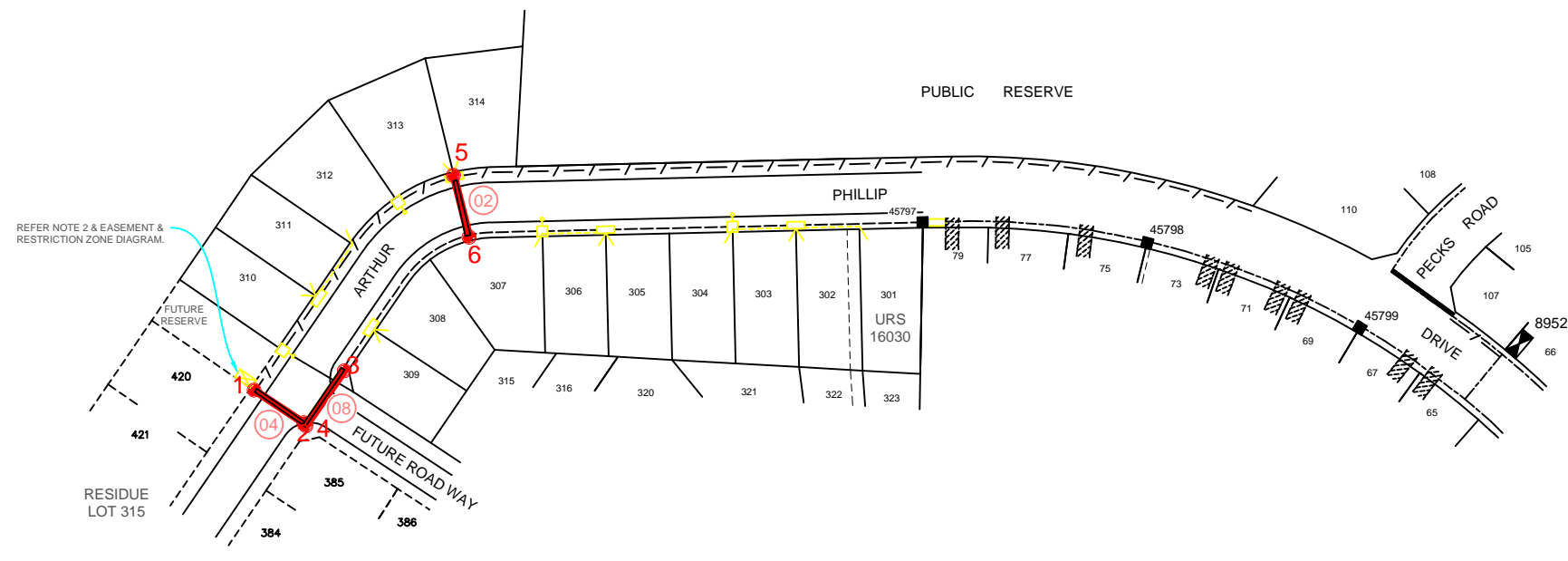
HV TRENCH LENGTH 350 M  
 LV TRENCH LENGTH 190 M  
 TOTAL TRENCH LENGTH 540 M

**WARNING**

LIVE ENDEAVOUR ENERGY CABLES AND OTHER SERVICES EXIST IN THIS AREA.  
 PLEASE CONTACT - DIAL BEFORE YOU DIG' ON TEL-1100 FOR SEARCH INFORMATION A MINIMUM TWO DAYS PRIOR TO EXCAVATION

- NOTES**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ENDEAVOUR ENERGY'S MDI 0028, MCI 0006.
  - AN EASEMENT FOR SUBSTATION SITE ('B') 5.5m x 2.75m (THIS IS MINIMUM SIZE ONLY) IS REQUIRED TO BE CREATED BY THE DEVELOPER OVER RESIDUE LOT 315. IN ADDITION TO THE EASEMENT A RESTRICTION ON THE USE OF LAND ('A') IS REQUIRED IN RELATION TO THE FIRE RATING OF BUILDINGS MEASURED 3M FROM THE PLINTH. ALSO A RESTRICTION ON THE USE OF LAND ('D') IS REQUIRED IN RELATION TO SWIMMING POOLS MEASURED 5M FROM THE EASEMENT.
  - REFER TELSTRANBN DESIGN LAYOUT FOR DUCTING AND EXCAVATION REQUIREMENTS.
  - ATTENTION - PERMANENT SURVEY MARKS MAY EXIST IN THIS AREA. THESE ARE TO BE LOCATED BY A SURVEYOR PRIOR TO THE COMMENCEMENT OF WORK.
  - WARNING - LIVE ENDEAVOUR ENERGY CABLES AND OTHER SERVICES IN THIS AREA. PLEASE CONTACT - DIAL BEFORE YOU DIG' ON TEL-1100 FOR SEARCHES A MINIMUM TWO DAYS PRIOR TO EXCAVATION.
  - ALL THE REQUIREMENTS OF THE ENVIRONMENTAL PROTECTION AUTHORITY POLLUTION CONTROL LEGISLATION IS TO BE STRICTLY ADHERED TO.

- LEGEND**
- EXISTING PADMOUNT SUBSTATION
  - PROPOSED PADMOUNT SUBSTATION
  - PROPOSED LV PILLAR
  - PROPOSED S.L. COLUMN & RAGBOLT (REFER TO SCHEDULE)
  - EXISTING S.L. COLUMN
  - LV CABLE TRENCH
  - EXISTING UNDERGROUND CABLE
  - INSTALL 40mm PVC SERVICE CONDUIT
  - HV CABLE TRENCH
  - EXISTING DUCT LOCATIONS
  - PROPOSED DUCT LOCATIONS
  - DUCT CONFIGURATION - REFER MCI 0006 SECTION 4



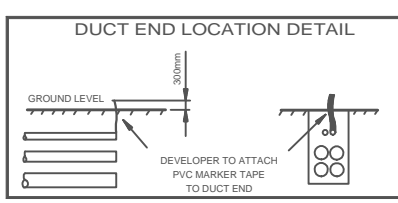
ALL WORKS TO BE CONSTRUCTED ARE TO BE COMPLETED IN ACCORDANCE WITH ENDEAVOUR ENERGY'S GENERIC ENVIRONMENTAL PLAN - EMS 0001.

ALL SL. COLUMNS ARE TO BE INSTALLED 350mm FROM PROPERTY BOUNDARIES UNLESS SHOWN OTHERWISE.

- QUALITY LEVEL DATA POINT**
- BDY - Boundary
  - DE - Duct End
  - New Ducts
  - UB-RC UNDERBORE - ROAD CROSSING
- Note:  
 1. ALL UNDERBORE DUCTS FOUND TWISTED  
 2. SECTION MARKED IN RED TO BE CAPTURED ONLY

**WAE Survey Coordinates Table**

Feature ID	Quality Level	Asset	Property Line	Cover	Notes	Easting	Northing	AHD Height
1	A	Duct End	1.12	1.55	Trench	286535.68	6282024.05	38.71
2	A	Duct End	2.01	1.35	Trench	286549.78	6282014.78	38.722
3	A	Duct End	0.9	1.75	Trench	286561.26	6282029.54	38.08
4	A	Duct End	1.08	1.78	Trench	286550.39	6282013.96	38.31
5	A	Duct End	0.91	1.26	Trench	286592.26	6282084.98	36.952
6	A	Duct End	1.02	1.30	Trench	286596.72	6282067.45	36.905



**DUCT DECLARATION**

I, Ernest Shum

OF MAROUBRA

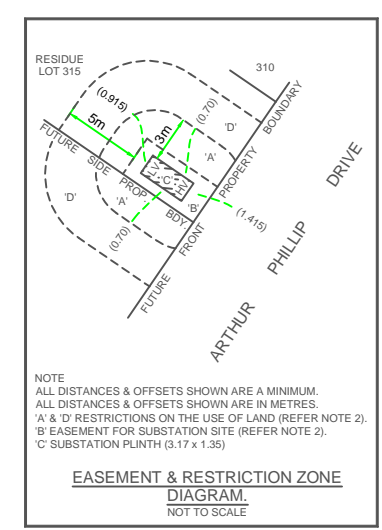
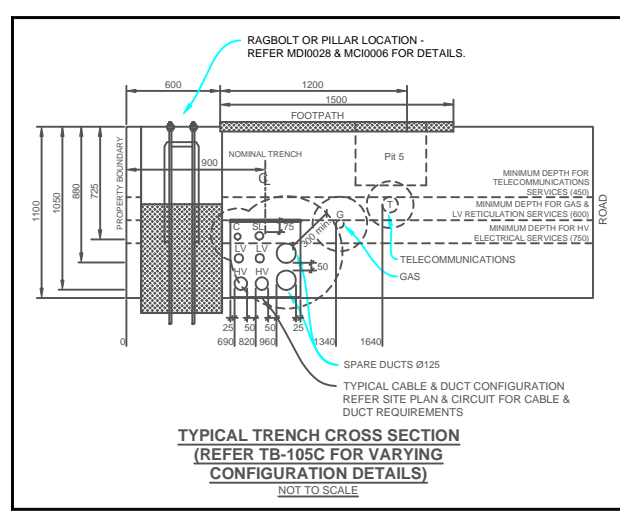
CONTACT NUMBER 02 4725 3421

HEREBY CERTIFY THAT THE DUCTS SHOWN ON THIS DRAWING HAVE BEEN INSTALLED IN ACCORDANCE WITH THIS DRAWING AND ENDEAVOUR ENERGY STANDARDS MDI 0028 & MCI006. THE DUCT DEPTHS AND LOCATION AT EACH END HAVE BEEN CORRECTLY MARKED ON THIS DRAWING AS PER ENDEAVOUR ENERGY STANDARD SAD0004.

THE INSTALLATION OF THE DUCTS WAS COMMENCED ON 28-09-2015 & COMPLETED ON 13-10-2015

SIGNATURE [Signature]

LAND SURVEYOR REGISTERED UNDER SURVEYING ACT 2002 OR MEMBER OF THE INSTITUTE OF ENGINEERS OF AUSTRALIA.



**DESIGN COMPLIANCE AND INDEMNITY**

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

- EMS : Environmental Management Standard
- MCI : Mains Construction Instruction
- MDI : Mains Design Instruction
- PDI : Protection Design Instruction
- SDI : Substation Design Instruction
- EDI : Earthing Design Instruction
- SAD 0001 : Design Drawing Standard
- MMI : Mains Maintenance Instruction
- SMI : Substation Maintenance Instruction
- LDI 0001 : Public Lighting Electrical Design Element

Additionally, where relevant, the design complies with AS/NZS 7000 'Overhead Line Design - Detailed Procedures' published by the Australian Standards.

ESTATE POWER DESIGN (Company name) indemnifies Endeavour Energy for any loss or damage resulting from non-compliance of the design with the above standards.

Signed: [Signature]  
 Name: BRIAN JUDE  
 Service Provider Number: 1033 Date: 17/10/2015

**CERTIFIED BY ENDEAVOUR ENERGY**

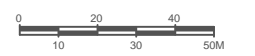
AMENDMENT: .....

DATE APPROVED: .....

EXAMINER'S SIGNATURE: .....

PRINT NAME: .....

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



**WAE ONLY**



REFERENCE DRAWINGS

404605	ELECTRICAL RETICULATION
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WORK ORDERS

GENERAL	
OVERHEAD	
UNDERGROUND	
SUBSTATIONS	

CAP / SAMP No. URS\_16032

AM PROJ. No. HV SWITCHING

UBD/PENGUIN REF MAP\_63\_REF\_H13

GIS MAP No 6482.94

HV OP DIAGRAM NTH/RICHMOND\_1\_L2

LOCAL GOV AREA HAWKESBURY

ORIGINAL SCALE

DO NOT SCALE

SCALE IN METRES

DATE 16.10.15

CHD B.J.

REDBANK\_ESTATE\_STAGE\_3A  
 LOT\_74\_ARTHUR\_PHILLIP\_DRIVE  
 NORTH\_RICHMOND  
 URS\_16032  
 DUCT,\_EASEMENT\_&\_TRENCHING  
 REQUIREMENTS

EPD REFERENCE No.  
**10/233/ED3A**

**Endeavour Energy**

**A1 404604 B**

SHEET No. NS OF SHTS SHEETS

**WORK COMPLETED / FIELD BOOK**  
 CONSTRUCTED BY **C.J. DOYLE CONTRACTING**  
 WORKS COMPLETED **TERRY GLASS**  
 SIGNATURE **TERRY GLASS**, DATE **17/11/15**  
 INSPECTED BY **TONY VELLIO**  
 SIGNATURE \_\_\_\_\_, DATE \_\_\_\_\_

**ASSET RECORDING**  
 I **BRIAN GRIMMAGE**  
 OF **C.J. DOYLE CONTRACTING**  
 CONTACT No **8784-1922**  
 HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004.  
 SIGNATURE **BRIAN GRIMMAGE**, DATE **17/11/15**

**WARNING**  
 ALL WORKS TO BE CONSTRUCTED ARE TO BE COMPLETED IN ACCORDANCE WITH ENDEAVOUR ENERGY'S GENERIC ENVIRONMENTAL PLAN - EMS 0001.

**WARNING**  
 LIVE ENDEAVOUR ENERGY CABLES AND OTHER SERVICES EXIST IN THIS AREA.  
 PLEASE CONTACT - DIAL BEFORE YOU DIG' ON TEL:-1100 FOR SEARCH INFORMATION A MINIMUM TWO DAYS PRIOR TO EXCAVATION

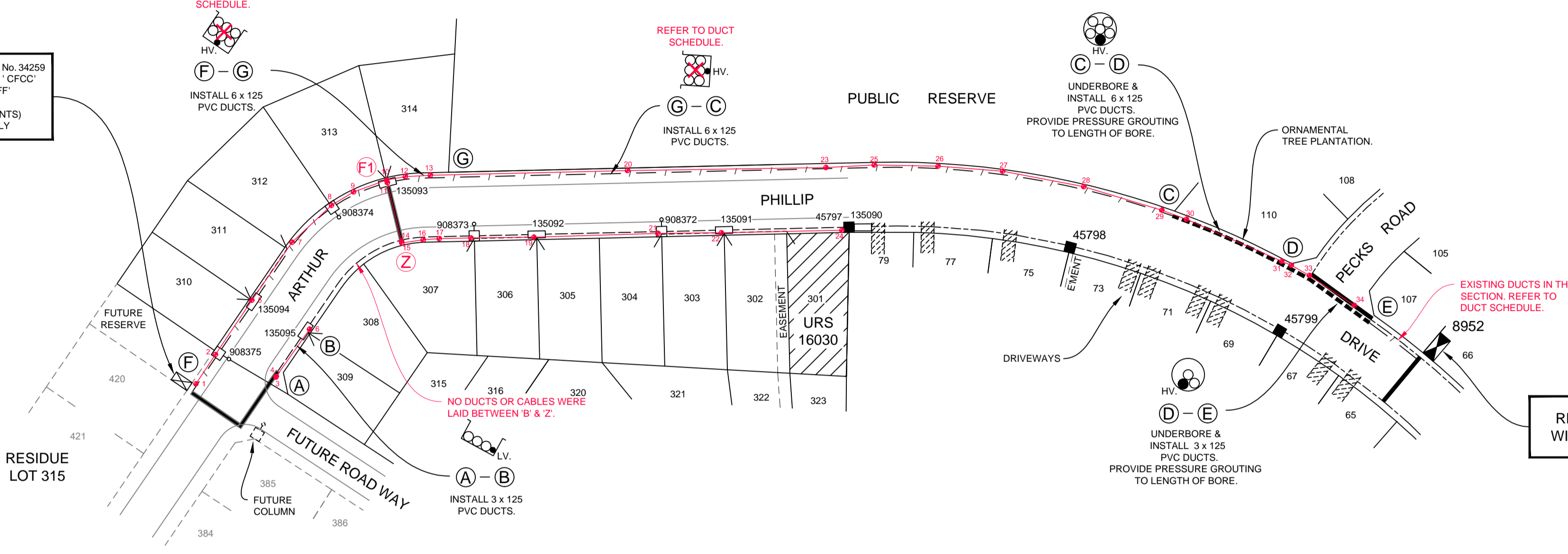
**ALL SL. COLUMNS ARE TO BE INSTALLED 350mm FROM PROPERTY BOUNDARIES UNLESS SHOWN OTHERWISE.**

- NOTES**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ENDEAVOUR ENERGY'S MCI 0006, MDI 0029, THE RELEVANT SDI & EDI 100 & THE DUCT, EASEMENT AND TRENCH REQUIREMENTS DRAWING.
  - ENDEAVOUR ENERGY CONTACT PHONE No. 131081.
  - DESIGN CERTIFICATION SHALL LAPSE WHERE:-  
 (i) NOTICE OF INTENT HAS NOT BEEN RECEIVED WITHIN SIX (6) MONTHS OF THIS CERTIFICATION, OR  
 (ii) CONSTRUCTION HAS BEEN INTERRUPTED FOR MORE THAN SIX (6) MONTHS. WHERE DESIGN CERTIFICATION HAS LAPSED, THE DESIGN MUST BE RESUBMITTED FOR CERTIFICATION BY THE ACCREDITED DESIGNER.
  - ATTENTION - PERMANENT SURVEY MARKS MAY EXIST IN THIS AREA. THESE ARE TO BE LOCATED BY A SURVEYOR PRIOR TO THE COMMENCEMENT OF WORK.
  - ATTENTION - ALL SERVICES SEARCHES MUST BE CHECKED BEFORE CONSTRUCTION.
  - WARNING** - LIVE ENDEAVOUR ENERGY CABLES AND OTHER SERVICES IN THIS AREA. PLEASE CONTACT - DIAL BEFORE YOU DIG' ON TEL:-1100 FOR SEARCHES A MINIMUM TWO DAYS PRIOR TO EXCAVATION
  - ATTENTION - SERVICE PROVIDER TO NOTIFY ENDEAVOUR ENERGY'S ASSET DATA CUSTOMER DEPT. DAILY WHEN CABLE WORKS IS IN PROGRESS. TELEPHONE 131 081.
  - OPERATIONAL LIMITS - UNLESS APPROVED OTHERWISE, INTERRUPTIONS TO ANY CUSTOMER'S SUPPLY MUST BE AVOIDED. THE FOLLOWING ALTERNATIVES SHOULD BE CONSIDERED:  
 - MOBILE GENERATORS OR SUBSTATIONS.  
 - LIVE LINEWORK  
 - DESIGN ALTERNATIVES.  
 - LOW VOLTAGE PARALLELS.  
 - WORK PRACTICES / STANDARDS.  
 THE COST IS TO BE FUNDED BY THE CUSTOMER / DEVELOPER.
  - HAVE ALL THE EXISTING ASSETS BEEN FIELD CHECKED AND ARE ACCURATE AT THE TIME OF DESIGN: YES / **NO**:
  - ALL NEW LANTERNS TO BE CONTROLLED BY PHOTO ELECTRIC CELLS.
  - HATCHED LOTS MUST NOT BE CONNECTED UNTIL APPROPRIATE PAYMENTS ARE RECEIVED BY ENDEAVOUR ENERGY.

- LEGEND**
- EXISTING PADMOUNT SUBSTATION
  - PROPOSED PADMOUNT SUBSTATION
  - PROPOSED LV PILLAR
  - PROPOSED S.L. COLUMN & RAGBOLT (REFER TO SCHEDULE)
  - EXISTING S.L. COLUMN
  - LV CABLE TRENCH
  - EXISTING UNDERGROUND CABLE
  - INSTALL 40mm PVC SERVICE CONDUIT
  - HV CABLE TRENCH
  - EXISTING DUCT LOCATIONS
  - UNDERBORE ROADWAY
  - PROPOSED DUCT LOCATIONS
  - PILLAR EARTHING LOCATIONS

- PLAN SYMBOLS**
- DIRECT BURIED CABLE
  - SPARE DUCT
  - DUCT WITH CABLE
  - DUCT WITH NEW CABLE

INSTALL 500KVA 11KV P.M. SUBSTATION No. 34259  
 HV. SW. GEAR - SAFELINK 12KV CODE 'CFCC'  
 LV. SW. GEAR - CAT. 1 CODE 'FFIF'  
 PROVIDE COMMON EARTHING (PREDICTED EARTHING REQUIREMENTS) - FOR QUOTATION PURPOSES ONLY



- WAE LEGEND**
- PVC DUCTS (TRENCH)
  - PVC DUCTS (UNDERBORE)
  - QUALITY LEVEL DATA POINT
  - PL PROPERTY LINE
  - DE DUCT END
  - UB UNDERBORE END

**SPARE DUCT REQUIREMENTS**  
 A CONTINUOUS SPARE 125MM PVC DUCT IS TO BE INSTALLED FOR EACH VOLTAGE IN ALL TRENCHES WHERE HV. & LV. CABLES ARE INSTALLED. IRRESPECTIVE OF THE NUMBER OF CABLES. A CONTINUOUS SPARE 50MM PVC DUCT IS TO BE INSTALLED IN THE TRENCHES WHERE DUCTED SL. CABLING IS TO BE INSTALLED. IN AREAS WHERE ADDITIONAL DUCTS ARE REQUIRED THE SPARE DUCT IS INCLUDED IN THE PVC DUCT SCHEDULE & THE SECTION SHOWN.

- WAE DUCT LEGEND**  
 NOT TO SCALE
- 125mm CONDUIT
  - 50mm CONDUIT
  - 125mm CONDUIT WITH EXISTING CABLE
  - 50mm CONDUIT WITH EXISTING CABLE
  - 125mm CONDUIT WITH NEW CABLE
  - 50mm CONDUIT WITH NEW CABLE
  - DIRECT BURIED HV/LV CABLE

**THE CERTIFICATION OF THIS PRODUCT IS SUPPORTED BY THE FOLLOWING KEY DOCUMENTS -**

DOCUMENT NAME	NOTATION DATE
ENVIRONMENTAL IMPACT ASSESSMENT (EMS0001) - FAT0038.	15.7.15
AGREEMENT FOR ENTRY, GRANT AND CREATION OF EASEMENT - FPJ5013.	-
EQUIPMENT TO BE RETURNED TO ENDEAVOUR ENERGY - FPJ4252 (SWITCH GEAR TRANSFORMERS & BARE COPPER CONDUCTOR).	-
EQUIPMENT TO BE RETURNED TO ENDEAVOUR ENERGY - FPJ4253 (TREATED TIMBER POLES AND CONCRETE POLES).	-
TELECOMMUNICATION ASSET AGREEMENT - FPJ4184.	-
PROJECT DEFINITION.	-
ESTATE POWER DESIGN SAFETY REPORT.	15.7.15

**PIONEER COST SHARE REIMBURSEMENT SCHEME - EXPIRY DATE: 31/12/2015**  
 PRO-RATA REIMBURSEMENT FOR CUSTOMER'S LOAD OVER 50KVA

ASSET	ASSET COST ESTIMATE (\$)	UNIT QUANTITY	NEW ASSET CAPACITY (kVA)	ORIGINAL CUSTOMER UTILISATION (kVA)	MAXIMUM REIMBURSEMENT AMOUNT (\$)
HV. MAINS	\$109,158.00	0.425 (km)	2,488	98	\$125,856.37
LV. MAINS	\$0	0 (km)	0	0	
SUBSTATION	\$0	-	0	0	

**THIS DRAWING SUPPLIES 13 x 1 FT. - LOTS**

CAP No.	FILE No.	LOT No.	No OF LOTS	DEVELOPER	DEVELOPER'S REP.	TEL. No.
URS 16030	2014/12659/001	301	1 FUT.	NTH RICHMOND JOINT VENTURE	A.FLAHERTY	47601400
URS 16032	2014/12661/001	302 - 314	13	NTH RICHMOND JOINT VENTURE	A.FLAHERTY	47601400

**FUNDING ARRANGEMENTS FOR SCOPE OF WORKS**

ASP LEVEL 1 ELECTRICAL WORKS		CUSTOMER
<b>ENDEAVOUR ENERGY SUPPLIED MATERIALS</b>	<b>CUSTOMER FUNDED NON-CONTESTABLE WORKS</b>	<b>CUSTOMER FUNDED</b>
1 x 500 KVA 11KV TRANSFORMER	SWITCHING, INSPECTION AND COMMISSIONING COSTS	INCLUDES BUT NOT LIMITED TO: - PEGGING OF EASEMENTS, PROPERTY BOUNDARIES AND INFRASTRUCTURE LOCATIONS. - REGISTRATION OF EASEMENTS. - PROVIDING ACCESS. - OWN SERVICE & SERVICE CONNECTION. - CONFIRM FINISHED GROUND LEVELS.
<b>ENDEAVOUR ENERGY FUNDED &amp; CONSTRUCTED</b>	<b>CUSTOMER FUNDED - CONTESTABLE</b>	<b>EXISTING DUCT USAGE CHARGE</b>
WORKS REQUIRED PRIOR TO COMPLETION OF CUSTOMER CONTESTABLE PROJECT.	ALL OTHER WORKS & MATERIALS INCLUDING BUT NOT LIMITED TO: - INSTALLATION & ESTABLISHMENT OF THE PM. SUBSTATION. - TRENCHING. - DUCT INSTALLATION. - CABLE LAYING AND / OR INSTALLATIONS. - JOINTING.	NIL. (REFER PVC DUCT SCHEDULE).
<b>ENDEAVOUR ENERGY FUNDED &amp; ASP L1 CONSTRUCTED - REIMBURSED</b>	<b>COORDINATION SUPPLY REQUIRED DATE (TO BE CONFIRMED WITH PROJECT MANAGER)</b>	<b>ASSETS TO BE RETURNED TO THE NEAREST ENDEAVOUR ENERGY DEPOT BY LEVEL 1 ASP.</b>
TOTAL - \$41,760 (REFER PVC DUCT SCHEDULE).	<b>DAY: 30 MONTH: 10 YEAR: 2015</b>	NIL

**PVC DUCT SCHEDULE**

LOCATION	DUCT CONFIG.	ROUTE LENGTH	CUSTOMER FUNDED	E.E FUNDED TOTAL DUCT LENGTH	E.E REIMBURSEMENT RATE PER METRE	ENDEAVOUR REIMBURSED	E.E EXISTING DUCT USAGE CHARGE
A - B	LV. NEW	15m	3 x 125mm	NIL	NIL	NIL	NIL
G - C	HV. NEW	215m	1 x 125mm	5 x 125mm	\$24	\$25,800	NIL
C - D	HV. UNDERBORE	35m	2 x 125mm	4 x 125mm	\$24	\$3,360	NIL
D - E	HV. UNDERBORE	25m	3 x 125mm	NIL	NIL	NIL	NIL
F1 - G	HV. NEW	105m	1 x 125mm	5 x 125mm	\$24	\$12,600	NIL
<b>TOTAL ROUTE LENGTH</b>		<b>395m</b>				<b>\$41,760</b>	<b>NIL</b>

**DESIGN COMPLIANCE AND INDEMNITY**  
 This design complies with the Endeavour Energy's relevant standards as current at the time and as listed on the Endeavour Energy Accredited Service Provider's Internet site. These standards include, but are not limited to:  
 EMS : Environmental Management Standard  
 MCI : Mains Construction Instruction  
 MDI : Mains Design Instruction  
 PDI : Protection Design Instruction  
 SDI : Substation Design Instruction  
 EDI : Earthing Design Instruction  
 SAD 0001 : Design Drawing Standard  
 MMI : Mains Maintenance Instruction  
 SM : Substation Maintenance Instruction  
 LD1 0001 : Public Lighting Electrical Design Element  
 Additionally, where relevant, the design complies with AS/NZS 7000 'Overhead Line Design - Detailed Procedures' published by the Australian Standards.

**ESTATE POWER DESIGN** (Company name)  
 indemnifies Endeavour Energy for any loss or damage resulting from non-compliance of the design with the above standards.  
 Signed: **BRIAN JUDE**  
 Name: \_\_\_\_\_  
 Service Provider Number: 1033 Date: 17/10/2015

**NOTE:**  
 HV. IN DUCT.

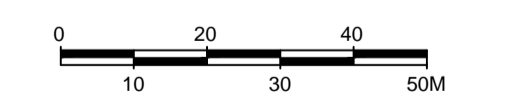
**NOTE:**  
 HV. IN DUCT.

**NOTE:**  
 LV. DIRECT BURIED HV. IN DUCT.

**APPROVAL TO CONNECT TO PUBLIC LIGHTING**  
 DATE APPROVED: \_\_\_\_\_  
 REVIEWERS SIGNATURE: \_\_\_\_\_  
 THIS APPROVAL IS ISSUED SUBJECT TO ENDEAVOUR ENERGY'S GENERAL TERMS & CONDITIONS FOR CONNECTION OF PUBLIC LIGHTING

**AUTHORISATION OF ESTIMATED VALUE OF ENDEAVOUR ENERGY FUNDED ASSETS**  
 SIGNED: \_\_\_\_\_  
 PRINT NAME: \_\_\_\_\_  
 SERVICE NUMBER: \_\_\_\_\_  
 FUNDING AMOUNT \$: \_\_\_\_\_  
 DATE: \_\_\_\_\_

**CERTIFIED BY ENDEAVOUR ENERGY**  
 AMENDMENT: \_\_\_\_\_  
 DATE APPROVED: \_\_\_\_\_  
 EXAMINER'S SIGNATURE: \_\_\_\_\_  
 PRINT NAME: \_\_\_\_\_  
 THIS CERTIFICATION IS ISSUED SUBJECT TO ENDEAVOUR ENERGY'S STANDARD CERT. TERMS.



EPD REFERENCE No. **10/233/ER3A**

**ESTATE POWER DESIGN PTY LIMITED**  
 ABN 69 002 331 142  
 ELECTRICAL RETICULATION CONSULTANTS  
 P.O. BOX 1872, PENRITH BC, 2751  
 TEL: (02) 4731-8333 FAX (02) 4731-1594  
 EMAIL: brian@estatepower.com.au

**REFERENCE DRAWINGS**

REF. NO.	DESCRIPTION	DATE
404604	DUCT, EASEMENT & TRENCHING REQ'S	GENERAL
	OVERHEAD	
	UNDERGROUND	
	SUBSTATIONS	

**WORK ORDERS**

NO.	DESCRIPTION	DATE
	AM PROJ. No.	URS 16032
	HV SWITCHING	
	UBD/PENGUIN REF	MAP 63 REF H13
	GIS MAP No	6482.94
	HV OP DIAGRAM	NTH / RICHMOND 1 L2
	LOCAL GOV AREA	HAWKESBURY

**ORIGINAL SCALE**  
 1:1000

**DO NOT SCALE**  
 DIMENSIONS IN METRES

DESIGN: B.J.

**REDBANK ESTATE - STAGE 3A**  
 LOT 74 ARTHUR PHILLIP DRIVE  
 NORTH RICHMOND  
 URS 16032  
 ELECTRICAL RETICULATION

**Endeavour Energy**

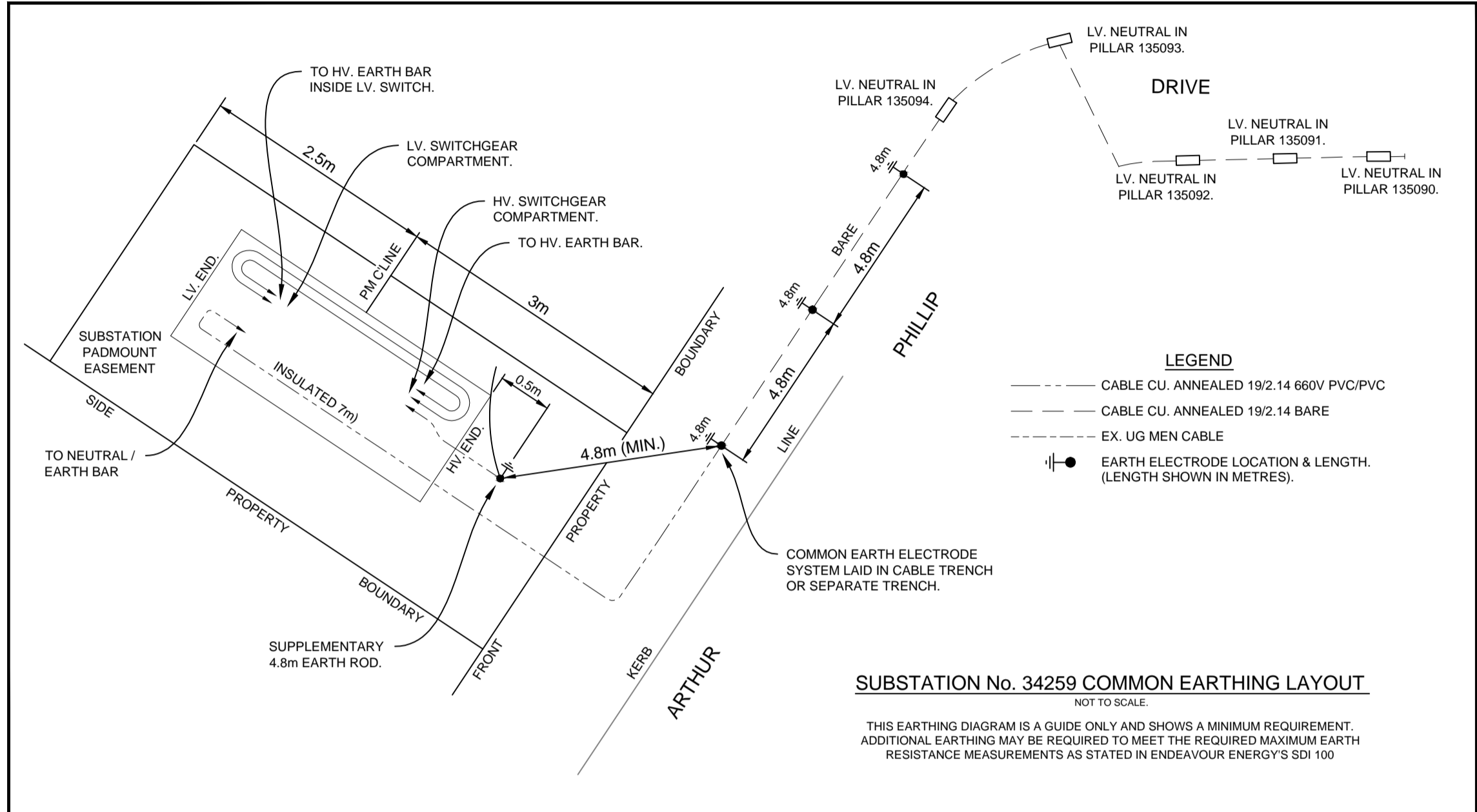
**A1 404605 B**

SHEET No 1 OF 2 SHEETS

**WORK COMPLETED / FIELD BOOK**  
 CONSTRUCTED BY C.J. DOYLE CONTRACTING  
 WORKS COMPLETED TERRY GLASS  
 SIGNATURE TERRY GLASS DATE 17/11/15  
 INSPECTED BY TONY VELLIO  
 SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**ASSET RECORDING**  
 I BRIAN GRIMMAGE  
 OF C.J. DOYLE CONTRACTING  
 CONTACT No 8784-1922  
 HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOUR ENERGY STANDARD SAD 0004.  
 SIGNATURE BRIAN GRIMMAGE DATE 17/11/15

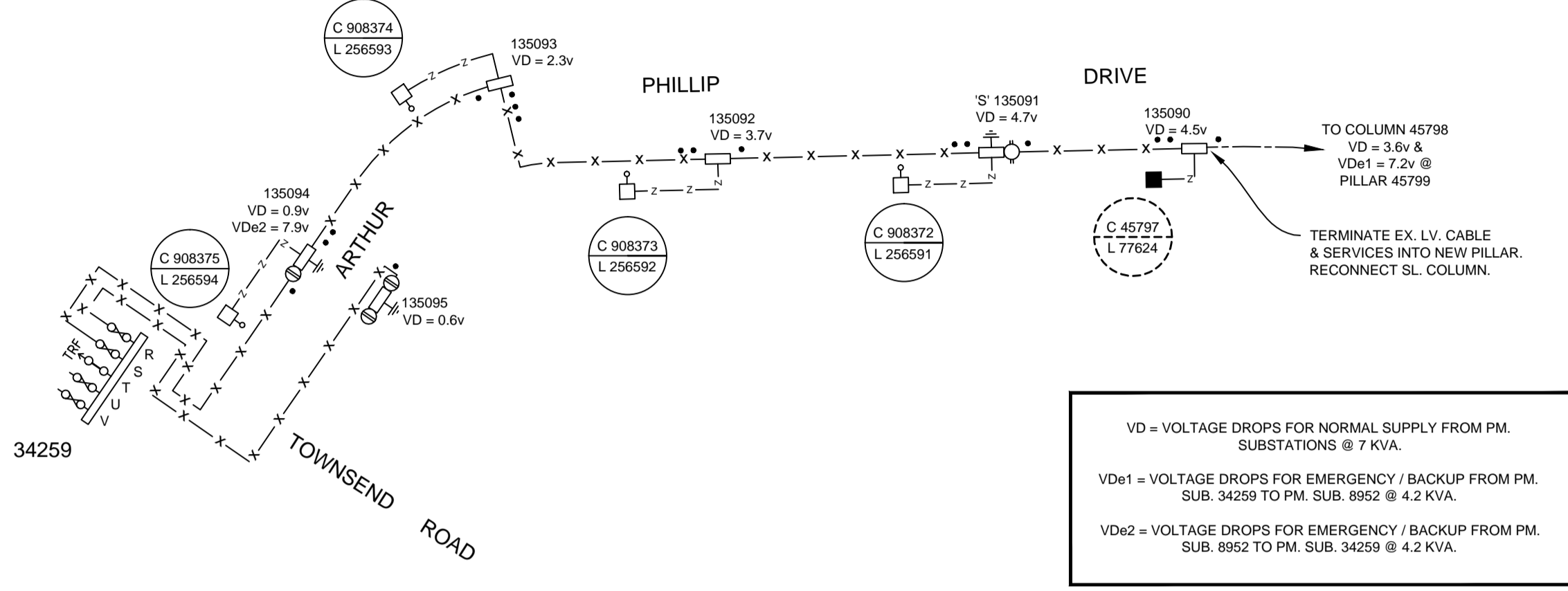
COLUMN AND LUMINAIRE SCHEDULE															
ITEM I.D.	LUMINAIRE	RATE CODE	RAGBOLT	FOUNDATION	POLE	RATE CODE	OUTREACH	RATE CODE	UPCAST	POLE QTY	LANTERN QTY	LTG CAT.	CHARGE TO		
1	25W SLA STREET LED	JL9901L29	867	TYPE 2	4.5m STANDARD	IE / EB 4.5	995	3.0 STANDARD	IE 3.0 PCS/25	991	5'	4	4	P4	HAWKESBURY COUNCIL



EARTHING DATA TO BE CAPTURED TO GIS	
SUBSTATION NO.	34259
INSTALLATION TYPE	UNDERGROUND
EARTHING SYSTEM TYPE	COMMON
SOIL RESISTIVITY AVERAGE IN OHMS	120 OHM METRES
HV SEPARATE EARTHING GRID RESISTANCE (SEPARATE EARTHING ONLY)	N/A
SIZE/NO. OF HV ELECTRODES (SEPARATE EARTHING ONLY)	N/A
LV SEPARATE EARTHING GRID RESISTANCE (SEPARATE EARTHING ONLY)	N/A
SIZE/NO. OF LV ELECTRODES (SEPARATE EARTHING ONLY)	N/A
COMBINED EARTH RESISTANCE IN OHMS (FOR COMMON EARTHING)	16.52 OHMS
SIZE/NO. OF COMBINED ELECTRODES (COMMON EARTHING)	3 x 4.8m
SIZE/NO. OF THE SUPPLEMENTARY ELECTRODE	1 x 4.8m
BONDING CONDUCTOR SIZE IN MM2 (INSULATED/BARE)	70 S0mm CU
CONNECTION TYPE (CAD OR CRIMP)	CRIMP
AMBIENT TEMPERATURE/WEATHER CONDITION	25°C
DATE OF SOIL TEST	23.02.15
INSULATED DEPTH FROM GROUND LEVEL (IN METRES)	NIL
LENGTH OF MEN CONNECTION CABLE (IN METRES)	N/A
TOTAL LENGTH OF EARTH ELECTRODE SYSTEM CABLE (INCL. INSULATED & BARE IN METRES)	APPROX. 210m
MEASURED EARTH RESISTANCE IN OHMS (TO BE MEASURED BY L1 ASP ON COMMISSIONING)	1.70 Ω

WAE SURVEY COORDINATE TABLE - MGA 56								
ID	QUALITY LEVEL	ASSET	PROPERTY LINE (m)	COVER (m)	NOTES	EASTING	NORTHING	AHD HEIGHT
1	C	DUCT END	0.90	-0.75		286537.278	6282026.511	39.273
2	A	ROUTE	0.90	-0.75		286542.939	6282034.955	39.123
3	A	DUCT CROSSING	CROSSING	-0.75		286560.349	6282028.452	38.206
4	A	ROUTE	0.90	-0.75		286560.464	6282028.659	38.254
5	A	ROUTE	0.90	-0.75		286553.430	6282050.584	38.494
6	A	DUCT END	0.90	-0.75		286570.027	6282042.286	38.690
7	A	ROUTE	0.90	-0.75		286564.986	6282067.270	37.935
8	A	ROUTE	0.90	-0.75		286576.369	6282077.922	37.542
9	A	ROUTE	0.90	-0.75		286582.725	6282081.780	37.615
10	A	ROUTE	0.90	-0.75		286592.198	6282085.204	37.323
11	A	DUCT CROSSING	CROSSING	-0.75		286592.474	6282084.460	36.970
12	A	ROUTE	0.90	-0.75		286597.654	6282086.197	37.280
13	A	ROUTE	0.90	-0.75		286604.845	6282086.562	37.284
14	A	DUCT CROSSING	CROSSING	-0.75		286596.504	6282067.653	36.882
15	A	DUCT END	0.90	-0.75		286596.631	6282067.107	37.169
16	A	ROUTE	0.90	-0.75		286602.782	6282068.031	37.321
17	A	ROUTE	0.90	-0.75		286607.400	6282068.330	37.373
18	A	ROUTE	0.90	-0.75		286616.510	6282068.536	37.212
19	A	ROUTE	0.90	-0.75		286634.639	6282068.761	37.133
20	A	ROUTE	0.90	-0.75		286661.654	6282087.954	36.578
21	A	ROUTE	0.90	-0.75		286670.419	6282069.828	36.602
22	A	ROUTE	0.90	-0.75		286688.651	6282070.038	36.229
23	A	ROUTE	0.90	-0.75		286718.801	6282088.818	35.559
24	A	DUCT END	0.90	-0.75		286723.418	6282070.784	35.758
25	A	ROUTE	0.90	-0.75		286732.715	6282089.531	35.450
26	A	ROUTE	0.90	-0.75		286751.116	6282089.209	35.254
27	A	ROUTE	0.90	-0.75		286769.720	6282087.739	35.104
28	C	ROUTE	0.90	-0.75		286793.110	6282083.286	35.014
29	A	ROUTE	0.90	-0.75		286815.582	6282076.523	35.432
30	A	ROUTE	0.90	-0.75		286822.667	6282073.905	35.550
31	A	ROUTE	0.90	-0.75		286850.138	6282061.827	35.999
32	A	DUCT END	0.90	-0.75		286852.896	6282060.669	35.854
33	A	DUCT CROSSING	CROSSING	-0.75		286858.076	6282057.744	35.858
34	A	DUCT CROSSING	CROSSING	-0.75		286871.048	6282049.098	35.814

**NEW LABELS SUB 34259**  
 'R' - PILLAR 135095  
 'S' - PILLAR 135094  
 'T' - TRANSFORMER  
 'U' - SPARE  
 'V' - SPARE



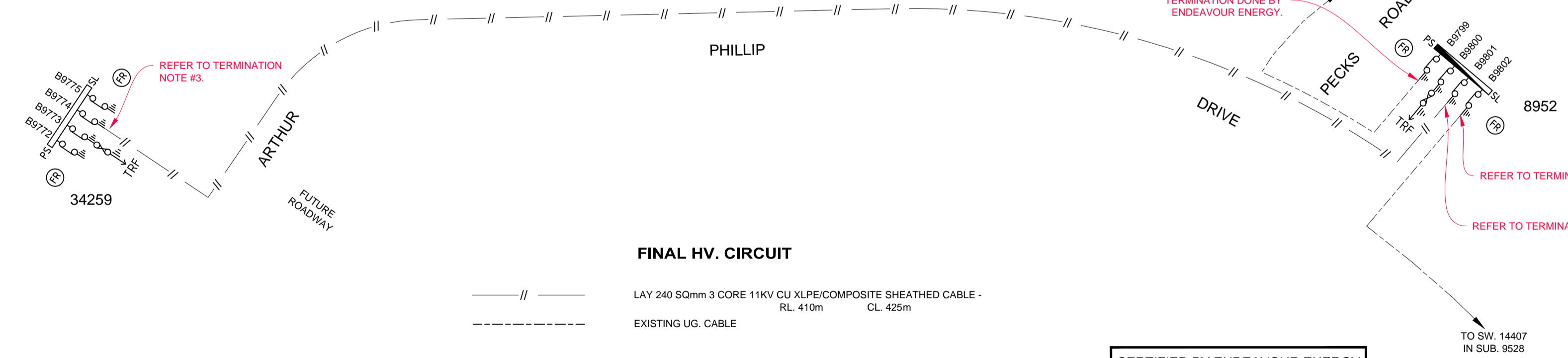
**FINAL LV. CIRCUIT**

— X — X — LAY 240 S0mm 4 CORE 1KV XLPE/PVC CABLE - RL 320m CL 360m  
 — Z — Z — LAY 2 x 16 S0mm 1 CORE PVC/PVC IN 50mm PVC CONDUIT OR ROAD CROSSING RL 95m CL 230m  
 - - - - - EXISTING UG. CABLE

**TERMINATION NOTE #1**  
 JOINT/TERMINATION TYPE: INDOOR TERMINATION  
 NETWORK ACCESS AUTHORITY: 1347  
 JOINT/TERMINATION KIT #: IXSU-FP103  
 JOINT/TERMINATION BATCH #: E14676-000  
 DATE OF MANUFACTURE: 21/09/2015

**TERMINATION NOTE #2**  
 JOINT/TERMINATION TYPE: INDOOR TERMINATION  
 NETWORK ACCESS AUTHORITY: 1347  
 JOINT/TERMINATION KIT #: IXSU-FP103  
 JOINT/TERMINATION BATCH #: E14676-000  
 DATE OF MANUFACTURE: 21/09/2015

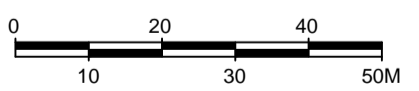
**TERMINATION NOTE #3**  
 JOINT/TERMINATION TYPE: INDOOR TERMINATION  
 NETWORK ACCESS AUTHORITY: 1584  
 JOINT/TERMINATION KIT #: IXSU-FP103  
 JOINT/TERMINATION BATCH #: E14676-000  
 DATE OF MANUFACTURE: 06/08/2015



**FINAL HV. CIRCUIT**

— // — // — LAY 240 S0mm 3 CORE 11KV CU XLPE/COMPOSITE SHEATHED CABLE - RL 410m CL 425m  
 - - - - - EXISTING UG. CABLE

**CERTIFIED BY ENDEAVOUR ENERGY**  
 AMENDMENT: \_\_\_\_\_  
 DATE APPROVED: \_\_\_\_\_  
 EXAMINER'S SIGNATURE: \_\_\_\_\_  
 PRINT NAME: \_\_\_\_\_  
 THIS CERTIFICATION IS ISSUED SUBJECT TO ENDEAVOUR ENERGY'S STANDARD CERT. TERMS.



EPD REFERENCE No. **10/233/ER3A**

AMENDMENTS	ORIGINAL ISSUE	ESTATE POWER DESIGN PTY LIMITED ABN 69 002 331 142 ELECTRICAL RETICULATION CONSULTANTS P.O. BOX 1872, PENRITH BC, 2751 TEL: (02) 4731-8333 FAX (02) 4731-1594 EMAIL: brian@estatepower.com.au	THIS DRAWING AND THE COPYRIGHT THEREIN IS THE PROPERTY OF ENDEAVOUR ENERGY AND MAY NOT BE COPIED, REPRODUCED, DISTRIBUTED, LOANED OR USED WITHOUT THE WRITTEN CONSENT OF ENDEAVOUR ENERGY	REFERENCE DRAWING'S	WORK ORDERS	CAP / SAMP No.	URS 16032	ORIGINAL SCALE 1:1000	DO NOT SCALE DIMENSIONS IN METRES	REDBANK ESTATE - STAGE 3A LOT 74 ARTHUR PHILLIP DRIVE NORTH RICHMOND URS 16032 ELECTRICAL RETICULATION	Endeavour Energy
	A			B	404604	DUCT, EASEMENT & TRENCHING REQ'S	GENERAL				
	CHKD B.J.				OVERHEAD	HV SWITCHING					
	DRWN P.M.				UNDERGROUND	UBD/PENGUIN REF					
	HV CABLE ROUTE REVISED				SUBSTATIONS	GIS MAP No	6482.94				
						HV OP DIAGRAM	NTH / RICHMOND 1 L2				
						LOCAL GOV AREA	HAWKESBURY				