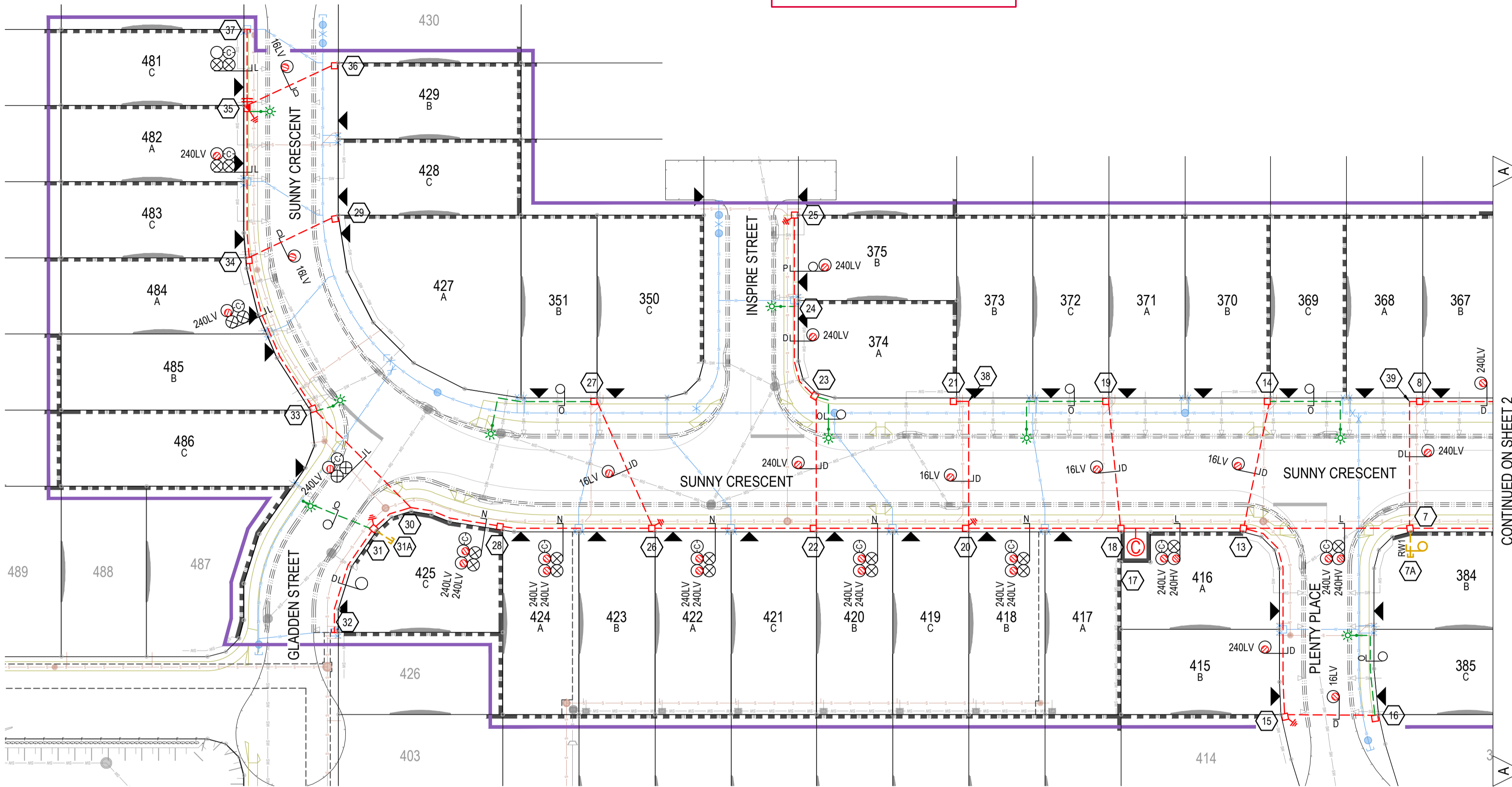


THE ELECTRICAL CONTRACT SHALL PAINT THE TRANSFORMER BLACK, AS FOLLOWS:
TWO-PACK PRIMER FOLLOWED BY TWO-PACK POLYURETHANE ENAMEL TO AS2700 IN(N61) BLACK



PLAN VIEW
SCALE 1:500
1: 500 (A1 - NOT REDUCED)

GENERAL NOTES

IN THE EVENT OF CONFLICT BETWEEN THIS WORKS PLAN AND DRAWINGS AND SPECIFICATIONS OF THE RELEVANT FUTURE ASSET OWNER, I.E. ENERGEX, ERGON, LOCAL AUTHORITY, DEPARTMENT OF TRANSPORT & MAIN ROADS, NBN™, ETC., THE DRAWINGS AND SPECIFICATIONS OF THE FUTURE ASSET OWNER SHALL TAKE PRECEDENCE. EXCEPTIONS APPLY WHERE RRA DESIGN DOCUMENTATION SPECIFY CLEARANCES, DEPTHS & SEPARATIONS GREATER THAN THE MINIMUM REQUIRED BY THE AUTHORITIES.

THE CONTRACTOR SHALL NOT ACCEPT A VERBAL INSTRUCTION FROM ANY PERSON TO DEPART FROM THE REQUIREMENTS OF THIS WORKS PLAN OR RRA GENERAL SPECIFICATION. ANY DEPARTURE FROM THE WORKS PLAN OR SPECIFICATION MUST FIRST BE AUTHORISED IN WRITING BY THE CONTRACT SUPERINTENDENT.

ELECTRICAL CONTRACTOR

THE WORKS DETAILED ON THIS DRAWING SHALL BE CONSTRUCTED IN ACCORDANCE WITH ROBIN RUSSELL & ASSOCIATES' GENERAL SPECIFICATION FOR INSTALLATION OF ELECTRICITY RETICULATION AND STREET LIGHTING - ISSUE 'AA'.

CIVIL CONTRACTOR

THE INSTALLATION OF ALL ELECTRICAL CONDUITS SHALL BE SUPERVISED BY THE HOLDER OF AN ELECTRICAL WORK LICENCE - ELECTRICAL SAFETY ACT 2002.

ENERGEX CONDUITS AND TRANSFORMER SITE RETAINING WALLS SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH ENERGEX'S SPECIFICATIONS (SEE BELOW). THEY WILL BE INSPECTED FOR COMPLIANCE UPON COMPLETION.

WHERE ROAD-CROSSING CONDUITS ARE INSTALLED DEEPER THAN USUAL (UNDER CULVERTS OR PIPES) THEY MUST RISE TO A DEPTH OF NOT MORE THAN 1200mm AT EACH END. IF UNCERTAIN, SEEK ADVICE FROM RRA CONSTRUCTION COORDINATOR.

THE CIVIL CONTRACTOR SHALL INSTALL ENVELOPING CONDUITS UNDER RETAINING WALLS BEHIND PILLARS - TWO 100mm CONDUITS INTO EACH LOT (ONE FOR ELECTRICITY, ONE FOR COMMUNICATIONS), 500mm DEEP BEHIND THE PILLAR, NEAR GROUND LEVEL INSIDE THE LOT.

RELEVANT SPECIFICATIONS IN ENERGEX'S UNDERGROUND DISTRIBUTION CONSTRUCTION MANUAL ARE FOUND AT -
SECTION C1: CONDUITS
SECTION C2: EXCAVATION
SECTION C3: TRANSFORMER SITES

THESE SECTIONS OF THE MANUAL CAN BE DOWNLOADED FROM THE FOLLOWING ENERGEX WEB SITE:
https://swp.energex.com.au/service_provider/technical_docs/asp/technical_documents.asp

CIVIL ENGINEERS WHO HAVE REGISTERED FOR ACCESS TO THE FOLLOWING RRA WEBSITE MAY DOWNLOAD EXTRACTS FROM ENERGEX'S MANUAL AT:
<http://www.robus.com.au>

THE CIVIL CONTRACTOR SHALL ENSURE THAT ALL CONDUITS HAVE BEEN INSTALLED BEFORE CONSTRUCTING RETAINING WALLS, PATHS, DRIVEWAYS & WATER SERVICES. THE CIVIL CONTRACTOR SHALL PLEASE INFORM THE ELECTRICAL CONTRACTOR OF ANY 'AS CONSTRUCTED' DEPARTURES FROM THE CIVIL DESIGN.

CARE: EXISTING STREET LIGHTS SHALL NOT BE RECOVERED UNLESS REPLACEMENT STREET LIGHTS WILL BE COMMISSIONED BEFORE NIGHTFALL. LIGHTING OF NEW OR ALTERED EXISTING ROADS MIGHT NOT COMPLY WITH SPECIFIED STANDARDS UNTIL NEW ROAD LIGHTING HAS BEEN COMMISSIONED. THE CIVIL CONTRACTOR SHALL APPLY APPROPRIATE RISK MANAGEMENT. E.G. WARNING SIGNS, SPEED RESTRICTIONS, TEMPORARY LIGHTING, ETC.

ON-SITE SERVICES CHECKS

ROBIN RUSSELL & ASSOCIATES GIVES NO WARRANTY REGARDING THE PRESENCE OR LOCATION OF BURIED SERVICES, INCLUDING NEWLY-INSTALLED SERVICES. 'AS CONSTRUCTED' LOCATIONS MAY DIFFER FROM WHAT IS DRAWN ON THIS WORKS PLAN. CONTRACTORS SHALL BE RESPONSIBLE TO IDENTIFY AND LOCATE ALL BURIED SERVICES. INITIAL IDENTIFICATION CAN BE OBTAINED FROM:

DIAL BEFORE YOU DIG SERVICE

TELEPHONE 1100
FAX 1300 652 077

ON-LINE ENQUIRIES CAN BE MADE AT: <http://www.1100.com.au>

HAVING DETERMINED WHICH SERVICES MAY BE PRESENT, ON-SITE LOCATIONS SHOULD THEN BE ARRANGED WITH RELEVANT SERVICE AUTHORITIES.

SEWERAGE AND WATER PLANS FOR THE SUBDIVISION MAY BE OBTAINED ON REQUEST FROM THE SUPERINTENDENT.

INSTALLATION OF RRA DESIGNED TELECOMMUNICATIONS CONDUITS

TELECOMS CONDUITS AND PITS SHALL BE SUPPLIED AND INSTALLED BY THE CIVIL AND ELECTRICAL CONTRACTORS AS SPECIFIED ON THE ASSOCIATED RRA WORKS PLAN.

IN RESIDENTIAL SUBDIVISIONS, TELECOMMUNICATIONS CONDUITS SHALL BE INSTALLED GENERALLY IN SHARED TRENCHES, DIRECTLY ABOVE THE ELECTRICAL CONDUITS.

IN COMMERCIAL SUBDIVISIONS OR OTHER SITUATIONS WHERE THIS IS NOT POSSIBLE, TELECOMMUNICATIONS CONDUITS SHALL BE INSTALLED IN A SEPARATE TRENCH ON THE SPECIFIED COMMUNICATIONS ALIGNMENT.

LEGEND: ELECTRICAL

- EXISTING UNDERGROUND CABLE / CONDUIT
- - - PROPOSED UNDERGROUND CABLE / CONDUIT
- - - FUTURE UNDERGROUND CABLE / CONDUIT
- END OF CONDUIT POINT / CONDUIT CAP
- BORED CONDUIT
- 12 17 STATION NUMBERS
- ⊙/⊙/⊙ PADMOUNT TRANSFORMER, EXISTING / PROPOSED / FUTURE
- ⊙/⊙/⊙ RING MAIN UNIT, EXISTING / PROPOSED / FUTURE
- ⊙/⊙/⊙ POLE TRANSFORMER, EXISTING / PROPOSED / FUTURE
- CABLE FAULT INDICATOR
- /□/□ SERVICE PILLAR, EXISTING / PROPOSED / FUTURE
- /□/□ LINK PILLAR, EXISTING / PROPOSED / FUTURE
- /□/□ C&I PILLAR, EXISTING / PROPOSED / FUTURE
- ⊥/⊥/⊥ LV LINKS (OPEN), EXISTING / PROPOSED / FUTURE
- ⊥/⊥/⊥ LV LINKS (CLOSED), EXISTING / PROPOSED / FUTURE
- EXISTING OVERHEAD ELECTRICITY MAINS
- PROPOSED OVERHEAD ELECTRICITY MAINS
- FUTURE OVERHEAD ELECTRICITY MAINS
- /○/○ HV POLE, EXISTING / PROPOSED / FUTURE
- /○/○ HV + LV POLE, EXISTING / PROPOSED / FUTURE
- /○/○ LV POLE, EXISTING / PROPOSED / FUTURE
- ⊥/⊥/⊥ EARTH, EXISTING / PROPOSED / FUTURE
- ⊙/⊙/⊙ STREET LIGHT, EXISTING / PROPOSED / FUTURE
- EXISTING RATE 3 STREETLIGHT CABLE
- PROPOSED RATE 3 STREETLIGHT CABLE
- FUTURE RATE 3 STREETLIGHT CABLE
- ⊙/⊙/⊙ RATE 3 STREET LIGHT, EXISTING / PROPOSED / FUTURE
- /□/□ RATE 3 SWITCHBOARD, EXISTING / PROPOSED
- EXISTING CONSUMERS UNDERGROUND CABLE
- PROPOSED CONSUMERS UNDERGROUND CABLE
- ⊗ TO BE RECOVERED
- /○/○ CABLE, EXISTING / PROPOSED
- 32 - 50mm HD CONDUIT
- 80/100mm LD CONDUIT
- ⊗ 100mm WHITE ENERGEX COMMS. CONDUIT
- ⊗ 125mm LD CONDUIT
- △ ELECTRIC CABLE MARKER PLATE

TELECOMMUNICATIONS INFRASTRUCTURE

CONDUITS & PITS to be designed by: Robin Russell & Associates
to be installed by: civil & electrical contractors
to be owned by:
TELECOMMUNICATIONS INFRASTRUCTURE to be provided by: **NBNCo Limited**

ROCK EXCAVATION BY ELECTRICAL CONTRACTOR

- The electrical contractor shall:
 - excavate electricity trenches to the depth required.
 - excavate street light foundations to a depth of 1500mm.

APA GAS INSTALLATION

GAS IS TO BE RETICULATED THROUGHOUT THIS PROJECT BY APA. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL VERGE TRENCHES FOR APA.

REFER TO APA'S DESIGN FOR ALL LOCATIONS OF JOINT USE & SEPARATE TRENCHES.

BE AWARE THAT ENERGEX WILL ONLY PERMIT A JOINT USE TRENCH WHERE THERE IS NOT MORE THAN ONE 125mm ELECTRICITY CONDUIT.

THE SEPARATE GAS ALIGNMENT IS AS SPECIFIED ON THE APA DESIGN BUT THE GAS MAINS MUST CLEAR THE STREET LIGHT FOUNDATION ALIGNMENT.

RATE 3 LIGHTING REQUIRED:

REFER TO RRA CONSTRUCTION PLAN S0107873 (RRA Ref. F228) FOR FULL DETAILS ON RATE 3 LIGHTING DESIGN FOR THIS STAGE.

PILLARS ON ZERO LOT BOUNDARY

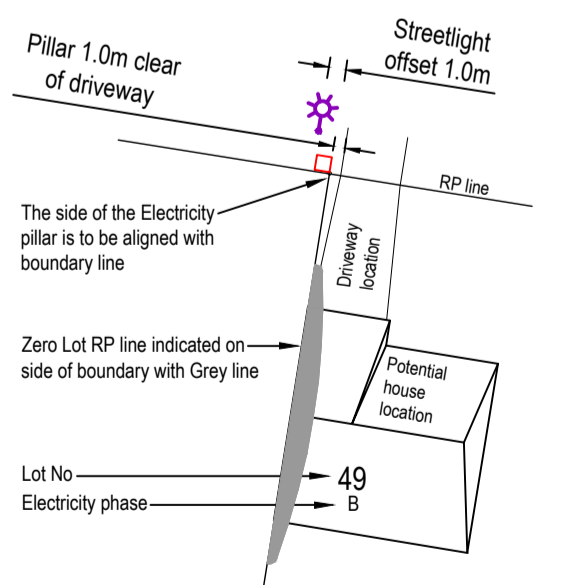
REQUIREMENTS FOR ELECTRICAL, GAS & COMMUNICATIONS CONTRACTORS

The proposed pillar shall be offset, as indicated, at the zero lot line boundary. The side of the pillar shall be aligned with the lot boundary, to provide at least 1.0m clearance from the future driveway.

A proposed streetlight shall be offset 1.0m from the zero lot line boundary, away from the future driveway.

COMMUNICATIONS PITS shall not clash with potential pillar exclusion zone if a pillar is offset to align with one side of a survey peg.

GAS DOMESTIC SERVICE TEE-OFFS shall be adjusted to remain outside 600mm pillar exclusion zone if a pillar is offset to align with one side of a survey peg.



MATERIALS SUMMARY - S0107872

UNDERGROUND			
MODEL No.	QTY	MODEL No.	QTY
11ST2424X	1	LVSP12-6	4
1CF9524XLG	2	LVSP12-6SL	4
2JXCA24XA24	1	LVSP14-6SL	1
ADE	7	LVSP2-6	1
DSHVFS5LK	1	LVSP2-6SL	3
DSLVF31	3	LVSP4-6	7
DSPMTEGSA	1	LVSP4-6SL	2
DSSQPMCEG	1	LVSP9-6	3
LV4CMEN	6	LVSP12-6	21
LV4CMENLINK	1	S2475044	1
LVPT4C240	3	SC0006614	18

CABLES			
MODEL No.	QTY	MODEL No.	QTY
SCS820363	340		
SCS820364	679		
SCS820365	192		

STREET LIGHTING			
MODEL No.	QTY	MODEL No.	QTY
SUGSLPIL	11		

FOR CONSTRUCTION

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
01/12/2023	A	PRELIMINARY ISSUE	RR					PILLARS RELOCATED TO SUIT UPDATED CIVIL
04/01/2024	B	29L RELOCATED	RR					
26/04/2024	C	AMENDED TO NEW CIVIL	RR					
21/10/2024	D	PMT CHANGED TO 500KVA	RR					

Robin Russell & Associates Pty. Ltd.
CONSULTING ENGINEERS - ELECTRICAL

20/16 Sabana Street, Stafford, QLD 4053
Tel: (07) 3872 5556
Fax: (07) 3872 5566
Email: rr@robus.com.au
www.robus.com.au
A.B.N. 78 010 589 661
THIS IS A UDC GENERATED DESIGN.

COUNCIL	IPSWICH	DWT REV.	V53-3 20210504
COUNCIL REF	9332/2019/PDA		
DESIGNED	W.Schardt	DRAWN	B.Hyland
CHECKED	D.Lloyd RPEQ 5060	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	01/12/2023	SIGNED	<i>Robin Russell</i>

DESCRIPTION: **ELECTRICITY RETICULATION - RESIDENTIAL**

CLIENT: **HB Doncaster Pty. Ltd.**

LOCATION: **BELLEVUE ESTATE - STAGE 12 323 - 395 RIPLEY ROAD RIPLEY**

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DRAWING No.	REVISION
F228-01	D
ENERGEX PROJECT No.	SHEET No.
S0107872	1 OF 5

CONSTRUCTION CONTACTS

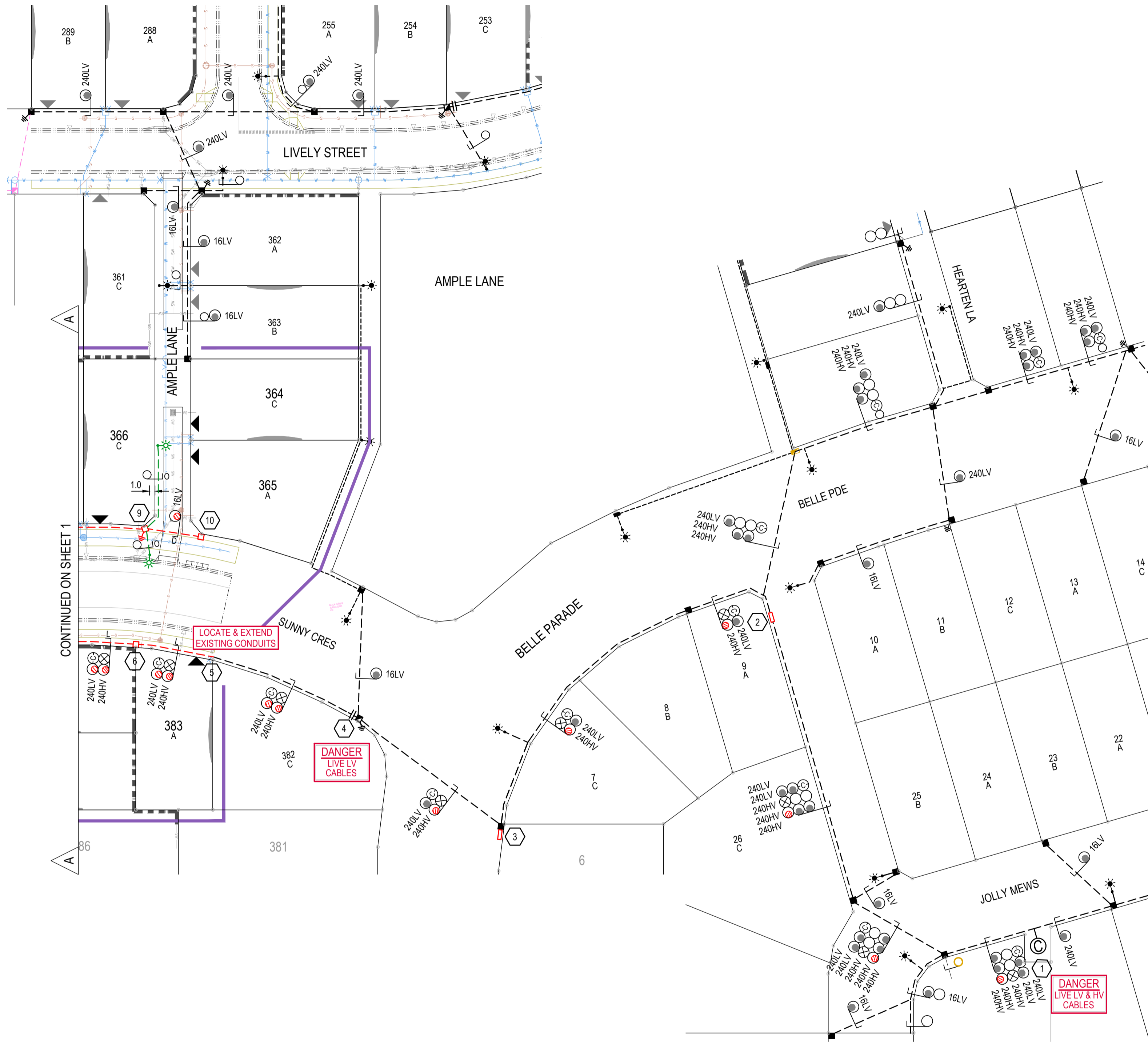
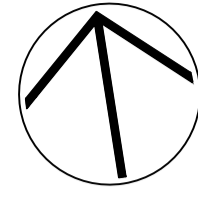
ELECTRICAL ENGINEER
ROBIN RUSSELL & ASSOCIATES PTY LTD
DESIGNER
WILLIAM SCHARDT Ph: 0419 778 552
CONSTRUCTION ADMINISTRATOR
SHANE HYDE Ph: 0419 021 772

CIVIL ENGINEER
COLLIERS
MATTHEW COTTON Ph: (07) 5588 0302

SURVEYOR
SAUNDERS HAVILL
CLINTON URQUHART Ph: (07) 3539 6701

SITE INFORMATION

TOTAL NUMBER OF LOTS: 37
PROPERTY DESCRIPTION: PROPOSED LOTS 350 - 351, 364 - 375, 383 - 385, 415 - 425, 427 - 429, 481 - 486
CANCELLING LOT 1002 ON SP324837



PLAN VIEW
SCALE 1:500
-10m 0 10 20 30m
1 : 500 (A1 - NOT REDUCED)

FOR CONSTRUCTION

EQUIPMENT SCHEDULE

LOCATION	STN No.	SITE I.D.	EX	REC	IN	SIZE AND DESCRIPTION	COMP ID	CU CODE	QTY	REMARKS
JOLLY MEWS	1	SC2246681	*			EXISTING TRANSFORMER TO REMAIN 240mm ² 11kV CFC TERM IN PADMOUNT HEATSHRINK CAP 25-55mm CONCRETE SURROUND		1CFC9524XLG SC0006614	1 3 1	KIT CONTAINS 3x ELBOWS CONTRACTOR TO CUT, REMOVE AND REINSTATE
BELLE PARADE	2	U12632231	*			11kV STRAIGHT JOINT HEATSHRINK CAP 25-55mm	CJ1	11ST24/24X SC0006614	1 6	240/240 AL TRIPLEX
	3	U12632232	*			11kV P/BUTT 240 TPX / 240 TPX HEATSHRINK CAP 25-55mm	CJ1	2JXCA24XCA24 SC0006614	1 6	
SUNNY CRESCENT	4	LP2246684	*			1 WAY LINK PILLAR 240mm 4 CORE CABLE LV LUG SET		LVSP1240	1	CONVERT TO 2 WAY 1x240LV
	6	U12632233	*			2 WAY PILLAR	PI1	LVSP4-6	1	2x240LV
	7	U12632234	*			3 WAY PILLAR	PI1	LVSP9-6	1	3x240LV
	8	U12632235	*			2 WAY PILLAR	PI1	LVSP4-6	1	2x240LV
	9	U12632236	*			1 WAY PILLAR + SL PILLAR MEN EARTHING	PI1	LVSP2-6SL LV4CMEN	1 1	1x240LV, 1x16LV, 2x4SL USE SPARE LV FUSE FOR SECOND STREETLIGHT
	10	U12632237	*			CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
	13	U12632238	*			3 WAY PILLAR	PI1	LVSP9-6	1	3x240LV, 1x16LV
	14	U12632239	*			CROSS-ROAD PILLAR + SL	PI1	LVSP12-6SL	1	1x16LV, 1x4SL
PLENTY PLACE	15	U12632240	*			1 WAY PILLAR PILLAR MEN EARTHING	PI1	LVSP2-6 LV4CMEN	1 1	1x240LV, 1x16LV
	16	U12632241	*			CROSS-ROAD PILLAR + SL	PI1	LVSP12-6SL	1	1x16LV, 1x4SL
SUNNY CRESCENT	17	SC12632242	*			PADMOUNT TRANSFORMER - 500kVA CFC HV FUSE SET FOR 500kVA SWITCHGEAR 240mm ² 11kV CFC TERM IN PADMOUNT HEATSHRINK CAP 25-55mm 315A LV FUSE LINK FOR LV BOARD LV TERMINATION CONCRETE SURROUND COMMON EARTH GRID FOR SQUARE PMT ADDITIONAL EARTH	TR1	S2475044 DSHV5SSLK 1CFC9524XLG SC0006614 DSLVF31 LVPT4C240	1 1 1 3 3 3 1 1 1	KIT CONTAINS 3x ELBOWS CONTRACTOR SUPPLIED
	18	U12632243	*			2 WAY PILLAR	PI1	LVSP4-6	1	2x240LV, 1x16LV
	19	U12632244	*			CROSS-ROAD PILLAR + SL	PI1	LVSP12-6SL	1	1x16LV, 1x4SL
	20	U12632245	*			2 WAY PILLAR PILLAR MEN EARTHING	PI1	LVSP4-6 LV4CMEN	1 1	2x240LV, 1x16LV
	21	U12632246	*			CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
	22	U12632247	*			3 WAY PILLAR	PI1	LVSP9-6	1	3x240LV
	23	U12632248	*			2 WAY PILLAR + SL	PI1	LVSP4-6SL	1	2x240LV, 1x4SL
INSPIRE STREET	25	U12632249	*			1 WAY PILLAR + SL PILLAR MEN EARTHING	PI1	LVSP2-6SL LV4CMEN	1 1	1x240LV, 1x4SL
SUNNY CRESCENT	26	U12632250	*			2 WAY PILLAR PILLAR MEN EARTHING	PI1	LVSP4-6 LV4CMEN	1 1	2x240LV, 1x16LV
	27	U12632251	*			CROSS-ROAD PILLAR + SL	PI1	LVSP12-6SL	1	1x16LV, 1x4SL
	28	U12632252	*			2 WAY PILLAR	PI1	LVSP4-6	1	2x240LV, 1x16LV
	29	U12632253	*			CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
GLADDEN STREET	31	U12632254	*			1 WAY PILLAR + SL PILLAR MEN EARTHING	PI1	LVSP2-6SL LV4CMEN	1 1	1x240LV, 1x4SL
SUNNY CRESCENT	33	U12632255	*			2 WAY PILLAR + SL	PI1	LVSP4-6SL	1	2x240LV, 1x4SL
	34	U12632256	*			2 WAY PILLAR	PI1	LVSP4-6	1	2x240LV
	35	LP12632257	*			1 WAY LINK PILLAR + SL LINK PILLAR MEN EARTHING	PI3	LVSP14-6SL LV4CMENLINK	1 1	1x240LV, 1x16LV, 1x4SL
	36	U12632258	*			CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV

SUNDRY ITEMS SCHEDULE

SUNDRY SPEC	DESCRIPTION	QUANTITY	REMARKS
LVSP1240	240mm 4 CORE CABLE LV LUG SET	20	

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
01/12/2023	A	PRELIMINARY ISSUE	RR					PILLARS RELOCATED TO SUIT UPDATED CIVIL
04/01/2024	B	29L RELOCATED	RR					
26/04/2024	C	AMENDED TO NEW CIVIL	RR					
21/10/2024	D	PMT CHANGED TO 500KVA	RR					

Robin Russell
& ASSOCIATES PTY. LTD.
CONSULTING ENGINEERS - ELECTRICAL

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A.B.N. 78 010 589 661
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COUNCIL	IPSWICH	DWT REV.	V53-3 20210504
COUNCIL REF	9332/2019/PDA	DESIGNED	W.Schardt
CHECKED	D.Lloyd RPEQ 5060	DRAWN	B.Hyland
DATE	01/12/2023	APPROVED	ROBIN RUSSELL RPEQ 1546
		SIGNED	<i>Robin Russell</i>

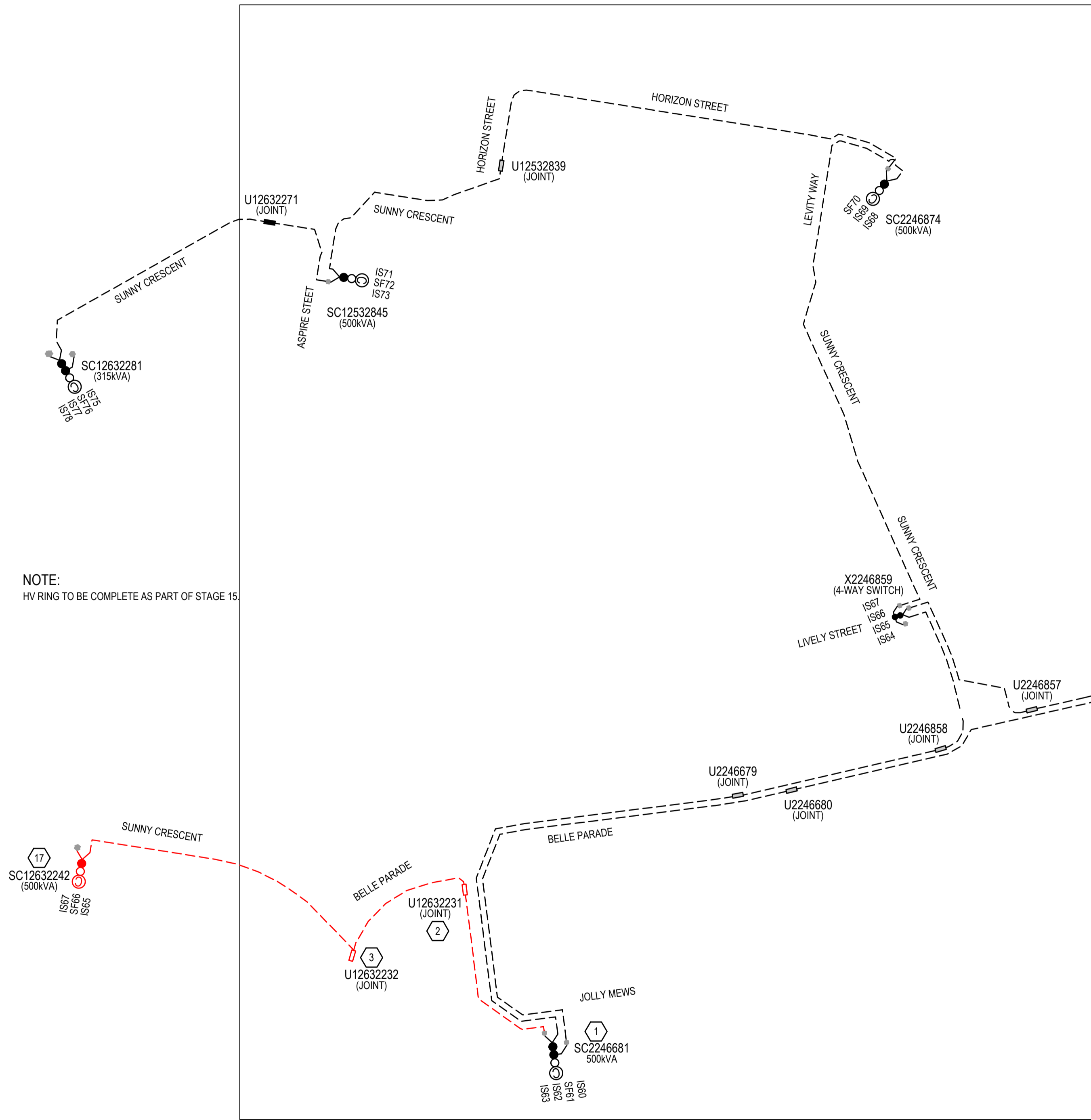
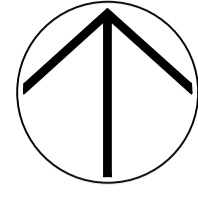
DESCRIPTION
ELECTRICITY RETICULATION - RESIDENTIAL

CLIENT
HB Doncaster Pty. Ltd.

LOCATION
**BELLEVUE ESTATE - STAGE 12
323 - 395 RIPLEY ROAD
RIPLEY**

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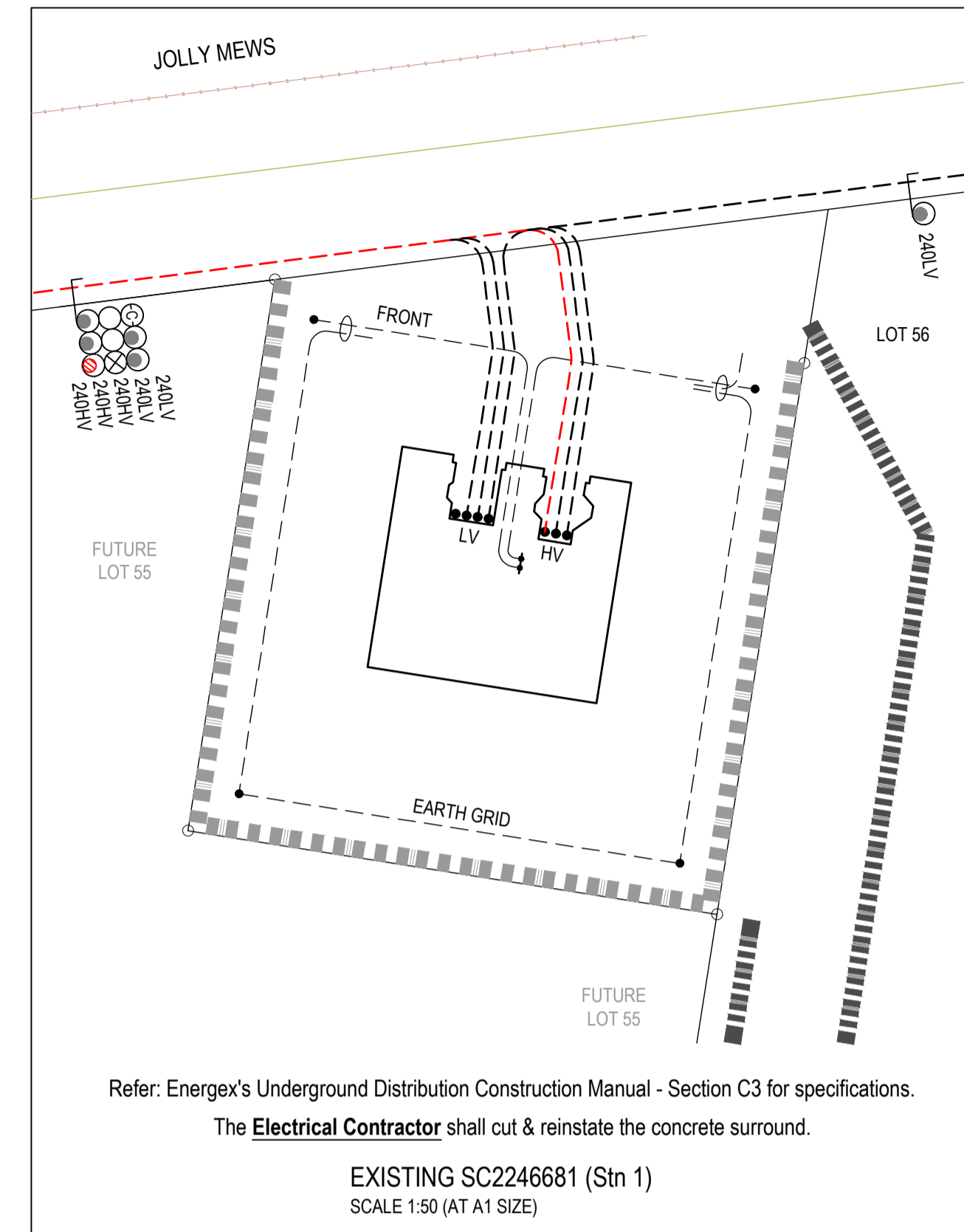
DRAWING No.	REVISION
F228-02	D
ENERGEX PROJECT No.	SHEET No.
S0107872	2 OF 5



EXISTING AND PROPOSED 11kV SCHEMATIC

SCALE 1:1500
ALL NEW HV CABLES TO BE 3 x 1c 240mm AI TRIPLEX
(UNLESS NOTED OTHERWISE)

FOR CONSTRUCTION



Refer: Energex's Underground Distribution Construction Manual - Section C3 for specifications.
The **Electrical Contractor** shall cut & reinstate the concrete surround.

EXISTING SC2246681 (Stn 1)
SCALE 1:50 (AT A1 SIZE)

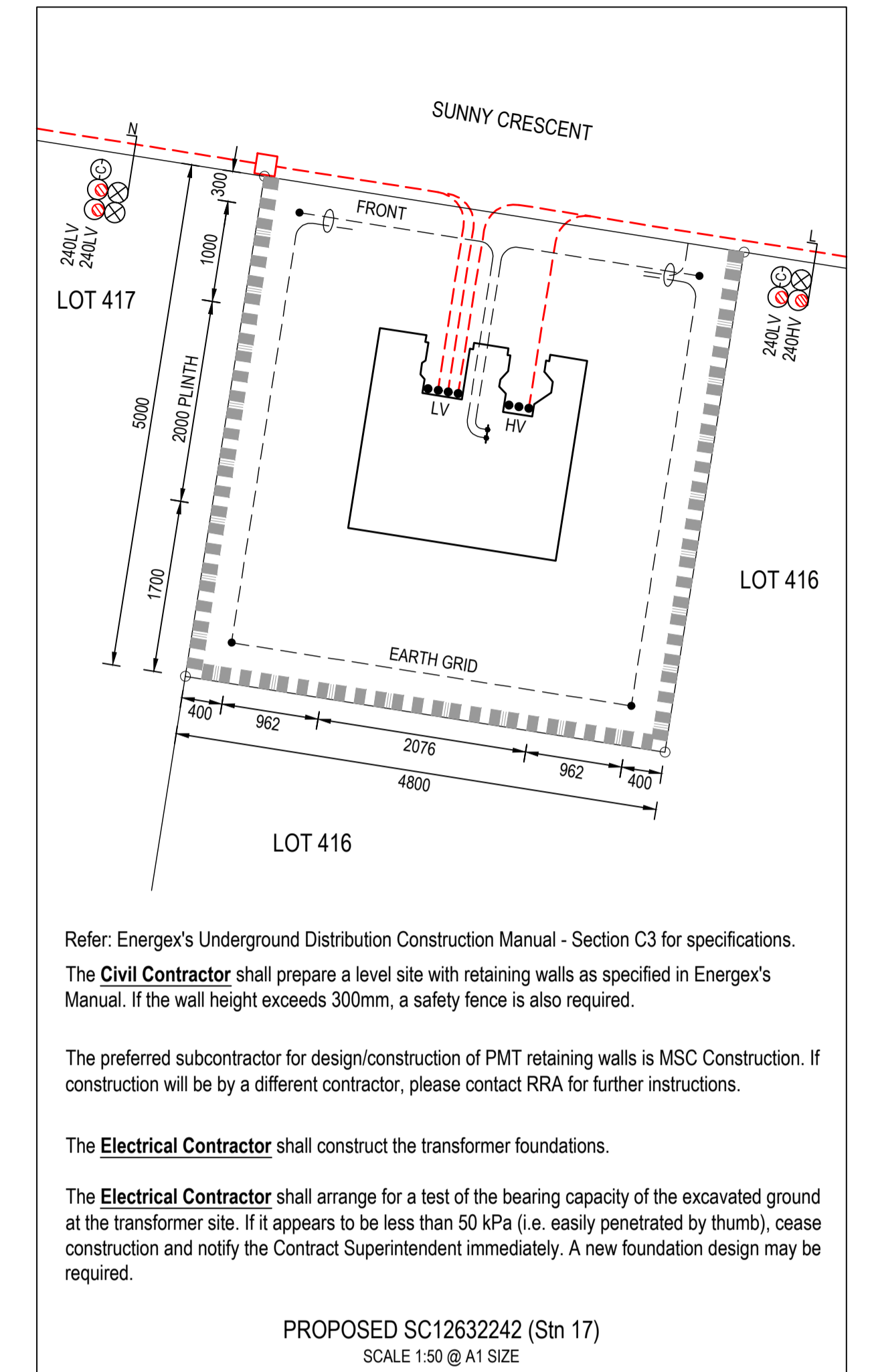
THE ELECTRICAL CONTRACT SHALL PAINT THE TRANSFORMER BLACK, AS FOLLOWS:
TWO-PACK PRIMER FOLLOWED BY TWO-PACK POLYURETHANE ENAMEL TO AS2700 IN:(N61) BLACK

LABELS

The contractor shall check label details against existing labels on site. Report any discrepancies immediately to the Contract Superintendent.

PROPOSED COMMISSIONING PLAN

- Tentative only; subject to amendment by ENERGEX outage coordinator.
- SWITCHING ONE**
- 1 x Simple HV Switching + 1 x LV Switching
 - Following a satisfactory site specific risk assessment by Electrical Contractor terminate new 240mm LV cable on spare switch-fuse in the **LIVE** LV Switchboard of SC12632242 (Stn 17)
 - Following a satisfactory site specific risk assessment by the Electrical Contractor terminate the new 240mm LV cable at the existing **LIVE** LV pillar at Stn 4 (LP2246684).
 - Open Links at LP2246684 - Sunny Crescent.
 - Carry out commissioning checks and reverse switching.
 - Commission LV Circuit 1 of SC12632242.
- SWITCHING TWO**
- 1 x LV Switching
 - Following a satisfactory site specific risk assessment by Electrical Contractor terminate new 240mm LV cable on spare switch-fuse in the **LIVE** LV Switchboard of SC12632242 (Stn 17)
 - Following a satisfactory site specific risk assessment by the Electrical Contractor terminate the new 240mm LV cable at the existing **LIVE** LV pillar at Stn 4 (LP2246684).
 - Open Links at LP2246684 - Sunny Crescent.
 - Carry out commissioning checks and reverse switching.
 - Commission LV Circuit 2 & 3 of SC12632242.
- SWITCHING THREE to FOUR**
- 2 x LV Switching
 - Following a satisfactory site specific risk assessment by the Electrical Contractor terminate each new 240mm LV cable on the spare LV switch-fuses in the **LIVE** LV Switchboard at Stn 17.
 - Carry out commissioning checks and reverse switching.
 - Commission LV Circuit 2 & 3 of SC12632242.
- Where interruptions to existing consumers are required, they shall be notified in line with ENERGEX policies.



Refer: Energex's Underground Distribution Construction Manual - Section C3 for specifications.
The **Civil Contractor** shall prepare a level site with retaining walls as specified in Energex's Manual. If the wall height exceeds 300mm, a safety fence is also required.

The preferred subcontractor for design/construction of PMT retaining walls is MSC Construction. If construction will be by a different contractor, please contact RRA for further instructions.

The **Electrical Contractor** shall construct the transformer foundations.

The **Electrical Contractor** shall arrange for a test of the bearing capacity of the excavated ground at the transformer site. If it appears to be less than 50 kPa (i.e. easily penetrated by thumb), cease construction and notify the Contract Superintendent immediately. A new foundation design may be required.

PROPOSED SC12632242 (Stn 17)
SCALE 1:50 @ A1 SIZE

11kV RMU LABELS		AT SUNNY CRESCENT (STN 17) SC12632242					
LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION			LABEL LOCATION	LABEL DESCRIPTION
100x40	WB	15	IS65	SF66	IS67	NEAR ISOLATOR	ISOLATOR IDENTIFICATION
150x40	BW	20				FRONT	FEEDER IDENTIFICATION
150x50	BW	10	TO JOLLY MEWS SC2246681 - IS63	TO TRANSFORMER	[SPARE]	CABLE BOX	CABLE DESTINATION
150x50	BW	10	TO JOLLY MEWS SC2246681 - IS63	TO TRANSFORMER	[SPARE]	INSIDE SIDE WALL	CABLE DESTINATION

11kV RMU LABELS		AT JOLLY MEWS (STN 1) SC2246681					
LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION			LABEL LOCATION	LABEL DESCRIPTION
100x40	WB	15	IS60	SF61	IS62	NEAR ISOLATOR	ISOLATOR IDENTIFICATION
150x40	BW	20				FRONT	FEEDER IDENTIFICATION
150x50	BW	10	[EXIST]	[EXIST]	[EXIST]	TO SUNNY CRESCENT SC12632242 - IS65	CABLE BOX
150x50	BW	10	[EXIST]	[EXIST]	[EXIST]	TO SUNNY CRESCENT SC12632242 - IS65	INSIDE SIDE WALL

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
01/12/2023	A	PRELIMINARY ISSUE	RR					PILLARS RELOCATED TO SUIT UPDATED CIVIL
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26/04/2024	C	AMENDED TO NEW CIVIL	RR					
21/10/2024	D	PMT CHANGED TO 500KVA	RR					

Robin Russell
& ASSOCIATES PTY. LTD.
CONSULTING ENGINEERS - ELECTRICAL

SUBDIVISION ELECTRICAL SERVICES
204/8 Sabana Street, Stafford, QLD 4053
Tel: (07) 3872 5555
Fax: (07) 3872 5566
Email: m@robusrussell.com.au
www.robusrussell.com.au
A.B.N. 78 010 589 661
THIS IS A UDC GENERATED DESIGN.

COUNCIL	IPSWICH	DWT REV.	V53-3 20210504
COUNCIL REF	9332/2019/PDA		
DESIGNED	W.Schardt	DRAWN	B.Hyland
CHECKED	D.Lloyd RPEQ 5060	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	01/12/2023	SIGNED	<i>Robin Russell</i>

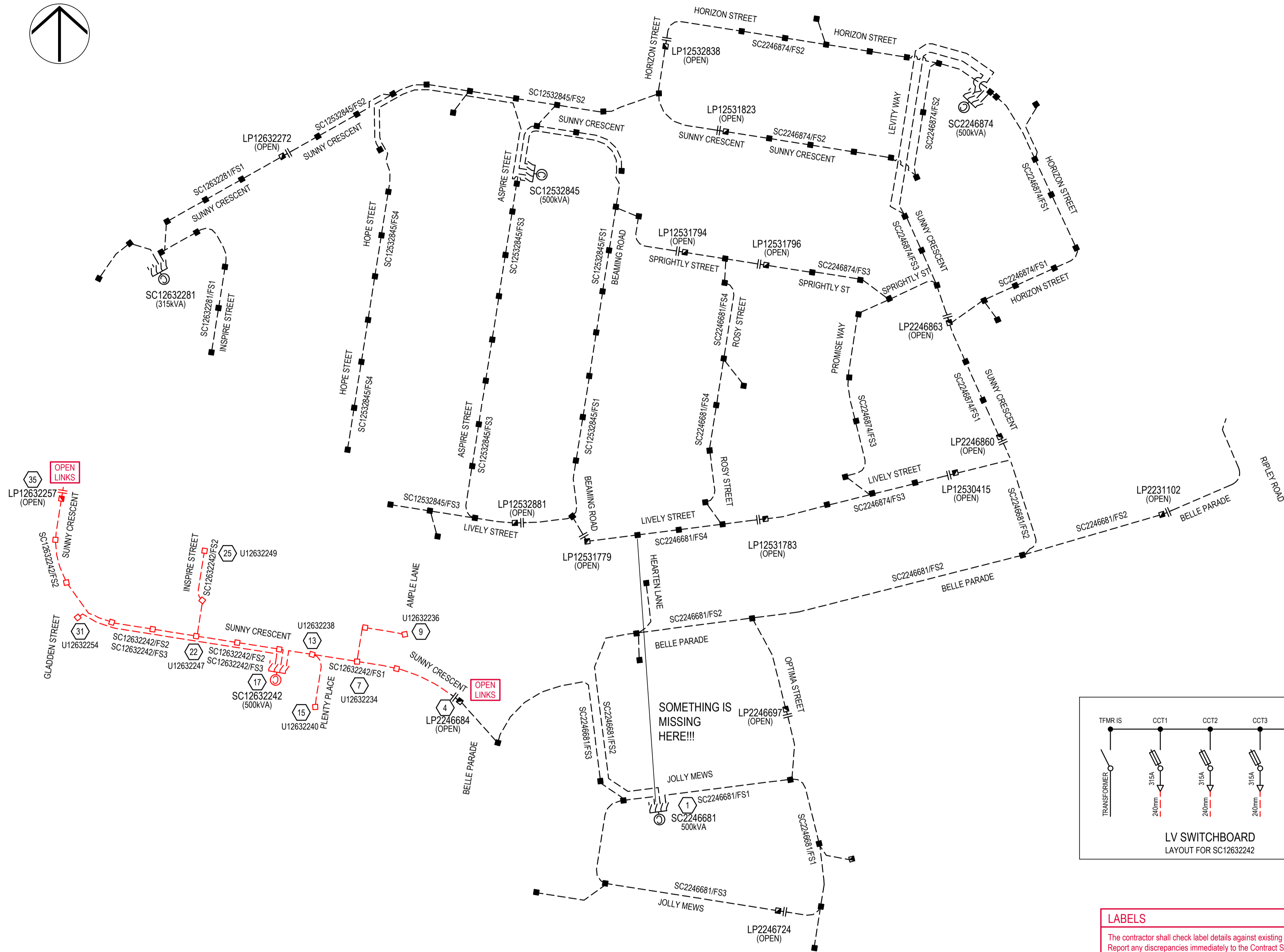
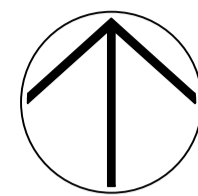
DESCRIPTION: **ELECTRICITY RETICULATION - RESIDENTIAL**

CLIENT: **HB Doncaster Pty. Ltd.**

LOCATION: **BELLEVUE ESTATE - STAGE 12
323 - 395 RIPLEY ROAD
RIPLEY**

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DRAWING No.	REVISION
F228-03	D
ENERGEX PROJECT No.	SHEET No.
S0107872	3 OF 5



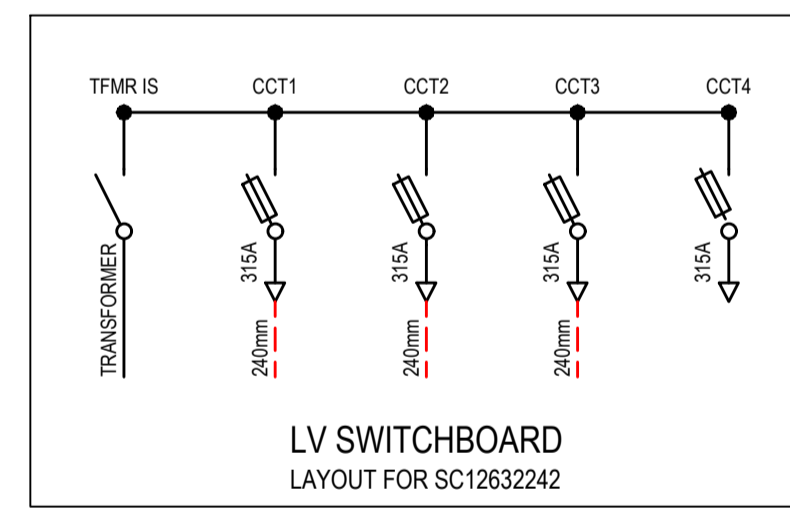
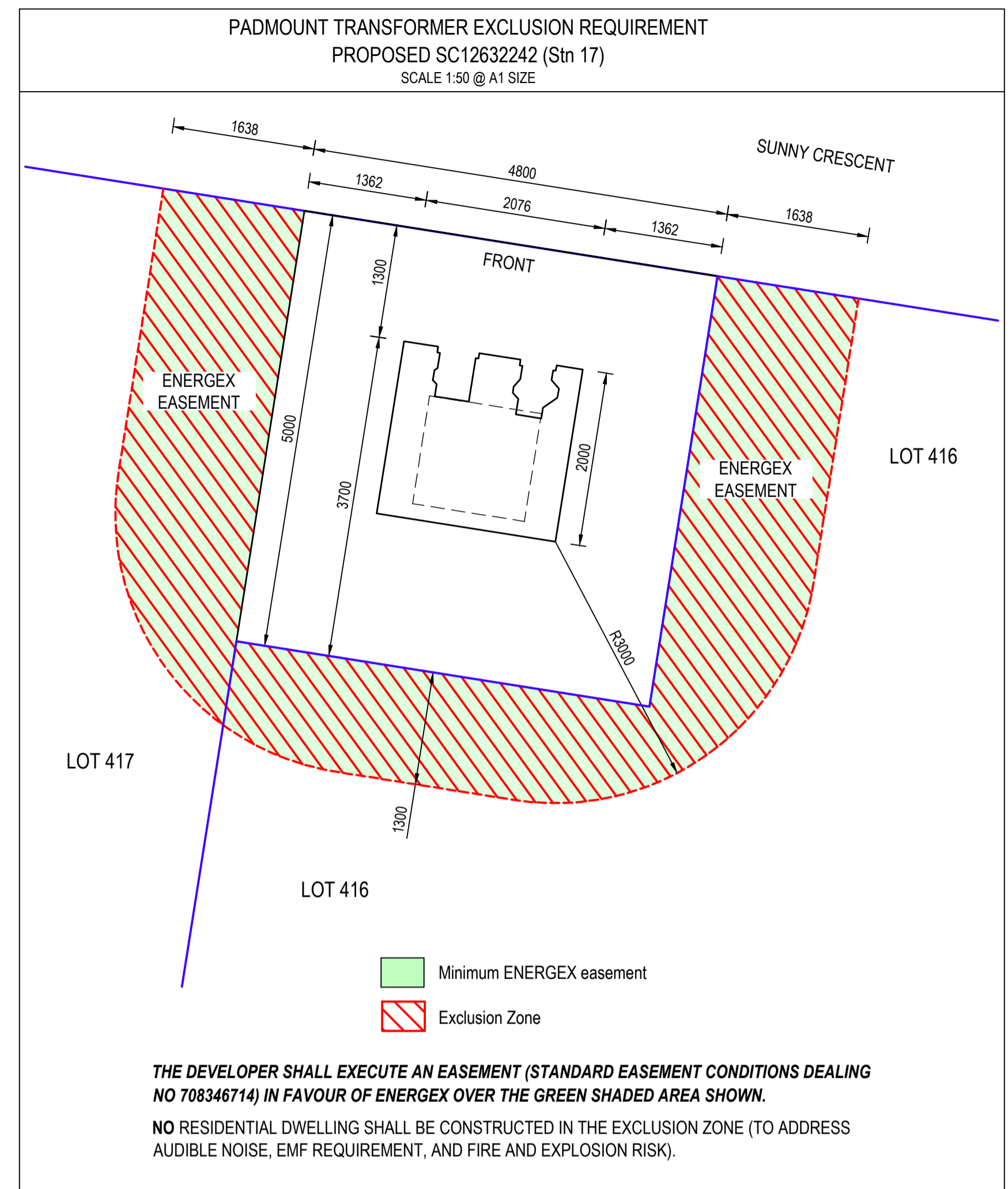
EXISTING AND PROPOSED LV SCHEMATIC
SCALE 1:1500
ALL NEW LV CABLES TO BE 4c 240mm Al XLPE
(UNLESS NOTED OTHERWISE)

PHASING

Transformer - FS#	A	B	C	Total
SC12532845 - FS3	0	0	1	1
SC12532845	0	0	1	(1)
SC12632242 - FS1	4	4	3	11
SC12632242 - FS2	8	8	8	24
SC12632242 - FS3	0	0	1	1
SC12632242	12	12	12	(36)

Calculation includes new lots add as part of this Workplan only.

FOR CONSTRUCTION



LABELS
The contractor shall check label details against existing labels on site. Report any discrepancies immediately to the Contract Superintendent.

LV SWITCHBOARD LABELS AT SUNNY CRESCENT (STN 17) SC12632242				
CIRCUIT No.	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
TRANSF. ISOLATOR	80x35	WB	6	TRANSFORMER ISOLATOR
1	80x35	WB	5	TO SUNNY CRESCENT LP2246684 AND SERVICES
2	80x35	WB	5	TO SUNNY CRESCENT LP12632257 AND SERVICES
3	80x35	WB	5	TO GLADDEN STREET U12632254 DIRECT
4	80x35	WB	5	[SPARE]

LV LINK PILLAR LABELS AT SUNNY CRESCENT (STN 35) LP12632257				
CIRCUIT DIRECTION	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
LHS	150x50	WB	5	TO SUNNY CRESCENT SC12632242 AND SERVICES
RHS	150x50	WB	5	[SPARE]

LHS & RHS AS VIEWED FROM ROAD TO PILLAR

LV LINK PILLAR LABELS AT SUNNY CRESCENT (STN 4) LP2246684				
CIRCUIT DIRECTION	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
LHS	150x50	WB	5	[EXIST]
RHS	150x50	WB	5	TO SUNNY CRESCENT SC12632242 AND SERVICES

LHS & RHS AS VIEWED FROM ROAD TO PILLAR

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
01/12/2023	A	PRELIMINARY ISSUE	RR					PILLARS RELOCATED TO SUIT UPDATED CIVIL
04/01/2024	B	29L RELOCATED	RR					
26/04/2024	C	AMENDED TO NEW CIVIL	RR					
21/10/2024	D	PMT CHANGED TO 500KVA	RR					

Robin Russell
& ASSOCIATES PTY. LTD.
CONSULTING ENGINEERS - ELECTRICAL

SUBDIVISION ELECTRICAL SERVICES
204/6 Salwana Street, Stafford, QLD 4053
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COUNCIL	IPSWICH	DWT REV.	V53-3 20210504
COUNCIL REF	9332/2019/PDA		
DESIGNED	W.Schardt	DRAWN	B.Hyland
CHECKED	D.Lloyd RPEQ 5060	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	01/12/2023	SIGNED	<i>Robin Russell</i>

DESCRIPTION
ELECTRICITY RETICULATION - RESIDENTIAL

CLIENT
HB Doncaster Pty. Ltd.

LOCATION
**BELLEVUE ESTATE - STAGE 12
323 - 395 RIPLEY ROAD
RIPLEY**

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DRAWING No.	REVISION
F228-04	D
ENERGEX PROJECT No.	SHEET No.
S0107872	4 OF 5

A1

URD CONDUIT SCHEDULE - FOOTPATHS - BY ELECTRICAL CONTRACTOR

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m)				X-SECTION (m)				DRAW WIRE	KERB MARKERS	REMARKS	
		50mm HD	No.	100mm LD	No.	125mm LD	No.	EOL 100mm COMMS MD	PVC CABLE PROTECTION (m)				EXCAV /TAPE
JOLLY MEWS	1 3											EXISTING CONDUITS	
BELLE PARADE	2 -											EARTH PIT EXCAVATION	
	3 -											EARTH PIT EXCAVATION	
SUNNY CRESCENT	4 5											EXISTING CONDUITS	
	5 6			15	1	15	2	15		15	L	68	
	8 9			25	1					25	D	27	
	8 39			3	1				3	3	D	5	
	13 15			35	1				35	35	D	37	
	17 18			3	2	3	2	3		3	N	25	
	18 20			26	2	26	2	26		26	N	140	
	20 22			26	2	26	2	26		26	N	140	
	21 38			4	1					4	D	6	
	22 26			27	2	27	2	27		27	N	145	
	23 24			17	1					17	D	19	
INSPIRE STREET	24 25			16	1					16	P	18	
SUNNY CRESCENT	26 28			25	2	25	2	25		25	N	135	
GLADDEN STREET	31 32			20	1					20	D	22	
SUNNY CRESCENT	33 34			27	1	27	2	27		27	L	116	
	34 35			25	1	25	2	25		25	L	108	
	35 37			14	1	14	2	14		14	L	64	
TOTAL				415m		376m		188m		38m		312m	1075m

- NOTES:
 1. CONDUITS SHALL BE INSTALLED WITHIN A CORRIDOR 300-900mm FROM PROPERTY ALIGNMENT, IN ACCORDANCE WITH ENERGEX UNDERGROUND DISTRIBUTION CONSTRUCTION (UDC) MANUAL.
 2. FOOTPATH CONDUITS SHALL HAVE MINIMUM 700mm COVER, REGARDLESS OF ENERGEX'S REQUIREMENTS.
 3. CONNECT EXISTING CONDUITS, INCLUDING ROAD CROSSING CONDUITS, TO NEW FOOTPATH CONDUITS
 4. TELECOMMUNICATION CONDUITS SHALL BE INSTALLED ABOVE THE ENERGEX CONDUITS IN A JOINT USE TRENCH ARRANGEMENT.
 5. REFER RRA CONSTRUCTION PLAN S0107873 (RRA F228) FOR JOINT USE TRENCH RATES CONDUIT INSTALLATION DETAILS.

UNDERGROUND CABLE SCHEDULE

LOCATION	STATIONS FROM - TO	VOLTS	EX	REC	IN	CABLE SIZE/TYPE	CU CODE	CABLE LENGTH (m)		REMARKS
								NEW	REC	
JOLLY MEWS	1 2	11kV				240mm² Al 3X1C TR XLPE/SCREEN/HDPE	SCS820363	101		
BELLE PARADE	2 3	11kV				240mm² Al 3X1C TR XLPE/SCREEN/HDPE	SCS820363	80		
	3 17	11kV				240mm² Al 3X1C TR XLPE/SCREEN/HDPE	SCS820363	159		
SUNNY CRESCENT	4 6	LV				240mm² Al 4C XLPE/PVC	SCS820364	47		
	6 7	LV				240mm² Al 4C XLPE/PVC	SCS820364	30		
	7 8	LV				240mm² Al 4C XLPE/PVC	SCS820364	28		
	7 13	LV				240mm² Al 4C XLPE/PVC	SCS820364	33		
	8 9	LV				240mm² Al 4C XLPE/PVC	SCS820364	30		
	9 10	LV				16mm² Cu 4C XLPE/PVC	SCS820365	16		
	13 14	LV				16mm² Cu 4C XLPE/PVC	SCS820365	27		
	13 15	LV				240mm² Al 4C XLPE/PVC	SCS820364	40		
	13 17	LV				240mm² Al 4C XLPE/PVC	SCS820364	27		
PLENTY PLACE	15 16	LV				16mm² Cu 4C XLPE/PVC	SCS820365	21		
SUNNY CRESCENT	17 18	LV				240mm² Al 4C XLPE/PVC	SCS820364	14		
	17 31	LV				240mm² Al 4C XLPE/PVC	SCS820364	138		
	18 19	LV				16mm² Cu 4C XLPE/PVC	SCS820365	26		
	18 20	LV				240mm² Al 4C XLPE/PVC	SCS820364	31		
	20 21	LV				16mm² Cu 4C XLPE/PVC	SCS820365	29		
	20 22	LV				240mm² Al 4C XLPE/PVC	SCS820364	31		
	22 23	LV				240mm² Al 4C XLPE/PVC	SCS820364	27		
	22 26	LV				240mm² Al 4C XLPE/PVC	SCS820364	32		
	23 25	LV				240mm² Al 4C XLPE/PVC	SCS820364	36		
	26 27	LV				16mm² Cu 4C XLPE/PVC	SCS820365	29		
	26 28	LV				240mm² Al 4C XLPE/PVC	SCS820364	30		
	28 33	LV				240mm² Al 4C XLPE/PVC	SCS820364	43		
	29 34	LV				16mm² Cu 4C XLPE/PVC	SCS820365	22		
	33 34	LV				240mm² Al 4C XLPE/PVC	SCS820364	32		
	34 35	LV				240mm² Al 4C XLPE/PVC	SCS820364	30		
	35 36	LV				16mm² Cu 4C XLPE/PVC	SCS820365	22		
TOTALS (Variance 2%)						240mm² Al 3X1C TR XLPE/SCREEN/HDPE	SCS820363	340		
						240mm² Al 4C XLPE/PVC	SCS820364	679		
						16mm² Cu 4C XLPE/PVC	SCS820365	192		

- NOTES:
 1. THE CONTRACTOR SHALL MEASURE ACTUAL CABLE LENGTHS REQUIRED, AFTER INSTALLATION OF CONDUITS, THEN ORDER CABLE ACCORDINGLY.
 2. 11kV CABLE IS NOT BE CUT UNTIL CABLE LENGTHS HAVE BEEN CONFIRMED ON SITE.

URD CONDUIT SCHEDULE - ROADWAYS - BY CIVIL CONTRACTOR

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m)				X-SECTION (m)				DRAW WIRE	KERB MARKERS	REMARKS		
		50mm HD	No.	100mm LD	No.	125mm LD	No.	EOL 100mm COMMS MD	PVC CABLE PROTECTION (m)				EXCAV /TAPE	TRENCH DETAIL
BELLE PARADE	3 4											EXISTING CONDUITS		
SUNNY CRESCENT	7 13			28	1	28	2	28		28	L	120	2	
	7 39			22	1					22	D	24	2	
	9 10			11	1					11	D	13	2	
	13 14			22	1					22	D	24	2	
PLENTY PLACE	15 16			16	1					16	D	18	2	
SUNNY CRESCENT	18 19			21	1					21	D	23	2	
	20 38			22	1					22	D	24	2	
	22 23			22	1					22	D	24	2	
	26 27			24	1					24	D	26	2	
	30 33			24	1	24	2	24		24	L	104	2	
	34 29			17	1					17	D	19	2	
	35 36			17	1					17	D	19	2	
TOTAL				246m		104m		52m		246m		246m	438m	24

- NOTES:
 1. ROAD CROSSING CONDUITS SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH THE ENERGEX UNDERGROUND DISTRIBUTION CONSTRUCTION (UDC) MANUAL.
 2. ROAD CROSSING CONDUITS SHALL HAVE A MINIMUM COVER OF 800mm AT ALL PLACES UNDER THE ROAD, EXCEPT UNDER STATE-CONTROLLED "MAIN" ROADS, WHERE CONDUITS SHALL HAVE A MINIMUM COVER OF 1200mm.
 3. CONDUITS SHALL EXTEND TO WITHIN 900mm OF PROPERTY ALIGNMENT; PVC PROTECTIVE COVER STRIPS SHALL BE LAID ABOVE ALL ROAD-CROSSING CONDUITS.
 4. REFER ENERGEX UDC MANUAL SECT. C2 FOR CROSS-SECTION DETAILS.
 5. BRASS "E" MARKERS SHALL BE INSTALLED IN KERBS DIRECTLY ABOVE ELECTRICITY CONDUITS.

CONDUIT BENDING RADIUS (mm)			
LOCATION	50mm Ø	100mm Ø	125mm Ø
HORIZONTAL BEND	600	1830	1830
PILLAR - MAIN CABLE	-	1200	-
PILLAR - X-ROAD CABLE	-	450	-
PILLAR - STREET LIGHT CABLE	600	-	-
STREET LIGHT	300	-	-
POLE TERMINATION	300	1200	1830
TRANSFORMER	no bends required		

CONSUMER CONDUIT SCHEDULE - BY CIVIL CONTRACTOR

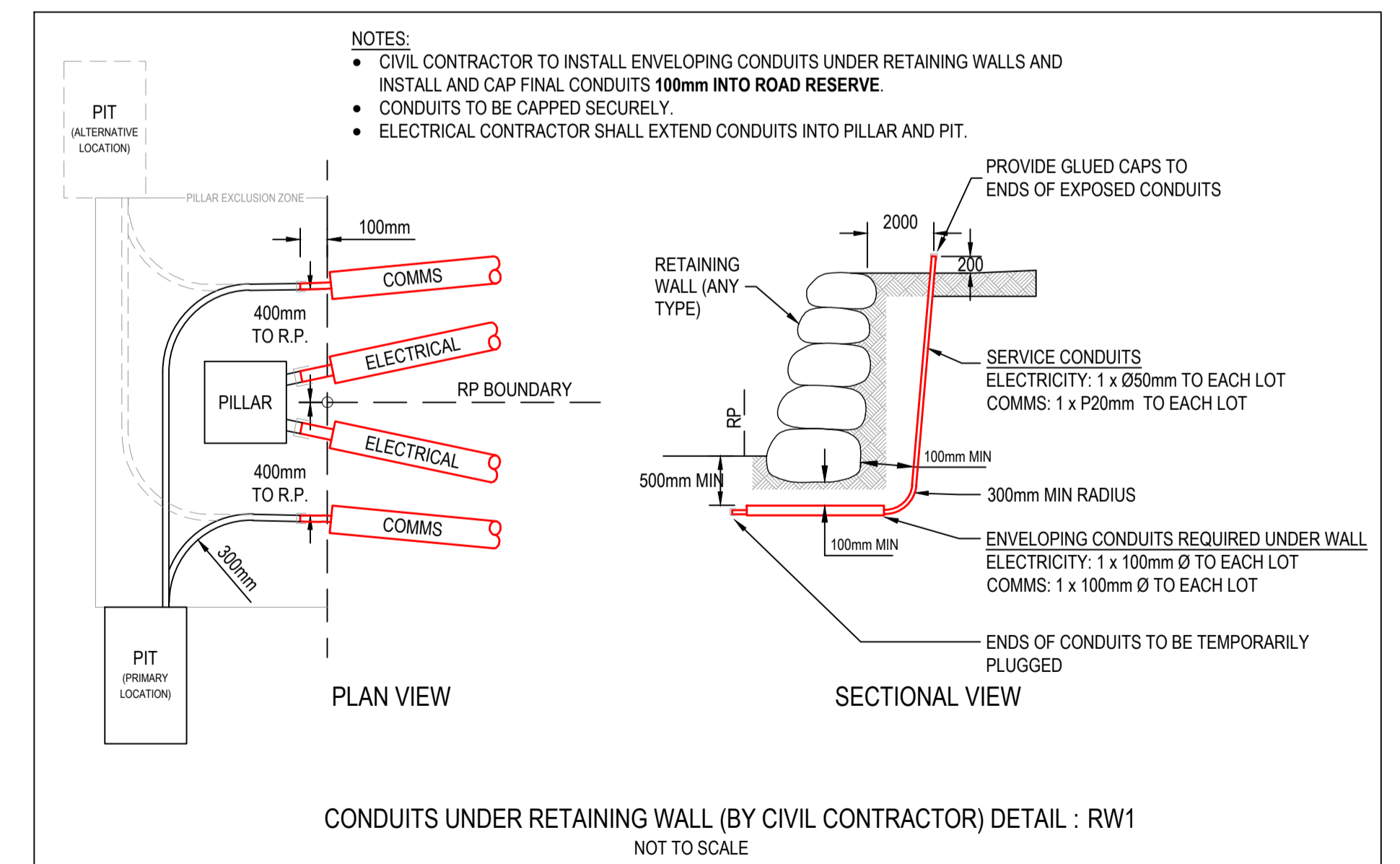
LOCATION	STATIONS FROM - TO	ELECTRICAL (m)				TRENCH DETAIL	REMARKS
		32HD	40HD	50HD	No.		
SUNNY CRESCENT	7 7A			1	1	RW1	REFER TO ENVELOPING CONDUIT DETAIL RW1
GLADDEN STREET	31 31A			1	1	RW1	REFER TO ENVELOPING CONDUIT DETAIL RW1
TOTAL				2m			

- NOTES:
 1. CONSUMER'S CONDUITS SHALL BE INSTALLED PRIOR TO CONSTRUCTION OF DRIVEWAYS TO REAR LOTS.
 2. ELECTRICAL CONDUIT SHALL BE ORANGE, HEAVY DUTY TO AS/NZS 2053:2001, AT MINIMUM DEPTH OF 500mm.
 3. COMMUNICATIONS CONDUIT SHALL BE WHITE, MEDIUM DUTY TO AS/NZS 1477:2017, LABELLED "COMMUNICATIONS", MINIMUM BEND RADIUS 300mm, AT MINIMUM DEPTH OF 300mm.
 4. MINIMUM CLEARANCE OF 100mm SHALL BE MAINTAINED BETWEEN ALL SERVICES.
 5. MARK THE END OF ALL CONSUMER'S CONDUITS, BY EXTENDING THE WARNING TAPE UP TO GROUND LEVEL.
 6. ALL CONDUITS TO BE MANDREL-TESTED, SEALED, AND HAVE DRAW ROPES INSTALLED.
 7. CONDUITS TO EXTEND TO FRONT PROPERTY ALIGNMENT.
 8. ELECTRICAL CONTRACTOR SHALL EXTEND CONDUITS THROUGH FROM BOUNDARY TO PILLAR
 9. REFER TO TELECOMMUNICATIONS CONDUIT PLAN FOR DETAILS OF TELECOMMUNICATIONS CONDUIT TO BE INSTALLED.

URD CONDUIT SCHEDULE - FOOTPATHS - BY CIVIL CONTRACTOR

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m)				X-SECTION (m)				DRAW WIRE	KERB MARKERS	REMARKS
		50mm HD	No.	100mm LD	No.	125mm LD	No.	EOL 100mm COMMS MD	PVC CABLE PROTECTION (m)			
SUNNY CRESCENT	6 7			25	1	25	2	25		25	L	108
	13 17			19	1	19	2	19		19	L	84
	28 30			16	2	16	2	16		16	N	90
	30 31			8	1					8	D	10
TOTAL				84m		120m		60m		68m		292m

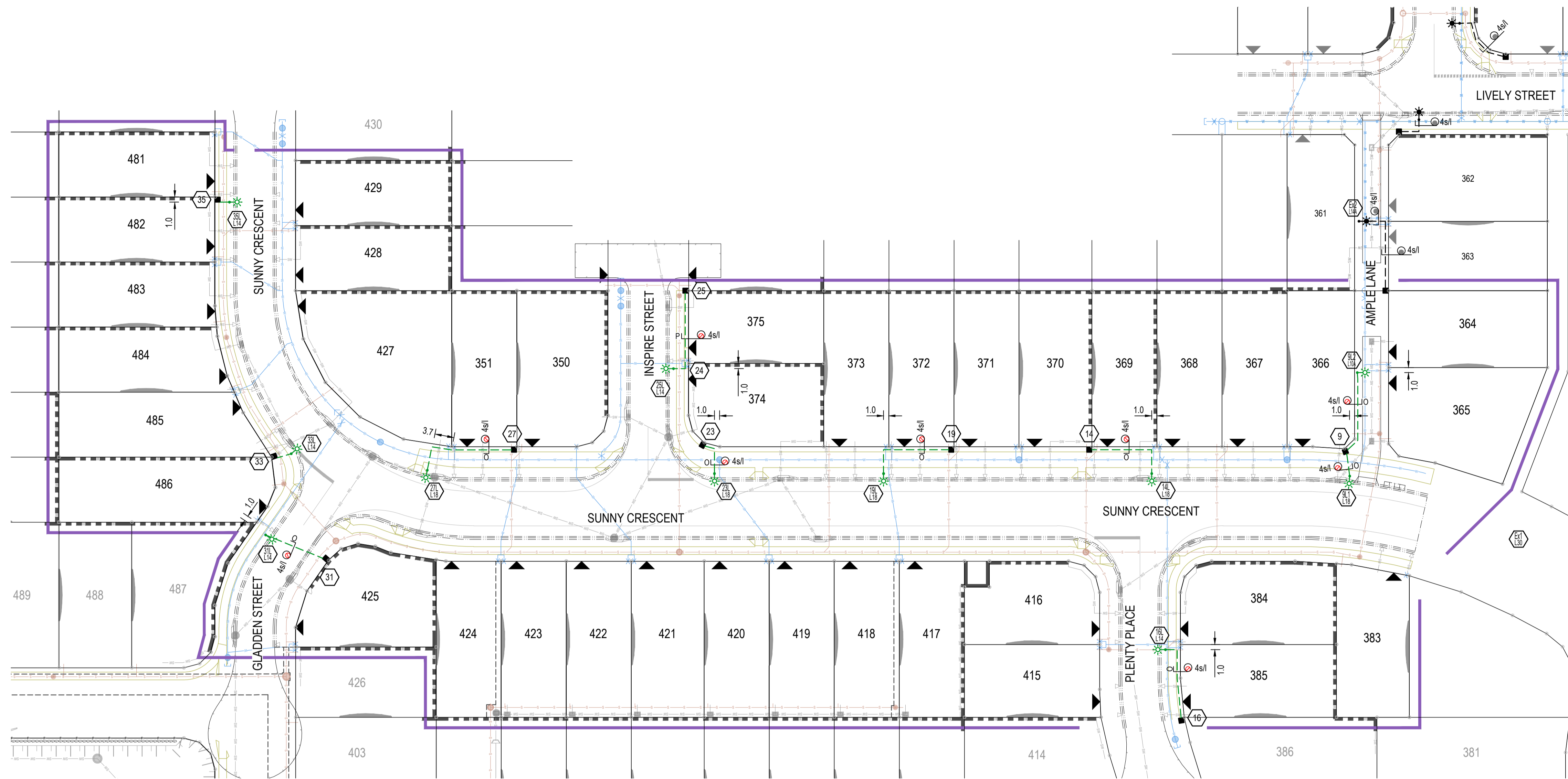
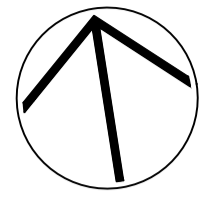
- NOTES:
 1. CONDUITS SHALL BE INSTALLED WITHIN A CORRIDOR 300-900mm FROM PROPERTY ALIGNMENT, IN ACCORDANCE WITH ENERGEX UNDERGROUND DISTRIBUTION CONSTRUCTION (UDC) MANUAL.
 2. FOOTPATH CONDUITS SHALL HAVE MINIMUM 700mm COVER, REGARDLESS OF ENERGEX'S REQUIREMENTS.
 3. CONNECT EXISTING CONDUITS, INCLUDING ROAD CROSSING CONDUITS, TO NEW FOOTPATH CONDUITS
 4. TELECOMMUNICATION CONDUITS SHALL BE INSTALLED ABOVE THE ENERGEX CONDUITS IN A JOINT USE TRENCH ARRANGEMENT.
 5. WHEN CONSTRUCTING A RETAINING WALL ALONG THE FRONT OF A LOT, THE CIVIL CONTRACTOR MUST INSTALL CONDUITS FOR ELECTRICAL AND TELECOMMUNICATIONS LEAD-INS. REFER TO CONDUIT UNDER RETAINING WALL DETAIL.



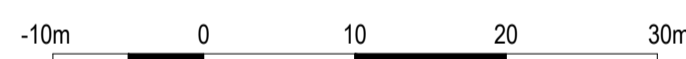
FOR CONSTRUCTION

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:	SUBDIVISION ELECTRICAL SERVICES	COUNCIL	IPSWICH	DWT REV.	V53-3 20210504	DESCRIPTION	LOCATION	DRAWING No.	REVISION
01/12/2023	A	PRELIMINARY ISSUE	RR					PILLARS RELOCATED TO SUIT UPDATED CIVIL	2048 Sabana Street, Stafford, QLD 4053	COUNCIL REF	9332/2019/PDA			ELECTRICITY RETICULATION - RESIDENTIAL	BELLEVEUE ESTATE - STAGE 12	F228-05	D
04/01/2024	B	29L RELOCATED	RR						Tel: (07) 3872 5555 Fax: (07) 3872 5566 Email: m@robinrussell.com.au www.robinrussell.com.au	DESIGNED	W.Schardt	DRAWN	B.Hyland	323 - 395 RIPLEY ROAD	ENERGEX PROJECT No.	SHEET No.	
26/04/2024	C	AMENDED TO NEW CIVIL	RR						A.B.N. 78 010 589 661 THIS IS A UDC GENERATED DESIGN.	CHECKED	D.Lloyd RPEQ 5060	APPROVED	ROBIN RUSSELL RPEQ 1546	RIPLEY	S0107872	5 OF 5	
21/10/2024	D	PMT CHANGED TO 500KVA	RR							DATE	01/12/2023	SIGNED	RR	HB Doncaster Pty. Ltd.	A1		

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PLAN VIEW
SCALE 1:500



1 : 500 (A1 - NOT REDUCED)

GENERAL NOTES

IN THE EVENT OF CONFLICT BETWEEN THIS WORKS PLAN AND SPECIFICATIONS OF THE RELEVANT FUTURE ASSET OWNER, I.E. ENERGEX, ERGON, LOCAL AUTHORITY, DEPARTMENT OF TRANSPORT & MAIN ROADS, NBN™ ETC., THE DRAWINGS AND SPECIFICATIONS OF THE FUTURE ASSET OWNER SHALL TAKE PRECEDENCE. EXCEPTIONS APPLY WHERE RRA DESIGN DOCUMENTATION SPECIFY CLEARANCES, DEPTHS & SEPARATIONS GREATER THAN THE MINIMUM REQUIRED BY THE AUTHORITIES.

THE CONTRACTOR SHALL NOT ACCEPT A VERBAL INSTRUCTION FROM ANY PERSON TO DEPART FROM THE REQUIREMENTS OF THIS WORKS PLAN OR RRA GENERAL SPECIFICATION. ANY DEPARTURE FROM THE WORKS PLAN OR SPECIFICATION MUST FIRST BE AUTHORISED IN WRITING BY THE CONTRACT SUPERINTENDENT.

ELECTRICAL CONTRACTOR

THE WORKS DETAILED ON THIS DRAWING SHALL BE CONSTRUCTED IN ACCORDANCE WITH ROBIN RUSSELL & ASSOCIATES' GENERAL SPECIFICATION FOR INSTALLATION OF ELECTRICITY RETICULATION AND STREET LIGHTING - ISSUE 'AA'.

CIVIL CONTRACTOR

THE INSTALLATION OF ALL ELECTRICAL CONDUITS SHALL BE SUPERVISED BY THE HOLDER OF AN ELECTRICAL WORK LICENCE - ELECTRICAL SAFETY ACT 2002.

ENERGEX CONDUITS AND TRANSFORMER SITE RETAINING WALLS SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH ENERGEX'S SPECIFICATIONS (SEE BELOW). THEY WILL BE INSPECTED FOR COMPLIANCE UPON COMPLETION.

WHERE ROAD-CROSSING CONDUITS ARE INSTALLED DEEPER THAN USUAL (UNDER CULVERTS OR PIPES) THEY MUST RISE TO A DEPTH OF NOT MORE THAN 1200mm AT EACH END. IF UNCERTAIN, SEEK ADVICE FROM RRA CONSTRUCTION COORDINATOR.

THE CIVIL CONTRACTOR SHALL INSTALL ENVELOPING CONDUITS UNDER RETAINING WALLS BEHIND PILLARS - TWO 100mm CONDUITS INTO EACH LOT (ONE FOR ELECTRICITY, ONE FOR COMMUNICATIONS), 500mm DEEP BEHIND THE PILLAR, NEAR GROUND LEVEL INSIDE THE LOT.

RELEVANT SPECIFICATIONS IN ENERGEX'S UNDERGROUND DISTRIBUTION CONSTRUCTION MANUAL ARE FOUND AT -

- SECTION C1: CONDUITS
- SECTION C2: EXCAVATION
- SECTION C3: TRANSFORMER SITES

THESE SECTIONS OF THE MANUAL CAN BE DOWNLOADED FROM THE FOLLOWING ENERGEX WEB SITE: https://swp.energex.com.au/service_providers/technical_docs/asp/technical_documents.asp

CIVIL ENGINEERS WHO HAVE REGISTERED FOR ACCESS TO THE FOLLOWING RRA WEBSITE MAY DOWNLOAD EXTRACTS FROM ENERGEX'S MANUAL AT: <http://www.robus.com.au>

THE CIVIL CONTRACTOR SHALL ENSURE THAT ALL CONDUITS HAVE BEEN INSTALLED BEFORE CONSTRUCTING RETAINING WALLS, PATHS, DRIVEWAYS & WATER SERVICES. THE CIVIL CONTRACTOR SHALL PLEASE INFORM THE ELECTRICAL CONTRACTOR OF ANY 'AS CONSTRUCTED' DEPARTURES FROM THE CIVIL DESIGN.

CARE: EXISTING STREET LIGHTS SHALL NOT BE RECOVERED UNLESS REPLACEMENT STREET LIGHTS WILL BE COMMISSIONED BEFORE NIGHTFALL. LIGHTING OF NEW OR ALTERED EXISTING ROADS MIGHT NOT COMPLY WITH SPECIFIED STANDARDS UNTIL NEW ROAD LIGHTING HAS BEEN COMMISSIONED. THE CIVIL CONTRACTOR SHALL APPLY APPROPRIATE RISK MANAGEMENT. E.G. WARNING SIGNS, SPEED RESTRICTIONS, TEMPORARY LIGHTING, ETC.

ON-SITE SERVICES CHECKS

ROBIN RUSSELL & ASSOCIATES GIVES NO WARRANTY REGARDING THE PRESENCE OR LOCATION OF BURIED SERVICES, INCLUDING NEWLY-INSTALLED SERVICES. 'AS CONSTRUCTED' LOCATIONS MAY DIFFER FROM WHAT IS DRAWN ON THIS WORKS PLAN. CONTRACTORS SHALL BE RESPONSIBLE TO IDENTIFY AND LOCATE ALL BURIED SERVICES. INITIAL IDENTIFICATION CAN BE OBTAINED FROM:

DIAL BEFORE YOU DIG SERVICE

TELEPHONE 1100
FAX 1300 652 077

ON-LINE ENQUIRIES CAN BE MADE AT: <http://www.1100.com.au>.

HAVING DETERMINED WHICH SERVICES MAY BE PRESENT, ON-SITE LOCATIONS SHOULD THEN BE ARRANGED WITH RELEVANT SERVICE AUTHORITIES.

SEWERAGE AND WATER PLANS FOR THE SUBDIVISION MAY BE OBTAINED ON REQUEST FROM THE SUPERINTENDENT.

ROCK EXCAVATION BY ELECTRICAL CONTRACTOR

- The electrical contractor shall:
 - excavate electricity trenches to the depth required,
 - excavate street light foundations to a depth of 1500mm,

FOR CONSTRUCTION

LEGEND: RATE 3 LIGHTING

- EXISTING RATE 3 STREETLIGHT CABLE
- PROPOSED RATE 3 STREETLIGHT CABLE
- FUTURE RATE 3 STREETLIGHT CABLE
- BORED CONDUIT
- STATION NUMBERS
- PADMOUNT TRANSFORMER, EXISTING / PROPOSED
- POLE TRANSFORMER, EXISTING / PROPOSED
- SERVICE PILLAR, EXISTING / PROPOSED
- LINK PILLAR, EXISTING / PROPOSED
- RATE 3 STREET LIGHT, EXISTING / PROPOSED / FUTURE
- STREET LIGHT PIT, EXISTING / PROPOSED / FUTURE
- RATE 3 SWITCHBOARD, EXISTING / PROPOSED
- EXISTING CONSUMERS UNDERGROUND CABLE
- PROPOSED CONSUMERS UNDERGROUND CABLE
- EARTH, EXISTING / PROPOSED
- STREET LIGHT, EXISTING / PROPOSED
- TO BE RECOVERED
- CABLE, EXISTING / PROPOSED
- 32/40mm HD CONDUIT
- 80/100mm LD CONDUIT
- 100mm WHITE ENERGEX COMMS. CONDUIT
- 125mm LD CONDUIT
- ELECTRIC CABLE MARKER PLATE

"AS CONSTRUCTED" DOCUMENTS

The electrical contractor shall email the "as constructed" drawing, test results & closure documents to:

- contestable@energex.com.au
- as.constructed@robus.com.au

UNDERGROUND CABLE CERTIFICATION

All cables detailed on this drawing have been checked using the cable locator described below and are, according to measurements taken, on the correct alignment and at correct depths below the finished level, except as marked up. Alignments are subject to the accuracy of survey pegs present at the time of measurement.

Make: _____ Model: _____
Serial No: _____ Date Cables Checked: ____/____/____
Name of Person Who Conducted Checks: _____
Certified (signature of checker): _____
Phone No. of checker: _____

PILLARS ON ZERO LOT BOUNDARY

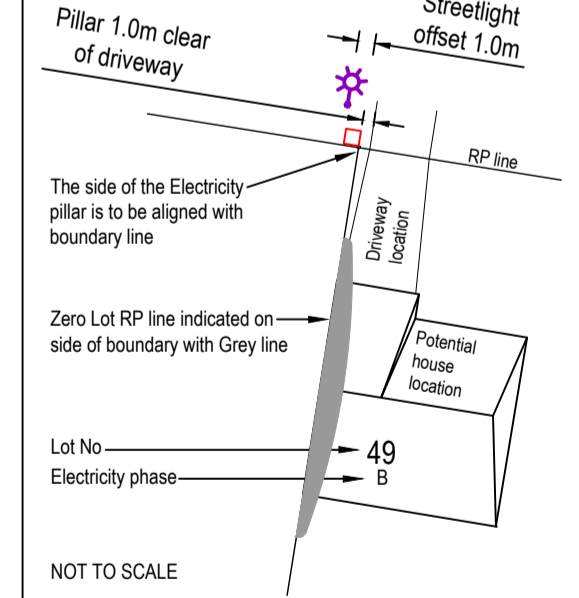
REQUIREMENTS FOR ELECTRICAL, GAS & COMMUNICATIONS CONTRACTORS

The proposed pillar shall be offset, as indicated, at the zero lot line boundary. The side of the pillar shall be aligned with the lot boundary, to provide at least 1.0m clearance from the future driveway.

A proposed streetlight shall be offset 1.0m from the zero lot line boundary, away from the future driveway.

COMMUNICATIONS PITS shall not clash with potential pillar exclusion zone if a pillar is offset to align with one side of a survey peg.

GAS DOMESTIC SERVICE TEE-OFFS shall be adjusted to remain outside 600mm pillar exclusion zone if a pillar is offset to align with one side of a survey peg.



CONSTRUCTION CONTACTS

ELECTRICAL ENGINEER
ROBIN RUSSELL & ASSOCIATES PTY LTD
DESIGNER
WILLIAM SCHARDT Ph: 0419 778 552
CONSTRUCTION ADMINISTRATOR
SHANE HYDE Ph: 0419 021 772
CIVIL ENGINEER
COLLIERS
MATTHEW COTTON Ph: (07) 5588 0302
SURVEYOR
SAUNDERS HAVILL
CLINTON URQUHART Ph: (07) 3539 6701

RATE 3 INSTALLATION MUST COMPLY WITH AS/NZS 3000:2018

ELECTRICAL CONTRACTOR:
REFER TO RRA CONSTRUCTION PLAN S0107872 (RRA Ref. F228) FOR FULL DETAILS ON ENERGEX INSTALLATIONS.

SITE INFORMATION

TOTAL NUMBER OF LIGHTS
11
PROPERTY DESCRIPTION
RATE 3 STREET LIGHTING ONLY

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
01/12/2023	A	PRELIMINARY ISSUE	RR					PILLARS RELOCATED TO SUIT UPDATED CIVIL
04/01/2024	B	29L RELOCATED	RR					
26/04/2024	C	AMENDED TO NEW CIVIL	RR					
21/10/2024	D	PMT CHANGED TO 500KVA	RR					

Robin Russell
& ASSOCIATES PTY. LTD.
CONSULTING ENGINEERS - ELECTRICAL

SUBDIVISION ELECTRICAL SERVICES
2016 Sabana Street, Stafford, QLD 4053
Tel: (07) 3872 5556
Fax: (07) 3872 5566
Email: rr@robus.com.au
www.robus.com.au
A.B.N. 78 010 589 661
THIS IS A UDC GENERATED DESIGN.

COUNCIL	IPSWICH	DWT REV.	V53-3 20210504
COUNCIL REF	9332/2019/PDA		
DESIGNED	W.Schardt	DRAWN	B.Hyland
CHECKED	D.Lloyd RPEQ 5060	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	01/12/2023	SIGNED	<i>Robin Russell</i>

DESCRIPTION	LOCATION
RATE 3 STREET LIGHTING	BELLEVEUE ESTATE - STAGE 12 323 - 395 RIPLEY ROAD RIPLEY
CLIENT	HB Doncaster Pty. Ltd.

DRAWING No.	REVISION
F228-R-01 D	
ENERGEX PROJECT No.	SHEET No.
S0107873	1 OF 3

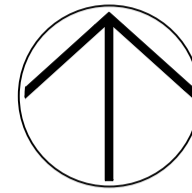
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A1

RATE 3 CONDUIT SCHEDULE - FOOTPATHS - BY ELECTRICAL CONTRACTOR

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m)		PVC CABLE PROTECTION (m)	X-SECTION (m)		DRAW WIRE	KERB MARKERS	REMARKS
		50mm HD	No.		EXCAV /TAPE	TRENCH DETAIL			
SUNNY CRESCENT	9 9L1	6	1	6	6	O	8		
DRIVEWAY 4	9 9L2	17	1	17	17	O	19		
SUNNY CRESCENT	14 14L	18	1	18	18	O	20		
PLENTY PLACE	16 16L	17	1	17	17	O	19		
SUNNY CRESCENT	19 19L	19	1	19	19	O	21		
	23 23L	8	1	8	8	O	10		
INSPIRE STREET	24 25	16	1			P	18		JOINT USE TRENCH
	24 25L	3	1	3	3	O	5		
SUNNY CRESCENT	27 27L	21	1	21	21	O	23		
	33 33L	4	1	4	4	O	6		
	35 35L	3	1	3	3	O	5		
TOTAL		132m		116m	116m		154m		

- NOTES:
- RATE 3 CONDUITS SHALL BE INSTALLED WITHIN A CORRIDOR 860-910mm FROM PROPERTY ALIGNMENT
 - RATE 3 CONDUITS SHALL BE INSTALLED IN A SHARED TRENCH WITH ENERGEX CONDUITS, WHERE POSSIBLE, WITH A MINIMUM CLEARANCE OF 100mm.
 - FOOTPATH CONDUITS SHALL HAVE MINIMUM 700mm COVER, REGARDLESS OF ENERGEX'S REQUIREMENTS.
 - CONNECT EXISTING CONDUITS, INCLUDING ROAD CROSSING CONDUITS, TO NEW FOOTPATH CONDUITS
 - REFER TO RRA CONSTRUCTION PLANS S0107872 (RRA Ref F228) FOR JOINT USE TRENCH DETAILS.
 - INSTALLATION TO COMPLY WITH AS/NZS 3000:2018 WIRING RULES.



RATE 3 CONDUIT SCHEDULE - ROADWAYS - BY CIVIL CONTRACTOR

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m)		PVC CABLE PROTECTION (m)	X-SECTION (m)		DRAW WIRE	KERB MARKERS	REMARKS
		50mm HD	No.		EXCAV /TAPE	TRENCH DETAIL			
GLADDEN STREET	31 31L	13	1	13	13	O	15	2	
TOTAL		13m		13m	13m		15m	2	

- NOTES:
- ROAD CROSSING CONDUITS SHALL HAVE A MINIMUM COVER OF 900mm AT ALL PLACES UNDER THE ROAD, EXCEPT UNDER STATE-CONTROLLED 'MAIN' ROADS WHERE CONDUITS SHALL HAVE A MINIMUM COVER OF 1200mm.
 - INSTALLATION TO COMPLY WITH AS/NZS 3000:2018 WIRING RULES.
 - RATE 3 CONDUITS SHALL BE INSTALLED IN A SHARED TRENCH WITH ENERGEX CONDUITS WHERE POSSIBLE WITH A MINIMUM CLEARANCE OF 100mm.

RATE 3 CABLE SCHEDULE

LOCATION	STATIONS FROM - To	EX	REC	In	CABLE SIZE/TYPE	LENGTH (m)	REMARKS
SUNNY CRESCENT	9 9L1			*	4mm² Cu 2C PVC/PVC	12	
DRIVEWAY 4	9 9L2			*	4mm² Cu 2C PVC/PVC	23	
SUNNY CRESCENT	14 14L			*	4mm² Cu 2C PVC/PVC	24	
PLENTY PLACE	16 16L			*	4mm² Cu 2C PVC/PVC	23	
SUNNY CRESCENT	19 19L			*	4mm² Cu 2C PVC/PVC	25	
	23 23L			*	4mm² Cu 2C PVC/PVC	14	
INSPIRE STREET	25 25L			*	4mm² Cu 2C PVC/PVC	24	
SUNNY CRESCENT	27 27L			*	4mm² Cu 2C PVC/PVC	27	
GLADDEN STREET	31 31L			*	4mm² Cu 2C PVC/PVC	19	
SUNNY CRESCENT	33 33L			*	4mm² Cu 2C PVC/PVC	10	
	35 35L			*	4mm² Cu 2C PVC/PVC	9	
TOTALS (Variance 2%)					4mm² Cu 2C PVC/PVC	210	

- NOTES:
- THE CONTRACTOR SHALL MEASURE ACTUAL CABLE LENGTHS REQUIRED, AFTER INSTALLATION OF CONDUITS, THEN ORDER CABLE ACCORDINGLY.

RATE 3 - STREETLIGHT SCHEDULE

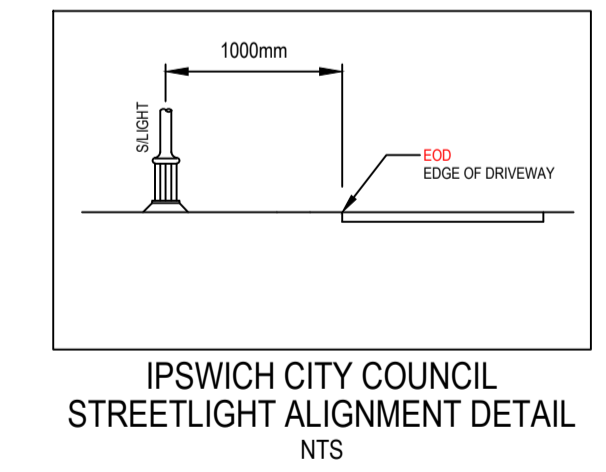
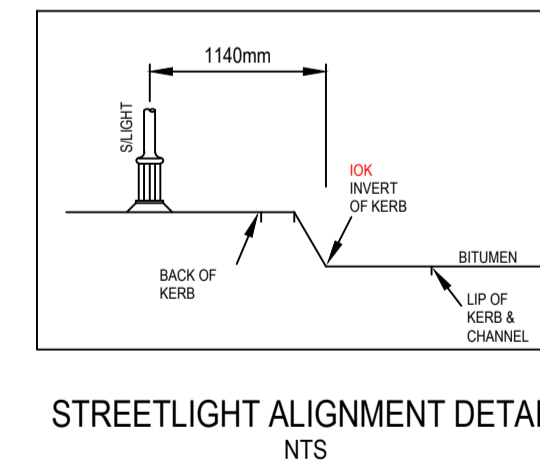
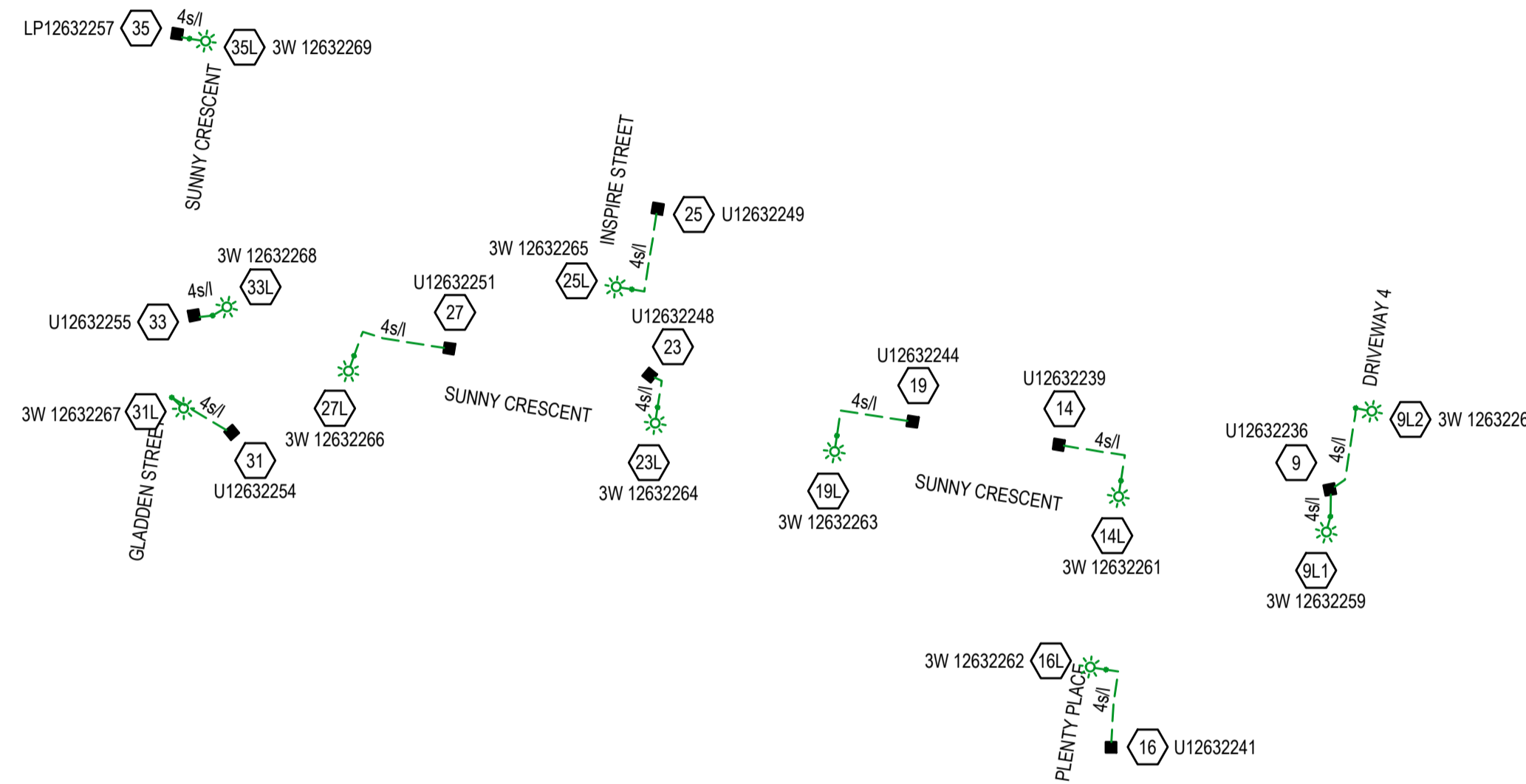
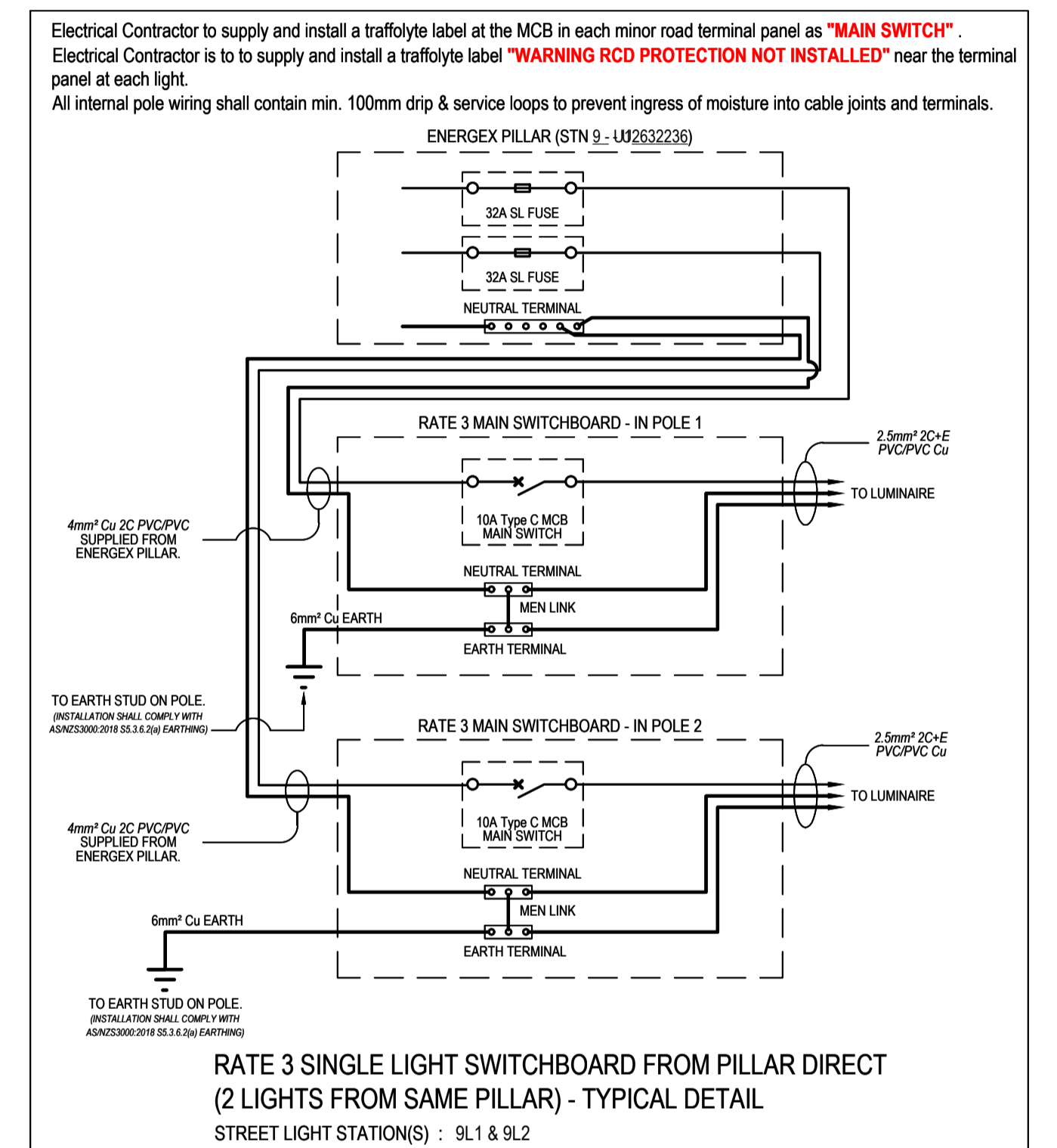
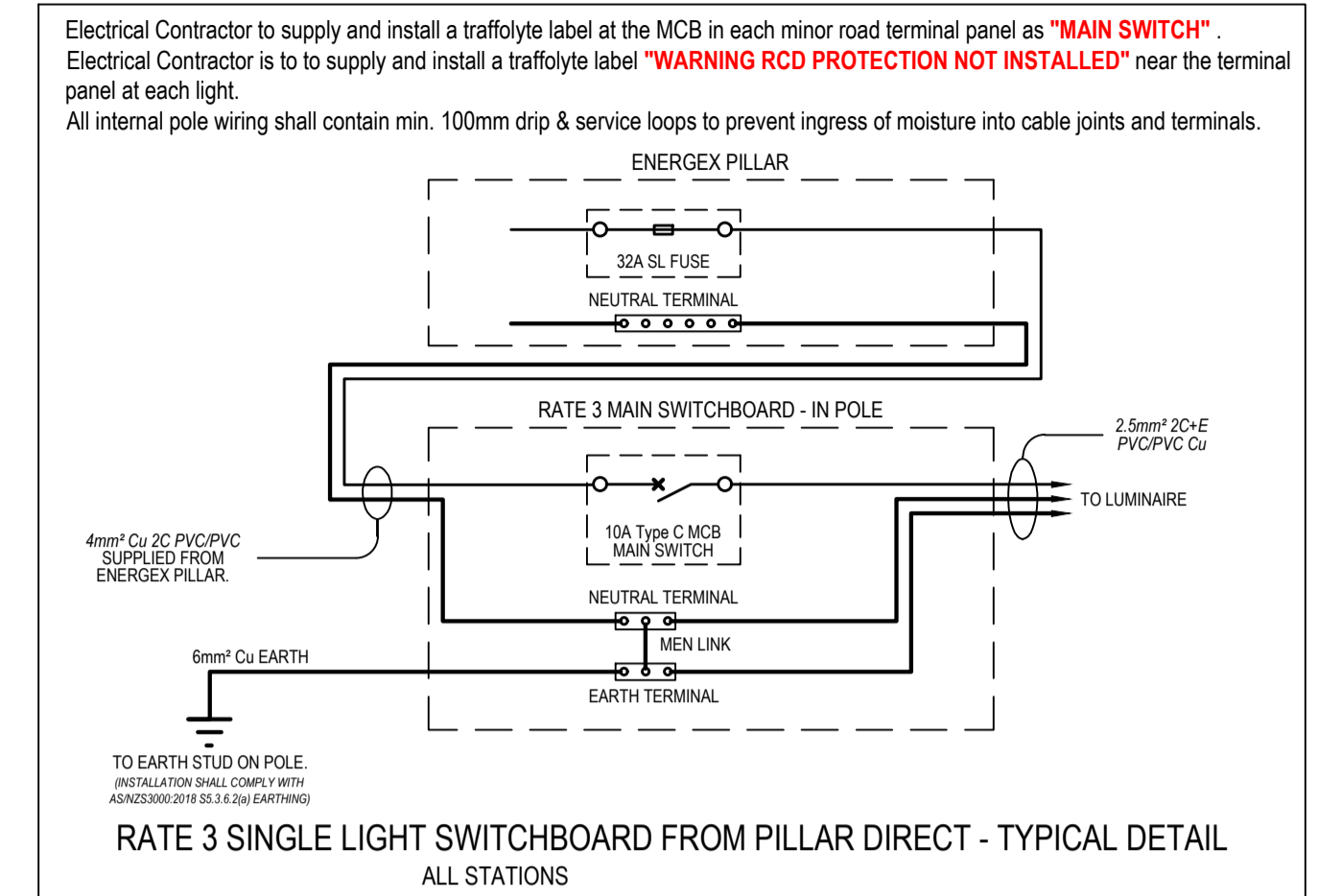
LOCATION	STN No.	POLE OR COMPONENTS				LUMINAIRE										OUTREACH BRACKET				MOUNT HT (m)	REMARKS			
		SITE ID (POLE No.)	COMP ID	EX (m)	REC (m)	ER (m)	POLE CODE	ALIGN (mm)	COMP ID	EX	RECOVER LUMIN	CUST	DATE ENERG	ERECT LUMIN	CUST	DATE ENERG	LUMINAIRE CODE	EX (m)	REC (m)			ER (m)	CU ID	UPCAST ANGLE
SUNNY CRESCENT	9L1	3W 12632259	P01			4.5m BPM	SLNOS3CI	1140 IOK	SL1				L18L3	IPSW	SLEDSY01795							0°	5.1	BLACK AVENUE
AMPLE LANE	9L2	3W 12632260	P01			5.0m BPM	SB50H3105CI	1000 EOD	SL1				L10AL3	IPSW	SLEDPH0106A + ASSY917-1 + ASSY901-2		0.5					0°	5	LUMINAIRE (BRP391 LED14'NW 10W DWP PSD P7 ANZ 824110138811) + LOU/VE + PE CELL) SUPPLIED BY ELECTRICAL CONTRACTOR ON BLACK HINGED POLE
SUNNY CRESCENT	14L	3W 12632261	P01			4.5m BPM	SLNOS3CI	1140 IOK	SL1				L18L3	IPSW	SLEDSY01795							0°	5.1	BLACK AVENUE
PLENTY PLACE	16L	3W 12632262	P01			4.5m BPM	SLNOS3CI	1140 IOK	SL1				L14L3	IPSW	SLEDSY01375							0°	5.1	BLACK AVENUE
SUNNY CRESCENT	19L	3W 12632263	P01			4.5m BPM	SLNOS3CI	1140 IOK	SL1				L18L3	IPSW	SLEDSY01795							0°	5.1	BLACK AVENUE
	23L	3W 12632264	P01			4.5m BPM	SLNOS3CI	1140 IOK	SL1				L18L3	IPSW	SLEDSY01795							0°	5.1	BLACK AVENUE
INSPIRE STREET	25L	3W 12632265	P01			4.5m BPM	SLNOS3CI	1140 IOK	SL1				L14L3	IPSW	SLEDSY01375							0°	5.1	BLACK AVENUE
SUNNY CRESCENT	27L	3W 12632266	P01			4.5m BPM	SLNOS3CI	1140 IOK	SL1				L18L3	IPSW	SLEDSY01795							0°	5.1	BLACK AVENUE
GLADDEN STREET	31L	3W 12632267	P01			4.5m BPM	SLNOS3CI	1140 IOK	SL1				L14L3	IPSW	SLEDSY01375							0°	5.1	BLACK AVENUE
SUNNY CRESCENT	33L	3W 12632268	P01			4.5m BPM	SLNOS3CI	1140 IOK	SL1				L14L3	IPSW	SLEDSY01375							0°	5.1	BLACK AVENUE
	35L	3W 12632269	P01			4.5m BPM	SLNOS3CI	1140 IOK	SL1				L14L3	IPSW	SLEDSY01375							0°	5.1	BLACK AVENUE

- NOTES:
- ALL LIGHTS TO BE CONNECTED ON ENERGEX RATE 3.
 - CHECK CLEAR OF ALL SERVICES BEFORE EXCAVATING.
 - "IOK" ALIGNMENT MEASURED FROM INVERT OF KERB TO CENTRE OF POLE.
 - "EOD" ALIGNMENT MEASURED FROM EDGE OF DRIVEWAY TO CENTRE OF POLE.
 - ALL LUMINAIRES COMPLY WITH ICC PLANNING SCHEME POLICY 3.
 - ELECTRICAL CONTRACTOR SHALL SUPPLY "ICC3" STICKERS (GREEN BACK WITH WHITE LETTERS) ON EACH POLE AS A PREFIX TO THE POLE NUMBER (eg: "ICC3 W1234567").
 - INSTALLATION TO COMPLY WITH AS/NZS 3000:2018 WIRING RULES.
 - ALL PART NUMBERS ARE ENERGEX PARTS UNLESS OTHERWISE SPECIFIED.
 - TO MEET IPSWICH CITY COUNCIL REQUIREMENTS, THE INTERNAL WIRING FOR SL POLES MUST BE ALTERED TO 2C + EARTH BETWEEN THE TERMINAL PANEL AND THE LUMINAIRE.
 - SUBSTITUTION OF SIMILAR PLANT/EQUIPMENT/PARTS TO THOSE SPECIFIED BY MANUFACTURER, TYPE OR MODEL NUMBER ON THIS DESIGN IS ONLY PERMITTED WITH EXPRESS APPROVAL OF THE RRA ENGINEERING MANAGER.

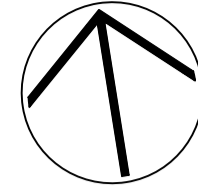
FOR CONSTRUCTION

MATERIALS SUMMARY - S0107873

EQUIPMENT	
MODEL No.	QTY
ASSY901-2	1
ASSY917-1	1
LVC24PVPV	210
SB50H3105CI	1
SLEDPH0106A	1
SLEDSY01375	5
SLEDSY01795	5
SLNOS3CI	10



DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:	SUBDIVISION ELECTRICAL SERVICES	COUNCIL	IPSWICH	DWT REV.	V53-3 20210504	DESCRIPTION	LOCATION	DRAWING No.	REVISION
01/12/2023	A	PRELIMINARY ISSUE	RR					PILLARS RELOCATED TO SUIT UPDATED CIVIL	2048 Sabana Street, Stafford, QLD 4053	COUNCIL REF	9332/2019/PDA			RATE 3 STREET LIGHTING	BELLEVUE ESTATE - STAGE 12	F228-R-02	D
04/01/2024	B	29L RELOCATED	RR						Tel: (07) 3872 5556 Fax: (07) 3872 5556 Email: m@robusrussell.com.au www.robusrussell.com.au	DESIGNED	W.Schardt	DRAWN	B.Hyland	323 - 395 RIPLEY ROAD	ENERGEX PROJECT No.	SHEET No.	
26/04/2024	C	AMENDED TO NEW CIVIL	RR						A.B.N. 78 010 589 661 THIS IS A UDC GENERATED DESIGN.	CHECKED	D.Lloyd RPEQ 5060	APPROVED	ROBIN RUSSELL RPEQ 1546	RIPLEY	S0107873	2	3
21/10/2024	D	PMT CHANGED TO 500KVA	RR							DATE	01/12/2023	SIGNED	RR	CLIENT HB Doncaster Pty. Ltd.	THIS DOCUMENT IS COPYRIGHT AND THE PROPERTY OF ROBIN RUSSELL & ASSOCIATES PTY LTD AND MUST NOT BE RETAINED, COPIED OR USED WITHOUT AUTHORITY.	A1	



Qty	Configuration	Description	MF	Filename	Arm
1	Single	Modular LED 26W 4K L30 Avenue	0.750	Modular LED 26W 4K 170326PH.IES	0.535
3	Single	SYLVANIA Nostalgia2 T2 L18 4K	0.750	AVENUE II 4K 18W V2 210730PH.ies	0.535
2	Single	SYLVANIA Nostalgia2 T2 L14 4K	0.750	AVENUE II 4K 14W V2 210729PH.ies	0.535

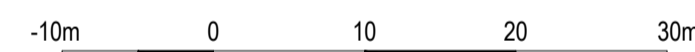
STREET LIGHT SPACING MATRIX

STN	Ex1	Ex2	9L1	9L2	14L	16L	19L	23L	25L	27L	31L	33L	35L
Ex1	-	-	37.8	-	75.1	-	-	-	-	-	-	-	-
Ex2	-	-	-	29.1	-	-	-	-	-	-	-	-	-
9L1	37.8	-	-	-	38.0	-	89.5	-	-	-	-	-	-
9L2	-	29.1	-	-	-	-	-	-	-	-	-	-	-
14L	75.1	-	38.0	-	-	33.9	51.5	84.0	-	-	-	-	-
16L	-	-	-	-	33.9	-	-	-	-	-	-	-	-
19L	-	-	89.5	-	51.5	-	-	32.5	-	87.7	-	-	-
23L	-	-	-	-	84.0	-	32.5	-	55.2	-	33.5	26.3	-
25L	-	-	-	-	-	-	-	-	-	55.2	87.0	81.4	-
27L	-	-	-	-	-	-	87.7	-	-	-	-	-	-
31L	-	-	-	-	-	-	-	-	-	87.0	33.5	16.4	-
33L	-	-	-	-	-	-	-	81.4	-	26.3	16.4	-	49.8
35L	-	-	-	-	-	-	-	-	-	-	-	49.8	-

1. ALL DISTANCES PROVIDED IN METRES (m)



PLAN VIEW
SCALE 1:500



1 : 500 (A1 - NOT REDUCED)

Calculation Summary

Project: Bends - Min 0.14

Label	CalcType	Avg	Max	Min	Max/Avg (UE2)
StatArea_1	Illuminance	1.51	8.96	0.18	5.93
StatArea_2	Illuminance	2.30	11.43	0.21	4.97
StatArea_3	Illuminance	2.02	11.44	0.18	5.66
StatArea_4	Illuminance	2.48	11.66	0.15	4.70

PROJECT SPECIFIC DETAILS:
THIS DESIGN IS COMPLIANT WITH AND PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF:
AS/NZS 1158.3.1:2020 APPENDIX C
AS DETAILED BELOW

LIGHTING SUBCATEGORIES:
AMPLE LANE, INSPIRE STREET, PLENTY PLACE, GLADDEN STREET, SUNNY CRESCENT - PR5

APPLICABLE CLAUSES:
P CATEGORY
S4.2.2(c) FOR CURVED SECTIONS OF ROAD AND BENDS.
S4.3 T-INTERSECTIONS (e)(i)(ii)/FIGURE 4.2(i)(ii)

DESIGN METHODS:
SPACING TABLES AND DESIGN RULES FOR ROADWAYS & INTERSECTIONS.
NB! ALL LUMINAIRES WITHIN THIS DESIGN ARE WITHIN THE MAXIMUM ALLOWABLE SPACING FOR THEIR CATEGORY.

ILLUMINANCE DESIGN FOR CURVES/BENDS.

ROAD SURFACE REFLECTION CHARACTERISTICS:
R3

COMPUTER PROGRAM DETAILS
Name of Computer Program - Perfect Lite v5.06 & AGI32 v21.1.75
Source of program - Constant Energy & Lighting Analysts
Compliance - AS/NZS 1158.2.2005

NON-CONFORMANCES:
NIL

ROAD LIGHTING MAINTENANCE SCHEDULE:
THE MAINTENANCE FACTOR AND THE MAINTENANCE REGIME ARE THE RESPONSIBILITY OF THE ASSET OWNER (IPSWICH CITY COUNCIL).
THIS DESIGN UTILISES A MAINTENANCE FACTOR OF 0.8 AS SPECIFIED BY IPSWICH CITY COUNCIL BASED ON THE IP RATING OF 6X FOR ALL LUMINAIRES & EOL FOR EACH LUMINAIRE AS FOLLOWS:
• 0.8 FOR SYLVANIA NOSTALGIA TYPE 1/2 (88,000 HRS EOL/IP66)
• 0.8 FOR PHILIPS LIGHTING ROADFLAIR (58,000 HRS EOL/IP66)
THE LAMP LUMEN MAINTENANCE FACTOR IS BASED ON THE MANUFACTURERS SPECIFIED L90 LUMEN MAINTENANCE FACTOR, AND THE LUMINAIRE IS REPLACED AT THE MANUFACTURERS SPECIFIED ASSOCIATED END OF LIFE (EOL).

THE LUMINAIRE MAINTENANCE FACTOR IS BASED ON A 48 MONTH CLEANING, INSPECTION AND MAINTENANCE INTERVAL, DETERMINED BASED ON THE MANUFACTURERS SPECIFIED IP RATING ASSOCIATED WITH A LOW POLLUTION RESIDENTIAL OPERATING ENVIRONMENT.

NOTE: THIS CERTIFICATION IS ONLY APPLICABLE IF LUMINAIRES ARE REPLACED WITH EXACT EQUIVALENTS AND MAINTENANCE IS UNDERTAKEN AS SPECIFIED.

LumNo	Description	Orient (°)	Tilt (°)	MH (m)
1	SYLVANIA Nostalgia2 T2 L14 4K	351.016	0	5.1
2	SYLVANIA Nostalgia2 T2 L14 4K	30.809	0	5.1
3	SYLVANIA Nostalgia2 T2 L18 4K	261.016	0	5.1
4	SYLVANIA Nostalgia2 T2 L18 4K	261.016	0	5.1
5	SYLVANIA Nostalgia2 T2 L18 4K	255.212	0	5.1
6	Modular LED 26W 4K 170326PH_1	234.299	0	5.1

GENERAL NOTES:

CALCULATIONS WITHIN THIS DESIGN ARE SUBJECT TO THE TOLERANCES OUTLINED IN AS/NZS 1158.2 & AS/NZS 3827.1.

ILLUMINANCE CALCULATION FIELDS USE A 1m X 1m HORIZONTAL GRID ARRAY.

SETTINGS HAVE BEEN ADJUSTED TO ENSURE ALL CALCULATIONS ARE UNDERTAKEN TO A MINIMUM OF 2 DECIMAL PLACES.

LINEAR ILLUMINANCE ARRAYS CREATED HAVE BEEN SET UP WITH A MAXIMUM SPACING OF 2.0m.

ISOLUX VALUES, WHERE SHOWN ON DIAGRAMS, HAVE BEEN ROUNDED TO 2 DECIMAL PLACES TO ENSURE CLARITY.

LUMINAIRES MAY BE MOVED BY UP TO 200mm IN EITHER DIRECTION LATERALLY, AND/OR AWAY FROM THE PATHWAY, WHILE REMAINING COMPLIANT.

AS PER S4.4.3.1 (1158.1.1:2022) & S4.1.1 (1158.3.1:2020), BLOCKING OBJECTS HAVE BEEN EMPLOYED IN ORDER TO EXCLUDE LIGHT THAT MAY CROSS PROPERTY BOUNDARIES.

DEFINITIONS:

OFFSET: THE HORIZONTAL DISTANCE BETWEEN THE PHOTOMETRIC CENTRE OF A LUMINAIRE AND THE RP BOUNDARY OR EDGE OF PATH.

OVERHANG: THE HORIZONTAL DISTANCE BETWEEN THE PHOTOMETRIC CENTRE OF A LUMINAIRE AND THE ADJACENT KERB OR CARRIAGEWAY EDGE.

OUTREACH: THE HORIZONTAL DISTANCE BETWEEN THE PHOTOMETRIC CENTRE OF A LUMINAIRE, TO—

(a) THE CENTRE OF THE POLE (E.G. STANDALONE STREET LIGHT POLES); OR

(b) THE FACE OF POLE FOR BRACKET ARMS (E.G. TIMBER POWER POLES).

LEGEND:

NOTE: NOT ALL ITEMS MAY HAVE BEEN USED IN THIS DESIGN

AS/NZS 1158 DESIGN AREA	Isolines	Value (Lux)
AS/NZS 1158 DESIGN AREA Eph	0.07	0.07
AS/NZS 1158 DESIGN AREA 0.5 Eph	0.14	0.14
	1.75	1.75
	3.5	3.5
	3.75	3.75
	7.5	7.5

TRAFFIC ISLAND

ROAD LIGHTING INFORMATION

Design documentation in accordance with the requirements of:
AS/NZS 1158.3.1:2020 Appendix C

ARRANGEMENT / GEOMETRY				
Category	Road Name(s)			
PR6	AMPLE LANE			
Arrangement	Height (m)	Outreach (m)	Upcast	Offset (m)
Single Sided	5.0	0.84	0	0.785
LUMINAIRE / LAMP DETAILS				
Type / Wattage	Lumens	IP Rating	Origin of Data	
17W LED	1071	IP66	Sylvania Schreder	
Luminaire Type	StreetLED Mk1 L17A Internal LVR 3K Black			
I Table No.	StreetLED 14W 3K Aero+LVR PH6621.cie			
TECHNICAL PARAMETERS				
Average Horizontal Illuminance (E _h)	≥0.7			
Min Point Horizontal Illuminance (E _{ph})	≥0.07			
Illuminance Uniformity (U _{e2})	≤10			
Upward Waste Light Ratio % (UWLR)	≤1			
Road Reserve Lighting Design Width (m)	6.5			
Perfect Lite Maximum Spacing (m)	50.4			

ROAD LIGHTING INFORMATION

Design documentation in accordance with the requirements of:
AS/NZS 1158.3.1:2020 Appendix C

ARRANGEMENT / GEOMETRY				
Category	Road Name(s)			
PR5	AMPLE LANE			
Arrangement	Height (m)	Outreach (m)	Upcast	Offset (m)
Single Sided	5.0	0.87	0	1.371
LUMINAIRE / LAMP DETAILS				
Type / Wattage	Lumens	IP Rating	Origin of Data	
11W LED	1400	IP66	Philips Lighting	
Luminaire Type	Philips RoadFlair L10A WITH LOUVRE			
I Table No.	BRP391 LED14 NW 10W DWP PSD P7 BL1.cie			
TECHNICAL PARAMETERS				
Average Horizontal Illuminance (E _h)	≥0.85			
Min Point Horizontal Illuminance (E _{ph})	≥0.14			
Illuminance Uniformity (U _{e2})	≤10			
Upward Waste Light Ratio % (UWLR)	≤1			
Road Reserve Lighting Design Width (m)	6.5			
Perfect Lite Maximum Spacing (m)	41.2			

AVG SPACING
45.8m

ROAD LIGHTING INFORMATION

Design documentation in accordance with the requirements of:
AS/NZS 1158.3.1:2020 Appendix C

ARRANGEMENT / GEOMETRY				
Category	Road Name(s)			
PR5	INSPIRE STREET, PLENTY PLACE, GLADDEN STREET, SUNNY CRESCENT			
Arrangement	Height (m)	Outreach (m)	Upcast	Offset (m)
Single Sided	5.1	0.535	0	3.4
LUMINAIRE / LAMP DETAILS				
Type / Wattage	Lumens	IP Rating	Origin of Data	
14W LED	1969	IP66	Sylvania Schreder	
Luminaire Type	Avenue L14 T2 Black			
I Table No.	AVENUE II 4K 14W V2 210729PH.cie			
TECHNICAL PARAMETERS				
Average Horizontal Illuminance (E _h)	≥0.85			
Min Point Horizontal Illuminance (E _{ph})	≥0.14			
Illuminance Uniformity (U _{e2})	≤10			
Upward Waste Light Ratio % (UWLR)	≤1			
Road Reserve Lighting Design Width (m)	15.5			
Perfect Lite Maximum Spacing (m)	56.4			

ROAD LIGHTING INFORMATION

Design documentation in accordance with the requirements of:
AS/NZS 1158.3.1:2020 Appendix C

ARRANGEMENT / GEOMETRY				
Category	Road Name(s)			
PR5	SUNNY CRESCENT			
Arrangement	Height (m)	Outreach (m)	Upcast	Offset (m)
Single Sided	5.1	0.535	0	5.7
LUMINAIRE / LAMP DETAILS				
Type / Wattage	Lumens	IP Rating	Origin of Data	
18W LED	2523	IP66	Sylvania Schreder	
Luminaire Type	Avenue L18 T2 Black			
I Table No.	AVENUE II 4K 18W V2 210730PH.cie			
TECHNICAL PARAMETERS				
Average Horizontal Illuminance (E _h)	≥0.85			
Min Point Horizontal Illuminance (E _{ph})	≥0.14			
Illuminance Uniformity (U _{e2})	≤10			
Upward Waste Light Ratio % (UWLR)	≤1			
Road Reserve Lighting Design Width (m)	22			
Perfect Lite Maximum Spacing (m)	52.6			

AVG SPACING
0.0m

ROAD LIGHTING INFORMATION

Design documentation in accordance with the requirements of:
AS/NZS 1158.3.1:2020 Appendix C

ARRANGEMENT / GEOMETRY				
Category	Road Name(s)			
PR5	SUNNY CRESCENT			
Arrangement	Height (m)	Outreach (m)	Upcast	Offset (m)
Single Sided	5.1	0.535	0	5.9
LUMINAIRE / LAMP DETAILS				
Type / Wattage	Lumens	IP Rating	Origin of Data	
30W LED	3400	IP66	Sylvania Schreder	
Luminaire Type	Sylvania L30 LED Nostalgia T2 Black			
I Table No.	Modular LED 26W 4K 170326PH.cie			
TECHNICAL PARAMETERS				
Average Horizontal Illuminance (E _h)	≥0.85			
Min Point Horizontal Illuminance (E _{ph})	≥0.14			
Illuminance Uniformity (U _{e2})	≤10			
Upward Waste Light Ratio % (UWLR)	≤1			
Road Reserve Lighting Design Width (m)	22			
Perfect Lite Maximum Spacing (m)	55.1			

AVG SPACING
53.85m

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
01/12/2023	A	PRELIMINARY ISSUE	RR					
04/01/2024	B	29L RELOCATED	RR					PILLARS RELOCATED TO SUIT UPDATED CIVIL
26/04/2024	C	AMENDED TO NEW CIVIL	RR					
21/10/2024	D	PMT CHANGED TO 500KVA	RR					



Robin Russell
& ASSOCIATES PTY. LTD.
CONSULTING ENGINEERS - ELECTRICAL

COUNCIL	IPSWICH	DWT REV.	V53-3 20210504	DESCRIPTION
COUNCIL REF	9332/2019/PDA			ROAD LIGHTING DESIGN
DESIGNED	W.Schardt	DRAWN	B.Hyland	
CHECKED	D.Lloyd RPEQ 5060	APPROVED	ROBIN RUSSELL RPEQ 1546	
DATE	01/12/2023	SIGNED	<i>Robin Russell</i>	

COUNCIL	IPSWICH	DWT REV.	V53-3 20210504	DESCRIPTION
COUNCIL REF	9332/2019/PDA			ROAD LIGHTING DESIGN
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DATE	01/12/2023	SIGNED	<i>Robin Russell</i>	

LOCATION	DRAWING No.	REVISION
BELLEVEUE ESTATE - STAGE 12 323 - 395 RIPLEY ROAD RIPLEY	F228-R-03	D
ENERGEX PROJECT No.	SHEET No.	
S0107873	3 OF 3	

CLIENT	PROJECT
HB Doncaster Pty. Ltd.	S0107873

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A1