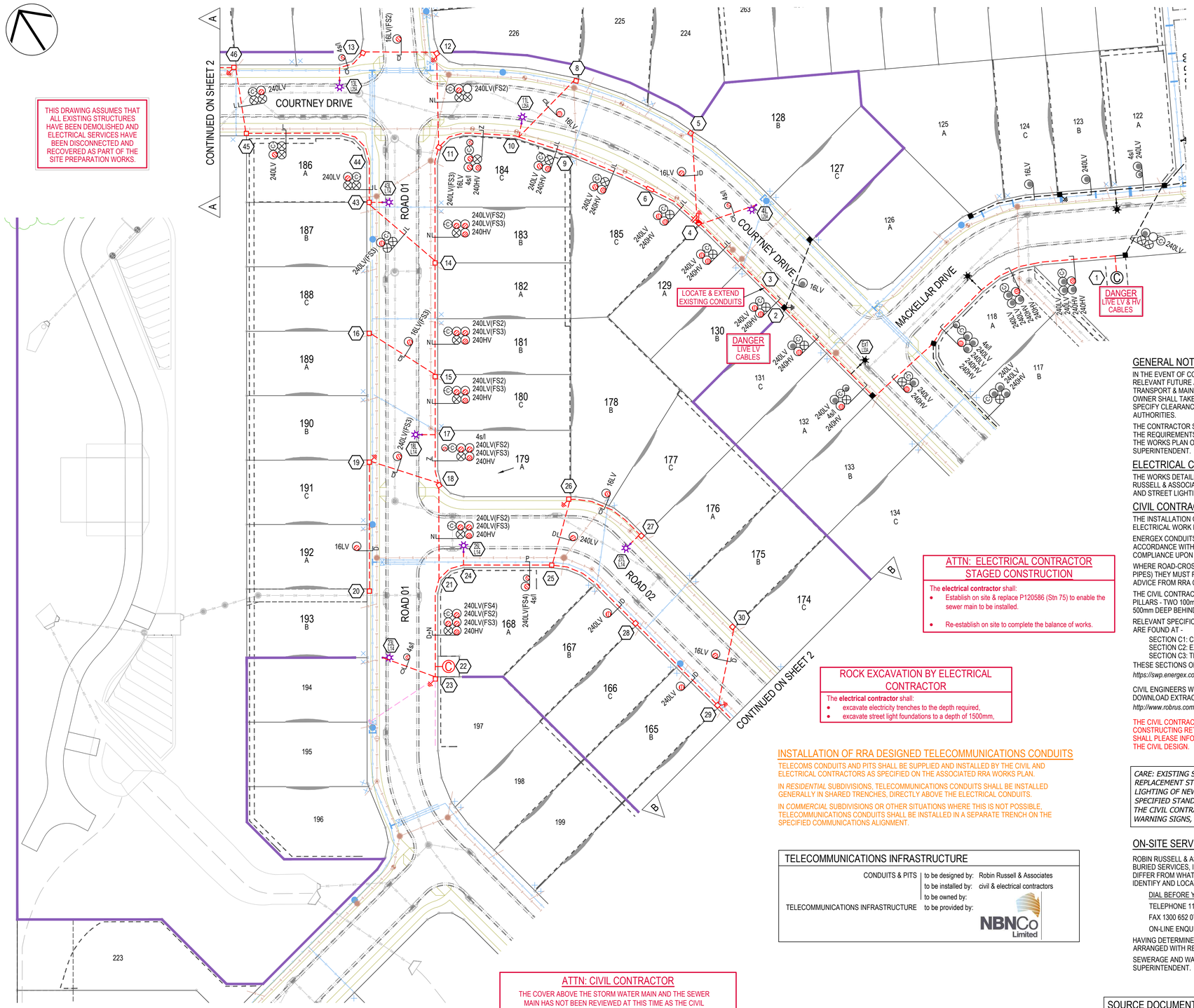
THIS DRAWING ASSUMES THAT ALL EXISTING STRUCTURES HAVE BEEN DEMOLISHED AND ELECTRICAL SERVICES HAVE BEEN DISCONNECTED AND RECOVERED AS PART OF THE SITE PREPARATION WORKS.



PLAN VIEW
SCALE 1:500

-10m 0 10 20 30m

1 : 500 (A1 - NOT REDUCED)

PILLARS ON ZERO LOT BOUNDARY

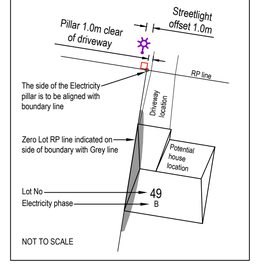
REQUIREMENTS FOR ELECTRICAL, GAS & COMMUNICATIONS CONTRACTORS

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 0.5m from the zero lot line boundary, away from the future driveway.

COMMUNICATIONS PITS shall not clash with potential driveway positions indicated

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.



LEGEND: ELECTRICAL

- EXISTING UNDERGROUND CABLE / CONDUIT
- PROPOSED UNDERGROUND CABLE / CONDUIT
- FUTURE UNDERGROUND CABLE / CONDUIT
- END OF CONDUIT POINT / CONDUIT CAP
- BORED CONDUIT
- 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

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_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.robrus.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.

ATTN: ELECTRICAL CONTRACTOR STAGED CONSTRUCTION

The **electrical contractor** shall:
- Establish on site & replace P120586 (Stn 75) to enable the sewer main to be installed.
- Re-establish on site to complete the balance of works.

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,

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.

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

ATTN: CIVIL CONTRACTOR

THE COVER ABOVE THE STORM WATER MAIN AND THE SEWER MAIN HAS NOT BEEN REVIEWED AT THIS TIME AS THE CIVIL DRAWINGS WERE NOT PROVIDED PRIOR TO ISSUING THE PRELIMINARY DRAWINGS.

"AS CONSTRUCTED" DOCUMENTS

The electrical contractor shall email the "as constructed" drawing, test results & closure documents to:
- contestable@energyq.com.au
- as.constructed@robrus.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: _____

CONSTRUCTION CONTACTS

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

CIVIL ENGINEER
MORTONS URBAN SOLUTIONS
JOHN HARRISON Ph: (07) 5571 1099

SURVEYOR
BENNETT & BENNETT (GC)
WAYNE HARRIS Ph: (07) 5631 8000

SOURCE DOCUMENTS

CREATOR	DRAWING	DWG No.	REV	DATE
MORTONS URBAN SOLUTIONS	CIVIL	X_STAGE2 Base	-	5/10/2023
Robin Russell & Assoc	ELECTRICAL	F018 (S0107643)	B	8/10/2023

SITE INFORMATION

TOTAL NUMBER OF LOTS
47

PROPERTY DESCRIPTION
PROPOSED LOTS 127 - 130, 150 - 159, 161 - 193
CANCELLING LOTS 188 - 192 ON RP173728

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.
08/11/2023	A	PRELIMINARY ISSUE	R.R.				

CURRENT REVISION CHANGES:

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

SUBDIVISION ELECTRICAL SERVICES
204/6 Babarra Street, Stafford, QLD 4053
Tel: (07) 3872 5555
Fax: (07) 3872 5566
Email: rr@robrus.com.au
www.robrus.com.au
A.B.N. 78 010 589 661
THIS IS A UDC GENERATED DESIGN.

COUNCIL	GOLD COAST	DWT REV.	V53-3 20210504
COUNCIL REF	COM/2019/82		
DESIGNED	B.Hyland	DRAWN	B.Hyland
CHECKED	W.Schardt	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	08/11/2023	SIGNED	

DESCRIPTION
ELECTRICITY RETICULATION - RESIDENTIAL

CLIENT
HB QLD PTY LTD

LOCATION
STAGE 2
COURTNEY DRIVE
UPPER COOMERA

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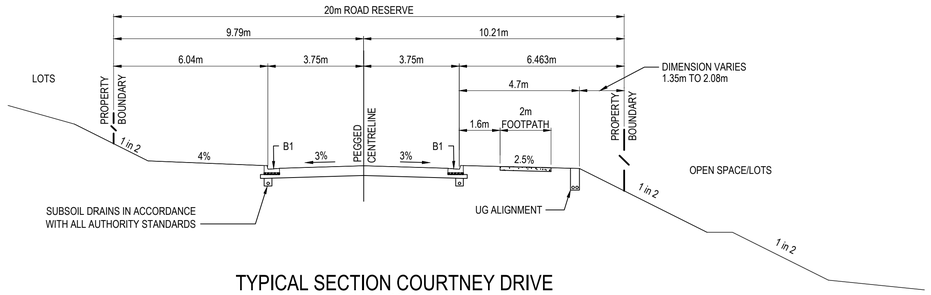
A1

DRAWING No. **F019-01**
REVISION **A**
ENERGEX PROJECT No. **S0107644**
SHEET No. 1 OF 10

THIS DRAWING ASSUMES THAT ALL EXISTING STRUCTURES HAVE BEEN DEMOLISHED AND ELECTRICAL SERVICES HAVE BEEN DISCONNECTED AND RECOVERED AS PART OF THE SITE PREPARATION WORKS.

NBN OVERHEAD MAIN CABLE & SERVICE RECOVERY, NBN CONVERSION TO UNDERGROUND.

1. THE ENERGEX OVERHEAD POWERLINES & POLES BETWEEN P120580 (STN 68) OUTSIDE #65 COURTNEY DRIVE & P120586 (STN 76) #90 COURTNET DRIVE ARE TO BE RECOVERED. NBN SHALL RECOVER THE EXIST OH MAINS CABLE/ SERVICES & REPLACE THEM WITH UNDERGROUND CABLE/CONDUIT.
2. NBN SHALL TRANSFER THE EXISTING OVERHEAD MAIN CABLE AT P120580 (STN 68) TO THE NEW POLE & TERMINATE THE OVERHEAD.
3. NBN SHALL TRANSFER THE OVERHEAD SERVICES AT P120580 (STN 68) TO #65 & #68 COURTNEY DRIVE TO THE NEW POLE.
4. NBN SHALL RECOVER THE OVERHEAD SERVICE AT P120581 (STN 70) TO #76a COURTNEY DRIVE & REPLACE THIS WITH AN UNDERGROUND CONNECTION.
3. NBN SHALL RECOVER THE OVERHEAD SERVICE AT P120582 (STN 71) TO #76 COURTNEY DRIVE & REPLACE THIS WITH AN UNDERGROUND CONNECTION.
4. NBN SHALL RECOVER THE UNDERGROUND CABLE FROM P120585 (STN 74) & RECONNECT THIS TO THE NEW NBN UNDERGROUND NETWORK.
5. NBN SHALL TRANSFER THE EXISTING OVERHEAD MAIN CABLE AT P120586 (STN __) TO THE NEW POLE & TERMINATE THE OVERHEAD.

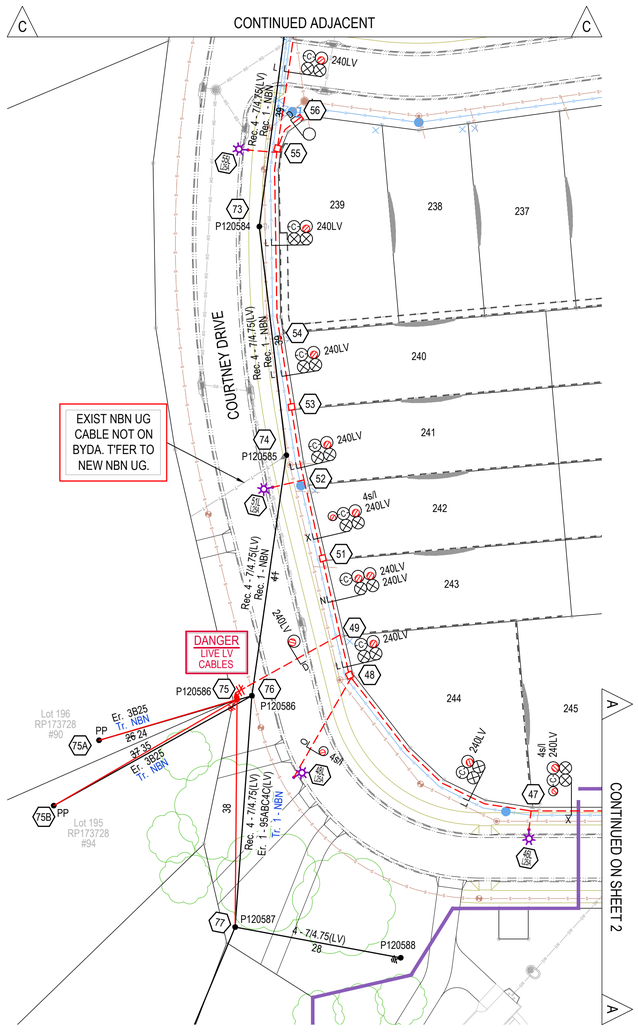


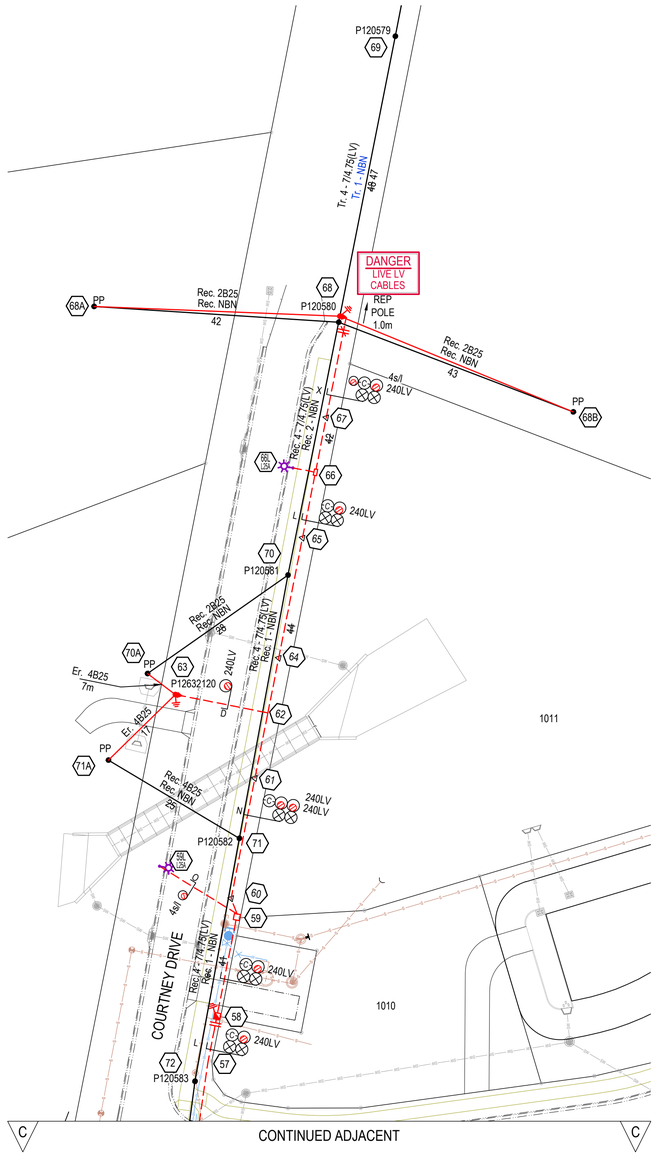
TYPICAL SECTION COURTNEY DRIVE
NOT TO SCALE

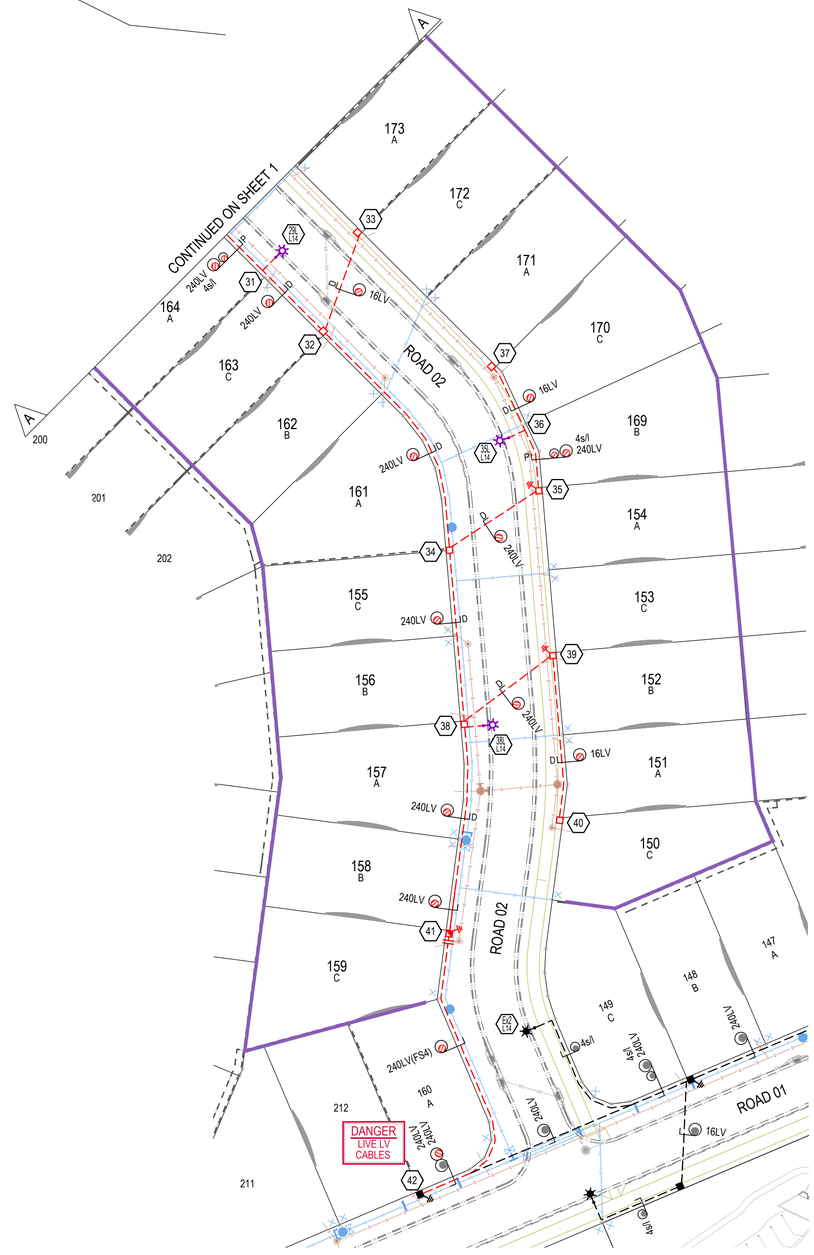
PLAN VIEW
SCALE 1:500

-10m 0 10 20 30m

1 : 500 (A1 - NOT REDUCED)







DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
08/11/2023	A	PRELIMINARY ISSUE	R.R.					

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

SUBDIVISION ELECTRICAL SERVICES
204/6 Babarra Street, Stafford, QLD 4053
Tel: (07) 3872 5555
Fax: (07) 3872 5566
Email: rr@robrus.com.au
www.robrus.com.au
A.B.N. 78 010 589 661

THIS IS A UDC GENERATED DESIGN.

COUNCIL	GOLD COAST	DWT REV.	V53-3 20210504
COUNCIL REF	COM/2019/82		
DESIGNED	B.Hyland	DRAWN	B.Hyland
CHECKED	W.Schardt	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	08/11/2023	SIGNED	

DESCRIPTION
ELECTRICITY RETICULATION - RESIDENTIAL

CLIENT
HB QLD PTY LTD

LOCATION
STAGE 2
COURTNEY DRIVE
UPPER COOMERA

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A1

DRAWING No. **F019-02**
REVISION **A**
ENERGEX PROJECT No. **S0107644**
SHEET No. 2 OF 10

PROPOSED COMMISSIONING PLAN

Tentative only; subject to amendment by ENERGEX outage coordinator.

SWITCHING ONE
- 1 x LV Switching
- Following a site specific risk assessment by Electrical Contractor, break LV bridges at SP5249 to isolate LV south.
- Replace LV pole P120586 (Stn 76)
- Reconductor LV mains P120586 (Stn 75) to P120587 (Stn 77)
- Carry out commissioning checks and reverse switching.

SWITCHING TWO
- 1 x Simple HV Switching + 1 x LV Switching
- Following a satisfactory site specific risk assessment by Electrical Contractor make new 11kV terminations at SC12630622 - IS94 (Stn 1)
- Carry out commissioning checks and reverse switching.
- Commission 11kV underground.
- Commission SC12632057.

SWITCHING THREE
- 1 x LV Switching
- 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 2 (U12630625).
- Carry out commissioning checks and reverse switching.
- Commission LV underground.

SWITCHING FOUR
- 1 x LV Switching
- 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 42 (U12630650).
- Carry out commissioning checks and reverse switching.
- Commission LV underground.

SWITCHING FIVE to EIGHT
- 4 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 27.
- Carry out commissioning checks and reverse switching.
- Commission each LV Circuit of SC12632057.

SWITCHING NINE
- 1 x LV Switching
- Following a satisfactory site specific risk assessment by Electrical Contractor break LV Bridges at SP5249 to isolate LV South.
- Replace LV Pole P120580 (Stn 68)
- Bridge in 240 LV UG cable at P120580 (Stn 68)
- Recover LV overhead P120580 (Stn 68) to P120586 (Stn 75)
- Carry out commissioning checks and reverse switching.
- Commission LV underground.

Where interruptions to existing consumers are required, they shall be notified in line with ENERGEX policies.

LABELS

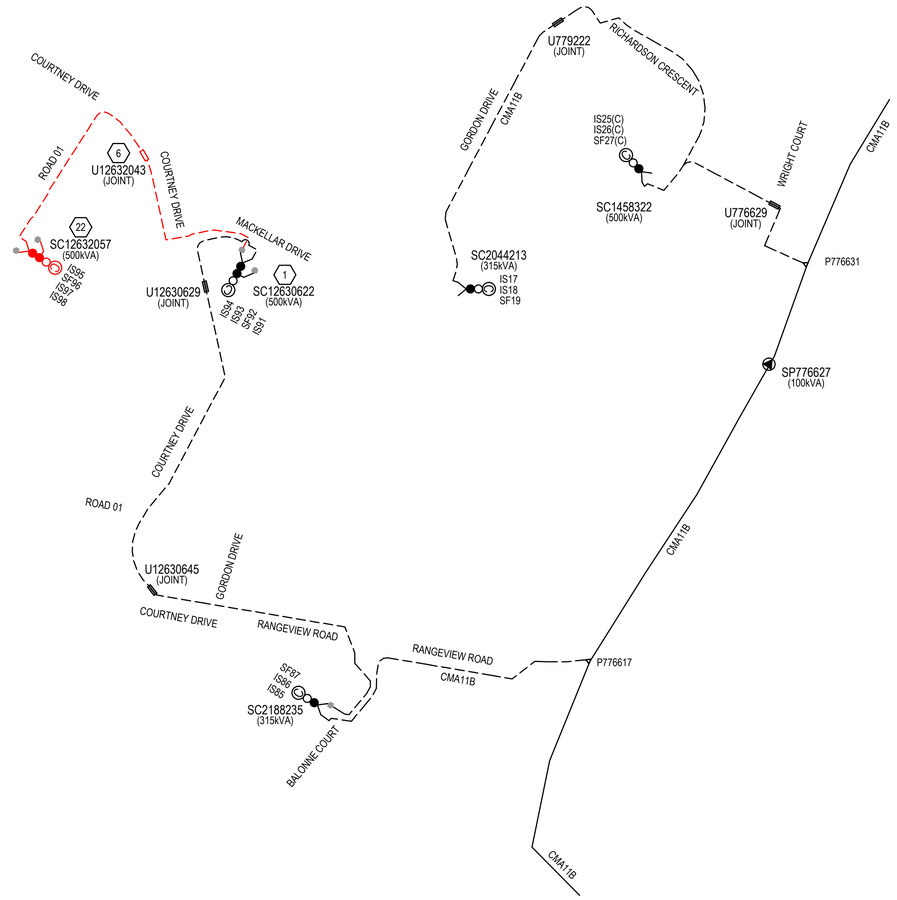
The contractor shall check label details against existing labels on site. Report any discrepancies immediately to the Contract Superintendent.

11kV RMU LABELS — AT MACKELLAR DRIVE (STN 1) SC12630622

LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION				LABEL LOCATION	LABEL DESCRIPTION
100x40	WB	15	IS91	SF92	IS93	IS94	NEAR ISOLATOR	ISOLATOR IDENTIFICATION
150x40	BW	20					FRONT	FEEDER IDENTIFICATION
150x50	BW	10	[SPARE]	[EXIST]	[EXIST]	TO ROAD 01 SC12632057 - IS97	CABLE BOX	CABLE DESTINATION
150x50	BW	10	[SPARE]	[EXIST]	[EXIST]	TO ROAD 01 SC12632057 - IS97	INSIDE SIDE WALL	CABLE DESTINATION

11kV RMU LABELS — AT ROAD 01 (STN 27) SC12632057

LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION				LABEL LOCATION	LABEL DESCRIPTION
100x40	WB	15	95	SF96	IS97	IS98	NEAR ISOLATOR	ISOLATOR IDENTIFICATION
150x40	BW	20					FRONT	FEEDER IDENTIFICATION
150x50	BW	10	[SPARE]	TO TRANSFORMER	TO MACKELLAR DRIVE SC12630622 - IS94	[SPARE]	CABLE BOX	CABLE DESTINATION
150x50	BW	10	[SPARE]	TO TRANSFORMER	TO MACKELLAR DRIVE SC12630622 - IS94	[SPARE]	INSIDE SIDE WALL	CABLE DESTINATION



EXISTING AND PROPOSED 11kV SCHEMATIC

SCALE 1:2500

ALL NEW HV CABLES TO BE 3 x 1c 240mm Al TRIPLEX
(UNLESS NOTED OTHERWISE)

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
08/11/2023	A	PRELIMINARY ISSUE	R.R.					

Robin Russell & ASSOCIATES PTY. LTD.
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A.B.N. 78 010 589 661
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COUNCIL	GOLD COAST	DWT REV.	V53-3 20210504
COUNCIL REF	COM/2019/82		
DESIGNED	B.Hyland	DRAWN	B.Hyland
CHECKED	W.Schardt	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	08/11/2023	SIGNED	

DESCRIPTION: **ELECTRICITY RETICULATION - RESIDENTIAL**

CLIENT: HB QLD PTY LTD

LOCATION: **STAGE 2 COURTNEY DRIVE** UPPER COOMERA

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A1

DRAWING No. **F019-03** REVISION **A**

ENERGEX PROJECT No. **S0107644**

SHEET No. 3 OF 10

LV SWITCHBOARD LABELS — AT MACKELLAR DRIVE (STN 1) SC12630622

CIRCUIT No.	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
TRANSF. ISOLATOR	80x35	WB	6	TRANSFORMER ISOLATOR
1	80x35	WB	5	[SPARE]
2	80x35	WB	5	[EXIST]
3	80x35	WB	5	TO COURTNEY DRIVE LP12632041 / COURTNEY DRIVE U12630635 AND SERVICES
4	80x35	WB	5	TO COURTNEY DRIVE U12630636 DIRECT THEN COURTNEY DRIVE LP12630641 / ROAD 02 LP12632073 AND SERVICES

LV SWITCHBOARD LABELS — AT ROAD 01 (STN 22) SC12632057

CIRCUIT No.	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
TRANSF. ISOLATOR	80x35	WB	6	TRANSFORMER ISOLATOR
1	80x35	WB	5	TO ROAD 02 U12632059 DIRECT THEN ROAD 02 LP12632073 AND SERVICES
2	80x35	WB	5	TO COURTNEY DRIVE P120586 / COURTNEY DRIVE LP12632041 / COURTNEY DRIVE LP12632118 AND SERVICES
3	80x35	WB	5	TO COURTNEY DRIVE U12632046 DIRECT
4	80x35	WB	5	TO ROAD 01 U12632058 DIRECT

LV LINK PILLAR LABELS — AT COURTNEY DRIVE LP12630641

CIRCUIT DIRECTION	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
LHS	150x50	WB	5	TO MACKELLAR DRIVE SC12630622 / ROAD 02 LP12632073 AND SERVICES
RHS	150x50	WB	5	[EXIST]

LHS & RHS AS VIEWED FROM ROAD TO PILLAR

LV LINK PILLAR LABELS — AT COURTNEY DRIVE (STN 4) LP12632041

CIRCUIT DIRECTION	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
LHS	150x50	WB	5	TO MACKELLAR DRIVE SC12630622 AND SERVICES
RHS	150x50	WB	5	TO ROAD 01 SC12632057 / COURTNEY DRIVE P120586 / COURTNEY DRIVE LP12632118 AND SERVICES

LHS & RHS AS VIEWED FROM ROAD TO PILLAR

LV LINK PILLAR LABELS — AT ROAD 02 (STN 41) LP12632073

CIRCUIT DIRECTION	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
LHS	150x50	WB	5	TO MACKELLAR DRIVE SC12630622 / COURTNEY DRIVE LP12630641 AND SERVICES
RHS	150x50	WB	5	TO ROAD 01 SC12632057 AND SERVICES

LHS & RHS AS VIEWED FROM ROAD TO PILLAR

LV LINK PILLAR LABELS — AT COURTNEY DRIVE (STN 58) LP12632118

CIRCUIT DIRECTION	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
LHS	150x50	WB	5	TO COURTNEY DRIVE P120580 / COURTNEY DRIVE P12632120 AND SERVICES
RHS	150x50	WB	5	TO ROAD 01 SC12632057 / COURTNEY DRIVE P120586 / COURTNEY DRIVE LP12632041 AND SERVICES

LHS & RHS AS VIEWED FROM ROAD TO PILLAR

LV POLE LABEL — AT COURTNEY DRIVE (STN 75) P120586

CIRCUIT DIRECTION	LABEL SIZE	LABEL COLOUR	LETTER COLOUR	LETTER SIZE	LABEL INFORMATION
CABLE TOWARDS STN 51	300x100	KOLANA BRONZE	SILVER	AS PER LABELING MANUAL 6447-A4	LV CABLE - TO ROAD 01 SC12632057 / COURTNEY DRIVE LP12632041 / COURTNEY DRIVE LP12632118 AND SERVICES

LV POLE LABEL — AT COURTNEY DRIVE (STN 68) P120580

CIRCUIT DIRECTION	LABEL SIZE	LABEL COLOUR	LETTER COLOUR	LETTER SIZE	LABEL INFORMATION
CABLE TOWARDS STN 58	300x100	KOLANA BRONZE	SILVER	AS PER LABELING MANUAL 6447-A4	LV CABLE - TO COURTNEY DRIVE P12632120 / COURTNEY DRIVE LP12632118 AND SERVICES

LV POLE LABEL — AT COURTNEY DRIVE (STN 63) P12632120

CIRCUIT DIRECTION	LABEL SIZE	LABEL COLOUR	LETTER COLOUR	LETTER SIZE	LABEL INFORMATION
CABLE TOWARDS STN	300x100	KOLANA BRONZE	SILVER	AS PER LABELING MANUAL 6447-A4	LV CABLE - TO COURTNEY DRIVE P120580 / COURTNEY DRIVE LP12632118 AND SERVICES

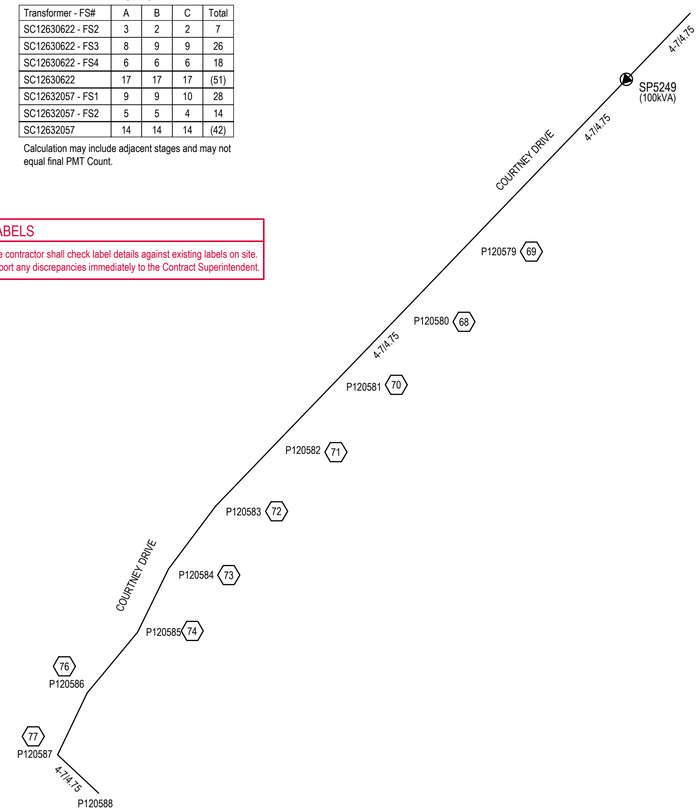
PHASING

Transformer - FS#	A	B	C	Total
SC12630622 - FS2	3	2	2	7
SC12630622 - FS3	8	9	9	26
SC12630622 - FS4	6	6	6	18
SC12630622	17	17	17	(51)
SC12632057 - FS1	9	9	10	28
SC12632057 - FS2	5	5	4	14
SC12632057	14	14	14	(42)

Calculation may include adjacent stages and may not equal final PMT Count.

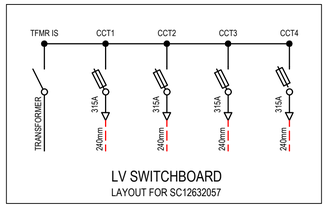
LABELS

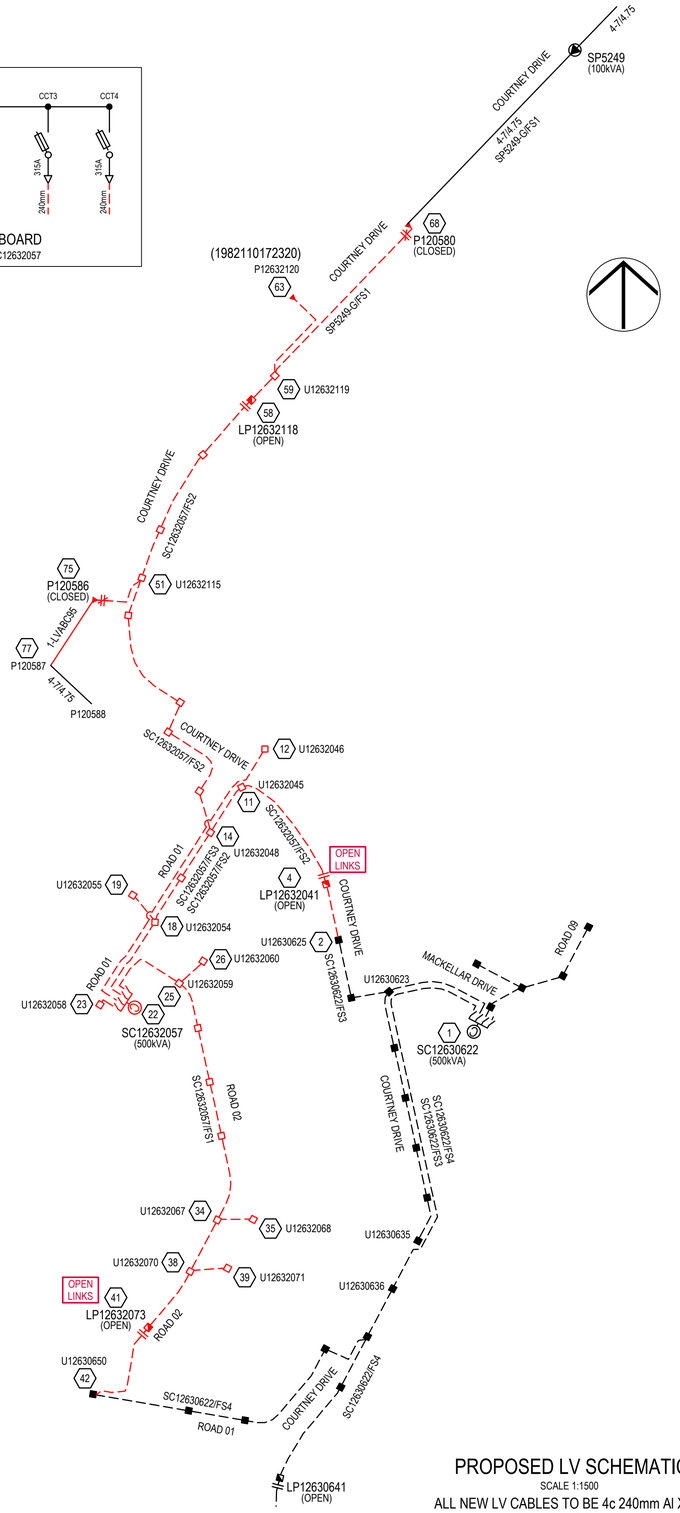
The contractor shall check label details against existing labels on site. Report any discrepancies immediately to the Contract Superintendent.



EXISTING LV SCHEMATIC (PART)

SCALE 1:1500





PROPOSED LV SCHEMATIC

SCALE 1:1500

ALL NEW LV CABLES TO BE 4c 240mm Al XLPE (UNLESS NOTED OTHERWISE)

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.
08/11/2023	A	PRELIMINARY ISSUE	R.R.				

CURRENT REVISION CHANGES:

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

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A.B.N. 78 010 589 661

THIS IS A UDC GENERATED DESIGN.

COUNCIL	GOLD COAST	DWT REV.	V53-3 20210504
COUNCIL REF	COM/2019/82		
DESIGNED	B.Hyland	DRAWN	B.Hyland
CHECKED	W.Schardt	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	08/11/2023	SIGNED	

DESCRIPTION: **ELECTRICITY RETICULATION - RESIDENTIAL**

CLIENT: HB QLD PTY LTD

LOCATION: **STAGE 2 COURTNEY DRIVE** UPPER COOMERA

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A1

DRAWING No. **F019-04** REVISION **A**

ENERGEX PROJECT No. **S0107644**

SHEET No. 4 OF 10

URD CONDUIT SCHEDULE - FOOTPATHS - BY ELECTRICAL CONTRACTOR

LOCATION	STATIONS FROM - TO		CONDUIT LENGTH (m) 50mm HD	No.	100mm LD	No.	125mm LD	No.	EQL 100mm COMMS MD	X-SECTION (m) PVC CABLE PROTECTION (m)	EXCAV /TAPE	TRENCH DETAIL	DRAW WIRE	KERB MARKERS	REMARKS
MACKELLAR DRIVE	1	2													EXISTING CONDUITS
COURTNEY DRIVE	2	3													EXISTING CONDUITS
	3	4			23	1	23	2	23		23	L	100		
	4	9			35	1	35	2	35		35	L	148		
	10	11L	4	1						4	4	O	6		
ROAD 01	11	14			28	2	28	2	28		28	N	150		
COURTNEY DRIVE	13	13L	11	1						11	11	O	13		
ROAD 01	14	15			27	2	27	2	27		27	N	145		
	15	17			15	2	15	2	15		15	N	85		
	17	18	13	1	13	2	13	2	13		13	Z	90		
	17	18L	4	1						4	4	O	6		
	19	20			31	1					31	D	33		
	22	23			4	1					4	D	6		
ROAD 02	24	25L	4	1						4	4	O	6		
	25	28			25	1					25	D	27		
	26	27			20	1					20	D	22		
	27	27L	4	1						4	4	O	6		
	28	29			28	1					28	D	30		
	29	31	14	1	14	1					14	P	32		
	31	29L	4	1						4	4	O	6		
	31	32			15	1					15	D	17		
	32	34			44	1					44	D	46		
	34	38			29	1					29	D	31		
	35	36	11	1	11	1					11	P	26		
	36	35L	3	1						3	3	O	5		
	36	37			13	1					13	D	15		
	38	38L	4	1						4	4	O	6		
	38	41			35	1					35	D	37		
	39	40			27	1					27	D	29		
	41	42													EXISTING CONDUITS
ROAD 01	43	43L	4	1						4	4	O	6		
	43	44			11	1	11	2	11		11	L	52		
COURTNEY DRIVE	46	47	16	1	16	1	16	2	16		16	X	90		
	47	46L	4	1						4	4	O	6		
	47	48			40	1	40	2	40		40	L	168		
	48	49			8	1	8	2	8		8	L	40		
	49	51			14	2	14	2	14		14	N	80		
	51	52	14	1	14	1	14	2	14		14	X	80		
	52	51L	6	1						6	6	O	8		
	52	53			13	1	13	2	13		13	L	60		
	53	54			13	1	13	2	13		13	L	60		
	55	55L	6	1						6	6	O	8		
	55	56			8	1					8	D	10		
	57	58			8	1	8	2	8		8	L	40		
	59	62			35	2	35	2	35		35	N	185		ALIGNMENT TO MIMIC FOOTPATH. REFER DETAIL.
	62	66			41	1	41	2	41		41	L	172		ALIGNMENT TO MIMIC FOOTPATH. REFER DETAIL.
	66	66L	5	1						5	5	O	7		
	66	68	27	1	27	1	27	2	27		27	X	145		ALIGNMENT TO MIMIC FOOTPATH. REFER DETAIL.
TOTAL			158m		817m		762m		381m	63m	748m		2340m		

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.

URD CONDUIT SCHEDULE - FOOTPATHS - BY CIVIL CONTRACTOR

LOCATION	STATIONS FROM - TO		CONDUIT LENGTH (m) 50mm HD	No.	100mm LD	No.	125mm LD	No.	EQL 100mm COMMS MD	X-SECTION (m) PVC CABLE PROTECTION (m)	EXCAV /TAPE	TRENCH DETAIL	DRAW WIRE	KERB MARKERS	REMARKS
COURTNEY DRIVE	9	10			15	1	15	2	15		15	L	68		
	10	11	21	1	21	2	21	2	21		21	Z	138		
ROAD 01	21	22			21	3	21	2	21		21	D+N	138		
	21	24			9	1					9	D	11		
ROAD 02	24	25	22	1	22	1					22	P	48		
ROAD 01	44	45			33	1	33	2	33		33	L	140		
COURTNEY DRIVE	54	55			31	1	31	2	31		31	L	132		
	58	59			17	1	17	2	17		17	L	76		
TOTAL			43m		232m		276m		138m		169m		751m		

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.

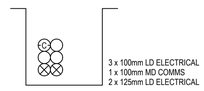
URD CONDUIT SCHEDULE - ROADWAYS - BY CIVIL CONTRACTOR

LOCATION	STATIONS FROM - TO		CONDUIT LENGTH (m) 50mm HD	No.	100mm LD	No.	125mm LD	No.	EQL 100mm COMMS MD	X-SECTION (m) PVC CABLE PROTECTION (m)	EXCAV /TAPE	TRENCH DETAIL	DRAW WIRE	KERB MARKERS	REMARKS
COURTNEY DRIVE	4	4L	15	1						15	15	O	17	2	
	4	5			22	1				22	22	D	24	2	
	8	10			20	1				20	20	D	22	2	
ROAD 01	11	12			22	2	22	2	22	22	22	N	120	2	
COURTNEY DRIVE	12	13			18	1				18	18	D	20	2	
ROAD 01	14	43			22	1	22	2	22	22	22	L	96	2	
	15	16			19	1				19	19	D	21	2	
	18	19			18	1				18	18	D	20	2	
	18	21			23	2	23	2	23	23	23	N	125	2	
	23	23L	15	1						15	15	O	17	2	
ROAD 02	25	26			16	1				16	16	D	18	2	
	29	30			19	1				19	19	D	21	2	
	32	33			18	1				18	18	D	20	2	
	34	35			18	1				18	18	D	20	2	
	38	39			19	1				19	19	D	21	2	
COURTNEY DRIVE	45	46			16	1	16	2	16	16	16	L	72	2	
	48	48L	20	1						20	20	O	22	2	
	49	75			22	1				22	22	D	24	2	
	55	57			29	1	29	2	29	29	29	L	124	2	
	59	59L	17	1						17	17	O	19	2	
	62	63			17	1				17	17	D	19	2	
TOTAL			67m		383m		224m		112m	405m	405m		862m	42	

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		



TRENCH DETAIL
'D+N'
(N.T.S)

PROJECT SPECIFIC
NON-STANDARD TRENCH DETAILS

SUNDRY ITEMS SCHEDULE

SUNDRY SPEC	DESCRIPTION	QUANTITY	LCC	REMARKS
LVSPL240	240mm 4 CORE CABLE LV LUG SET	16		

MATERIALS SUMMARY - S0107644

UNDERGROUND

MODEL No.	QTY	MODEL No.	QTY
11ST24/24X	1	LVSP12-6SL	2
1350-2	5	LVSP14-6	2
1CFC9524XLG	2	LVSP14-6SL	1
ADE	11	LVSP2-6	4
DSHVF5SLK	1	LVSP2-6SL	2
DSLVF31	4	LVSP4-6	5
DSPMTEGSA	1	LVSP4-6SL	6
DSSQPMCEG	1	LVSP9-6	3
LV4CMEN	8	LVSP9-6SL	4
LV4CMENLINK	3	LVSPL240	18
LVPT4C240	4	S2477933	1
LVSP12-6	8	SC0006614	12
		SUGSLLPIT4	1

CABLES

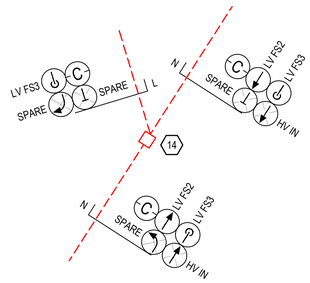
MODEL No.	QTY	MODEL No.	QTY
SCS820363	352	LVC216PVPV	37
SCS820364	1436	LVC24PVPV	344
SCS820365	297		

STREET LIGHTING

MODEL No.	QTY	MODEL No.	QTY
ASSY901-2	9	SLEDSY01375	8
SB75115CI	9	SLNOS3CI	8
SLEDPH0257A	9	SUGSLPIL	17

OVERHEAD

MODEL No.	QTY	MODEL No.	QTY
2B25	28	LVTMO	8
3B25	28	MEN	2
4B25	123	N2B25WAN80	1
CGECROD	3	N3B25WBN80	1
LVABC/DS4	2	N4B25WAN80	2
LVABC/T	2	N4B25WBN80	2
LVABC95	39	P11/12-22	1
LVBR240/AOH	3	P11/8-14	1
LVT	2	P12.5/12-22	1
LVT4C240	3	SLUGT16/2	1
		SSW108/SAS30	1



CONDUIT TRANSITION DETAIL(S)
N.T.S

CONDUIT LEGEND
- RISES AT PILLAR
- CAPPED AT ROUTE END
- CONTINUES STRAIGHT THROUGH
- CONTINUES / CONNECTS VIA BEND

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
08/11/2023	A	PRELIMINARY ISSUE	R.R.					

Robin Russell & ASSOCIATES PTY. LTD.
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A.B.N. 78 010 589 661

THIS IS A UDC GENERATED DESIGN.

COUNCIL	GOLD COAST	DWT REV.	V53-3 20210504
COUNCIL REF	COM/2019/82		
DESIGNED	B.Hyland	DRAWN	B.Hyland
CHECKED	W.Schardt	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	08/11/2023	SIGNED	

DESCRIPTION
ELECTRICITY RETICULATION - RESIDENTIAL

CLIENT
HB QLD PTY LTD

LOCATION
STAGE 2
COURTNEY DRIVE
UPPER COOMERA

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A1

DRAWING No. **F019-05**
REVISION **A**
ENERGEX PROJECT No. **S0107644**
SHEET No. 5 OF 10

UNDERGROUND CABLE SCHEDULE

LOCATION	STATIONS FROM - TO		VOLTS	EX	REC	IN	CABLE SIZE/TYPE	CU CODE	CABLE LENGTH (m) NEW	CABLE LENGTH (m) REC	REMARKS
MACKELLAR DRIVE	1	6	11kV			*	240mm² Al 3X1C TR XLPE/SCREEN/HDPE	SCS820363	159		
COURTNEY DRIVE	2	4	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	33		
	4	4L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	21		
	4	5	LV			*	16mm² Cu 4C XLPE/PVC	SCS820365	28		
	4	11	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	75		
	6	22	11kV			*	240mm² Al 3X1C TR XLPE/SCREEN/HDPE	SCS820363	193		
	8	11	LV			*	16mm² Cu 4C XLPE/PVC	SCS820365	46		
	11	11L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	31		
ROAD 01	11	14	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	34		
COURTNEY DRIVE	12	13	LV			*	16mm² Cu 4C XLPE/PVC	SCS820365	24		
	12	22	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	160		
	13	13L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	17		
ROAD 01	14	15	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	33		
	14	43	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	28		
	15	16	LV			*	16mm² Cu 4C XLPE/PVC	SCS820365	25		
	15	18	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	32		
	18	18L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	23		
	18	19	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	24		
	18	22	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	54		
	19	20	LV			*	16mm² Cu 4C XLPE/PVC	SCS820365	37		
	22	23	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	13		
	22	25	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	60		
	23	23L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	21		
ROAD 02	25	25L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	32		
	25	26	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	21		
	25	28	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	31		
	26	27	LV			*	16mm² Cu 4C XLPE/PVC	SCS820365	26		
	27	27L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	10		
	28	29	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	34		
	29	29L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	24		
	29	30	LV			*	16mm² Cu 4C XLPE/PVC	SCS820365	25		
	29	32	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	33		
	32	33	LV			*	16mm² Cu 4C XLPE/PVC	SCS820365	24		
	32	34	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	51		
	34	35	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	24		
	34	38	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	35		
	35	35L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	20		
	35	37	LV			*	16mm² Cu 4C XLPE/PVC	SCS820365	29		
	38	38L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	10		
	38	39	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	25		
	38	41	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	41		
	39	40	LV			*	16mm² Cu 4C XLPE/PVC	SCS820365	33		
	41	42	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	59		
ROAD 01	43	43L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	10		
	43	45	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	49		
COURTNEY DRIVE	45	46	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	21		
	46	46L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	26		
	46	48	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	61		
	48	48L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	27		
	48	51	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	26		
	51	51L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	26		
	51	53	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	32		
	51	75	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	48		INCLUDES LENGTH UP POLE
	53	55	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	50		
	55	55L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	12		
	55	58	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	42		
	58	59	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	23		
	59	59L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	23		
	59	63	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	66		
	59	68	LV			*	240mm² Al 4C XLPE/PVC	SCS820364	118		
	66	66L	SL			*	4mm² Cu 2C PVC/PVC	LVC24PVPV	11		
	66	68	SL			*	16mm² Cu 2C PVC/PVC	LVC216PVPV	37		
TOTALS (Variance 5%)							240mm² Al 3X1C TR XLPE/SCREEN/HDPE	SCS820363	352		
							240mm² Al 4C XLPE/PVC	SCS820364	1436		
							16mm² Cu 4C XLPE/PVC	SCS820365	297		
							16mm² Cu 2C PVC/PVC	LVC216PVPV	37		
							4mm² Cu 2C PVC/PVC	LVC24PVPV	344		

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.

EQUIPMENT SCHEDULE

LOCATION	STN No.	SITE I.D.	EX	REC	IN	SIZE AND DESCRIPTION	COMP ID	CU CODE	QTY	REMARKS
MACKELLAR DRIVE	1	SC12630622	*			EXISTING TRANSFORMER TO REMAIN				
					*	240mm² 11kV CFC TERM IN PADMOUNT		1CFC9524XLG	1	KIT CONTAINS 3x ELBOWS
					*	HEATSHRINK CAP 25-55mm		SC0006614	3	
					*	CONCRETE SURROUND			1	CONTRACTOR TO CUT, REMOVE AND REINSTATE
COURTNEY DRIVE	2	U12630625	*			1 WAY PILLAR				CONVERT TO 2 WAY
					*	240mm 4 CORE CABLE LV LUG SET		LVSPL240	1	1x240LV
	4	LP12632041			*	2 WAY LINK PILLAR + SL	PI3	LVSP14-6SL	1	2x240LV, 1x16LV, 1x4SL
					*	LINK PILLAR MEN EARTHING		LV4CMENLINK	1	
	5	U12632042			*	CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
	6	U12632043			*	11kV STRAIGHT JOINT	CJ1	11ST24/24X	1	240/240 AL TRIPLEX
					*	HEATSHRINK CAP 25-55mm		SC0006614	6	
	8	U12632044			*	CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
ROAD 01	11	U12632045			*	2 WAY PILLAR + SL	PI1	LVSP4-6SL	1	2x240LV, 1x16SL, 1x4SL
COURTNEY DRIVE	12	U12632046			*	1 WAY PILLAR	PI1	LVSP2-6	1	1x240LV, 1x16LV
					*	PILLAR MEN EARTHING		LV4CMEN	1	
	13	U12632047			*	CROSS-ROAD PILLAR + SL	PI1	LVSP12-6SL	1	1x16LV, 1x4SL
ROAD 01	14	U12632048			*	3 WAY PILLAR	PI1	LVSP9-6	1	3x240LV
	15	U12632052			*	2 WAY PILLAR	PI1	LVSP4-6	1	2x240LV, 1x16LV
	16	U12632053			*	CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
	18	U12632054			*	3 WAY PILLAR + SL	PI1	LVSP9-6SL	1	3x240LV, 1x4SL
	19	U12632055			*	1 WAY PILLAR	PI1	LVSP2-6	1	1x240LV, 1x16LV
					*	PILLAR MEN EARTHING		LV4CMEN	1	
	20	U12632056			*	CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
	22	SC12632057			*	PADMOUNT TRANSFORMER - 500kVA CFCC	TR1	S2477933	1	
					*	CONCRETE SURROUND			1	CONTRACTOR SUPPLIED
					*	COMMON EARTH GRID FOR SQUARE PMT		DSSQPMCEG	1	
					*	ADDITIONAL EARTH		DSPMTEGSA	1	
					*	HV FUSE SET FOR 500kVA SWITCHGEAR		DSHVF5SLK	1	
					*	240mm² 11kV CFC TERM IN PADMOUNT		1CFC9524XLG	1	KIT CONTAINS 3x ELBOWS
					*	HEATSHRINK CAP 25-55mm		SC0006614	3	
					*	315A LV FUSE LINK FOR LV BOARD		DSLVF31	4	
					*	LV TERMINATION		LVPT4C240	4	
	23	U12632058			*	1 WAY PILLAR + SL	PI1	LVSP2-6SL	1	1x240LV, 1x4SL
					*	PILLAR MEN EARTHING		LV4CMEN	1	
ROAD 02	25	U12632059			*	3 WAY PILLAR + SL	PI1	LVSP9-6SL	1	3x240LV, 1x4SL
	26	U12632060			*	1 WAY PILLAR	PI1	LVSP2-6	1	1x240LV, 1x16LV
					*	PILLAR MEN EARTHING		LV4CMEN	1	
	27	U12632061			*	CROSS-ROAD PILLAR + SL	PI1	LVSP12-6SL	1	1x16LV, 1x4SL
	28	U12632062			*	2 WAY PILLAR	PI1	LVSP4-6	1	2x240LV
	29	U12632063			*	2 WAY PILLAR + SL	PI1	LVSP4-6SL	1	2x240LV, 1x16LV, 1x4SL
					*	PILLAR MEN EARTHING		LV4CMEN	1	
	30	U12632064			*	CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
	32	U12632065			*	2 WAY PILLAR	PI1	LVSP4-6	1	2x240LV, 1x16LV
	33	U12632066			*	CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
	34	U12632067			*	3 WAY PILLAR	PI1	LVSP9-6	1	3x240LV
	35	U12632068			*	1 WAY PILLAR + SL	PI1	LVSP2-6SL	1	1x240LV, 1x16LV, 1x4SL
					*	PILLAR MEN EARTHING		LV4CMEN	1	
	37	U12632069			*	CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
	38	U12632070			*	3 WAY PILLAR + SL	PI1	LVSP9-6SL	1	3x240LV, 1x4SL
	39	U12632071			*	1 WAY PILLAR	PI1	LVSP2-6	1	1x240LV, 1x16LV
					*	PILLAR MEN EARTHING		LV4CMEN	1	
	40	U12632072			*	CROSS-ROAD PILLAR	PI1	LVSP12-6	1	1x16LV
	41	LP12632073			*	2 WAY LINK PILLAR	PI3	LVSP14-6	1	2x240LV
					*	LINK PILLAR MEN EARTHING		LV4CMENLINK	1	
ROAD 01	42	U12630650	*			1 WAY PILLAR				CONVERT TO 2 WAY
					*	240mm 4 CORE CABLE LV LUG SET		LVSPL240	1	1x240LV
	43	U12632049			*	2 WAY PILLAR + SL	PI1	LVSP4-6SL	1	2x240LV, 1x4SL
COURTNEY DRIVE	45	U12632050			*	2 WAY PILLAR	PI1	LVSP4-6	1	2x240LV
	46	U12632051			*	2 WAY PILLAR + SL	PI1	LVSP4-6SL	1	2x240LV, 1x4SL
					*	PILLAR MEN EARTHING		LV4CMEN	1	
	48	U12632114			*	2 WAY PILLAR + SL	PI1	LVSP4-6SL	1	2x240LV, 1x4SL
	51	U12632115			*	3 WAY PILLAR + SL	PI1	LVSP9-6SL	1	3x240LV, 1x4SL
	53	U12632116			*	2 WAY PILLAR	PI1	LVSP4-6	1	2x240LV
	55	U12632117			*	2 WAY PILLAR + SL	PI1	LVSP4-6SL	1	2x240LV, 1x4SL
	58	LP12632118			*	2 WAY LINK PILLAR	PI3	LVSP14-6	1	2x240LV
					*	LINK PILLAR MEN EARTHING		LV4CMENLINK	1	
	59	U12632119			*	3 WAY PILLAR	PI1	LVSP9-6	1	3x240LV
	60				*	CABLE MARKER PLATE		1350-2	1	
	61				*	CABLE MARKER PLATE		1350-2	1	
	64				*	CABLE MARKER PLATE		1350-2	1	
	65				*	CABLE MARKER PLATE		1350-2	1	
	66	U12632121			*	U/G PIT, TYPE P4 C/W LID AND JBO (NO FUSE)		SUGSLLPIT4	1	
	67				*	CABLE MARKER PLATE		1350-2	1	

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
08/11/2023	A	PRELIMINARY ISSUE	R.R.					

Robin Russell & ASSOCIATES PTY. LTD.
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THIS IS A UDC GENERATED DESIGN.

COUNCIL	GOLD COAST	DWT REV.	V53-3 20210504
COUNCIL REF	COM/2019/82		
DESIGNED	B.Hyland	DRAWN	B.Hyland
CHECKED	W.Schardt	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	08/11/2023	SIGNED	

DESCRIPTION
ELECTRICITY RETICULATION - RESIDENTIAL

CLIENT
HB QLD PTY LTD

LOCATION
STAGE 2
COURTNEY DRIVE
UPPER COOMERA

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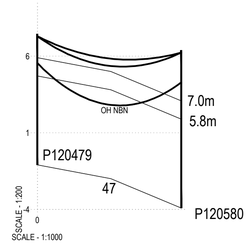
A1

DRAWING No. **F019-06**
REVISION **A**
ENERGEX PROJECT No. **S0107644**
SHEET No. 6 OF 10

OVERHEAD WORKS SCHEDULE

LOCATION	STN No.	SITE ID (POLE No.)	POLES EDT ANG	EDT kN	SST kN	LST kN	EXISTING	RECOVER	ERECT	SINK	FOOT	COMP ID	ALIGN	CONSTRUCTION EXISTING	RECOVER	ERECT	No.	KBS	ANG	REMARKS
COURTNEY DRIVE	63	P12632120							P11/8-14	2.0	RBGF	P01	2.5			LVT4C240 LVBR240/AOH CGECROD	1 1 1	150		
	68	P120580	34°	4.83	10.16	20.2	P11M	P11M	P12.5/12-22	2.2	MDCF	P01	EX	LVP	LVP	LVT LVTMO SSW108/SAS30 LVT4C240 LVBR240/AOH LVABC/DS4 SLUGT16/2 NBN CGECROD MEN	1 4 1 1 1 1 1 1 1 1	150* 200 150 300		REP POLE 1.0m NORTH 7/4.75 HELICAL TERMINATION INSTALL ANCHOR AT 2.45m & 100 BAR LVABC LINKS (CLOSED) NBN TO TERMINATE OH ON NEW POLE
			WITHOUT STAY																	
			241°	0	1.02	1.66														
			WITH STAY																	
	70	P120581	EX	EX	EX	EX	P11/8	P11/8		EX	EX	P01	EX	LVP NBN	LVP NBN		1 1			NBN TO RECOVER EXIST OVERHEAD MAIN & SERVICE
	71	P120582	EX	EX	EX	EX	P11H	P11H		EX	EX	P01	EX	LVP NBN	LVP NBN		1 1			NBN TO RECOVER EXIST OVERHEAD MAIN
	72	P120583	EX	EX	EX	EX	P11H	P11H		EX	EX	P01	EX	LVA NBN	LVA NBN		1 1			NBN TO RECOVER EXIST OVERHEAD MAIN
	73	P120584	EX	EX	EX	EX	P11H	P11H		EX	EX	P01	EX	LVA NBN MEN	LVA NBN MEN		1 1 1			NBN TO RECOVER EXIST OVERHEAD MAIN
	74	P120585	EX	EX	EX	EX	P11H	P11H		EX	EX	P01	EX	LVA NBN NBN UG	LVA NBN NBN UG		1 1 1			NBN TO RECOVER EXIST OVERHEAD MAIN NBN TO RECOVER EXIST UNEDRGROUND CABLE
	75	P120586	205°	2.56	4.65	9.15	P11H	P11H	P11/12-22	2.2	RBGF	P01	1.0M	LVA LVT	LVA LVT	LVT LVTMO LVABC/T LVT4C240 LVBR240/AOH LVABC/DS4 NBN CGECROD MEN	1 4 1 1 1 1 1 1 1	150* 150 150 300	T	REPLACE POLE TO 1.0m ALIGNMENT TEMP LVT FOR EARLY WORKS ONLY LVABC LINKS (CLOSED) NBN TO TERMINATE EXIST OVERHEAD MAIN ON NEW POLE
	77	P120587	72°	3.25	6.53	11.89	P12.5H			EX	EX	P01	EX	LVT LVT NBN	LVT	LVABC/T	1 1 1	150* 650 2100	T T T	

NOTES:
1. THE CONTRACTOR SHALL ENSURE THAT FINISHED LEVELS ARE COMPLETE OR PROVIDED BY SURVEY PRIOR TO THE INSTALLATION OF ANY POLES.
2. THE CONTRACTOR SHALL KEEP RECORDS OF ANY FINISHED LEVELS PROVIDED BY THE SURVEYOR OR CIVIL CONTRACTOR.



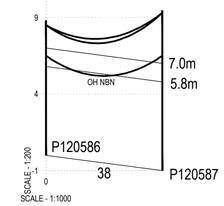
Circuit ID	L pole	L att ht	R pole	R att ht	Conductor	Sag	Span	Temperature	MES/RS	Tension	Tension Units	Segment	Actual no wind tens	Min clearance @ Ch	Blowout
standard	P120479	8.4	P120580	10.15	MO	0.92	47	15	47	416	Table	SS1	0.999	7.79 @ 19	1.007
hot	P120479	8.4	P120580	10.15	MO	1.4	47	75	47	416	Table	SS1	0.657	7.33 @ 20	1.007
warm	P120479	6.65	P120580	8.2	TEL 30/0.64	2.09	47	35	47	924	Table	SS2	0.565	4.8 @ 22	2.106

ID	Conductor	RS	Tension	Temperatures	Poles
SS1	4 x MO - Moon	47	416 (Table)	uplift (5); standard (15); warm (35); hot (75)	P120479, P120580
SS2	1 x TEL 30/0.64 - TEL 30/0.64	47	924 (Table)	uplift (5); standard (15); warm (35); hot (75)	P120479, P120580

OVERHEAD CONDUCTOR SCHEDULE

LOCATION	STATION FROM	To	VOLTS	EXISTING	TRANSFER	RECOVER	ERECT	No Of SPANS	DIST (m)	String TABLE	M.E.S.	SAG SPAN FROM	To	SAG (m) 15°	30°	Ht (m)	Temp (°)	CONDUCTOR LENGTH (m) New	REC	REMARKS
COURTNEY DRIVE	68	69	LV	4-7/4.75	4-7/4.75			1	47	T416	47	68	69	0.92	1.06					SAG TO EXISTING TENSION
				1-NBN	1-NBN			1	47											NBN TO TRANSFER TO NEW POLE
	68	74	LV	4-7/4.75		4-7/4.75		5	202		40.5								808	RECOVER EXISTING
				1-NBN		1-NBN		5	202			68	74						202	NBN TO CONVERT EXISTING OVERHEAD TO UNDERGROUND
	74	76	LV	4-7/4.75		4-7/4.75		1	41			74	76						164	
				1-NBN		1-NBN		1	41										41	NBN TO CONVERT EXISTING OVERHEAD TO UNDERGROUND
	75	77	LV	4-7/4.75		4-7/4.75	1-LVABC95	1	38	T880	38	75	77	1.27	1.35			39	156	SAG TO EXISTING TENSION
				1-NBN	1-NBN			1	38			75	77							NBN TO T'FER TO NEW POLE

NOTES:
1. FOR EVERY SPAN WHICH IS RECONDUCTORED OR RETENSIONED, THE ELECTRICAL CONTRACTOR SHALL RECORD THE SPAN HEIGHT AND AMBIENT TEMPERATURE IN THE COLUMNS PROVIDED.



Circuit ID	L pole	L att ht	R pole	R att ht	Conductor	Sag	Span	Temperature	MES/RS	Tension	Tension Units	Segment	Actual no wind tens	Min clearance @ Ch	Blowout
standard	P120586	8.5	P120587	10.3	LVABC95	1.27	38	15	38	880	Table	SS1	1.881	7.97 @ 12	1.117
hot	P120586	8.5	P120587	10.3	LVABC95	1.56	38	80	38	880	Table	SS1	1.538	7.71 @ 13	1.117
warm	P120586	6.5	P120587	7.5	TEL 30/0.64	1.32	38	35	38	880	Table	SS2	0.585	5.63 @ 15	1.369

ID	Conductor	RS	Tension	Temperatures	Poles
SS1	1 x LVABC95 - LVABC95 4C	38	880 (Table)	uplift (5); standard (15); warm (35); hot (80)	P120586, P120587
SS2	1 x TEL 30/0.64 - TEL 30/0.64	38	880 (Table)	uplift (5); standard (15); warm (35); hot (75)	P120586, P120587

OVERHEAD SERVICE SCHEDULE

LOCATION	STN No.	HOUSE # / STN No.	EXISTING	TRANSFER	RECOVER	ERECT	No. OF SPANS	DIST (m)	SAG SPAN	SAG (m) 25°	TOTAL CONDUCTOR LENGTH (m)	FITTINGS MAINS BOX	CHANGE P.O.A	FUSE SIZE	Ø	SERVICE FITTING CODE OR IIN	REMARKS
COURTNEY DRIVE	63	70A				4B25	1	7	61 - 70A	0.15	11			80A	ABC	N4B25WBN80	
	63	71A				4B25	1	17	63 - 71A	0	21			80A	ABC	N4B25WBN80	
	68	68A	4B25		4B25	4B25	1	42	68 - 68A	2.22	46			80A	ABC	N4B25WAN80	
			NBN	NBN			1	42	68 - 68A		46						NBN TO TRANSFER TO NEW POLE
	68	68B	4B25		4B25	4B25	1	43	68 - 68B	0	45			80A	ABC	N4B25WAN80	
			NBN	NBN			1	43	68 - 68B		45						NBN TO T'FER TO NEW POLE
	70	70A	4B25		4B25		1	30	70 - 70A		32						
			NBN		NBN		1	30	70 - 70A	0	32						NBN TO CONVERT OH SERVICE TO UNDEGROUND
	71	71A	4B25		4B25		1	26	71 - 71A		28						
			NBN		NBN		1	26	71 - 71A	0	28						NBN TO CONVERT OH SERVICE TO UNDEGROUND
	75	75A	PW16		PW16	2B25	1	26	75 - 75A	0.65	28			80A	C	N2B25WAN80	
			NBN	NBN			1	26	75 - 75A		28						NBN TO T'FER TO NEW POLE
	75	75B	3TT16		3TT16	3B25	1	26	75 - 75B	0.65	28				AB	N3B25WBN80	
			NBN	NBN			1	26	75 - 75B		28						NBN TO T'FER TO NEW POLE

NOTES:
1. OVERHEAD SERVICE CABLES SHALL BE SUPPLIED BY THE ELECTRICAL CONTRACTOR.
2. ELECTRICAL CONTRACTOR TO CONFIRM THE SERVICEABILITY OF ANY PROPERTY POLE MODIFIED AS PART OF THIS WORKS PACKAGE AND REPLACE IF NECESSARY.

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.
08/11/2023	A	PRELIMINARY ISSUE	R.R.				

CURRENT REVISION CHANGES:

Robin Russell & ASSOCIATES PTY. LTD.
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A.B.N. 78 010 589 661
THIS IS A UDC GENERATED DESIGN.

COUNCIL	GOLD COAST	DWT REV.	V53-3 20210504
COUNCIL REF	COM/2019/82		
DESIGNED	B.Hyland	DRAWN	B.Hyland
CHECKED	W.Schardt	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	08/11/2023	SIGNED	

DESCRIPTION: **ELECTRICITY RETICULATION - RESIDENTIAL**

CLIENT: HB QLD PTY LTD

LOCATION: **STAGE 2 COURTNEY DRIVE** UPPER COOMERA

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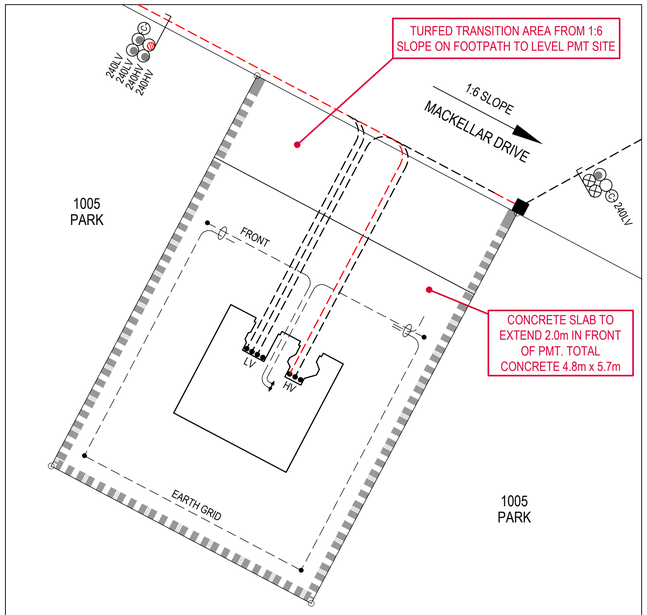
DRAWING No. **F019-07** REVISION **A**

ENERGEX PROJECT No. **S0107644**

SHEET No. 7 OF 10

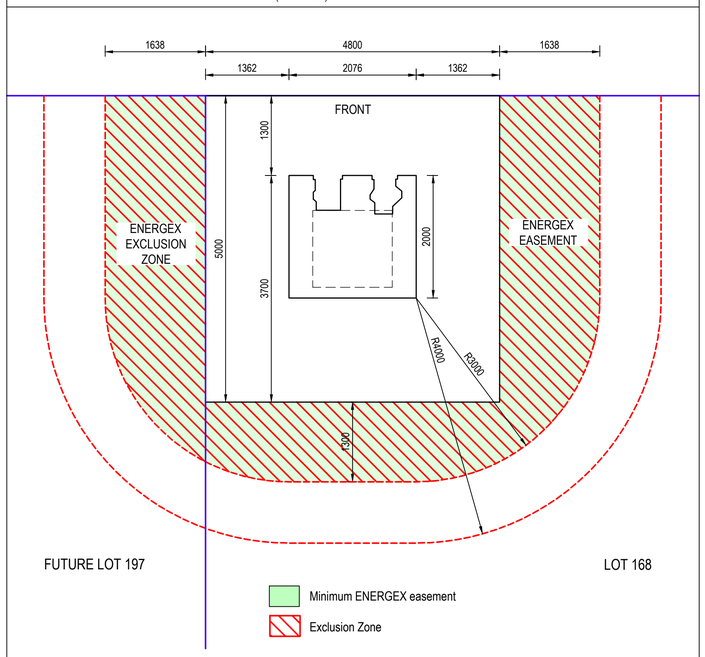


Refer: Energex's Underground Distribution Construction Manual - Section C3 for specifications.

The **Electrical Contractor** shall cut & reinstate the concrete surround.

EXISTING SC12630622 (Stn 1)
SCALE 1:50 @ A1 SIZE

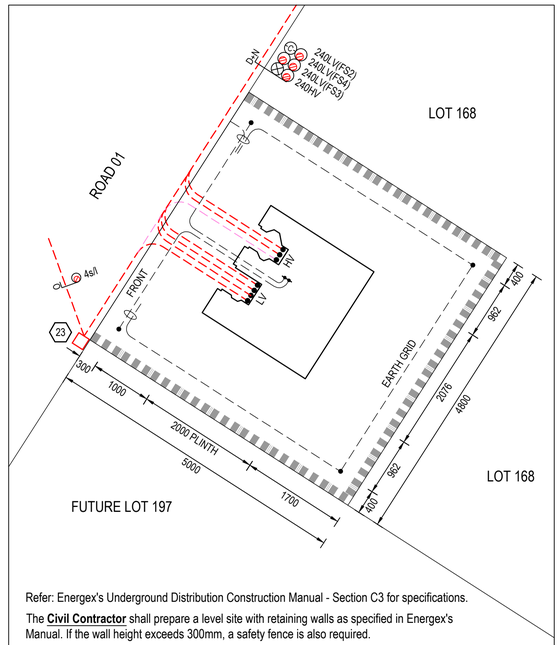
PADMOUNT TRANSFORMER CLEARANCE REQUIREMENT
PROPOSED SC12632057 (Stn 27)
1:50 (AT A1 SIZE)



THE DEVELOPER SHALL EXECUTE AN EASEMENT (STANDARD EASEMENT CONDITIONS DEALING NO 708346714) IN FAVOUR OF ENERGEX OVER THE GREEN SHADED AREA SHOWN.

NO RESIDENTIAL DWELLING SHALL BE CONSTRUCTED IN THE EXCLUSION ZONE (TO ADDRESS AUDIBLE NOISE, EMF REQUIREMENT, AND FIRE AND EXPLOSION RISK).

4m CLEARANCE IS REQUIRED TO AREAS FOR WHICH HUMAN OCCUPATION CAN BE EXPECTED FOR SIGNIFICANT TIMES SUCH AS BEDROOMS OR LIVING AREAS IN ORDER TO MANAGE AUDIBLE NOISE AND EMF ISSUES (500kVA Tx).



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.

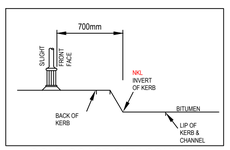
PROPOSED SC12632057 (Stn 27)
SCALE 1:50 @ A1 SIZE

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

RATE 2 - STREETLIGHT SCHEDULE

LOCATION	STN No.	POLE OR COMPONENTS							LANTERN									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	RECOVER CUST	DATE DE-ENERG	ERECT LUMIN	ERECT CUST	DATE ENERG	LUMINAIRE CODE	EX (m)	REC (m)	ER (m)	CU ID	UPCAST ANGLE		
COURTNEY DRIVE	4L	P12632074	P01			5.5m BPM	SB75115CI	700 NKL	SL1					L25AL2	GCCC		SLEDPH0257A + ASSY901-2			1.5		0°	7.5	POWDERCOAT BLACK. REFER NOTES
	11L	P12632075	P01			5.5m BPM	SB75115CI	700 NKL	SL1					L25AL2	GCCC		SLEDPH0257A + ASSY901-2			1.5		0°	7.5	POWDERCOAT BLACK. REFER NOTES
	13L	P12632076	P01			5.5m BPM	SB75115CI	700 NKL	SL1					L25AL2	GCCC		SLEDPH0257A + ASSY901-2			1.5		0°	7.5	POWDERCOAT BLACK. REFER NOTES
ROAD 01	18L	P12632077	P01			4.5m BPM	SLNOS3CI	700 NKL	SL1					L14L2	GCCC		SLEDSY01375					0°	5.1	BLACK AVENUE
	23L	P12632078	P01			4.5m BPM	SLNOS3CI	700 NKL	SL1					L14L2	GCCC		SLEDSY01375					0°	5.1	BLACK AVENUE
ROAD 02	25L	P12632079	P01			4.5m BPM	SLNOS3CI	700 NKL	SL1					L14L2	GCCC		SLEDSY01375					0°	5.1	BLACK AVENUE
	27L	P12632080	P01			4.5m BPM	SLNOS3CI	700 NKL	SL1					L14L2	GCCC		SLEDSY01375					0°	5.1	BLACK AVENUE
	29L	P12632081	P01			4.5m BPM	SLNOS3CI	700 NKL	SL1					L14L2	GCCC		SLEDSY01375					0°	5.1	BLACK AVENUE
	35L	P12632082	P01			4.5m BPM	SLNOS3CI	700 NKL	SL1					L14L2	GCCC		SLEDSY01375					0°	5.1	BLACK AVENUE
	38L	P12632083	P01			4.5m BPM	SLNOS3CI	700 NKL	SL1					L14L2	GCCC		SLEDSY01375					0°	5.1	BLACK AVENUE
ROAD 01	43L	P12632084	P01			4.5m BPM	SLNOS3CI	700 NKL	SL1					L14L2	GCCC		SLEDSY01375					0°	5.1	BLACK AVENUE
COURTNEY DRIVE	46L	P12632122	P01			5.5m BPM	SB75115CI	700 NKL	SL1					L25AL2	GCCC		SLEDPH0257A + ASSY901-2			1.5		0°	7.5	POWDERCOAT BLACK. REFER NOTES
	48L	P12632123	P01			5.5m BPM	SB75115CI	700 NKL	SL1					L25AL2	GCCC		SLEDPH0257A + ASSY901-2			1.5		0°	7.5	POWDERCOAT BLACK. REFER NOTES
	51L	P12632124	P01			5.5m BPM	SB75115CI	700 NKL	SL1					L25AL2	GCCC		SLEDPH0257A + ASSY901-2			1.5		0°	7.5	POWDERCOAT BLACK. REFER NOTES
	55L	P12632125	P01			5.5m BPM	SB75115CI	700 NKL	SL1					L25AL2	GCCC		SLEDPH0257A + ASSY901-2			1.5		0°	7.5	POWDERCOAT BLACK. REFER NOTES
	59L	P12632126	P01			5.5m BPM	SB75115CI	700 NKL	SL1					L25AL2	GCCC		SLEDPH0257A + ASSY901-2			1.5		0°	7.5	POWDERCOAT BLACK. REFER NOTES
	66L	P12632127	P01			5.5m BPM	SB75115CI	700 NKL	SL1					L25AL2	GCCC		SLEDPH0257A + ASSY901-2			1.5		0°	7.5	POWDERCOAT BLACK. REFER NOTES

NOTES:
1. ALL LIGHTS TO BE CONNECTED ON EQL RATE 2.
2. CHECK CLEAR OF ALL SERVICES BEFORE EXCAVATING.
3. "NKL" ALIGNMENT MEASURED FROM NOMINAL KERB LINE TO FRONT OF POLE.
4. POWDER COATING OF COLUMNS AND OUTREACHES TO BE A LIGHT ABRASIVE BLAST, FOLLOWED BY POWDER COATING IN : DULUX LUNAR ECLIPSE (BLACK)



GOLD COAST CITY COUNCIL
STREETLIGHT ALIGNMENT DETAIL
NTS

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
08/11/2023	A	PRELIMINARY ISSUE	R.R.					

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CONSULTING ENGINEERS - ELECTRICAL

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A.B.N. 78 010 589 661
THIS IS A UDC GENERATED DESIGN.

COUNCIL	GOLD COAST	DWT REV.	V53-3 20210504
COUNCIL REF	COM/2019/82		
DESIGNED	B.Hyland	DRAWN	B.Hyland
CHECKED	W.Schardt	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	08/11/2023	SIGNED	

DESCRIPTION
ELECTRICITY RETICULATION - RESIDENTIAL

CLIENT
HB QLD PTY LTD

LOCATION
STAGE 2
COURTNEY DRIVE
UPPER COOMERA

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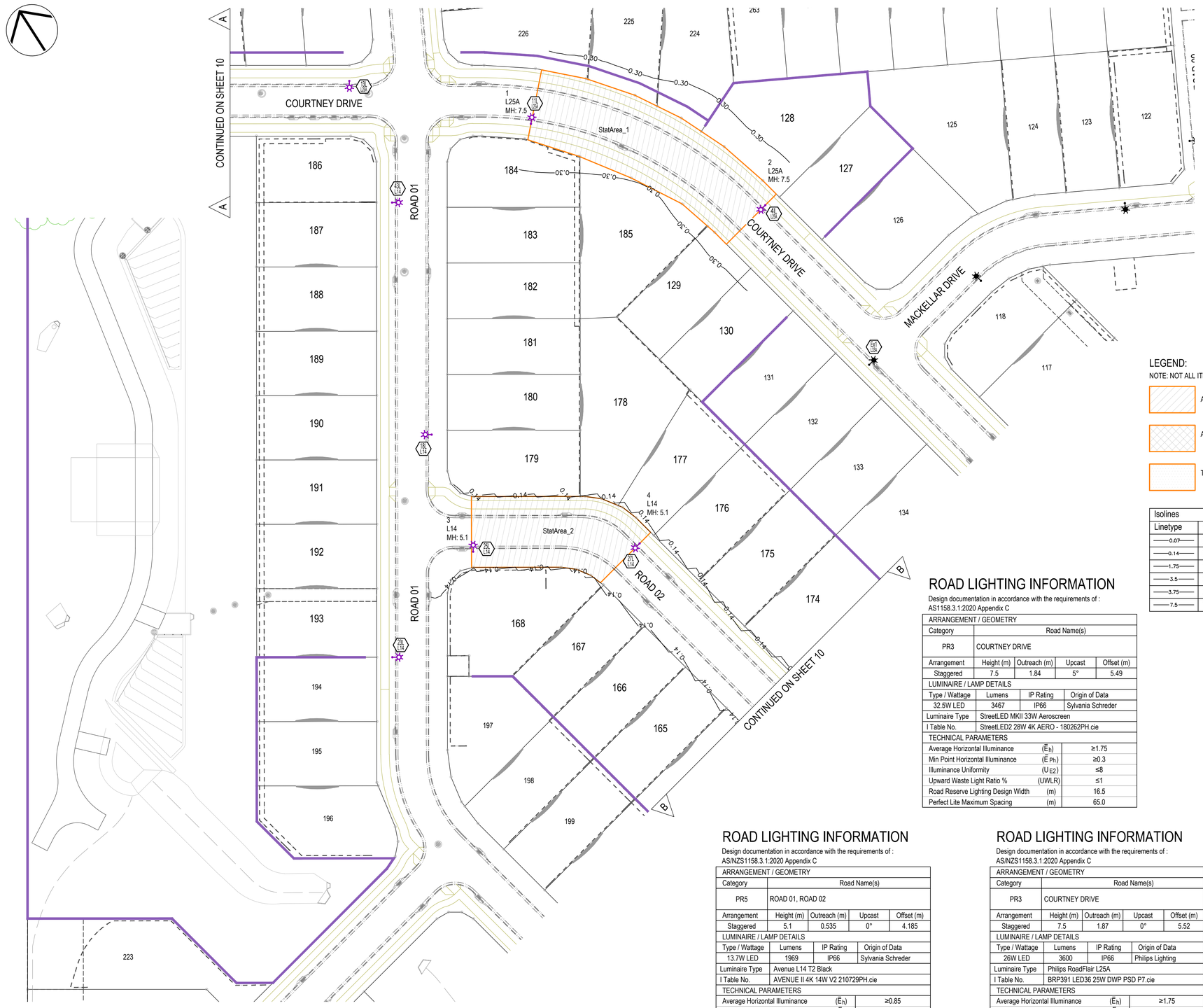
A1

DRAWING No. **F019-08**
REVISION **A**
ENERGEX PROJECT No. **S0107644**
SHEET No. 8 OF 10



PLAN VIEW
SCALE 1:500

-10m 0 10 20 30m

1 : 500 (A1 - NOT REDUCED)

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 Eph
- AS/NZS 1158 DESIGN AREA 0.5 Eph
- TRAFFIC ISLAND

Isolines	
Linetype	Value (Lux)
0.07	0.07
0.14	0.14
1.75	1.75
3.5	3.5
3.75	3.75
7.5	7.5

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:
COURTNEY DRIVE- PR3
ROAD 01, ROAD 02 - 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:
THIS DESIGN CONTAINS AN AREA OF NON-CONFORMANCE TO THE REQUIREMENTS OF TABLE 2.6 MINIMUM (AS/NZS 1158.3.1:2005) EPH REQUIREMENTS (≥ 0.30 LUX). THIS NON-COMPLIANT AREA HAS BEEN LABELLED 'NON-COMPLIANT AREA A' ON SHEET 10.

THIS AREA OF NON-CONFORMANCE HAS BEEN DEEMED NON-TRAFFICABLE AND LOW RISK GIVEN THE TOPOLOGY (DRIVEWAYS AND TREES)OF THE ROAD RESERVE IN THAT LOCATION & THE DESIGN WITH THE PEDESTRIAN PATHWAY ON THE OPPOSITE SIDE OF THE ROAD RESERVE. COMPLIANCE OF THE TRAFFICABLE AREA HAS BEEN ASSESSED AGAINST AS/NZS 1158.3.1:2020 (S4.2.2 (c)) AS EVIDENT BY THE ISOLINES.

ROAD LIGHTING MAINTENANCE SCHEDULE:
THE MAINTENANCE FACTOR AND THE MAINTENANCE REGIME ARE THE RESPONSIBILITY OF THE ASSET OWNER (ENERGY QUEENSLAND).

THIS DESIGN UTILISES A MAINTENANCE FACTOR OF 0.75 BASED ON THE IP RATING OF 6X & 0.7 BASED ON THE IP RATING OF 5X AS SPECIFIED BY ENERGY QUEENSLAND.

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

ROAD LIGHTING INFORMATION

Design documentation in accordance with the requirements of :
AS1158.3.1:2020 Appendix C

ARRANGEMENT / GEOMETRY				
Category	Road Name(s)			
PR3	COURTNEY DRIVE			
Arrangement	Height (m)	Outreach (m)	Upcast	Offset (m)
Staggered	7.5	1.84	5°	5.49
LUMINAIRE / LAMP DETAILS				
Type / Wattage	Lumens	IP Rating	Origin of Data	
32.5W LED	3467	IP66	Sylvania Schreder	
Luminaire Type	StreetLED MKII 33W Aeroscreen			
I Table No.	StreetLED2 28W 4K AERO - 180262PH.cie			
TECHNICAL PARAMETERS				
Average Horizontal Illuminance	($\bar{E}_h$)	≥1.75		
Min Point Horizontal Illuminance	($\bar{E}_{Ph}$)	≥0.3		
Illuminance Uniformity	(U_{E2})	≤8		
Upward Waste Light Ratio %	(UWLR)	≤1		
Road Reserve Lighting Design Width	(m)	16.5		
Perfect Lite Maximum Spacing	(m)	65.0		

ROAD LIGHTING INFORMATION

Design documentation in accordance with the requirements of :
AS/NZS1158.3.1:2020 Appendix C

ARRANGEMENT / GEOMETRY				
Category	Road Name(s)			
PR5	ROAD 01, ROAD 02			
Arrangement	Height (m)	Outreach (m)	Upcast	Offset (m)
Staggered	5.1	0.535	0°	4.185
LUMINAIRE / LAMP DETAILS				
Type / Wattage	Lumens	IP Rating	Origin of Data	
13.7W 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	($\bar{E}_h$)	≥0.85		
Min Point Horizontal Illuminance	($\bar{E}_{Ph}$)	≥0.14		
Illuminance Uniformity	(U_{E2})	≤10		
Upward Waste Light Ratio %	(UWLR)	≤1		
Road Reserve Lighting Design Width	(m)	16.5		
Perfect Lite Maximum Spacing	(m)	57.0		

ROAD LIGHTING INFORMATION

Design documentation in accordance with the requirements of :
AS/NZS1158.3.1:2020 Appendix C

ARRANGEMENT / GEOMETRY				
Category	Road Name(s)			
PR3	COURTNEY DRIVE			
Arrangement	Height (m)	Outreach (m)	Upcast	Offset (m)
Staggered	7.5	1.87	0°	5.52
LUMINAIRE / LAMP DETAILS				
Type / Wattage	Lumens	IP Rating	Origin of Data	
26W LED	3600	IP66	Philips Lighting	
Luminaire Type	Philips RoadFlair L25A			
I Table No.	BRP391 LED36 25W DWP PSD P7.cie			
TECHNICAL PARAMETERS				
Average Horizontal Illuminance	($\bar{E}_h$)	≥1.75		
Min Point Horizontal Illuminance	($\bar{E}_{Ph}$)	≥0.3		
Illuminance Uniformity	(U_{E2})	≤8		
Upward Waste Light Ratio %	(UWLR)	≤1		
Road Reserve Lighting Design Width	(m)	16.5		
Perfect Lite Maximum Spacing	(m)	70		

ROAD LIGHTING INFORMATION

Design documentation in accordance with the requirements of :
AS/NZS1158.3.1:2020 Appendix C

ARRANGEMENT / GEOMETRY				
Category	Road Name(s)			
PR3	COURTNEY DRIVE			
Arrangement	Height (m)	Outreach (m)	Upcast	Offset (m)
Single Sided	7.5	1.87	0°	5.52
LUMINAIRE / LAMP DETAILS				
Type / Wattage	Lumens	IP Rating	Origin of Data	
26W LED	3600	IP66	Philips Lighting	
Luminaire Type	Philips RoadFlair L25A			
I Table No.	BRP391 LED36 25W DWP PSD P7.cie			
TECHNICAL PARAMETERS				
Average Horizontal Illuminance	($\bar{E}_h$)	≥1.75		
Min Point Horizontal Illuminance	($\bar{E}_{Ph}$)	≥0.3		
Illuminance Uniformity	(U_{E2})	≤8		
Upward Waste Light Ratio %	(UWLR)	≤1		
Road Reserve Lighting Design Width	(m)	20		
Perfect Lite Maximum Spacing	(m)	53.9		

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
08/11/2023	A	PRELIMINARY ISSUE	R.R.					

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A.B.N. 78 010 589 661
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COUNCIL	GOLD COAST	DWT REV.	V53-3 20210504
COUNCIL REF	COM/2019/82		
DESIGNED	B.Hyland	DRAWN	B.Hyland
CHECKED	W.Schardt	APPROVED	ROBIN RUSSELL RPEQ 1546
DATE	08/11/2023	SIGNED	

DESCRIPTION
ROAD LIGHTING DESIGN

CLIENT
HB QLD PTY LTD

LOCATION
STAGE 2
COURTNEY DRIVE
UPPER COOMERA

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A1

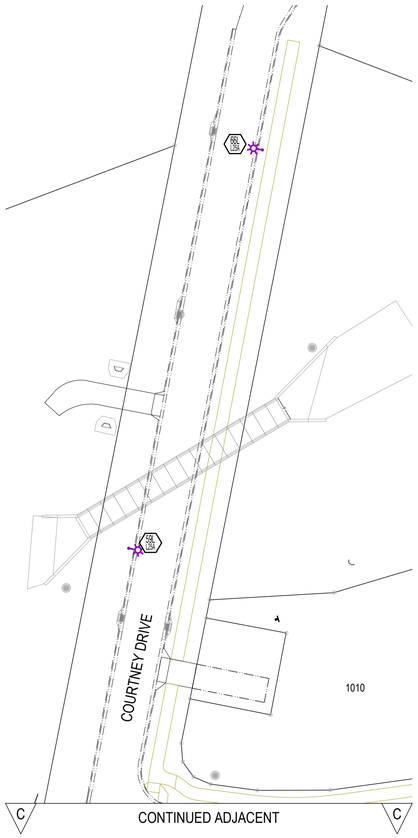
DRAWING No. **F019-09**
REVISION **A**
ENERGEX PROJECT No. **S0107644**
SHEET No. 9 OF 10

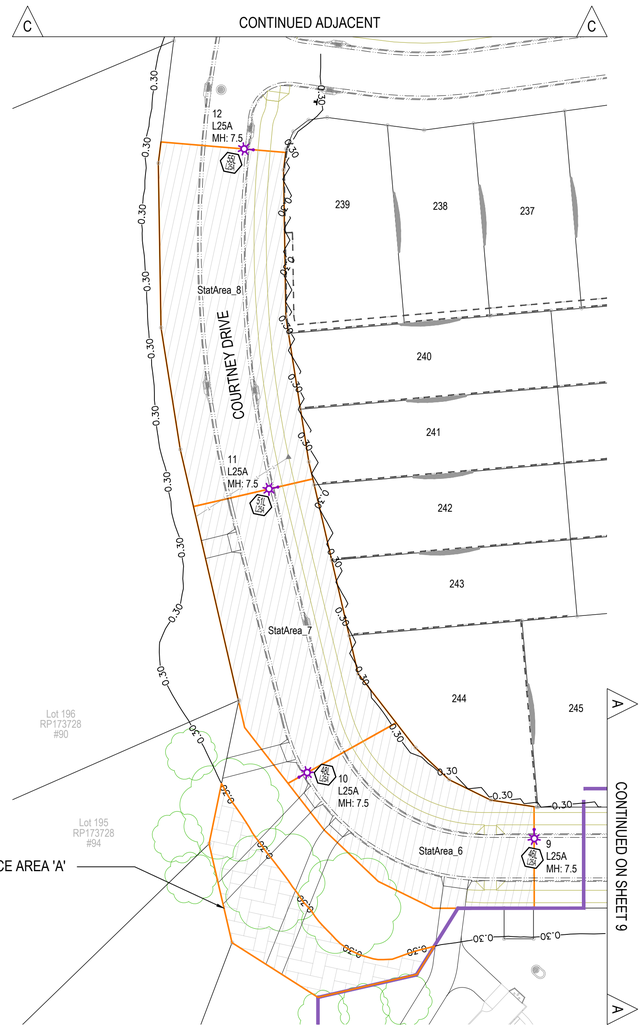
Calculation Summary					
Project: Bends - Min 0.3					
Label	CalcType	Avg	Max	Min	Max/Avg (UE2)
StatArea_1	Illuminance	2.09	8.30	0.34	3.97
StatArea_6	Illuminance	2.81	8.50	0.33	3.02
StatArea_7	Illuminance	2.40	8.47	0.33	3.53
StatArea_8	Illuminance	2.04	8.47	0.45	4.15

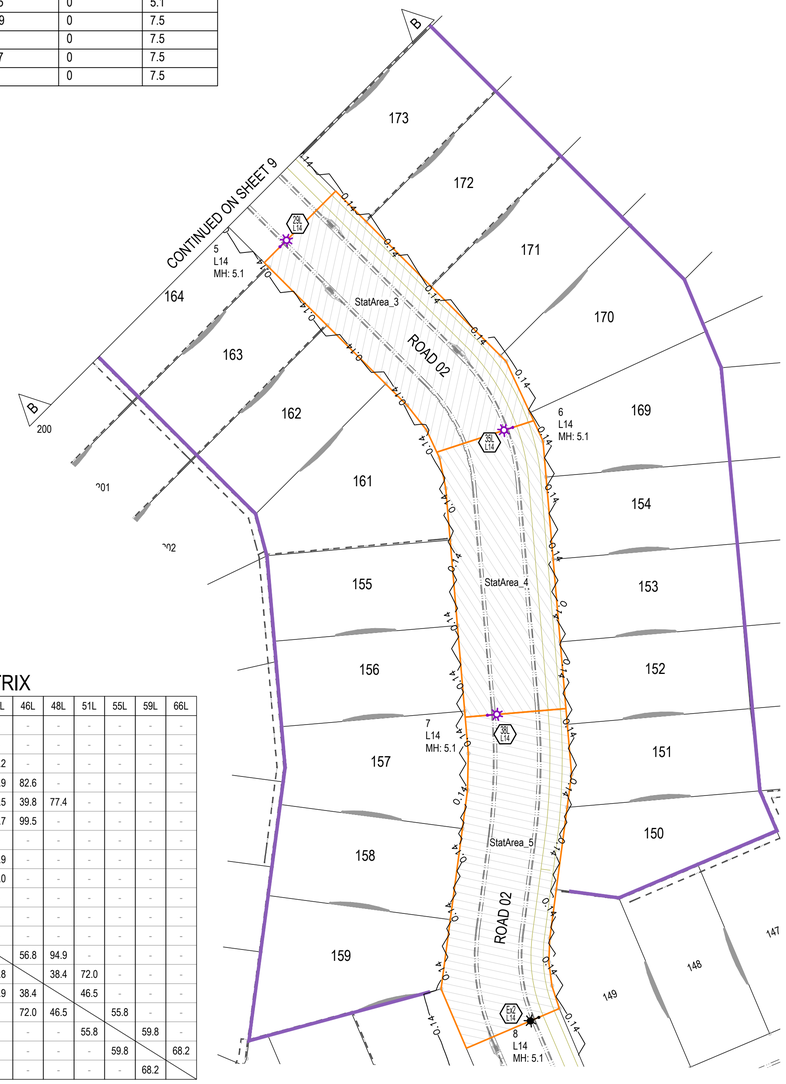
Calculation Summary					
Project: Bends - Min 0.14					
Label	CalcType	Avg	Max	Min	Max/Avg (UE2)
StatArea_2	Illuminance	1.83	9.05	0.33	4.95
StatArea_3	Illuminance	1.50	8.59	0.17	5.73
StatArea_4	Illuminance	1.61	8.88	0.23	5.52
StatArea_5	Illuminance	1.40	9.02	0.15	6.44

Luminaire Schedule					
Qty	Configuration	Description	MF	Filename	Arm
6	Single	SYLVANIA Nostalgia2 T2 L14 4K	0.750	AVENUE II 4K 14W V2 210729PH.ies	0.535
6	Single	PHILIPS Roadflair L25A 4K	0.750	BRP391 LED36 25W DWP PSD P7.ies	1.5

Luminaire Location Summary				
LumNo	Description	Orient (°)	Tilt (°)	MH (m)
1	PHILIPS Roadflair L25A 4K	49.821	0	7.5
2	PHILIPS Roadflair L25A 4K	192.319	0	7.5
3	SYLVANIA Nostalgia2 T2 L14 4K	57.319	0	5.1
4	SYLVANIA Nostalgia2 T2 L14 4K	192.319	0	5.1
5	SYLVANIA Nostalgia2 T2 L14 4K	12.319	0	5.1
6	SYLVANIA Nostalgia2 T2 L14 4K	165.318	0	5.1
7	SYLVANIA Nostalgia2 T2 L14 4K	332.164	0	5.1
8	SYLVANIA Nostalgia2 T2 L14 4K	170.275	0	5.1
9	PHILIPS Roadflair L25A 4K	237.319	0	7.5
10	PHILIPS Roadflair L25A 4K	1.329	0	7.5
11	PHILIPS Roadflair L25A 4K	160.337	0	7.5
12	PHILIPS Roadflair L25A 4K	142.42	0	7.5







STREET LIGHT SPACING MATRIX

STN	Ex1	Ex2	4L	11L	13L	18L	23L	25L	27L	29L	35L	38L	43L	46L	48L	51L	55L	59L	66L
Ex1		-	44.1	97.7	-	-	-	-	68.4	88.5	-	-	-	-	-	-	-	-	-
Ex2	-		-	-	-	-	-	-	-	-	96.4	50.1	-	-	-	-	-	-	-
4L	44.1	-		57.5	99.8	93.0	-	-	82.9	-	-	-	85.2		-	-	-	-	-
11L	97.7	-	57.5		43.1	78.1	-	-	-	-	-	-	37.9	82.6		-	-	-	-
13L	-	-	99.8	43.1		82.7	-	-	-	-	-	-	28.5	39.8	77.4	-	-	-	-
18L	-	-	93.0	78.1	82.7		52.5	28.6	55.1		-	-	54.7	99.5	-	-	-	-	-
23L	-	-	-	-	-	52.5		31.1	62.5	90.9	-	-	-	-	-	-	-	-	-
25L	-	-	-	-	-	28.6	31.1		38.5	82.8	-	-	82.9	-	-	-	-	-	-
27L	68.4	-	82.9	-	-	55.1	62.5	38.5		54.5			98.0	-	-	-	-	-	-
29L	88.5	-	-	-	-	-	90.9	82.8	54.5		47.7	84.0	-	-	-	-	-	-	-
35L	-	96.4	-	-	-	-	-	-	-	47.7		46.9	-	-	-	-	-	-	-
38L	-	50.1	-	-	-	-	-	-	-	84.0	46.9		-	-	-	-	-	-	-
43L	-	-	85.2	37.9	28.5	54.7	-	82.9	98.0	-	-	-		56.8	94.9	-	-	-	-
46L	-	-	-	82.6	39.8	99.5	-	-	-	-	-	-	56.8		38.4	72.0	-	-	-
48L	-	-	-	-	77.4	-	-	-	-	-	-	-	94.9	38.4		46.5	-	-	-
51L	-	-	-	-	-	-	-	-	-	-	-	-	-	72.0	46.5		55.8	-	-
55L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55.8		59.8	-
59L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59.8		68.2
66L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68.2	

1. ALL DISTANCES PROVIDED IN METRES (m)

DATE	REV	REVISION	APP.	DATE	REV	REVISION	APP.	CURRENT REVISION CHANGES:
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DESCRIPTION
ROAD LIGHTING DESIGN

CLIENT
HB QLD PTY LTD

LOCATION
STAGE 2
COURTNEY DRIVE
UPPER COOMERA

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DRAWING No. **F019-10**
REVISION **A**
ENERGEX PROJECT No. **S0107644**
SHEET No. 10 OF 10