*** CHECK FOR OTHER SERVICES BEFORE BORING OR EXCAVATING ***

ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AUSGRID'S NETWORK STANDARDS

WARNING

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- DIAL-BEFORE-YOU-DIG INFORMATION MUST NOT BE OLDER THAN 20 BUSINESS DAYS AT THE TIME OF CONSTRUCTION.

GENERAL NOTATIONS

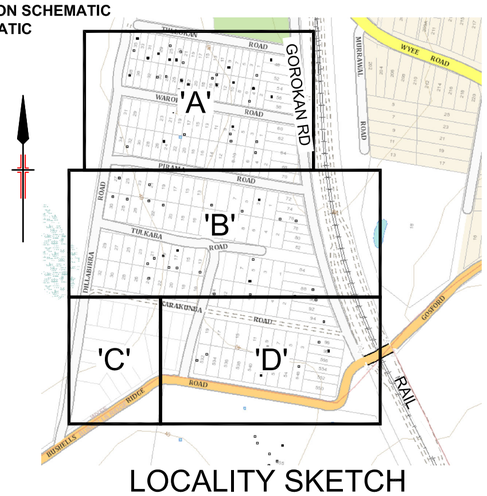
- CLAIMS FOR VARIATIONS TO THE COST OF NON-CONTESTABLE WORKS, INCLUDING ROCK EXCAVATION, WILL NOT BE ACCEPTED UNLESS VERIFIED ON SITE BY AUSGRID WHILE THE WORKS ARE IN PROGRESS.
- THE ASP/1 IS RESPONSIBLE FOR UNDERTAKING SATISFACTORY CONSULTATION WITH ALL THE LOCAL CUSTOMERS WHO MAY POTENTIALLY BE AFFECTED BY THE CONSTRUCTION WORKS INCLUDING ALL ALTERATIONS TO SERVICE MAINS.
- THE ASP/1 MUST MINIMISE THE IMPACT OF THE WORKS ON THE ELECTRICITY SUPPLY TO CUSTOMERS AND INTERRUPTIONS TO SUPPLY MUST BE AVOIDED, WHERE POSSIBLE. AT LEAST FOUR (4) CLEAR BUSINESS DAYS NOTICE MUST BE PROVIDED TO ALL AFFECTED CUSTOMERS PRIOR TO ANY PLANNED INTERRUPTIONS TO THE ELECTRICITY SUPPLY. NOTICE MUST BE IN WRITING IN ACCORDANCE WITH CLAUSE 90 OF THE NATIONAL ENERGY RETAIL RULES.
- FOR KIOSK AND CHAMBER TYPE SUBSTATIONS IN THE HUNTER AREAS, ARRANGE PHASING OF 11KV AND LOW VOLTAGE TRANSFORMER TERMINATIONS TO ACHIEVE DYN 11 INTERCONNECTION CAPABILITIES.
- SPECIFIC PRIOR APPROVAL MUST BE SOUGHT FROM AUSGRID FOR ANY PLANNED ELECTRICITY SUPPLY INTERRUPTIONS WHERE THE PLANNED INTERRUPTION WILL EXCEED ONE (1) HOUR DURATION OR THE DURATION WILL BE LESS THAN ONE HOUR, BUT A SUITABLE TIME FOR THE INTERRUPTION CANNOT BE MUTUALLY AGREED TO WITH THE AFFECTED CUSTOMER(S).
- THE ASP/1 IS TO MAINTAIN ADEQUATE PUBLIC LIGHTING LEVELS FOR THE DURATION OF THE WORKS. IF NECESSARY, THE ASP/1 IS TO ARRANGE FOR SUITABLE TEMPORARY STREET LIGHTING TO BE PROVIDED UNTIL PERMANENT LIGHTING IS RE-ESTABLISHED.
- THE ASP/1 IS REQUIRED TO COMPLY WITH THE CORRECT PROCEDURE(S) FOR WORKING WITH AND/OR NEAR ASBESTOS MATERIAL (REFER TO AUSGRID NUS211 - WORKING WITH ASBESTOS PRODUCTS).
- FOR IDENTIFICATION AND JOINTING PURPOSES, ALL CABLE ENDS SHALL BE LABELLED AT THE TERMINATIONS AND IN JOINT BAYS DURING CABLE INSTALLATION. THE CABLES MUST BE LABELLED AS PER THE CERTIFIED DESIGN.
- WHERE AUSGRID AGREE TO USE THE SPARE CONDUITS, THE ASP/1 MUST VERIFY THAT THE DEPTH OF THE COVER OVER THE ENTIRE LENGTH COMPLIES WITH CURRENT AUSGRID NETWORK STANDARDS. EXISTING AUSGRID SPARE CONDUITS ARE DETERMINED FROM PLANS ONLY AND AUSGRID IN NO WAY WARRANTS OR GUARANTEES THAT APPARENTLY SPARE CONDUITS ARE AVAILABLE FOR USE OR ARE FIT FOR THE DESIGNERS INTENDED PURPOSE. SUCH CONDUITS MAY HAVE ALREADY BEEN USED AND THE PLANS NOT UPDATED, OR THE CONDUITS MAY HAVE BEEN DAMAGED, MAY HAVE INSUFFICIENT COVER OR FOR ANY OTHER REASON MAY BE UNAVAILABLE OR UNUSABLE. IN SUCH A CASE AUSGRID SHALL NOT BE RESPONSIBLE TO ANY PARTY(IES) FOR DELAYS, ADDITIONAL COST OR PENALTIES.
- THIS INFORMATION INCLUDES DATA FROM THE NSW DIGITAL CADASTRAL DATABASE BY LAND & PROPERTY INFORMATION COPYRIGHT 2016. USED UNDER CREATIVE COMMONS LICENCE VERSION 4.0.

REFER TO SHEET 1 FOR LEGEND, LOCALITY SKETCH & SYSTEM DIAGRAM
REFER TO SHEET 2 FOR SITE PLAN 'A'
REFER TO SHEET 3 FOR SITE PLAN 'B'
REFER TO SHEET 4 FOR SITE PLAN 'C'
REFER TO SHEET 5 FOR SITE PLAN 'D'
REFER TO SHEET 6 FOR LV OVERHEAD SERVICE WORKS
REFER TO SHEET 7 FOR KIOSK PROFILE, EARTHING, KIOSK NOTES & DETAIL 'B'
REFER TO SHEET 8 FOR KIOSK PROFILE, EARTHING, KIOSK NOTES & DETAIL 'A'
REFER TO SHEET 9 FOR O/H PROFILES, EARTHING DESIGNS & STRINGING CHART
REFER TO SHEET 10 FOR CONSTRUCTION SCHEDULES
REFER TO SHEET 11 FOR CONSTRUCTION SCHEDULES & SUBSTATION SCHEMATIC
REFER TO SHEET 12 FOR CONSTRUCTION SCHEDULES & SL SCHEMATIC
REFER TO SHEET 13 FOR TRENCH SECTIONS REFER TO
SHEET 14 FOR LV SCHEMATICS & PILLAR SCHEMATICS
REFER TO SHEET 15 FOR AUSGRID PROPERTY RIGHTS

LEGEND	EXIST.
DRAINAGE PIT	
TELSTRA PIT	
SEWER	S
WATER MAIN	W
GAS LINE	G G
OPTICAL LINE	OP OP
TELSTRA LINE	T
FENCE	/ / /
STORMWATER	SW SW

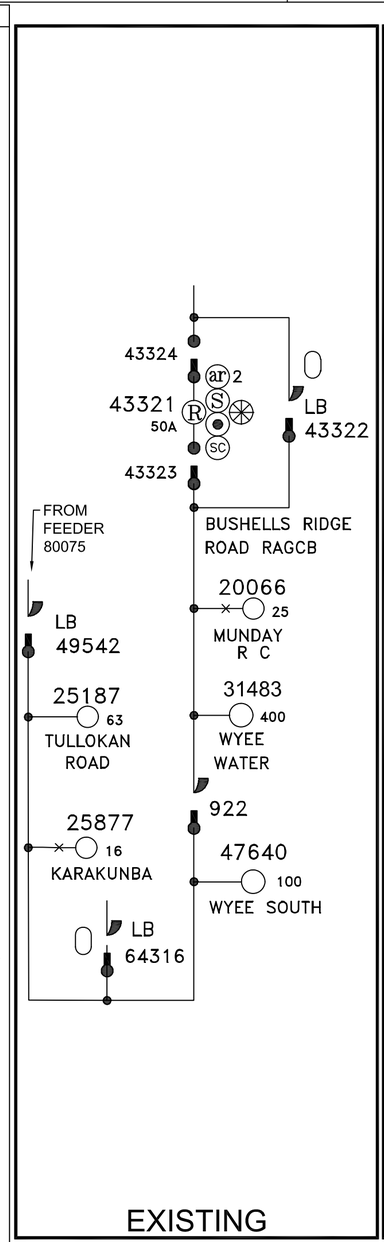
NOTE:
ASP LEVEL 2 WORKS ARE INDICATIVE ONLY AND DO NOT FORM ANY PART OF THE CERTIFIED DESIGN.

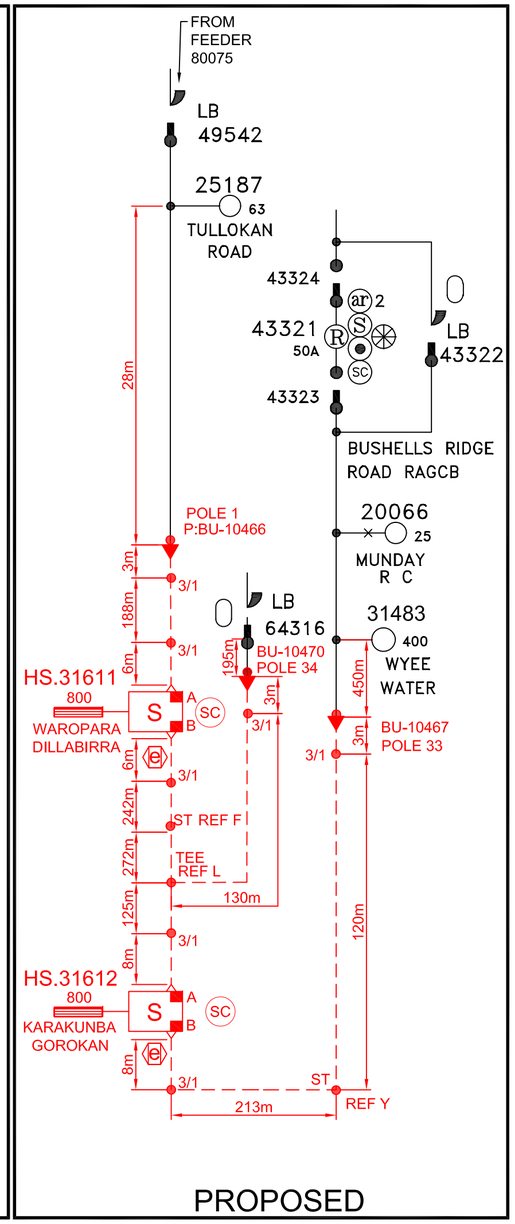
DESIGN PARAMETERS
ADMD 3.5KVA
NOMINAL VOLTAGE 240V
MAX. VOLTAGE DROP 9V (3.75%)



LOCALITY SKETCH
N.T.S.

LEGEND	PROPOSED	EXISTING
132kV OVERHEAD		
66kV OVERHEAD		
66kV UNDERGROUND		
33kV OVERHEAD		
33kV UNDERGROUND		
HV OVERHEAD		
HV UNDERGROUND		
LV OVERHEAD		
LV UNDERGROUND		
SL OVERHEAD		
SL UNDERGROUND		
SV OVERHEAD		
SV UNDERGROUND		
AUX OVERHEAD		
AUX UNDERGROUND		
CONSUMERS UG		
CONDUITS		
KIOSK SUBSTATION		
POLE SUBSTATION		
ABS		
HV O/H OPEN POINT		
HV O/H TERMINATION		
HV SEALED END		
HV POT END		
HV CABLE TERMINATION		
HV UGOH		
HV CABLE JOINT		
OPEN POINT		
PILLAR		
SWITCH/ LINK PILLAR		
PRIVATE PILLAR		
LV SEALED END		
LV POT END		
LV CABLE TERMINATION		
LV UGOH		
LV CABLE JOINT		
UNDERSLUNG LINK		
AUX PILLAR		
AUX UGOH		
AUX CABLE JOINT		
POLE		
STREETLIGHT STAND		
PEC STREET LIGHT		
STREET LIGHT REPLACEMENT		
PEC SL CONTACTOR		
PEC SL CONTROL		
STAY WIRE		
HV CABLE		
LV CABLE		
SL CABLE		
SV CABLE		
AUX CABLE		
ABANDONED CABLE		
CONDUIT		
PILLAR (TO BE REMOVED)		
SL STAND (TO BE REMOVED)		
POLE (TO BE REMOVED)		
PEC SL REMOVE		
HV CABLE REMOVE (U/G)		
LV CABLE REMOVE (U/G)		
SL CABLE REMOVE (U/G)		
SV CABLE REMOVE (U/G)		
HV CABLE REMOVE (O/H)		
LV CABLE REMOVE (O/H)		
SL CABLE REMOVE (O/H)		
SV CABLE REMOVE (O/H)		
ABANDONED CABLE		
STAY WIRE		
E - ELECTRODE		
E - CABLE		





11kV SYSTEM DIAGRAM

ZONE: MORISSET 243/1
FDR: 80075 REF: F7

SUMMARY OF WORKS

- INSTALLATION OF 2 L-TYPE KIOSKS
- INSTALLATION OF LV NETWORK
- REMOVAL OF REDUNDANT O/H LV CONDUCTORS
- UNDERGROUNDING OF O/H 11kV
- RELOCATION OF SERVICE CONNECTIONS TO EXISTING RESIDENCES
- NO WORKS ON RAILWAY 66kV FEEDER

CAD DRAWING DO NOT MANUALLY AMEND
AMENDMENTS

ASSOCIATED DRAWINGS

power solutions
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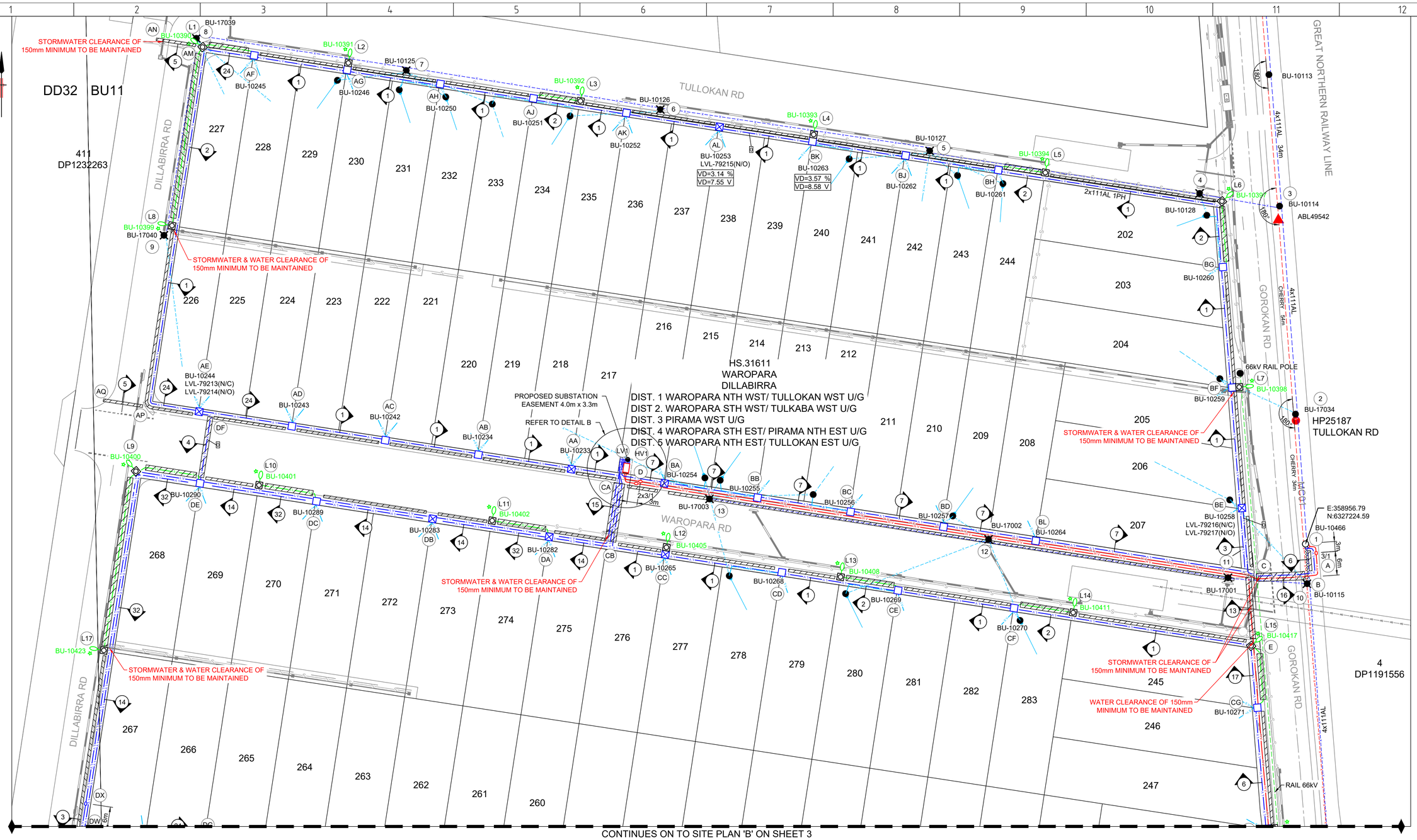
PO BOX 278, CHARLESTOWN, NSW 2290 | projects@powersol.com.au

DESIGNED BY	C.LEVER
AUTH NO.	3946/04
SUBMIT DATE	15/07/2020
LGA	LAKE MACQUARIE C.C.
MAP REF.	M:20 REF:N6
AUSGRID REF.	BU11, BU13, DD32, DD34
PRJTRAK No.	XCW026293
ASP REF.	3177 - C
CERTIFICATION NUMBER	3694792/20200802

WYEE
GOROKAN ROAD
LOTS 202-400 DP 7506
URD SUBDIVISION

SIZE A2 | AUSGRID PROJECT No. AN-20031 | SHEETS 1 of 15 | AMD. 0

20160817



CONTINUES ON TO SITE PLAN 'B' ON SHEET 3

SITE PLAN A

SCALE 1 : 500

0 10 20 30 40 50 METRES

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SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 2 of 15 | AMD. 0

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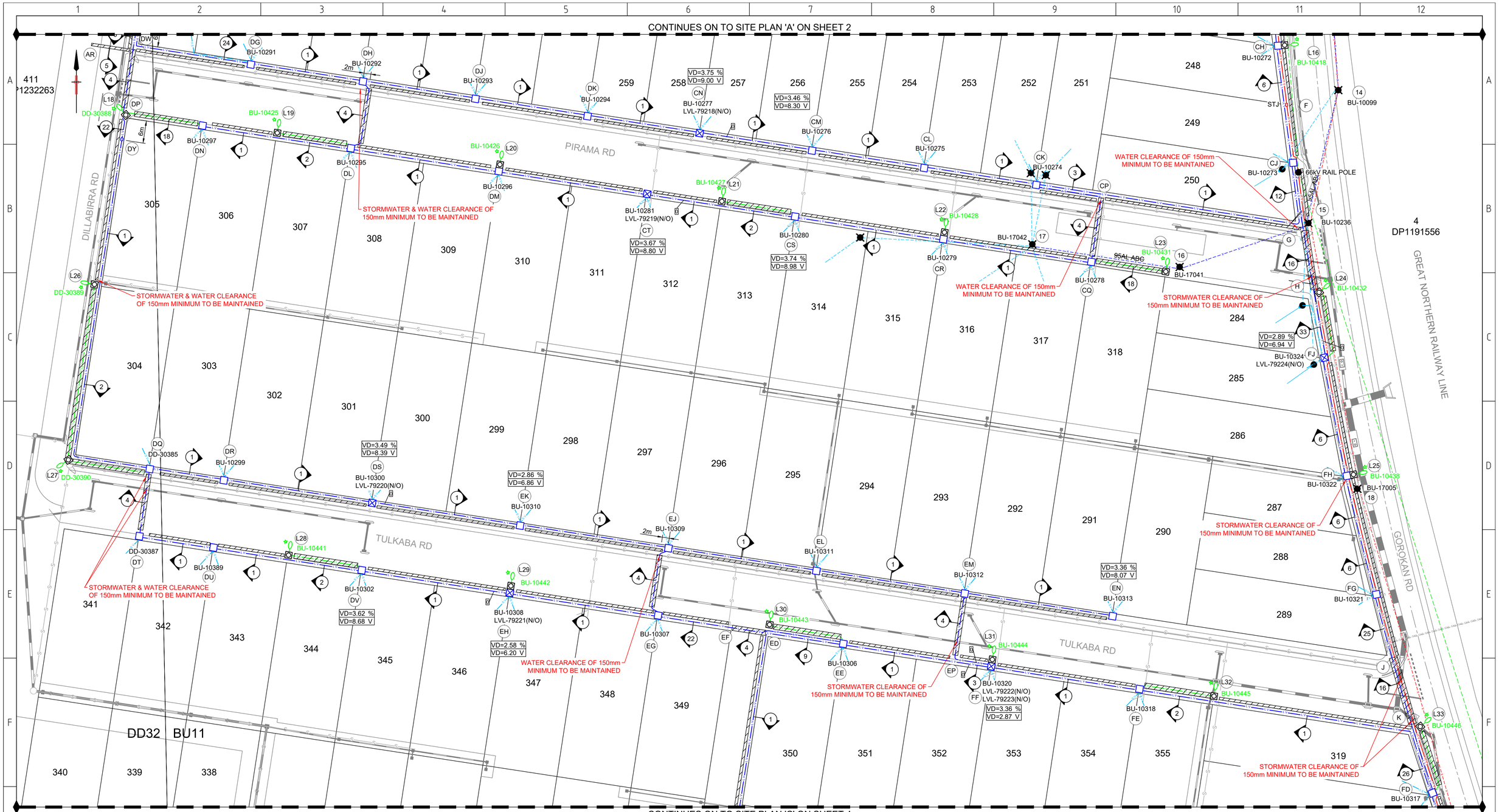

SITE PLAN B

SCALE 1 : 500

0 10 20 30 40 50 METRES

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SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 3 of 15 | AMD. 0

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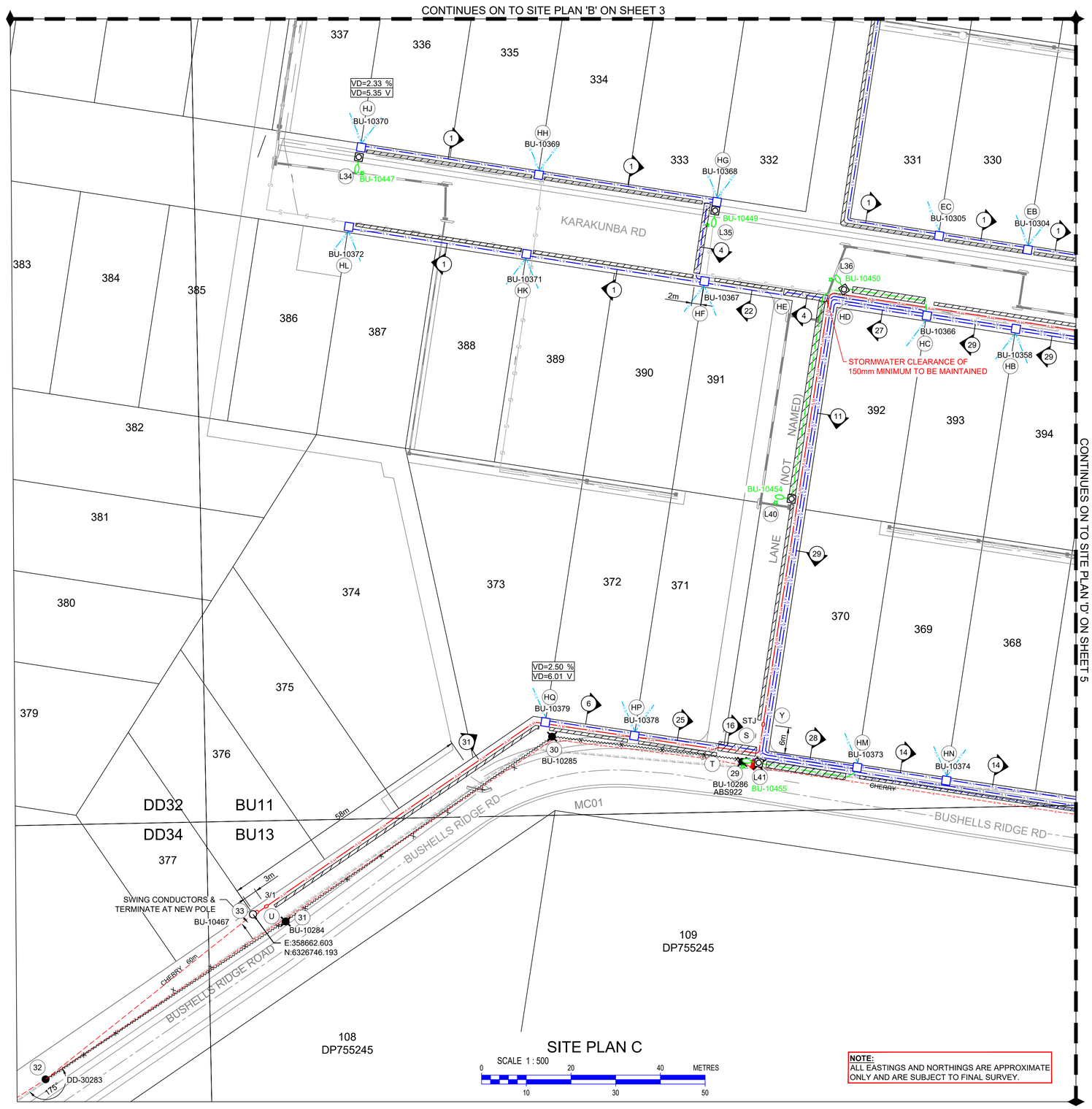
REMOVAL OF EXISTING SUBSTATION

THE EXISTING 100kVA POLE SUBSTATION HP47640, 16kVA POLE SUBSTATION HP25877 AND AIR BREAK SWITCH ABS922 IS TO BE DISCONNECTED, REMOVED AND RETURNED TO AUSGRID.

- THE CUSTOMERS ASP/1 IS RESPONSIBLE FOR THE RECOVERY & RETURN OF THE REDUNDANT EQUIPMENT.
- THE ASP/1 IS TO CONTACT AUSGRID VIA ASPreturns@ausgrid.com.au TO ARRANGE ANY EQUIPMENT RETURNS TO AUSGRID.

INVENTORY OF EQUIPMENT TO BE RETURNED

TRANSFORMER HP47640 100 kVA - OIL FILLED EQUIPMENT WITH POSSIBLE PCB.
TRANSFORMER HP25877 16 KVA - OIL FILLED EQUIPMENT WITH POSSIBLE PCB.
AIR BREAK SWITCH ABS922.



CAD DRAWING
AMENDMENTS

ASSOCIATED DRAWINGS

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GOROKAN ROAD
LOTS 202-400 DP 7506
URD SUBDIVISION

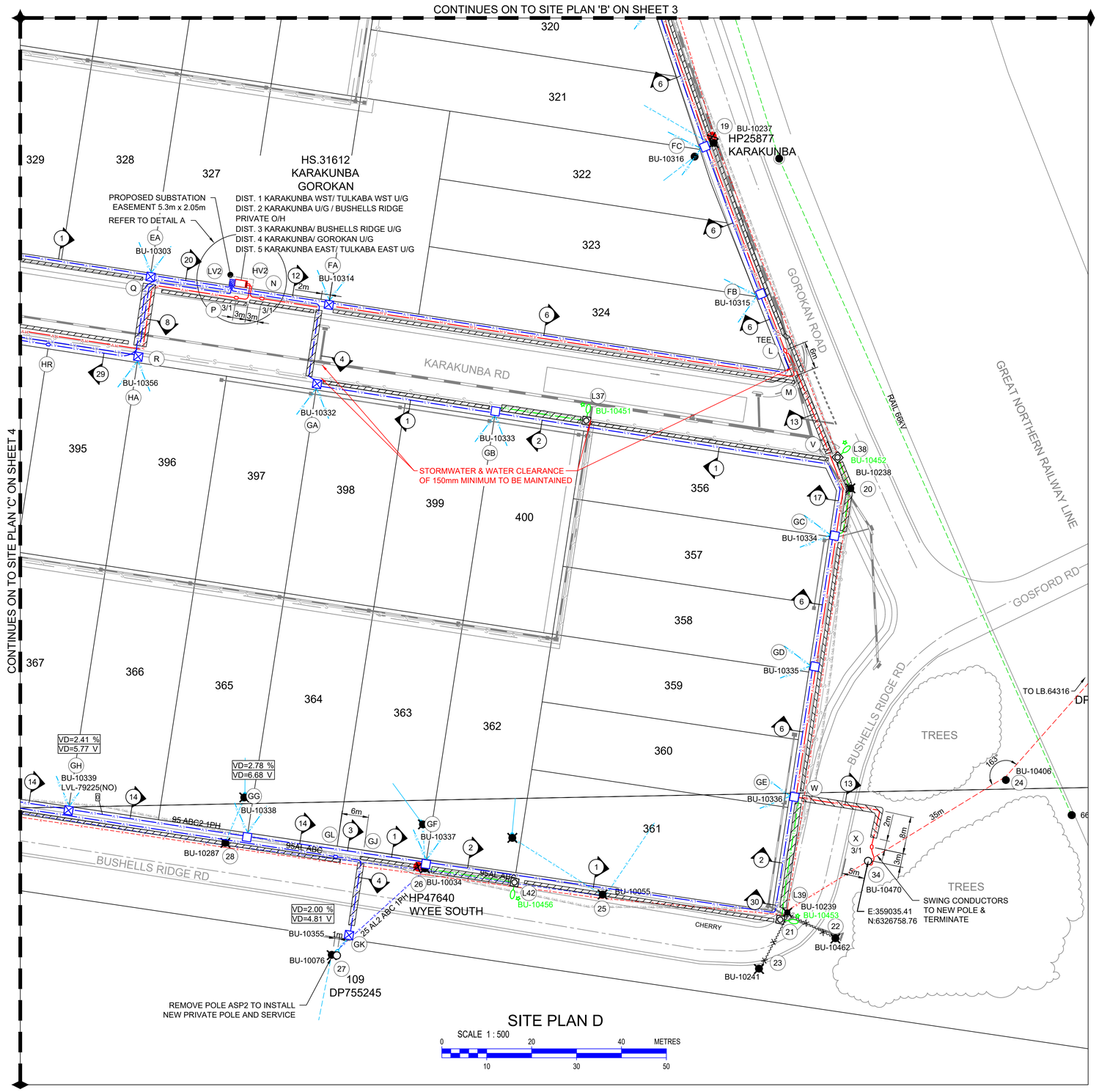
SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 4 of 15 | AMD. 0

20160817

REMOVAL OF EXISTING SUBSTATION
THE EXISTING 63kVA 3 PHASE SUBSTATION 25187 & 16KVA 1 PHASE SUBSTATION 25877 IS TO BE DISCONNECTED, REMOVED AND RETURNED TO AUSGRID.

- THE CUSTOMERS ASP/1 IS RESPONSIBLE FOR THE RECOVERY & RETURN OF THE REDUNDANT EQUIPMENT.
- THE ASP/1 IS TO CONTACT AUSGRID VIA ASPreturns@ausgrid.com.au TO ARRANGE ANY EQUIPMENT RETURNS TO AUSGRID.

INVENTORY OF EQUIPMENT TO BE RETURNED
TRANSFORMER 25187 63kVA - OIL FILLED EQUIPMENT WITH POSSIBLE PCB.
TRANSFORMER 25877 16KVA - OIL FILLED EQUIPMENT WITH POSSIBLE PCB.
AIR BREAK SWITCH ABS922 11KV



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SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 5 of 15 | AMD. 0

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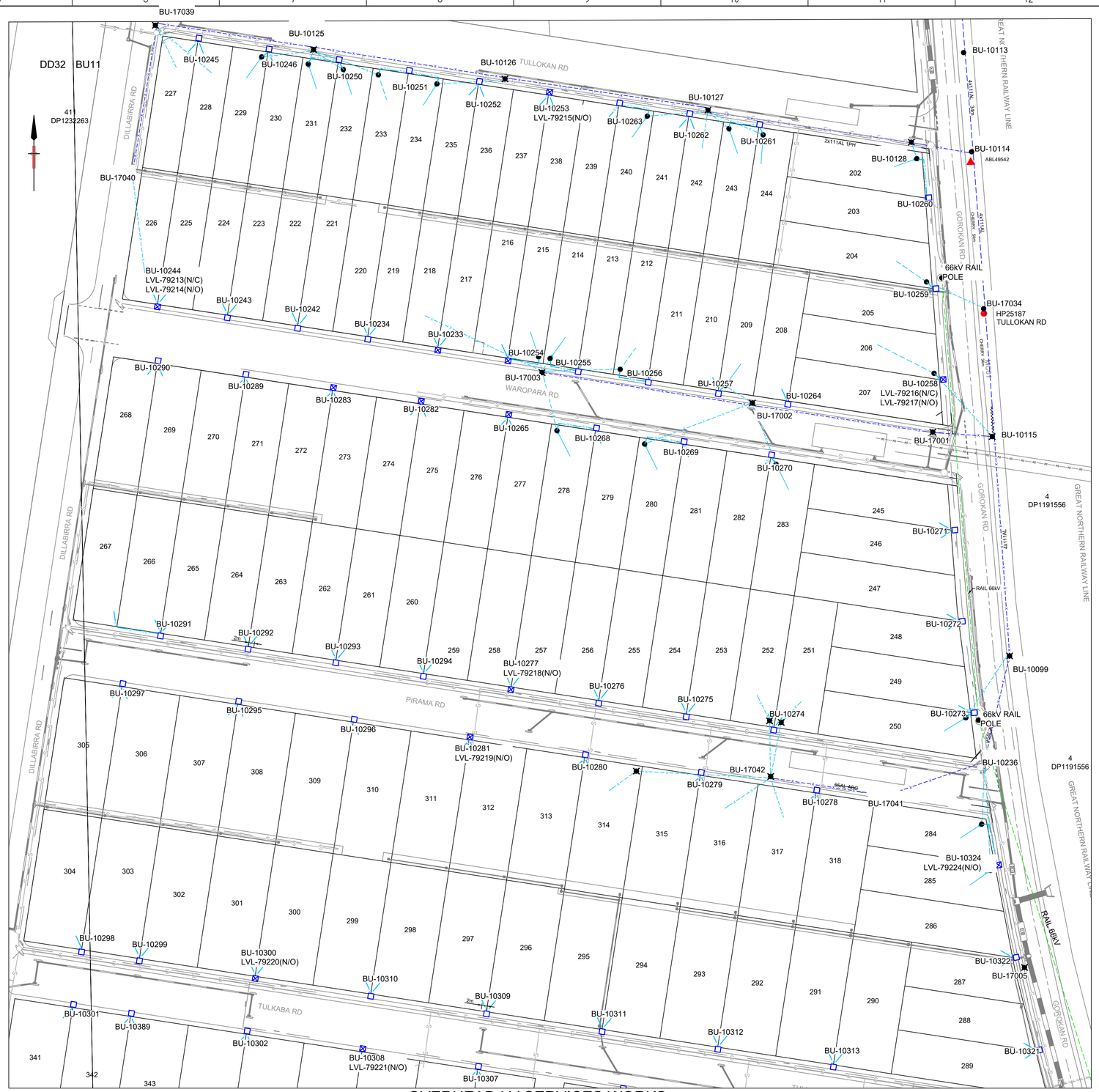
EXISTING SERVICES TO BE RELOCATED TO PROPOSED LV NETWORK. EXISTING PRIVATE POLES TO REMAIN WHERE POSSIBLE. ASP2 TO RECONNECT SERVICES.



OVERHEAD LV SERVICES WORKS
INDICATIVE ONLY
(NTS)

CAD DRAWING
DO NOT SCALE FROM THIS DRAWING
AMENDMENTS

ASSOCIATED DRAWINGS

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WYEE
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LOTS 202-400 DP 7506
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SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 6 of 15 | AMD. 0

20160817

BU-10237

BU-10316

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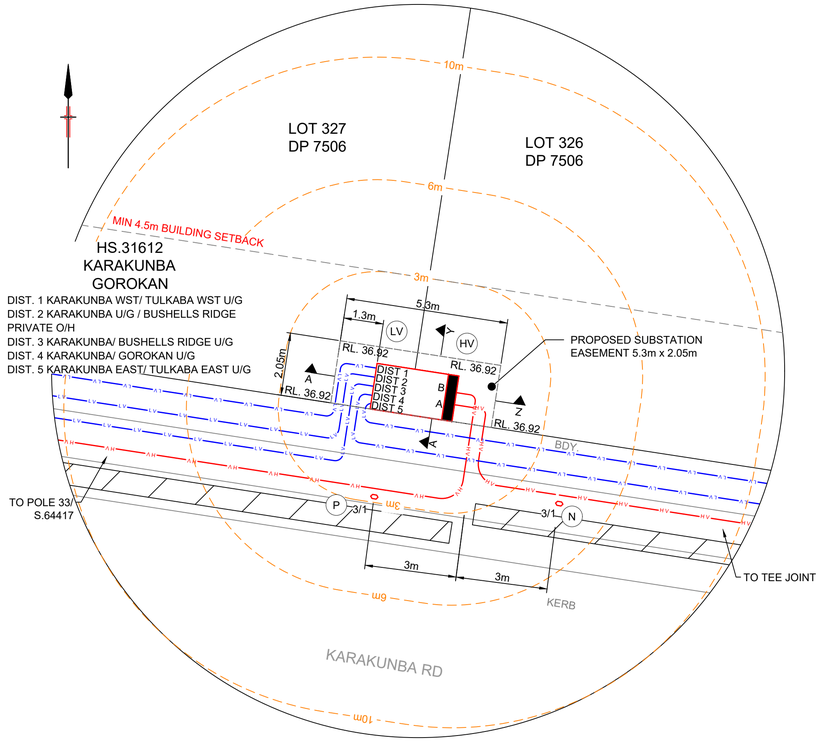
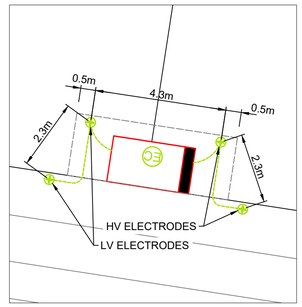


DETAIL 'B'

SCALE 1 : 100 (0, 2, 4, 6, 8, 10 METRES)

KIOSK SUBSTATION DETAILS	
SUBSTATION NAME:	KARAKUNBA GOROKAN
SUBSTATION NUMBER:	HS.31612
ADDRESS:	KARAKUNBA ROAD
SUBSTATION TYPE:	KL TYPE
SIZE (kVA):	800
VECTOR GROUP:	Dyn1
TAP SETTING:	11000 / 433
HV SWITCHGEAR:	SCHNIEDER ELECTRIC RM6
HV FUSE DETAILS:	100A SIBA 300.20.93.100
LOAD CYCLE:	D
PHASING DETAIL:	TO BE CONFIRMED ON SITE
LOW VOLTAGE BOARD:	400/400/400/400/400
TRANSF. LV LINK RATING:	1600A
DIST 1 LV FUSE SIZE (Amps):	400 AMP
DIST 2 LV FUSE SIZE (Amps):	400 AMP
DIST 3 LV FUSE SIZE (Amps):	400 AMP
DIST 4 LV FUSE SIZE (Amps):	400 AMP
DIST 5 LV FUSE SIZE (Amps):	400 AMP
CONFIGURE AS Dyn11:	YES
EARTHING REQUIREMENTS:	AS PER NS116 AND REFER SPECIFIC NETWORK EARTHING DESIGN ATTACHED
SUBSTATION PIERING:	AS PER NS141 DRAWING 151572
EASEMENT PLAN DETAIL:	AS PER NS141 - SITE PLAN B - L TYPE KIOSK

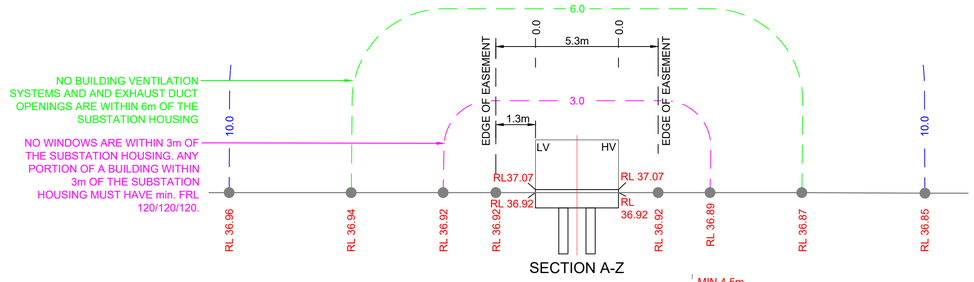


EARTHING DESIGN - HS.31612

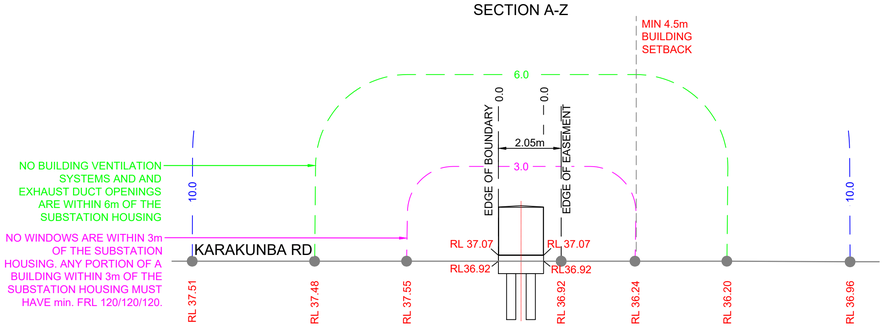
SCALE 1 : 100 (0, 2, 4, 6, 8, 10 METRES)

EARTHING DESIGN REQUIREMENTS	
KIOSK NUMBER	S.31612
CONFIGURATIONS	COMBINED
COMBINED RESISTANCE	0.68Ω
REFERENCE DRAWING	167433
HV ELECTRODES	
NUMBER OF ELECTRODES	2
DEPTH OF EACH ELECTRODE	5.4m
SPACING BETWEEN ELECTRODES	2.3m
MAX RESISTANCE (NORMAL)	0.79Ω
MAX RESISTANCE (DROUGHT)	1.19Ω
LV ELECTRODES	
NUMBER OF ELECTRODES	2
DEPTH OF EACH ELECTRODE	5.4m
SPACING BETWEEN ELECTRODES	2.3m
MAX RESISTANCE (NORMAL)	0.79Ω
MAX RESISTANCE (DROUGHT)	1.19Ω
MIN. SEPARATION DISTANCES	
FROM TELCO ASSETS	1.2m
BETWEEN HV AND LV AND M.E.N.	4.3m
REFER TO SITE SPECIFIC EARTHING DESIGN FOR COMPLETE DETAILS	

EARTHING LEGEND	
	PROPOSED
EARTH CABLE	
EARTHING ELECTRODE	
EARTHING HV ONLY	
EARTHING COMBINED	
EARTHING SEGREGATED	



SECTION A-Z



SECTION A-Y

KIOSK SUBSTATION SITE PROFILES

HS.31612
KARAKUNBA GOROKAN

SCALE 1 : 100 (0, 2, 4, 6, 8, 10 METRES)

RL'S TO BE CONFIRMED WITH DEVELOPER PRIOR TO CONSTRUCTION

KIOSK SITE REQUIREMENTS

1. THE FINISHED SURFACE OF THE SUBSTATION SITE MAY BE BLUE METAL, LAWN GRASS, PINE BARK WOODCHIPS, PAVERS OR MOWING STRIPS. OTHER SURFACE FINISHES MAY BE PERMITTED, AT THE DISCRETION OF AUSGRID'S REGIONAL PLANNING OFFICER, PROVIDED THE CUSTOMER AGREES IN WRITING TO BEAR ALL COSTS RESULTING FROM ANY FUTURE NEED TO EXCAVATE AND REINSTATE AROUND THE SUBSTATION, IRRESPECTIVE OF WHETHER OR NOT THE EXCAVATION IS ASSOCIATED WITH SUPPLY TO THE CUSTOMER.
2. SCREENING VEGETATION MUST NOT INTERFERE WITH ACCESS TO THE SUBSTATION FOR BOTH PERSONNEL AND EQUIPMENT.
3. TREES, SHRUBS, OR PLANTS, OTHER THAN LAWN GRASS, ARE NOT PERMITTED ON THE SUBSTATION SITE.
4. ALL DIMENSIONS SHOWN ARE MINIMUM REQUIREMENTS
5. IT IS ESSENTIAL TO LOCATE KIOSK SUBSTATIONS IN AREAS THAT ARE WELL DRAINED AND ARE CLEAR OF UNDERGROUND OR OVERHEAD OBSTRUCTIONS. SITES SHOULD PREFERABLY ALSO BE LEVEL OR NEAR LEVEL (MAXIMUM FALL OVER SUBSTATION AREA TO BE 120MM) , TO MINIMISE SOIL EROSION EFFECTS AND LONG TERM MOVEMENT OF THE KIOSK ASSEMBLY. KIOSK SITES MUST BE ABLE TO WITHSTAND A BEARING PRESSURE OF 55 KILOPASCALS WITHOUT MOVEMENT.
6. THERE SHOULD BE NO OTHER SERVICES LOCATED WITHIN THE SUBSTATION EASEMENT.
7. ANY FILL USED WITHIN THE AREA SHOWN ON THE SITE PLAN IS TO BE CLEAN, COMPACTED SAND.
8. FREE TO AIR (IE. NO ENCROACHMENT ABOVE)
9. ANY VEHICLE PROTECTION BOLLARDS OR RETAINING WALLS, INCLUDING FOOTINGS, DRAINAGE, ETC ARE TO BE LOCATED OUTSIDE OF THE MINIMUM KIOSK SUBSTATION AREA.
10. IN RELATION TO BOUNDARY FENCING, KIOSK SHOULD BE "FENCED OUT" OF THE PROPERTY NOT "FENCED IN".

CLEARANCE REQUIREMENTS MEASURED WITH A STRINGLINE FROM THE KIOSK SUBSTATION SHELL:

WITHIN 3M
- ANY PORTION OF A BUILDING OTHER THAN A BCA CLASS 10A STRUCTURE CONSTRUCTED FROM NON-COMBUSTIBLE MATERIALS IS REQUIRED TO HAVE A FIRE RESISTANCE LEVEL (FRL) OF NOT LESS THAN 120/120/120
- OPENABLE OR FIXED WINDOWS OR GLASS BLOCKWORK OR SIMILAR, IRRESPECTIVE OF THEIR FIRE RATING, ARE NOT PERMITTED
- ANY METER, REGULATOR OR EXPOSED PIPE WORK ASSOCIATED WITH THE RETICULATION OF GAS WHICH IS WITHIN 3 METRES IN ANY DIRECTION FROM THE HOUSING OF A KIOSK SUBSTATION AND WHICH DOES NOT HAVE A FIRE RESISTANCE LEVEL OF 120/120/120 MUST BE SHELTERED BY A NON-IGNITABLE BLAST-RESISTING BARRIER
- ANY PORTION OF AN AREA WHICH MAY BE USED FOR STORAGE OF COMBUSTIBLE MATERIAL, WHICH IS WITHIN 3 METRES IN ANY DIRECTION FROM THE HOUSING OF A KIOSK SUBSTATION, MUST BE SHELTERED BY A NON-IGNITABLE BLAST-RESISTING BARRIER.

WITHIN 6M
- BUILDING VENTILATION SYSTEM AIR INTAKE AND EXHAUST DUCT OPENINGS ARE NOT PERMITTED (OPENABLE WINDOWS TO ONE BUILDING COMPARTMENT ARE NOT REGARDED AS VENTILATION OPENINGS)

WITHIN 10M
- EXTERNAL FIRE HYDRANTS, AS PER AS 2419.1:2005 – FIRE HYDRANT INSTALLATIONS – PART 1 SYSTEM DESIGN, INSTALLATION AND COMMISSIONING, ARE NOT PERMITTED.

CAD DRAWING
AMENDMENTS

ASSOCIATED DRAWINGS

power solutions
SYDNEY | NEWCASTLE | 1300 73 22 93
PO BOX 278, CHARLESTOWN, NSW 2290 | projects@powersol.com.au

DESIGNED BY	C.LEVER
AUTH NO.	3946/04
SUBMIT DATE	15/07/2020
LGA	LAKE MACQUARIE C.C.
MAP REF.	M:20 REF:N6
AUSGRID REF.	BU11, BU13, DD32, DD34
PRJTRAK No.	XCW026293
ASP REF.	3177 - C

CERTIFICATION NUMBER 3694792/20200802

WYEE
GOROKAN ROAD
LOTS 202-400 DP 7506
URD SUBDIVISION

SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 7 of 15 | AMD. 0

20160817

*** CHECK FOR OTHER SERVICES BEFORE BORING OR EXCAVATING ***

ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AUSGRID'S NETWORK STANDARDS

WARNING

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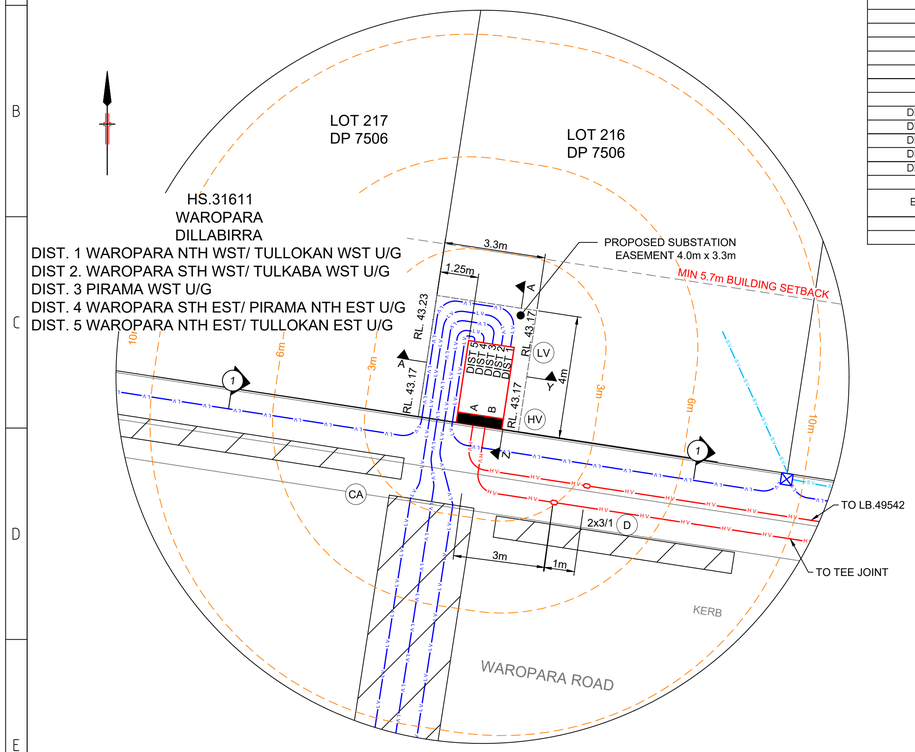
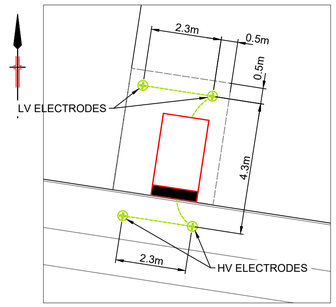


DETAIL 'A'

SCALE 1 : 100 (0, 2, 4, 6, 8, 10 METRES)

KIOSK SUBSTATION DETAILS	
SUBSTATION NAME:	WAROPARA DILLABIRRA
SUBSTATION NUMBER:	HS.31611
ADDRESS:	WAROPARA ROAD
SUBSTATION TYPE:	KL TYPE
SIZE (kVA):	800
VECTOR GROUP:	Dyn1
TAP SETTING:	11000 / 433
HV SWITCHGEAR:	SCHNIEDER ELECTRIC RM6
HV FUSE DETAILS:	100A SIBA 300.20.93.100
LOAD CYCLE:	D
PHASING DETAIL:	TO BE CONFIRMED ON SITE
LOW VOLTAGE BOARD:	400/400/400/400/400
TRANSF. LV LINK RATING:	1600A
DIST 1 LV FUSE SIZE (Amps):	400 AMP
DIST 2 LV FUSE SIZE (Amps):	400 AMP
DIST 3 LV FUSE SIZE (Amps):	400 AMP
DIST 4 LV FUSE SIZE (Amps):	400 AMP
DIST 5 LV FUSE SIZE (Amps):	400 AMP
CONFIGURE AS Dyn11:	YES
EARTHING REQUIREMENTS:	AS PER NS116 AND REFER SPECIFIC NETWORK EARTHING DESIGN ATTACHED
SUBSTATION PIERING:	AS PER NS141 DRAWING 151572
EASEMENT PLAN DETAIL:	AS PER NS141 - SITE PLAN C - L TYPE KIOSK

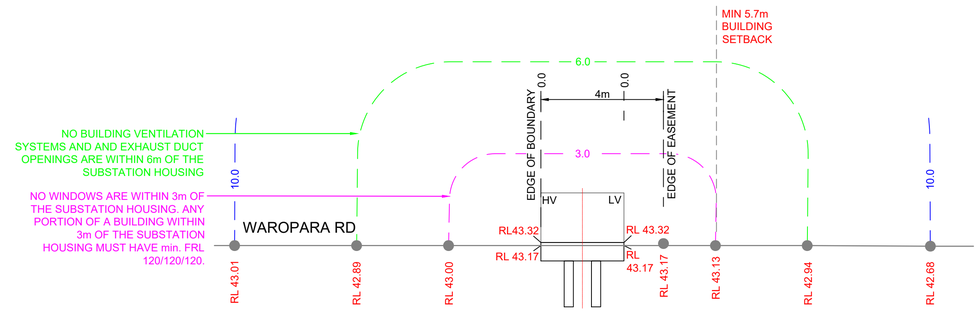


EARTHING DESIGN - HS.31611

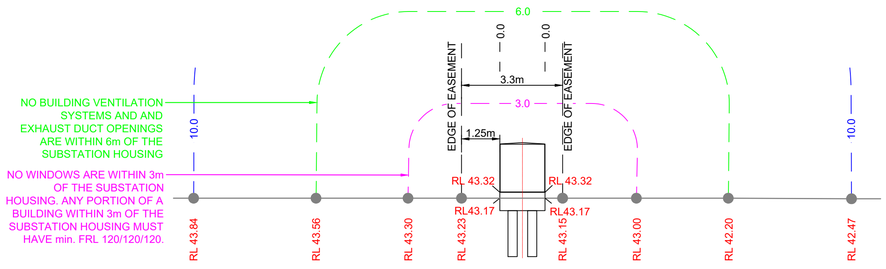
SCALE 1 : 100 (0, 2, 4, 6, 8, 10 METRES)

EARTHING DESIGN REQUIREMENTS	
KIOSK NUMBER	**S.31611**
CONFIGURATIONS	COMBINED
COMBINED RESISTANCE	0.68Ω
REFERENCE DRAWING	167433
HV ELECTRODES	
NUMBER OF ELECTRODES	2
DEPTH OF EACH ELECTRODE	5.4m
SPACING BETWEEN ELECTRODES	2.3m
MAX RESISTANCE (NORMAL)	0.79Ω
MAX RESISTANCE (DROUGHT)	1.19Ω
LV ELECTRODES	
NUMBER OF ELECTRODES	2
DEPTH OF EACH ELECTRODE	5.4m
SPACING BETWEEN ELECTRODES	2.3m
MAX RESISTANCE (NORMAL)	0.79Ω
MAX RESISTANCE (DROUGHT)	1.19Ω
MIN. SEPARATION DISTANCES	
FROM TELCO ASSETS	1.2m
BETWEEN HV AND LV AND M.E.N.	4.3m
REFER TO SITE SPECIFIC EARTHING DESIGN FOR COMPLETE DETAILS	

EARTHING LEGEND	
	PROPOSED
EARTH CABLE	
EARTHING ELECTRODE	
EARTHING HV ONLY	
EARTHING COMBINED	
EARTHING SEGREGATED	



SECTION A-Z



SECTION A-Y

KIOSK SUBSTATION SITE PROFILES

HS.31611

WAROPARA DILLABIRRA

SCALE 1 : 100 (0, 2, 4, 6, 8, 10 METRES)

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CAD DRAWING
AMENDMENTS

ASSOCIATED DRAWINGS

power solutions
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PO BOX 278, CHARLESTOWN, NSW 2290 | projects@powersol.com.au

ASP REF.	3177 - C
DESIGNED BY	C.LEVER
AUTH NO.	3946/04
SUBMIT DATE	15/07/2020
LGA	LAKE MACQUARIE C.C.
MAP REF.	M:20 REF:N6
AUSGRID REF.	BU11, BU13, DD32, DD34
PRJTRAK No.	XCW026293

CERTIFICATION NUMBER 3694792/20200802

WYEE
GOROKAN ROAD
LOTS 202-400 DP 7506
URD SUBDIVISION

SIZE	AUSGRID PROJECT No.	SHEETS	AMD.
A1	AN-20031	8 of 15	0

20160817

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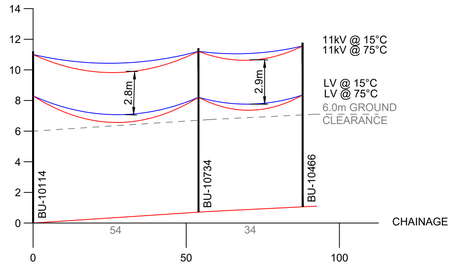
OVERHEAD MAINS STRINGING TABLE

DESIGN SPAN:	BU-17034	**TO**	BU-10466	**RULING SPAN (m)**		53m	**VOLTAGE**		LV
STRAIN POINTS:	BU-10093	**TO**	BU-10466	**CONDUCTOR TENSION**		6% UTS	**MAX. OPERATING TEMP:**		75 deg. C
CONDUCTOR DETAIL:			**MERCURY (111AL)**			**CONDUCTOR CODE:**		**51101**	
AMBIENT TEMP:	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**
TENSION (kN - NO WIND):	1.072	1.014	0.964	0.92	0.882	0.847	0.817	0.789	0.764
SAG (m)	0.98	1.03	1.09	1.14	1.19	1.24	1.28	1.33	1.37
TIME (sec):	5.4	5.5	5.7	5.8	5.9	6	6.1	6.2	6.3
DESIGN SPAN:	BU-17034	**TO**	BU-10466	**RULING SPAN (m)**		47m	**VOLTAGE**		11kV
STRAIN POINTS:	BU-10114	**TO**	BU-10466	**CONDUCTOR TENSION**		8% UTS	**MAX. OPERATING TEMP:**		75 deg. C
CONDUCTOR DETAIL:			**CHERRY**			**CONDUCTOR CODE:**		**49**	
AMBIENT TEMP:	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**
TENSION (kN - NO WIND):	3.118	2.672	2.321	2.063	1.858	1.696	1.566	1.46	1.37
SAG (m)	0.35	0.41	0.47	0.53	0.59	0.64	0.69	0.75	0.8
TIME (sec):	3.2	3.5	3.7	3.9	4.2	4.3	4.5	4.7	4.8
DESIGN SPAN:	BU-10406	**TO**	BU-10470	**RULING SPAN (m)**		35m	**VOLTAGE**		11kV
STRAIN POINTS:	BU-10406	**TO**	BU-10470	**CONDUCTOR TENSION**		8% UTS	**MAX. OPERATING TEMP:**		75 deg. C
CONDUCTOR DETAIL:			**CHERRY**			**CONDUCTOR CODE:**		**49**	
AMBIENT TEMP:	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**
TENSION (kN - NO WIND):	3.273	2.672	2.209	1.869	1.624	1.442	1.304	1.196	1.109
SAG (m)	0.18	0.23	0.27	0.32	0.37	0.42	0.46	0.5	0.55
TIME (sec):	2.3	2.6	2.8	3.1	3.3	3.5	3.7	3.8	4
DESIGN SPAN:	DD-30283	**TO**	BU-10467	**RULING SPAN (m)**		94m	**VOLTAGE**		11kV
STRAIN POINTS:	DD30273	**TO**	BU-10467	**CONDUCTOR TENSION**		8% UTS	**MAX. OPERATING TEMP:**		75 deg. C
CONDUCTOR DETAIL:			**CHERRY**			**CONDUCTOR CODE:**		**49**	
AMBIENT TEMP:	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**
TENSION (kN - NO WIND):	2.824	2.672	2.54	2.423	2.32	2.227	2.145	2.07	2.002
SAG (m)	1.54	1.63	1.72	1.8	1.88	1.96	2.03	2.11	2.18
TIME (sec):	6.7	6.9	7.1	7.3	7.4	7.6	7.7	7.9	8

NOTES:
1. DO NOT STRING NEW CONDUCTORS AT AN AMBIENT TEMPERATURE BELOW 10°C.
2. WHEN TENSIONING NEW CONDUCTORS SUBTRACT 10°C FROM THE AMBIENT TEMPERATURE AND USE THE SAG TIME VALUES SHOWN IN THE TABLES ABOVE.
3. WHEN TENSIONING EXISTING CONDUCTORS NO ALLOWANCE FOR CREEP REQUIRED. USE AMBIENT TEMPERATURE AND THE SAG TIME VALUES SHOWN IN THE TABLES ABOVE.

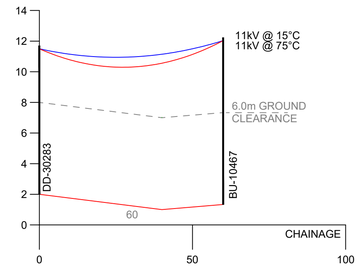


OVERHEAD PROFILE - GOROKAN RD
HOR. SCALE - 1:1000
VERT. SCALE - 1:200

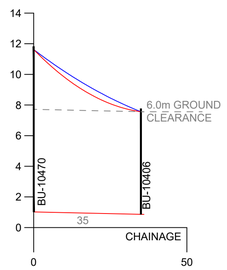
OVERHEAD CONSTRUCTION WORKS SCHEDULE

REF IDENTIFIER	POLE NUMBER	SIZE (m)	STRENGTH (kN)	POLE TYPE TIMBER/CONCRETE	DEPTH (m)	FOOTING DETAILS (mm)	HV CONSTRUCTION CONST TYPE	HV CONSTRUCTION ATTACHED (m) FROM HEAD OF POLE	LV CONSTRUCTION CONST TYPE	LV CONSTRUCTION ATTACHED (m) FROM HEAD OF POLE	STAY DETAIL STAY SIZE	STAY DETAIL ATTACHED (m) FROM HEAD OF POLE	STAY DETAIL STARY BEARING (Deg)	ADDITIONAL CONSTRUCTION DETAIL
1	BU-10466	14	12	TIMBER	3.6	750 (CEMENT STABILISED)	2-10	0.2	1-10	3.4	19/2.00 SINGLE 300mm BLADE AVG SOIL CODE 6 (REFER NS220.10.2.1 AND DRG 61501)	1	176	TERMINATE HV CONDUCTORS FROM POLE 2 CONSTRUCT 11kV UGOH AS PER DRG 160354. INSTALL LV UGOH (LV1-43). REMOVE HV & LV MAINS TO POLE BU-10099 (REF 14) INSTALL GROUND STAY
2	BU-10734	-	-	TIMBER (EXISTING)	-	-	2-11	0.2	1-11	3.2	-	-	-	RELOCATE CONDUCTORS TO NEW POLE 1
3	BU-10114	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE CONDUCTORS TO POLE 4
4	BU-10128	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
5	BU-10127	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
6	BU-10126	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
7	BU-10125	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
8	BU-17039	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
9	BU-17040	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
10	BU-10115	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
11	BU-17001	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
12	BU-17002	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
13	BU-17003	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
14	BU-10099	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
15	BU-10236	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
16	BU-17041	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
17	BU-17042	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
18	BU-17005	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
19	BU-10237	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE, CONDUCTORS & RETURN SUBSTATION TO AUSGRID
20	BU-10238	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
21	BU-10239	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE, STAY WIRES AND CONDUCTORS
22	BU-10462	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND STAY WIRES
23	BU-10241	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND STAY WIRES
24	BU-10406	-	-	TIMBER (EXISTING)	-	-	2-11 (EXIST)	0.2	-	-	-	-	-	RELOCATE CONDUCTORS FROM POLE 21 TO NEW POLE 34 AND TERMINATE
25	BU-10055	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
26	BU-10034	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE, CONDUCTORS & RETURN SUBSTATION TO AUSGRID
27	BU-10076	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE POLE, ASP2 TO INSTALL REPLACEMENT SERVICE POLE AND LV SERVICE UGOH (LV1-14)
28	BU-10287	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
29	BU-10286	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE, CONDUCTORS & RETURN ABS TO AUSGRID
30	BU-10285	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
31	BU-10284	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	REMOVE EXISTING POLE AND CONDUCTORS
32	DD-30283	-	-	TIMBER (EXISTING)	-	-	-	-	-	-	-	-	-	RELOCATE CONDUCTORS FROM POLE 31 TO POLE 33 AND TERMINATE. REMOVE STAY WIRE
33	BU-10467	14	12	TIMBER	3.2	750 (CEMENT STABILISED)	2-10	0.2	-	-	-	-	-	INSTALL NEW POLE SWING CONDUCTORS FROM POLE 32 AND TERMINATE CONSTRUCT 11kV UGOH AS PER DRG 160354.
34	BU-10470	14	12	TIMBER	3.2	750 (CEMENT STABILISED)	2-10	0.2	-	-	-	-	-	INSTALL NEW POLE RECONNECT CONDUCTORS FROM POLE 24 AND TERMINATE CONSTRUCT 11kV UGOH AS PER DRG 160354.

OVERHEAD LINE DESIGN SOFTWARE USED: Poles 'n' Wires (V7.14)
FOOTING DETAILS ARE BASED ON STANDARD GROUND WITH NO ROCK HOLES. IF ROCK IS ENCOUNTERED REFER TO ASP3 DESIGNER.



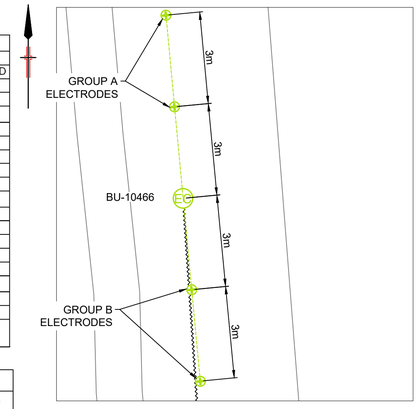
OVERHEAD PROFILE - BUSHELLS RIDGE RD - WEST
HOR. SCALE - 1:1000
VERT. SCALE - 1:200



OVERHEAD PROFILE - BUSHELLS RIDGE RD - EAST
HOR. SCALE - 1:1000
VERT. SCALE - 1:200

EARTHING DESIGN REQUIREMENTS	
POLE NUMBER	BU10466
CONFIGURATIONS	COMBINED
COMBINED RESISTANCE	0.65Ω
REFERENCE DRAWING	160354
HV ELECTRODES	
NUMBER OF ELECTRODES	2
DEPTH OF EACH ELECTRODE	5.4m
SPACING BETWEEN ELECTRODES	3.0m
MAX RESISTANCE (NORMAL)	0.77Ω
MAX RESISTANCE (DROUGHT)	1.16Ω
LV ELECTRODES	
NUMBER OF ELECTRODES	2
DEPTH OF EACH ELECTRODE	5.4m
SPACING BETWEEN ELECTRODES	3.0m
MAX RESISTANCE (NORMAL)	0.77Ω
MAX RESISTANCE (DROUGHT)	1.16Ω
MIN. SEPARATION DISTANCES	
FROM TELCO ASSETS	1.2m
BETWEEN HV AND LV AND M.E.N.	6.0m
REFER TO SITE SPECIFIC EARTHING DESIGN FOR COMPLETE DETAILS	

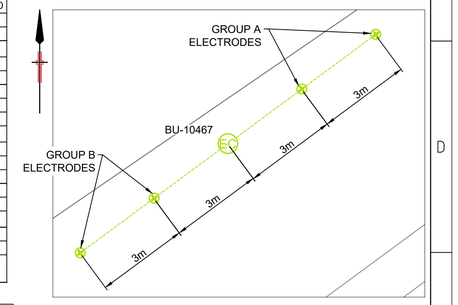
EARTHING LEGEND	PROPOSED
EARTH CABLE	
EARTHING ELECTRODE	
EARTHING COMBINED	



UGOH EARTHING DESIGN - BU-10466
SCALE 1 : 100
0 2 4 6 8 10 METRES

EARTHING DESIGN REQUIREMENTS	
POLE NUMBER	BU10467
CONFIGURATIONS	COMBINED
COMBINED RESISTANCE	0.65Ω
REFERENCE DRAWING	160354
HV ELECTRODES	
NUMBER OF ELECTRODES	2
DEPTH OF EACH ELECTRODE	5.4m
SPACING BETWEEN ELECTRODES	3.0m
MAX RESISTANCE (NORMAL)	0.77Ω
MAX RESISTANCE (DROUGHT)	1.16Ω
LV ELECTRODES	
NUMBER OF ELECTRODES	2
DEPTH OF EACH ELECTRODE	5.4m
SPACING BETWEEN ELECTRODES	3.0m
MAX RESISTANCE (NORMAL)	0.77Ω
MAX RESISTANCE (DROUGHT)	1.16Ω
MIN. SEPARATION DISTANCES	
FROM TELCO ASSETS	1.2m
BETWEEN HV AND LV AND M.E.N.	6.0m
REFER TO SITE SPECIFIC EARTHING DESIGN FOR COMPLETE DETAILS	

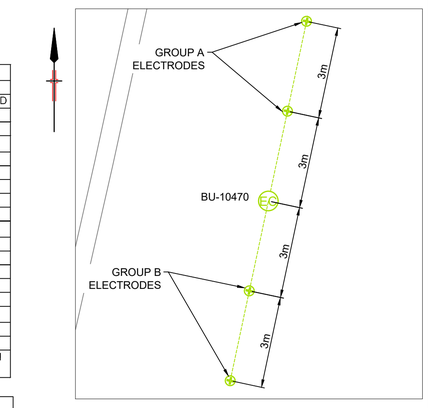
EARTHING LEGEND	PROPOSED
EARTH CABLE	
EARTHING ELECTRODE	
EARTHING COMBINED	



UGOH EARTHING DESIGN - BU-10467
SCALE 1 : 100
0 2 4 6 8 10 METRES

EARTHING DESIGN REQUIREMENTS	
POLE NUMBER	BU10470
CONFIGURATIONS	COMBINED
COMBINED RESISTANCE	0.69Ω
REFERENCE DRAWING	160354
HV ELECTRODES	
NUMBER OF ELECTRODES	2
DEPTH OF EACH ELECTRODE	5.4m
SPACING BETWEEN ELECTRODES	3.0m
MAX RESISTANCE (NORMAL)	0.82Ω
MAX RESISTANCE (DROUGHT)	1.24Ω
LV ELECTRODES	
NUMBER OF ELECTRODES	2
DEPTH OF EACH ELECTRODE	5.4m
SPACING BETWEEN ELECTRODES	3.0m
MAX RESISTANCE (NORMAL)	0.82Ω
MAX RESISTANCE (DROUGHT)	1.24Ω
MIN. SEPARATION DISTANCES	
FROM TELCO ASSETS	1.2m
BETWEEN HV AND LV AND M.E.N.	6.0m
REFER TO SITE SPECIFIC EARTHING DESIGN FOR COMPLETE DETAILS	

EARTHING LEGEND	PROPOSED
EARTH CABLE	
EARTHING ELECTRODE	
EARTHING COMBINED	



UGOH EARTHING DESIGN - BU-10470
SCALE 1 : 100
0 2 4 6 8 10 METRES

CAD DRAWING
AMENDMENTS

ASSOCIATED DRAWINGS

power solutions
SYDNEY | NEWCASTLE | 1300 73 22 93
PO BOX 278, CHARLESTOWN, NSW 2290 | projects@powersol.com.au

DESIGNED BY	C.LEVER
AUTH NO.	3946/04
SUBMIT DATE	15/07/2020
LGA	LAKE MACQUARIE C.C.
MAP REF.	M:20 REF:N6
AUSGRID REF.	BU11, BU13, DD32, DD34
PRJTRAK No.	XCW026293
ASP REF.	3177 - C

CERTIFICATION NUMBER 3694792/20200802

WYEE
GOROKAN ROAD
LOTS 202-400 DP 7506
URD SUBDIVISION

SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 9 of 15 | AMD. 0

20160817

*** CHECK FOR OTHER SERVICES BEFORE BORING OR EXCAVATING ***

ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AUSGRID'S NETWORK STANDARDS

WARNING

- THIS DESIGN CANNOT BE USED FOR CONSTRUCTION PURPOSES UNTIL THE LOCATION OF ALL EXISTING SERVICES IS VERIFIED.
- THE INFORMATION PROVIDED IN THIS DESIGN MUST BE CHECKED ON SITE AND THE MOST CURRENT INFORMATION ON THE CONFIGURATION OF ALL SERVICES, INCLUDING AUSGRID'S NETWORK, MUST BE VERIFIED IMMEDIATELY BEFORE CONSTRUCTION COMMENCES BY CONTACTING DIAL-BEFORE-YOU-DIG BY TELEPHONE ON 1100 OR AT www.1100.COM.AU.
- DIAL-BEFORE-YOU-DIG INFORMATION MUST NOT BE OLDER THAN 20 BUSINESS DAYS AT THE TIME OF CONSTRUCTION.

UNDERGROUND CONSTRUCTION WORKS SCHEDULE *(UNDERGROUND DESIGN SOFTWARE: DUCT PULL v1.1)*

REF IDENTIFIER	ROUTE DISTANCE (m)	CIRCUIT VOLTAGE	CONDUCTOR OR ASSET DETAIL	CABLE / STOCK CODE	MIN. INT. BENDING RADIUS (mm) DURING INSTALLATION	MIN. INT. BENDING RADIUS (mm) AFTER INSTALLATION	CALCULATED MAX. PULLING TENSION (kN) DURING INSTALLATION	CONSTRUCTION DETAIL
HIGH VOLTAGE (11kV)								
HV1	N/A	11kV	2 x CABLE TERMINATION FOR RM6 SWITCHGEAR	HV1-52	-	-	-	ESTABLISH KIOSK SUBSTATION . TERMINATE CABLES AT SUBSTATION
HV1 - D	5	11kV	2 x 11KV 300 CU 1 EPR 70 CU(WS) Z YQ / TX	179122	1275 (BUNDLED) 960 (PHASE)	850 (BUNDLED) 575 (PHASE)	-	INSTALL CABLE IN TRENCH
D	N/A	11kV	2 x THREE-TO-ONE JOINT (POLYMERIC TO POLYMERIC)	HV2-23	-	-	-	INSTALL JOINT [300CU1 - 400AL3]
D - C	161	11kV	2 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 2 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
C - B	15	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 2 x CONDUIT - 150mm PVC	177562	2180	1305	0.63	INSTALL CABLE IN CONDUIT IN TRENCH
B - A	6	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
A	N/A	11kV	1 x THREE-TO-ONE JOINT (POLYMERIC TO POLYMERIC)	HV2-23	-	-	-	INSTALL JOINT [300CU1 - 400AL3]
A - 1	3	11kV	1 x 11KV 300 CU 1 EPR 70 CU(WS) Z YQ / TX	179122	1275 (BUNDLED) 960 (PHASE)	850 (BUNDLED) 575 (PHASE)	-	INSTALL CABLE IN TRENCH TO UGOH
C - E	18	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 2 x CONDUIT - 150mm PVC	177562	2180	1305	0.74	INSTALL CABLE IN CONDUIT IN TRENCH
E - F	64	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
F	N/A	11kV	1 x STRAIGHT THROUGH JOINT FOR THREE CORE CABLES (POLYMERIC TO POLYMERIC)	HV2-22	-	-	-	INSTALL JOINT [400AL3- 400AL3]
F - G	34	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
G - H	18	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 2 x CONDUIT - 150mm PVC	177562	2180	1305	0.74	INSTALL CABLE IN CONDUIT IN TRENCH
H - J	103	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
J - K	19	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 2 x CONDUIT - 150mm PVC	177562	2180	1305	0.78	INSTALL CABLE IN CONDUIT IN TRENCH
K - L	103	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
L	N/A	11kV	1 x POLYMERIC TEE JOINTS (POLYMERIC MAIN TO POLYMERIC TEE)	HV3-40	-	-	-	INSTALL JOINT [400AL3- 400AL3]
L - M	6	11kV	2 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 2 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
M - V	18	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 2 x CONDUIT - 150mm PVC	177562	2180	1305	0.74	INSTALL CABLE IN CONDUIT IN TRENCH
V - W	77	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
W - X	28	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 2 x CONDUIT - 150mm PVC	177562	2180	1305	1.1	INSTALL CABLE IN CONDUIT IN TRENCH
X	N/A	11kV	1 x THREE-TO-ONE JOINT (POLYMERIC TO POLYMERIC)	HV2-23	-	-	-	INSTALL JOINT [300CU1 - 400AL3]
X - 34	3	11kV	1 x 11KV 300 CU 1 EPR 70 CU(WS) Z YQ / TX	179122	1275 (BUNDLED) 960 (PHASE)	850 (BUNDLED) 575 (PHASE)	-	INSTALL CABLE IN TRENCH TO UGOH
M - N	120	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
N	N/A	11kV	1 x THREE-TO-ONE JOINT (POLYMERIC TO POLYMERIC)	HV2-23	-	-	-	INSTALL JOINT [300CU1 - 400AL3]
N - HV2	6	11kV	1 x 11KV 300 CU 1 EPR 70 CU(WS) Z YQ / TX	179122	1275 (BUNDLED) 960 (PHASE)	850 (BUNDLED) 575 (PHASE)	-	INSTALL CABLE IN TRENCH
HV2	N/A	11kV	2 x CABLE TERMINATION FOR RM6 SWITCHGEAR	HV1-52	-	-	-	ESTABLISH KIOSK SUBSTATION . TERMINATE CABLES AT SUBSTATION
HV2 - P	6	11kV	1 x 11KV 300 CU 1 EPR 70 CU(WS) Z YQ / TX	179122	1275 (BUNDLED) 960 (PHASE)	850 (BUNDLED) 575 (PHASE)	-	INSTALL CABLE IN TRENCH
P	N/A	11kV	1 x THREE-TO-ONE JOINT (POLYMERIC TO POLYMERIC)	HV2-23	-	-	-	INSTALL JOINT [300CU1 - 400AL3]
P - Q	19	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
Q - R	18	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 2 x CONDUIT - 150mm PVC	177562	2180	1305	0.74	INSTALL CABLE IN CONDUIT IN TRENCH
R - Y	180	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
Y	N/A	11kV	1 x STRAIGHT THROUGH JOINT FOR THREE CORE CABLES (POLYMERIC TO POLYMERIC)	HV2-22	-	-	-	INSTALL JOINT [400AL3- 400AL3]
Y - S	6	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
S - T	12	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 2 x CONDUIT - 150mm PVC	177562	2180	1305	0.53	INSTALL CABLE IN CONDUIT IN TRENCH
T - U	115	11kV	1 x 11KV 400 AL 3 TRXQ 35 CU(WS) Z YQ 1 x CONDUIT - 150mm PVC	177562	2180	1305	-	INSTALL CABLE AND CONDUIT IN TRENCH
U	N/A	11kV	1 x THREE-TO-ONE JOINT (POLYMERIC TO POLYMERIC)	HV2-23	-	-	-	INSTALL JOINT [300CU1 - 400AL3]
U - 33	3	11kV	1 x 11KV 300 CU 1 EPR 70 CU(WS) Z YQ / TX	179122	1275 (BUNDLED) 960 (PHASE)	850 (BUNDLED) 575 (PHASE)	-	INSTALL CABLE IN TRENCH TO UGOH

REFER TO CABLE AND CONDUIT CROSS SECTIONS FOR PHYSICAL LAYOUT

THIS SCHEDULE IS NOT TO BE USED AS A BILL OF MATERIAL. CABLE LENGTHS ARE TO BE REVIEWED IN CONJUNCTION WITH THE SITE PLAN, CROSS SECTIONS AND AUSGRIDS NETWORK STANDARDS

REF IDENTIFIER	ROUTE DISTANCE (m)	CIRCUIT VOLTAGE	CONDUCTOR OR ASSET DETAIL	CABLE / STOCK CODE	MIN. INT. BENDING RADIUS (mm) DURING INSTALLATION	MIN. INT. BENDING RADIUS (mm) AFTER INSTALLATION	CALCULATED MAX. PULLING TENSION (kN) DURING INSTALLATION	CONSTRUCTION DETAIL
LOW VOLTAGE (400V)								
LV1	N/A	LV	2 x KIOSK TERMINATIONS 240 AL4 XQ Z/SAC CABLES 3 X KIOSK TERMINATIONS 240CU4 CABLES	LV1-41 N/A	-	-	-	TERMINATE CABLES AT SUBSTATION
LV1 - AA	16	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
AA - AD	74	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
AD - DE	21	LV	1 x 415V 240 AL4 XQ Z / SAC 2 x CONDUIT - 125mm PVC	141739	590	395	0.48	INSTALL CABLE AND CONDUIT IN TRENCH
DE - AE	4	LV	1 x 415V 240 AL4 XQ Z / SAC 4 x 415V 185 CU1 XQ Z 2 x CONDUIT - 125mm PVC	141739 61432 N/A	590 145 N/A	395 95 N/A	-	INSTALL CABLE AND CONDUIT IN TRENCH
AE - AP	13	LV	1 x 415V 240 AL4 XQ Z / SAC 2 x CONDUIT - 125mm PVC	141739	590	395	0.33	INSTALL CABLE AND CONDUIT IN TRENCH
AP - AM	92	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
AM - AF	13	LV	1 x 415V 240 AL4 XQ Z / SAC 2 x CONDUIT - 125mm PVC	141739	590	395	0.33	INSTALL CABLE AND CONDUIT IN TRENCH
AF - AL	123	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
LV1 - BA	16	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
BA - C	154	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
C - B	15	LV	4 x 415V 185 CU1 XQ Z 1 x CONDUIT - 125mm PVC	61432	145	95	0.24	INSTALL CABLE AND CONDUIT IN TRENCH
B - 1	9	LV	4 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH AND CONNECT TO LV UGOH
C - BE	17	LV	4 x 415V 185 CU1 XQ Z 1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	61432 141739 -	145 590 N/A	95 395 N/A	-	INSTALL CABLE AND CONDUIT IN TRENCH
BE - AL	209	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
LV1 - CA	6	LV	3 x 415V 240 CU4 XQ Z	39	675	450	-	INSTALL CABLE IN TRENCH
CA - CB	18	LV	3 x 415V 240 CU4 XQ Z 4 x CONDUIT - 125mm PVC	39	675	450	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
CB - CC	15	LV	1 x 415V 240 CU4 XQ Z 1 x CONDUIT - 125mm PVC	39	675	450	-	INSTALL CABLE AND CONDUIT IN TRENCH
CC - CJ	234	LV	1 x 415V 240 CU4 XQ Z 1 x CONDUIT - 125mm PVC	39	675	450	-	INSTALL CABLE AND CONDUIT IN TRENCH
CJ - G	18	LV	1 x 415V 240 AL4 XQ Z / SAC 4 x 415V 185 CU1 XQ Z 1 x CONDUIT - 125mm PVC	141739 61432 N/A	590 145 N/A	395 95 N/A	-	INSTALL CABLE AND CONDUIT IN TRENCH
G - CP	54	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
CP - CK	19	LV	1 x 415V 240 AL4 XQ Z / SAC 4 x 415V 185 CU1 XQ Z 1 x CONDUIT - 125mm PVC	141739 61432 N/A	590 145 N/A	395 95 N/A	-	INSTALL CABLE AND CONDUIT IN TRENCH
CK - CN	93	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
CP - CQ	18	LV	4 x 415V 185 CU1 XQ Z 2 x CONDUIT - 125mm PVC	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
CQ - CT	122	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
CB - DA	18	LV	2 x 415V 240 CU4 XQ Z 1 x CONDUIT - 125mm PVC	39	675	450	-	INSTALL CABLE AND CONDUIT IN TRENCH
DA - DC	61	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x 415V 240 CU4 XQ Z 1 x CONDUIT - 125mm PVC	141739 H108589 N/A	590 675 N/A	395 450 N/A	-	INSTALL CABLE AND CONDUIT IN TRENCH
DC - DX	130	LV	2 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
DX	-	LV	1 x FOUR-TO-ONE HEATSHRINK JOINT 240 FOUR CORE CABLES TO 4X185CU1XQZ OR 4X300AL1XQZ CABLES	LV2-36	-	-	-	INSTALL JOINT
DX - DW	6	LV	1 x 415V 240 AL4 XQ Z / SAC 4 x 415V 185 CU1 XQ Z 1 x CONDUIT - 125mm PVC	141739 61432 N/A	590 145 N/A	395 95 N/A	-	INSTALL CABLE AND CONDUIT IN TRENCH
DW - DG	32	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
DG - CN	122	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
DH - DL	18	LV	4 x 415V 185 CU1 XQ Z 2 x CONDUIT - 125mm PVC	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
DN - CT	122	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
DW - DP	18	LV	4 x 415V 185 CU1 XQ Z 2 x CONDUIT - 125mm PVC	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
DP - DY	6	LV	4 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
DY	-	LV	1 x FOUR-TO-ONE HEATSHRINK JOINT 240 FOUR CORE CABLES TO 4X185CU1XQZ OR 4X300AL1XQZ CABLES	LV2-36	-	-	-	INSTALL JOINT
DY - DS	168	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
DQ - DT	18	LV	4 x 415V 185 CU1 XQ Z 2 x CONDUIT - 125mm PVC	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
DT - EH	101	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
LV2	N/A	LV	2 x KIOSK TERMINATIONS 240 AL4 XQ Z/SAC CABLES 3 X KIOSK TERMINATIONS 185CU CABLES	LV1-41 N/A	-	-	-	TERMINATE CABLES AT SUBSTATION
LV2 - FA	23	LV	1 x 415V 240 AL4 XQ Z / SAC 4 x 415V 185 CU1 XQ Z 1 x CONDUIT - 125mm PVC	141739 61432 N/A	590 145 N/A	395 95 N/A	-	INSTALL CABLE AND CONDUIT IN TRENCH
FA - FD	191	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
FD - K	20	LV	1 x 415V 240 AL4 XQ Z / SAC 4 x 415V 185 CU1 XQ Z 1 x CONDUIT - 125mm PVC	141739 61432 N/A	590 145 N/A	395 95 N/A	-	INSTALL CABLE AND CONDUIT IN TRENCH
K - J	18	LV	4 x 415V 185 CU1 XQ Z 2 x CONDUIT - 125mm PVC	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
J - FG	18	LV	4 x 415V 185 CU1 XQ Z 1 x CONDUIT - 125mm PVC	61432	145	95	-	INSTALL CABLE AND CONDUIT IN TRENCH
FG - FJ	66	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
FJ - H	19	LV	4 x 415V 185 CU1 XQ Z 1 x CONDUIT - 125mm PVC	61432	145	95	-	INSTALL CABLE AND CONDUIT IN TRENCH
H - G	18	LV	4 x 415V 185 CU1 XQ Z 2 x CONDUIT - 125mm PVC	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
K - FF	114	LV	1 x 415V 240 AL4 XQ Z / SAC 1 x CONDUIT - 125mm PVC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH

REFER TO CABLE AND CONDUIT CROSS SECTIONS FOR PHYSICAL LAYOUT

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CAD DRAWING
DO NOT SCALE DRAWING
AMENDMENTS

ASSOCIATED DRAWINGS

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DESIGNED BY	C.LEVER
AUTH NO.	3946/04
SUBMIT DATE	15/07/2020
LGA	LAKE MACQUARIE C.C.
MAP REF.	M:20 REF:N6
AUSGRID REF.	BU11, BU13, DD32, DD34
PRJTRAK No.	XCW026293
ASP REF.	3177 - C

CERTIFICATION NUMBER 3694792/20200802

WYEE
GOROKAN ROAD
LOTS 202-400 DP 7506
URD SUBDIVISION

SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 10 of 15 | AMD. 0

20160817

*** CHECK FOR OTHER SERVICES BEFORE BORING OR EXCAVATING ***

ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AUSGRID'S NETWORK STANDARDS

WARNING

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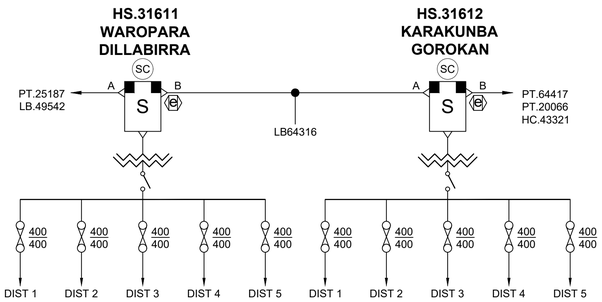
- DIAL-BEFORE-YOU-DIG INFORMATION MUST NOT BE OLDER THAN 20 BUSINESS DAYS AT THE TIME OF CONSTRUCTION.



LV DISTRIBUTOR DETAILS	
NUMBER	DESTINATION
DIST 1	WAROPARA NTH WST/ TULLOKAN WST U/G
DIST 2	WAROPARA STH WST/ TULKABA WST U/G
DIST 3	PIRAMA WST U/G
DIST 4	WAROPARA STH EST/ PIRAMA NTH EST U/G
DIST 5	WAROPARA NTH EST/ TULLOKAN EST U/G

LV DISTRIBUTOR DETAILS	
NUMBER	DESTINATION
DIST 1	KARAKUNBA WST/ TULKABA WST U/G
DIST 2	KARAKUNBA U/G / BUSHELLS RIDGE PRIVATE O/H
DIST 3	KARAKUNBA/ BUSHELLS RIDGE U/G
DIST 4	KARAKUNBA/ GOROKAN U/G
DIST 5	KARAKUNBA EAST/ TULKABA EAST U/G

REF IDENTIFIER	ROUTE DISTANCE (m)	CIRCUIT VOLTAGE	CONDUCTOR OR ASSET DETAIL	CABLE / STOCK CODE	MIN. INT. BENDING RADIUS (mm) DURING INSTALLATION	MIN. INT. BENDING RADIUS (mm) AFTER INSTALLATION	CALCULATED MAX. PULLING TENSION (kN) DURING INSTALLATION	CONSTRUCTION DETAIL
LOW VOLTAGE (400V)								
LV2 - EA	19	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			8 x 415V 185 CU1 XQ Z	61432	145	95		
			1 x CONDUIT - 125mm PVC	N/A	N/A	N/A		
EA - ED	173	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
ED - EE	21	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			4 x 415V 185 CU1 XQ Z	61432	145	95		
			1 x CONDUIT - 125mm PVC	N/A	N/A	N/A		
EE - EP	30	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
EP - FF	11	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			4 x 415V 185 CU1 XQ Z	61432	145	95		
			1 x CONDUIT - 125mm PVC	N/A	N/A	N/A		
EP - EM	18	LV	4 x 415V 185 CU1 XQ Z	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
			2 x CONDUIT - 125mm PVC					
EM - EN	41	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
EM - DS	161	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
ED - EF	10	LV	4 x 415V 185 CU1 XQ Z	61432	145	95	0.19	INSTALL CABLE IN CONDUIT IN TRENCH
			2 x CONDUIT - 125mm PVC					
EF - EG	21	LV	4 x 415V 185 CU1 XQ Z	61432	145	95	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
EG - EH	41	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
EJ - EG	18	LV	4 x 415V 185 CU1 XQ Z	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
			2 x CONDUIT - 125mm PVC					
FA - GA	18	LV	4 x 415V 185 CU1 XQ Z	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
			2 x CONDUIT - 125mm PVC					
GA - GJ	309	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
GJ - GL	6	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			4 x 415V 185 CU1 XQ Z	61432	145	95		
			1 x CONDUIT - 125mm PVC	N/A	N/A	N/A		
GL	-	LV	1 x FOUR-TO-ONE HEATSHRINK JOINT 240 FOUR CORE CABLES TO 4X185CU1XQZ OR 4X300AL1XQZ CABLES	LV2-36	-	-	-	INSTALL JOINT
GL - GH	61	LV	2 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
GJ - GK	18	LV	4 x 415V 185 CU1 XQ Z	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
			2 x CONDUIT - 125mm PVC					
EA - HA	18	LV	8 x 415V 185 CU1 XQ Z	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
			3 x CONDUIT - 125mm PVC					
HA - HR	21	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			4 x 415V 185 CU1 XQ Z	61432	145	95		
			1 x CONDUIT - 125mm PVC	N/A	N/A	N/A		
HR	-	LV	1 x FOUR-TO-ONE HEATSHRINK JOINT 240 FOUR CORE CABLES TO 4X185CU1XQZ OR 4X300AL1XQZ CABLES	LV2-36	-	-	-	INSTALL JOINT
HR - HC	41	LV	2 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
HC - HD	22	LV	2 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			4 x 415V 185 CU1 XQ Z	61432	145	95		
			1 x CONDUIT - 125mm PVC	N/A	N/A	N/A		
HD - HE	11	LV	4 x 415V 185 CU1 XQ Z	61432	145	95	0.19	INSTALL CABLE IN CONDUIT IN TRENCH
			2 x CONDUIT - 125mm PVC					
HE - HF	18	LV	4 x 415V 185 CU1 XQ Z	61432	145	95	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
HF - HG	18	LV	4 x 415V 185 CU1 XQ Z	61432	145	95	0.27	INSTALL CABLE IN CONDUIT IN TRENCH
			2 x CONDUIT - 125mm PVC					
HG - HJ	81	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
HF - HL	81	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
HD - S	103	LV	2 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
S - HM	22	LV	2 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			4 x 415V 185 CU1 XQ Z	61432	145	95		
			1 x CONDUIT - 125mm PVC	N/A	N/A	N/A		
HM - GH	61	LV	2 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
S - T	10	LV	4 x 415V 185 CU1 XQ Z	61432	145	95		INSTALL CABLE IN CONDUIT IN TRENCH
			2 x CONDUIT - 125mm PVC					
T - HP	20	LV	4 x 415V 185 CU1 XQ Z	61432	145	95	0.19	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
HP - HQ	21	LV	1 x 415V 240 AL4 XQ Z / SAC	141739	590	395	-	INSTALL CABLE AND CONDUIT IN TRENCH
			1 x CONDUIT - 125mm PVC					
AL, CN, CT, DS, EH, FJ, GH	-	LV	7 x SWITCH PILLAR FOR 240 AL4 XQ Z/SAC CABLES	LV1-61	-	-	-	INSTALL PILLARS
BA, AA, DB, DA, CC, FA, EA, HA, GA, GK	-	LV	10 x SINGLE LINK DISTRIBUTION PILLAR	LV1-37	-	-	-	INSTALL PILLARS
AE, BE, FF	-	LV	3 x DOUBLE LINK DISTRIBUTION PILLAR	LV1-60	-	-	-	INSTALL PILLARS
AG, AH, AJ, AK, BK, BJ, BH, BG, BF, BL, BD, BC, BB, AB, AC, DC, CD, CE, CF, CG, CH, CL, CM, DK, DJ, DN, DM, CS, CR, FH, EN, EL, EK, DR, DU, DV, FE, FC, FB, EB, EC, HH, HJ, HL, HK, HB, GB, GC, GD, GE, GF, HN, HQ	-	LV	53 x DISTRIBUTION PILLAR (TWO-WAY) 240 AL4 XQ Z/SAC CABLES	LV1-33	-	-	-	INSTALL PILLARS
CQ, FG, DT, HG, HP	-	LV	5 x DISTRIBUTION PILLAR (SOLID CONNECTION) FOR SINGLE CORE CABLES	LV1-35	-	-	-	INSTALL TWO WAY PILLARS NOTE 185Cu LUGS FOR COPPER CABLE (S/C175532)
AF, DE, CJ, CK, DH, DL, DQ, EJ, EM, EG, EE, FD, HC, HF, HM, GG, AD, DG	-	LV	18 x DISTRIBUTION PILLAR (SOLID CONNECTION) FOR SINGLE CORE CABLES	LV1-35	-	-	-	INSTALL THREE WAY PILLARS NOTE 185Cu LUGS FOR COPPER CABLE (S/C175532)
ADDITIONAL SPARE CONDUITS								
AM - AN	14		2 x CONDUIT - 125mm PVC					INSTALL CONDUIT IN TRENCH
AQ - AP	14		2 x CONDUIT - 125mm PVC					INSTALL CONDUIT IN TRENCH
DW - AR	14		2 x CONDUIT - 125mm PVC					INSTALL CONDUIT IN TRENCH

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CAD DRAWING
DO NOT MODIFY MANUALLY
AMENDMENTS

ASSOCIATED DRAWINGS

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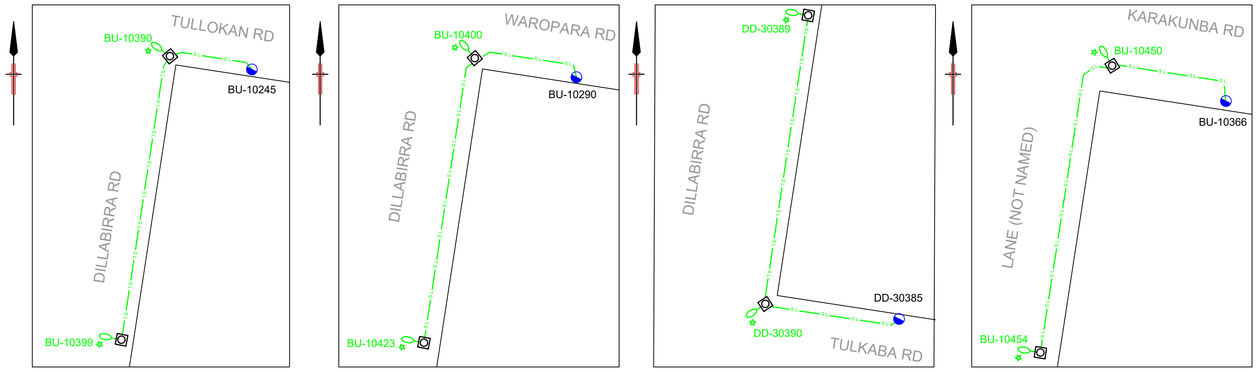
CHARLESTOWN, NSW 2290 | projects@powersol.com.au

DESIGNED BY	C.LEVER
AUTH NO.	3946/04
SUBMIT DATE	15/07/2020
LGA	LAKE MACQUARIE C.C.
MAP REF.	M:20 REF:N6
AUSGRID REF.	BU11, BU13, DD32, DD34
PRJTRAK No.	XCW026293
ASP REF.	3177 - C
CERTIFICATION NUMBER	3694792/20200802

WYEE
GOROKAN ROAD
LOTS 202-400 DP 7506
URD SUBDIVISION

SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 11 of 15 | AMD. 0

20160817



SL SCHEMATIC

N.T.S

SL SCHEMATIC LEGEND		
	EXISTING	PROPOSED
SL CABLE U/G		
LUMINAIRE		
LV PILLAR		

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STREET LIGHTING DESIGN DETAILS

REF IDENTIFIER	ASSET NUMBER	TARIFF	SL POLE TYPE	AUSGRID STOCKCODE	MOUNTING METHOD	SYSTEM CONSTRUCTION	CONNECTED PHASE	COLUMN COLOUR	COLUMN SIZE (m)	OUTREACH (m)	HEIGHT OF LUMINAIRE (m)	LUMINAIRE TYPE	LAMP SIZE (W)	ADDITIONAL DESIGN DETAIL
L1	BU10390	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	NOTE THAT CLEARANCES FROM OTHER UTILITES AND FOOTPATHS ARE TO BE CHECKED PRIOR TO CONSTRUCTION
L2	BU10391	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L3	BU10392	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L4	BU10393	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L5	BU10394	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L6	BU10397	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L7	BU10398	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L8	BU10399	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L9	BU10400	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L10	BU10401	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L11	BU10402	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L12	BU10405	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L13	BU10408	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L14	BU10411	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L15	BU10417	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L16	BU10418	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L17	BU10423	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L18	DD30388	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L19	BU10425	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L20	BU10426	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L21	BU10427	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L22	BU10428	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L23	BU10431	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L24	BU10432	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L25	BU10438	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L26	DD30389	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L27	DD30390	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L28	BU10441	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L29	BU10442	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L30	BU10443	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L31	BU10444	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L32	BU10445	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L33	BU10446	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L34	BU10447	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L35	BU10449	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L36	BU10450	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L37	BU10451	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L38	BU10452	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L39	BU10453	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L40	BU10454	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	A	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L41	BU10455	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	B	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	
L42	BU10456	2	STEEL	100115	RAGBOLT	DOUBLE INSUL.	C	GALV.	6.5	2	6.5	GERARD STREETLED MK2	17W LED	

INSTALL STREET LIGHT COLUMN RAGBOLT FOOTINGS AS PER AUSGRID DRG 514087

DESIGNED TO AS/NZS 1158.3.1:2005 - CAT P4 & BASED ON SPACING TABLES FOR GERARD STREETLED MK2 LUMINAIRE

STREET LIGHTING SOFTWARE: PERFECT LIGHT - P CATEGORY V3.10

STREET LIGHTING

REF IDENTIFIER	ROUTE DISTANCE (m)	CIRCUIT VOLTAGE	CONDUCTOR OR ASSET DETAIL	CABLE / STOCK CODE	MIN. INT. BENDING RADIUS (mm) DURING INSTALLATION	MIN. INT. BENDING RADIUS (mm) AFTER INSTALLATION	CALCULATED MAX PULLING TENSION (kN) DURING INSTALLATION	CONSTRUCTION DETAIL
L2, L4, L7, L12, L16, L20, L22, L25, L29, L31, L34, L35	3 PER SL (36)	SL	1 x 415V 16 CU2 XQ Z	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
AF - L1	14	SL	1 x 415V 16 CU4 XQ Z 1 x CONDUIT - 50mm PVC	2259	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
AJ - L3	13	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
BH - L5	13	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
BG - L6	17	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
L1 - L8	47	SL	1 x 415V 16 CU4 XQ Z 1 x CONDUIT - 50mm PVC	2259	155	105	-	INSTALL CABLE FROM COLUMN TO COLUMN IN CONDUIT.
DE - L9	16	SL	1 x 415V 16 CU4 XQ Z 1 x CONDUIT - 50mm PVC	2259	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
L9 - L17	47	SL	1 x 415V 16 CU4 XQ Z 1 x CONDUIT - 50mm PVC	2259	155	105	-	INSTALL CABLE FROM COLUMN TO COLUMN IN CONDUIT.
DC - L10	16	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
DA - L11	16	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
CE - L13	16	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
CF - L14	16	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
CG - L15	17	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
DN - L18	21	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
DL - L19	21	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
CS - L21	21	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
CQ - L23	21	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
FJ - L24	18	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
DQ - L27	22	SL	1 x 415V 16 CU4 XQ Z 1 x CONDUIT - 50mm PVC	2259	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
L27 - L26	48	SL	1 x 415V 16 CU4 XQ Z 1 x CONDUIT - 50mm PVC	2259	155	105	-	INSTALL CABLE FROM COLUMN TO COLUMN IN CONDUIT.
DV - L28	22	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
EE - L30	22	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
FE - L32	22	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
FD - L33	19	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
HC - L36	19	SL	1 x 415V 16 CU4 XQ Z 1 x CONDUIT - 50mm PVC	2259	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
L36 - L40	48	SL	1 x 415V 16 CU4 XQ Z 1 x CONDUIT - 50mm PVC	2259	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
GB - L37	21	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
GC - L38	21	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
GE - L39	23	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
HM - L41	22	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.
GF - L42	23	SL	1 x 415V 16 CU2 XQ Z 1 x CONDUIT - 50mm PVC	2260	155	105	-	INSTALL CABLE FROM PILLAR TO COLUMN IN CONDUIT.

REFER TO CABLE AND CONDUIT CROSS SECTIONS FOR PHYSICAL LAYOUT

THIS SCHEDULE IS NOT TO BE USED AS A BILL OF MATERIAL. CABLE LENGTHS ARE TO BE REVIEWED IN CONJUNCTION WITH THE SITE PLAN, CROSS SECTIONS AND AUSGRIDS NETWORK STANDARDS

CAD DRAWING
AMENDMENTS

ASSOCIATED DRAWINGS

power solutions
SYDNEY | NEWCASTLE | 1300 73 22 93
P.O.BOX 278,
CHARLESTOWN, NSW 2290 | projects@powersol.com.au

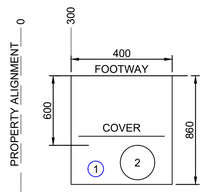
DESIGNED BY	C.LEVER
AUTH NO.	3946/04
SUBMIT DATE	15/07/2020
LGA	LAKE MACQUARIE C.C.
MAP REF.	M:20 REF:N6
AUSGRID REF.	BU11, BU13, DD32, DD34
PRJTRAK No.	XCW026293
ASP REF.	3177 - C

CERTIFICATION NUMBER 3694792/20200802

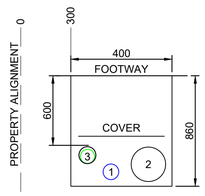
WYEE
GOROKAN ROAD
LOTS 202-400 DP 7506
URD SUBDIVISION

SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 12 of 15 | AMD. 0

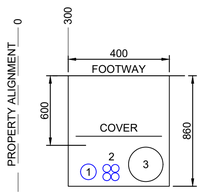
20160817



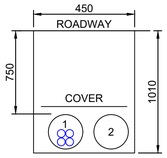
SECTION 1
1 LV CABLE
2 125mm SPARE CONDUIT



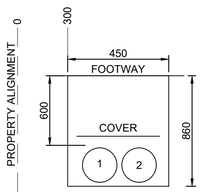
SECTION 2
1 LV CABLE
2 125mm SPARE CONDUIT
3 SL CABLE IN 50mm CONDUIT



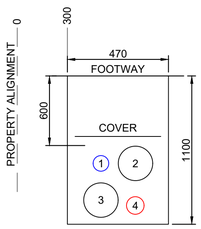
SECTION 3
1 LV CABLE
2 LV CABLE
3 125mm SPARE CONDUIT



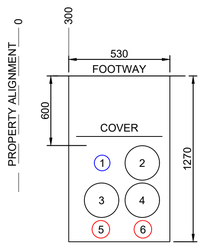
SECTION 4
1 LV CABLE IN 125mm CONDUIT
2 125mm SPARE CONDUIT



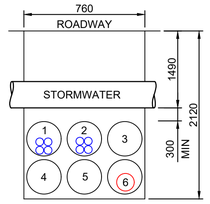
SECTION 5
1 125mm SPARE CONDUIT
2 125mm SPARE CONDUIT



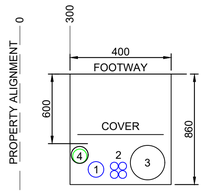
SECTION 6
1 LV CABLE
2 125mm SPARE CONDUIT
3 150mm SPARE CONDUIT
4 11kV CABLE



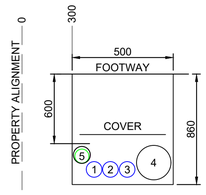
SECTION 7
1 LV CABLE
2 125mm SPARE CONDUIT
3 150mm SPARE CONDUIT
4 150mm SPARE CONDUIT
5 11kV CABLE
6 11kV CABLE



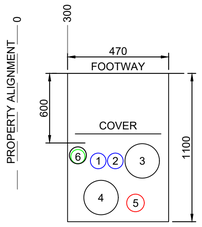
SECTION 8
1 LV CABLE IN 125mm CONDUIT
2 LV CABLE IN 125mm CONDUIT
3 125mm SPARE CONDUIT
4 125mm SPARE CONDUIT
5 150mm SPARE CONDUIT
6 11kV CABLE IN 150mm CONDUIT



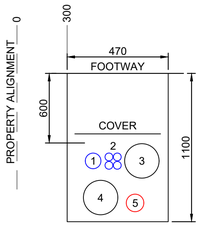
SECTION 9
1 LV CABLE
2 LV CABLE
3 125mm SPARE CONDUIT
4 SL CABLE IN 50mm CONDUIT



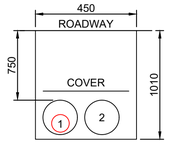
SECTION 10
1 LV CABLE
2 LV CABLE
3 125mm SPARE CONDUIT
4 SL CABLE IN 50mm CONDUIT



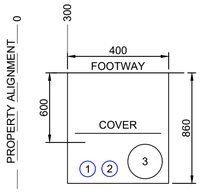
SECTION 11
1 LV CABLE
2 LV CABLE
3 125mm SPARE CONDUIT
4 150mm SPARE CONDUIT
5 11kV CABLE
6 SL CABLE IN 50mm CONDUIT



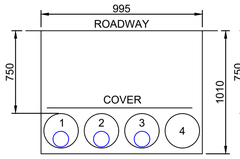
SECTION 12
1 LV CABLE
2 LV CABLE
3 125mm SPARE CONDUIT
4 150mm SPARE CONDUIT
5 11kV CABLE



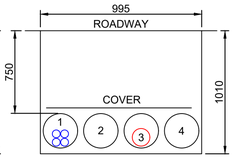
SECTION 13
1 11kV CABLE IN 150mm CONDUIT
2 150mm SPARE CONDUIT



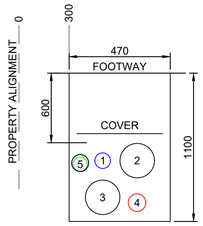
SECTION 14
1 LV CABLE
2 LV CABLE
3 125mm SPARE CONDUIT



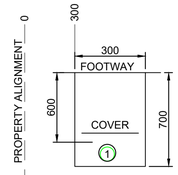
SECTION 15
1 LV CABLE IN 125mm CONDUIT
2 LV CABLE IN 125mm CONDUIT
3 LV CABLE IN 125mm CONDUIT
4 125mm SPARE CONDUIT



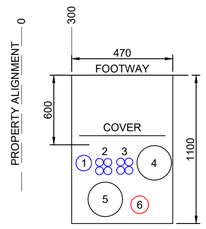
SECTION 16
1 LV CABLE IN 150mm CONDUIT
2 125mm SPARE CONDUIT
3 11kV CABLE IN 150mm CONDUIT
4 150mm SPARE CONDUIT



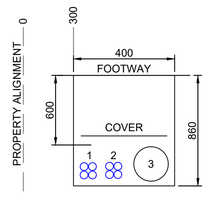
SECTION 17
1 LV CABLE
2 125mm SPARE CONDUIT
3 150mm SPARE CONDUIT
4 11kV CABLE



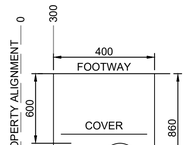
SECTION 18
1 SL CABLE IN 50mm CONDUIT



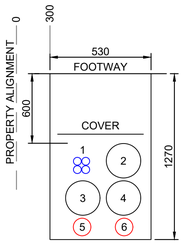
SECTION 20
1 LV CABLE
2 LV CABLE
3 LV CABLE
4 125mm SPARE CONDUIT
5 150mm SPARE CONDUIT
6 11kV CABLE



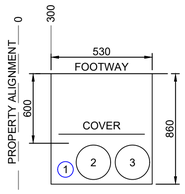
SECTION 21
1 LV CABLE
2 LV CABLE
3 125mm SPARE CONDUIT



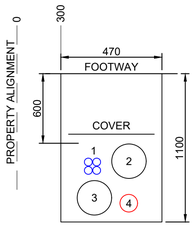
SECTION 22
1 LV CABLE
2 125mm SPARE CONDUIT



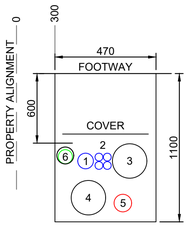
SECTION 23
1 LV CABLE
2 125mm SPARE CONDUIT
3 150mm SPARE CONDUIT
4 150mm SPARE CONDUIT
5 11kV CABLE
6 11kV CABLE



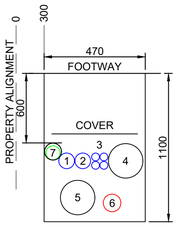
SECTION 24
1 LV CABLE
2 125mm SPARE CONDUIT
3 125mm SPARE CONDUIT



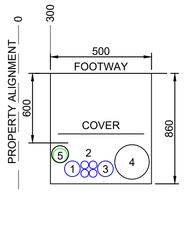
SECTION 25
1 LV CABLE
2 125mm SPARE CONDUIT
3 150mm SPARE CONDUIT
4 11kV CABLE



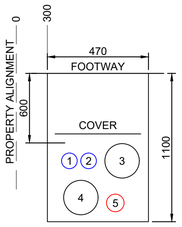
SECTION 26
1 LV CABLE
2 LV CABLE
3 125mm SPARE CONDUIT
4 150mm SPARE CONDUIT
5 11kV CABLE
6 SL CABLE IN 50mm CONDUIT



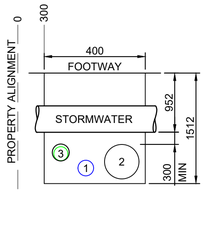
SECTION 27
1 LV CABLE
2 LV CABLE
3 LV CABLE
4 125mm SPARE CONDUIT
5 150mm SPARE CONDUIT
6 11kV CABLE
7 SL CABLE IN 50mm CONDUIT



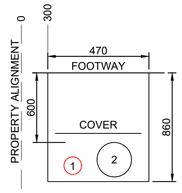
SECTION 28
1 LV CABLE
2 LV CABLE
3 LV CABLE
4 125mm SPARE CONDUIT
5 SL CABLE IN 50mm CONDUIT



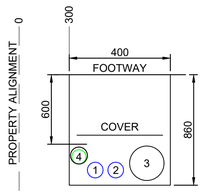
SECTION 29
1 LV CABLE
2 LV CABLE
3 125mm SPARE CONDUIT
4 150mm SPARE CONDUIT
5 11kV CABLE



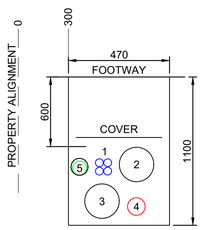
SECTION 30
1 LV CABLE
2 125mm SPARE CONDUIT
3 SL CABLE IN 50mm CONDUIT



SECTION 31
1 11kV CABLE
2 150mm SPARE CONDUIT



SECTION 32
1 LV CABLE
2 LV CABLE
3 125mm SPARE CONDUIT
4 SL CABLE IN 50mm CONDUIT



SECTION 33
1 LV CABLE
2 125mm SPARE CONDUIT
3 150mm SPARE CONDUIT
4 11kV CABLE

CABLE AND CONDUIT CROSS SECTIONS

NOT TO SCALE

- ALL CABLE AND CONDUIT TO BE INSTALLED IN ACCORDANCE WITH NS130.
- REFER TO UNDERGROUND CONSTRUCTION SCHEDULE FOR CABLE & CONDUIT TYPES.
- EXACT OFFSET AND DEPTH OF EXISTING CABLES AND CONDUITS ARE UNKNOWN.
- ALL COVER DIMENSIONS ARE BASED ON FINISHED GROUND LEVELS.
- ALL SPARE CONDUITS ARE TO BE CONTINUOUS.

*** CHECK FOR OTHER SERVICES BEFORE BORING OR EXCAVATING ***

ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AUSGRID'S NETWORK STANDARDS

WARNING

- THIS DESIGN CANNOT BE USED FOR CONSTRUCTION PURPOSES UNTIL THE LOCATION OF ALL EXISTING SERVICES IS VERIFIED.
- THE INFORMATION PROVIDED IN THIS DESIGN MUST BE CHECKED ON SITE AND THE MOST CURRENT INFORMATION ON THE CONFIGURATION OF ALL SERVICES, INCLUDING AUSGRID'S NETWORK, MUST BE VERIFIED IMMEDIATELY BEFORE CONSTRUCTION COMMENCES BY CONTACTING DIAL-BEFORE-YOU-DIG BY TELEPHONE ON 1100 OR AT www.1100.COM.AU.
- DIAL-BEFORE-YOU-DIG INFORMATION MUST NOT BE OLDER THAN 20 BUSINESS DAYS AT THE TIME OF CONSTRUCTION.

CAD DRAWING
DO NOT SCALE DRAWING
AMENDMENTS

ASSOCIATED DRAWINGS

power solutions
SYDNEY | NEWCASTLE | 1300 73 22 93
PO BOX 278,
CHARLESTOWN, NSW 2290 | projects@powersol.com.au

ASP REF. 3177 - C

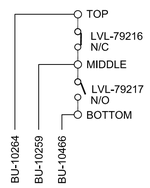
DESIGNED BY	C.LEVER
AUTH NO.	3946/04
SUBMIT DATE	15/07/2020
LGA	LAKE MACQUARIE C.C.
MAP REF.	M:20 REF:N6
AUSGRID REF.	BU11, BU13, DD32, DD34
PRJTRAK No.	XCW026293

CERTIFICATION NUMBER 3694792/20200802

WYEE
GOROKAN ROAD
LOTS 202-400 DP 7506
URD SUBDIVISION

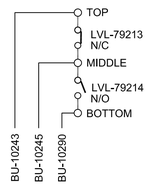
SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 13 of 15 | AMD. 0

20160817



PILLAR: BU-10258 (REF BE)

ONLY ONE PHASE SHOWN
OPTION - NS110 - APP A2



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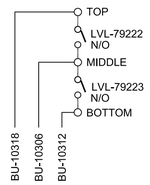
OPTION - NS110 - APP A2



PILLAR: BU-10320 (REF FF)

ONLY ONE PHASE SHOWN
OPTION - NS110 - APP A2

DOUBLE LINK PILLAR SCHEMATICS

*** CHECK FOR OTHER SERVICES BEFORE BORING OR EXCAVATING ***

ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AUSGRID'S NETWORK STANDARDS

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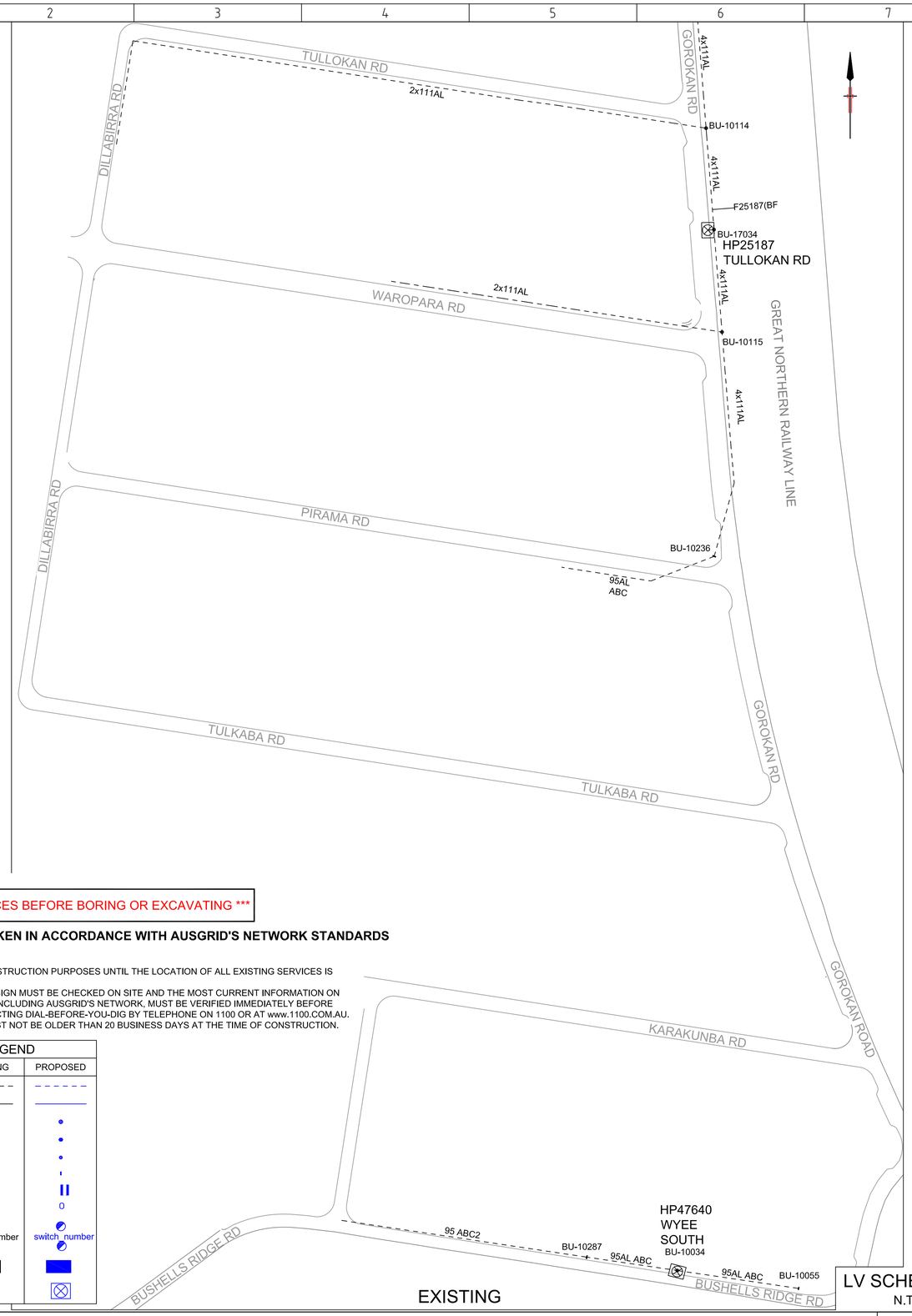
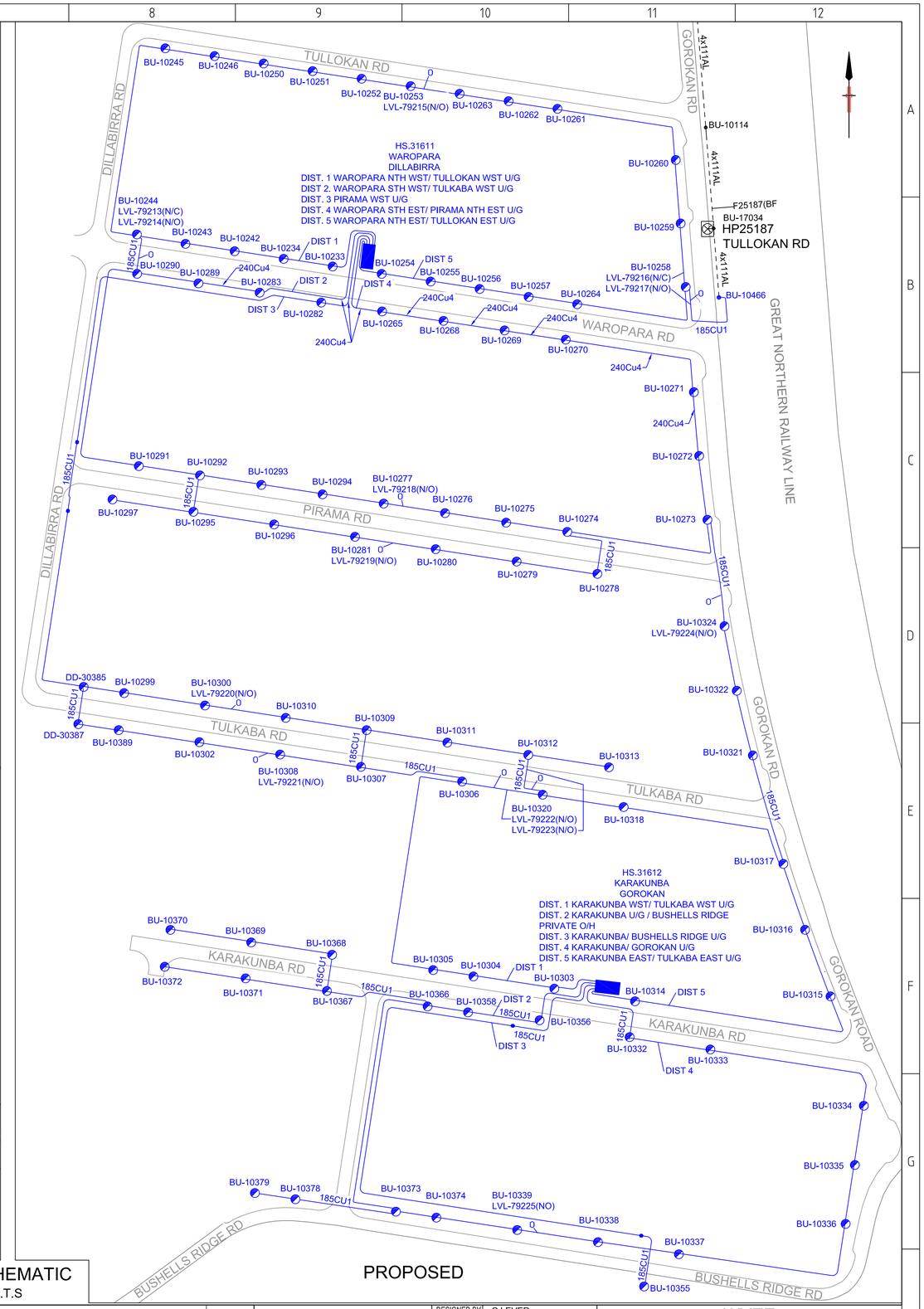
LV SCHEMATIC LEGEND

	EXISTING	PROPOSED
LV O/H CABLE		
LV U/G CABLE		
UGOH		
U/G CABLE JOINT		
TEE		
MAINS SECTION		
LINK		
OPEN POINT	O	O
LV PILLAR		
LV LINK / SWITCH PILLAR	switch_number	switch_number
KIOSK SUBSTATION		
POLE MOUNTED SUB		



EXISTING



PROPOSED

LV SCHEMATIC
N.T.S

ASSOCIATED DRAWINGS

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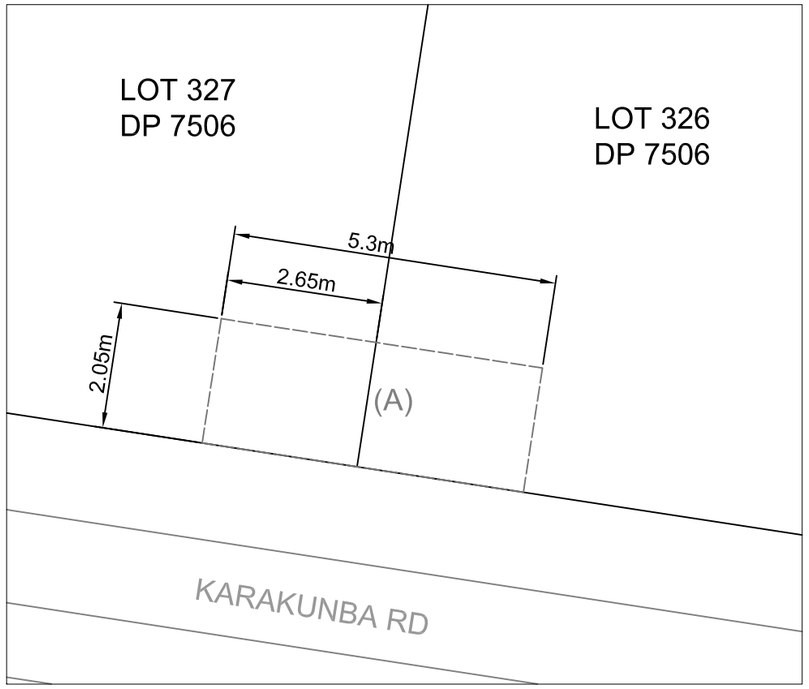
SIZE A1 | AUSGRID PROJECT No. AN-20031 | SHEETS 14 of 15 | AMD. 0

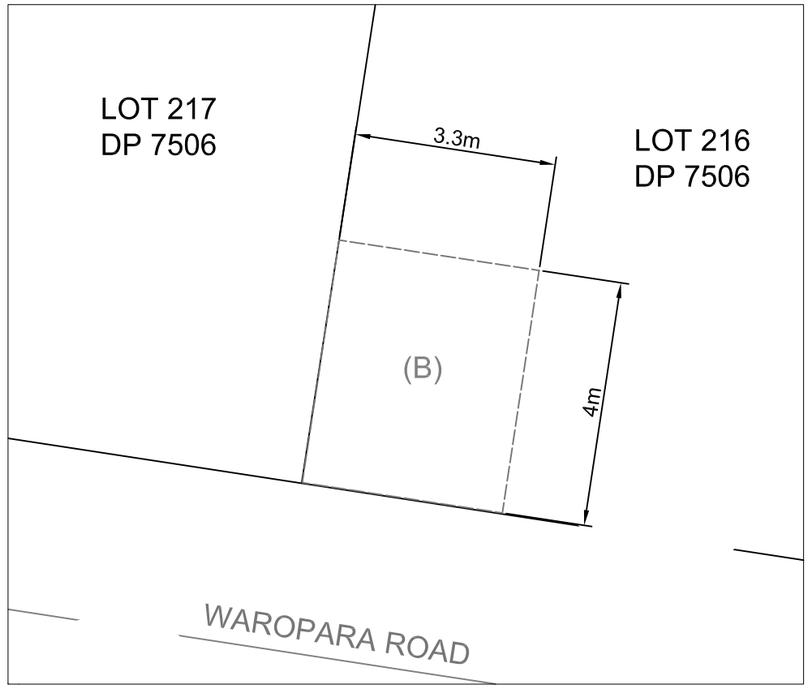
CAD DRAWING
AMENDMENTS

20160817

(A) - EASEMENT FOR ELECTRICITY AND OTHER PURPOSES
(SUBSTATION EASEMENT) - 2.05m x 5.3m

(B) - EASEMENT FOR ELECTRICITY AND OTHER PURPOSES
(SUBSTATION EASEMENT) - 3.3m x 4.0m





AUSGRID PROPERTY RIGHTS

SCALE 1 : 100

0 4 8 METRES
2 6 10

NOTE:
ALL DIMENSIONS ARE APPROXIMATE ONLY AND ARE SUBJECT TO FINAL SURVEY.

CAD DRAWING
DO NOT MANUALLY AMEND

AMENDMENTS

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SIZE A3 | AUSGRID PROJECT No. AN-20031 | SHEETS 15 of 15 | AMD. 0

20160817