

## DESIGN NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH AND MUST COMPLY WITH AUSGRID'S NETWORK STANDARDS. REFER TO BUT NOT LIMITED TO: - NS104, NS113, NS116, NS130, NS156, NS114, NS127, NS129 & NS177.
2. ALL SERVICE WORK TO BE DONE IN ACCORDANCE WITH AS3000:2007 AND THE N.S.W. SERVICE AND INSTALLATION RULES.
3. ALL TRENCHING, PITS, CABLES & CONDUITS ARE TO BE SURVEYED MARKED, & PHOTOGRAPHED (INSPECTED BY COMPLIANCE OFFICER PRIOR TO BACKFILLING)
4. CONSTRUCTOR IS TO ENSURE THAT ALL CABLES AND CONDUITS ARE INSTALLED RELATIVE TO FINAL LEVELS.
5. DO NOT PLACE ANY RELIANCE ON ANY QUANTITIES OR DIMENSIONS GIVEN IN THIS DRAWING. QUANTITIES AND DIMENSIONS GIVEN IN THIS DRAWING ARE BASED ON DESIGN INFORMATION AND SITE CONDITIONS AT THE TIME OF DESIGN. AS QUANTITIES AND DIMENSIONS ARE SUBJECT TO CHANGE, THE BUILDER OF THIS PROJECT MUST CHECK ALL QUANTITIES AND DIMENSIONS ON THE SITE PRIOR TO TENDERING AND PRIOR TO CONSTRUCTION.
6. THE PREPARATION OF THIS DESIGN, HAS BEEN UNDERTAKEN GIVING DUE CONSIDERATION TO THE EXISTING SERVICES. THE PROJECT CONSTRUCTOR IS, HOWEVER, WHOLLY RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF EXISTING SERVICES AND PERMANENT SURVEY MARKS BEFORE CONSTRUCTION COMMENCES, AND NO RESPONSIBILITY NOR LIABILITY WILL BE ACCEPTED BY THE DESIGNER OF THIS PROJECT FOR DAMAGE TO EXISTING SERVICES AS A RESULT OF THIS DESIGN.
7. HAND EXCAVATION IS TO BE USED IN THE VICINITY OF EXISTING UNDERGROUND CONSTRUCTION.
8. ALL CONDUITS ARE TO BE IN ACCORDANCE TO NS130.
9. ACCREDITED DESIGNER TO BE CONTACTED REGARDING ISSUES RAISED WITH THIS DESIGN.
10. CONSUMER MAINS LENGTH TO BE IN ACCORDANCE WITH AS3000.
11. DUCT CONFIGURATIONS SHOWN ARE A GUIDE ONLY - REFER DBYD SEARCHES AND AUSGRID UNDERGROUND MAPS FOR MORE DETAIL.
12. HV MAINS TO HAVE MIN 600mm COVER IN FOOTPATH & MIN 750mm COVER IN ROADWAY. LV MAINS TO HAVE MIN 500mm COVER IN FOOTPATH & MIN 750mm COVER IN ROADWAY.
13. TELSTRA AND OPTUS TO BE NOTIFIED OF PROPOSED WORK PRIOR TO CONSTRUCTION. CONTACTS:  
TELSTRA: f0204107@team.telstra.com (EMAIL)  
OPTUS: dartsnw@optus.com.au (EMAIL)
14. EXCAVATION NEAR TREES TO BE DONE IN ACCORDANCE WITH AS4970.

## GENERAL NOTES

- 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 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 WHEREVER 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.
- SPECIFIC PRIOR APPROVAL MUST BE SOUGHT FROM AUSGRID FOR ANY PLANNED ELECTRICITY SUPPLY INTERRUPTIONS WHERE THE PLANNED INTERRUPTION WILL EXCEED ONE (1) HOUR IN 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 TO CO-ORDINATE THE MODIFICATION AND TESTING OF ANY REQUIRED PROTECTION RELAY WITH THE AUSGRID TECHNICAL SERVICES GROUP
- THE ASP/1 IS REQUIRED TO COMPLY WITH THE CORRECT PROCEDURE(S) FOR WORKING WITH AND/OR NEAR ASBESTOS MATERIAL (REFER TO AUSGRID NUS 211 - WORKING WITH ASBESTOS PRODUCTS).
- THIS INFORMATION INCLUDES DATA FROM THE NSW DIGITAL CADASTRAL DATABASE BY LAND AND PROPERTY INFORMATION © 2016, USED UNDER CREATIVE COMMONS LICENCE VERSION 4.0.
- FOR IDENTIFICATION AND JOINTING PURPOSES, ALL CABLE ENDS SHALL BE LABELLED AT THE TERMINATION LOCATIONS AND IN JOINT BAYS DURING CABLE INSTALLATION. THE CABLES MUST BE LABELED AS PER CERTIFIED DESIGN DRAWING

## ASP LEVEL 2 WORK

1. ALL LEVEL 2 ASP WORK DEPICTED ON THIS DRAWING IS SHOWN FOR INFORMATION PURPOSES ONLY AND DOES NOT FORM PART OF THE CERTIFIED DESIGN.



**CHECK FOR OTHER SERVICES BEFORE  
BORING OR EXCAVATING**  
Tel: 1100 [www.byda.com.au](http://www.byda.com.au)

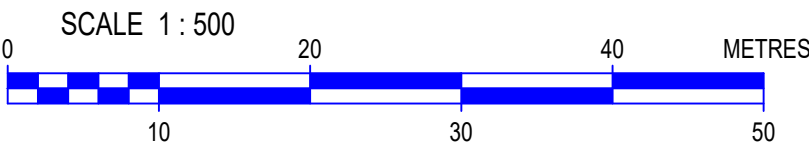
- This design cannot be used for construction purposes until the location of all existing services is verified.
- The information provided in this design must be checked on site and the most current information on the configuration of all services, including asugrid's network, must be verified immediately before construction commences by contacting dial-before-you-dig by telephone on 1100 or at [www.byda.com.au](http://www.byda.com.au).
- Dial-before-you-dig information must not be older than 20 business days at the time of construction.
- Check for other services before boring or excavating

## LOCALITY MAP

NOT TO SCALE

HVC DETAILS	
SUBSTATION NAME:	ABERDEEN BATTERY 2
SUBSTATION NUMBER:	HC.37762
ADDRESS:	981 NEW ENGLAND HWY, ABERDEEN
SUBSTATION TYPE:	KR
SIZE (kVA):	N/A
VECTOR GROUP:	N/A
TAP SETTING:	N/A
HV SWITCHGEAR:	SCHNEIDER ELECTRIC RM6 RMIC8
HV FUSE DETAILS:	N/A
LOAD CYCLE:	N/A
PHASING DETAIL:	N/A
CONFIGURE AS Dyn11:	N/A
EARTHING REQUIREMENTS:	NS116 & SITE SPECIFIC ON SHEET 5
HVC PIERING:	NS195 DRAWING NUMBER 258017
EASEMENT PLAN DETAIL:	AS PER SHEET 6

## CONSTRUCTION PLAN



ALL WORKS TO COMPLY WITH AUSGRIDS NETWORK STANDARDS, UNLESS NETWORK STANDARD VARIATION IN ACCORDANCE WITH NS181 HAS BEEN APPROVED IN WRITING BY AUSGRID. IN THE EVENT OF A DISCREPANCY BETWEEN THIS CERTIFIED DESIGN AND AUSGRID'S NETWORK STANDARDS, THE NETWORK STANDARD REQUIREMENT SHALL PREVAIL.

CAD DRAWING AMENDMENTS	<table><tr><td colspan="2">PROPOSED</td><td colspan="2">EXISTING</td><td colspan="2">PROPOSED</td><td colspan="2">EXISTING</td><td colspan="2">REMOVE</td><td colspan="2">PROPOSED</td><td colspan="2">EXISTING</td></tr><tr><td>Pole</td><td></td><td>Pole-to be removed</td><td></td><td>UGOH  Pot End</td><td> Pot End</td><td>UGOH  Sealed End</td><td> Sealed End</td><td>OH lines</td><td></td><td>Pole Sub</td><td></td><td>Ground Sub</td><td></td><td>Node Point</td><td></td><td>Open Point</td><td></td><td>Mains Section Change</td><td></td><td>LV Links</td><td></td><td>OH Mains</td><td></td><td>UG Mains</td><td></td></tr><tr><td>SL Standard</td><td></td><td>USL</td><td></td><td>Conduit</td><td></td><td>OH Lines</td><td></td><td>UG Cables</td><td></td><td>LV</td><td></td><td>SL</td><td></td><td>LV Links</td><td></td><td>OH Mains</td><td></td><td>UG Mains</td><td></td><td>LV</td><td></td><td>SL</td><td></td><td>LV</td><td></td></tr><tr><td>Pillar Standard</td><td></td><td>ABS</td><td></td><td>LV Link Pillar</td><td></td><td>Chamber Sub</td><td></td><td>Pole Sub</td><td></td><td>Two Pole Sub</td><td></td><td>Streetlight</td><td></td><td>Streetlight-PEC</td><td></td><td>Streetlight-replacement</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>										PROPOSED		EXISTING		PROPOSED		EXISTING		REMOVE		PROPOSED		EXISTING		Pole		Pole-to be removed		UGOH  Pot End	Pot End	UGOH  Sealed End	Sealed End	OH lines		Pole Sub		Ground Sub		Node Point		Open Point		Mains Section Change		LV Links		OH Mains		UG Mains		SL Standard		USL		Conduit		OH Lines		UG Cables		LV		SL		LV Links		OH Mains		UG Mains		LV		SL		LV		Pillar Standard		ABS		LV Link Pillar		Chamber Sub		Pole Sub		Two Pole Sub		Streetlight		Streetlight-PEC		Streetlight-replacement										 SYDNEY 345 George Street, Ph: (02) 9261 4180 P.O. Box 1171 SYDNEY, N.S.W. 2000 Fax: (02) 9261 4224 Australia Square, N.S.W. 1215 Email: SYDNEY@northrop.com.au ABB 81 504 420 120		DESIGNED BY AUTH NO. SUBMIT DATE LGA MAP REF. AUSGRID REF. PRJ/TRAK No.		Braj Dubey 2431 10.11.2023 MUSWELLBROOK AJ33/AJ44 XCW027935		PROPOSED 11kV HVC FOR FOR HV SUPPLY - STAGE 2 LOT 51 DP 776564 981 NEW ENGLAND HWY ABERDEEN, NSW 2336		SIZE A1		AUSGRID PROJECT No. AN-25360		SHEETS 1 of 6		AMD 0	
	PROPOSED		EXISTING		PROPOSED		EXISTING		REMOVE		PROPOSED		EXISTING																																																																																																									
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ASSOCIATED DRAWINGS										CERTIFICATION NUMBER										1166170/20231122																																																																																																		

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ASSOCIATED DRAWINGS

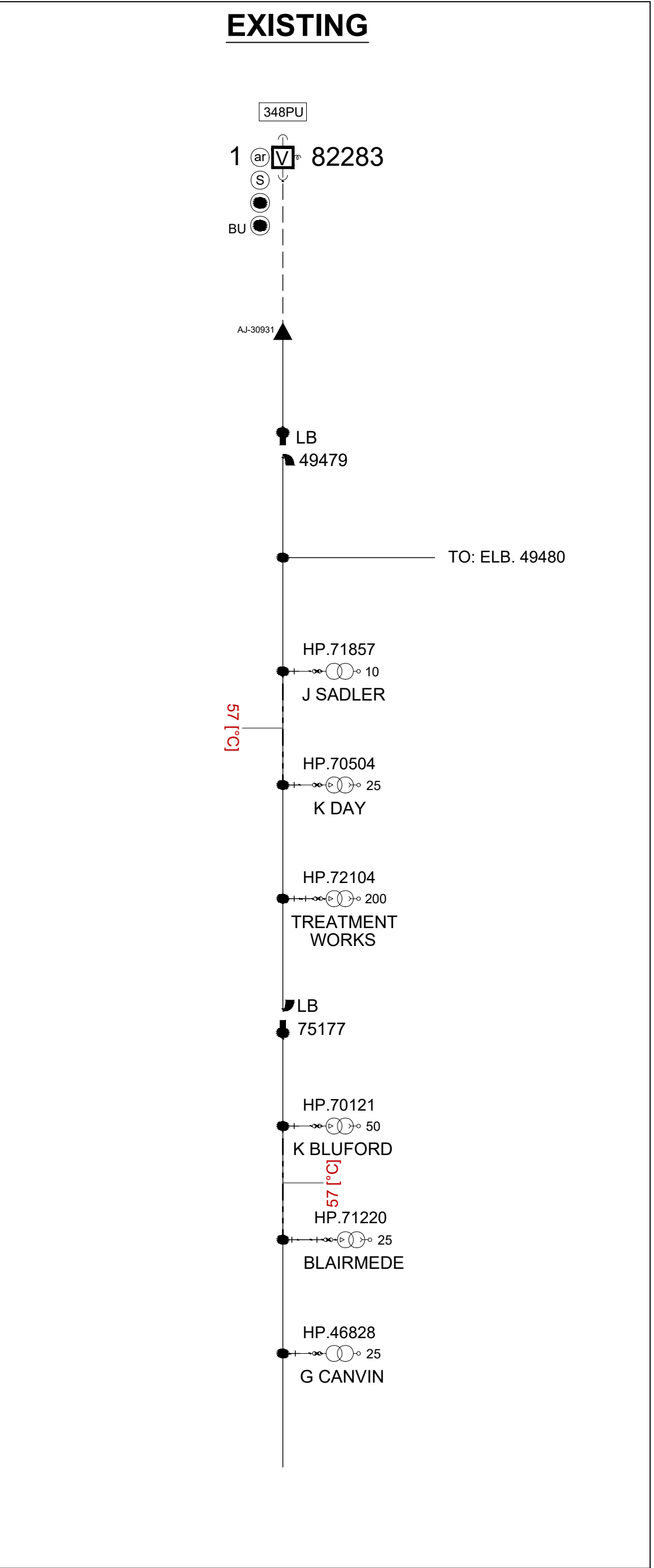
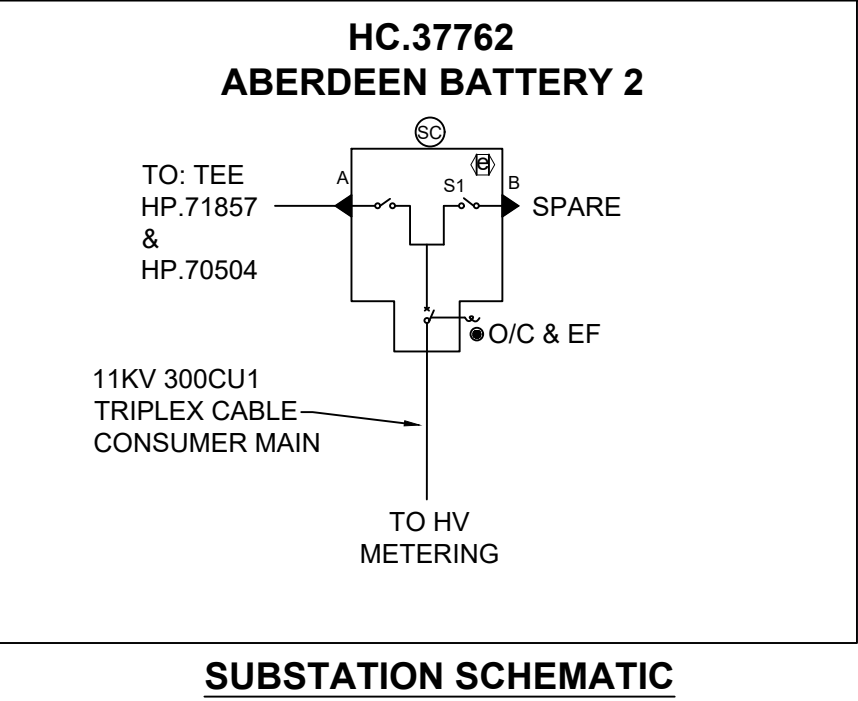
CERTIFICATION NUMBER

1166170/20231122

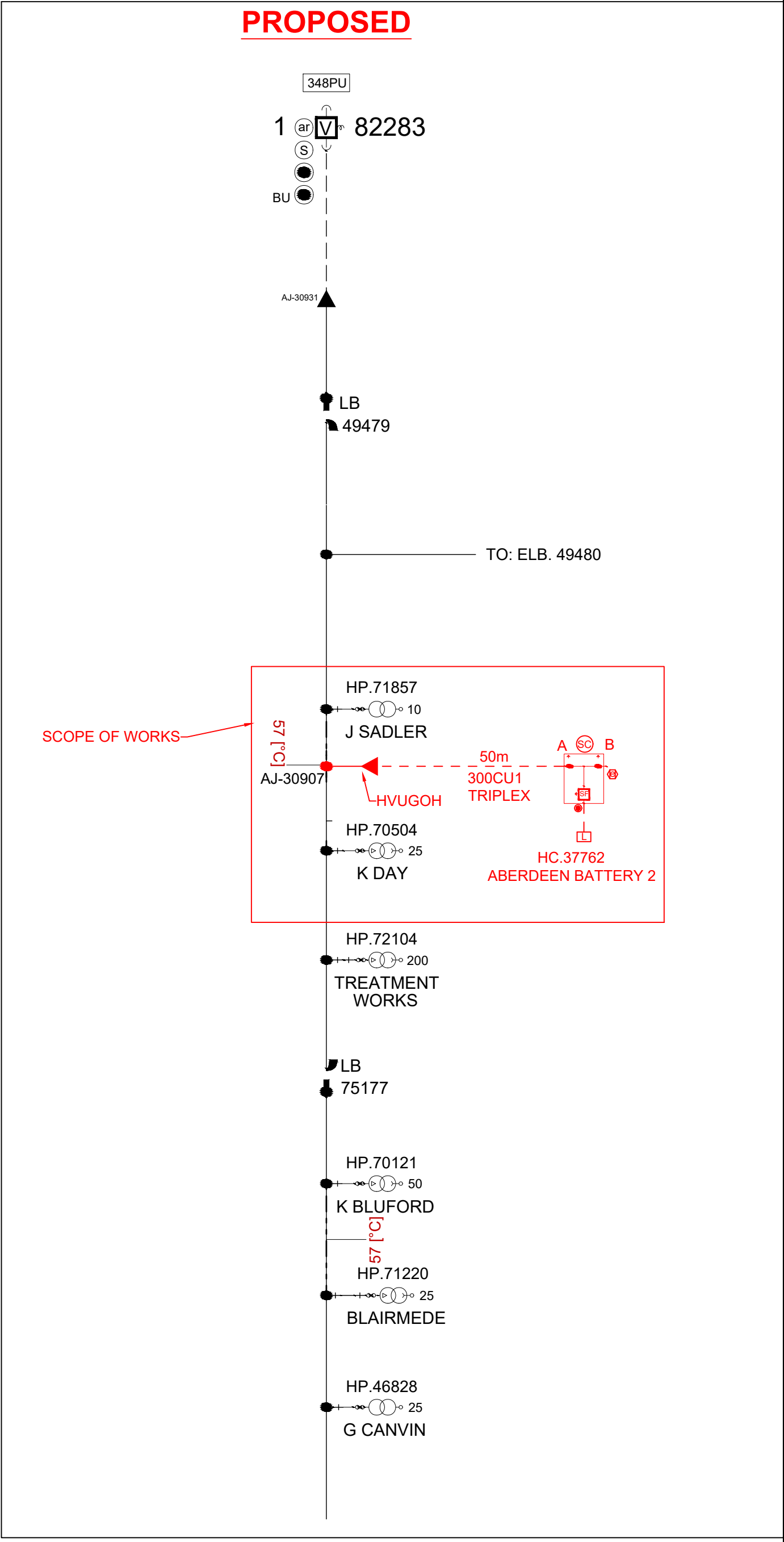


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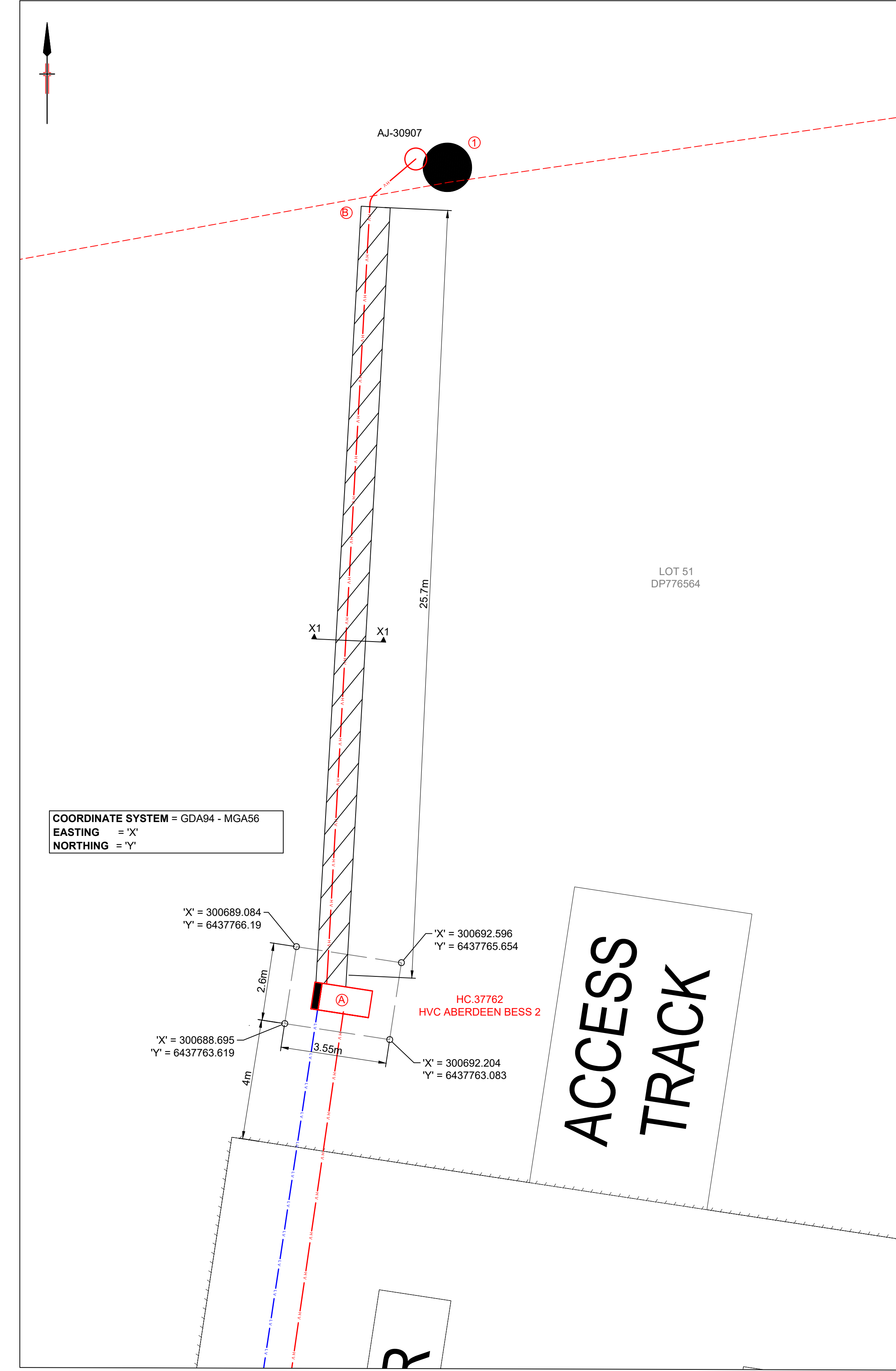
ZN.814 ABERDEEN 11KV DISTRIBUTION



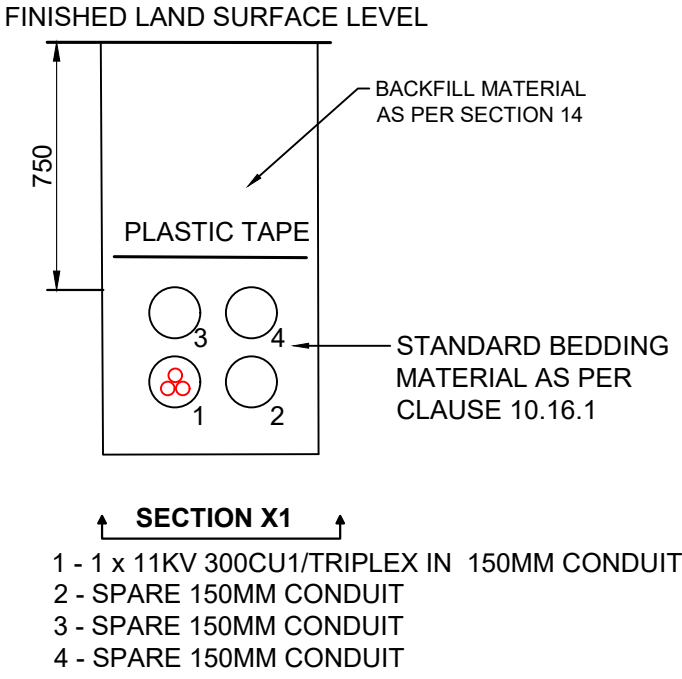
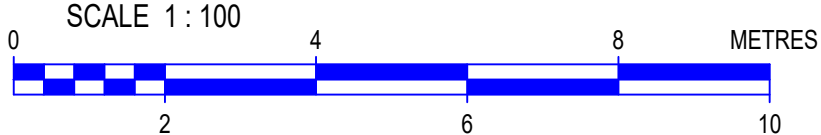
EXISTING HV NETWORK DIAGRAM



PROPOSED HV NETWORK DIAGRAM



DETAIL PLAN A



PROPOSED	EXISTING	PROPOSED	EXISTING	REMOVE	PROPOSED	EXISTING
Pole	○	Pole-to be removed	○	OH lines	○	○
SL Standard	⊗	USL	⊗	HV	—	—
Pillar Standard	⊗	ABS	⊗	LV	—	—
LV Pillar	⊗	IDT	⊗	SL	—	—
LV Link Pillar	⊗	Kiosk Sub	⊗	UG lines	—	—
Streetlight	⊗	Chamber Sub	⊗	HV	—	—
Streetlight-PEC	⊗	Pole Sub	⊗	LV	—	—
Streetlight-replacement	⊗	Two Pole Sub	⊗	SL	—	—
				Joints	—	—
				HV	—	—
				LV	—	—
				SL	—	—
				UG Mains	—	—

ASSOCIATED DRAWINGS



ASP REF. SY230159 - R05 - STAGE 2

DESIGNED BY	Braj Dubey
AUTH NO.	2431
SUBMIT DATE	10.11.2023
LGA	MUSWELLBROOK
MAP REF.	AJ33/AJ44
AUSGRID REF.	XCW027935
PRJ/TRAJ No.	

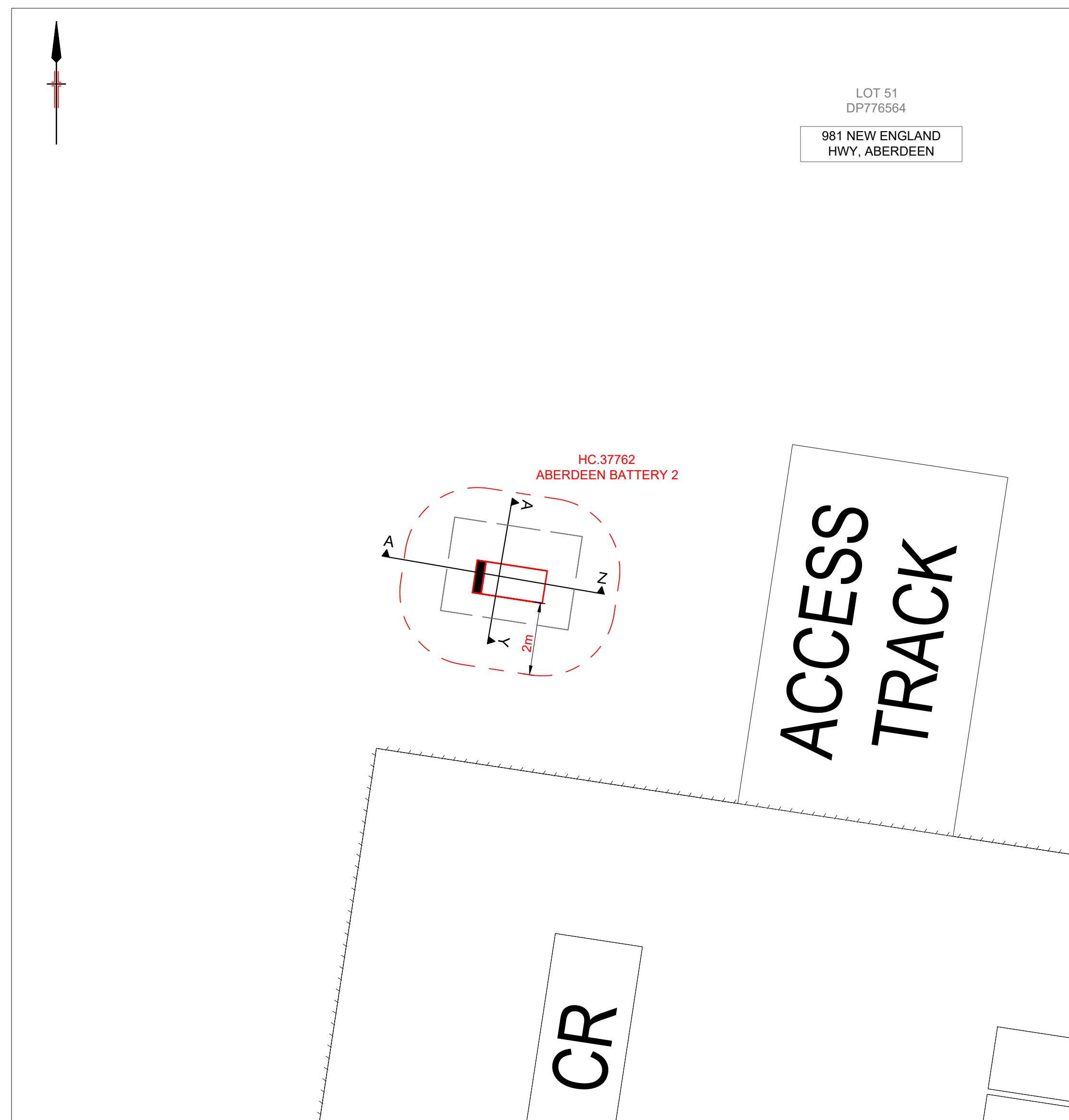
PROPOSED 11kv HVC FOR  
FOR HV SUPPLY - STAGE 2  
LOT 51 DP 776564  
981 NEW ENGLAND HWY  
ABERDEEN, NSW 2336

AUSGRID PROJECT No. AN-25360

SHEETS 2 of 6

AMD 0

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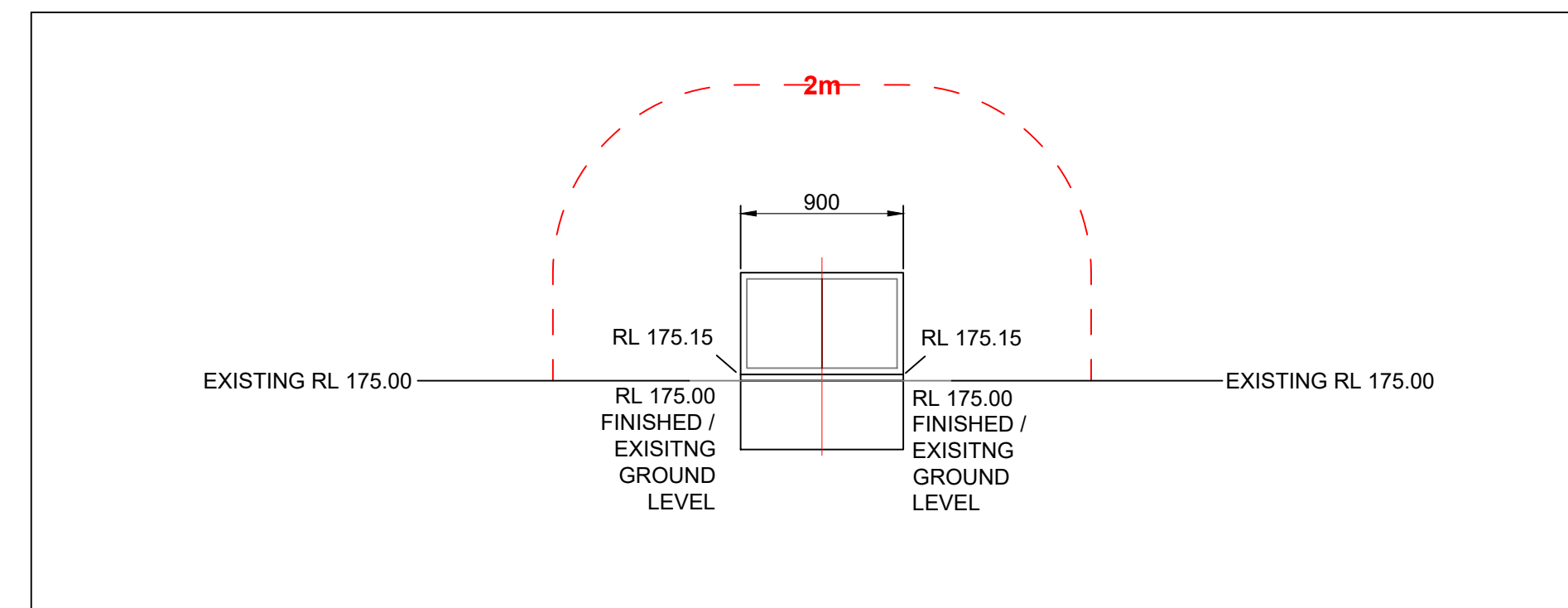
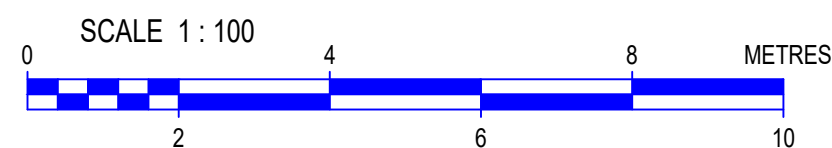
**SUBSTATION VENTILATION & RESTRICTION ZONE NOTES:**

**2m CLEARANCE:**  
- ANY PORTION OF A BUILDING WITHIN 2 METRES IN ANY DIRECTION FROM THE HOUSING OF A KIOSK  
SUBSTATION SHALL BE CONSTRUCTED FROM NON-COMBUSTIBLE MATERIALS, UNLESS IT IS SHELTERED BY A NON-IGNITABLE BLAST-RESISTING BARRIER;

- OPENABLE OR FIXED WINDOWS OR GLASS BLOCKWORK OR SIMILAR, IRRESPECTIVE OF THEIR FIRE RATING, ARE NOT PERMITTED WITHIN 2 METRES IN ANY DIRECTION FROM THE HOUSING OF A KIOSK SUBSTATION, UNLESS THEY ARE SHELTERED BY A NON-IGNITABLE BLAST RESISTING BARRIER;

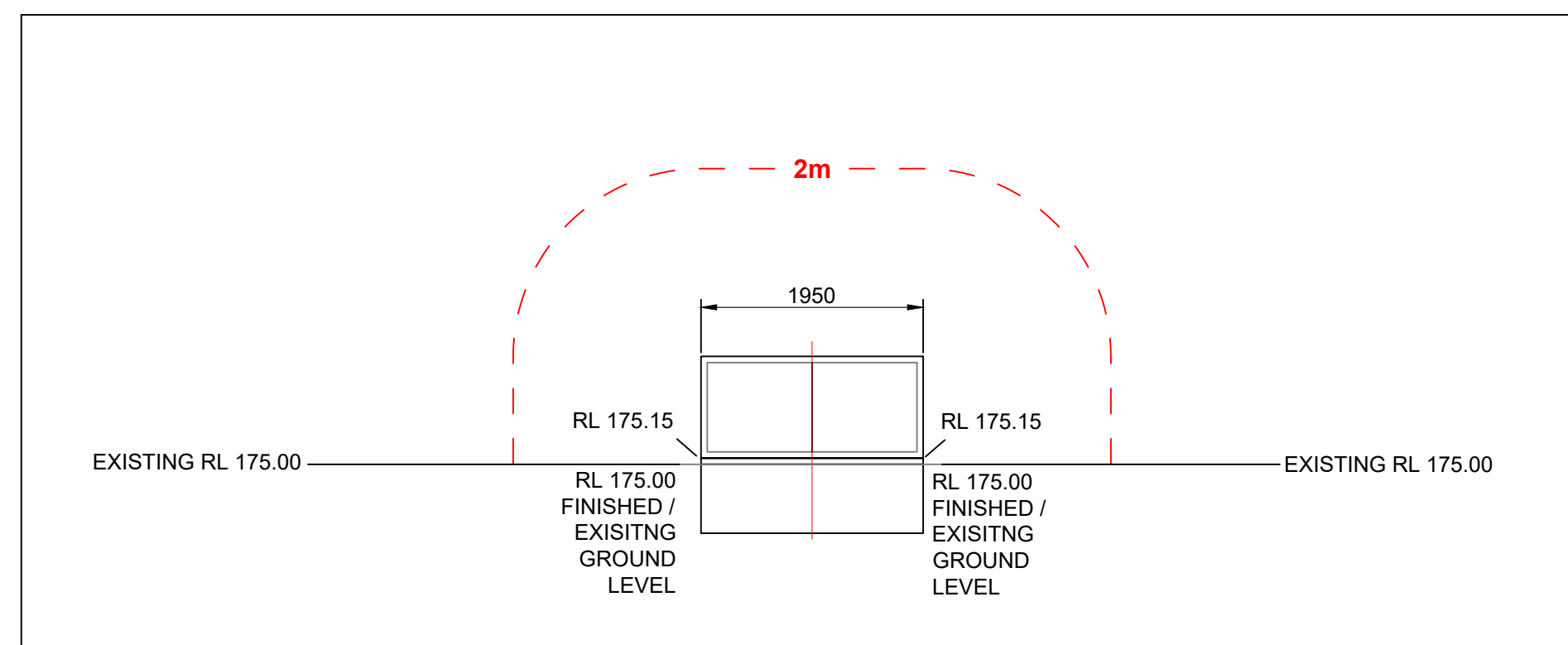
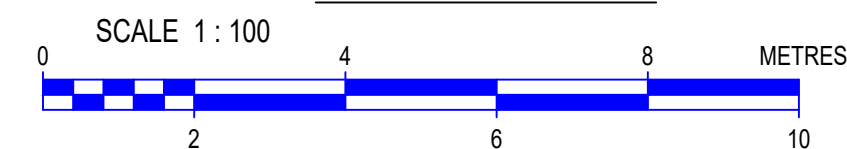
-ANY METER, REGULATOR OR EXPOSED PIPE WORK ASSOCIATED WITH THE RETICULATION OF GAS WHICH IS WITHIN 2 METRES IN ANY DIRECTION FROM THE HOUSING OF A KIOSK SUBSTATION AND WHICH DOES NOT HAVE A FIRE RESISTANCE LEVEL OF 60/60/60, SHALL BE SHELTERED BY A NON-IGNITABLE BLAST-RESISTING BARRIER

## SUBSTATION VENTILATION & RESTRICTION ZONE DIAGRAM



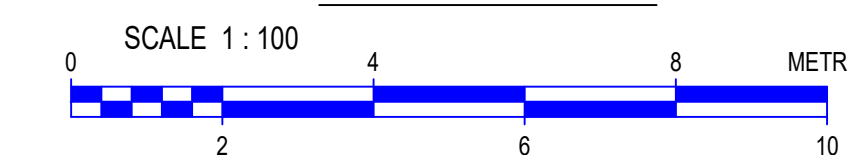
## SUBSTATION SITE PROFILE

### SECTION A-Y



## SUBSTATION SITE PROFILE

### SECTION A-Z



**NOTE**

CLIENT DOES NOT HAVE THE 1% AEP (1:100) YEAR FLOOD DATA FOR THIS SITE HOWEVER, THIS WAS WELL ABOVE ANY FLOOD LEVELS AS SITE 1 IS AT ~RL 180 AND THE RIVER 900M AWAY IS AT ~RL 160M.

[illegible]

*ASSOCIATED DRAWINGS*

 **NORTHROP**

**SYDNEY**

345 George Street, Ph (02) 9241 4168 P.O. Box H171  
SYDNEY, N.S.W. 2000 Fax (02) 9241 4324 Australia Square, N.S.W. 1  
Email [SYDNEY@northrop.com.au](mailto:SYDNEY@northrop.com.au) ABN 61 094 433 100

ASP REF.	SY230159 - R05 - STAGE 2
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DESIGNED BY	Braj Dubey
AUTH NO.	2431
SUBMIT DATE	10.11.2023
LGA	MUSWELLBROOK
MAP REF.	
AUSGRID REF.	AJ33/AJ44
PRJTRAK No.	XCW027935

PROPOSED 11kV HVC FOR  
FOR HV SUPPLY - STAGE 2  
LOT 51 DP 776564  
981 NEW ENGLAND HWY  
ABERDEEN, NSW 2336

1	AUSGRID PROJECT No. <b>AN-25360</b>
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SHEETS	AMD.
3 of 6	0

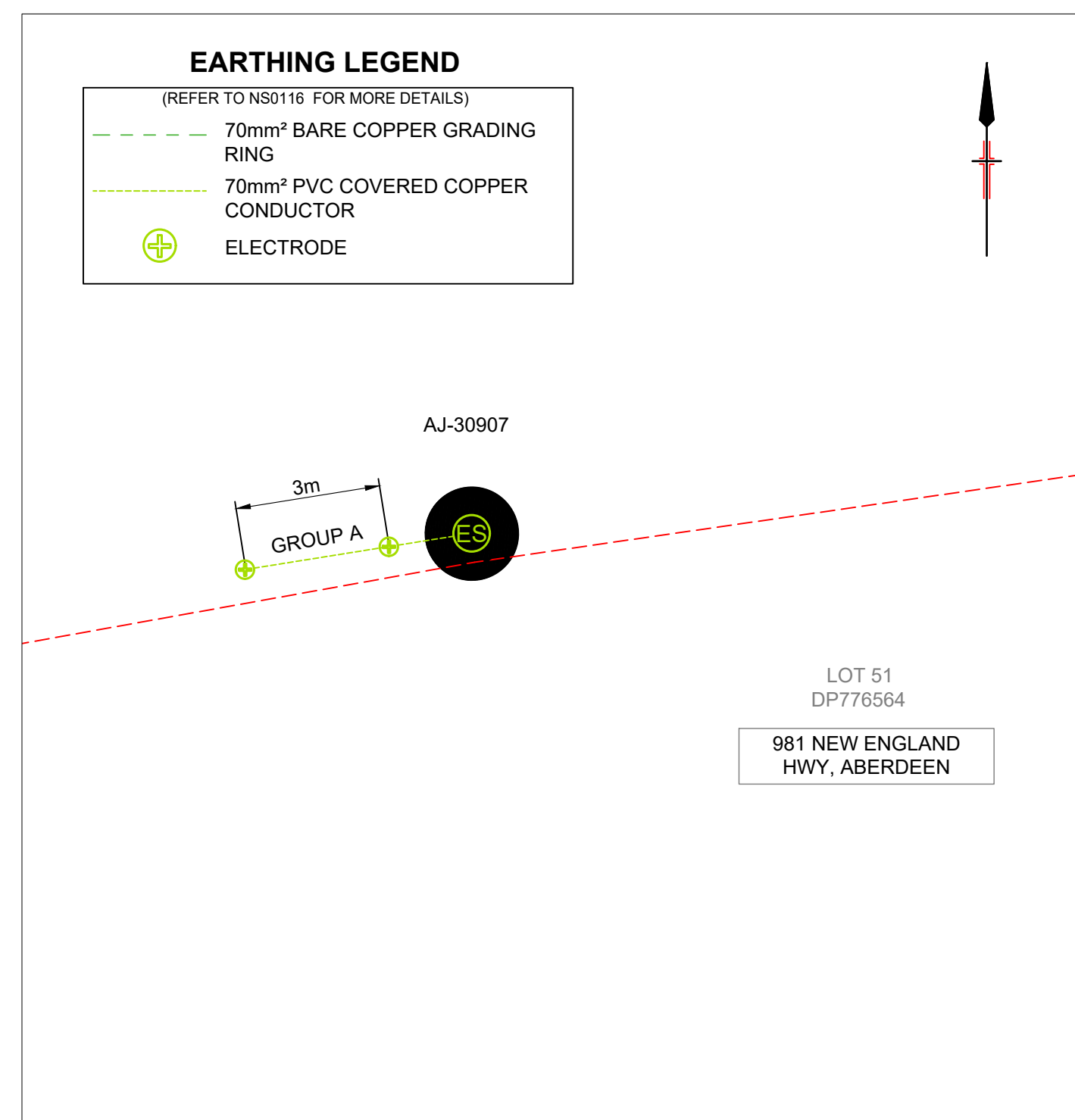
UNDERGROUND CONSTRUCTION WORKS SCHEDULE (DUCT PULL 1.1 SOFTWARE USED)									
REF. IDENTIFIER	ROUTE DISTANCE (m)	CIRCUIT VOLTAGE	CONDUCTOR OR ASSET DETAIL	CONDUCTOR CODE / STOCK CODE	MIN. INTERNAL BENDING RADIUS (mm) DURING INSTALLATION	MIN. INTERNAL BENDING RADIUS (mm) AFTER INSTALLATION	CALCULATED MAX. PULLING TENSION (kN) DURING INSTALLATION	CONSTRUCTION DETAIL	
HVC & TERMINATION									
A	N/A	11KV	1xKR TYPE KIOSK HVC	S/C-186402	N/A	N/A	N/A	<p>INSTALL KR TYPE KIOSK HVC AS PER DRAWING NUMBER 258017. EARTHING AS 116. PIERING AS PER NS117&amp;NS141.</p> <p><b>NOTE:</b> HV METERING EQUIPMENT SHALL BE PROVIDED IN ACCORDANCE WITH THE REGULATIONS AND AUSGRID'S ELECTRICAL STANDARD ES 3 - METERING INSTALLATIONS. THE CUSTOMER'S HV METERING EQUIPMENT (VTS AND CTS) SHALL BE PART OF THE CUSTOMER'S INSTALLATION AND SHALL BE SUPPLIED AND MAINTAINED BY THE CUSTOMER. METERING EQUIPMENT SHALL NOT BE LOCATED WITHIN ANY PART OF AUSGRID'S HVC. THE TYPE OF CONSUMER'S MAINS AND ASSOCIATED CABLE ACCESSORIES SHALL BE COMPATIBLE WITH, AND SUITABLE FOR CONNECTION TO, AUSGRID'S HVC EQUIPMENT, INCLUDING PROTECTION CTS, ETC.</p> <p><b>NOTE: AUXILIARY LOW VOLTAGE SUPPLY:</b> A NOMINAL 240VAC 20A SINGLE PHASE CIRCUIT SHALL BE PROVIDED FROM THE CUSTOMER'S MAIN LOW VOLTAGE SWITCHBOARD. THIS IS REQUIRED TO PROVIDE SUPPLY FOR PROTECTION BATTERY CHARGING, LIGHTING AND POWER WITHIN THE HVC SUBSTATION. THE SUB-CIRCUIT ORIGINATING FROM THE CUSTOMERS MAIN SWITCHBOARD MUST BE DEDICATED FOR AUSGRID'S EXCLUSIVE USE ONLY AND SHALL NOT HAVE ANY RESIDUAL CURRENT DETECTION (RCD) OR ELCB DEVICE. THIS IS TO AVOID SPURIOUS TRIPPING. THE CIRCUIT SHALL TERMINATE IN THE HVC SUBSTATION SERVICE BOARD AS SHOWN ON AUSGRID DRAWING 169394. THE CIRCUIT MAINS SHALL BE DOUBLE INSULATED AND CONSIST OF ACTIVE AND NEUTRAL CONDUCTORS ONLY. NO EARTHING CONDUCTOR IS TO BE INCLUDED IN THE CIRCUIT MAINS. THE NEUTRAL IS TO BE TERMINATED ON THE NEUTRAL INSULATED BUSBAR IN A KIOSK SITUATION.</p> <p><b>NOTE:</b> ORDER LARGER RMU TO SUIT CONNECTION. STANDARD RMU HAS 200A RATED T OFF TO MSB.</p>	
A	N/A	11KV	1xHV TERMINATION (HV1-52)	N/A	N/A	N/A	N/A	TERMINATE 1x300CU1 TRIPLEX CABLE	
CONDUIT									
A - B	30	N/A	INSTALL 4x150mm (3 SPARE) PVC CONDUIT	N/A	N/A	N/A	N/A	INSTALL CONDUIT AS PER ASSOCIATED TRENCH CROSS SECTION	
TRENCH									
A - B	30	N/A	PROPOSED TRENCH	N/A	N/A	N/A	N/A	EXCAVATE AS PER TRENCH CROSS SECTION	
CABLES									
A1 - A	50	11KV	1x300 CU1 TRXQ 70 CU(WS) Z YQ/Triplex	179122	1275(Bundled) 960 (Phase)	850 (Bundled) 575 (Phase)	1.58kn	RUN UNDERGROUND CABLE IN CONDUIT AS PER ASSOCIATED TRENCH CROSS SECTIONS	

OVERHEAD CONSTRUCTION WORKS SCHEDULE																	
REF. IDENTIFIER	POLE NUMBER	SIZE (m)	STRENGTH (kN)	POLE TYPE TIMBER/CONC	DEPTH (m)	FOOTING DETAILS	HV CONSTRUCTION		LV CONSTRUCTION		STAY DETAILS				No. of VIBRATION DAMPERS	No. of ARMOUR RODS	ADDITIONAL CONSTRUCTION DETAIL
							CONST TYPE	ATTACHED (m) FROM HEAD OF POLE	CONST TYPE	ATTACHED (m) FROM HEAD OF POLE	STAY TYPE	STAY SIZE	ATTACHED (m) FROM HEAD OF POLE	STAY BEARING (Deg)			
1	AJ-30907	EX	EX	EX	EX	EX	2-11 11KV UGOH									INSTALL NEW 11KV UGOH AS PER DRAWING NUMBER 160354. EARTHING AS PER AUSGRID EARTHING DESIGN. CONSTRUCTION THROUGH TERMINATION CONSTRUCTION. RE-STRING 11KV BARE CABLE AS PER ASSOCIATED STRINIGN TABLE.	

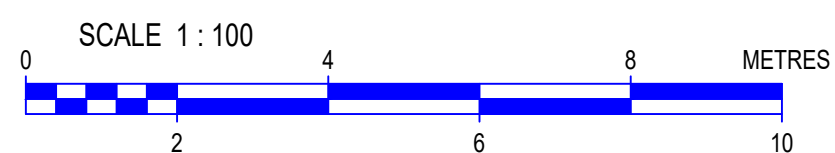
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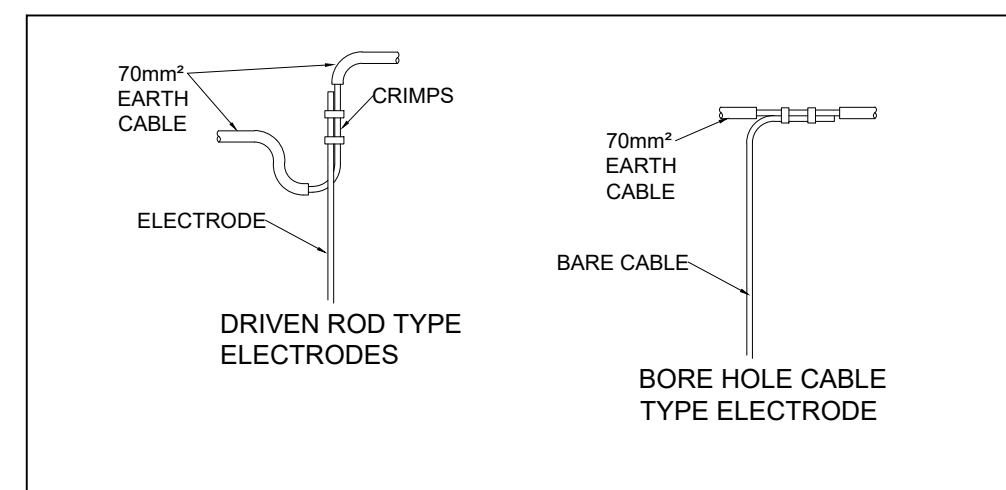
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## POLE EARTHING ON AJ-30907

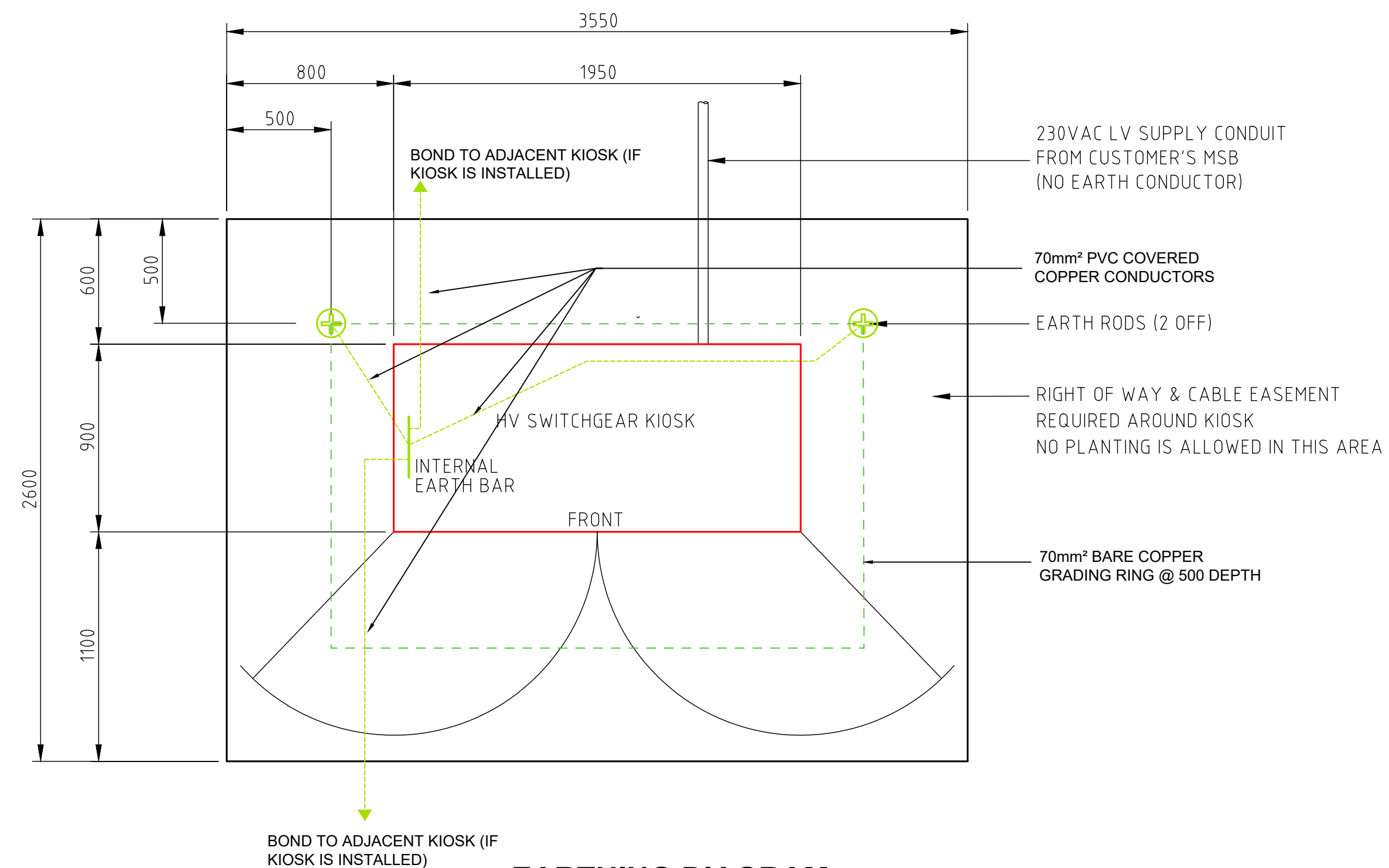


<b>GENERAL</b>		
EARTHING CONFIGURATION :		HV ONLY
DESIGN CURVE :		ENA - TDMEN 50Qm/ TDB 5Qm
ELECTRODES INSTALLATION :		DRIVEN
	<b>DESIGN</b>	<b>AS BUILT</b>
<b>HV ELECTRODES</b>		
NUMBER OF ELECTRODES :	2	
DEPTH OF EACH ELECTRODE :	5.4	m
SPACING BETWEEN ELECTRODES :	3	m
MAX RESISTANCE - NORMAL :	1.01	ohms
MAX RESISTANCE - DROUGHT :	1.60	ohms
MEASURED :		ohms
<b>MINIMUM SEPARATION DISTANCES *</b>		
MINIMUM SEPARATION FROM TELCO ASSETS :	4.3	m
MINIMUM SEPARATION FROM LONG METALLIC ASSETS WITH HIGH LIKELIHOOD OF CONTACT:	1.200	m
AND/OR MEN ELECTRODES :	6.0	m
<b>REFERENCE DRAWINGS FOR THIS INSTALLATION</b>		
160354		



## **ELECTRODE CONNECTIONS**

**NOT TO SCALE**




## EARTHING DIAGRAM FOR PROPOSED HVC KIOSK HC.37762

<b>GENERAL</b>		
EARTHING CONFIGURATION :	HV ONLY	
DESIGN CURVE :	ENA - TDMEN 50Ωm/ TDB 5Ωm	
ELECTRODES INSTALLATION :	DRIVEN	
	<b>DESIGN</b>	<b>AS BUILT</b>
<b>HV ELECTRODES</b>		
NUMBER OF ELECTRODES :	2	
DEPTH OF EACH ELECTRODE :	5.4	m
SPACING BETWEEN ELECTRODES :	2.5	m
MAX RESISTANCE - NORMAL :	1.03	ohms
MAX RESISTANCE - DROUGHT :	1.63	ohms
MEASURED :		ohms
<b>MINIMUM SEPARATION DISTANCES *</b>		
MINIMUM SEPARATION FROM TELCO ASSETS :	4.1	m
MINIMUM SEPARATION FROM LONG METALLIC ASSETS WITH HIGH LIKELIHOOD OF CONTACT:	1.200	m
AND/OR MEN ELECTRODES :	6.0	m
<b>REFERENCE DRAWINGS FOR THIS INSTALLATION</b>		
258017		

## EARTHING LEGEND

(REFER TO NS0116 FOR MORE DETAILS)

	70mm <sup>2</sup> BARE COPPER GRADING RING
	70mm <sup>2</sup> PVC COVERED COPPER CONDUCTOR
	ELECTRODE

## EARTHING NOTES

EARTHING IS TO BE INSTALLED AFTER THE SITE IS CLEARED

EARTHING DETAILS FOR KIOSK SUBSTATION  
IS INDICATIVE ONLY AS EACH KIOSK SITE  
REQUIRES A

SPECIFIC EARTHING DESIGN TO BE UNDERTAKEN AS INDICATED IN NETWORK STANDARD NS116

PROPOSED		EXISTING		PROPOSED		EXISTING		PROPOSED		EXISTING		REMOVE		PROPOSED		EXISTING	
Pole			Pole-to-be removed		UGOH		Pot End		UGOH		Pot End		OH Lines		Pole Sub		
SL Standard			USL		Joint		Sealed End		Joint		Sealed End		HV		Ground Sub		
Pillar Standard			ABS		Conduit				OH Lines		UG Cables		LV		Node Point		
LV Pillar			IDT		OH Lines		UG Cables		OH Lines		UG Cables		LV		Open Point		
LV Link Pillar			Kiosk Sub		-HV-		-HV-						HV		Main Section Change		
Streetlight			Chamber Sub		-LV-		-LV-						LV		LV Links		
Streetlight-PEC			Pole Sub		-SL-		-SL-						LV		OH Mains		
Streetlight-replacement			Two Pole Sub		-SV-		-SV-						HV		UG Mains		

*ASSOCIATED DRAWINGS*

 **NORTHROP**

**SYDNEY**

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ASP REF.	SY230159 - R05 - STAGE 2
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DESIGNED BY	Braj Dubey
AUTH NO.	2431
SUBMIT DATE	10.11.2023
LGA	MUSWELLBROOK
MAP REF.	
AUSGRID REF.	AJ33/AJ44
PRJTRAK No.	XCW027935

PROPOSED 11kV HVC FOR  
FOR HV SUPPLY - STAGE 2  
LOT 51 DP 776564  
981 NEW ENGLAND HWY  
ABERDEEN, NSW 2336

2	SIZE <b>A1</b>	AUSGRID PROJECT No. <b>AN-25360</b>	SHEETS <b>5 of 6</b>	AMD. <b>0</b>
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