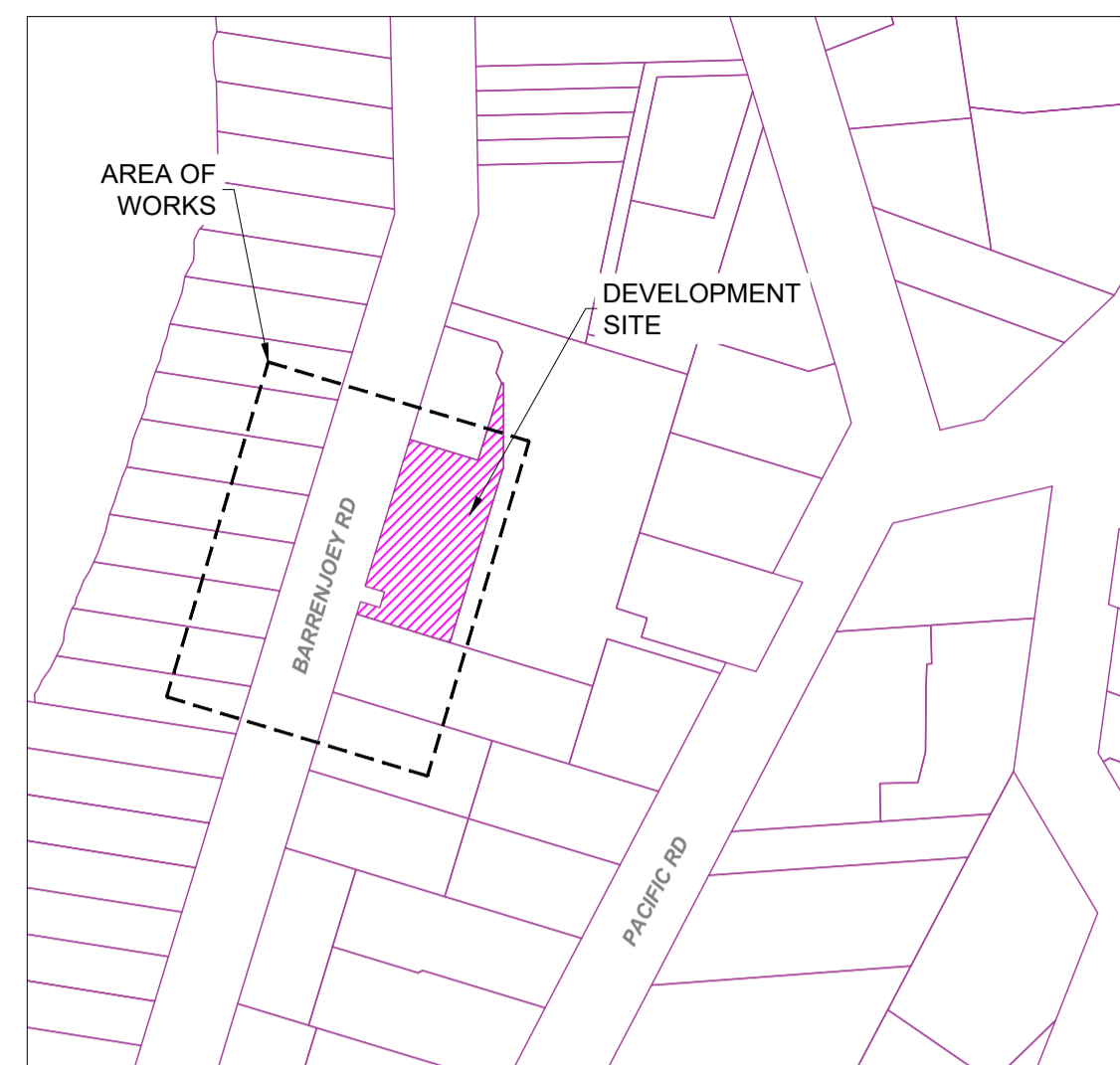
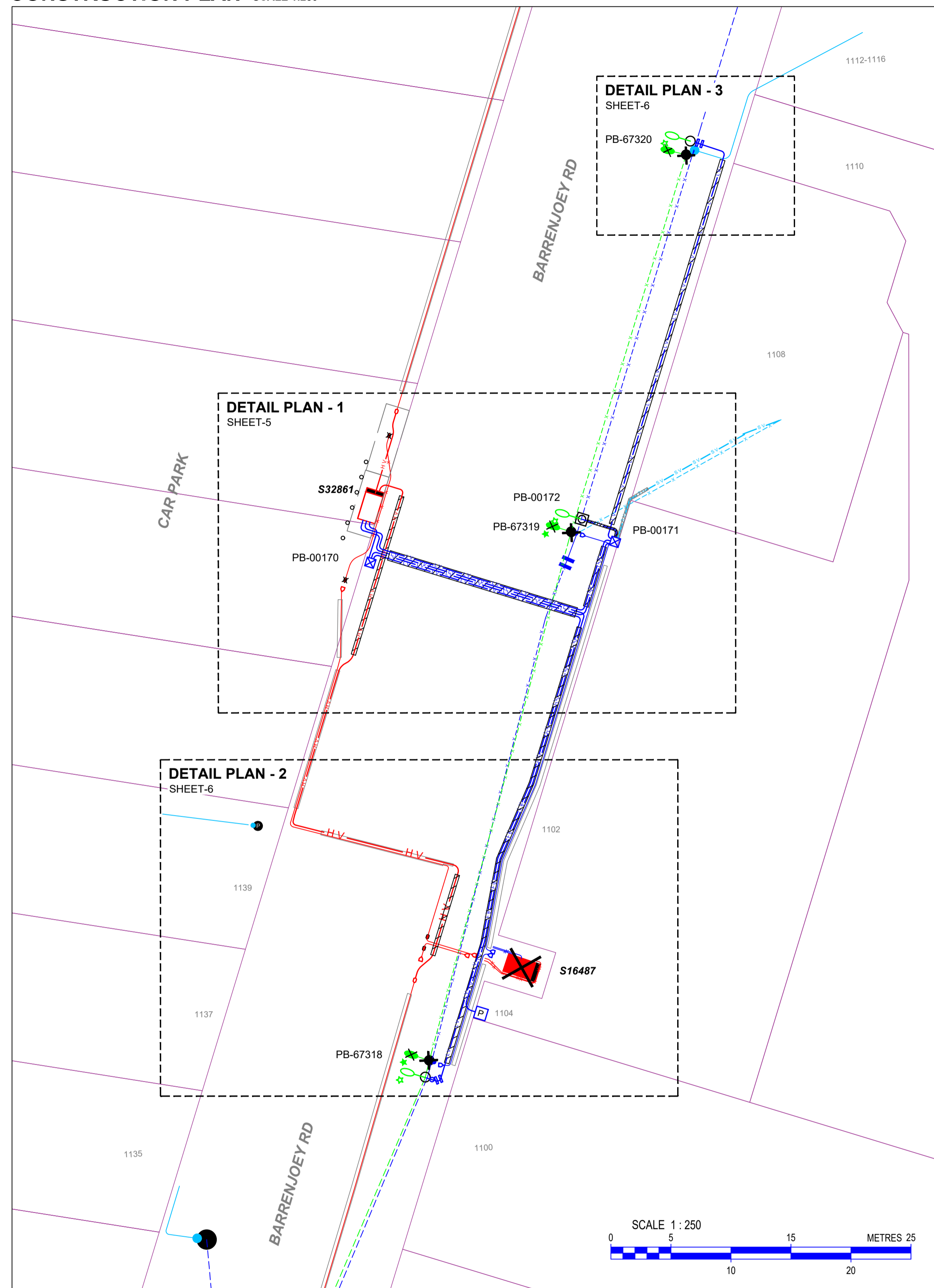


**LOCALITY PLAN** NOT TO SCALE



**CONSTRUCTION PLAN** SCALE 1:250



DESIGN SHEET SCHEDULE			
SHEET	CONTENT	SIZE	DRAWING No.
1	LOCALITY PLAN CONSTRUCTION PLAN PROJECT SUMMARY GENERAL NOTES	A1	DEP-EL-DWG-1000
2	HV NETWORK SCHEMATICS	A1	DEP-EL-DWG-1100
3	LV NETWORK SCHEMATICS	A1	DEP-EL-DWG-1110
4	SL NETWORK SCHEMATICS	A1	DEP-EL-DWG-1120
5	DETAIL PLANS AND SECTIONS	A1	DEP-EL-DWG-1200
6	DETAIL PLANS AND SECTIONS	A1	DEP-EL-DWG-1201
7	EARTHING DETAILS	A1	DEP-EL-DWG-1300
8	CONSTRUCTION SCHEDULE	A1	DEP-EL-DWG-1400
9	CONSTRUCTION SCHEDULE	A1	DEP-EL-DWG-1401
10	OVERHEAD SCHEDULES LINE DESIGN	A1	DEP-EL-DWG-1402
11	SEGREGATION PLANS	A1	DEP-EL-DWG-1500
12	TENURE PLAN	A1	DEP-EL-DWG-1600



- 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.
- Check for other services before boring or excavating

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

**PROJECT SUMMARY**

**PROPOSED SCOPE**

- ESTABLISH 1 x 600kVA KIOSK SUBSTATION ON SITE
- DECOMMISSION S.16487
- UNDERGROUND LV OVERHEAD MAINS

**HV NETWORK RELOCATION WORKS (STAGE 1 - INTERIM)**

- EXCAVATE GRASS VERGE ALONG BARRENJOEY RD
- LAY CABLES BETWEEN JOINT BAYS
- MAKE ANY ASSOCIATED HV JOINTS TO RELOCATE THE HV NETWORK
- REMOVE HV CABLE PASSING THROUGH NEW EASEMENT LOCATION

**HV NETWORK CONNECTION WORKS**

- EXCAVATE KIOSK EASEMENT IN GRASS VERGE ALONG BARRENJOEY RD
- EXCAVATE BARRENJOEY RD FOOTWAY AND ROADWAY FOR CABLE AND CONDUIT INSTALLATION
- LAY CABLES BETWEEN SUBSTATION AND ADJACENT JOINT BAYS
- MAKE ANY ASSOCIATED HV JOINTS AND TERMS TO CONNECT TO HV NETWORK

**LV NETWORK CONNECTION WORKS**

A LV INTERCONNECT TO BE ESTABLISHED BETWEEN SUBSTATION AND EXISTING UNDERGROUND LV NETWORK DISTRIBUTORS IN BARRENJOEY RD

**LV NETWORK UNDERGROUNDING WORKS**

THE EXISTING OVERHEAD LV BARE MAINS ARE TO BE UNDERGROUNDED BETWEEN POLE PB-67318 TO PB-67320

- EXCAVATE BARRENJOEY RD FOOTWAY FOR CABLE AND CONDUIT INSTALLATION
- EXCAVATE BARRENJOEY RD ROADWAY FOR CABLE AND CONDUIT INSTALLATION
- INSTALL 2 x NEW NETWORK POLES
- INSTALL UGOHS, NETWORK PILLARS AND MAKE ANY ASSOCIATED LV JOINTS AND TERMS TO CONNECT TO LV NETWORK

**LV SUPPLY TO SITE**

- SUBSTATION WILL PROVIDE CONNECTION POINT FOR THE LV CONSUMER MAINS 1 x 400A LV CABLE SUPPLY

**SL NETWORK CONNECTION WORKS**

- INSTALL 1 x NEW STEEL STANDARD COLUMN AND LUMINAIRE
- INSTALL 2 x NEW LUMINAIRES AND BRACKETS ON NEW NETWORK POLES

**DECOMMISSION WORKS**

- DECOMMISSION AND REMOVE EXISTING SUBSTATION S.16487
- RECOVER/ABANDON REDUNDANT HV/LV CABLING
- REMOVE 2 x REDUNDANT NETWORK POLES

**NOTES**

- THE PROPOSED CONNECTION WORKS ARE TO BE CARRIED OUT BY A LEVEL-1 ACCREDITED SERVICE PROVIDER (ASP/1) IN ACCORDANCE WITH AUSGRID'S NETWORK STANDARDS.
- A REGISTERED SURVEYOR IS RESPONSIBLE FOR PREPARING THE RED LINE SURVEY. WHERE AN LEASE/EASEMENT IS REQUIRED BY AUSGRID, THE CUSTOMER MUST PROVIDE A COPY OF THE SURVEY PLAN SHOWING IN RED INK THE CENTRE LINE OF THE ELECTRICITY CABLES (OR CABLE DUCTS) AS INSTALLED WITH OFFSETS TO THE EASEMENT OR OTHER BOUNDARIES AND THE LOCATION OF ANY SUBSTATION. FOR UNDERGROUND CONSTRUCTION THIS IS BEST ACHIEVED BY PREPARING THE PLAN AFTER EXCAVATION AND BEFORE BACKFILLING. THE REGISTERED SURVEYOR MUST SIGN ONE COPY AND PROVIDE A HARD COPY TOGETHER WITH AN ACCOMPANYING STATEMENT TO CERTIFY THAT THE INFORMATION SHOWN IN RED INK HAS BEEN ACCURATELY LOCATED TO THEIR SATISFACTION.
- ELECTRICAL INSTALLATION IS TO COMPLY WITH THE REQUIREMENTS OF THE NSW SERVICE AND INSTALLATION RULES, AS/NZS:3000 WIRING RULES. PARTICULAR ATTENTION IS TO BE PAID TO THE REQUIREMENT FOR GRADING OF THE SUBSTATION LV FUSES AND THE SERVICE PROTECTIVE DEVICE (SPD) ON THE INSTALLATION MAIN SWITCHBOARD.
- WHERE A NEW CONTESTABLE CUSTOMER SUBSTATION IS UNDER CONSTRUCTION (UNDER AN EQUIPPING PERMIT), THE ASP1 CONSTRUCTING THE SUBSTATION MUST PULL IN AND INSTALL THE CONSUMERS MAINS WITHIN THE SUBSTATION AND CONNECT THEM TO THE LOW VOLTAGE BOARD ON BEHALF OF THE ELECTRICAL CONTRACTOR BEFORE THE SUBSTATION IS COMMISSIONED. THE ELECTRICAL CONTRACTOR MUST CO-ORDINATE DIRECTLY WITH THE ASP/1 TO ARRANGE COMPLETION OF THIS WORK.
- CLAIMS FOR VARIATIONS TO THE COST OF NON-CONTESTABLE WORKS (AUSGRID FUNDED), INCLUDING ROCK EXCAVATION, WILL NOT BE ACCEPTED UNLESS VERIFIED ON SITE BY AUSGRID WHILE WORKS ARE IN PROGRESS.
- THE ASP/1 IS RESPONSIBLE FOR UNDERTAKING SATISFACTORY CONSULTATION WITH ALL LOCAL CUSTOMERS WHO MAY BE POTENTIALLY 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).
- INFORMATION ON EXISTING CABLES IS PROVIDED FROM RECORDS THAT MAY BE INCORRECT. TO ALLOW FOR THIS, THE ASP1 IS RESPONSIBLE FOR ENSURING THAT ADEQUATE VARIETIES OF JOINT KITS ARE STOCKED.
- 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 LABELLED AS PER CERTIFIED DESIGN DRAWING.
- THIS INFORMATION INCLUDES DATA FROM THE NSW DIGITAL CADASTRAL DATABASE BY LAND AND PROPERTY INFORMATION © 2016, USED UNDER CREATIVE COMMONS LICENCE VERSION 4.0.
- ALL REINSTATEMENT IS TO BE IN ACCORDANCE WITH COUNCIL REQUIREMENTS AND NS-130.
- BACK FILL TO BE INSTALLED IN ACCORDANCE WITH NS-130.
- THE ASP/1 IS TO COMPLY WITH THE CORRECT PROCEDURE(S) FOR WORKING WITH AND/OR NEAR ASBESTOS MATERIAL (REFER TO AUSGRID NS 211 - WORKING WITH ASBESTOS PRODUCTS). THERE ARE NO KNOWN ASBESTOS MATERIAL ASSOCIATED WITH THE EXISTING AUSGRID ASSETS TO BE WORKED ON.
- ALL LEVEL 2 ASP WORK (ASP/2) DEPICTED ON THIS DRAWING IS SHOWN FOR INFORMATION PURPOSES ONLY AND DOES NOT FORM PART OF THE CERTIFIED DESIGN.
- ALL WORKS TO COMPLY WITH AUSGRID 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 REQUIREMENTS SHALL PREVAIL.
- MATERIAL CONTAINING PCB CONTAMINATED OIL MAY BE PRESENT IN THE AUSGRID OIL FILLED ASSETS. THE HANDLING AND TRANSPORTATION OF OIL FILLED EQUIPMENT TO AN AUSGRID DEPOT IS IDENTIFIED IN THE SER. EQUIPMENT MANUFACTURED PRIOR TO 1997 (OR WHERE THE DATE IS UNCERTAIN) REQUIRING DISPOSAL OR RETURN TO AUSGRID MUST BE TESTED FOR THE PRESENCE OF PCB'S PRIOR TO TRANSPORTING. THE ASP/1 MUST THEREFORE CHECK FOR THE PRESENCE OF PCB CONTAMINATED OIL BY ARRANGING THE TESTING OF ALL OIL FILLED EQUIPMENT. THE PCB LEVEL CAN BE OBTAINED EITHER FROM THE PCB REGISTER OR VIA AN OIL TEST UNDERTAKEN AT A SUITABLE NATIONAL ASSOCIATION OF TESTING AUTHORITIES, AUSTRALIA (NATA) ACCREDITED LABORATORY. AUSGRID'S PREFERRED OPTION FOR PCB OIL TESTING IS TO USE THE PLUS ES CHEMICAL TESTING LABORATORY, TELEPHONE (9410 5117).
- THE PROCEDURE FOR RETURNING ASSETS TO AUSGRID STORES REQUIRES THE ASP/1 TO CONTACT AUSGRID BY EMAIL TO ARRANGE A SUITABLE LOCATION AND DATE FOR THE RETURN. THE AUSGRID CONTACT FOR ASSET RETURNS IS: ASPRETURNS@AUSGRID.COM.AU (REFER TO AUSGRID ASP ALERT GI\_09\_18).
- AUSGRID GIS SHOWS NO RECORD OF LV SERVICE SUPPLYING NBN NODE CABINET. ASP2 TO TRANSFER SERVICE ONTO NEW PILLAR PB-00170 AS REQUIRED
- DUE TO SITE RESTRICTIONS A NETWORK STANDARD VARIATION IN ACCORDANCE WITH NS181 HAS BEEN APPROVED IN WRITING BY AUSGRID FOR A SITE PLAN B EASEMENT.
- DUE TO FLOOD LEVELS A NETWORK STANDARD VARIATION IN ACCORDANCE WITH NS181 HAS BEEN APPROVED IN WRITING BY AUSGRID FOR A RAISED KIOSK BASE LEVEL.

CAD DRAWING AMENDMENTS		PROPOSED		EXISTING		REMOVE	
Pole	○	○	○	○	○	○	○
SL Standard	○	○	○	○	○	○	○
Pillar Standard	○	○	○	○	○	○	○
LV Pillar	○	○	○	○	○	○	○
LV Link Pillar	○	○	○	○	○	○	○
Private Pillar	○	○	○	○	○	○	○
Streetlight	○	○	○	○	○	○	○
Streetlight-PEC	○	○	○	○	○	○	○
Streetlight-replacement	○	○	○	○	○	○	○
USL	○	○	○	○	○	○	○
IDT	○	○	○	○	○	○	○
F/S Link Disc.	○	○	○	○	○	○	○
ABS	○	○	○	○	○	○	○
Kiosk Sub	○	○	○	○	○	○	○
Chamber Sub	○	○	○	○	○	○	○
Pole Sub	○	○	○	○	○	○	○
Two Pole Sub	○	○	○	○	○	○	○
UGOH Pot End	○	○	○	○	○	○	○
Joint Sealed End	○	○	○	○	○	○	○
OH Lines	○	○	○	○	○	○	○
UG Cables	○	○	○	○	○	○	○
OH Lines	○	○	○	○	○	○	○
UG Cables	○	○	○	○	○	○	○
OH Lines	○	○	○	○	○	○	○
UG Cables	○	○	○	○	○	○	○
OH Lines	○	○	○	○	○	○	○
UG Cables	○	○	○	○	○	○	○

**ASSOCIATED DRAWINGS**

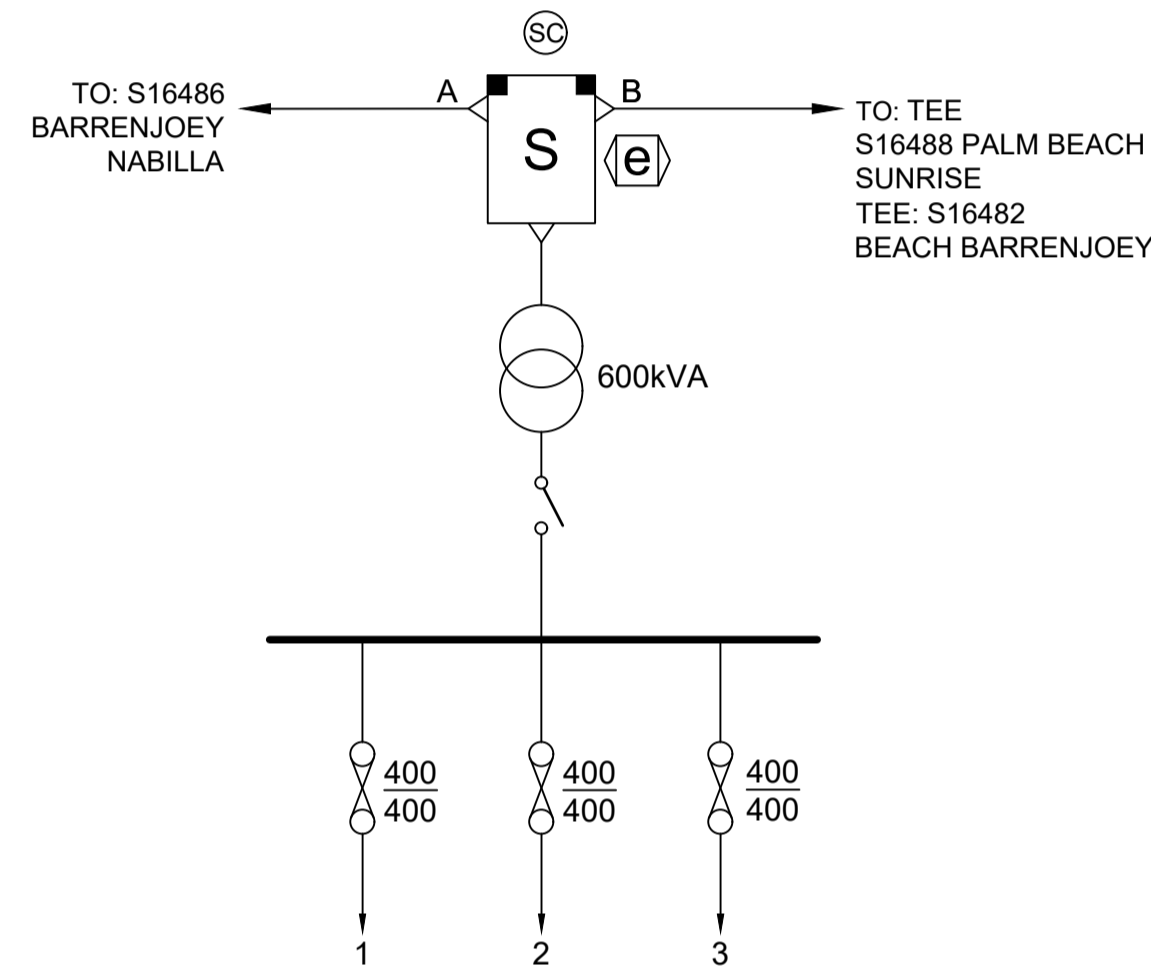
<b>DEP CONSULTING</b>	DESIGNED BY	P DAWSON
	AUTH NO.	4615 / 01
	SUBMIT DATE	22/06/2021
	MAP REF.	NORTHERN BEACHES
DESIGN-ENERGY-PROJECTS	ASP Accred. No.4615	AUSGRID REF.
	ABN 50 887 230 861	PRJTRAK No.
ASP REF.	1172-01 (B)	DEP-EL-DWG-1000

<b>SITE PLAN</b>	
<b>ESTABLISH KIOSK SUBSTATION</b>	
S.32861 BARRENJOEY RD	
1102 BARRENJOEY ROAD	
PALM BEACH NSW 2108	
SIZE	A1
AUSGRID PROJECT No.	AN-21900
SHEETS	1 of 12
AMD.	0

KIOSK SUBSTATION DETAILS	
SUBSTATION NAME:	BARRENJOEY RD 1139
SUBSTATION NUMBER:	S32861
ADDRESS:	1139 BARRENJOEY RD, PALM BEACH
SUBSTATION TYPE:	L TYPE KIOSK
SIZE (kVA):	600kVA
VECTOR GROUP:	Dyn1
TAP SETTING:	10505 / 433
HV SWITCHGEAR:	SCHNEIDER RM6 RMI
HV FUSE DETAILS:	80AMP SIBA 300.12.93.80
LOAD CYCLE:	MPD
PHASING DETAIL:	TO BE VERIFIED ON SITE BY THE ASP1 PRIOR TO COMMISSIONING
LOW VOLTAGE BOARD:	400 / 400 / 400
CCT1 LV FUSE SIZE (Amps):	400A (92mm CENTRES BELL / MEM "J")
CCT2 LV FUSE SIZE (Amps):	400A (92mm CENTRES BELL / MEM "J")
CCT3 LV FUSE SIZE (Amps):	400A (92mm CENTRES BELL / MEM "J")
EARTHING REQUIREMENTS:	EARTHING DESIGN SPECIFICATION DATED 13/04/2021 AND NS-116
SUBSTATION PIERING:	AS PER NS-141 & AUSGRID DRAWING 151572
EASEMENT PLAN DETAIL:	AS PER NS-141 SITE PLAN B

### SUBSTATION SCHEMATIC

S.32861 'BARRENJOEY RD 1139'



LV DISTRIBUTOR DETAILS	
DIST	DESTINATION
1	BARRENJOEY RD NORTH (400/400)
2	BARRENJOEY RD SOUTH (400/400)
3	1102 BARRENJOEY RD U/G (400/400)

THE APPLICABLE LV SUBSTATION FUSES CHARACTERISTICS CAN BE FOUND IN AS:60269-2-1

### FAULT LEVEL DETAILS

HIGH VOLTAGE (11KV)  
EXISTING MAXIMUM THREE PHASE 11KV FAULT LEVEL AT SUBSTATION S.32861 IS **3.99 kA**.

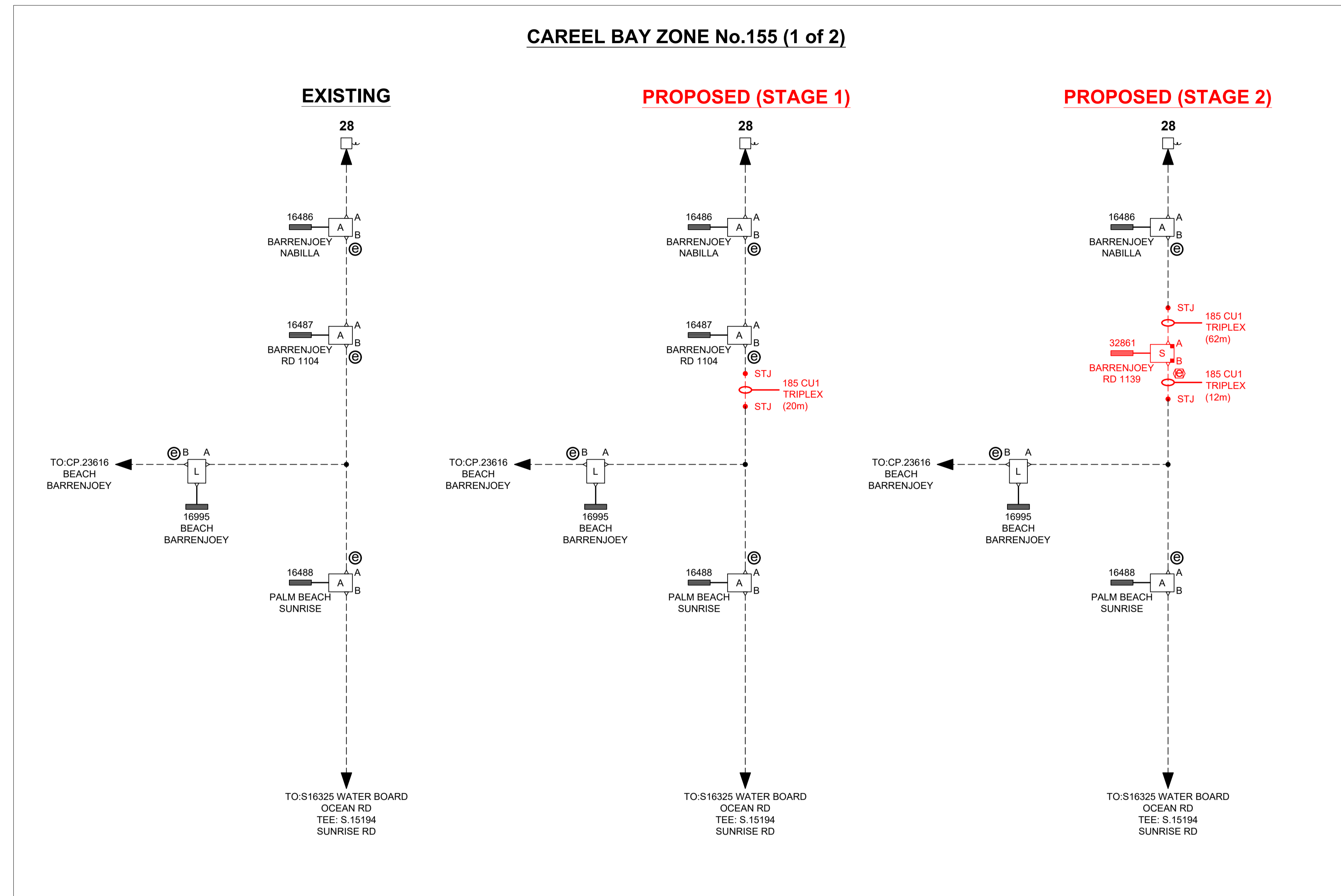
**25kA** - NOMINAL PROSPECTIVE SHORT CIRCUIT CURRENT AT THE LV BOARD OF THE SUBSTATION.

THE APPLICABLE LV SUBSTATION FUSES CHARACTERISTICS CAN BE FOUND IN AS:60269-2-1

AUSGRID STOCKCODES			
ITEM	DESCRIPTION	STOCK CODE	(QTY)
SUBSTATION	600kVA "L" TYPE KIOSK (400/400/400)	176847	1
HV FUSES	80AMP SIBA 300.20.93.80	89631	3
LV FUSES	400A (92mm CENTRES BELL / MEM "J")	85738	9
LOCKS	Z1 PADLOCK (SUBSTATION)	175092	4
	Z5 PADLOCK (OPERATOR)	H46498	3
	Z6 PADLOCK (OPERATOR - SMALL)	182854	1 - SCHNEIDER 2 - WILSON
	X5 PADLOCK (CONSTRUCTION)	179552	AS REQUIRED

## HV NETWORK DIAGRAM

### CAREEL BAY ZONE No.155 (1 of 2)



LEGEND					
ITEM	EXISTING	PROPOSED	ITEM	EXISTING	PROPOSED
HV UG CABLE	---	---	FLAIR 23D	⊕	⊕
HV OH CABLE	---	---	METERING UNIT	⊗	⊗
POLE SUBSTATION	⊙	⊙	HV JOINT	•	•
ENCLOSED LBS	⊗	⊗	OPEN POINT	○	○
ISOLATOR	⊕	⊕	LV BUS SECTION	⊕	⊕
AIR BREAK SWITCH	⊕	⊕	GENERATOR	⊕	⊕
RING MAIN ISOLATOR	⊕	⊕	BALANCED VOLTAGE	⊕	⊕
RING MAIN CIRCUIT BREAKER	⊕	⊕	3 PHASE OVERCURRENT	⊕	⊕
RING MAIN ISOLATOR UNIT	⊕	⊕	FAULT EARTH	●	●
EARTH FAULT INDICATOR	⊕	⊕	OPTICAL ARC FAULT	⊕	⊕
BATTERY POWERED EFIF	⊕	⊕	THEMERAL TRIP	⊕	⊕
			INSTANTANEOUS OC	⊕	⊕
			UGOH	←	←
			TRANSFORMER	⊕	⊕

CAD DRAWING AMENDMENTS



DESIGNED BY: P DAWSON  
AUTH NO.: 4615 / 01  
SUBMIT DATE: 22/06/2021  
LGA: NORTHERN BEACHES  
MAP REF.: UBD MAP 78 - P16  
AUSGRID REF.: PB14  
PRJTRAK No.: XCY012781  
ASP REF.: 1172-01 (B)  
DEP-EL-DWG-1100

HV NETWORK SCHEMATICS  
ESTABLISH KIOSK SUBSTATION  
S.32861 BARRENJOEY RD  
1102 BARRENJOEY ROAD  
PALM BEACH NSW 2108

ASSOCIATED DRAWINGS

CERTIFICATION NUMBER 7941840/20210705 A1

SIZE AN-21900 SHEETS 2 of 12 AMD 0



**EXISTING SL NETWORK DIAGRAM** NOT TO SCALE



**PROPOSED SL NETWORK DIAGRAM** NOT TO SCALE



**NOTE:**  
SL MAINS SHOWN ON GIS HAVE  
BEEN REMOVED NORTH OF POLE  
PB-67320, AUSGRID TO CONFIRM

LEGEND		
ITEM	EXISTING	PROPOSED
SL UG CABLE		
SL OH CABLE		
SL COLUMN		
SL LUMINAIRE		
SL LUMINAIRE PEC		
SL REPLACEMENT		
POLE		

CAD DRAWING  
AMENDMENTS

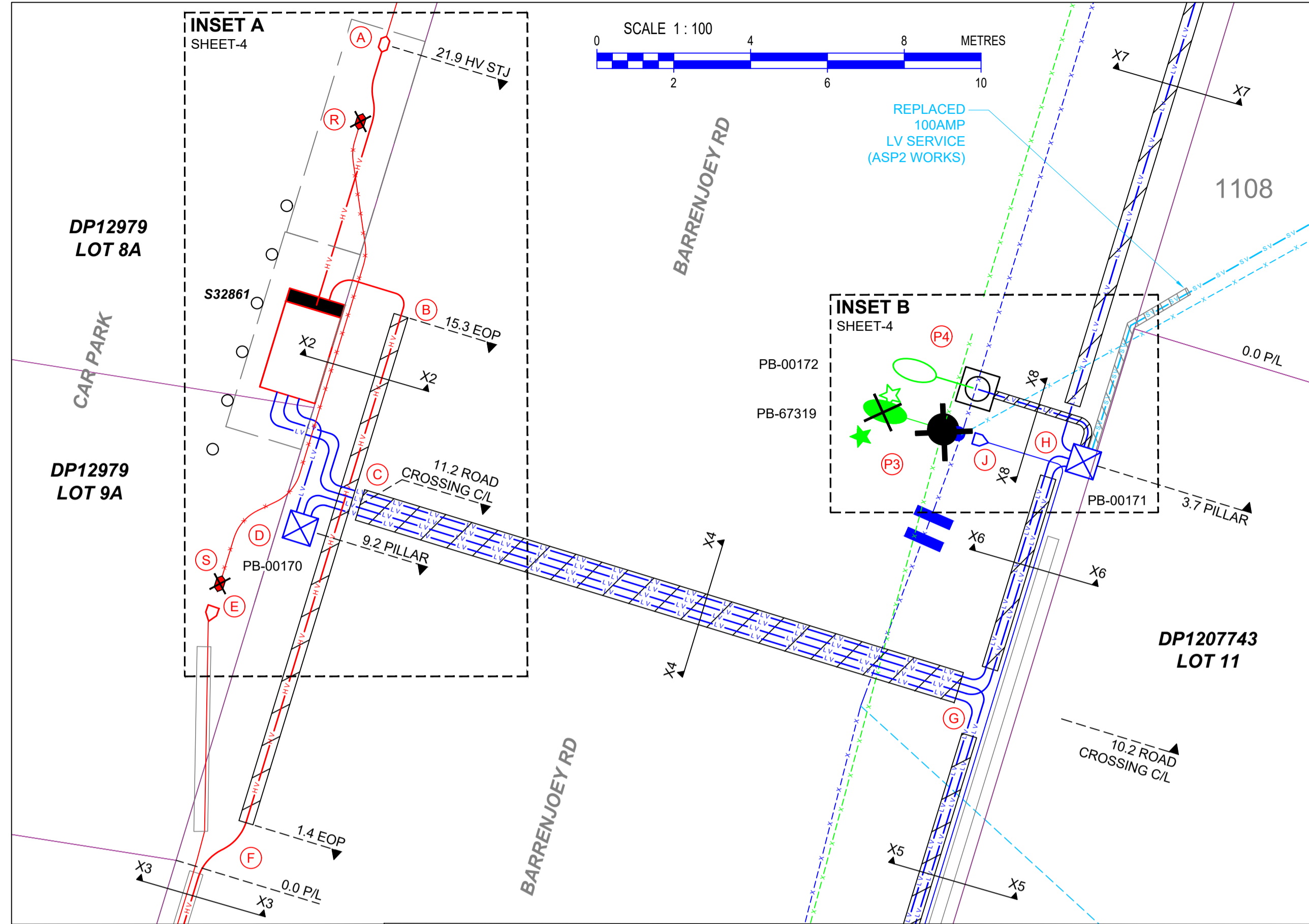
DESIGNED BY	P DAWSON
AUTH NO.	4615 / 01
SUBMIT DATE	22/06/2021
LGA	NORTHERN BEACHES
MAP REF.	UBD MAP 78 - P16
AUSGRID REF.	PB14
PRJTRAK No.	XCY012781
ASP REF.	1172-01 (B)
DEP-EL-DWG-1120	

**DEP CONSULTING**  
 PO Box 688  
 Cronulla NSW 2230  
 02 9526 5129  
 ASP Accred. No.4615  
 ABN 50 887 230 861

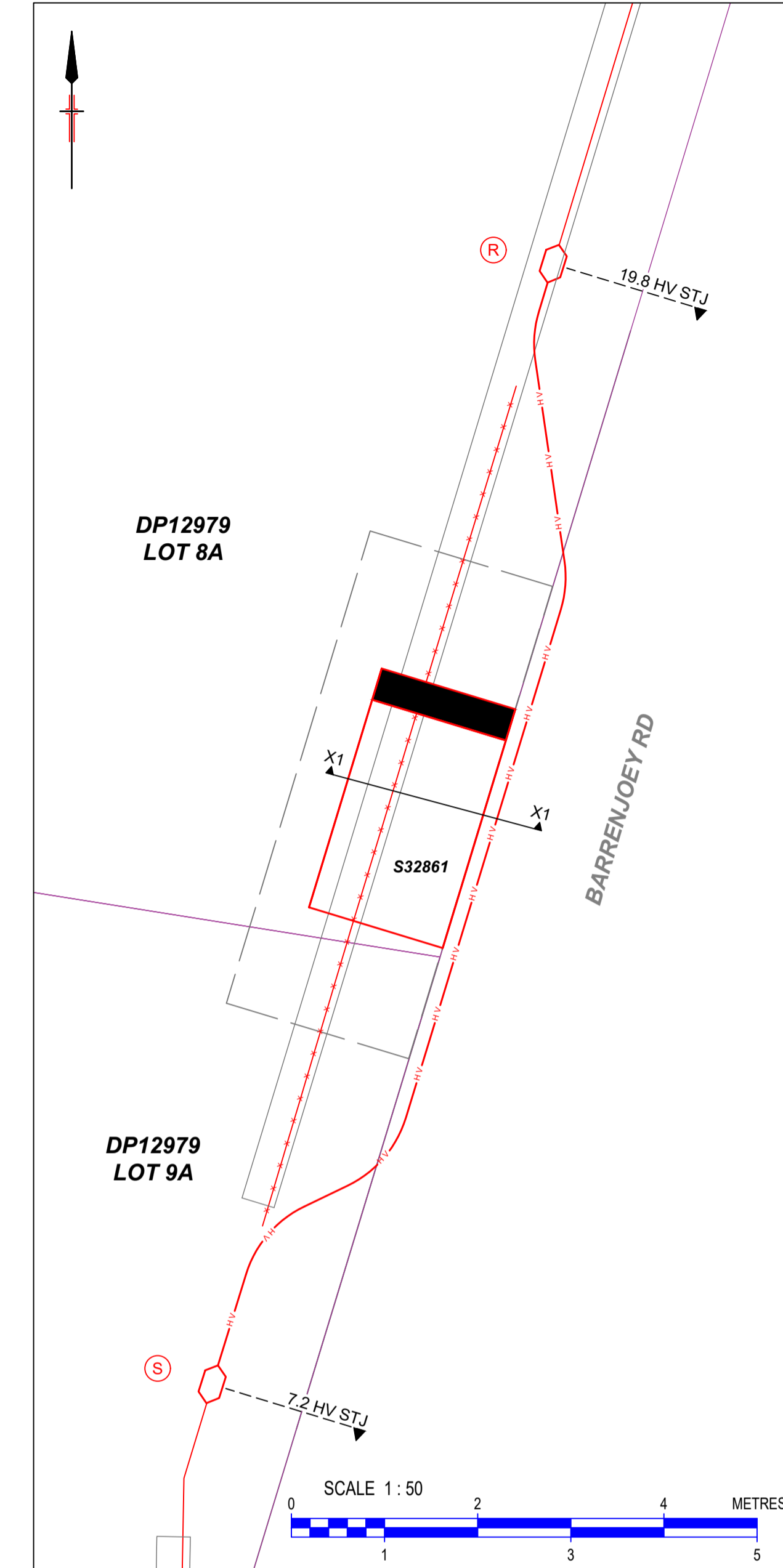
**SL NETWORK SCHEMATICS**  
 ESTABLISH KIOSK SUBSTATION  
 S.32861 BARRENJOEY RD  
 1102 BARRENJOEY ROAD  
 PALM BEACH NSW 2108

ASSOCIATED DRAWINGS  
 CERTIFICATION NUMBER 7941840/20210705 A1  
 AN-21900  
 SHEETS 4 of 12  
 AMD. 0

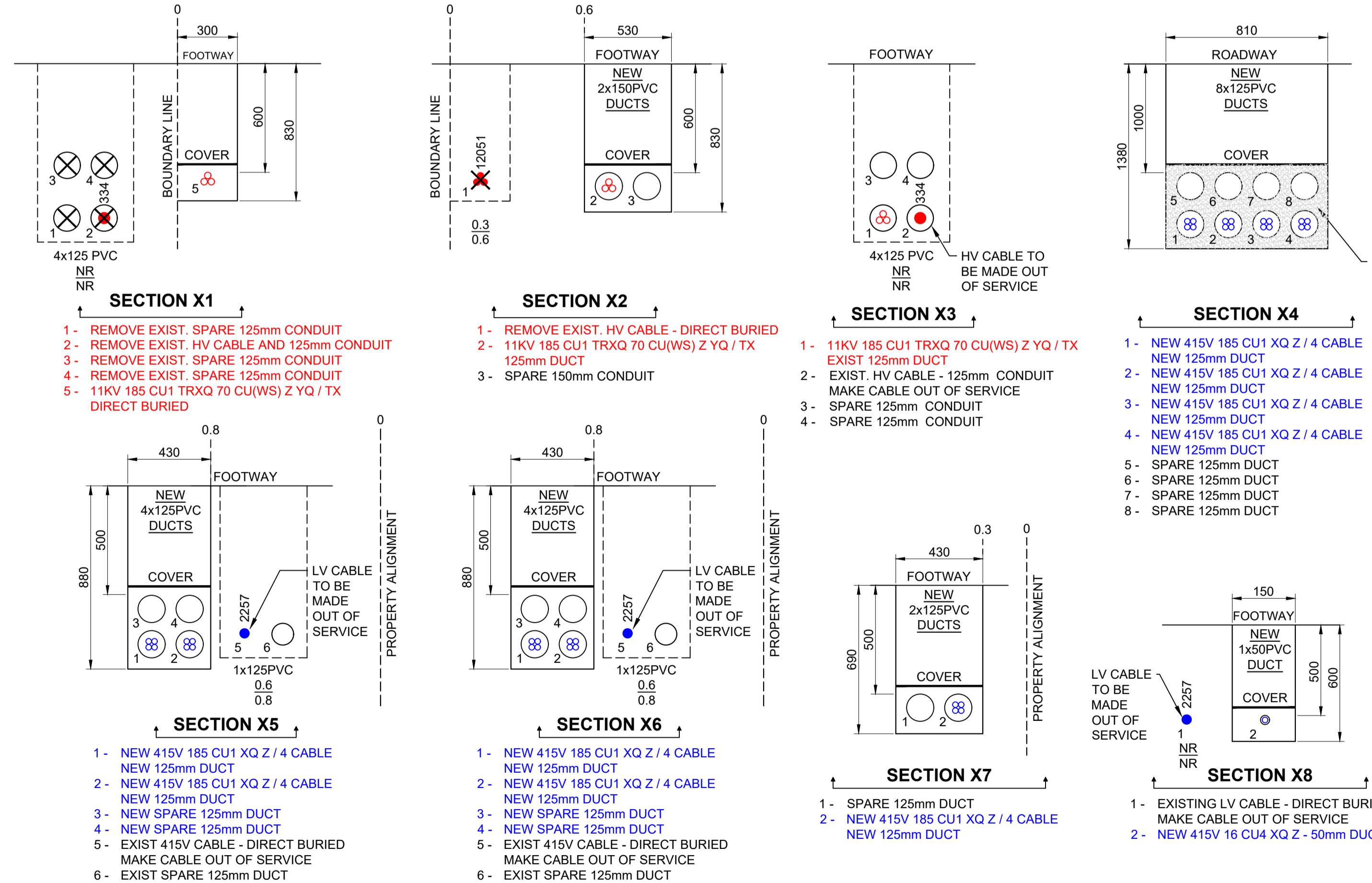
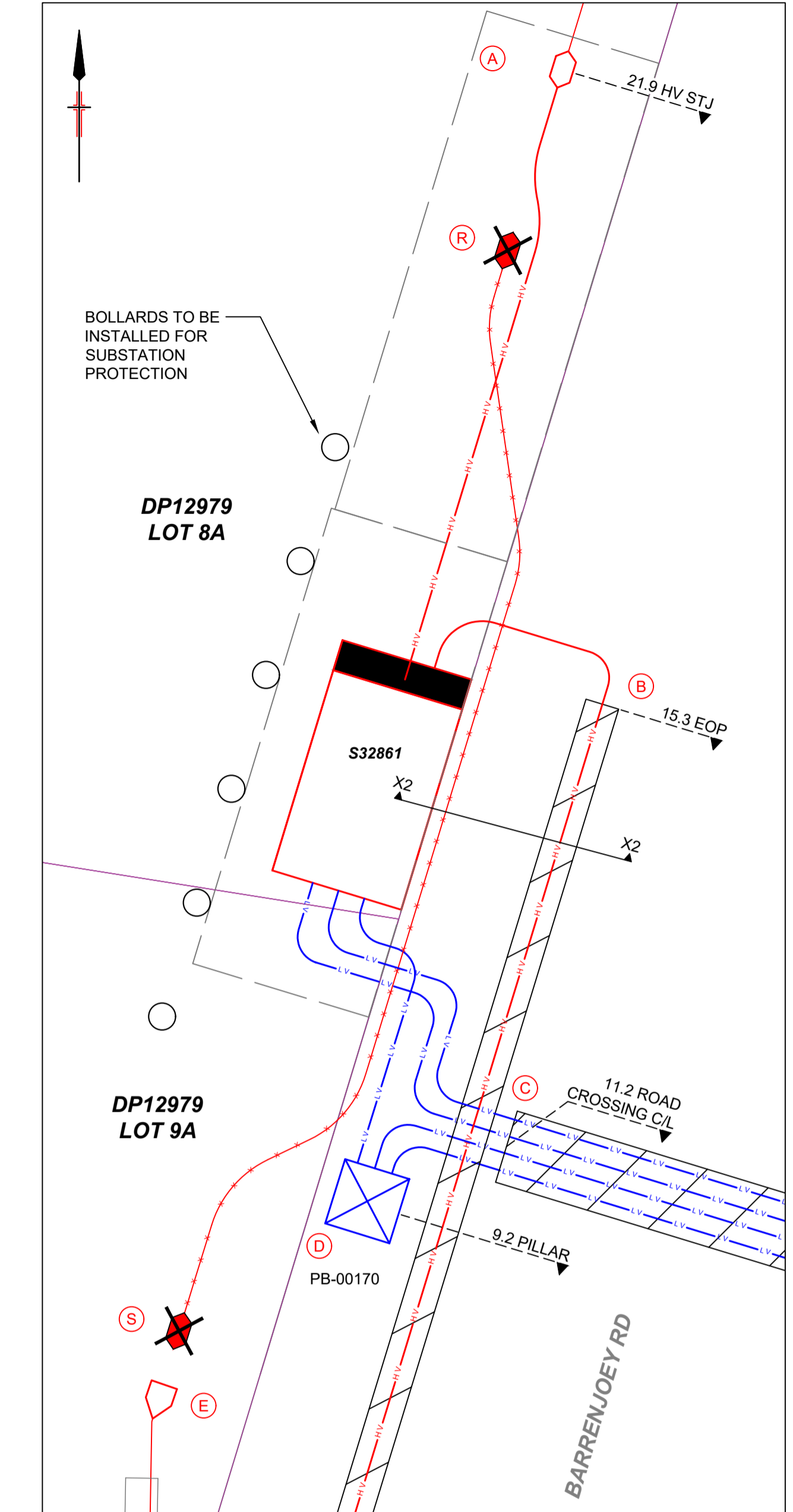
**DETAIL PLAN 1** SCALE 1:100



**INSET A STAGE 1 HV** SCALE 1:50



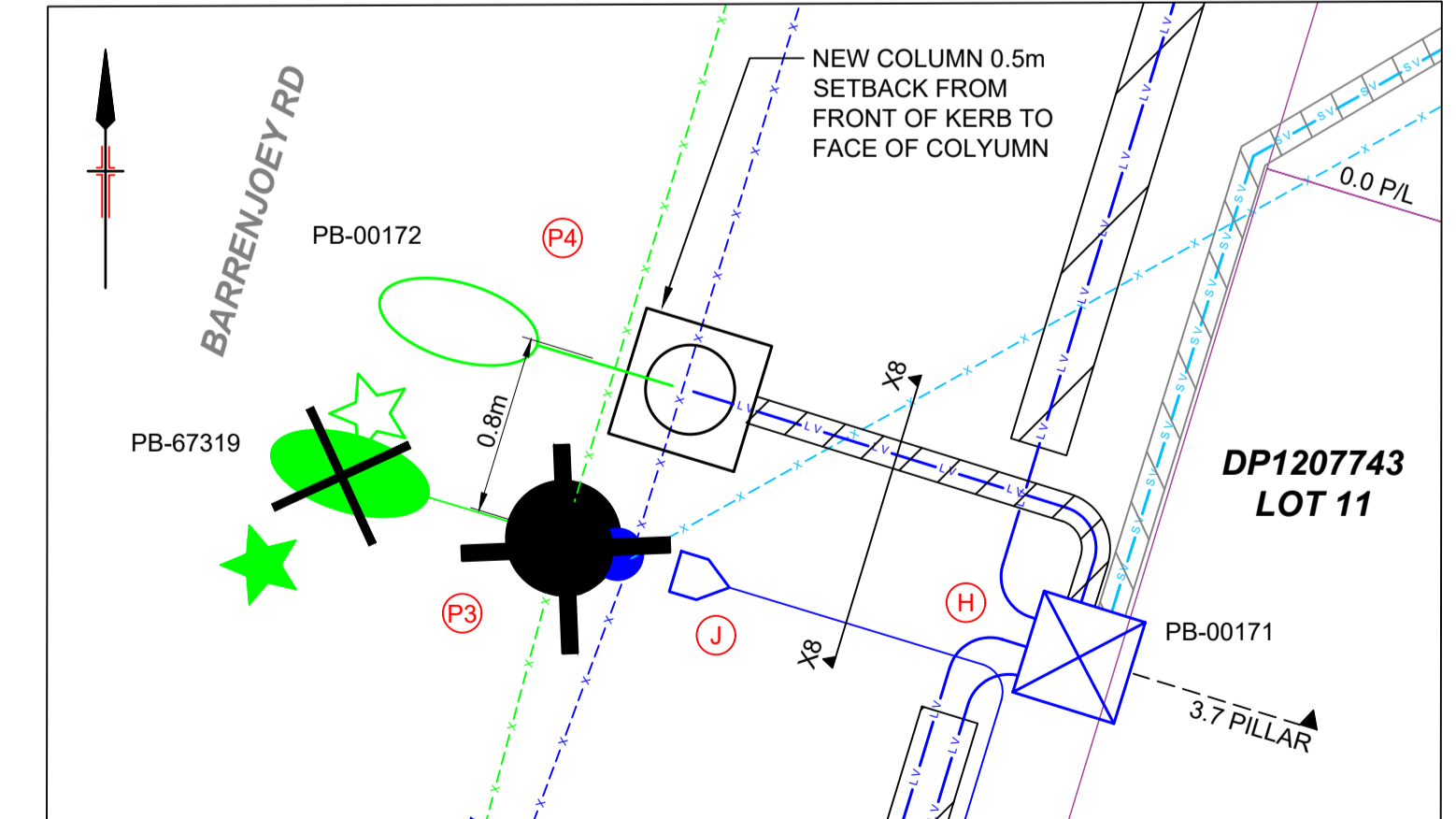
**INSET A STAGE 2 (FINAL) HV** SCALE 1:50



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

**INSET B** SCALE 1:50



PROPOSED	EXISTING	REMOVE
Pole	○	○
SL Standard	○	○
Pillar Standard	○	○
LV Pillar	○	○
LV Link Pillar	○	○
Private Pillar	○	○
Streetlight	○	○
Streetlight-PEC	○	○
Streetlight-replacement	○	○
USL	○	○
IDT	○	○
F/S Link Disc.	○	○
ABS	○	○
Kiosk Sub	○	○
Chamber Sub	○	○
Pole Sub	○	○
Two Pole Sub	○	○
UGOH ○ Pot End	○	○
Joint ○ Sealed End	○	○
Conduit	○	○
OH Lines	○	○
UG Cables	○	○
UGOH ● Pot End	○	○
Joint ● Sealed End	○	○
OH Lines	○	○
UG Cables	○	○
OH Lines	○	○
UG Cables	○	○
Pole-to be removed	○	○
OH Lines	○	○
UG Cables	○	○

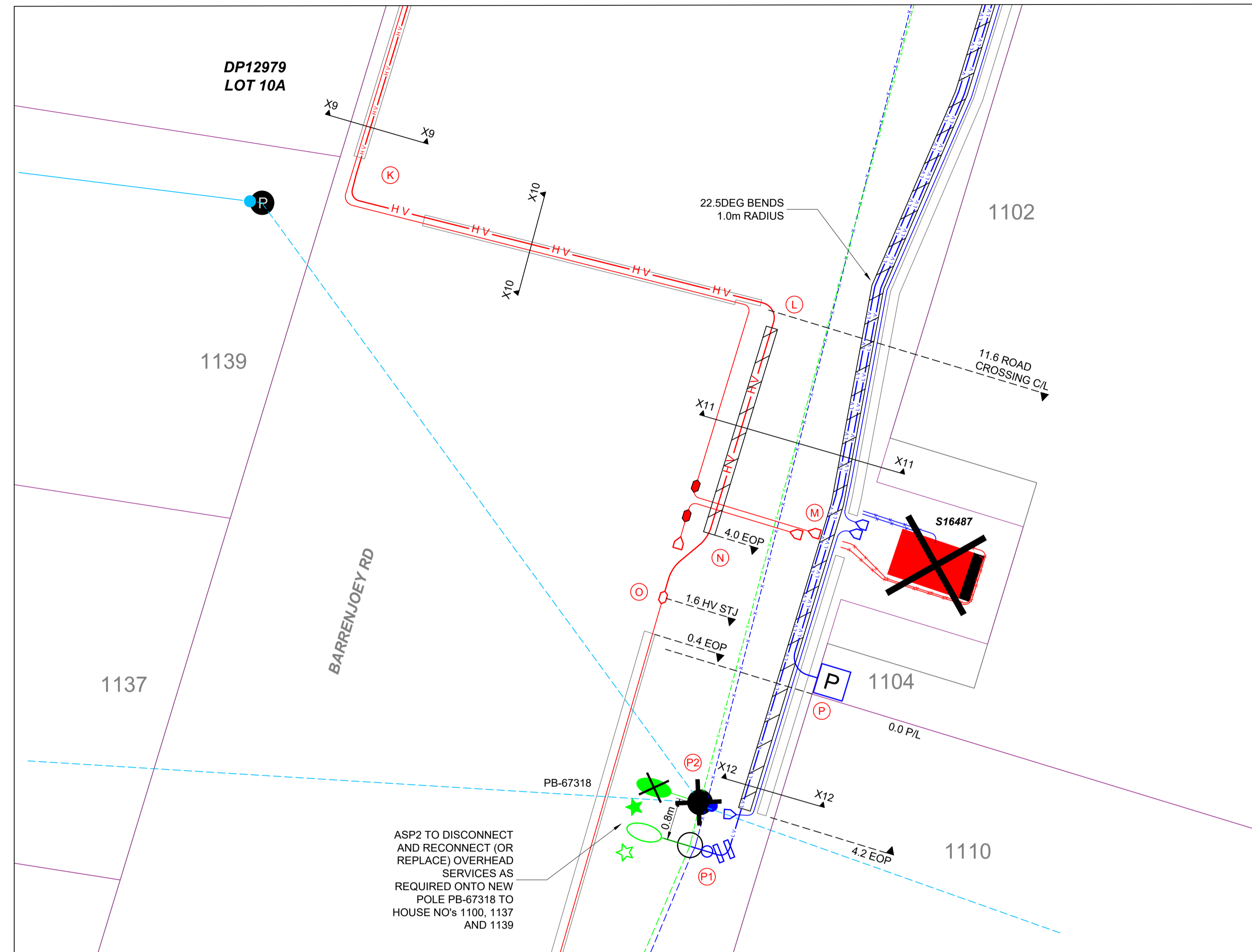
**DEP CONSULTING**

DESIGNED BY: P DAWSON  
 AUTH NO: 4615 / 01  
 SUBMIT DATE: 22/06/2021  
 LGA: NORTHERN BEACHES  
 MAP REF: UBD MAP 78 - P16  
 AUSGRID REF: PB14  
 PRJTRAK No: XCY012781  
 ASP REF: 1172-01 (B)  
 DEP-EL-DWG-1200

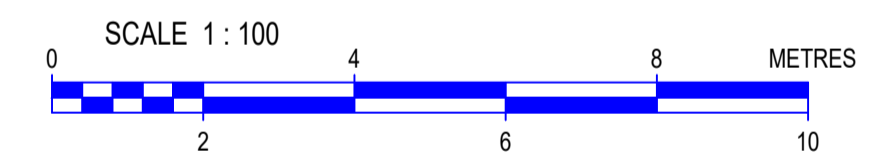
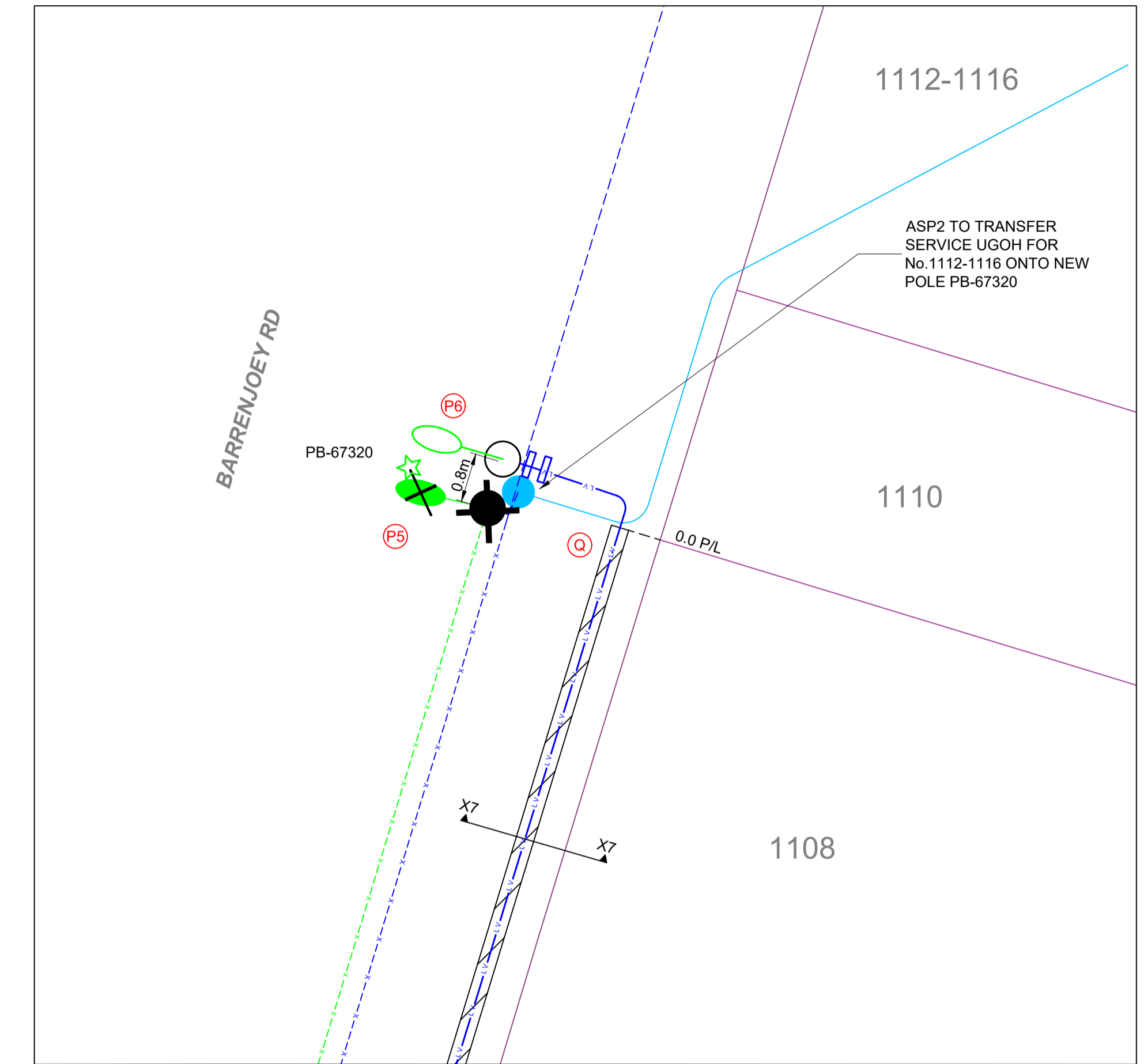
**DETAIL PLANS**  
 ESTABLISH KIOSK SUBSTATION  
 S.32861 BARRENJOEY RD  
 1102 BARRENJOEY ROAD  
 PALM BEACH NSW 2108

SIZE: AN-21900  
 SHEETS: 5 of 12  
 AMD: 0

**DETAIL PLAN 2** SCALE 1:100

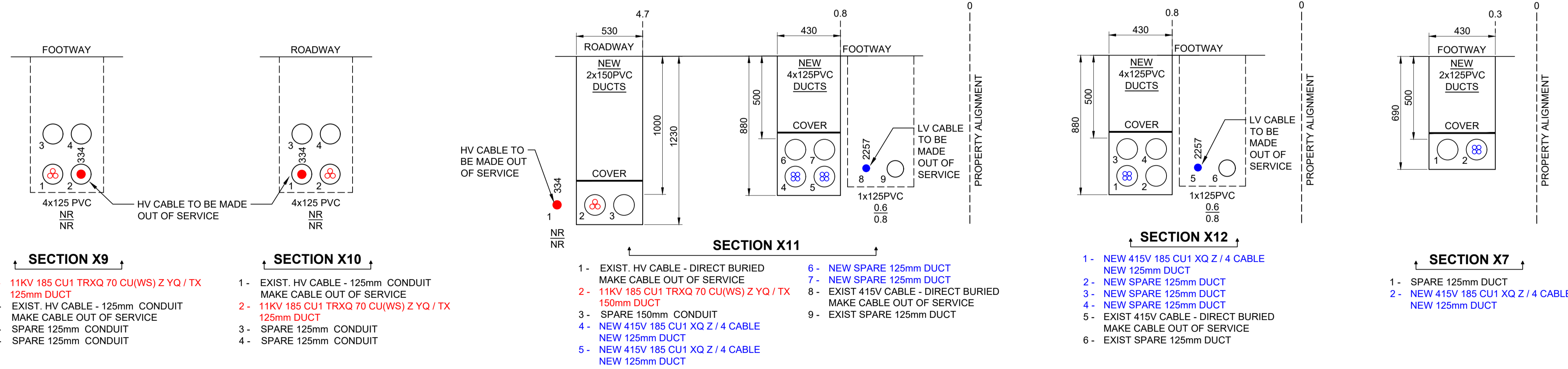


**DETAIL PLAN 3** SCALE 1:100



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- 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 excavation

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



PROPOSED	EXISTING	REMOVE
Pole	○	○
SL Standard	○	○
IDT	○	○
Pillar Standard	○	○
LV Link	○	○
Private Link	○	○
Streetlight	○	○
Streetlight-PEC	○	○
Streetlight-replacement	○	○
USL	○	○
IDT	○	○
F/S Link Disc.	○	○
ABS	○	○
Kiosk Sub	○	○
Chamber Sub	○	○
Pole Sub	○	○
Two Pole Sub	○	○
UGOH	○	○
Joint	○	○
Sealed End	○	○
OH Lines	○	○
UG Cables	○	○
OH Lines	○	○
UG Cables	○	○
OH Lines	○	○
UG Cables	○	○

**ASSOCIATED DRAWINGS**

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DESIGNED BY: P DAWSON  
 AUTH NO: 4615 / 01  
 SUBMIT DATE: 22/06/2021  
 LGA: NORTHERN BEACHES  
 MAP REF: UBD MAP 78 - P16  
 AUSGRID REF: PB14  
 PRJTRAK No: XCY012781  
 DEP-EL-DWG-1201

**DETAIL PLANS**  
 ESTABLISH KIOSK SUBSTATION  
 S.32861 BARRENJOEY RD  
 1102 BARRENJOEY ROAD  
 PALM BEACH NSW 2108

CERTIFICATION NUMBER 7941840/20210705 A1  
 AN-21900  
 6 of 12



UNDERGROUND CONSTRUCTION WORKS SCHEDULE (ELECTROTECHNIK - CABLE PULLING V2.0)								
REF. IDENTIFIER	ROUTE DISTANCE (m)	CIRCUIT VOLTAGE	CONDUCTOR OR ASSET DETAIL	CABLE CODE (CC) or STOCK CODE (SC)	MIN. INTERNAL BENDING RADIUS (mm) DURING INSTALLATION	MIN. INTERNAL BENDING RADIUS (mm) AFTER INSTALLATION	CALCULATED MAX. PULLING TENSION (kN) DURING INSTALLATION	CONSTRUCTION DETAIL
<b>EXCAVATION (HIGH VOLTAGE)</b>								
S.32861	N/A	HV/LV	PREPARE 1 x L TYPE KIOSK INSTALLATION	N/A	N/A	N/A	N/A	CLEAR & PREPARE SUBSTATION SITE FOR KIOSK INSTALLATION, SUBSTATION EARTHING ELECTRODE INSTALLATION & HV/LV CABLE INSTALLATION
S.32861 - A	7	HV	EXCAVATE CABLE TRENCH (DIRECT BURIED)	N/A	N/A	N/A	N/A	EXCAVATE IN SUBSTATION EASEMENT AND FOOTWAY IN FRONT OF SUBSTATION AND PREPARE FOR CABLE LAY/PULL
S.32861 - B	2	HV	EXCAVATE CABLE TRENCH (DIRECT BURIED)	N/A	N/A	N/A	N/A	EXCAVATE IN SUBSTATION EASEMENT AND FOOTWAY IN FRONT OF SUBSTATION AND PREPARE FOR CABLE LAY/PULL
A	N/A	HV	EXCAVATE LARGE JOINT BAY	N/A	N/A	N/A	N/A	EXCAVATE LARGE JOINT BAY WITHIN FOOTWAY & PREPARE FOR CABLE JOINTING
B - F	13	HV	INSTALL 2 x150mm CONDUIT (LD) UPVC	SC-78147	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN FOOTWAY, LAY CONDUITS & PREPARE FOR CABLE PULL
E	N/A	HV	EXCAVATE SMALL JOINT BAY	N/A	N/A	N/A	N/A	EXCAVATE SMALL JOINT BAY WITHIN FOOTWAY & PREPARE FOR CABLE JOINTING
F	2	HV	EXCAVATE CABLE TRENCH (DIRECT BURIED)	N/A	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN FOOTWAY & PREPARE FOR CABLE LAY/PULL
K	N/A	HV	EXCAVATE CABLE TURNING BAY	N/A	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN FOOTWAY & PREPARE FOR CABLE PULL
L - N	8	HV	INSTALL 2 x150mm CONDUIT (LD) UPVC	N/A	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN ROADWAY, LAY CONDUITS & PREPARE FOR CABLE PULL
N - O	3	HV	EXCAVATE CABLE TRENCH (DIRECT BURIED)	N/A	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN ROADWAY & PREPARE FOR CABLE LAY/PULL
O	N/A	HV	EXCAVATE LARGE JOINT BAY	N/A	N/A	N/A	N/A	EXCAVATE LARGE JOINT BAY WITHIN ROADWAY & PREPARE FOR CABLE JOINTING
R - S	14	HV	EXCAVATE CABLE TRENCH (DIRECT BURIED)	N/A	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN FOOTWAY & PREPARE FOR CABLE JOINTING (STAGE 1 WORKS)
R	N/A	HV	EXCAVATE LARGE JOINT BAY	N/A	N/A	N/A	N/A	EXCAVATE LARGE JOINT BAY WITHIN FOOTWAY & PREPARE FOR CABLE JOINTING (STAGE 1 WORKS)
S	N/A	HV	EXCAVATE LARGE JOINT BAY	N/A	N/A	N/A	N/A	EXCAVATE LARGE JOINT BAY WITHIN FOOTWAY & PREPARE FOR CABLE JOINTING (STAGE 1 WORKS)
<b>EXCAVATION (LOW VOLTAGE)</b>								
S.32861 - C	3	LV	EXCAVATE CABLE TRENCH (DIRECT BURIED)	N/A	N/A	N/A	N/A	EXCAVATE IN SUBSTATION EASEMENT AND FOOTWAY IN FRONT OF SUBSTATION AND PREPARE FOR CABLE LAY/PULL
C - G	17	LV	INSTALL 8 x125mm CONDUIT (LD) UPVC	SC-78162	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN ROADWAY, LAY CONDUITS, INSTALL TSB & PREPARE FOR CABLE PULL
G	N/A	LV	EXCAVATE CABLE TURNING BAYS	N/A	N/A	N/A	N/A	EXCAVATE CABLE TURNING BAY WITHIN FOOTWAY & PREPARE FOR CABLE LAY/PULL
G - P1	42	LV	INSTALL 4 x125mm CONDUIT (LD) UPVC INSTALL 4 x 125mm BENDS, 22.5DEG, 1.0RAD	SC-78162 SC-77529	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN FOOTWAY, INSTALL BENDS, LAY CONDUITS, & PREPARE FOR CABLE PULL
G - H	6	LV	INSTALL 4 x125mm CONDUIT (LD) UPVC	SC-78162	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN FOOTWAY, LAY CONDUITS, & PREPARE FOR CABLE PULL
H - P4	3	LV	INSTALL 1 x50mm CONDUIT (HD) UPVC	SC-78022	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN FOOTWAY, LAY DUCT & PREPARE FOR CABLE LAY/PULL
H - Q	33	LV	INSTALL 2 x125mm CONDUIT (LD) UPVC	SC-78162	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN FOOTWAY, LAY CONDUITS, & PREPARE FOR CABLE PULL
Q - P6	3	LV	EXCAVATE CABLE TRENCH (DIRECT BURIED)	N/A	N/A	N/A	N/A	EXCAVATE CABLE TRENCH WITHIN FOOTWAY & PREPARE FOR CABLE LAY/PULL
<b>CABLE LAYING (HIGH VOLTAGE)</b>								
S.32861 - A	12	HV	1 x 11kV 185 CU1 TRXQ 70 CU(WS) Z YQ/TRIPLEX	SC-181758	1120(3)/870(1)	745(3)/525(1)	N/A	DIRECT LAY (7m) & ALLOWANCE FOR TERMS & JOINTING (5m)
S.32861 - O	62	HV	1 x 11kV 185 CU1 TRXQ 70 CU(WS) Z YQ/TRIPLEX	SC-181758	1120(3)/870(1)	745(3)/525(1)	2.94kN (MAX 12.6kN)	PULL THROUGH DUCT (45m), DIRECT LAY (12m) & ALLOWANCE FOR TERMS & JOINTING (5m)
R - S	20	HV	1 x 11kV 185 CU1 TRXQ 70 CU(WS) Z YQ/TRIPLEX	SC-181758	1120(3)/870(1)	745(3)/525(1)	N/A	DIRECT LAY (14m) & ALLOWANCE FOR TERMS & JOINTING (6m) (STAGE 1 WORKS)
<b>CABLE LAYING (LOW VOLTAGE)</b>								
S.32861 - D	10	LV	1 x 415V 185 CU1 XQ Z / 4 CABLES	SC-61432	145	95	N/A	DIRECT LAY (5m) & ALLOWANCE FOR PILLAR & SUBSTATION TERMS (5m)
S.32861 - H	34	LV	1 x 415V 185 CU1 XQ Z / 4 CABLES	SC-61432	145	95	1.45kN (MAX 7.2kN)	PULL THROUGH DUCT (21m), DIRECT LAY (8m) & ALLOWANCE FOR TERMS & JOINTING (5m)
S.32861 - P	63	LV	1 x 415V 185 CU1 XQ Z / 4 CABLES	SC-61432	145	95	3.92kN (MAX 7.2kN)	PULL THROUGH DUCT (49m), DIRECT LAY (9m) & ALLOWANCE FOR TERMS (5m)
D - H	32	LV	1 x 415V 185 CU1 XQ Z / 4 CABLES	SC-61432	145	95	1.45kN (MAX 7.2kN)	PULL THROUGH DUCT (21m), DIRECT LAY (6m) & ALLOWANCE FOR TERMS & JOINTING (5m)
D - P1	80	LV	1 x 415V 185 CU1 XQ Z / 4 CABLES	SC-61432	145	95	3.92kN (MAX 7.2kN)	PULL THROUGH DUCT (54m), DIRECT LAY (12m) & ALLOWANCE FOR TERMS & UGOH (14m)
H - P6	51	LV	1 x 415V 185 CU1 XQ Z / 4 CABLES	SC-61432	145	95	3.39kN (MAX 7.2kN)	PULL THROUGH DUCT (32m), DIRECT LAY (5m) & ALLOWANCE FOR TERMS & UGOH (14m)
H - P4	9	LV	415V 16 CU2 XQ Z	SC-174565	145	95	N/A	PULL THROUGH DUCT (4m), & ALLOWANCE FOR TERMS (5m)

CAD DRAWING  
AMENDMENTS

ASSOCIATED DRAWINGS

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 ASP REF. 1172-01 (B)

DESIGNED BY P DAWSON  
 AUTH NO. 4615 / 01  
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 LGA NORTHERN BEACHES  
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 DEP-EL-DWG-1400

CONSTRUCTION SCHEDULES  
 ESTABLISH KIOSK SUBSTATION  
 S.32861 BARRENJOEY RD  
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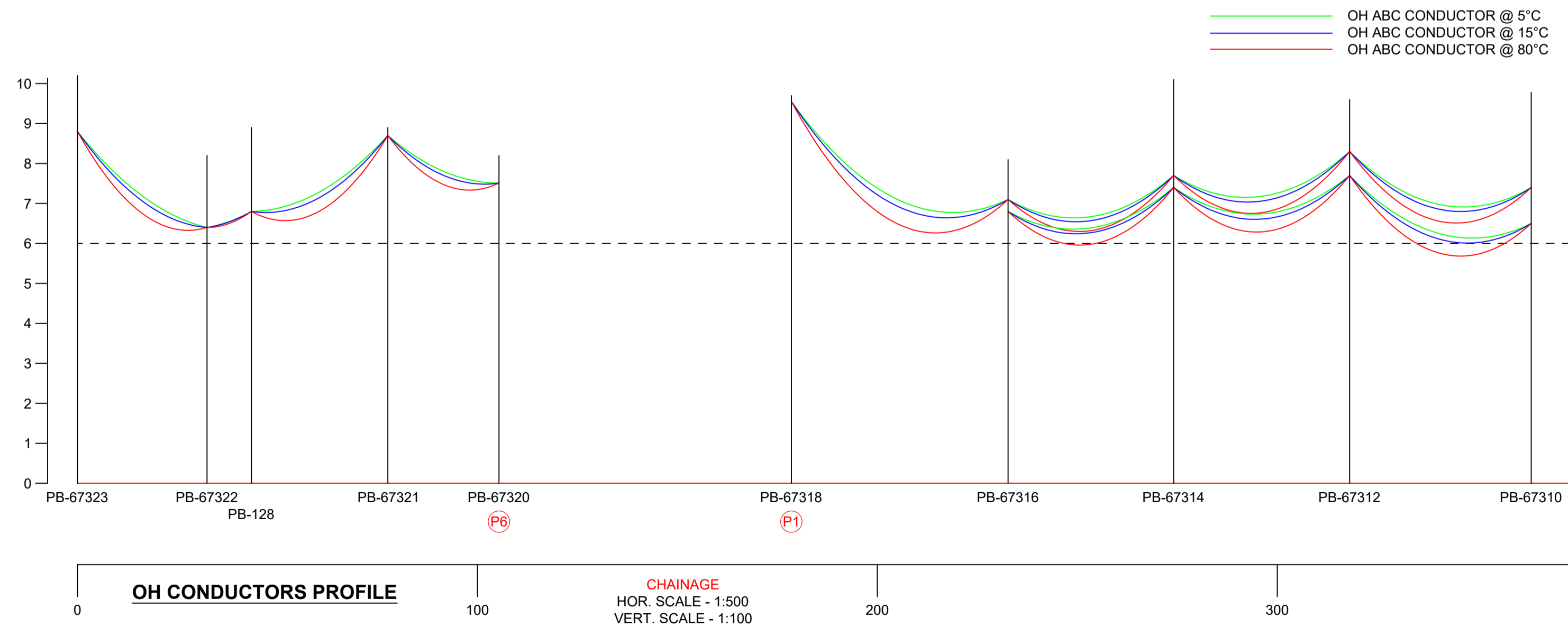




OVERHEAD CONSTRUCTION WORKS SCHEDULE (POLES 'n' WIRES V7)																	
REF. IDENTIFIER	POLE NUMBER	SIZE (m)	STRENGTH (kN)	POLE TYPE (TIMBER/CONC)	DEPTH (m)	FOOTING DETAILS	HV CONSTRUCTION		LV CONSTRUCTION		STAY DETAILS				No. of VIBRATION DAMPERS	No. of ARMOUR RODS	ADDITIONAL CONSTRUCTION DETAIL
							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)			
P1	PB-67318	12.5m	12kN	TIMBER	2.8m	600mm BACKFILL	N/A	N/A	LV1-6 1-10	0.2m	N/A	N/A	N/A	N/A	N/A	N/A	INSTALL NEW LV POLE, LV UGOH AND FUSE LINK DISCONNECTOR INSTALL LV TERMINATION CONSTRUCTION
P2	"	EXIST	EXIST	EXISTING TIMBER	EXIST	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RECOVER EXISTING LV POLE
P3	PB-67319	EXIST	EXIST	EXISTING TIMBER	EXIST	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RECOVER EXISTING LV POLE
P5	PB-67320	EXIST	EXIST	EXISTING TIMBER	EXIST	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RECOVER EXISTING LV POLE
P6	"	11.0m	12kN	TIMBER	2.8m	600mm BACKFILL	N/A	N/A	LV1-6 1-10	0.2m	N/A	N/A	N/A	N/A	N/A	N/A	INSTALL NEW LV POLE, LV UGOH AND FUSE LINK DISCONNECTOR INSTALL LV TERMINATION CONSTRUCTION

STREET LIGHTING DESIGN DETAILS															
REF. IDENTIFIER	ASSET NUMBER	TARIFF	SL POLE TYPE	COLUMN SIZE (m)	MOUNTING METHOD	SYSTEM CONSTRUCTION	CONNECTED PHASE	COLUMN COLOUR	OUTREACH BRACKET TYPE	OUTREACH (m)	HEIGHT OF LUMINAIRE (m)	LUMINAIRE TYPE	LUMINAIRE SIZE (W)	LUMINAIRE REMOVED TYPE	ADDITIONAL DESIGN DETAIL
P1	PB-67318	RATE 2	WOODEN POLE	N/A	N/A	N/A	A PHASE	N/A	2A	3.0m	9.0m	PHILIPS CAT V3 140W LED	140W	N/A	INSTALL NEW BRACKET AND LUMINAIRE STOCKCODES: BRACKET - 72264 LUMINAIRE - 185836 PE CELL - 182715
P2	"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0m	N/A	N/A	250 SON	RECOVER EXISTING SL BRACKET AND LUMINAIRE
P3	PB-67319	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0m	N/A	N/A	250 SON	RECOVER EXISTING SL BRACKET AND LUMINAIRE
P4	"	RATE 2	STEEL	7.5m	BASEPLATE	DOUBLE INSUL.	A PHASE	UNPAINTED	N/A	9.0m	3.0m	PHILIPS CAT V3 140W LED	140W	N/A	ERECT NEW STEEL STANDARD AND FLOODLIGHT STOCKCODES: COLUMN AND OUTREACH - 72090 1m EXTENSION - 79962 LUMINAIRE - 185836 PE CELL - 182715 FLOODLIGHT BRACKET (44mm) - 72249 SL LINK PANEL - 150797
P5	PB-67320	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0m	N/A	N/A	250 SON	RECOVER EXISTING SL BRACKET AND LUMINAIRE
P6	"	RATE 2	WOODEN POLE	N/A	N/A	N/A	A PHASE	N/A	2A	3.0m	9.0m	PHILIPS CAT V3 140W LED	140W	N/A	INSTALL NEW BRACKET AND LUMINAIRE STOCKCODES: BRACKET - 72264 LUMINAIRE - 185836 PE CELL - 182715

OVERHEAD MAINS CONDUCTOR DETAIL						
REF. IDENTIFIER	CIRCUIT VOLTAGE	No. OF CABLES	CONDUCTOR TYPE	DEAD END SECTION LENGTH (m)	TOTAL CABLE LENGTH (m)	ADDITIONAL DESIGN DETAIL
P2 - P3 - P5	LV	4	66 CU	78	N/A	REMOVE 2 x SPANS OF EXISTING LV BARE MAINS
P2 - P3 - P5	SL	2	15 CU	78	N/A	REMOVE 2 x SPANS OF EXISTING LV BARE MAINS



OVERHEAD MAINS STRINGING TABLE 1										
STRAIN POINTS:	PB-67323	TO	PB-67320	RULING SPAN (m)	30.261	VOLTAGE				400V
CABLE TENSION:	37.083C			CABLE TENSION	6% UTS	MAX. OPERATING TEMP				75 Deg. C
AMBIENT TEMP:	0	5	10	15	20	25	30	35	40	
TENSION (kN no wind):	3.39	3.151	2.949	2.778	2.63	2.502	2.39	2.29	2.201	
SAG (m):	0.39	0.42	0.45	0.47	0.50	0.52	0.55	0.57	0.60	
TIME (sec):	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	

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OVERHEAD MAINS STRINGING TABLE 2										
STRAIN POINTS:	PB-67316	TO	PB-67310	RULING SPAN (m)	47.016	VOLTAGE				400V
CABLE TENSION:	37.083C			CABLE TENSION	6% UTS	MAX. OPERATING TEMP				75 Deg. C
AMBIENT TEMP:	0	5	10	15	20	25	30	35	40	
TENSION (kN no wind):	3.256	3.151	3.054	2.965	2.883	2.808	2.737	2.671	2.610	
SAG (m):	0.97	1.01	1.04	1.07	1.1	1.13	1.16	1.19	1.22	
TIME (sec):	5.3	5.4	5.5	5.6	5.7	5.8	5.8	5.9	6.0	

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**OVERHEAD SCHEDULES  
 ESTABLISH KIOSK SUBSTATION  
 S.32861 BARRENJOEY RD  
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SIZE: AN-21900  
 SHEETS: 10 of 12  
 AMD: 0



