Scope of Work for Dendrobium Surface Supply

Introduction

Dendrobium Mine Pit Top on Cordeaux Rd, Mt. Kembla is currently supplied electricity from a 33kV overhead power line that originates from Bluescope Steel (BSL). South 32 Illawarra Coal propose to migrate from this private network supply to a local network supplier, a 11kV supply from Endeavour Energy. This requires a new 2MVA 11/6.6kV kiosk style transformer on Illawarra Coal land adjacent to Dendrobium Pit Top Switchyard.

Construction Detail

Dendrobium Mine proposes to locate the kiosk as per Figure 1. The scope includes:

- Connect to Enedeavour Energy's 11kV network on Cordeaux Rd. Supply is proposed to be implemented via underground conduit from the southern side of Cordeaux Rd to northern side adjacent Dendrobium car park to a 'point of connection pole'. From this pole to a S32 landing pole and to a pole adjacent the kiosk transformer. The electricity supply between the landing pole and kiosk pole would be installed beneath ground in a conduit.
- Demolish part of the existing switchyard to install the kiosk. The switchyard proposed to be demolished is not in service and is redundant. Existing concrete beneath the demolished sections of switchyard would be removed and new foundations constructed for the new kiosk transformer (Figure 2).
- Install kiosk transformer (Figure 3).
- Install electrical control, metering and earthing panels adjacent kiosk transformer.
- Install new nonconductive perimeter fencing.
- Install new high voltage cable from the kiosk transformer to the existing high voltage distribution board. The cable would pass over American Creek adjacent the existing Nebo Bridge. It is proposed to use existing services bridge or implement a new cable bridge adjacent the Nebo Bridge.

Implementation of Network Connection to Endeavour Energy

To implement the Endeavour Energy supply, S32 will engage an Accredited Service Provider Level 3 (ASP L3) to design and implement the supply from Endeavour Energy's network. This accreditation is received from NSW Department of Industry (DoI) after a proponent demonstrates it can undertake design and installation to DoI requirements. An ASP needs to demonstrate to the network provider (in this instance Endeavour Energy) it can design and install to the network provider standards. An ASP L3 can install cables under road reserves and overhead conductors from Endeavour Energy's network to the customers Point of Connection without requiring to obtain development consent or similar

from the NSW government and is covered as exempt development. Once this work is performed the asset becomes property of the network provider (i.e. Endeavour Energy).

For electrical structures being erected on public land, the Electricity Supply Act 1995 (Section 45) '….a *network operator may carry out any of the following work:*

(a) work comprising the erection, installation or extension of electricity works on public land,

(b) work on any land comprising or connected with the alteration, maintenance or removal of existing electricity works on any land,

(c) work on public land that is connected with the erection, installation, extension, alteration, maintenance or removal of electricity works on any land.

(2) Work carried out by a network operator for the purpose of exercising its functions under this or any other Act or law and comprising the erection, installation, extension, alteration, maintenance or removal of electricity works on any land is exempt from the requirement for an approval under the Local Government Act 1993, except in relation to buildings.

…….public land means:

(a) a public road, or

(b) a public reserve, or

(c) Crown land within the meaning of the Crown Lands Act 1989 or land within a reserve as defined in Part 5 of that Act, or

(d) State forest, or

(e) land under the control and management of a public or local authority '

Notification of forty (40) days of the proposed works is to be given to Local Council and twenty -one (21) day notification to adjoining land owners if a new substation or modifications to an existing substation is proposed. These notifications are run concurrently. Following acceptance of ASP design, documented substantiation of council and local community notification, Endeavour Energy would provide certification of design to allow implementation of the new power supply.

Existing BSL Overhead Power Supply

The existing BSL 33kV supply line would be de-energised at the completion of the commissioning of the kiosk transformer. The span of conductor crossing Cordeaux Rd adjacent Dendrobium Mine entrance would be removed.

Existing Switchyard

Following commissioning of the new kiosk transformer the existing Dendrobium Surface switchyard would be de-energised.

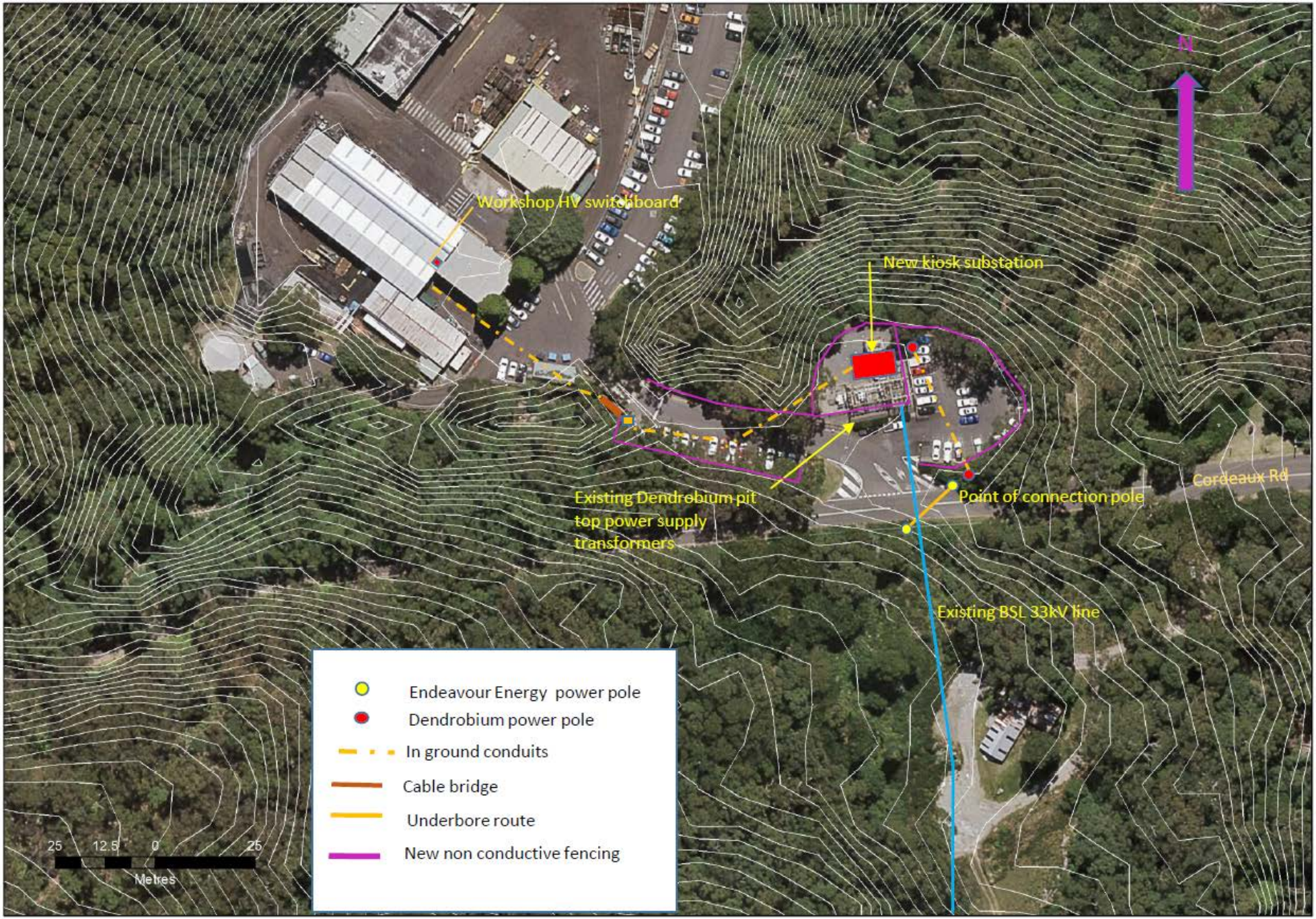


Figure 1- Proposed Dendrobium Surface Kiosk Supply

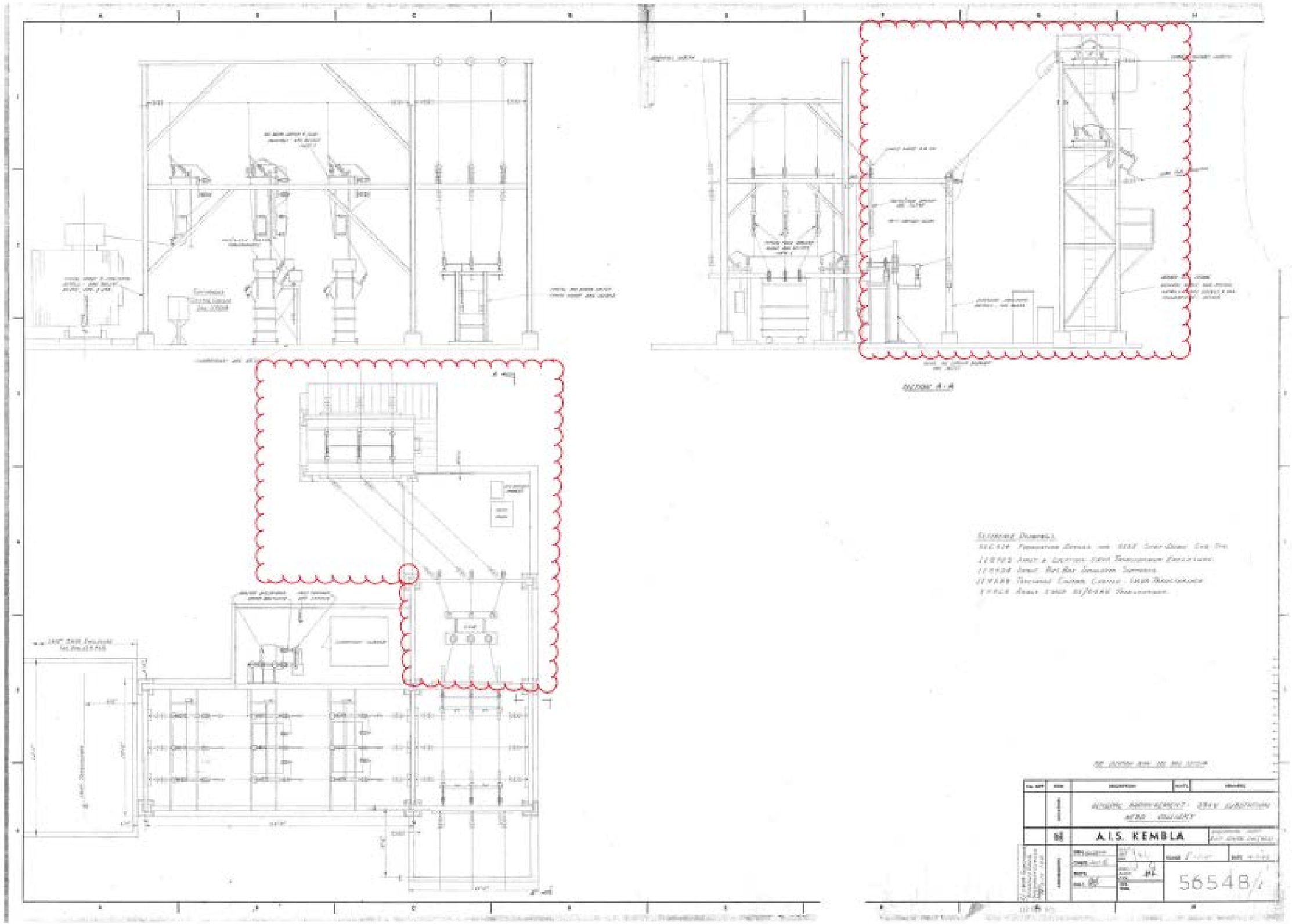
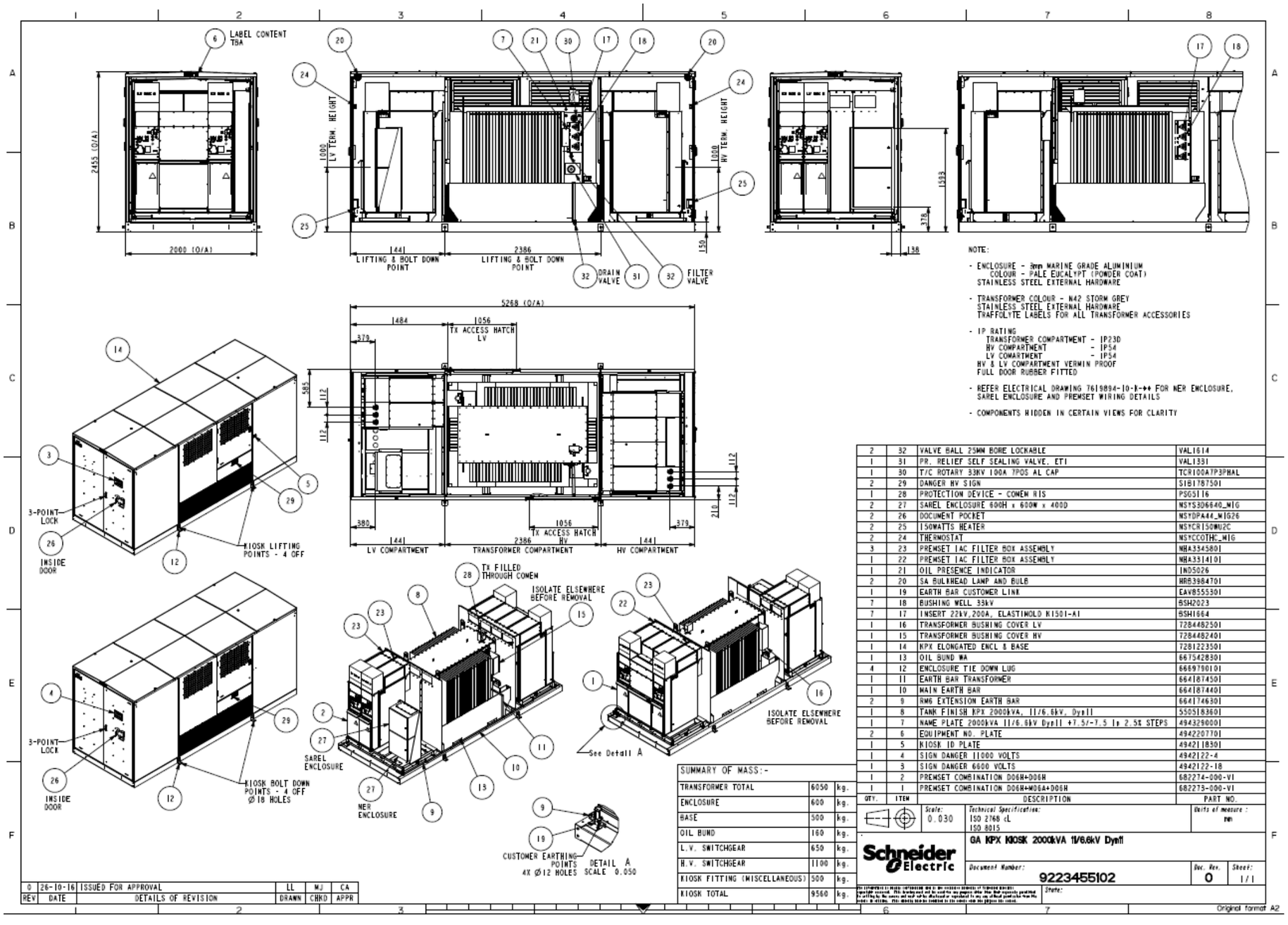


Figure 2 – Dendrobium (Nebo) Surface Switchyard- section proposed to be demolished clouded



NOTE:

- ENCLOSURE - 3mm MARINE GRADE ALUMINIUM
  COLOUR - PALE EUCALYPT (POWDER COAT)
  STAINLESS STEEL EXTERNAL HARDWARE
- TRANSFORMER COLOUR - N42 STORM GREY
  STAINLESS STEEL EXTERNAL HARDWARE
  TRAFFOLYTE LABELS FOR ALL TRANSFORMER ACCESSORIES
- IP RATING
  TRANSFORMER COMPARTMENT - IP23D
  HV COMPARTMENT - IP54
  LV COMARTMENT - IP54
  HV & LV COMPARTMENT VERMIN PROOF
  FULL DOOR RUBBER FITTED
- REFER ELECTRICAL DRAWING 7619894-10-1-++ FOR NER ENCLOSURE, SAREL ENCLOSURE AND PREMSET WIRING DETAILS
- COMPONENTS HIDDEN IN CERTAIN VIEWS FOR CLARITY

QTY.	ITEM	DESCRIPTION	PART NO.
2	32	VALVE BALL 25MM BORE LOCKABLE	VAL1614
1	31	PR. RELIEF SELF SEALING VALVE, ETI	VAL1331
1	30	T/C ROTARY 33KV 100A 7POS AL CAP	TCR100A7P3PHAL
2	29	DANGER HV SIGN	SIB178750I
1	28	PROTECTION DEVICE - CONEN RIS	PSG51I6
2	27	SAREL ENCLOSURE 600H x 600W x 400D	NSYS3D6640_MIG
2	26	DOCUMENT POCKET	NSYDPA44_MIG26
2	25	150WATTS HEATER	NSYCR150WU2C
2	24	THERMOSTAT	NSYCCOTHC_MIG
3	23	PREMSET IAC FILTER BOX ASSEMBLY	NHA334580I
1	22	PREMSET IAC FILTER BOX ASSEMBLY	NHA33I4I0I
1	21	OIL PRESENCE INDICATOR	IND5026
2	20	SA BULKHEAD LAMP AND BULB	HRB3984701
1	19	EARTH BAR CUSTOMER LINK	EAV8555301
7	18	BUSHING WELL 33kV	BSH2023
7	17	INSERT 22kV,200A, ELASTIMOLD K1501-A1	BSH1864
1	16	TRANSFORMER BUSHING COVER LV	728448250I
1	15	TRANSFORMER BUSHING COVER HV	728448240I
1	14	KPX ELONGATED ENCL & BASE	728122350I
1	13	OIL BUND WA	667542830I
4	12	ENCLOSURE TIE DOWN LUG	666979010I
1	11	EARTH BAR TRANSFORMER	664187450I
1	10	MAIN EARTH BAR	664187440I
2	9	RM6 EXTENSION EARTH BAR	664174630I
1	8	TANK FINISH KPX 2000kVA, II/6.6kV, Dyn11	550518360I
1	7	NAME PLATE 2000kVA II/6.6kV Dyn11 +7.5/-7.5 I» 2.5% STEPS	494329000I
2	6	EQUIPMENT NO. PLATE	494220770I
1	5	KIOSK ID PLATE	49421I830I
1	4	SIGN DANGER 11000 VOLTS	4942122-4
1	3	SIGN DANGER 6600 VOLTS	4942122-18
1	2	PREMSET COMBINATION D06H+D06H	682274-000-VI
1	1	PREMSET COMBINATION D06H+M06A+D06H	682273-000-VI

SUMMARY OF MASS:-		
TRANSFORMER TOTAL	6050	kg.
ENCLOSURE	600	kg.
BASE	500	kg.
OIL BUND	160	kg.
L.V. SWITCHGEAR	650	kg.
H.V. SWITCHGEAR	1100	kg.
KIOSK FITTING (MISCELLANEOUS)	500	kg.
KIOSK TOTAL	9560	kg.

REV	DATE	DETAILS OF REVISION	DRAWN	CHKD	APPR
0	26-10-16	ISSUED FOR APPROVAL	LL	MJ	CA

Scale: 0.030
Technical Specification: ISO 2768 cL, ISO 8015
Units of measure: mm
Schneider Electric
GA KPX KIOSK 2000kVA 11/6.6kV Dyn11
Document Number: 9223455102
Doc. Rev.: 0
Sheet: 1/1
State:
Original format A2

Figure 3- Kiosk Transformer Drawing and Images