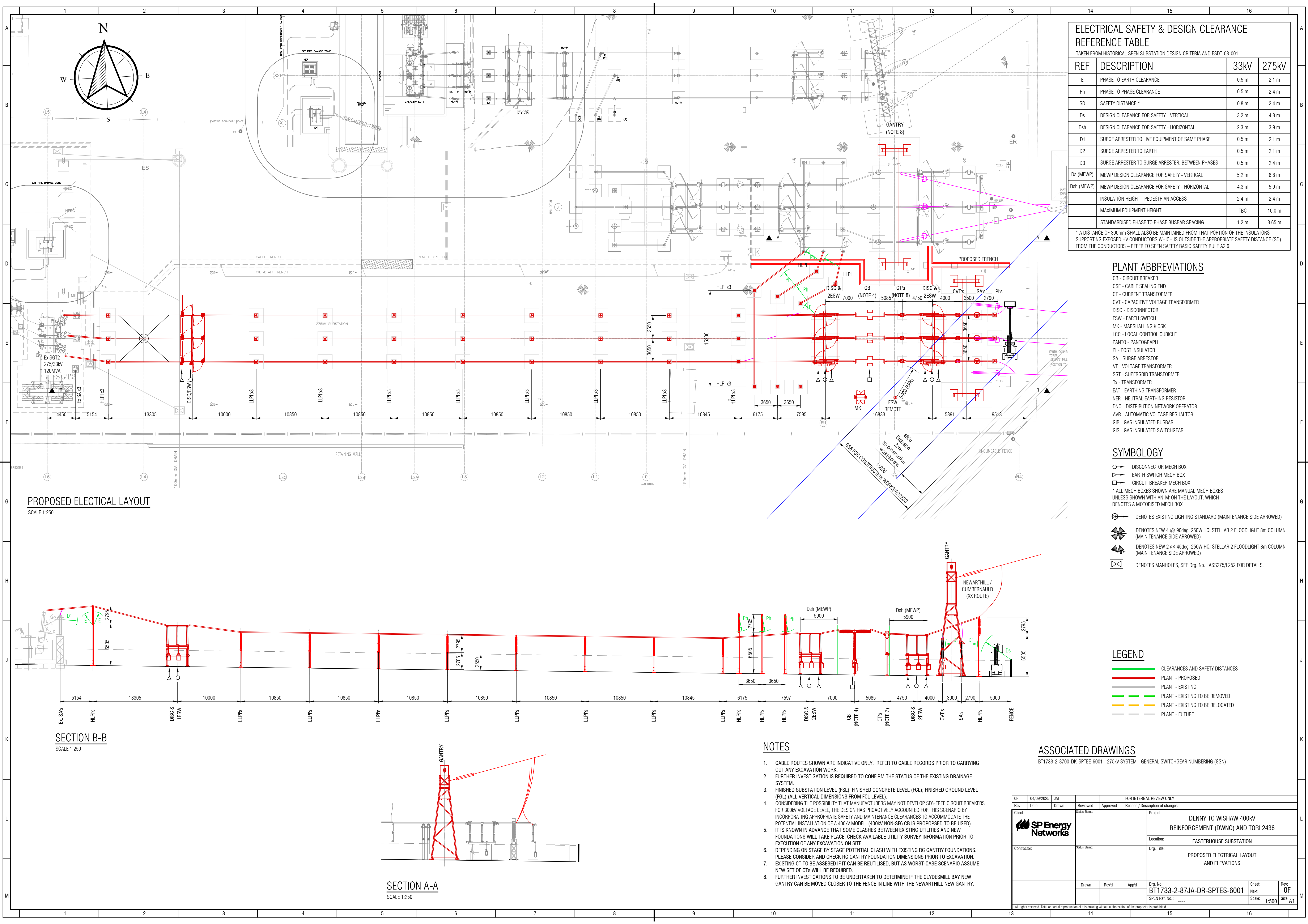




ELECTRICAL SAFETY & DESIGN CLEARANCE REFERENCE TABLE			
TAKEN FROM HISTORICAL SPEN SUBSTATION DESIGN CRITERIA AND ESDT-03-001			
REF	DESCRIPTION	33kV	275kV
E	PHASE TO EARTH CLEARANCE	0.5 m	2.1 m
Ph	PHASE TO PHASE CLEARANCE	0.5 m	2.4 m
SD	SAFETY DISTANCE *	0.8 m	2.4 m
Ds	DESIGN CLEARANCE FOR SAFETY - VERTICAL	3.2 m	4.8 m
Dsh	DESIGN CLEARANCE FOR SAFETY - HORIZONTAL	2.3 m	3.9 m
D1	SURGE ARRESTER TO LIVE EQUIPMENT OF SAME PHASE	0.5 m	2.1 m
D2	SURGE ARRESTER TO EARTH	0.5 m	2.1 m
D3	SURGE ARRESTER TO SURGE ARRESTER, BETWEEN PHASES	0.5 m	2.4 m
Ds (MEWP)	MEWP DESIGN CLEARANCE FOR SAFETY - VERTICAL	5.2 m	6.8 m
Dsh (MEWP)	MEWP DESIGN CLEARANCE FOR SAFETY - HORIZONTAL	4.3 m	5.9 m
	INSULATION HEIGHT - PEDESTRIAN ACCESS	2.4 m	2.4 m
	MAXIMUM EQUIPMENT HEIGHT	TBC	10.0 m
	STANDARDISED PHASE TO PHASE BUSBAR SPACING	1.2 m	3.65 m

* A DISTANCE OF 300mm SHALL ALSO BE MAINTAINED FROM THAT PORTION OF THE INSULATORS SUPPORTING EXPOSED HV CONDUCTORS WHICH IS OUTSIDE THE APPROPRIATE SAFETY DISTANCE (SD) FROM THE CONDUCTORS - REFER TO SPEN SAFETY BASIC SAFETY RULE A2.6

PLANT ABBREVIATIONS

- CB - CIRCUIT BREAKER
- CSE - CABLE SEALING END
- CT - CURRENT TRANSFORMER
- CVT - CAPACITIVE VOLTAGE TRANSFORMER
- DISC - DISCONNECTOR
- ESW - EARTH SWITCH
- MK - MARSHALLING KIOSK
- LCC - LOCAL CONTROL CUBICLE
- PANTO - PANTOGRAPH
- PI - POST INSULATOR
- SA - SURGE ARRESTOR
- VT - VOLTAGE TRANSFORMER
- SGT - SUPERGRID TRANSFORMER
- Tx - TRANSFORMER
- EAT - EARTHING TRANSFORMER
- NER - NEUTRAL EARTHING RESISTOR
- DNO - DISTRIBUTION NETWORK OPERATOR
- AVR - AUTOMATIC VOLTAGE REGULATOR
- GIB - GAS INSULATED BUSBAR
- GIS - GAS INSULATED SWITCHGEAR

SYMBOLOLOGY

- DISCONNECTOR MECH BOX
- EARTH SWITCH MECH BOX
- CIRCUIT BREAKER MECH BOX
- * ALL MECH BOXES SHOWN ARE MANUAL MECH BOXES UNLESS SHOWN WITH AN 'M' ON THE LAYOUT, WHICH DENOTES A MOTORISED MECH BOX
- DENOTES EXISTING LIGHTING STANDARD (MAINTENANCE SIDE ARROWED)
- DENOTES NEW 4 @ 90deg 250W HOI STELLAR 2 FLOODLIGHT 8m COLUMN (MAIN TENANCE SIDE ARROWED)
- DENOTES NEW 2 @ 45deg 250W HOI STELLAR 2 FLOODLIGHT 8m COLUMN (MAIN TENANCE SIDE ARROWED)
- DENOTES MANHOLES, SEE Drg. No. LASS275/L252 FOR DETAILS.

LEGEND

- CLEARANCES AND SAFETY DISTANCES
- PLANT - PROPOSED
- PLANT - EXISTING
- PLANT - EXISTING TO BE REMOVED
- PLANT - EXISTING TO BE RELOCATED
- PLANT - FUTURE

NOTES

- CABLE ROUTES SHOWN ARE INDICATIVE ONLY. REFER TO CABLE RECORDS PRIOR TO CARRYING OUT ANY EXCAVATION WORK.
- FURTHER INVESTIGATION IS REQUIRED TO CONFIRM THE STATUS OF THE EXISTING DRAINAGE SYSTEM.
- FINISHED SUBSTATION LEVEL (FSL); FINISHED CONCRETE LEVEL (FCL); FINISHED GROUND LEVEL (FGL) (ALL VERTICAL DIMENSIONS FROM FGL LEVEL).
- CONSIDERING THE POSSIBILITY THAT MANUFACTURERS MAY NOT DEVELOP SF6-FREE CIRCUIT BREAKERS FOR 300kV VOLTAGE LEVEL, THE DESIGN HAS PROACTIVELY ACCOUNTED FOR THIS SCENARIO BY INCORPORATING APPROPRIATE SAFETY AND MAINTENANCE CLEARANCES TO ACCOMMODATE THE POTENTIAL INSTALLATION OF A 400kV MODEL. (400kV NON-SF6 CB IS PROPOSED TO BE USED) IT IS KNOWN IN ADVANCE THAT SOME CLASHES BETWEEN EXISTING UTILITIES AND NEW FOUNDATIONS WILL TAKE PLACE. CHECK AVAILABLE UTILITY SURVEY INFORMATION PRIOR TO EXECUTION OF ANY EXCAVATION ON SITE.
- DEPENDING ON STAGE BY STAGE POTENTIAL CLASH WITH EXISTING RC GANTRY FOUNDATIONS. PLEASE CONSIDER AND CHECK RC GANTRY FOUNDATION DIMENSIONS PRIOR TO EXCAVATION. EXISTING CT TO BE ASSESSED IF IT CAN BE REUTILISED, BUT AS WORST-CASE SCENARIO ASSUME NEW SET OF CTs WILL BE REQUIRED.
- FURTHER INVESTIGATIONS TO BE UNDERTAKEN TO DETERMINE IF THE CLYDESMILL BAY NEW GANTRY CAN BE MOVED CLOSER TO THE FENCE IN LINE WITH THE NEWARTHILL NEW GANTRY.

ASSOCIATED DRAWINGS

BT1733-2-8700-DK-SPTEE-6001 - 275kV SYSTEM - GENERAL SWITCHGEAR NUMBERING (GSN)

Rev.	Date	Drawn	Reviewed	Approved	Reason / Description of changes.
01	04/09/2025	JM			
Client:			Project:		
SP Energy Networks			DENNY TO WISHAW 400kV REINFORCEMENT (DWN0) AND TORI 2436		
Contractor:			Location:		
			EASTERHOUSE SUBSTATION		
			Drg. Title:		
			PROPOSED ELECTRICAL LAYOUT AND ELEVATIONS		
			Drg. No.:		Sheet:
			BT1733-2-87JA-DR-SPTES-6001		01
			SPEN Ref. No.:		Rev:
			1:500		OF
			Scale:		Size:
			A1		