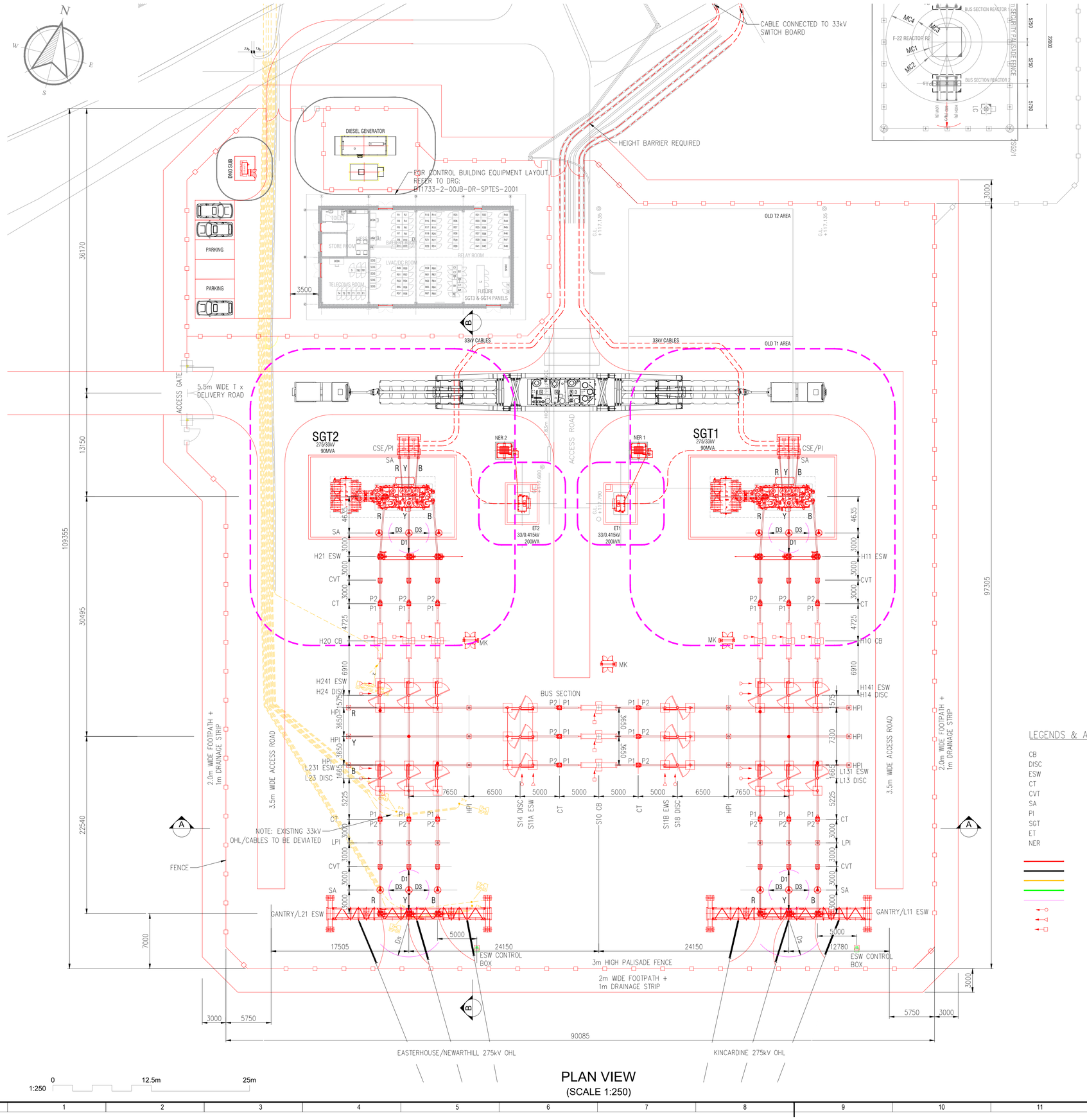
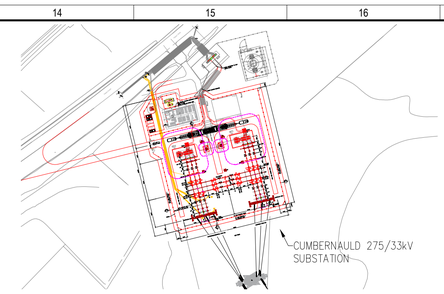


0 1:250 12.5m 25m

PLAN VIEW
(SCALE 1:250)



LOCATION PLAN
(SCALE 1:2500)

ASSOCIATED DRAWINGS:

22119-BHK-CUMB-SUB-D-E-000201	– 275kV ELECTRICAL SUBSTATION ELEVATIONS
BT1733-2-8700-DK-SPTEE-2001	– PROPOSED SWITCHGEAR NUMBERING FOR CUMBERNAULD 275kV SUBSTATION
ET1A1106055	– HYOSUNG (TRANSFORMER OUTLINE)

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
2. ALL EQUIPMENT UPGRADE WORKS SHALL BE AS PER ASENG-11-862.
3. DESIGN OF ALL NEW PRIMARY PLANT EQUIPMENT AND SYSTEMS SHALL BE AS PER EPS-03-033 & ASSET-02-005.
4. ALL NEW PLANT PROPOSED AND THE LOCATIONS OF PLANT AS SHOWN INDICATIVELY TO BE UPDATED UPON RECEIPT OF CONTRACT GA's IN AUTOCAD FORMAT.
5. ELECTRO-MECHANICAL LOADING TO BE VERIFIED UPON RECEIPT OF CONTRACT GA's.
6. TO BE UPDATEDONCE OHL DESIGN HAS BEEN SUITABLY PROGRESSED INLINE WITH GANTRY.
7. EQUIPMENT CONTROL BOX LOCATIONS (TBC) ON RECEIPT OF MANUFACTURE DRAWINGS.
8. 33kV CABLE ROUTE AND CABLE SEALING END ARRANGEMENTS TO BE CONFIRMED IN STAGE 1B.
9. EXISTING PLANT TO BE REMOVED ARE NOT SHOWN FOR CLARITY

275kV MAIN PLANT EQUIPMENT SCHEDULE

EQUIPMENT REF.	DESCRIPTION	QUANTITY	MANUFACTURER	TYPE	GA DRAWING No.
CB	1 PHASE CIRCUIT BREAKER	9	TBC	TBC	TBC
DISC/1ESW	3 PHASE DISCONNECTOR WITH 1 EARTH SWITCH	6	TBC	TBC	TBC
ESW	3 PHASE EARTH SWITCH	4	TBC	TBC	TBC
SGT	SUPER GRID TRANSFORMER	2	TBC	TBC	TBC
CT	CURRENT TRANSFORMER	18	TBC	TBC	TBC
CVT	CAPACITIVE VOLTAGE TRANSFORMER	12	TBC	TBC	TBC
SA	SURGE ARRESTER	12	TBC	TBC	TBC
HPI	HIGH POST INSULATOR	12	TBC	TBC	TBC
LPI	LOW POST INSULATOR	6	TBC	TBC	TBC

33kV MAIN PLANT EQUIPMENT SCHEDULE

EQUIPMENT REF.	DESCRIPTION	QUANTITY	MANUFACTURER	TYPE	GA DRAWING No.
ET	EARTHING TRANSFORMER	2	TBC	TBC	TBC
NER	NEUTRAL EARTHING RESISTOR	2	TBC	TBC	TBC
SA	SURGE ARRESTER	6	TBC	TBC	TBC
PI	POST INSULATOR	12	TBC	TBC	TBC

LEGENDS & ABBREVIATIONS:

CB	CIRCUIT BREAKER
DISC	DISCONNECTOR
ESW	EARTH SWITCH
CT	CURRENT TRANSFORMER
CVT	CAPACITIVE VOLTAGE TRANSFORMER
SA	SURGE ARRESTER
PI	POST INSULATOR
SGT	SUPERGRID TRANSFORMER
ET	EARTHING TRANSFORMER
NER	NEUTRAL EARTHING RESISTOR
	PROPOSED MAIN PLANT
	EXISTING MAIN PLANT
	TO BE RELOCATED
	TO BE REMOVED
	CLEARANCE & SAFETY DISTANCES
	DISCONNECTOR MECH. BOX
	EARTH SWITCH MOTOR/MANUAL MECH. BOX
	CIRCUIT BREAKER MECH. BOX

ELECTRICAL SAFETY CLEARANCE REFERENCE TABLE

REF	DESCRIPTION	275kV	33kV
E	PHASE TO EARTH CLEARANCE	1.9m	0.5m
Ph	PHASE TO PHASE CLEARANCE	2.6m	0.32m
SD	SAFETY DISTANCE*	2.4m	0.8m
Ds	DESIGN CLEARANCE FOR SAFETY – VERTICAL	4.8m	3.05m
Dsh	DESIGN CLEARANCE FOR SAFETY –HORIZONTAL	3.9m	2.3m
D1	SURGE ARRESTER TO LIVE EQUIPMENT OF SAME PHASE	2.1m	0.5m
D2	SURGE ARRESTER TO EARTH	2.1m	0.5m
D3	SURGE ARRESTER TO SURGE ARRESTER, BETWEEN PHASES	2.4m	0.5m
Ds (MEWP)	MEWP DESIGN FOR SAFETY – VERTICAL	6.8m	5.05m
Dsh (MEWP)	MEWP DESIGN FOR SAFETY – HORIZONTAL	5.9m	4.3m
Ih	INSULATION HEIGHT – PEDESTRIAN ACCESS	2.55m	2.55m
	STANDARDISED PHASE TO PHASE BUSBAR SPACING	3.65m	1.2m
	MINIMUM HEIGHT OF CONDUCTORS ABOVE ROADWAYS	7.0m	5.8m

* 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

Rev.	Date	Drawn	Reviewed	Approved	Reason / Description of changes.
P01	11/09/2025	PCC	SJ	US	FIRST ISSUE

SP Energy Networks | MORGAN SINDALL INFRASTRUCTURE | BakerHicks

Drg. Title: 275/33kV ELECTRICAL SUBSTATION LAYOUT

Location: CUMBERNAULD

Project: DWNO - DENNY TO WISHAW NETWORK OPTIMISATION

Drg. No.: 22119-BHK-CUMB-SUB-D-E-000101

Rev: P01

Status Code:	Description:	SPEN Ref. No. :	Scale:	Sheet:	Next:	Size:
S3	REVIEW & COMMENTS	----	AS SHOWN	01	-	A1

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