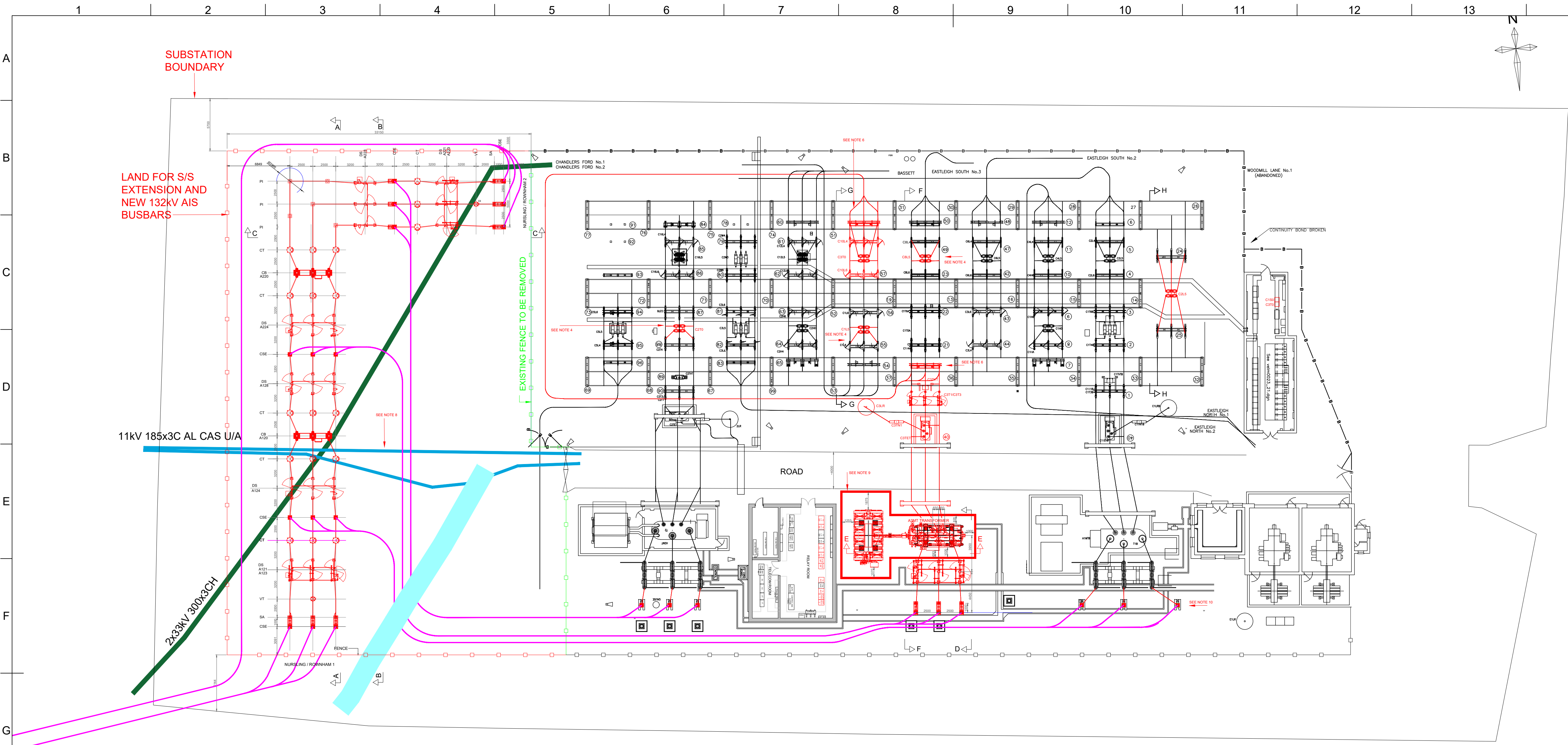


- NOTES:-
- 1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.
 - 2) THIS IS A PRELIMINARY LAYOUT PLAN AND PREPARED FOR STAGE 1 AND TO BE UPDATED AT LATER STAGE.
 - 3) ALL EQUIPMENT SIZES, APPEARANCE, LOCATIONS ARE AS SHOWN. TOLERANCE.
 - 4) EXISTING GR TO BE REMOVED AND REPLACED WITH NEW GR.
 - 5) EQUIPMENT TABLE SHOWN IS TENTATIVE AND TO BE UPDATED DURING DETAIL DESIGN STAGE.
 - 6) 33KV C/S (SEE ARRANGEMENT DESIGN 6) ETC.
 - 7) IT HAS BEEN IDENTIFIED THAT HOT BUND, CONTROL ROOM BUILDING AND SITE SITES UNDER FLOOD RISK ZONE AND A FLOOD RISK ASSESSMENT NEEDS TO BE DONE AND RECOMMENDATION TO BE IMPLEMENTED DURING DETAIL DESIGN.
 - 8) EXISTING 11KV AND 33KV UG CABLE AND DRAINAGE SYSTEMS TO BE DIVERTED FOR NEW SUBSTATION COMPOUND EXTENSION. WHEREAS ALTERNATE SYSTEMS ARE BEING DEVELOPED TO AVOID THIS DIVERSION E.G. PROVIDING PULLING FOR NEARBY (AS SERVICES) ETC.
 - 9) EXISTING CONTROL ROOM BUILDING IS LOCATED WITHIN NEW OT FIRE DAMAGE ZONE. THIS IS A INHERENT RISK AND AN ASSESSMENT IS TO BE DONE REGARDING CONTROL ROOM BUILDING EXTERNAL WALL AND DOORS.
 - 10) PLEASE REFER CONTROL ROOM DRAWING CC12118_CONS_VELM_OEL_001277 FOR FURTHER DETAILS.
 - 11) SLIPOVER CTS WILL BE INSTALLED WITH CABLE SEALING END OF A UNIT AND ANMT TRANSFORMER.

132KV LEGEND		
ITEM	LEGEND	DESCRIPTION
1		CABLE SEALING END WITH SURGE ARRESTER
2		CABLE SEALING END
3		LINE DISCONNECTOR WITH SINGLE EARTH SWITCH
4		DISCONNECTOR
5		DISCONNECTOR WITH DOUBLE EARTH SWITCH
6		VOLTAGE TRANSFORMER
7		CURRENT TRANSFORMER
8		CIRCUIT BREAKER
9		POST INSULATOR
GENERAL LEGEND		
ITEM	LEGEND	DESCRIPTION
1		EXISTING EQUIPMENT
2		NEW EQUIPMENT
3		EQUIPMENTS TO BE REMOVED
4		33KV CABLE
5		11KV CABLE
6		132KV NEW CABLE

33KV LEGEND		
ITEM	LEGEND	DESCRIPTION
10		33KV CABLE SEALING END
11		33KV DISCONNECTOR
12		33KV CIRCUIT BREAKER
13		33KV DISCONNECTOR WITH SINGLE EARTHING SWITCH
14		33KV EARTHING TRANSFORMER
15		33KV VOLTAGE TRANSFORMER

REFERENCES:

SINGLE LINE DIAGRAM
CC12118_CONS_VELM_SLD_001273

OVERALL ELECTRICAL ELEVATION DIAGRAM
CC12118_CONS_VELM_OELED_001277

SYSTEM PARAMETERS :-

S.No.	DESCRIPTION	UNIT	132 kV	33 kV
1	SYSTEM OPERATING VOLTAGE	kV	132	33
2	HIGHEST SYSTEM VOLTAGE (rms)	kV	145	36
3	LIGHTNING IMPULSE WITHSTAND VOLTAGE	kVp	650	170
4	POWER FREQUENCY WITHSTAND VOLTAGE FOR 1MIN (rms)	kVrms	275	70
5	SHORT CIRCUIT CURRENT/DURATION	kA/Sec	40/3	31.5/3
6	FREQUENCY	Hz	50	50

ELECTRICAL CLEARANCES :-

S.No.	DESCRIPTION	UNIT	132 kV	33 kV
1	PHASE TO PHASE (MIN) (P-P)	mm	1400	430
2	PHASE TO EARTH (MIN) (P-E)	mm	1200	500
3	VERTICAL DESIGN CLEARANCE (VDC) (TO LIVE METAL)	mm	3500	2900
4	MINIMUM INSULATION HEIGHT(MIH) (PEDESTRIAN ACCESS)	mm	2400	2400
5	HORIZONTAL DESIGN CLEARANCE (HDC)	mm	2900	2300

PROPOSED EQUIPMENT DETAILS			
S. No	EQUIPMENT NOMENCLATURE	DESCRIPTION	QTY
1	A120, A220	132KV, 1250A 31.5kA 3 POLE, NON-SF6, LIVE TANK CIRCUIT BREAKER	02
2	A301/A313/A311	132KV, 1250A, 31.5KA 3-PHASE AIS DISCONNECTOR WITH 2 EARTH SWITCH	01
3	A3MT	132KV/33KV, 90MVA GRID TRANSFORMER	01
4	A124, A128, A224, A228 A123, A223	132KV, 1250A, 31.5KA 3-PHASE AIS DISCONNECTOR	06
5	CT	132KV, 2000A 31.5KA 1-POLE CURRENT TRANSFORMER	18
6	VT	132KV 1-PHASE VOLTAGE TRANSFORMER	T.B.C
7	A121, A221	132KV EARTH SWITCH	02
8	C10L4, C10L6	33KV, 2000A 31.5KA 3-PHASE AIS DISCONNECTOR WITH BUS TRANSFER DUTY CAPACITY	02
9	C3TET	33KV EARTHING / AUX TRANSFORMER	01
10	C3TVT	33KV VOLTAGE TRANSFORMER	01
11	C3T3	33KV, 2000A 31.5KA 3-PHASE AIS DISCONNECTOR WITH 1 EARTH SWITCH	01
12	C1L5, C2T0, C3T0, C1S0, C8L5	33KV, 2000A 31.5KA 3 POLE, NON-SF6, DEAD TANK CIRCUIT BREAKER WITH CTS	05
13	C3LR	33KV NER	01
14	SLIPOVER CT	132KV CABLE SEALING END	06



Engineering & Project Management

Project Title

VELMORE 132/33KV SUBSTATION

Title

OVERALL ELECTRICAL LAYOUT

Drawn

Designer

Checked

Date Approved

AZ RZ UH



Borehamwood Industrial Park, Rowley Lane,
Borehamwood, Herts, WD6 5PZ
Tel: 0208 731 4600 Fax: 0208 731 4601
www.ocugroup.com

Drawing No

CC12118_CONS_VELM_OEL_001276

Status

Scale

Rev

REVIEW

1:250 @ A1

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