

110kV STATION MINIMUM ALL YEAR ROUND RATINGS		
	NOMINAL RATING	SHORT CIRCUIT RATING
BUSBAR	2500A	31.5KA (1s)
FEEDER BAY	1250A	31.5KA (1s)
TRANSFORMER BAY	1250A	31.5KA (1s)
COUPLER BAY	2500A	31.5KA (1s)
SECTIONALISER BAY	2500A	31.5KA (1s)

HV BAY CONDUCTOR RATINGS SHALL OUTLINE RATINGS FOR SUMMER, WINTER & AUTUMN.

STANDARD IEC/ESB DESIGNATORS - AIS	
IEC DESIGNATOR (ESB DESIGNATOR)	DESCRIPTION
QA1(CB)	CIRCUIT BREAKER
QB1(DA)	BUSBAR DISCONNECT
QB2(DB)	BUSBAR DISCONNECT
QB9(DL)	LINE DISCONNECT
QB91(DT1)	TRAF'D DISCONNECT
QB92(DT2)	TRAF'D DISCONNECT
QC1(DEM1)	BAY EARTH SWITCHES
QC2(DEM2)	
QC3(DEM3)	
QC9(DE)	
QC91(DE4)	
QC92(DE5)	
QC93(DE6)	BUSBAR EARTH SWITCHES
QC11(DEMA1)	
QC12(DEMA2)	
QC22(DEMR2)	
QB1(K1-DA)	WING COUPLER BUSBAR DISCONNECT
QB2(K1-DB)	WING COUPLER BUSBAR DISCONNECT
QA1(K1-CB)	WING COUPLER CIRCUIT BREAKER

LEGEND	
LT	LINE TRAP
SA	SURGE ARRESTOR
VT	VOLTAGE TRANSFORMER
CT	CURRENT TRANSFORMER

KEY	
<span style="background-color: black; color: black;">■</span>	NEW
<span style="background-color: red; color: red;">■</span>	FUTURE EXTENSION TO 4 BAYS
<span style="background-color: magenta; color: magenta;">■</span>	CUSTOMER
<span style="background-color: cyan; color: cyan;">■</span>	SPARE
<span style="background-color: blue; color: blue;">■</span>	FUTURE EXTENSION TO 8 BAYS
VT	MULTICORE VT
CT	MULTICORE CT
▲	(OHL) OVER HEAD LINE
▲	CABLE SEALING END
.....	CABLE
.....	CABLE

**NOTE 1:** THIS SLD IS AN ELECTRICAL REPRESENTATION OF A STANDARD 110kV C TYPE AIS STATION SHOWING EXAMPLE BAY ALLOCATIONS, FEEDER CONFIGURATIONS AND CUSTOMER INTERFACES. FOR PHYSICAL LAYOUT REQUIREMENTS REFER TO EIRGRID GENERAL FUNCTIONAL SPECIFICATION XDS-QFS-00-001.

**NOTE 2:** THE SPECIFIC MINIMUM 3 PHASE SHORT CIRCUIT BAY RATING 31.5KA (1s), APPLIES TO BOTH ELECTRICAL AND MECHANICAL FORCES.

**NOTE 3:** HIGHER SHORT CIRCUIT RATING MAY BE REQUIRED DEPENDING ON LOCATION OF THE SUBSTATION.

**NOTE 4:** THIS IS AN SCS/RTU STATION TBC. THIS IS AN AIS STATION.

**NOTE 5:** ALL NEW 110kV DISCONNECTS SHALL BE MOTORISED.

**NOTE 6:** SOME POINT ON WAVE CONTROLLERS REQUIRE A VOLTAGE REFERENCE FROM BOTH SIDES OF THE CIRCUIT BREAKER. IN SUCH CASES A SUITABLE VOLTAGE SELECTION SCHEME SHALL BE INSTALLED TO PROVIDE THE REFERENCE ON THE BUSBAR SIDE OF THE CIRCUIT BREAKER.

**NOTE 7:** REFER TO PROJECT SPECIFIC PROTECTION SPEC FOR:  
 1. SPECIFIC BAY CT & VT CONFIGURATIONS, RATINGS, BURDEN & ACCURACY CLASS REQUIREMENTS.  
 2. TELEPROTECTION CHANNEL REQUIREMENTS  
 3. Tx NEUTRAL EARTH REQUIREMENTS

**NOTE 8:** A PROTECTION SLD SHALL BE SUBMITTED FOR DETAILED DESIGN & AS-BUILT PURPOSES INCLUDING THE FOLLOWING:  
 1. HV PLANT RATINGS FOR ALL HV COMPONENTS INCLUDING PROTECTION REQUIREMENTS AS OUTLINED IN NOTE 7.  
 2. A LEGEND OUTLINING PROTECTION RELAY DETAILS USED INCLUDING RELAY TYPE, ANSI DEVICE NUMBERS AND LONG RELAY MLFB/ORDER CODE.  
 3. PROTECTION RELAY INPUTS SHOWN WIRED TO INSTRUMENT TRANSFORMER CORES.

**NOTE 9 (AS ILLUSTRATED ON DRAWING):** MANDATORY REQUIREMENT FOR SA PRIOR TO EIRGRID/CUSTOMER BOUNDARY.

**NOTE 10:** ALL SA REQUIREMENTS TO BE CONFIRMED BASED ON INSULATION COORDINATION STUDY.

**NOTE 11:** THE DASHED LINE IS A GENERAL INDICATION OF THE BOUNDARY BETWEEN THE TRANSMISSION SYSTEM AND THE CUSTOMER'S INSTALLATION. THE OWNERSHIP OF EQUIPMENT HOWEVER IS INDICATED BY COLOUR, FOR EXAMPLE CUSTOMER OWNED EQUIPMENT IS SHOWN IN: THERE SHALL NOT BE ANY CUSTOMER OWNED HV EQUIPMENT LOCATED ON THE EIRGRID SIDE OF THE DASHED LINE.

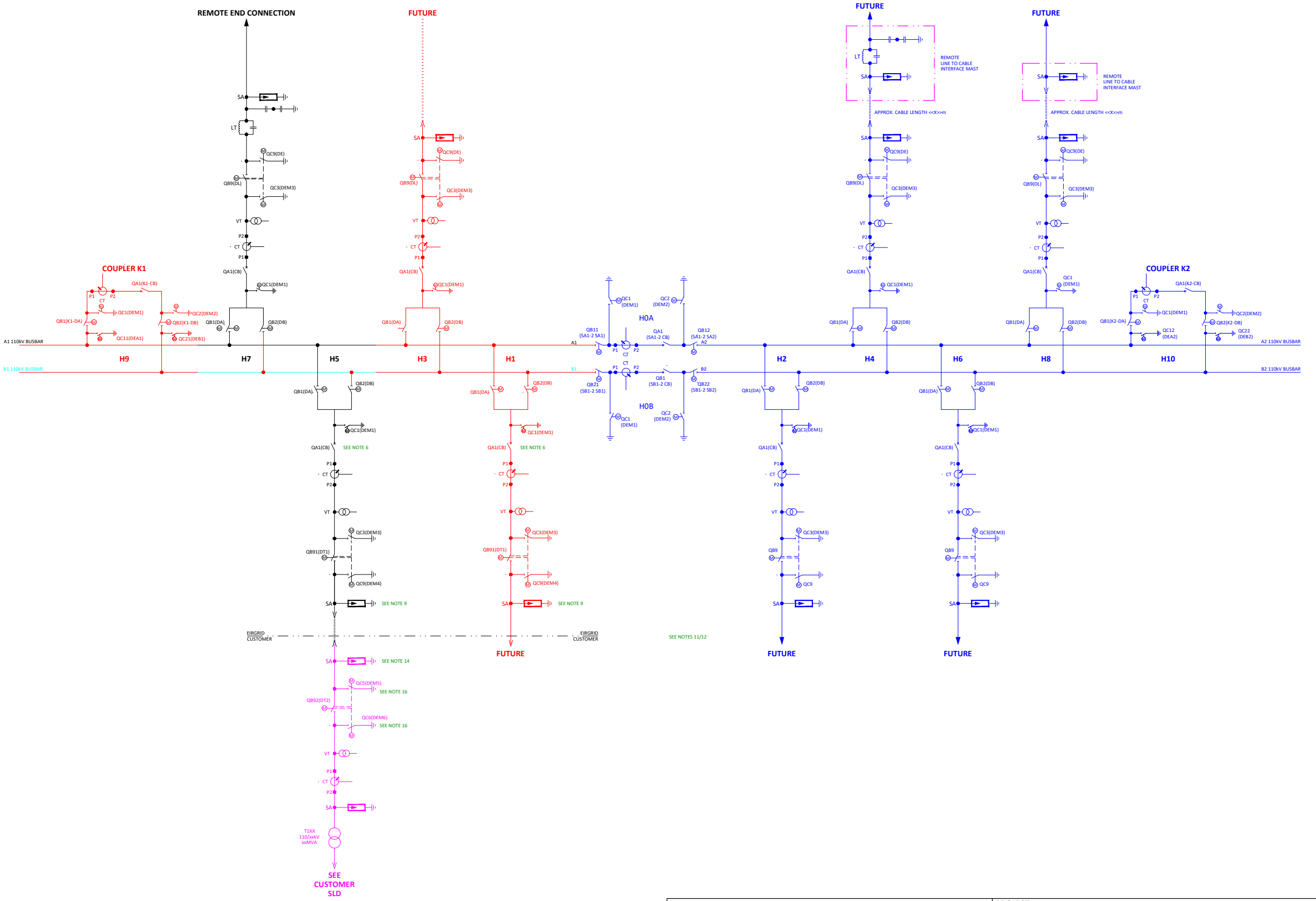
**NOTE 12:** CUSTOMER EQUIPMENT TBC. OWNERSHIP BOUNDARIES TBC.

**NOTE 13:** INSTRUMENT TRANSFORMER CORES & WINDINGS ARE NOT TO BE SHARED ACROSS THE PROPERTY BOUNDARY FENCE WITH THE EXCEPTION OF A CT CORE FOR DIFFERENTIAL PROTECTION AND A VT WINDING FOR VOLTAGE SYNCHRONISATION WHERE APPLICABLE.

**NOTE 14 (AS ILLUSTRATED ON DRAWING):** MANDATORY REQUIREMENT FOR SA AT CUSTOMER END OF TAO CABLE. CUSTOMER TO DEMONSTRATE THAT TAO CABLE IS SUITABLY PROTECTED FROM OVERVOLTAGES.

**NOTE 15:** REQUIREMENT AND POSITION OF CT/VT AND TRANSFORMER SA IN CUSTOMER COMPOUND TO BE DETERMINED BY THE CUSTOMER.

**NOTE 16:** THE EARTH SWITCH ON THE TAO SIDE OF THE DISCONNECTOR IS MANDATORY. THE EARTH SWITCH ON THE CUSTOMER'S SIDE OF THE DISCONNECTOR IS OPTIONAL AND A MATTER FOR THE CUSTOMER. AS THE SWITCHGEAR WILL BE OWNED AND OPERATED BY THE CUSTOMER IT IS ALSO A MATTER FOR THE CUSTOMER TO DECIDE WHETHER THE DISCONNECTOR AND/OR EARTH SWITCH(ES) WILL BE MOTORISED OR MANUALLY OPERATED.



DRAWING IS NOT TO SCALE - IF IN DOUBT, ASK

02	DRAWING TITLE CHANGE	CRC	DG	NC	04/10/2024
01	REVISED AFTER ESB DUE DILIGENCE	CRC	DG	NC	30/09/2024
00	FIRST ISSUE	CRC	DG	NC	20/09/2024
REV	DESC	DRAWN	CHK'D	APP'D	DATE

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PROJECT			
<b>STANDARD 110 kV SINGLE LINE DIAGRAMS</b>			
DRAWING TITLE			
<b>110 kV AIS 2-BAY STATION EXTENDABLE TO 4-BAY &amp; 8-BAY CONFIGURATIONS SINGLE LINE DIAGRAM</b>			
No of Shts	1	SIZE	A3
		SCALE	N/A
DRAWING NUMBER		SHEET	REV
XDN-SLD-STND-H-009		001	02