FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM)

DRG. NO. TB-3-331-510-101

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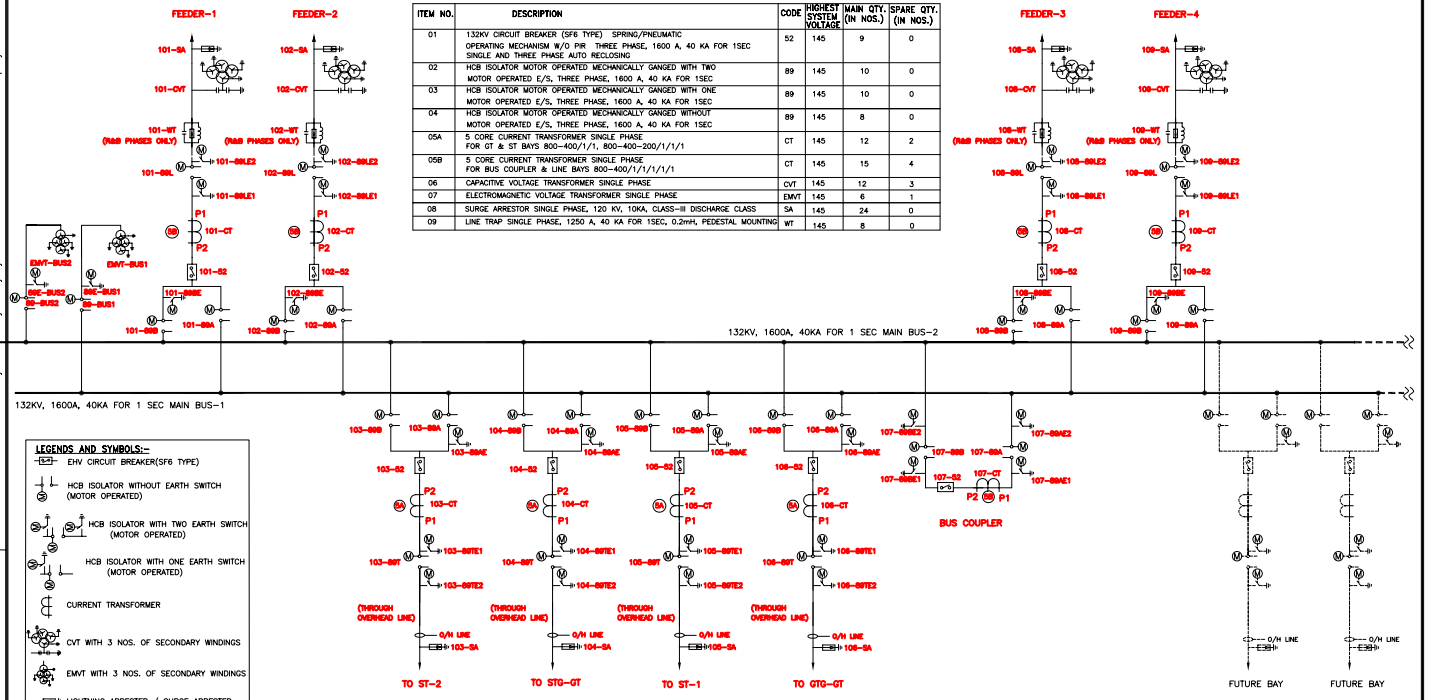
COMPUTER DRG. PATH NAME :

SIGN & DATE

INVENTORY NO.



ITEM NO.	DESCRIPTION	CODE	HIGHEST SYSTEM VOLTAGE	MAIN QTY. (IN NOS.)	SPARE QTY. (IN NOS.)
01	132KV CIRCUIT BREAKER (SF6 TYPE) SPRING/PNEUMATIC OPERATING MECHANISM W/O PIR THREE PHASE, 1600 A, 40 KA FOR 1SEC SINGLE AND THREE PHASE AUTO RECLOSING	52	145	9	0
02	HCB ISOLATOR MOTOR OPERATED MECHANICALLY GANGED WITH TWO MOTOR OPERATED E/S, THREE PHASE, 1600 A, 40 KA FOR 1SEC	89	145	10	0
03	HCB ISOLATOR MOTOR OPERATED MECHANICALLY GANGED WITH ONE MOTOR OPERATED E/S, THREE PHASE, 1600 A, 40 KA FOR 1SEC	89	145	10	0
04	HCB ISOLATOR MOTOR OPERATED MECHANICALLY GANGED WITHOUT MOTOR OPERATED E/S, THREE PHASE, 1600 A, 40 KA FOR 1SEC	89	145	8	0
05A	5 CORE CURRENT TRANSFORMER SINGLE PHASE FOR GT & ST BAYS 800-400/1/1, 800-400-200/1/1/1	CT	145	12	2
05B	5 CORE CURRENT TRANSFORMER SINGLE PHASE FOR BUS COUPLER & LINE BAYS 800-400/1/1/1/1/1	CT	145	15	4
06	CAPACITIVE VOLTAGE TRANSFORMER SINGLE PHASE	CVT	145	12	3
07	ELECTROMAGNETIC VOLTAGE TRANSFORMER SINGLE PHASE	EMVT	145	6	1
08	SURGE ARRESTOR SINGLE PHASE, 120 KV, 10KA, CLASS-III DISCHARGE CLASS	SA	145	24	0
09	LINE TRAP SINGLE PHASE, 1250 A, 40 KA FOR 1SEC, 0.2mH, PEDESTAL MOUNTING	WT	145	8	0

SYSTEM: 145KV, 1600A, 50HZ, 40KA FOR 1 SEC, SOLIDLY EARTHED

REFERENCE DRAWING/ DOCUMENTS.
1. CUSTOMER SINGLE LINE DIAGRAM

PROJECT : 132 kV SWITCHYARD FOR 100 MW MONARCHAK GAS BASED COMBINED CYCLE POWER PROJECT
CUSTOMER : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
CONSULTANT : M/S DESEIN PVT. LTD.

REV.	DATE	ALTD.	CHD.	APPD.
01	19.10.10			

REVISED AS PER CUSTOMER COMMENTS DATED 19.10.10.

	NAME	SIGN.	DATE
DRAWN	JOGENDRA	-SD-	25.08.10
CHECKED	SK/VK/BB	-SD-	25.08.10
APPROVED	DR/BH	-SD-	25.08.10

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BHARAT HEAVY ELECTRICALS LIMITED
TRANSMISSION PROJECTS DIVISION

CARD CODE

TITLE: SINGLE LINE DIAGRAM FOR 132KV SWITCHYARD

NEXT SHEET 02
SHEET No. 01

DEPT. TBEM | CODE 422 | SCALE | W.O. No. 80002 | DRG. No. TB-3-331-510-101 | REV. 01

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132kV CT DETAILS(FOR TWO GT BAYS & TWO ST BAYS)-QTY = 12 Nos. + 2 Nos. (SPARES)

CORE NO.	RATIO	OUTPUT BURDEN (VA) AT HIGHEST TAP	Min KPV (V)	MAX Ie (mA) AT KPV	Max Rct (ohm)	Acc Class	Purpose
1	800-400/1	–	800/400V	25mA/50mA	4/2 Ohms	PS	PROTECTION
2	800-400/1	–	800/400V	25mA/50mA	4/2 Ohms	PS	PROTECTION
3	800-400-200/1	20	–	–	–	0.2	METERING
4	800-400-200/1	–	800/400/200V	25mA/50mA/100mA	4/2/1 Ohms	PS	BACKUP PROTECTION
5	800-400-200/1	–	800/400/200V	25mA/50mA/100mA	4/2/1 Ohms	PS	PROTECTION

132kV CT DETAILS(FOR FOUR LINE & B/C BAYS)-QTY = 15 Nos. + 4 Nos. (SPARES)

CORE NO.	RATIO	OUTPUT BURDEN (VA) AT HIGHEST TAP	Min KPV (V)	MAX Ie (mA) AT KPV	Max Rct (ohm)	Acc Class	Purpose
1	800-400/1	–	800/400V	25mA/50mA	4/2 Ohms	PS	PROTECTION
2	800-400/1	–	800/400V	25mA/50mA	4/2 Ohms	PS	PROTECTION
3	800-400/1	20	–	–	–	0.2	METERING
4	800-400/1	–	800/400V	25mA/50mA	4/2 Ohms	PS	BACKUP PROTECTION
5	800-400/1	–	800/400V	25mA/50mA	4/2 Ohms	PS	PROTECTION

132kV CVT DETAILS(FOR FOUR LINE BAYS)-QTY = 12 Nos. + 3 Nos. (SPARES)

SECONDARY WINDING	RATIO	Accuracy Class	BURDEN (VA)	Purpose
1	$\frac{132kV}{\sqrt{3}} / \frac{110V}{\sqrt{3}}$	3P	200	PROTECTION
2	$\frac{132kV}{\sqrt{3}} / \frac{110V}{\sqrt{3}}$	3P	200	PROTECTION
3	$\frac{132kV}{\sqrt{3}} / \frac{110V}{\sqrt{3}}$	0.2	100	METERING
13200 pF (+10%, -5%)				

132kV EMVT DETAILS(FOR MAIN BUS-1 & MAIN BUS-2) QTY = 6 Nos. + 1 No. (SPARE)

SECONDARY WINDING	RATIO	Accuracy Class	BURDEN (VA)	Purpose
1	$\frac{132kV}{\sqrt{3}} / \frac{110V}{\sqrt{3}}$	3P	200	PROTECTION
2	$\frac{132kV}{\sqrt{3}} / \frac{110V}{\sqrt{3}}$	3P	200	PROTECTION
3	$\frac{132kV}{\sqrt{3}} / \frac{110V}{\sqrt{3}}$	0.2	100	METERING

NOTES:-

1. NOMINAL VOLTAGE : 132kV
2. HIGHEST SYSTEM VOLTAGE : 145kV
3. POWER FREQUENCY WITHSTAND VOLTAGE FOR 1 SEC. : 275kV (rms)
4. LIGHTNING IMPULSE VOLTAGE : 650kVp
5. CREEPAGE : 3625mm
6. SHORT CIRCUIT CAPABILITY : 40kA FOR 1 SEC.
7. AC AUX. SUPPLY : 415V ±10%, 3-PH. 4-W, 50HZ ± 5%
8. DC AUX. VOLTAGE : 220V ±10%, 2-W, UNGROUNDED.
9. ALL EQUIPMENT SHALL BE RATED FOR 45 DEG CENTIGRADE AMBIENT AND OUTDOOR INSTALLATION.
10. POWER LINE CARRIER COMMUNICATION (PLCC) SYSTEM IS CONSIDERED FOR FOUR (4) NOS. LINE FEEDER.
11. PROVISION FOR TWO NOS. FUTURE LINE BAYS IS KEPT. THE SAME SHALL BE MARKED IN LAYOUT DRAWING.
12. THE PHASES ON WHICH LINE TRAPS ARE TO BE MOUNTED TO BE CONFIRMED BY NEEPCO. HOWEVER, FOUNDATIONS OF LINE TRAPS SHALL BE CASTED IN ALL THREE PHASES.

SYSTEM: 145KV, 1600A, 50HZ, 40KA FOR 1 SEC, SOLIDLY EARTHED

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NEXT SHEET –
SHEET No. 02

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