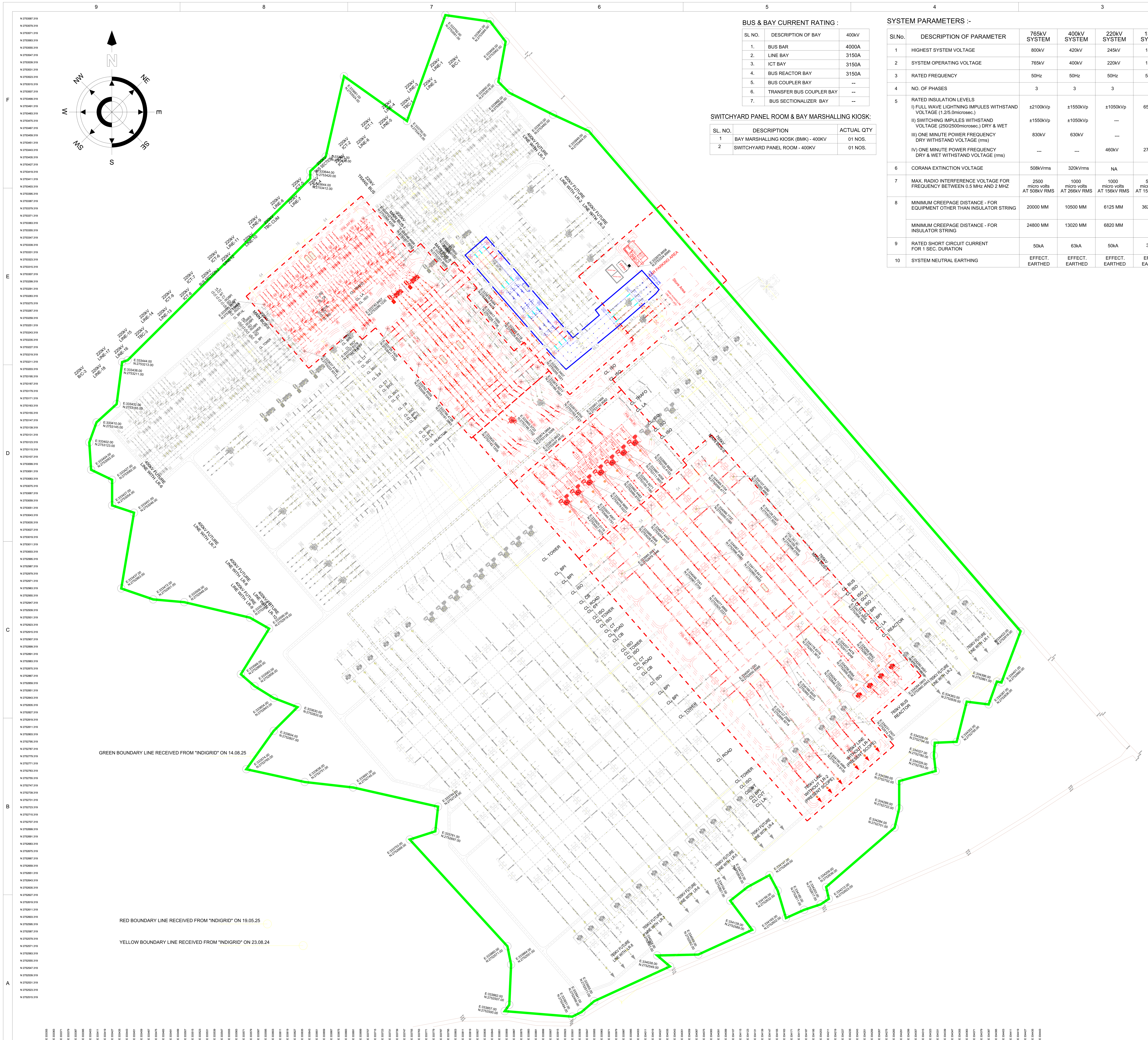

PLAN

BUS & BAY CURRENT RATING :

SL NO.	DESCRIPTION OF BAY	400kV
1.	BUS BAR	4000A
2.	LINE BAY	3150A
3.	ICT BAY	3150A
4.	BUS REACTOR BAY	3150A
5.	BUS COUPLER BAY	--
6.	TRANSFER BUS COUPLER BAY	--
7.	BUS SECTIONALIZER BAY	--

SWITCHYARD PANEL ROOM & BAY MARSHALLING KIOSK:

SL. NO.	DESCRIPTION	ACTUAL QTY
1	BAY MARSHALLING KIOSK (BMK) - 400KV	01 NOS.
2	SWITCHYARD PANEL ROOM - 400KV	01 NOS.

SYSTEM PARAMETERS :-

Sl.No.	DESCRIPTION OF PARAMETER	765kV SYSTEM	400kV SYSTEM	220kV SYSTEM	132kV SYSTEM	66kV SYSTEM	33kV SYSTEM
1	HIGHEST SYSTEM VOLTAGE	800kV	420kV	245kV	145kV	72.5kV	36kV
2	SYSTEM OPERATING VOLTAGE	765kV	400kV	220kV	132kV	66kV	33kV
3	RATED FREQUENCY	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
4	NO. OF PHASES	3	3	3	3	3	3
5	RATED INSULATION LEVELS						
	I) FULL WAVE LIGHTNING IMPULES WITHSTAND VOLTAGE (1.2/5.0microsec.)	±2100kVp	±1550kVp	±1050kVp	650kVp	325kVp	170kVp
	II) SWITCHING IMPULES WITHSTAND VOLTAGE (250/2500microsec.) DRY & WET	±1550kVp	±1050kVp	---	---	---	---
	III) ONE MINUTE POWER FREQUENCY DRY WITHSTAND VOLTAGE (rms)	830kV	630kV	---	---	---	---
	IV) ONE MINUTE POWER FREQUENCY DRY & WET WITHSTAND VOLTAGE (rms)	---	---	460kV	275KV	140kV	70kV
6	CORANA EXTINCTION VOLTAGE	508kVrms	320kVrms	NA	NA	NA	NA
7	MAX. RADIO INTERFERENCE VOLTAGE FOR FREQUENCY BETWEEN 0.5 MHz AND 2 MHZ	2500 micro volts AT 508kV RMS	1000 micro volts AT 266kV RMS	1000 micro volts AT 156kV RMS	500 micro volts AT 156kV RMS	NA	NA
8	MINIMUM CREEPAGE DISTANCE - FOR EQUIPMENT OTHER THAN INSULATOR STRING	20000 MM	10500 MM	6125 MM	3625 MM	1813 MM	900 MM
	MINIMUM CREEPAGE DISTANCE - FOR INSULATOR STRING	24800 MM	13020 MM	6820 MM	---	---	---
9	RATED SHORT CIRCUIT CURRENT FOR 1 SEC. DURATION	50kA	63kA	50kA	31.5kA	25kA (FOR 3 Sec.)	25kA (FOR 3 Sec.)
10	SYSTEM NEUTRAL EARTHING	EFFECT. EARTHED	EFFECT. EARTHED	EFFECT. EARTHED	EFFECT. EARTHED	EFFECT. EARTHED	EFFECT. EARTHED

CONDUCTOR DETAILS OF 400 kV SIDE:-	
a) MAIN BUS	QUAD ACSR BERSIMIS AT 15 M.
b) JACK BUS	QUAD MOOSE ACSR AT 22 M.
c) BAY EQPT INTERCONNECTION	4.5" IPS AL. TUBE AT 8 M / QUAD MOOSE ACSR
d) DROPPER / JUMPER	QUAD MOOSE ACSR
NO.OF STRINGS/PHASE:-	
a) FOR TENSION	2
b) FOR SUSPENSION	1
SUB CONDUCTOR SPACING:-	450 mm
EARTHWIRE.	10.98 MM DIA GI WIRE

BILL OF QTY. FOR 400kV MAIN EQUIPMENTS (FAULT LEVEL 63kA for 1 sec) :

SL.NO.	DESCRIPTION	UNIT	ACTUAL QUANTITY		SYMBOL	REMARKS
1	420kV, 3150A, 63kA CIRCUIT BREAKER (3-PH) WITHOUT CLOSING RESISTOR (With Support Structure)	EA	02		WITH CSD / W/O CR	
2	CONTROLLED SWITCHING DEVICE FOR 420kV, 3-PH CIRCUIT BREAKER	EA	02		CSD	
3	420kV, 3000A, 63kA,1-PH CURRENT TRANSFORMER WITH 120 % EXTENDED CURRENT RATING	EA	06			8 M HEIGHT
4	420kV, 4400pF CAPACITIVE VOLTAGE TRANSFORMER(1-PH)	EA	03			8 M HEIGHT
5	420kV, 3150A, 63kA ISOLATOR (3-PH) (DOUBLE BREAK) WITH 1 E/S	EA	05			8 M HEIGHT
6	400kV,3150A,63kA LINE TRAP 1SEC. (1-PH)	EA	02			
7	336kV SURGE ARRESTER (1-PH) LOW LEVEL	EA	03			8 M HEIGHT
8	400KV LINE TRAP BUS POST INSULATOR	EA	06	39		8 M HEIGHT
9	400kV BUS POST INSULATOR	EA	33			

CLEARANCE TABLE AS PER GTR :-

Sl.No.	DESCRIPTION	765kV SYSTEM	400kV SYSTEM	220kV SYSTEM	145kV SYSTEM	66kV SYSTEM	33kV SYSTEM
1	PHASE TO PHASE FOR CONDUCTOR-CONDUCTOR CONFIGURATION FOR ROD-CONDUCTOR CONFIGURATION	7600mm 9400mm	4000mm 4200mm	2100mm	1300mm	750mm	320mm
2	PHASE TO EARTH FOR CONDUCTOR-CONDUCTOR STRUCTURE FOR ROD-CONDUCTOR CONFIGURATION	4900mm 6400mm	3500mm	2100mm	1300mm	630mm	320mm
3	SECTIONAL CLEARANCE	10300mm	6500mm	5000mm	4000mm	3100mm	2800mm

LEGEND:

- PRESENT SCOPE
- NOT IN SCOPE OR FUTURE SCOPE
- EXISTING
- LEVEL LINE

NOTES :

01. ALL DIMENSIONS ARE IN MTR. UNLESS OTHERWISE SPECIFIED.
02. PHASE SEQUENCE SHOWN IN DRAWING IS INDICATIVE ONLY AND IT SHALL BE VERIFIED AT SITE DURING EXECUTION MATCHING WITH PHASE SEQUENCE OF TRANSMISSION LINES AND OTHER SS.

REV	DESCRIPTION	PREP.	CHKD.	APPD.	DATE
0	FIRST SUBMISSION	P.K.	S.K.	P.S.	26.08.26
		SIGN.			

OWNER	ISHANAGAR POWER TRANSMISSION LTD
NOA NO.	TENDER PURPOSE
PROJECT	Implementation of 1 no. 400kV line bay at Ishanagar S/s for RE Interconnection of M/s NTPC Renewable Energy Limited 630 MW RPP. 400kV line bays – 1 No.
SUBSTATION	765/400/220kV AIS SUB-STATION AT ISHANAGAR (NEW)
DRG. TITLE	OVERALL GENERAL ARRANGEMENT LAYOUT
DRG. NO. :	XXXX-XXXX-XXX-XXXXX-X-XXX-XX-XXX
SCALE :	N.T.S — JOB NO: XXXXX — SHEET 1 OF 1