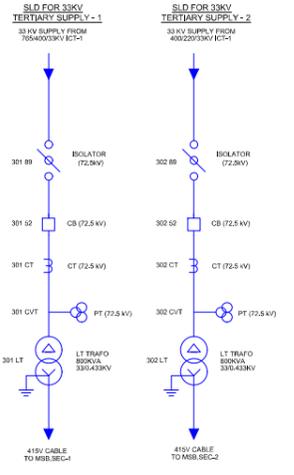
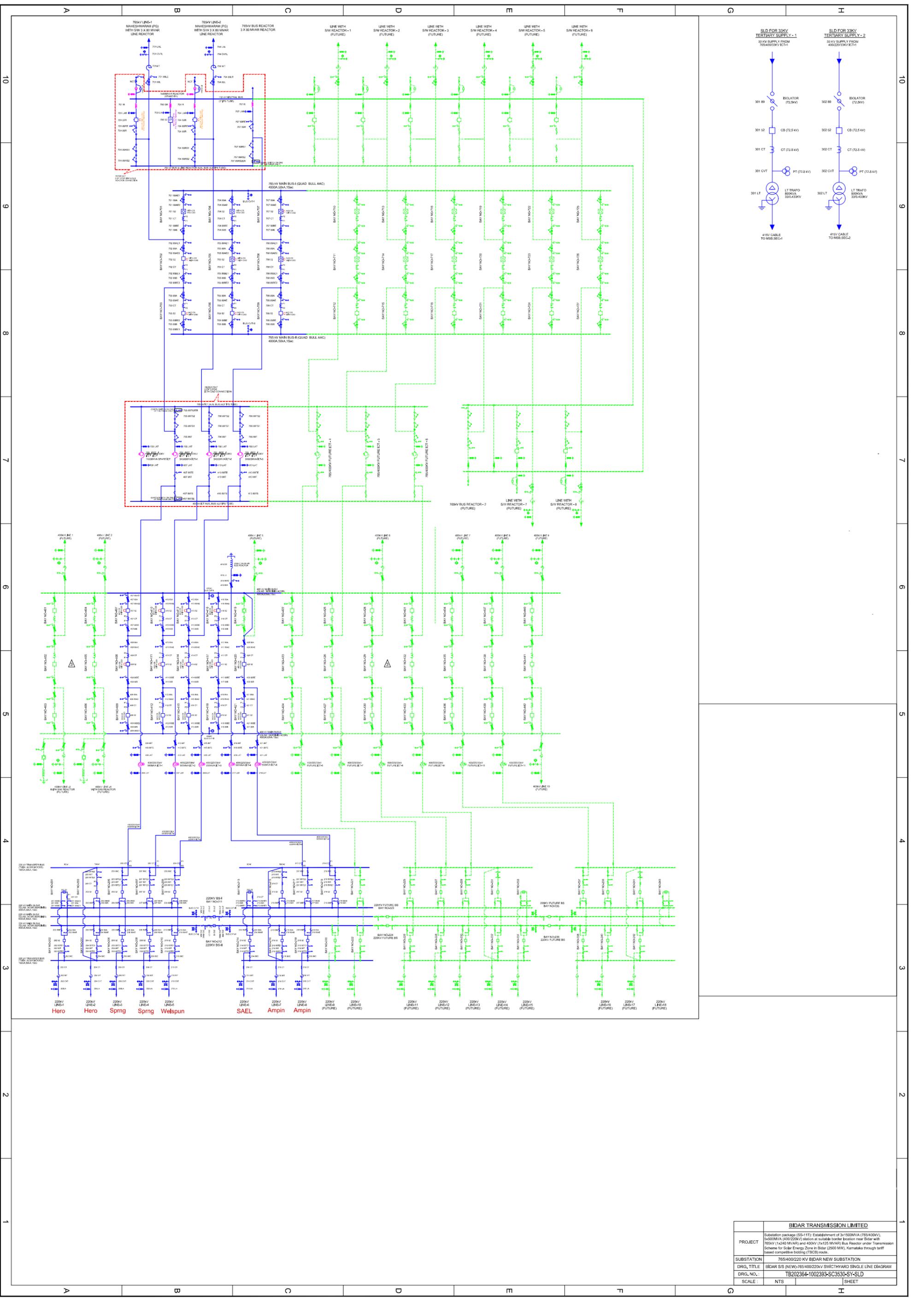
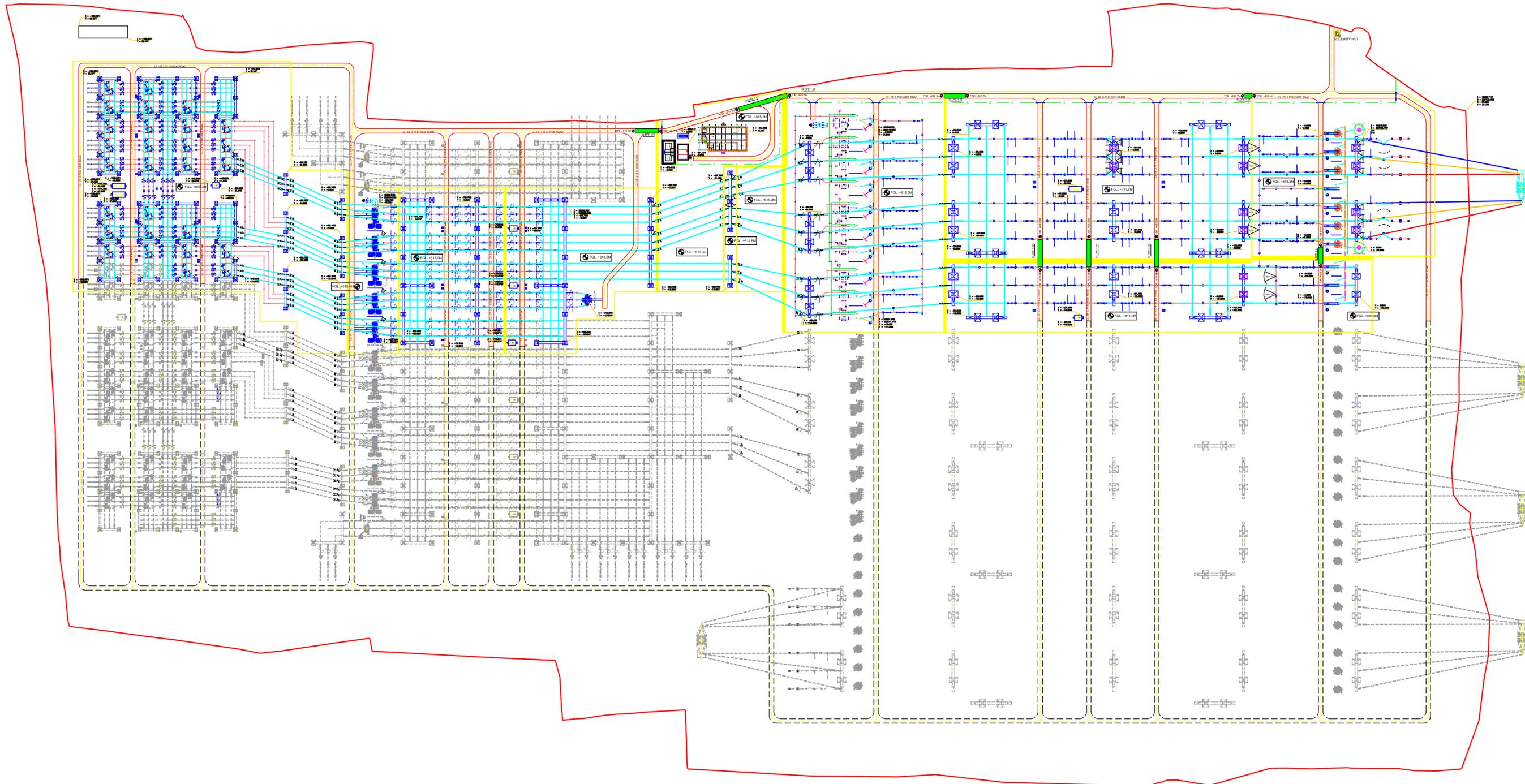


A.765 KV BIDAR S/S

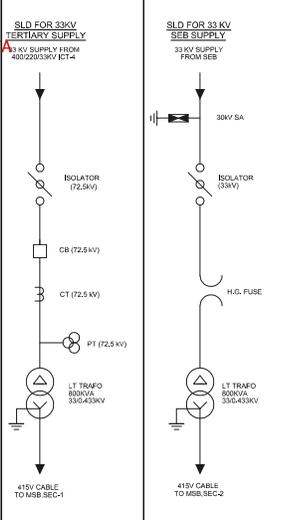
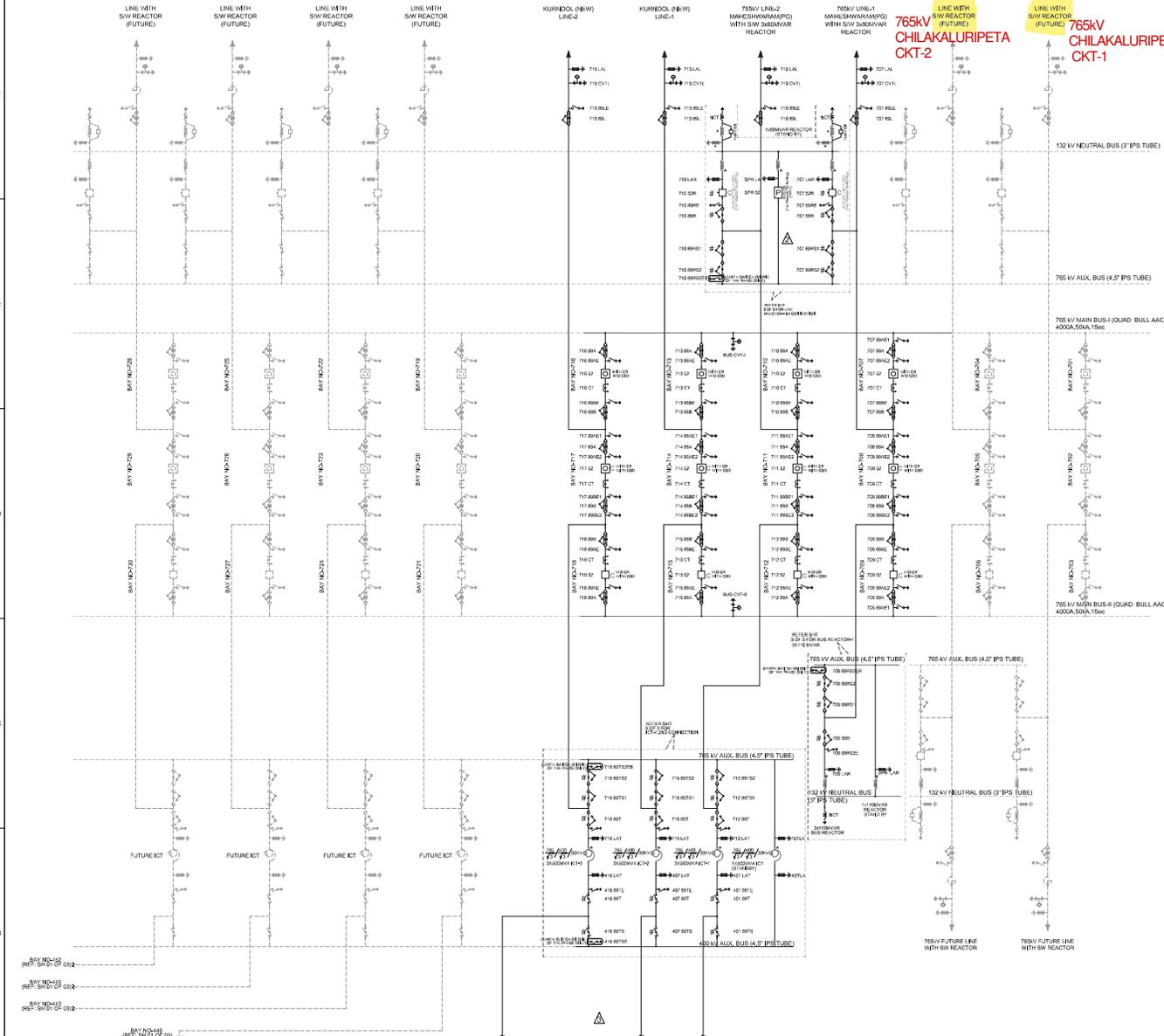


BIDAR TRANSMISSION LIMITED	
PROJECT	Substation package (SS-11T) Establishment of 3x1500MVA (765/400kV), 765/400MVA (400/220kV) station at suitable location near Bidar with 765kV (1x400 MVA) and 400kV (1x25 MVA) Bus Reactor under Transmission Scheme for Solar Energy Zone in Bidar (2000 MW), Karnataka through tariff based competitive bidding (TBCB) route.
SUBSTATION	765/400/220 KV BIDAR NEW SUBSTATION
DRG. TITLE	BIDAR SIS NEW-765/400/220kV SWMTHYARD SINGLE LINE DIAGRAM
DRG. NO.	TB202364-1002393-SC3530-SY-SLD
SCALE	NTS SHEET



3	FOURTH SUBMISSION	PM	AM	BS	22.11.24
2	THIRD SUBMISSION	PM	AM	BS	15.10.24
1	SECOND SUBMISSION	PM	AM	BS	08.10.24
0	FIRST SUBMISSION	PM	AM	BS	31.07.24
REV	DESCRIPTION	PREP.	CHKD.	APPD.	DATE
		SIGN.	SIGN.		
CUSTOMER	POWER GRID CORPORATION OF INDIA LTD. 				
	 TECHNO ELECTRIC & ENGG. CO. LTD.				
NOA NO.	SUPPLY	CC/T/W-AIS/DOM/A06/23/02743/NOA-1/24-103573/01, DATE:13.03.2024			
	ERECTION	CC/T/W-AIS/DOM/A06/23/02743/NOA-2/24-103573/02, DATE:13.03.2024			
PROJECT	765kV SUBSTATION (NEW) PACKAGE-SS-11T FOR ESTABLISHMENT OF 3X1500MVA (765/400KV), 5X500MVA (400/220KV) STATION AT SUITABLE BORDER LOCATION AT BIDAR INCLUDING 400KV, 125MVAR BUS REACTOR UNDER 'TRANSMISSION SCHEME FOR SOLAR ENERGY ZONE IN BIDAR (2500MW), KARNATAKA THROUGH TARIFF BASED COMPETITIVE BIDDING TBCB ROUTE				
SUBSTATION	765/400/220 KV BIDAR (NEW) PS				
DRG. TITLE	BIDAR S/S (NEW)-765/400/220KV ELECTRICAL LAYOUT PLAN & SECTION				
DRG. NO. :	TB202364-1002393-SC3530-ELECT-LAY-PLAN				
SCALE :	NTS	JOB NO: 0804BI	SHEET	4 OF 4	

B.765/400/220 KV
KURNOOL-III PS

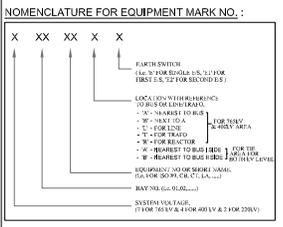


800kV 800pF CVT CORE DETAILS:

PARTICULARS	SECONDARY-1	SECONDARY-2	SECONDARY-3
RATED SECONDARY VOLTAGE (V)	110√3	110√3	110√3
APPLICATION	PROTECTION	PROTECTION	METERING
ACCURACY	0.5/0P	0.5/0P	0.2
OUTPUT BURDEN(MVA)	50 VA	50 VA	50 VA
VOLTAGE RATIO	785/10.1	785/10.1	785/10.1

72.5kV VT CORE DETAILS:

PARTICULARS	SECONDARY-1	SECONDARY-2
RATED SECONDARY VOLTAGE (V)	110√3	110√3
APPLICATION	PROTECTION	METERING
ACCURACY	3P	0.5
OUTPUT BURDEN(MVA)	10 VA	12 VA
VOLTAGE RATIO	33/0.11	33/0.11



NOTE:

- FOR DETAIL OF TRANSFORMER, REACTOR AREA PLEASE REFER RESPECTIVE SHEET 1, 2 OR 3 AS MENTIONED.
- PHASE ISOLATORS HAVE BEEN USED FOR 765KV REACTORS AND 765KV AUTO TRANSFORMERS TO USE SPARE UNIT THROUGH ISOLATOR SWITCHES.
- * MARKED EQUIPMENTS ARE NOT IN MS TECL'S SCOPE.
- * MARKED EQUIPMENTS ARE INDIVIDUAL POLE OPERATED.

LEGENDS:

—	PRESENT SCOPE
- - -	FUTURE/EXISTING SCOPE
□	NOT IN SCOPE OF TECL

800 KV CT (3000A) CORE DETAILS (TABLE-IA):

CORE NO	APPLICATION	CURRENT RATIO	OUTPUT BURDEN(MVA)	ACCURACY CLASS	MIN. POLE VOLT.(KV)	MAX. CT S.I. (OHM)	MAX. EXCITING CURRENT AT 10KV (mA)
01	DIFFERENTIAL CHECK	3000/500/1	-	PX	3000/2000/500	10/2.5	20 or 3000/1 TAP 20 or 3000/1 TAP
02	DIFFERENTIAL METER	3000/500/1	-	PX	3000/2000/500	10/2.5	20 or 3000/1 TAP 20 or 3000/1 TAP
03	METERING	3000/500/1	20	0.2B	-	-	-
04	METERING	3000/500/1	20	0.2B	-	-	-
05	TRANSF. DEF. LINE PROTECTION	3000/500/1	-	PX	3000/2000/500	10/2.5	20 or 3000/1 TAP 20 or 3000/1 TAP
08	LINE PROTECTION	3000/500/1	-	PX	3000/2000/500	10/2.5	20 or 3000/1 TAP 20 or 3000/1 TAP

NOTE: 1. PROTECTION CORES SHALL BE OF ACCURACY CLASS PX AS PER IEC 61869.
2. METERING CORES SHALL BE OF ACCURACY CLASS 0.2B AS PER IEC 61869.

SYSTEM PARAMETERS:

Sl. No	DESCRIPTION	765KV	132KV	66KV	33KV
1.0	RATED VOLTAGE	765 KV	132 KV	66 KV	33 KV
2.0	HIGHEST SYSTEM VOLTAGE	800 KV rms	145 KV rms	72.5 KV rms	36 KV rms
3.0	RATED FREQUENCY	50 Hz	50 Hz	50 Hz	50 Hz
4.0	MAX. FAULT LEVEL (I SEC)	50 KA	40 KA	31.5 KA	25 KA
5.0	RATED 1 PH POWER FREQ. WITH STAND VOLTAGE	800 KV rms	275 KV rms	140 KV rms	70 KV rms
6.0	RATED SWITCHING IMPULSE VOLTAGE (DRY & WET)	1550 KVp	-	-	-
7.0	FULL WAVE IMPULSE WITH STAND VOLTAGE	2100 KVp	650 KVp	325 KVp	170 KVp
8.0	MINIMUM CREEPAGE DISTANCE - EQUIPMENT	2480 mm	4495 mm	2244 mm	1116 mm
9.0	MINIMUM CREEPAGE DISTANCE - INSULATOR	2480 mm	4495 mm	2244 mm	1116 mm
9.0	SYSTEM EARTHING	EFFECTIVELY EARTH	EFFECTIVELY EARTH	EFFECTIVELY EARTH	EFFECTIVELY EARTH

72.5kV CT (50A) CORE DETAILS (TABLE-IB) WITH 120% EXTENDED CURRENT RATING (FOR LT TRAF0)

CORE NO	APPLICATION	CURRENT RATIO	OUTPUT BURDEN(MVA)	ACCURACY CLASS
01	OC & EF	50/1	10	5P10
02	METERING	50/1	10	0.5

BILL OF QTY FOR 765KV MAIN EQUIPMENTS:

SLNO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
1	AUTO TRANSFORMER (1PH) 765KV/132KV	EA	08	08
2	3000VA 33KV REACTOR (1PH) WITH 100% EXTENDED CURRENT RATING	EA	08	08
3	110MVAR 33KV REACTOR (1PH) WITH 100% EXTENDED CURRENT RATING	EA	08	08
4	765KV 3150A 50KA 3PH CIRCUIT BREAKER (WITH CLOSING RESISTOR) WITH SUPPORT STRUCTURE	EA	08	08
5	765KV 3150A 50KA 3PH CIRCUIT BREAKER (WITH CLOSING RESISTOR) WITH SUPPORT STRUCTURE	EA	08	08
6	765KV 3150A 50KA 3PH CIRCUIT BREAKER (WITH CLOSING RESISTOR) WITH SUPPORT STRUCTURE	EA	08	08
7	765KV 3150A 50KA SINGLE PHASE CIRCUIT BREAKER WITH SUPPORT STRUCTURE	EA	01	01
8	COIL INCLUDE SWITCHING DEVICE FOR 765KV 3PH CIRCUIT BREAKER	EA	10	10
9	765KV 300A 50KA 1 PHASE CURRENT TRANSFORMER WITH 100% EXTENDED CURRENT RATING	EA	36	36
10	765KV 800PF CAPACITIVE VOLTAGE TRANSFORMER (1PH)	EA	18	18
11	765KV 3150A 50KA VERTICAL KNEE DOUBLE BREAK ISOLATOR (1PH) WITH 1.5 S	EA	18	18
12	765KV 3150A 50KA VERTICAL KNEE DOUBLE BREAK ISOLATOR (3PH) WITH 2 S	EA	10	10
13	765KV 3150A 50KA VERTICAL KNEE DOUBLE BREAK ISOLATOR (1PH) WITH 1.5 S	EA	21	21
14	765KV 3150A 50KA VERTICAL KNEE DOUBLE BREAK ISOLATOR (1PH) WITHOUT E.S	EA	33	33
15	624KV SURGE ARRESTER (1PH)	EA	33	33

BILL OF QTY FOR 145KV & 33KV EQUIPMENTS (FOR NCT CONNECTION):

SLNO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
1	145KV 1250A 31.5KA CIRCUIT BREAKER (1PH)	EA	02	02
2	132KV SURGE ARRESTER (1PH)	EA	02	02
3	145KV MGR	EA	02	02
4	33KV CURRENT TRANSFORMER FOR 765KV REACTOR NEUTRAL ALONG WITH SUPPORT STRUCTURE & TERMINAL CONNECTOR	EA	03	03
5	CURRENT TRANSFORMER FOR 765KV REACTOR NEUTRAL ALONG WITH SUPPORT STRUCTURE & TERMINAL CONNECTOR	EA	03	03

BOQ FOR MAIN ITEMS (AT TERTIARY UNIT):

SLNO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
1	72.5KV 1250A 31.5KA 3PH CIRCUIT BREAKER WITH SUPPORT STRUCTURE	EA	01	01
2	72.5KV 650A 30KA 3PH DOUBLE BREAK ISOLATOR WITH 1.5 S	EA	01	01
3	72.5KV 50A 25A 1PH CURRENT TRANSFORMER WITH 120% EXTENDED CURRENT RATING	EA	03	03
4	72.5KV VOLTAGE TRANSFORMER (1PH)	EA	03	03
5	800VA 33/0.433KV 3PH LT TRANSFORMER	EA	01	01

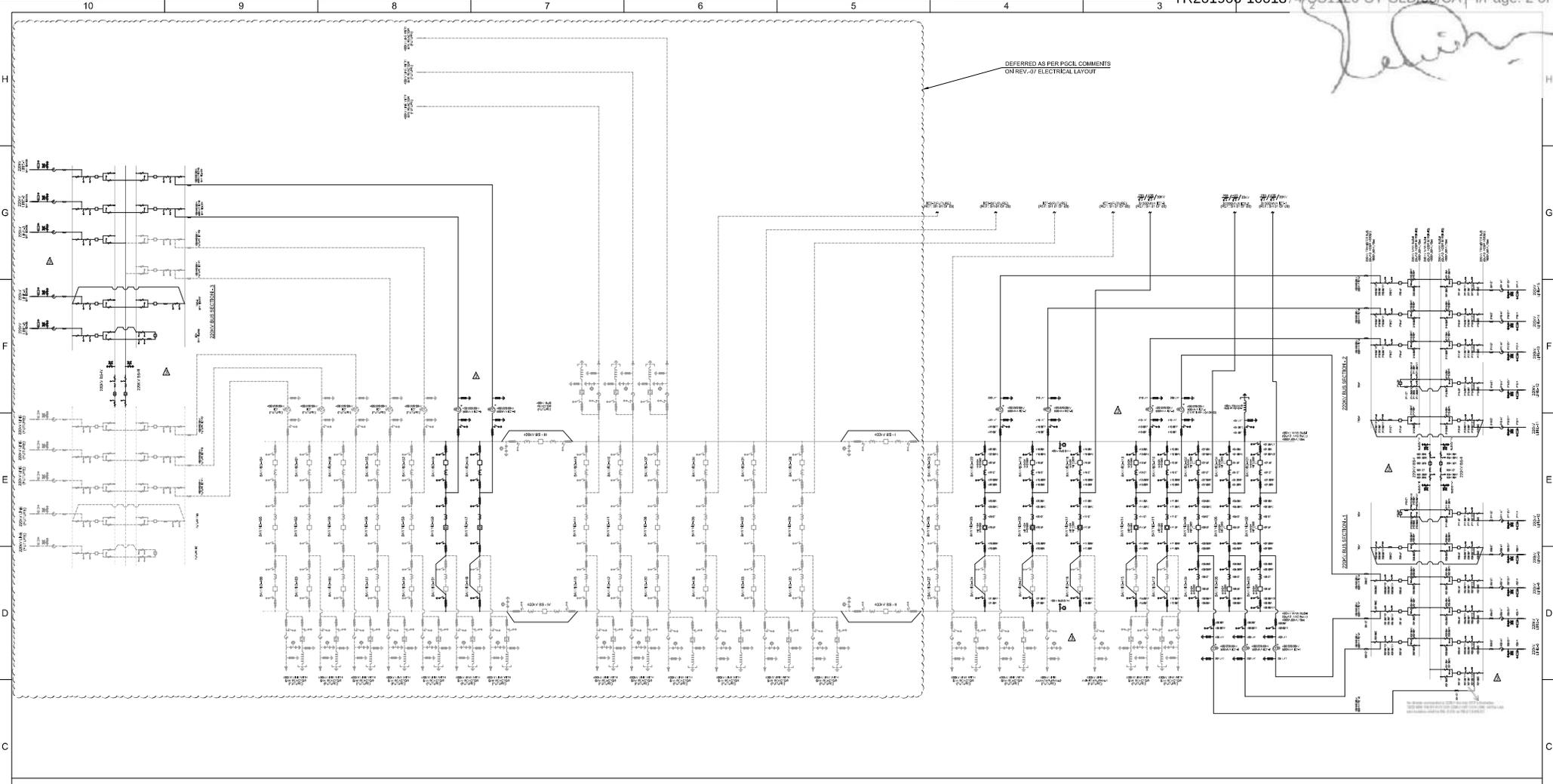
BOQ FOR MAIN ITEMS (AT LT AREA-SEB SUPPLY):

SLNO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
1	30KV 500A 25KA 3PHASE HOB ISOLATOR WITHOUT E.S	EA	01	01
2	30KV SURGE ARRESTER (1PH)	EA	03	03
3	30KV HOB GAP FUSE (1PH)	EA	03	03
4	800VA 33/0.433KV 3PH LT TRANSFORMER	EA	01	01

REVISED AS PER MAIL DATED 25.04.24 AND DISCUSSION HELD ON DATED 09.05.24, 10.05.24 & 14.05.24 AND COMMENTED R-07 ELECTRICAL LAYOUT.

REV	DESCRIPTION	PREP.	CHKD.	APFD.	DATE
3	FOURTH SUBMISSION	A.M.	A.M.	B.S.	22.05.24
2	THIRD SUBMISSION	A.M.	A.M.	B.S.	16.01.24
1	SECOND SUBMISSION	A.M.	A.M.	B.S.	20.09.23
0	FIRST SUBMISSION	A.M.	A.M.	B.S.	10.07.23

CUSTOMER	POWER GRID CORPORATION OF INDIA LTD.		
NOA NO.	CCNT/W-AIS/DOM/A0023/00332/NOA-1/23-103951/01	DATE:	19.06.2023
PROJECT	ERECTION OF 765KV/132KV/33KV SUBSTATION AT CHILAKALURIPETA (NEAR KURNOL-III) UNDER TRANSMISSION SCHEME FOR EVACUATION OF POWER FROM RE SOURCES IN KURNOL WIND ENERGY ZONE (3000MVA) / SOLAR ENERGY ZONE (1500 MW) PART A AND PART B.		
SUBSTATION	765/400/220 KV KURNOL-III (NEW) PS		
DRG. TITLE	SWITCHYARD SINGLE LINE DIAGRAM		
DRG. NO.:	TR201906-1001874-SS1120-SY-STD		
SCALE:	NTS	JOB NO:	0791KU SHEET 1 OF 3



BILL OF QTY. FOR 400V MAIN EQUIPMENTS:

S.N.	DESCRIPTION	UNIT	QTY	SYMBOL	REMARKS
1	400V 3P4W 300A AIR BREAKER	EA	06		
2	400V 3P4W 300A CIRCUIT BREAKER	EA	01		
3	400V 3P4W 300A CIRCUIT BREAKER	EA	04		
4	400V 3P4W 300A CIRCUIT BREAKER	EA	01		
5	400V 3P4W 300A CIRCUIT BREAKER	EA	01		
6	400V 3P4W 300A CIRCUIT BREAKER	EA	01		
7	400V 3P4W 300A CIRCUIT BREAKER	EA	01		
8	400V 3P4W 300A CIRCUIT BREAKER	EA	01		
9	400V 3P4W 300A CIRCUIT BREAKER	EA	01		
10	400V 3P4W 300A CIRCUIT BREAKER	EA	01		
11	400V 3P4W 300A CIRCUIT BREAKER	EA	01		
12	400V 3P4W 300A CIRCUIT BREAKER	EA	01		

BILL OF QTY. FOR 220V MAIN EQUIPMENTS:

S.N.	DESCRIPTION	UNIT	QTY	SYMBOL	REMARKS
1	220V 3P4W 100A AIR BREAKER	EA	01		
2	220V 3P4W 100A CIRCUIT BREAKER	EA	01		
3	220V 3P4W 100A CIRCUIT BREAKER	EA	01		
4	220V 3P4W 100A CIRCUIT BREAKER	EA	01		
5	220V 3P4W 100A CIRCUIT BREAKER	EA	01		
6	220V 3P4W 100A CIRCUIT BREAKER	EA	01		
7	220V 3P4W 100A CIRCUIT BREAKER	EA	01		
8	220V 3P4W 100A CIRCUIT BREAKER	EA	01		
9	220V 3P4W 100A CIRCUIT BREAKER	EA	01		
10	220V 3P4W 100A CIRCUIT BREAKER	EA	01		
11	220V 3P4W 100A CIRCUIT BREAKER	EA	01		
12	220V 3P4W 100A CIRCUIT BREAKER	EA	01		

400V CT (300A) CORE DETAILS (TABLE 10):

S.N.	APPLICATION	TYPE	CLASS	MAX. EXTENDED CURRENT AT 100% EXTENDED CURRENT RATING
01	DR (DISCONNECT)	PC	1000/0.5	25000 A
02	DR (DISCONNECT)	PC	1000/0.5	25000 A
03	DR (DISCONNECT)	PC	1000/0.5	25000 A
04	DR (DISCONNECT)	PC	1000/0.5	25000 A
05	DR (DISCONNECT)	PC	1000/0.5	25000 A
06	DR (DISCONNECT)	PC	1000/0.5	25000 A
07	DR (DISCONNECT)	PC	1000/0.5	25000 A
08	DR (DISCONNECT)	PC	1000/0.5	25000 A
09	DR (DISCONNECT)	PC	1000/0.5	25000 A
10	DR (DISCONNECT)	PC	1000/0.5	25000 A
11	DR (DISCONNECT)	PC	1000/0.5	25000 A
12	DR (DISCONNECT)	PC	1000/0.5	25000 A

400V 400V CVT CORE DETAILS (TABLE 11):

S.N.	APPLICATION	TYPE	CLASS	MAX. EXTENDED CURRENT AT 100% EXTENDED CURRENT RATING
01	DR (DISCONNECT)	PC	1000/0.5	25000 A
02	DR (DISCONNECT)	PC	1000/0.5	25000 A
03	DR (DISCONNECT)	PC	1000/0.5	25000 A
04	DR (DISCONNECT)	PC	1000/0.5	25000 A
05	DR (DISCONNECT)	PC	1000/0.5	25000 A
06	DR (DISCONNECT)	PC	1000/0.5	25000 A
07	DR (DISCONNECT)	PC	1000/0.5	25000 A
08	DR (DISCONNECT)	PC	1000/0.5	25000 A
09	DR (DISCONNECT)	PC	1000/0.5	25000 A
10	DR (DISCONNECT)	PC	1000/0.5	25000 A
11	DR (DISCONNECT)	PC	1000/0.5	25000 A
12	DR (DISCONNECT)	PC	1000/0.5	25000 A

220V CVT CORE DETAILS (TABLE 12):

S.N.	APPLICATION	TYPE	CLASS	MAX. EXTENDED CURRENT AT 100% EXTENDED CURRENT RATING
01	DR (DISCONNECT)	PC	1000/0.5	25000 A
02	DR (DISCONNECT)	PC	1000/0.5	25000 A
03	DR (DISCONNECT)	PC	1000/0.5	25000 A
04	DR (DISCONNECT)	PC	1000/0.5	25000 A
05	DR (DISCONNECT)	PC	1000/0.5	25000 A
06	DR (DISCONNECT)	PC	1000/0.5	25000 A
07	DR (DISCONNECT)	PC	1000/0.5	25000 A
08	DR (DISCONNECT)	PC	1000/0.5	25000 A
09	DR (DISCONNECT)	PC	1000/0.5	25000 A
10	DR (DISCONNECT)	PC	1000/0.5	25000 A
11	DR (DISCONNECT)	PC	1000/0.5	25000 A
12	DR (DISCONNECT)	PC	1000/0.5	25000 A

NOTE:

- FOR THE TYPE OF TRANSDUCER, PROTECTIVE RELAYS AND OTHER EQUIPMENT REFER TO THE IEC STANDARDS.
- FOR THE TYPE OF TRANSDUCER, PROTECTIVE RELAYS AND OTHER EQUIPMENT REFER TO THE IEC STANDARDS.
- FOR THE TYPE OF TRANSDUCER, PROTECTIVE RELAYS AND OTHER EQUIPMENT REFER TO THE IEC STANDARDS.

LEGENDS:

- PROTECTIVE SCOPE
- PROTECTIVE SCOPE
- PROTECTIVE SCOPE

REVISIONS:

REV	DESCRIPTION	DATE
3	FOURTH SUBMISSION	A.M. A.S. 22.05.24
2	THIRD SUBMISSION	A.M. A.S. 18.01.24
1	SECOND SUBMISSION	A.M. A.S. 20.09.23
0	FIRST SUBMISSION	A.M. A.S. 10.07.23

SYSTEM PARAMETERS:

S.N.	DESCRIPTION	400V	220V
01	RATED VOLTAGE	400V	220V
02	RATED SYSTEM VOLTAGE	400V	220V
03	RATED FREQUENCY	50 Hz	50 Hz
04	RATED SHORT CIRCUIT CURRENT	25000 A	25000 A
05	RATED SHORT CIRCUIT CURRENT	25000 A	25000 A
06	RATED SHORT CIRCUIT CURRENT	25000 A	25000 A
07	RATED SHORT CIRCUIT CURRENT	25000 A	25000 A
08	RATED SHORT CIRCUIT CURRENT	25000 A	25000 A
09	RATED SHORT CIRCUIT CURRENT	25000 A	25000 A
10	RATED SHORT CIRCUIT CURRENT	25000 A	25000 A
11	RATED SHORT CIRCUIT CURRENT	25000 A	25000 A
12	RATED SHORT CIRCUIT CURRENT	25000 A	25000 A

REVISIONS AS PER MAIL DATED 20.04.24 AND DISCUSSION HELD ON DATED 09.05.24, 10.05.24 & 10.05.24 AND COMMENTED ON ELECTRICAL LAYOUT:

CUSTOMER: POWER GRID CORPORATION OF INDIA LTD.

TECHNO ELECTRIC & ENGG. CO. LTD.

NOA NO: [Blank]

PROJECT: SUBSTATION PACKAGE-S10R 78540220KV KURNOOL-III UNDER TRANSMISSION SCHEME FOR DEDICATED POWER FROM THE SOURCES IN KURNOOL WIND ENERGY ZONE (200MW) SOLAR ENERGY ZONE (1000 MW) TANDLA AND NEELGIRI

SUBSTATION: 78540220KV KURNOOL-III (NEW) PS

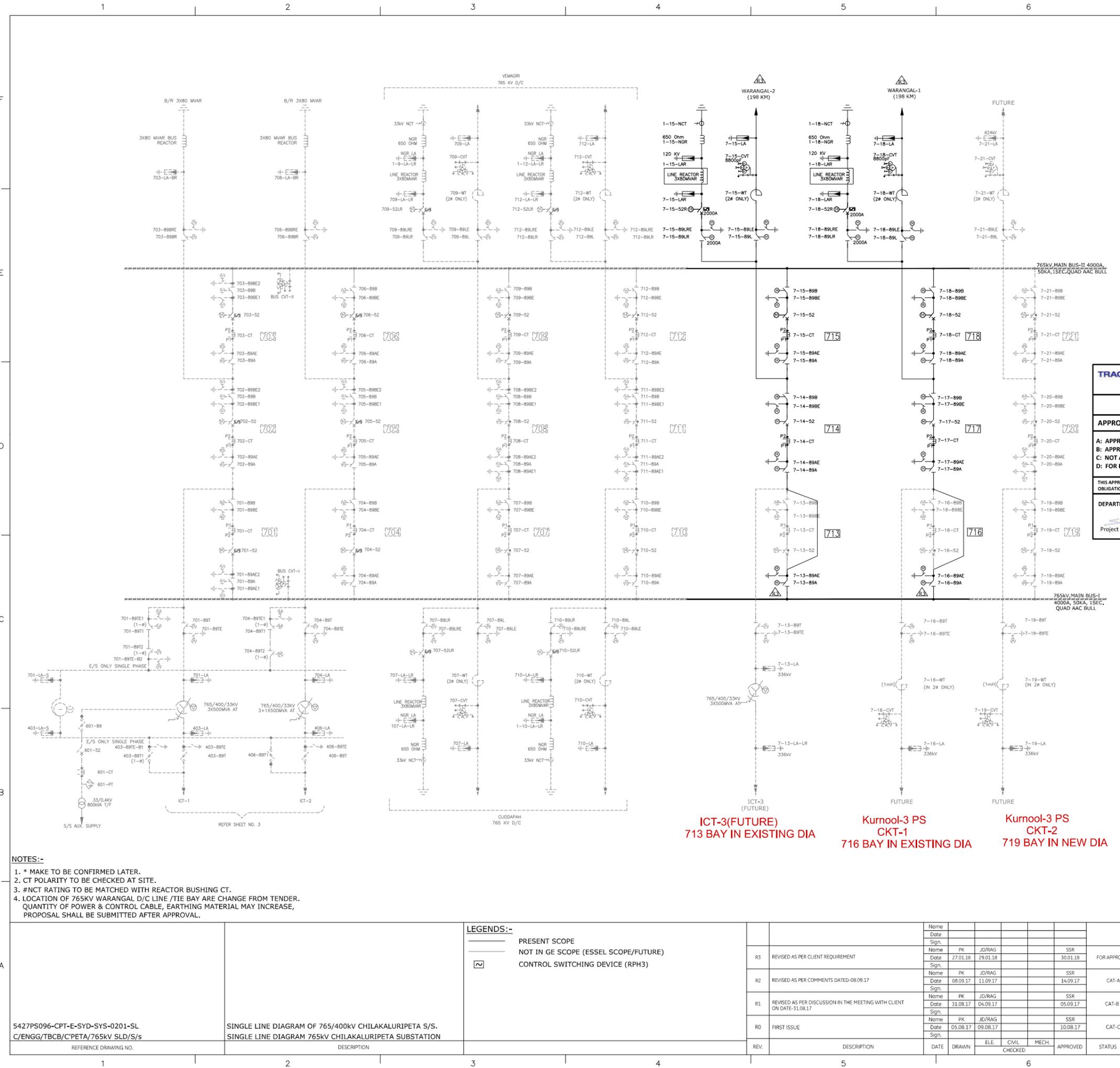
DRG. TITLE: SWITCHYARD SINGLE LINE DIAGRAM

DRG. NO.: TR201906-1001874-SS1-20-SY-STD

SCALE: NPS JOB NO: 079100 SHEET 2 OF 3

C.765/400 KV
CHILAKALURIPETA S/S

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SL No.	DESCRIPTION	MAKE	LOCATION	ENGG. QTY.	UNIT	SYMBOL
1	765KV, 80 MVAR LINE REACTOR, 1-PHASE	GE		06	NOS.	
2	145KV, 650 Ohm, NGR FOR 1 BANK OF 3-PH. LINE REACTOR	*	1-15-NGR, 1-18-NGR	02	NOS.	
3	120KV LA FOR 1 BANK OF 3-PH. LINE REACTOR	CGL	1-15-LAR, 1-18-LAR	02	NOS.	
4	#33KV,300-1 AMP NCT FOR 1 BANK OF 3-PH. LINE REACTOR	*	1-15-NCT, 1-18-NCT	02	NOS.	
5	765KV, 2000A, 50 KA, 1sec SF6, 3-PH. CIRCUIT BREAKER WITH CONTROL SWITCHING W/O CLOSING RESISTOR	GE	7-15-S2R, 7-18-S2R	02	NOS.	
6	765KV, 3150A, 50 KA, 1sec SF6, 3-PH. CIRCUIT BREAKER WITHOUT CONTROL SWITCHING W/O CLOSING RESISTOR	GE	7-14-S2, 7-15-S2, 7-17-S2, 7-18-S2	04	NOS.	
7	765KV, 3150A, 50 KA, 1sec, 3-PH. (KNEE TYPE) ISOLATOR WITH ONE EARTH SWITCH	C&S	7-13-89A, 7-14-89A, 7-15-89A, 7-16-89A, 7-17-89A, 7-18-89A, 7-18-89L, 7-18-89R	12	SET	
8	765KV, 2000A, 50KA, 1sec, 3-PHASE, (KNEE TYPE) ISOLATOR WITH ONE EARTH SWITCH	*	7-15-89LR, 7-18-89LR	02	NOS.	
9	765KV, 1-PH CURRENT TRANSFORMER 3000A/46 CORES 50KA-1 SEC 120% EXTENDED CURRENT RATING	GE	7-14-CT, 7-15-CT, 7-17-CT, 7-18-CT	12	NOS.	
10	765KV, 8800PF, 1-PH CVT IS CORE	GE	7-15-CVT, 7-18-CVT	06	NOS.	
11	765KV, 3150A, 50KA, 1 SEC, 1 MH, 1-PH WT	GE	7-15-WT, 7-18-WT	04	NOS.	
12	624KV, 20KA LIGHTNING ARRESTER (1-Ø)	CGL	7-15-LA7, 7-15-LAR, 7-18-LA7, 7-18-LAR	12	NOS.	

SLNO.	DESCRIPTION OF PARAMETER	765KV SYSTEM
1	SYSTEM OPERATING VOLTAGE	765KV
2	MAX OPERATING VOLTAGE OF THE SYSTEM (rms)	800KV
3	RATED FREQUENCY	50Hz
4	NO. OF PHASES	3
5	RATED INSULATION LEVELS i) FULL WAVE LIGHTNING IMPULSE WITHSTAND VOLTAGE (1.2/50microsec) ii) SWITCHING IMPULSE WITHSTAND VOLTAGE (250/2500microsec) DRY & WET iii) ONE MINUTE POWER FREQUENCY DRY WITHSTAND VOLTAGE (rms) iv) ONE MINUTE POWER FREQUENCY DRY & WET WITHSTAND VOLTAGE (rms)	±2100kVp ±1550kVp 830kVp -
6	CORONA EXTINCTION VOLTAGE	508kV
7	MAX RADIO INTERFERENCE VOLTAGE LEVEL AT CORONA EXTINCTION VOLTAGE (rms)	2500 micro volts
8	RATED 3-PH. SYMMETRICAL SHORT CIRCUIT CURRENT WITHSTAND CAPACITY	50kA/1sec.
9	SYSTEM NEUTRAL EARTHING	EFFECT. EARTHED
10	MINIMUM CREEPAGE DISTANCE (25MM/kV)	20000mm

TRACTEBEL CONSULTING ENGINEERS, GURGAON, INDIA

M.010184: Warora - Kurnool 765 KV D/C Transmission Line Project

APPROVAL STATUS:

A: APPROVED

B: APPROVED WITH COMMENT (RESUBMIT)

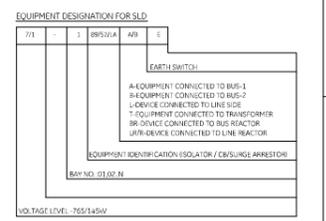
C: NOT APPROVED

D: FOR INFORMATION/REFERENCE

THIS APPROVAL STATUS SHALL NOT RELIEVE THE CONTRACTOR FROM ITS CONTRACTUAL OBLIGATIONS.

DEPARTMENT: T & D DATE: 02.02.2018

Project Manager Transmittal No: M.010184/WKT/SS/E/074



- NOTES:-**
- * MAKE TO BE CONFIRMED LATER.
 - CT POLARITY TO BE CHECKED AT SITE.
 - #NCT RATING TO BE MATCHED WITH REACTOR BUSHING CT.
 - LOCATION OF 765KV WARANGAL D/C LINE /TIE BAY ARE CHANGE FROM TENDER. QUANTITY OF POWER & CONTROL CABLE, EARTHING MATERIAL MAY INCREASE, PROPOSAL SHALL BE SUBMITTED AFTER APPROVAL.

- LEGENDS:-**
- PRESENT SCOPE
 - NOT IN GE SCOPE (ESSEL SCOPE/FUTURE)
 - CONTROL SWITCHING DEVICE (RPH3)

REV.	DESCRIPTION	DATE	DRAWN	ELE.	CIVIL	MECH.	APPROVED	STATUS
R3	REVISED AS PER CLIENT REQUIREMENT	27.01.18	29.01.18				30.01.18	FOR APPROVAL
R2	REVISED AS PER COMMENTS DATED-08.09.17	08.09.17	11.09.17				14.09.17	CAT-A
R1	REVISED AS PER DISCUSSION IN THE MEETING WITH CLIENT ON DATE-31.08.17	31.08.17	04.09.17				05.09.17	CAT-B
R0	FIRST ISSUE	05.08.17	09.08.17				10.08.17	CAT-C

OWNER: WARORA-KURNOOL TRANSMISSION LTD.

EPC CONTRACTOR: PAN INDIA INFRAPROJECTS PVT. LTD.

EPC SUB. CONTRACTOR: MUMBAI WTR PVT. LTD.

OWNER'S ENGINEER: **TRACTEBEL** CONSULTING ENGINEERS, GURGAON, INDIA

CONTRACTOR: **GE T&D INDIA LTD.** (FORMERLY ALSTOM T&D INDIA LTD) A-7, SECTOR-65, NOIDA - 201301 UTTAR PRADESH (INDIA)

PROJECT: ADDITIONAL INTER-REGIONAL AC LINK FOR IMPORT INTO SOUTHERN REGION I.E. WARORA-WARANGAL AND CHILAKALURIPETA-HYDERABAD-KURNOOL 765KV LINK

LOA No.: WTR/LOA/GE/WKT/SUBSTATION/19/17, DATED-13.06.2017

TITLE: SINGLE LINE DIAGRAM FOR EXTENSION OF 765KV CHILAKALURIPETA SUBSTATION

DRAWING No.: 5427PS102-CPT-E-SYD-SYS-0001-SL

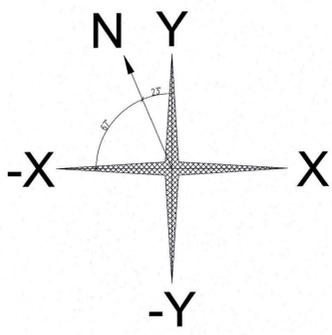
TOTAL SH. No.: 001
SCALE: NTS. 001
REV.: R3

5427PS096-CPT-E-SYD-SYS-0201-SL
C/ENGG/TBCB/C/PETA/765KV SLD/S/S

SINGLE LINE DIAGRAM OF 765/400KV CHILAKALURIPETA S/S.
SINGLE LINE DIAGRAM 765KV CHILAKALURIPETA SUBSTATION

REFERENCE DRAWING NO. DESCRIPTION

5427PS102-CPT-E-SYD-SYS-0001-SL

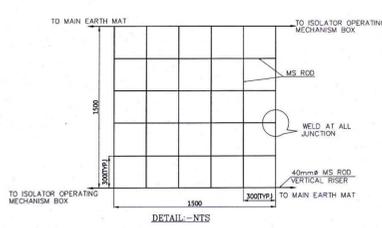


2. Minimum conductor size

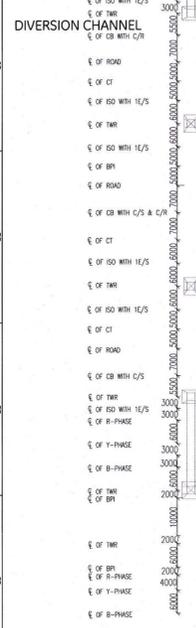
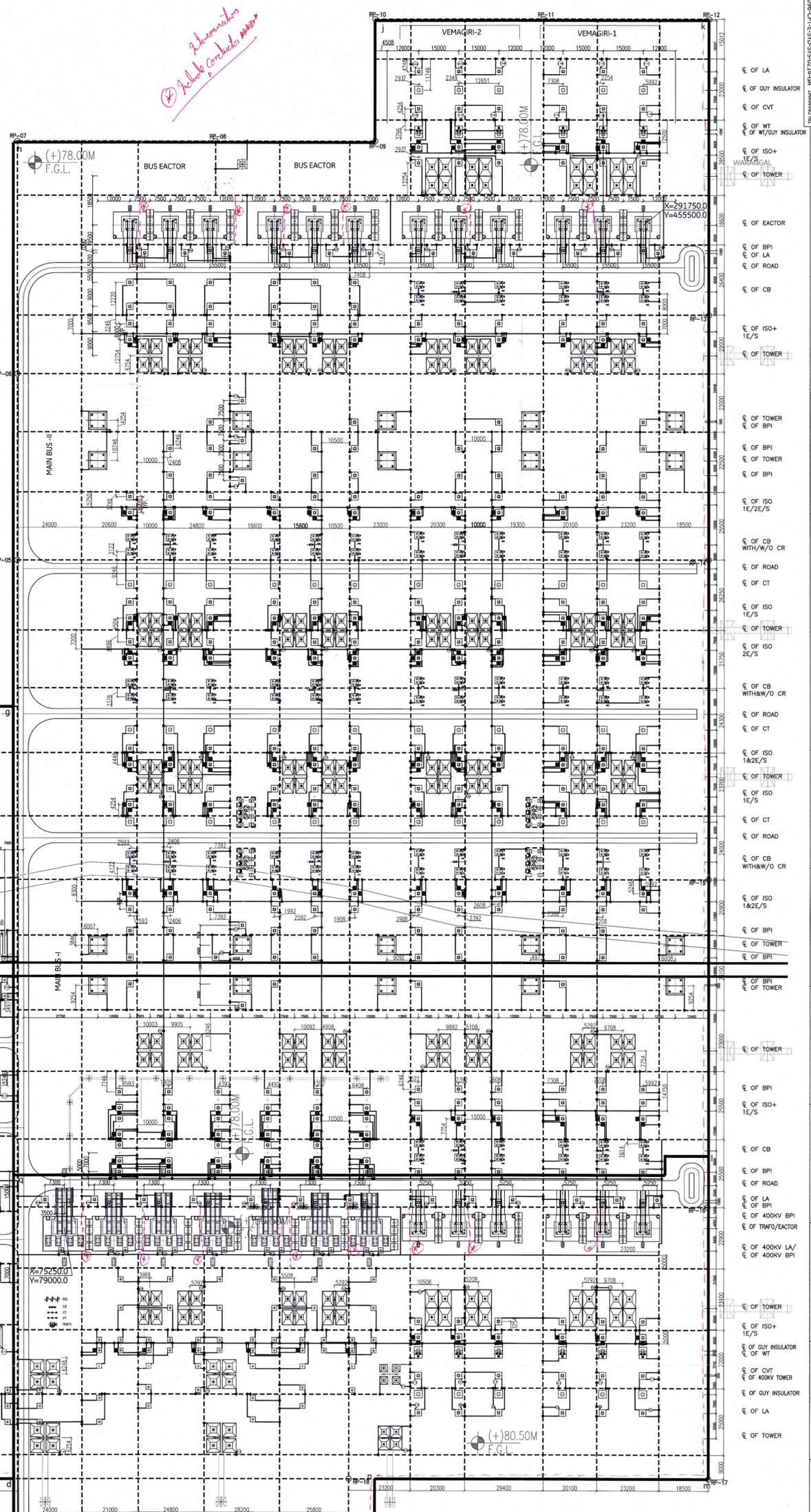
NOTES:-

S.NO	DESCRIPTION	UNIT	MARKED	ACTUAL OUT.
1.	40mm DIA MS ROD MAIN EARTH MAT	Mtr.		14620
2.	40mm DIA MS ROD FOR RISER & AUX. EARTH MAT	Mtr.		35000
3.	40MM DIA MS ROD ELECTRODES (3M LONG WITH TEST LINK)	NOS.	⊕	20
(a)	LA			30
(b)	CVT			50
(b)	TOWER			64
(b)	CONTROL ROOM			06

1. 40mm dia rod
2. 30mm dia rod
3. 20mm dia rod



1. 40mm dia rod
2. 30mm dia rod
3. 20mm dia rod



CONTROLLED COPY

<input type="checkbox"/> APPROVAL	<input type="checkbox"/> AS BUILT
<input type="checkbox"/> PHOTO	<input type="checkbox"/> CONSTRUCTION
<input type="checkbox"/> PLANNING	<input type="checkbox"/> REFERENCE
<input type="checkbox"/> MANUFACTURING	<input type="checkbox"/> RECORD
<input type="checkbox"/> RECORD	<input type="checkbox"/> EXECUTION

19 JUN 2017

Note:-
(1) The drawing is a symbolic representation of existing conductors layout. Make detail conductor shall be laid in such way that it does not find with any foundation.
(2) For Equipment shall be laid below 100mm from any other 38 mm dia rod for diameter of 30mm dia.
(3) All electrical equipment shall be earthed & connected to the different earth grid.
(4) Minimum clearance shall be maintained between conductors.

- NOTES:-**
- ALL DIMENSION ARE IN MM
 - THE EARTHING CONDUCTOR IS TO BE LAID 0.2M OUTSIDE THE FENCE. 40MM DIA. 3MTR. LONG ROD ELECTRODE SHALL BE PROVIDED ON PERIPHERY.
 - AS PER ACTUAL SITE CONDITIONS MAIN CONDUCTORS WILL BE RE-ROUTED IN SUCH A MANNER THAT IT DOESN'T FOUL WITH ANY FOUNDATION.
 - EQUIPMENT EARTHING SHALL BE DONE AS PER STANDARD EARTHING DETAILS - ANNEXURE TO SWITCHYARD ERECTION C/ENG/STD/EARTHING/09