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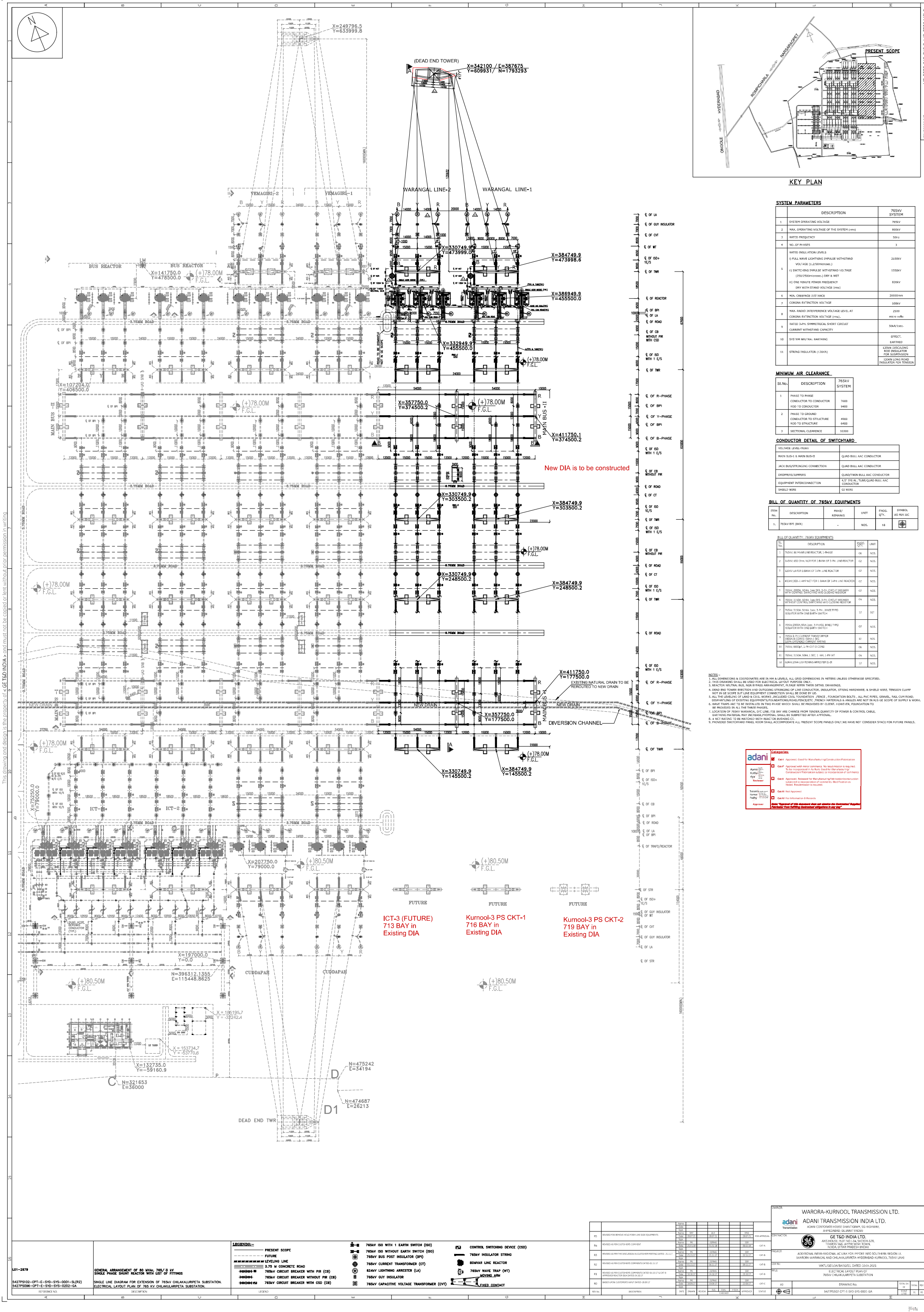

KEY PLAN

SYSTEM PARAMETERS

	DESCRIPTION	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 WITH STAND VOLTAGE (rms)	 2100kV 1550kV 830kV
6	MIN. CREEPAGE DISTANCE	20000mm
7	CORONA EXTINCTION VOLTAGE	508kV
8	MAX. RADIO INTERFERENCE VOLTAGE LEVEL AT CORONA EXTINCTION VOLTAGE (rms).	2500 micro volts
9	RATED 3-PH. SYMMETRICAL SHORT CIRCUIT CURRENT WITHSTAND CAPACITY	50kA/1sec.
10	SYSTEM NEUTRAL EARTHING	EFFECT. EARTHED
11	STRING INSULATOR (120KN)	120kN DISC/LONG ROD INSULATOR FOR SUSPENSION 120KN LONG ROAD INSULATOR FOR TENSION

MINIMUM AIR CLEARANCE

Sl.No.	DESCRIPTION	765kV SYSTEM
1	PHASE TO PHASE CONDUCTOR TO CONDUCTOR ROD TO CONDUCTOR	 7600 9400
2	PHASE TO GROUND CONDUCTOR TO STRUCTURE ROD TO STRUCTURE	 4900 6400
3	SECTIONAL CLEARENCE	10300

CONDUCTOR DETAIL OF SWITCHYARD

VOLTAGE LEVEL-765kV	
MAIN BUS-I & MAIN BUS-II	QUAD BULL AAC CONDUCTOR
JACK BUS/STRINGING CONNECTION	QUAD BULL AAC CONDUCTOR
DROPPERS/JUMPERS	QUAD/TWIN BULL AAC CONDUCTOR
EQUIPMENT INTERCONNECTION	4.5" 19S AL. TUBE/QUAD BULL AAC CONDUCTOR
SHIELD WIRE	GI WIRE

BILL OF QUANTITY OF 765kV EQUIPMENTS

ITEM No.	DESCRIPTION	MAKE/ REMARKS	UNIT	ENGG. QTY.	SYMBOL AS PER ISC
1.	765kV BPI (8KN)	-	NOS.	18	

BILL OF QUANTITY : 765KV EQUIPMENTS

Sl. No.	DESCRIPTION	ENGG. QTY.	UNIT
1	765kV, 80 MVAR LINE REACTOR, 1-PHASE	06	NOS.
2	145kV, 650 Ohm, NGR FOR 1 BANK OF 3-PH. LINE REACTOR	02	NOS.
3	120kV LA FOR 1 BANK OF 3-PH. LINE REACTOR	02	NOS.
4	433kV,300-1 AMP NCT FOR 1 BANK OF 3-PH. LINE REACTOR	02	NOS.
5	765kV, 3000A, 50 KA, 1sec SF6, 3-PH. CIRCUIT BREAKER WITH CONTROL SWITCHING W/O CLOSING RESISTOR	02	NOS.
6	765kV, 3150A, 50 KA, 1sec SF6, 3-PH. CIRCUIT BREAKER WITHOUT CONTROL SWITCHING W/O CLOSING RESISTOR	06	NOS.
7	765kV, 3150A, 50 KA, 1sec, 3-PH., (KNEE TYPE) ISOLATOR WITH ONE EARTH SWITCH	12	SET
8	765kV,2000A,50kA 1sec, 3-PHASE, (KNEE TYPE) ISOLATOR WITH ONE EARTH SWITCH	02	NOS.
9	765kV,1-PH CURRENT TRANSFORMER 2X0.4+6 CORES 1.10kA-1 SEC 120% EXTENDED CURRENT RATING	12	NOS.
10	765kV, 8800pF, 1-PH CVT (3 CORE)	06	NOS.
11	765kV, 3150A, 50kA, 1 SEC 1 nHL 1-PH WT	06	NOS.
12	624kV,20kA LIGHTENING ARRESTER (1-Ø	12	NOS.

NOTES -
1. ALL DIMENSIONS & COORDINATES ARE IN MM & LEVELS, ALL GRID DIMENSIONS IN METERS UNLESS OTHERWISE SPECIFIED.
2. THIS DRAWING SHALL BE USED FOR ELECTRICAL LAYOUT PURPOSE ONLY.
3. REACTOR NEUTRAL BUS, NGR BYPASS ARRANGEMENT, PLEASE REFER THEIR DETAIL DRAWINGS.
4. DEAD END TOWER ERECTION AND OUTGOING STRINGING OF LINE CONDUCTOR, INSULATOR, STRING HARDWARE, & SHIELD WIRE, TENSION CLAMP NOT IN GE SCOPE BUT LINE EQUIPMENT CONNECTION SHALL BE DONE BY GE.
5. ALL THE LEVELING OF LAND & CIVIL WORKS ,INCLUDED CIVIL FOUNDATION ,FENCE , FOUNDATION BOLTS , ALL PVC PIPES, GRAVEL, RAIL CUM ROAD, DISMANTLING OF EXISTING EQUIPMENTS/FOUNDATIONS/ROAD/FENCE/ETC ,TRENCH MATERIALS & ANGLES ARE NOT IN M/S GE SCOPE OF SUPPLY & WORK.
6. WAVE TRAPS ARE TO BE INSTALLED IN TWO PHASE WHICH SHALL BE PROVIDED BY CLIENT. HOWEVER, FOUNDATION TO BE PROVIDED IN ALL THE THREE PHASES.
7. 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.
8. ± NCT RATING TO BE MATCHED WITH REACTOR BUSHING CT.
9. PROVIDED SWITCHYARD PANEL ROOM SHALL ACCOMMODATE ALL PRESENT SCOPE PANELS ONLY, WE HAVE NOT CONSIDER SPACE FOR FUTURE PANELS.

adani — Categories:
- Cat-I Approved, Good for Manufacturing/Construction/Fabrication
- Cat-I* Approved with minor comments. No resubmission is required. To be incorporated in As Built. Good for Manufacturing/ Construction/ Fabrication subject to incorporation of comments.
- Cat-II Approved. Released for Manufacturing/fabrication/construction subjected to incorporation of comments. Modification as Noted. Resubmission is required.
- Cat-III Not Approved
- Cat-IV For Information & Records

Note: "Approval of this document does not absolve the Contractor/ Supplier/ Fabricator from fulfilling Contractual obligations in any way".

Aamir Kotha — Reviewer
Suresh Kumar Padhy — Approver

LEGENDS:-

PRESENT SCOPE
FUTURE
LEVELING LINE
3.75 M CONCRETE ROAD
765kV CIRCUIT BREAKER WITH PIR (CB)
765kV CIRCUIT BREAKER WITHOUT PIR (CB)
765kV CIRCUIT BREAKER WITH CSD (CB)
765kV ISO WITH 1 EARTH SWITCH (ISO)
765kV ISO WITHOUT EARTH SWITCH (ISO)
765kV BUS POST INSULATOR (BPI)
765kV CURRENT TRANSFORMER (CT)
624kV LIGHTNING ARRESTER (LA)
765kV GUY INSULATOR
765kV CAPACITIVE VOLTAGE TRANSFORMER (CVT)
CONTROL SWITCHING DEVICE (CSD)
765kV INSULATOR STRING
80MVAR LINE REACTOR
765kV WAVE TRAP (WT)
MOVING ARM
FIXED CONTACT

REV. No.	DESCRIPTION	DATE	DRAWN	REVIEW	CHECKED: DSD	CWL	TECH.	APPROVED	STATUS
R5	REVISED FOR REMOVE HOLD FOR(+) LINE SIDE EQUIPMENTS	Name / Date / Sign	VKV 19.07.21						FOR APPROVAL
R4	REVISED AS PER CUSTOMERS COMMENT	Name / Date / Sign	PK 20.01.18	JD/KVG		SSR 19.01.18			CAT-A
R3	REVISED AS PER THE DISCUSSION IN CUSTOMER MEETING DATED : 21.11.17	Name / Date / Sign	PK 23.11.17	JD/KVG		SSR 27.11.17			CAT-B
R2	REVISED AS PER CUSTOMERS COMMENTS DATED-01.11.17	Name / Date / Sign	PK 06.11.17	JD/KVG		SSR 08.11.17			CAT-B
R1	REVISED AS PER CUSTOMERS COMMENTS DATED-06.10.17 & CAT-II APPROVED REACTOR DGA DATED-26.10.17	Name / Date / Sign	PK 24.10.17	JD/KVG		SSR 25.10.17			CAT-B
R0	BASED UPON CUSTOMERS INPUT DATED-18.09.17	Name / Date / Sign	PK 19.09.17	JD/KVG		SSR 22.09.17			CAT-C

OWNER: WARORA-KURNOOL TRANSMISSION LTD.
ADANI TRANSMISSION INDIA LTD.
ADANI CORPORATE HOUSE SHANTIGRAM, S/G HIGHWAY, AHMEDABAD, GUJARAT (INDIA)

CONTRACTOR: GE T&D INDIA LTD.
AXIS HOUSE, PLOT NO I-14, SECTOR-128, TOWERS 5&6, JAYPEE WISH TOWN, NOIDA, UTTAR PRADESH (INDIA)

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

JOB NO.: WKT/GE/LOA/BA/02/21, DATED-10.04.2021

TITLE: ELECTRICAL LAYOUT PLAN OF 765kV CHILAKULURIPETA SUBSTATION

L01-2679	GENERAL ARRANGEMENT OF 80 MVAr, 765/√3 kV SINGLE PHASE SHUNT REACTOR WITH LIST OF FITTINGS	
5427PS102-CPT-E-SYD-SYS-0001-SL(R2) 5427PS096-CPT-E-SYD-SYS-0202-GA	SINGLE LINE DIAGRAM FOR EXTENSION OF 765kV CHILAKALURIPETA SUBSTATION. ELECTRICAL LAYOUT PLAN OF 765 KV CHILAKULARIPETA SUBSTATION.	
REFERENCE NO.	DESCRIPTION	LEGEND

DRAWING No.: 5427PS102-CPT-E-SYD-SYS-0001-GA
TOTAL SH. 05 | SHTNO. 01 | REV. R5
SCALE: 1:500