DRAWING No.

(220kV LINE-1F) (220kV LINE-1F) (220kV LINE-1F) (220kV LINE-1F) (220kV LINE-1F) (220kV LINE-1F) (220kV LINE-1F) (220kV LINE-1F)

220kV MAIN BUS

220kV MAIN BUS

220kV GIS

(400kV LINE-1(F)) (400kV LINE-1(F)) (BUS REACTOR-1 (125MVAR)) (400kV STATCOM) (SPARE REACTOR) (BUS REACTOR-2 (125MVAR)) (LINE-5) Adani Green Energy Ltd. PSS-4 (LINE-2) Adani Green Energy Ltd PSS-5 (LINE-1) Adani Green Energy Ltd. PSS-3 (FUTURE LINE REACTOR) (LINE-1 (BAY:-412)) (125MVAR B/R) (LINE-3) (LINE-2) (LINE-1) (400kV STATCOM)

400kV, 4000A, 63kA MAIN BUS-1

400kV, 4000A, 63kA MAIN BUS-2

765kV, 4000A, 50kA MAIN BUS-1

765kV, 4000A, 50kA MAIN BUS-2

765kV, 4000A, 50kA MAIN BUS-1 SECTION-1

765kV, 4000A, 50kA MAIN BUS-1 SECTION-2

765/3/400/3/33kV 500MVA,1-PHASE (ICT-1)

765/3/400/3/33kV 500MVA,1-PHASE (ICT-2)

765/3/400/3/33kV 500MVA,1-PHASE (ICT-3)

765/3/400/3/33kV 500MVA,1-PHASE (ICT-4)

765/3/400/3/33kV 500MVA,1-PHASE SPARE ICT

765/3/400/3/33kV 500MVA,1-PHASE (ICT-5)

765/3/400/3/33kV 500MVA,1-PHASE (ICT-6)

(765kV Bus Reactor) 765kV NCT 3x110MVAR 1Ø R

765kV MAIN BUS-1

765kV MAIN BUS-2

TRANSFER BUS, 400kV, 63kA

SCOPE UNDER PH-IV PART-A

IMPORTANT NOTE :-
1. ADDITIONAL 400KV BAY IS PROPOSED FOR ICT#9 CONNECTION WITH CONFIGURATION OF ICT#9-TIE-BUS REACTOR ON 400KV SIDE.

IMPORTANT NOTE :-
1. IT IS NOT FEASIBLE TO ACCOMMODATE ANY FUTURE FEEDER ON 765kV SIDE, CONSIDERING THIS CONSTRAINT HALF DIA. FOR 765kV ICT#9 IS PROPOSED AT 765KV SWITCHYARD END.

(SPARE REACTOR) (BUS REACTOR-1) (765kV BHUJ LINE-2) (765kV BHUJ LINE-1) (FUTURE LINE REACTOR) (765kV FUTURE LINE-2) (FUTURE LINE REACTOR) (765kV FUTURE LINE-1) (FUTURE LINE REACTOR) (765kV FUTURE LINE) (765kV KPS-2 LINE-2) (765kV KPS-2 LINE-1)

NOTE:-
1. FOR GIS EQUIPMENT RATING & QTY REFER APPROVED GIS OEM SLD, GAS SLD AND INDOOR GIS LAYOUT.

LEGENDS:-

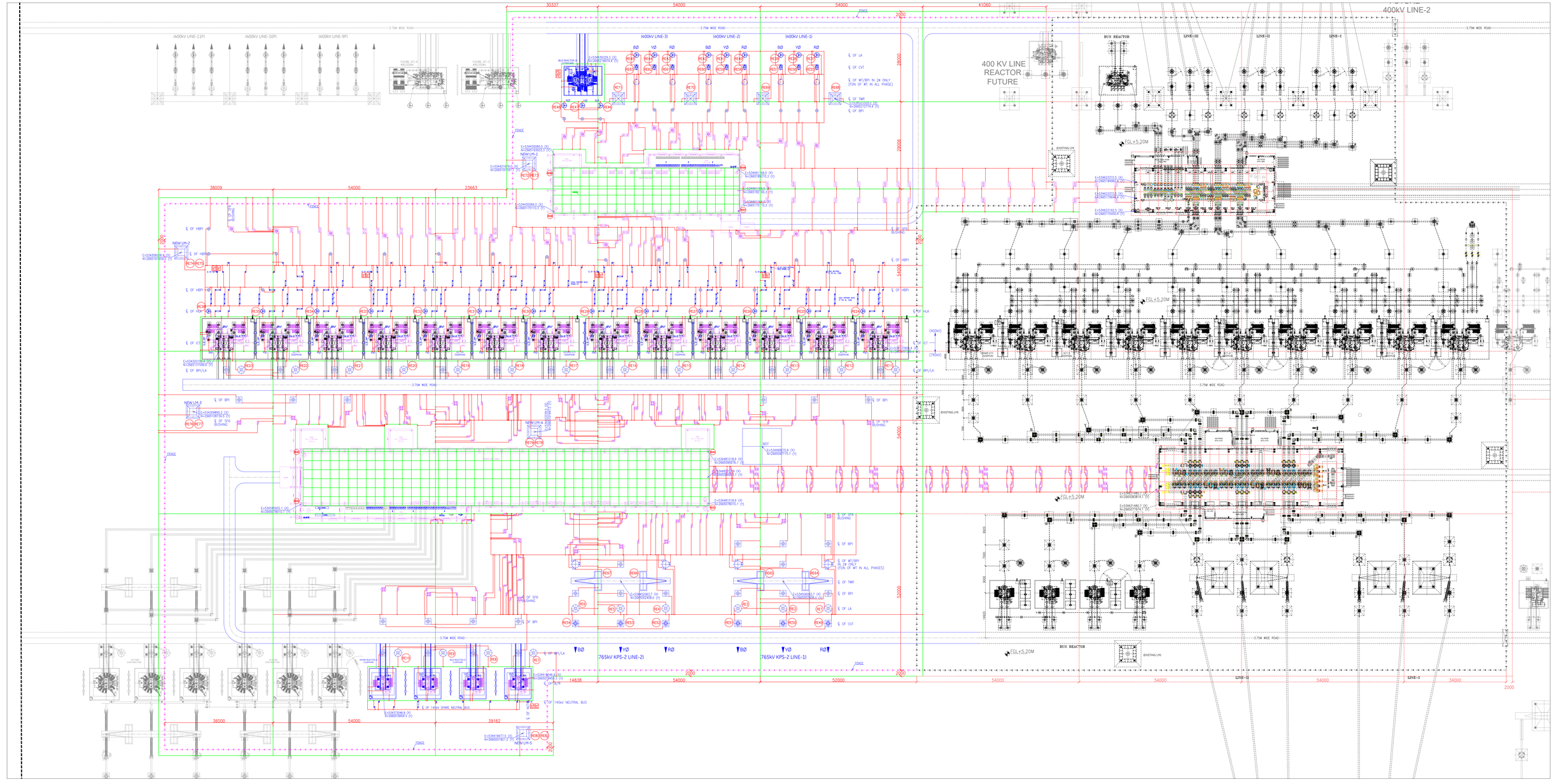
- STATCOM DIA.
- SCOPE FOR 765/400KV ICT#9
- SCOPE FOR KPS PH-IV A
- PRESENT SCOPE FOR RTM-1
- PRESENT SCOPE FOR RTM-2
- PRESENT SCOPE FOR RTM-3
- PRESENT SCOPE FOR KPS-1 AUGMENTATION
- EXISTING
- FUTURE
- MANUALLY JUMPERING CONNECTION OF NEUTRAL BUS & TERTIARY BUS FOR CONNECTING SPARE UNIT OF REACTOR/TRANSFORMER

SUBSTATION
765/400kV KPS-1 SUBSTATION (UPDATED AS ON 14.06.2024)

Drawing no.
5427PW063-KHA-765-SYD-GSI-S2020-SL-0001 REV-00 dated 14-06-2024

REFERENCE DRAWING/DOCUMENT NUMBER

DRAWING/DOCUMENT DESCRIPTION



BILL OF MATERIALS

S.NO.	DESCRIPTION	TOTAL QTY.	MARKED
1	40MM DIA MS ROD FOR EXISTING MAIN EARTHMAT	–	
2	40MM DIA MS ROD FOR MAIN EARTHMAT	6500M	
3	40MM DIA MS ROD RISER (BELOW GROUND RISER)	12500M	
4	75x12MM GS FLAT (ABOVE GROUND RISER)	9000M	
6	50x6MM MS FLAT (CABLE TRENCH)	1600M	
7	50x6MM GS FLAT (JB/MB/PYLON SUPPORT/ETC)	1550M	
8	75x12MM GS FLAT (CLEAT TYPE CLAMP)	4000M	
9	40MM DIA ROD ELECTRODES (3M LONG) DIRECT DRIVEN UNTREATED EARTH PIT WITH TEST LINK		
(A)	765kV & 400kV LA	48 NOS.	RE1 TO RE48
(B)	765kV & 400kV CVT	15 NOS.	RE49 TO RE63
(C)	765kV & 400kV TOWER WITH PEAK	08 NOS.	RE64 TO RE71
(D)	LIGHTNING MAST (LM)	10 NOS.	RE72 TO RE81
(E)	BUILDING CORNER	08 NOS.	RE82 TO RE89
10	40MM DIA GI PIPE (3M LONG) TREATED EARTH PIT WITH TEST LINK FOR TRANSFORMER, REACTOR NEUTRAL (2 NOS PER NEUTRAL)	12	PE

NOTES:-

1. THE EARTHING GRID SHALL BE MADE WITH 40mm DIA MS ROD BURIED AT 600MM FROM FGL.
2. 3x3 EARTHING GRID BELOW PRESENT SCOPE GIS FLOOR BURIED IN SOIL BELOW BUILDING FLOOR FOR INDOOR GIS EQUIPMENT EARTHING AS PER GIS MANUFACTURER.
3. WHERVER EARTHING CONDUCTOR CROSS CABLE TRENCHES, UNDER GROUND SERVICES DUCTS PIPES, TUNNELS, RAILWAY TRACKS ETC. IT SHALL BE LAID AS PER SITE CONDITION.
4. EARTHING CONDUCTORS CROSSING THE ROAD SHALL BE LAID AT 1M DEPTH FROM FGL.
5. EARTHING CONDUCTOR EMBEDDED IN THE CONCRETE SHALL HAVE APPROXIMATELY 50mm CONCRETE COVER.
6. ALL EQUIPMENT & STRUCTURES SHALL BE GROUNDED AS PER EQUIPMENT EARTHING PHILOSOPHY.
7. THE LOCATION OF EARTHING CONDUCTOR, RISERS, EARTHPITS AND GROUND RODS ARE INDICATIVE AND CAN BE MODIFIED TO SUIT SITE CONDITION.
8. WHERE EARTHING CONDUCTOR FOUL WITH FOUNDATIONS SAME SHALL BE DIVERTED LOCALLY AS PER SITE CONDITION.
9. INCASE OF EXISTING MAIN EARTHMAT WHICH ARE ALREADY LAID IN THE PRESENT SCOPE AREA, COMING ON THE WAY OF NEW EQUIPMENT FOUNDATION, SHALL BE RE-ROUTED AS PER SITE CONDITION.
10. EARTHING CONDUCTOR SHALL BE COVERED ON ALL SIDES BY A LAYER OF GOOD SOIL, FREE FROM ROCKS, STONES, LUMPS AND THEN FILLED UP.
11. THE LOCATIONS OF RISERS SHALL BE IN SUCH A WAY THAT THEY SHOULD NOT INTERFERE WITH COLUMNS AND FOUNDATIONS.
12. WHEREVER THE EARTH CONDUCTOR PASSES THROUGH WALL IT SHALL TAKEN DIRECTLY THROUGH WALL WITHOUT INSERTS.
13. ALL WELDING JOINTS SHALL BE PAINTED WITH TWO COATS OF RED OXIDE PRIMER AND TWO COATS OF BITUMINOUS PAINT OR ZINC RICH PAINT.
14. DISTANCE BETWEEN TWO EARTH PITS SHALL BE MAINTAINED WITH TWICE THE LENGTH OF ELECTRODE
15. EARTHING FOR GAS INSULATED BUS DUCT (GIB) AND GIB SUPPORT STRUCTURE NOT SHOWN IN THE DRAWING.
16. BOQ MENTION ABOVE IS TENTATIVE ONLY, WHICH MAY VARY SUBJECT TO ACTUAL SITE SITUATION.
17. THIS LAYOUT SHALL BE REFERED FOR MAIN EARTHMAT ONLY.
18. FOR GIB LOOPING EARTHING PLEASE REFER GIS MANUFACTURER EARTHING PHILOSOPHY DRAWING.

adani

Aamir Kotharia — Digitally signed by Aamir Kotharia Date: 2024.06.20 13:11:03 +05'30' — Reviewer

Manoj Gohil — Digitally signed by Manoj Gohil Date: 2024.06.20 13:11:03 +05'30' — Approver

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"

REV.No.	DESCRIPTION	DATE	DRAWN	ELE.	CIVIL	MECH	CHECKED	APPROVED	STATUS
		Name							
		Date							
		Sign.							
		Name							
		Date							
		Sign.							
R2	REVISED AS PER CUSTOMER COMMENTS	Name	SV	ABH			DMH		
		Date	12.06.24	12.06.24			12.06.24		FOR APPROVAL
		Sign.							
R1	REVISED AS PER CUSTOMER COMMENTS	Name	SV	ABH			DMH		
		Date	31.05.24	31.05.24			31.05.24		FOR APPROVAL
		Sign.							
R0	FIRST ISSUE	Name	SV	ABH			DMH		
		Date	29.01.24	29.01.24			29.01.24		FOR APPROVAL
		Sign.							

REFERENCE DRAWING/DOCUMENT NUMBER	DRAWING/DOCUMENT DESCRIPTION
5427PW063-KHA-765-SYD-GSI-S2020-GA-0002	KPS-1 EXTENSION S/S 765/400kV ELECTRICAL LAYOUT PLAN & SECTION
0778KH-KHVD-SWYD-E-DRG-27-001	EARTHMAT LAYOUT DRAWING

CLIENT: **KPS1 TRANSMISSION LIMITED**
ADANI CORPORATE HOUSE SHANTIGRAM, SG HIGHWAY, AHMEDABAD, GUJARAT (INDIA)

EPC CONTRACTOR: GE T&D INDIA LTD.
AXIS HOUSE, PLOT NO I-1A, SECTOR-128, TOWERS 5&6 JAYPEE WISH TOWN, NOIDA, UTTAR PRADESH (INDIA)

PROJECT: AUGMENTATION OF KHAVDA PS1 BY 765/400kV TRANSFORMATION CAPACITY (MAX. UPTO 4x1500 MVA) WITH 1x330 MVAR, 765kV BUS REACTOR AND 1x125 MVAR, 420kV BUS REACTOR ON 2ND 765kV AND 400kV BUS SECTION RESPECTIVELY

LOA NO.: LOA/KPS-1/EPC/BA/02/23 DATE : 02.12.2023

SUBSTATION: 765/400kV KPS1 SUBSTATION GIS EXTENSION

TITLE: 765/400kV OUTDOOR EARTHMAT LAYOUT

AESL DRAWING NO.: 5411-E-GIS-ETH-DE-L-V-001

SIZE : A-0 | GE DRAWING No. 5427PW063-KHA-765-SYD-GSI-S2020-GA-0005 | TOTAL SH. 001 | SH.No. 001 | REV. R2 | SCALE 1:650