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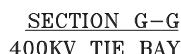
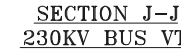
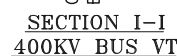
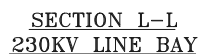
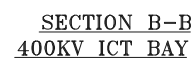
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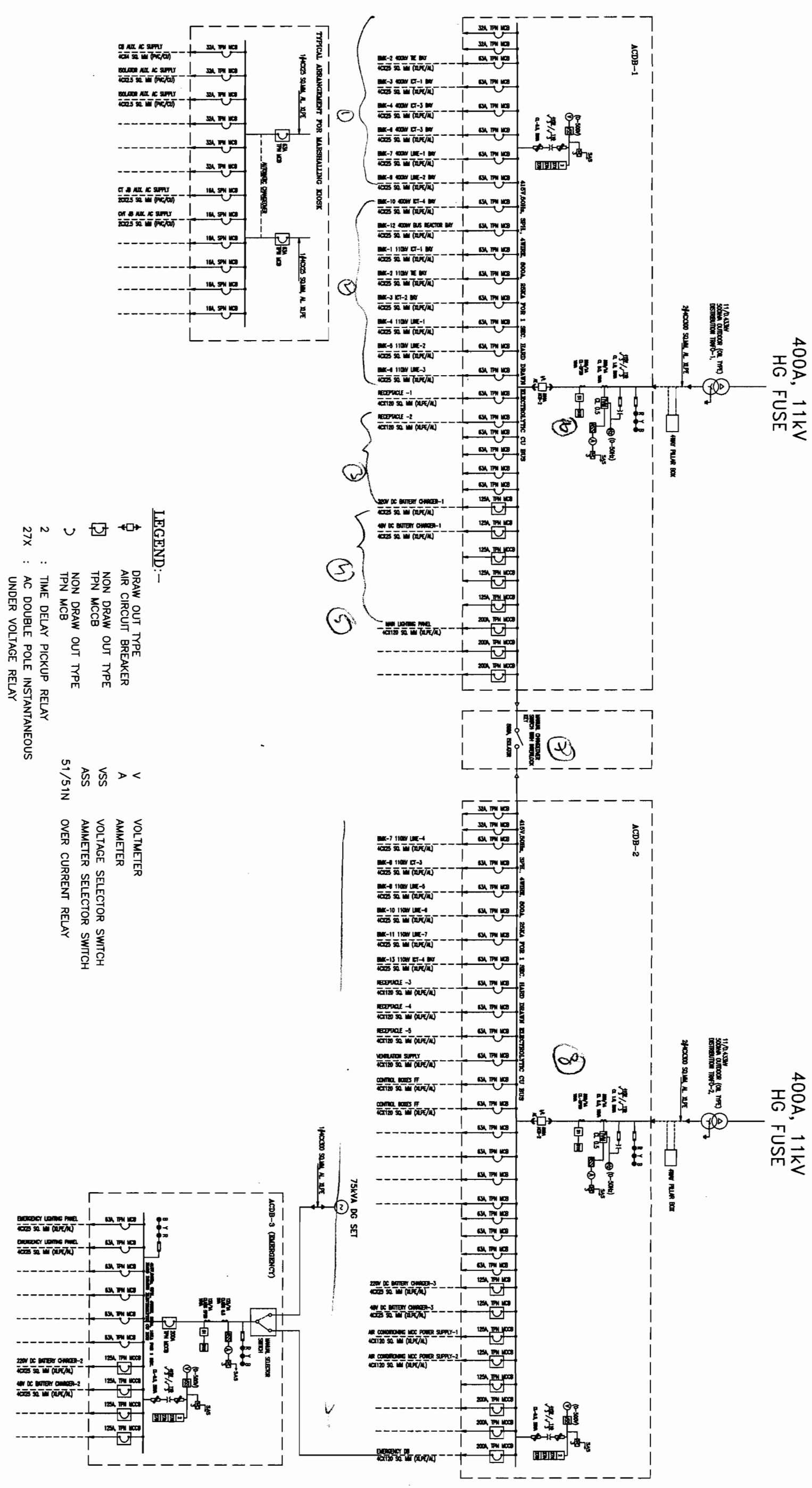
COMPUTER DRG. PATH NAME :

REF. DRG. No.

SIGN. & DATE

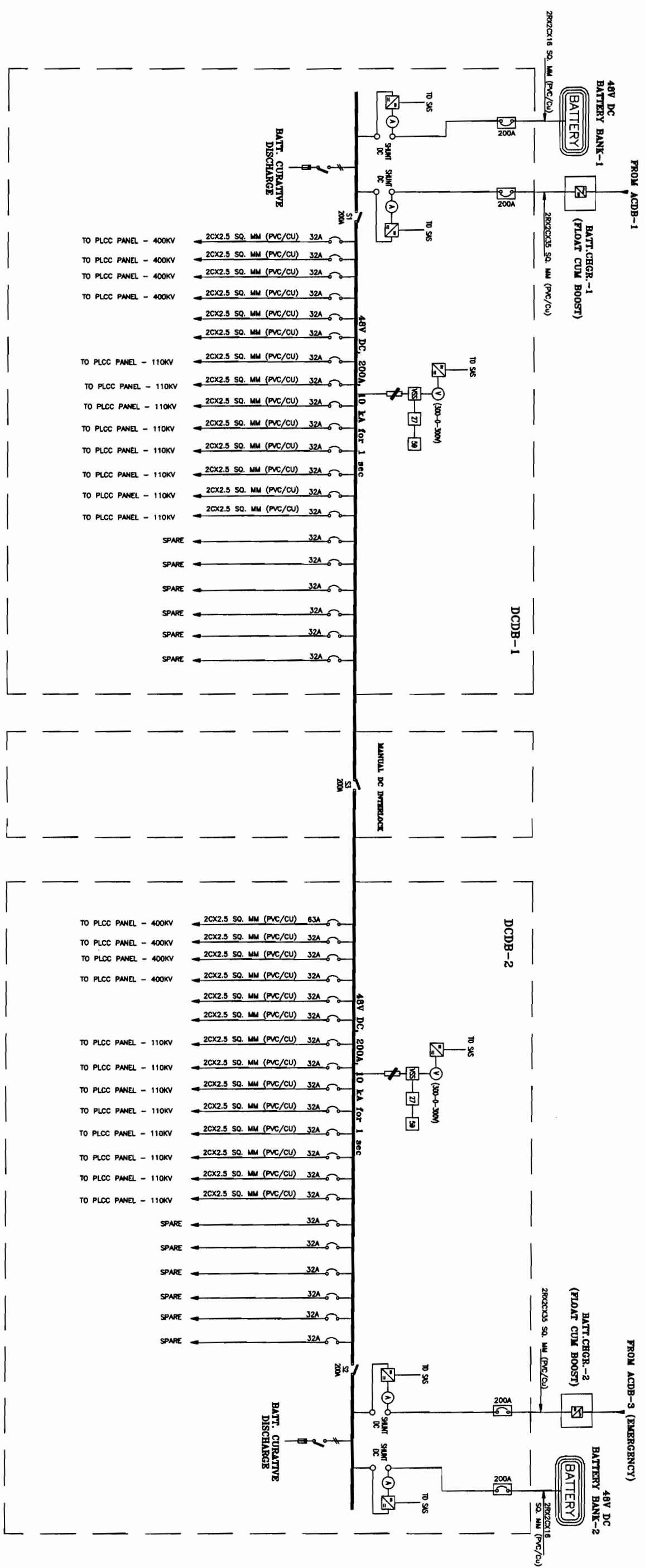
INVENTORY No.

A2 SIZE



- NOTES:-
1. NO TWO AC SOURCE SHALL BE PARALLELED AT ANY STAGE.
 2. PARALLEL OPERATION OF EITHER STATION SERVICE TRANSFORMERS OR STATION SERVICE TRANSFORMER AND DG SET IS NOT PERMITTED.
 3. ALL THE FEEDERS SHOWN IN THE SLD ARE IN THE SCOPE OF SUPPLY. IN ADDITION TO THIS MINIMUM 20% SPARE FEEDERS OF EACH TYPE IN EACH BUS SECTION TO BE PROVIDED.
 4. DEGREE OF PROTECTION IS IP52.
 5. SAS INTERFACE TO BE DONE AS PER SPECIFICATION.
 6. INTERPANEL WIRING & INTERCONNECTING CABLES BETWEEN THE BOARDS IS IN SUPPLIER SCOPE.

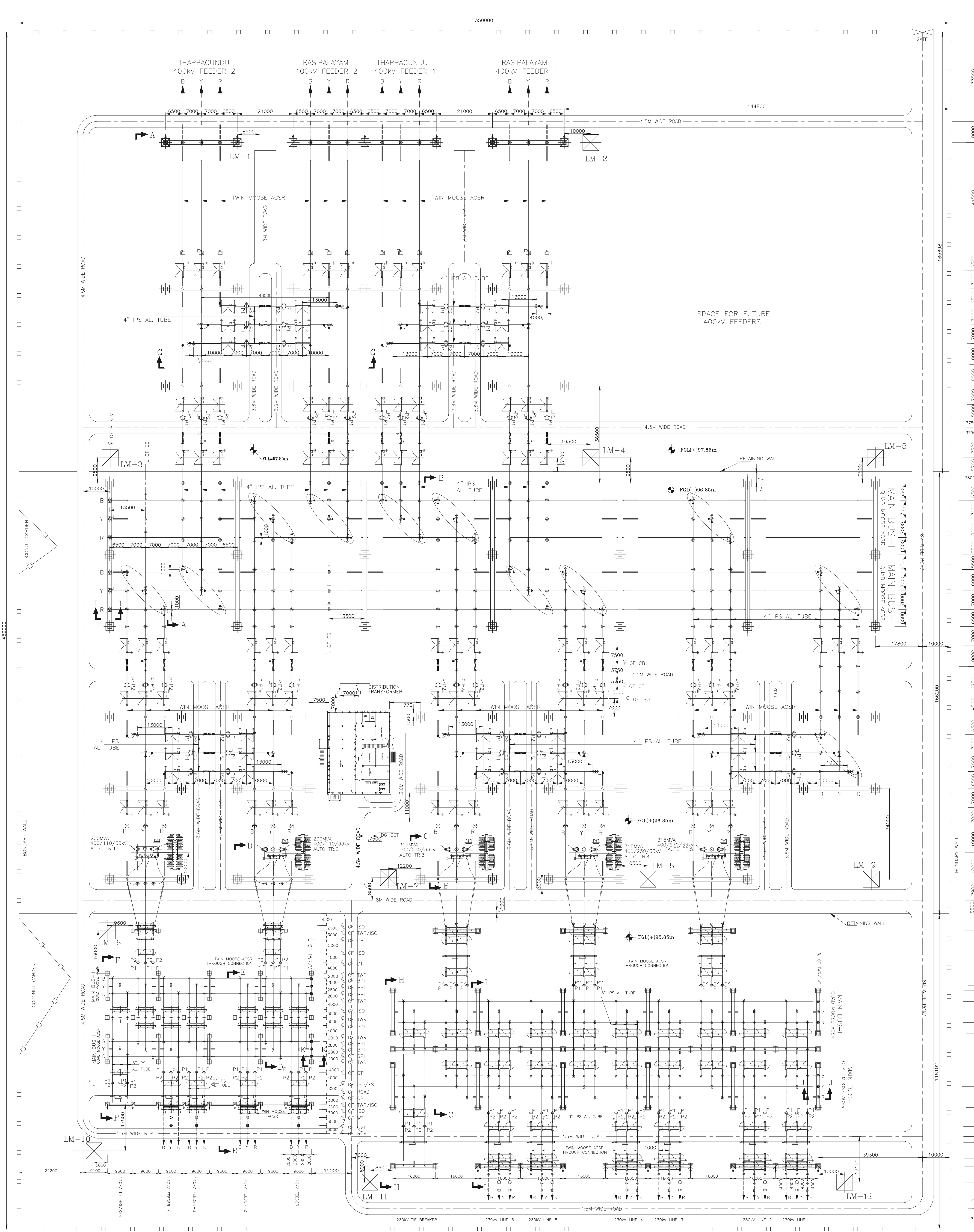
[illegible]



NOTE:-

1. PROVISION FOR MANUAL INTERLOCK BETWEEN THE TWO DCDS CAN BE GIVEN IN ANY ONE OF THE BOARD.
2. 20% SPARE FEEDERS TO BE PROVIDED FOR EACH TYPE AND RATING OF THE FEEDERS.

[illegible]



S/L	ITEM DESCRIPTION	SYMBOL	QTY.	S/PARE QTY.	SUPPORT STRUCTURE	TYPE
1.	315 MVA, 3 PHASE 50Hz, 400 /230/33 KV Ynood11, AUTO TRANSFORMER		03	--	NA	NA
2.	200 MVA, 3 PHASE 50Hz 400/110/33 KV Ynood11, AUTO TRANSFORMER		02	--	NA	NA
3.	400 KV, 3150 A, 63KA/1S OUTDOOR SF 6 BREAKER 1Φ & 3Φ RECLOSEING WITHOUT PRE INSERTION RESISTOR		08	--	PIPE/LATTICE	
4.	400 KV, 3150 A, 63KA/1S OUTDOOR SF 6 BREAKER 1Φ & 3Φ RECLOSEING WITH PRE INSERTION RESISTOR		06	01	PIPE/LATTICE	
5.	420 KV, 3000A, 63KA/1S, 5 CORE SINGLE PHASE CURRENT TRANSFORMER		54	02	LATTICE	
6.	390 KV LIGHTNING ARRESTER		27	02	PIPE	
7.	400 KV 4000pF SINGLE PHASE CVT		18	02	PIPE	
8.	420 KV, 3150 A, 63KA/1S HCB ISOLATOR WITH DOUBLE EARTH SWITCH		09	01	PIPE/LATTICE	
9.	420 KV, 3150 A, 63KA/1S HCB ISOLATOR WITH SINGLE EARTH SWITCH		28	--	PIPE/LATTICE	
10.	420 KV BUS EARTH SWITCH (SINGLE PHASE).		06	--	PIPE/LATTICE	
11.	420 KV BUS POST INSULATOR		167		PIPE/LATTICE	

S/L	ITEM DESCRIPTION	SYMBOL	QTY.	SUPPLY SPARE QTY.	SUPPLY TYPE
1	245 KV, 2000A, 40KA/3S OUTDOOR SF6 BREAKER 1P & 3P CLOSING.		10	--	PIPE/LATTICE
2	245 KV, 2000 A, 40KA/3S, 5 CORE SINGLE PHASE CURRENT TRANSFORMER		30	--	PIPE/LATTICE
3	245 KV, 2000 A, 40KA/3S HDB ISOLATOR WITH SINGLE EARTH SWITCH		06	--	PIPE/LATTICE
4	245 KV, 2000 A, 40KA/3S HDB ISOLATOR WITHOUT EARTH SWITCH		41	--	PIPE/LATTICE
5	216 KV LIGHTNING ARRESTER		09	--	PIPE
6	230 KV SINGLE PHASE 3 CORE BUS VT		06	--	PIPE
7	230 KV 4400pF SINGLE PHASE CVT		12	--	PIPE
8	230 KV, 0.5 MH, 200A WAVE TRAP		12	--	PIPE
9	230KV BUS POST INSULATOR		118	--	PIPE/LATTICE
10	230 KV UNDER HUNG SOLID CORE INSULATOR		39	--	NA

S/L	ITEM DESCRIPTION	SYMBOL	QTY.	SPARE	SUPPORT STRUCTURE TYPE
1	132 KV, 2000A, 40KA/3S OUTDOOR SF6 BREAKER GANG OPERATED 3Φ RECLOSING.		07	--	PIPE/LATTICE
2	132 KV, 2000 A, 40KA/3S, 5 CORE SINGLE PHASE CURRENT TRANSFORMER		21	--	PIPE/LATTICE
3	132 KV, 2000 A, 40KA/3S HDB ISOLATOR WITH SINGLE EARTH SWITCH		04	--	PIPE/LATTICE
4	132 KV, 2000 A, 40KA/3S HDB ISOLATOR WITHOUT EARTH SWITCH		28	--	PIPE/LATTICE
5	96 KV LIGHTNING ARRESTER		06	--	PIPE
6	110 KV SINGLE PHASE 3 CORE BUT VT		06	--	PIPE
7	110 KV 6600PF SINGLE PHASE CVT		04	--	PIPE
8	110 KV, 0.5 MH, 2000A WAVE TRAP		04	--	PIPE
9	132KV BUS POST INSULATOR		56		PIPE/LATTICE
10	132 KV UNDER HUNG SOLID CORE INSULATOR		27		NA

NOTE :-

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
2. SYSTEM PARAMETERS

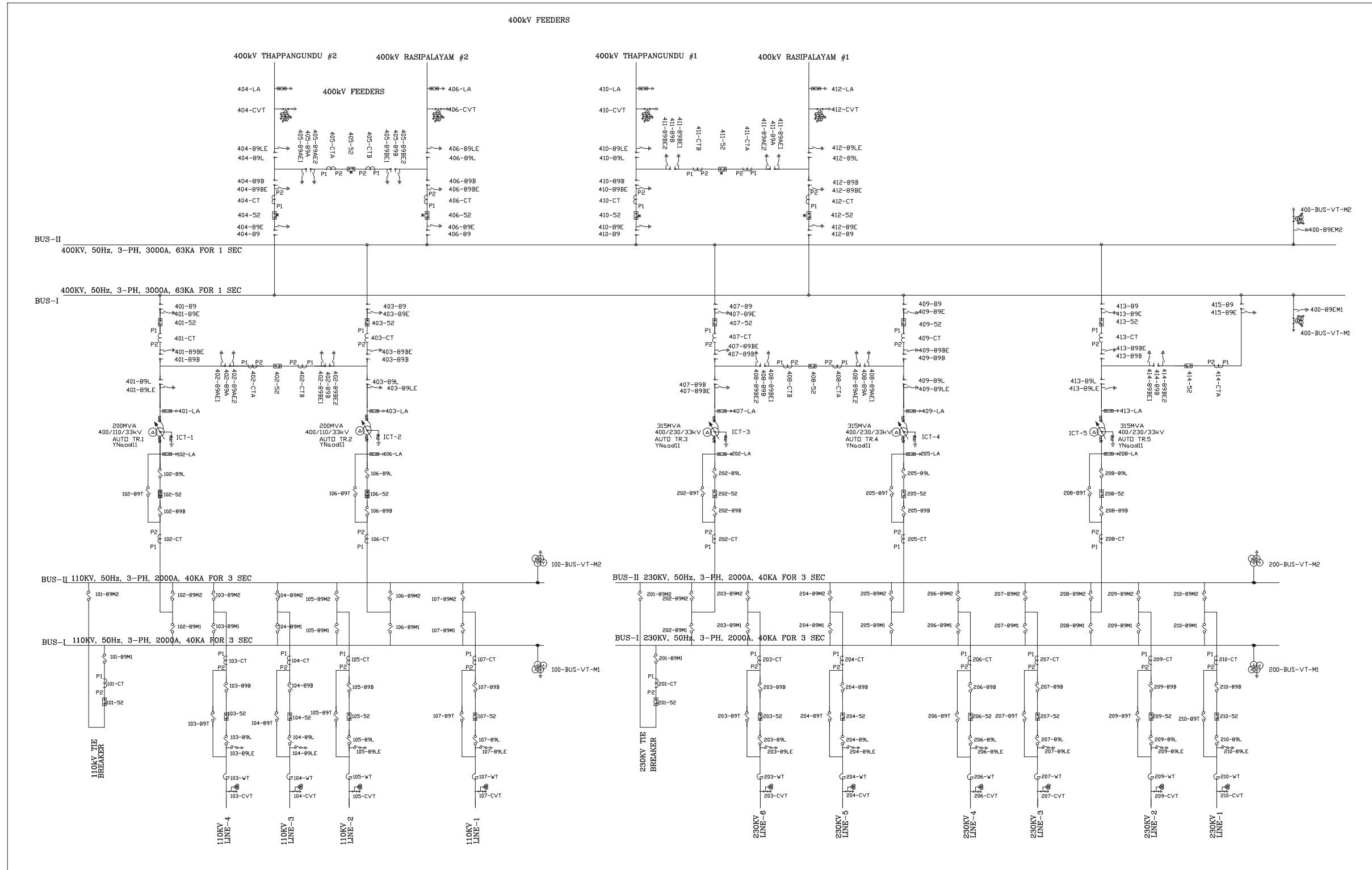
S. NOS.	DESCRIPTION	UNIT			
1.	NOMINAL SYSTEM VOLTAGE	kV	400	230	132
2.	HIGHEST SYSTEM VOLTAGE	kV	420	245	111
3.	BASIC IMPULSE LEVEL	kVp	1425	1050	550
4.	POWER FREQUENCY WITHSTAND	kVrms	630	460	230
5.	SWITCHING IMPULSE WITHSTAND VOLTAGE	kVrms	1050	—	—
6.	CREEPAGE DISTANCE (MINIMUM)	mm/kV	25	25	25
7.	SYSTEM FAULT LEVEL	kA/Sec	63/1	40	40/3

3. CONDUCTION DATA			
S. NOS.	DESCRIPTION	400kV	230kV
1.	MAIN BUS AND BUS COUPLER BAY	QUAD ACSR MOOSE	QUAD ACSR MOOSE
2.	EQUIPMENT INTERCONNECTION	4" IPS AL. TUBE/TWIN MOOSE ACSR	3" IPS AL. TUBE /TWIN MOOSE ACSR
3.	JACK BUS/DROPPERS	TWIN MOOSE ACSR	TWIN MOOSE ACSR

4. ALL THE DIMENSIONS IN IN MM.
5. LIGHTNING PROTECTION OF SWITCHYARD SHALL BE DONE BY LIGHTNING MAST AND SEPARATE OF LM SHALL BE AS PER ISD PUBLICATION.
6. DIMENSIONS AND HENCE CLEARANCES ARE AS PER TRANTRANSCO INP DRAWINGS.
7. SEPARATE DRAWING SHALL BE REFERRED FOR ERECTION KEY DIAGRAM, TRENCH LAYOUT, EARTH MAT LAYOUT, CONTROL ROOM, TOWER/ BEAM, FIRE FIGHTING SYSTEM, ILLUMINATION SYSTEM, AIR CONDITIONING & VENTILATION SYSTEM, FENCE, GATE, GRAVEL ETC.
8. DISTANCE AT SITE SHALL BE 10.500 TO 10.650M AND 9.750M AS SHOWN.
9. THE HEIGHT OF FENCE AND GATE WOULD BE SHOWN IN THE CORRESPONDING CIVIL DRAWING.
10. STATIC TENSION ON THE BUSES AND SHIELD WIRE SHALL BE SHOWN IN THE STRUCTURE LOADING DIAGRAM SEPARATELY.
11. TRANTRANSCO GIVE THE COORDINATES OF FENCE / BOUNDARY WALL AND DIMENSIONS BETWEEN FENCE/BOUNDARY WALL AND SWITCHYARD.
12. WHEREVER SPACE IS NOT AVAILABLE ROAD REQUIREMENT SHALL BE FINALISED AT SITE.
13. WHEREVER TRANTRANSCO LOCATIONS SHALL BE PROVIDED FOR THE PROJECT.
14. LOCATION OF DG SET AND DISTRIBUTION TRANSFORMER MAY CHANGE TO SUIT SITE CONDITION.

————— BHEL SCOPE
 - - - - - NOT IN BHEL SCOPE
 —□— BOUNDARY WALL

No.	ITEM DESCRIPTION	Quantity (SETS)
45	100 iv Double Tension String insulator with double anchoring point(anchor spacing 450mm), 2x25 dics with tension clamp, Corona Ring and Turn Buckle set suitable for Quade ACSR Moose Conductor (sub conductor spacing 225mm).	36
46	100 iv Double Tension String insulator with double anchoring point(anchor spacing 450mm), 2x25 dics with tension clamp, Corona Ring and without Turn Buckle set suitable for Quade ACSR Moose Conductor (sub conductor spacing 225mm).	36
47	100 iv Double Tension String insulator with double anchoring point(anchor spacing 450mm), 2x25 dics with tension clamp, Corona Ring and Turn Buckle set suitable for Twin ACSR Moose Conductor (sub conductor spacing 450mm).	57
48	100 iv Double Tension String insulator with double anchoring point(anchor spacing 450mm), 2x25 dics with tension clamp, Corona Ring and without Turn Buckle set suitable for Twin ACSR Moose Conductor (sub conductor spacing 450mm).	57
49	100 iv Single Suspension String insulator with 25 dics, Corona Ring drop type clamp suitable for Twin ACSR Moose Conductor (sub conductor spacing 450mm).	69
50	230 iv Double Tension String insulator with double anchoring point (anchor spacing 450mm), 2x15 dics with tension clamp and Turn Buckle set suitable for Twin ACSR Moose Conductor (sub conductor spacing 225mm).	33
51	230 iv Double Tension String insulator with double anchoring point(anchor spacing 450mm), 2x15 dics with tension clamp and without Turn Buckle set suitable for Quade ACSR Moose Conductor (sub conductor spacing 225mm).	33
52	230 iv Double Tension String insulator with Double anchoring point (anchor spacing 450mm), 2x15dics with tension clamp and Turn Buckle set suitable for Twin ACSR Moose Conductor (sub conductor spacing 225mm).	36
53	230 iv Double Tension String insulator with Double anchoring point (anchor spacing 450mm), 2x15 dics with tension clamp and without Turn Buckle set suitable for Twin ACSR Moose Conductor (sub conductor spacing 225mm).	36
54	100 both side bolted type Tension Clamp for mid span isolation with 3Dics suitable for Twin Moose Conductor (sub conductor spacing 225mm). (For 120KV I/C and Line Bay).	12
55	120 iv Simple Suspension String insulator with 3 dics, drop type clamp suitable for Twin ACSR Moose Conductor (sub conductor spacing 225mm). (To be suspended from Twin Moose Stringing Conductor).	4
56	100 both side bolted type Tension Clamp for mid span isolation with 3Dics suitable for Twin Moose Conductor (sub conductor spacing 225mm). (For 110KV I/C and Line Bay).	12
57	100 iv Simple Suspension String insulator with 3 dics, drop type clamp suitable for Twin ACSR Moose Conductor (sub conductor spacing 225mm). (To be suspended from Twin Moose Stringing Conductor of out going lines).	4
58	110 iv Double Tension String insulator with double anchoring point(anchor spacing 450mm), 2x2dics, with tension clamp and Turn Buckle set suitable for Quade ACSR Moose Conductor (sub conductor spacing 225mm).	27
59	110 iv Double Tension String insulator with double anchoring point(anchor spacing 450mm), 2x8 dics, with tension clamp and without Turn Buckle set suitable for Quade ACSR Moose Conductor (sub conductor spacing 225mm).	27
60	110 iv Double Tension String insulator with Double anchoring point, 2x8 dics with tension clamp and Turn Buckle set suitable for Twin ACSR Moose Conductor (sub conductor spacing 225mm).	27
61	110 iv Double Tension String insulator with Double anchoring point, 2x8 dics, with tension clamp and without Turn Buckle set suitable for Twin ACSR Moose Conductor (sub conductor spacing 225mm).	24



SINGLE LINE DIAGRAM

NAME OF CONSULTANT

नाम /NAME	हस्ता./SIGN.	दि./DATE
RKP	-SD-	13.09.13

BHARAT HEAVY ELECTRICALS LTD.
TRANSMISSION PROJECTS DIVISION

	अनुपात / SCALE	कार्ड को CARD CODE
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REV.	DATE	ALTERED RKP	REV.	DATE	ALTERED RKP	REV.	DATE	ALTERED RKP
03	17.02.14	CHECKED SKS	02	06.01.14	CHECKED SKS	01	22.11.13	CHECKED SKS

	APPROVED	RS		APPROVED	RS	-SD-		APPROVED	RS	-SD-	
ZONE	REVISED IN LINE WITH FGL DECIDED AT SITE WITH TRANSTRANSCO			ZONE	REVISED IN LINE WITH SURVEY REPORT FOR BOUNDARY			ZONE	REVISED IN LINE WITH TRANSTRANSCO COMMENT DATED 08.10.13, 24.10.13 AND 08.11.13.		

LAYOUT PLAN 10kV SUBSTATION ANIKADAVU	TB-0-364-316-002	03
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