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NOTES

LEGEND

KEY PLAN

07	1405/02/22	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
06	1405/02/07	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
05	1404/12/09	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
04	1404/10/17	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
03	1404/09/22	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
02	1404/08/06	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
01	1404/05/19	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
00	1404/01/14	IFR-ISSUED FOR REVIEW	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER

REV.	DATE	DESCRIPTION	DESIGN	DRAWN	CHECKED	APPROVED
Client:			Consultant:			
 NICICO  تاسیسات و مهندسی برق موتنکو ایران Contractor:  MOHAM SHARGH CO. Sub Contractor:						

Project:

RANFSANJAN 230/33KV SUBSTATION

Title:

GENERAL LAYOUT & SECTIONS
COVER SHEET

DOC NO.:

28P2-B-3MG-LAY-SUS-460001-EL-050

REV.

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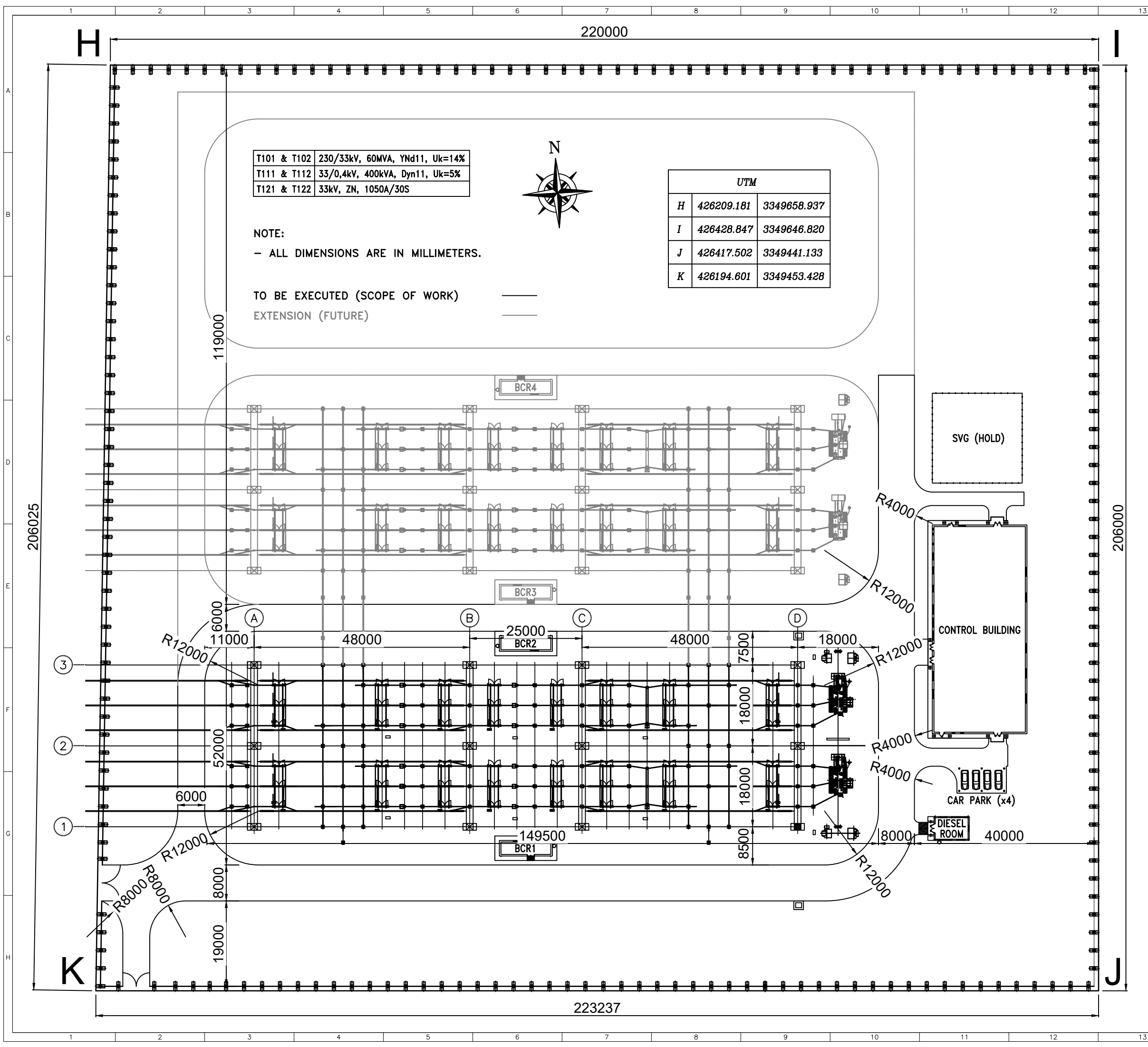
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													 NICICO  شماره ثبت شرکت: ۱۳۸۴۰۰۰۰۰۰۰۰ شماره ثبت شرکت: ۱۳۸۴۰۰۰۰۰۰۰۰۰ مشاور:  Monenco Iran Contractor:  MOHAM SHARGH CO. Sub Contractor:																																																																		
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2	INDEX SHEET	Z	A	B	C	D	E	F	G
3	SITE PLAN	Z	A	B	C	D	E	F	G
4	GENERAL LAYOUT	Z	A	B	C	D	E	F	G
5	230KV SWITCHGEAR LAYOUT	Z	A	B	C	D	E	F	G
6	SECTIONS A-A & B-B	Z	A	B	C	D	E	F	G
7	SECTIONS C-C & D-D	Z	A	B	C	D	E	F	G
8	SECTIONS E-E & F-F	Z	A	B	C	D	E	F	G
9	TRANSFORMERS AREA LAYOUT & SECTION G-G	Z	A	B	C	D	E	F	G



REFERENCE							
REFERENCE. TITLE				REFERENCE. No.			
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06	1405/02/07	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER	
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01	1404/05/19	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER	
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REV.	DATE	DESCRIPTION	DESIGN	DRAWN	CHECKED	APPROVED	
Client:			Consultant:				
							
			Contractor:		Sub Contractor:		
							
Project:							
RANFSANJAN 230/33KV SUBSTATION							
Title:							
GENERAL LAYOUT & SECTIONS SITE PLAN							
DOC NO.:		28P2-B-3MG-LAY-SUS-460001-EL-050				REV. G	
SCALE		SIZE	SHEET			FORMAT	
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REV.	DATE	DESCRIPTION	DESIGN	DRAWN	CHECKED	APPROVED	
Client:			Consultant:				
			 Monenco Iran				
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			 MOHAM SHARGH CO.				
Project:							
RANFSANJAN 230/33KV SUBSTATION							
Title:							
GENERAL LAYOUT & SECTIONS GENERAL LAYOUT							
DOC NO.:		28P2-B-3MG-LAY-SUS-460001-EL-050				REV.	
						G	
SCALE		SIZE	SHEET		FORMAT		
1:800		A3	4 OF 9				
		14	15		16		

T101 & T102	230/33kV, 60MVA, YNd11, Uk=14%
T111 & T112	33/0.4kV, 400kVA, Dyn11, Uk=5%
T121 & T122	33kV, ZN, 1050A/30S



NOTE:

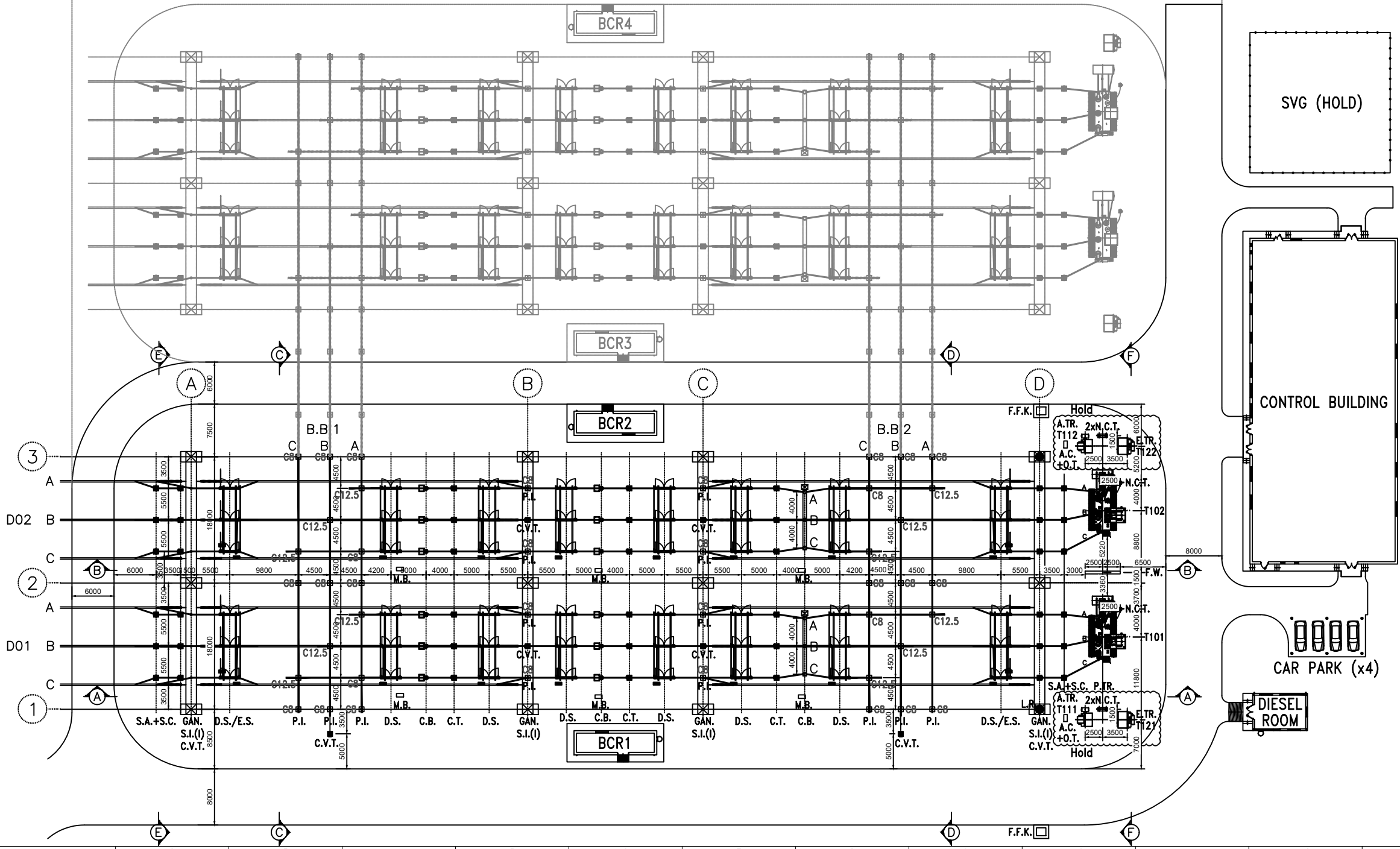
- ALL DIMENSIONS ARE IN MILLIMETERS.

TO BE EXECUTED (SCOPE OF WORK)

EXTENSION (FUTURE)

TYPE	DESCRIPTION
C.B.	Circuit Breaker
D.S.	Disconnecting Switch
D.S./E.S.	Disconnecting & Earthing Switch
C.T.	Current Transformer
N.C.T.	Neutral Current Transformer
C.V.T.	Capacitive Voltage Transformer
S.A.	Surge Arrester
S.C.	Surge Counter
L.T.	Line Trap
L.M.U.	Line Matching Unit
P.I.	Post Insulator
S.I.	String Insulator (I or V Type)
B.B.	Bus-Bar

TYPE	DESCRIPTION
GAN.	Gantry
C.O.F.	Cut-Out Fuse
P.TR.	Power Transformer
A.TR.	Auxiliary Transformer
E.TR.	Earthing Transformer
S.TR.	Step-up Transformer
L.R.	Lightning Rod
F.W.	Fire Wall
M.B.	Marshaling Box
O.T.	Oil Treatment Panel
A.C.	AC Primary Panel
F.F.K.	Fire Fighting Kiosk



SVG (HOLD)

CONTROL BUILDING

CAR PARK (x4)

DIESEL ROOM

REFERENCE

REFERENCE. TITLE

REFERENCE. No.

NOTES

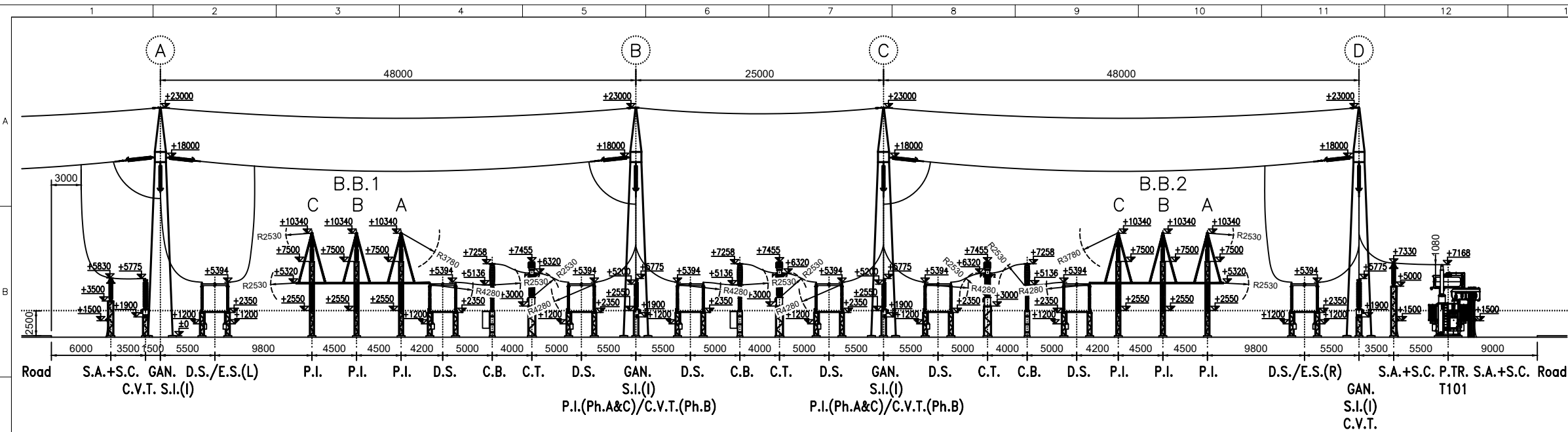
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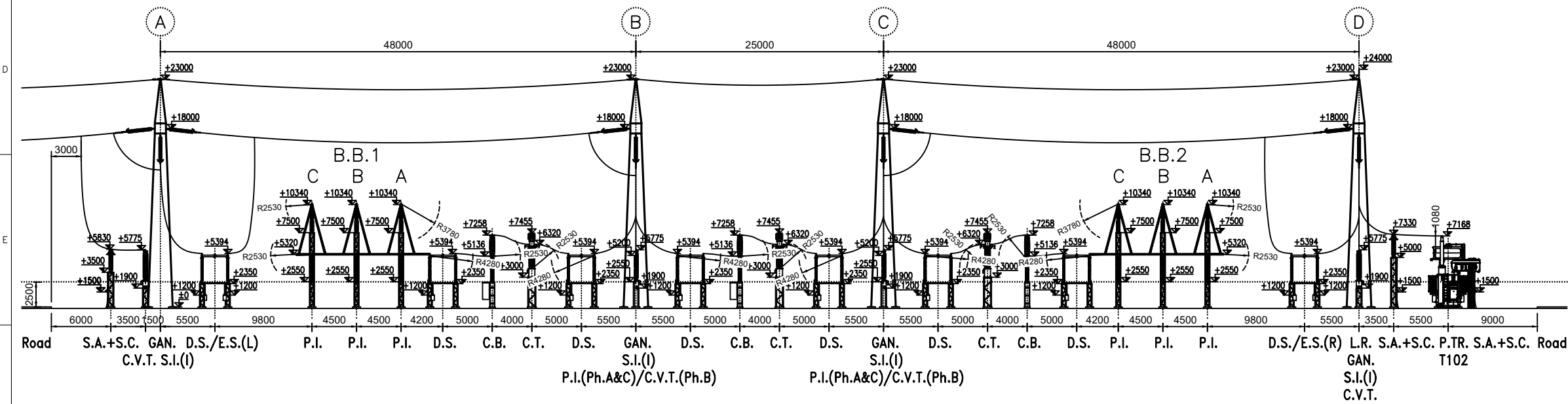
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04	1404/10/17	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
03	1404/09/22	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
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01	1404/05/19	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
00	1404/01/14	IFR-ISSUED FOR REVIEW	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER
REV.	DATE	DESCRIPTION	DESIGN	DRAWN	CHECKED	APPROVED

Client:	Consultant:
	
Contractor:	Sub Contractor:
	

Project:		RANFSANJAN 230/33KV SUBSTATION	
Title:		GENERAL LAYOUT & SECTIONS SWITCHGEAR LAYOUT	
DOC NO.:	28P2-B-3MG-LAY-SUS-460001-EL-050		REV.
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SCALE	SIZE	SHEET	FORMAT
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SECTION A-A



SECTION B-B

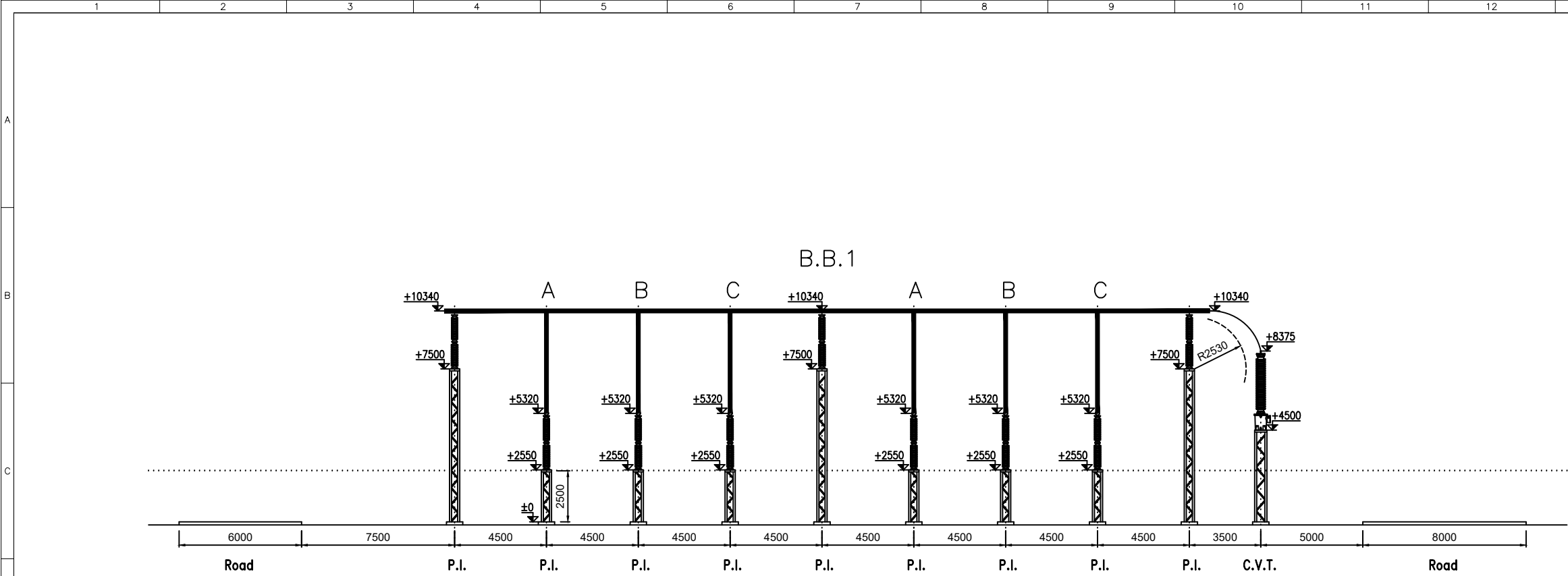
INSULATION LEVELS, AIR CLEARANCES & SAFETY DISTANCES	230kV	33kV
Rated Lightning Impulse Withstand Voltage in Air	1050kV	170kV
Basic Phase-Earth Clearance Value (Non-Flashover Distance)	2300mm	320mm
Minimum Phase-Phase Clearance in Air (Including 10% Safety Margin)	2530mm	350mm
Minimum Phase-Earth Clearance in Air (Including 10% Safety Margin)	2530mm	350mm
Clearance between Ground & the Insulators Base	2500mm	2500mm
Minimum Clearance between Lowest Live Part & Ground (Total Safety Zone)	5030mm	3250mm
Horizontal Clearance Working Zone (In the Absence of Heavy Machines)	4280mm	3000mm
Vertical Clearance Working Zone (In the Absence of Heavy Machines)	3780mm	3000mm
Clearance of Conductors above the Access Roads	10000mm	8000mm
Phase Spacing of Rigid Bus-Bar (Center Line to Center Line)	4500mm	1000mm

NOTES:

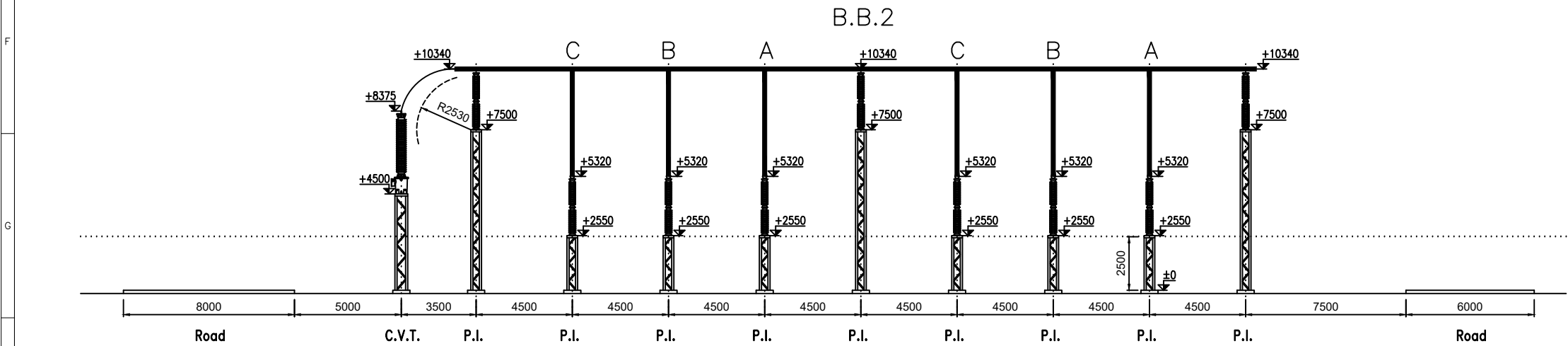
1- ALL DIMENSIONS ARE IN MILLIMETERS.

2- ALL HEIGHTS WILL BE FINALIZED AFTER APPROVAL OF EQUIPMENT OUTLINES.

REFERENCE							
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LEGEND							



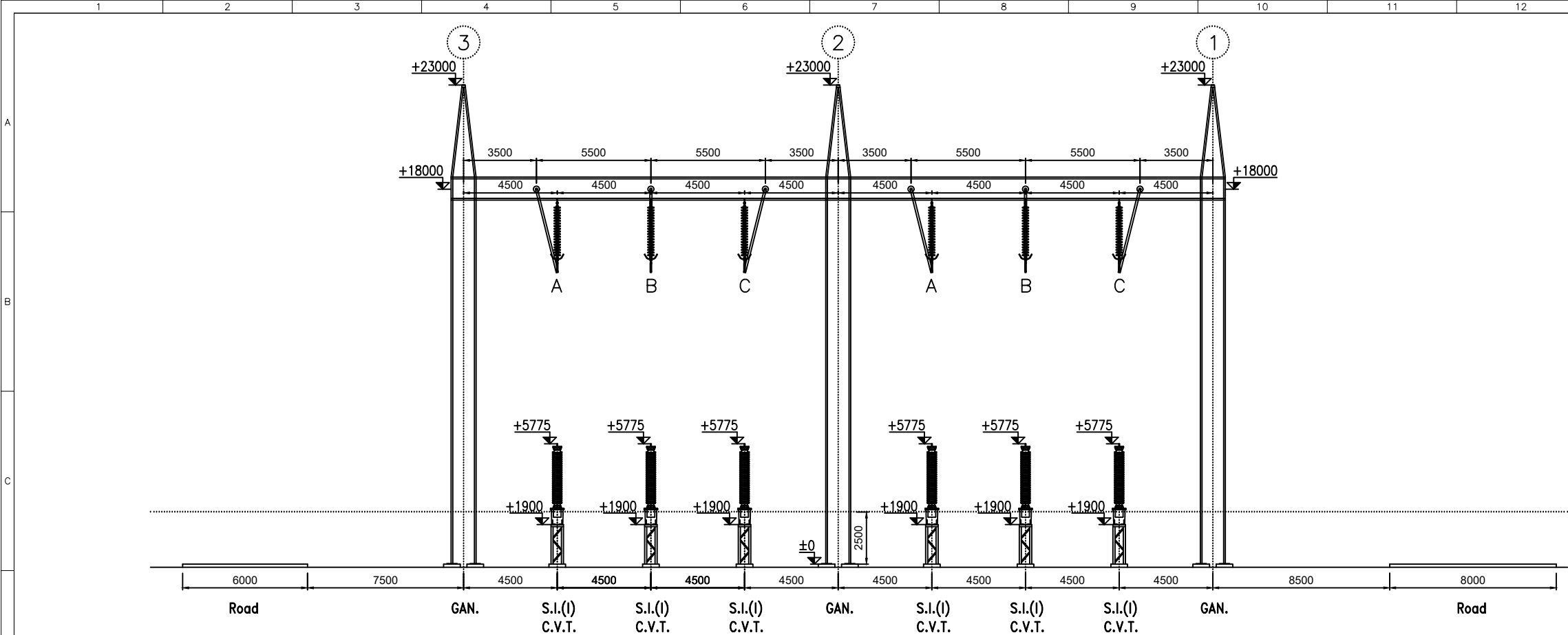
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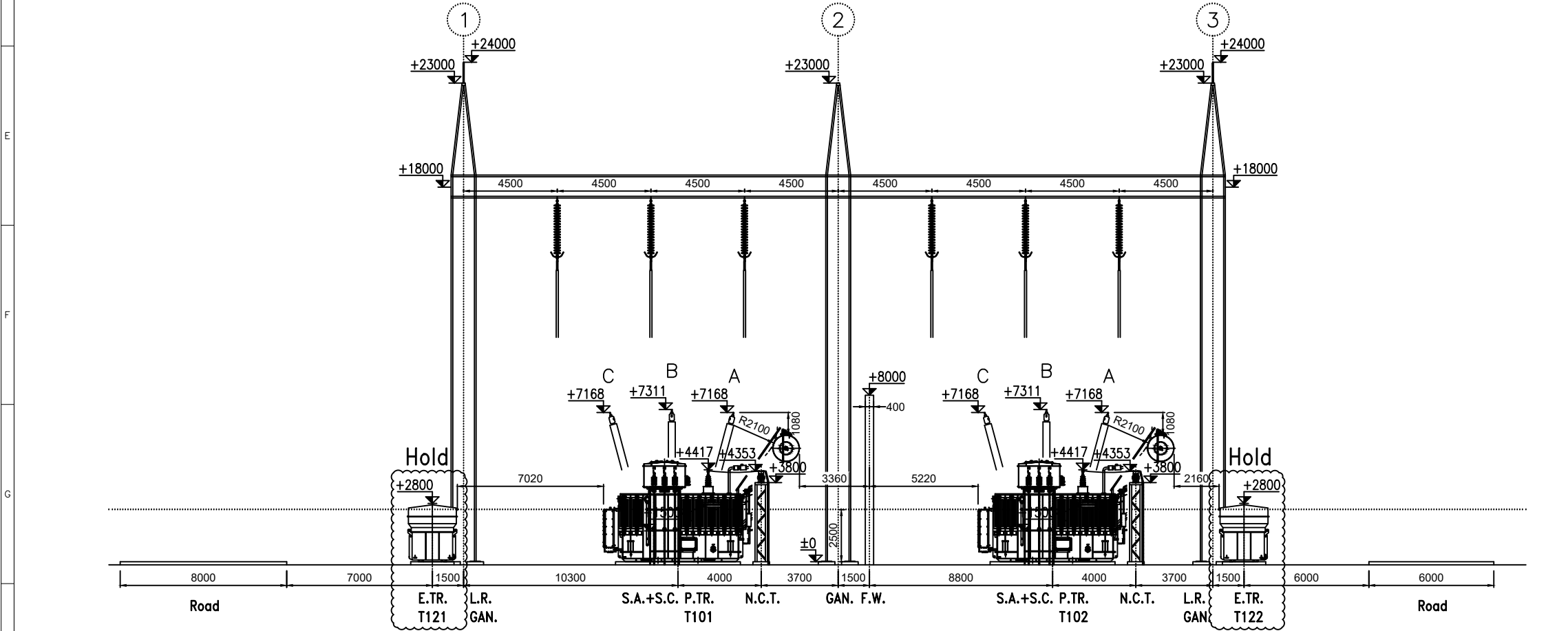
SECTION D-D

NOTES:
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2- ALL HEIGHTS WILL BE FINALIZED AFTER APPROVAL OF EQUIPMENT OUTLINES.

REFERENCE							
REFERENCE. TITLE				REFERENCE. No.			
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LEGEND							
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06	1405/02/07	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER	
05	1404/12/09	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER	
04	1404/10/17	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER	
03	1404/09/22	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER	
02	1404/08/06	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER	
01	1404/05/19	IFA-ISSUED FOR APPROVAL	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER	
00	1404/01/14	IFR-ISSUED FOR REVIEW	H.S.	H.S.	EPC ENGINEERING MANAGER	EPC PROJECT MANAGER	
REV.	DATE	DESCRIPTION	DESIGN	DRAWN	CHECKED	APPROVED	
Client:			Consultant:				
							
			Contractor:		Sub Contractor:		
							
Project:							RANFSANJAN 230/33KV SUBSTATION
Title:							GENERAL LAYOUT & SECTIONS SECTIONS C-C & D-D
DOC NO.:		28P2-B-3MG-LAY-SUS-460001-EL-050				REV. G	
SCALE		SIZE	SHEET		FORMAT		
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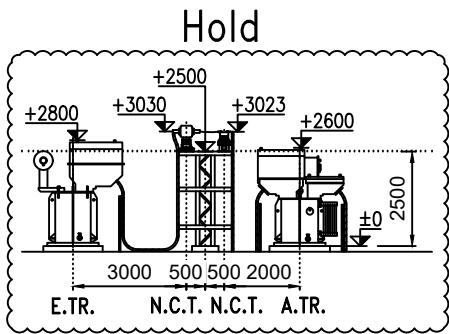
SECTION E-E



SECTION F-F

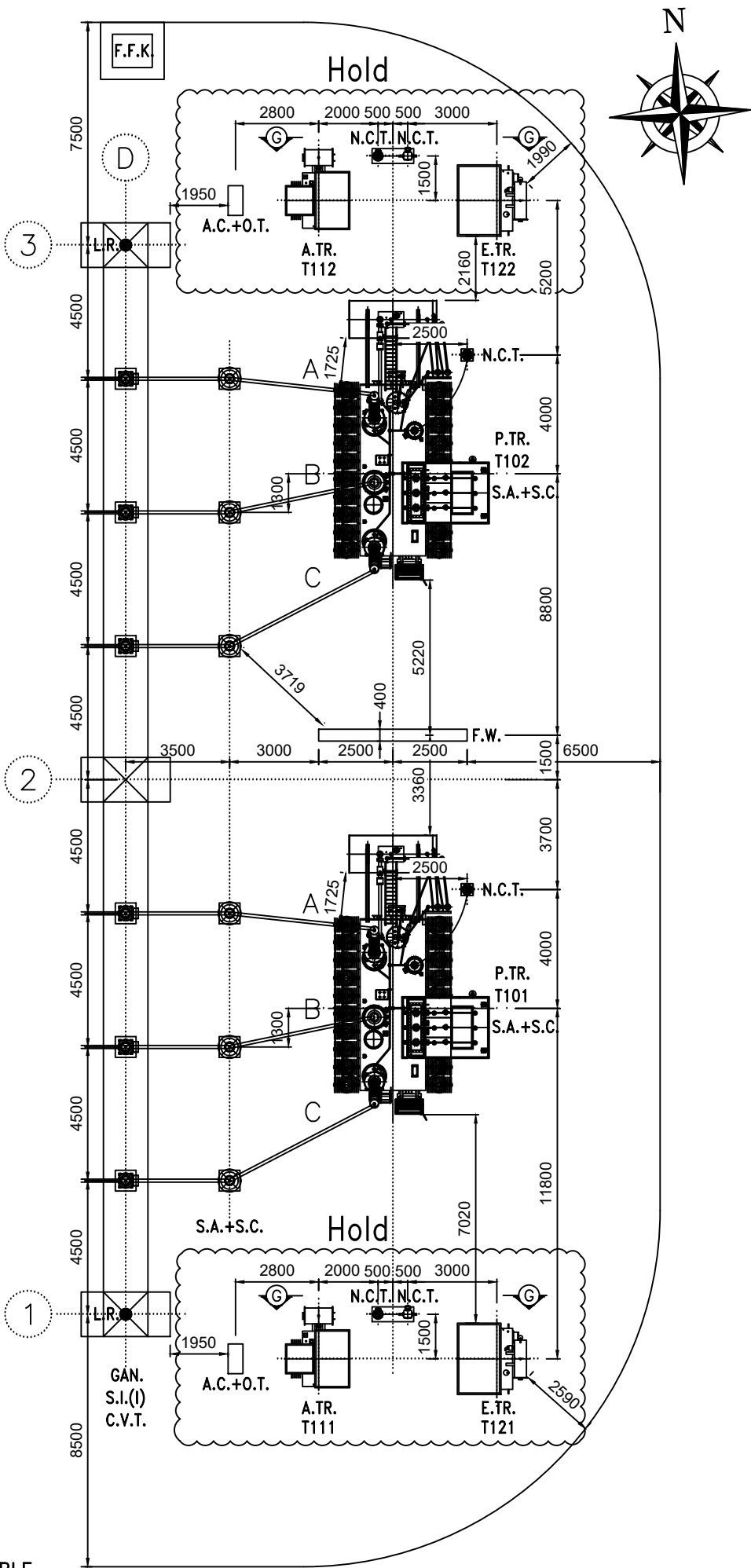
- NOTES:
- 1- ALL DIMENSIONS ARE IN MILLIMETERS.
 - 2- ALL HEIGHTS WILL BE FINALIZED AFTER APPROVAL OF EQUIPMENT OUTLINES.
 - 3- DURING BUSBAR INSTALLATION, PAY SPECIAL ATTENTION TO THE CLEARANCE BETWEEN PHASE A FLEXIBLE CONDUCTOR & PTR CONSERVATOR, THAT MUST BE AT LEAST 2100 mm, IN WORST CASE (BY ADJUSTING THE INSTALLATION ANGLE OF PTR BUSHING CLAMP & PROPER FORMING OF THE CONDUCTOR)

REFERENCE							
REFERENCE. TITLE				REFERENCE. No.			
NOTES							



SECTION G-G

- NOTES:
- 1- ALL DIMENSIONS ARE IN MILLIMETERS.
 - 2- ALL HEIGHTS WILL BE FINALIZED AFTER APPROVAL OF EQUIPMENT OUTLINES.
 - 3- DURING BUSBAR INSTALLATION, PAY SPECIAL ATTENTION TO THE CLEARANCE BETWEEN PHASE A FLEXIBLE CONDUCTOR & PTR CONSERVATOR, THAT MUST BE AT LEAST 2100 mm, IN WORST CASE (BY ADJUSTING THE INSTALLATION ANGLE OF PTR BUSHING CLAMP & PROPER FORMING OF THE CONDUCTOR)



REFERENCE						
REFERENCE. TITLE			REFERENCE. No.			
NOTES						
LEGEND						