

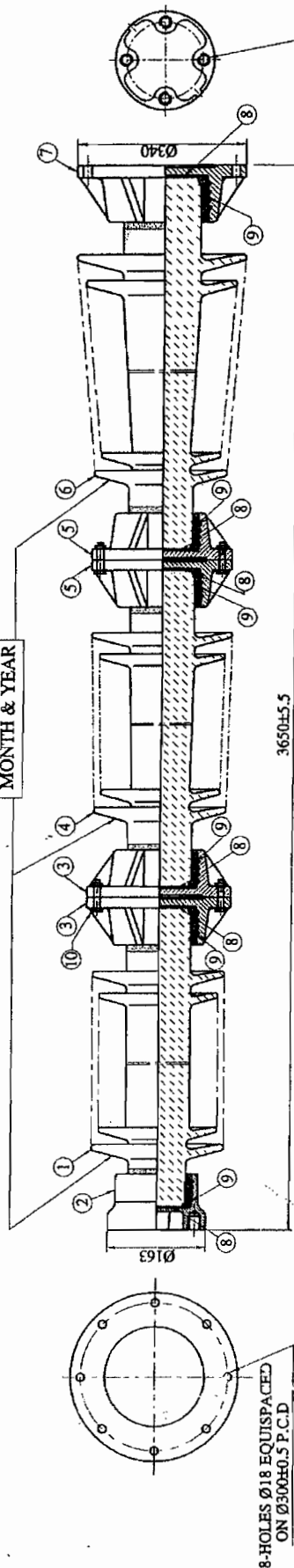
FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

REV 00
Dwg No. 3 983 14 01200



INDIA
MONTH & YEAR



4-TAPPED HOLES M16x2x22DEEP
EQUISPACED ON Ø127±0.5 P.C.D.

3650±5.5

8-HOLES Ø18 EQUISPACED
ON Ø3000±0.5 P.C.D.

NOTES:

1. MCI TO CONFORM TO GRADE BM 320 OF IS:14329-1995 OR S.G. IRON CONFORMING TO Gr. 450/10 OF IS: 1865 - 1991
2. INSULATOR WILL CONFORM TO IS:2544/IS:5350 PT / IEC:168/IEC773 IN GENERAL
3. SHED PROFILE AS PER IS:13134/IEC:815
4. HOLES IN THE CAP SHOULD BE TAPPED/DRILLED OVERSIZE BY 0.5 mm AS PER IS 1367 PART 13-(1983)

TEST PARTICULARS

CREEPAGE DISTANCE TOTAL = 10500 mm

MECHANICAL VALUES

BENDING STRENGTH kgf/kN = 800 / 8
TENSILE STRENGTH kgf/kN = 16000 / 160
TORSIONAL STRENGTH kgf-m/kN-m = 400 / 4
COMPRESSION STRENGTH kgf/kN = 32000 / 320

ELECTRICAL VALUES

VISIBLE DISCHARGE VOLTAGE = 256 kV (rms)
POWER FREQUENCY WET WITHSTAND = 480 kV (rms)
IMPULSE WITHSTAND VOLTAGE = 1550 kVp

5. INSULATOR WILL BE BROWN GLAZED EXCEPT GROUND SURFACES
6. METAL PARTS DESIGN WILL BE MODIFIED FOR IMPROVEMENT IF REQUIRED WITHOUT AFFECTING THE END REQUIREMENT.

CONTROLLED COPY

ITEM	DESCRIPTION	MATERIAL	UNIT	QTY
10	HEX HEAD BOLTS WITH NUTS & WASHERS	MILD STEEL	-	8 SETS
9	BONDING MATERIAL	PORTLAND CEMENT	-	-
8	CUSHION	CORK	-	6
7	FLANGE	M.C IRON / S.G. IRON	20	1
6	BOTTOM SHELL	PORCELAIN	117	1
5	FLANGE	M.C IRON / S.G. IRON	7.5	2
4	MIDDLE SHELL	PORCELAIN	74	1
3	FLANGE	M.C IRON / S.G. IRON	6.5	2
2	CAP	M.C IRON / S.G. IRON	4	1
1	TOP SHELL	PORCELAIN	54	1

FERRIOUS PARTS ARE HOT-DIP GALVANIZED (EXCEPT FEMALE THREADS) AND TEST CONFORM TO IS:2633/IEC:38/RS 729
PORCELAIN BROWN GLAZED

BHARAT HEAVY ELECTRICALS LTD.
ELECTROPORCELAINS DIVISION
BANGALORE - 560 012

DEPT. OF SCALE WEIGHT (kg)
GRADE OF N.T.S. 300
TOL. DIM C/N/F (As per)

TITLE
400 kV STATION POST
SOLID CORE INSULATOR (8 kN)

DRAWING No.
3 983 14 01200

REV. 00

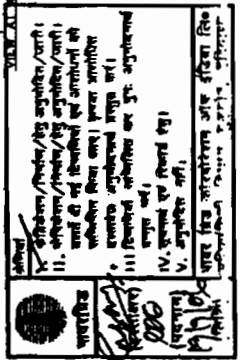
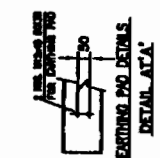
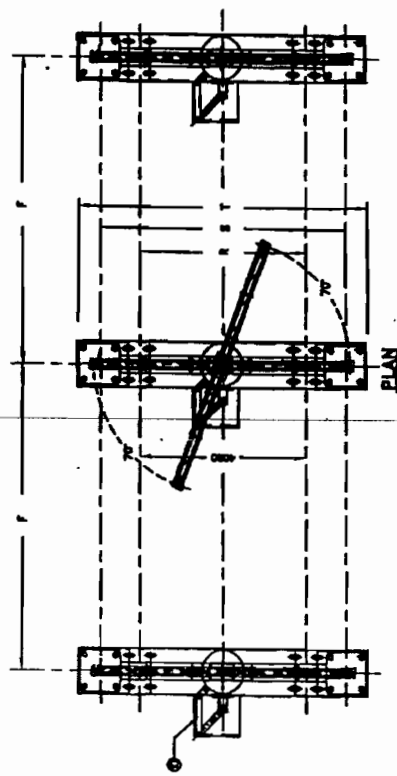
No. OF SHEETS

SUPERNODES DRG. No.

SHT.24 SIZE A3 420 x 297

ONE PHASE 1A'U'

[illegible]

[illegible]

ISOLATOR SHOWN IN CLOSED CONDITION

STANDARD DRAWING

[illegible]

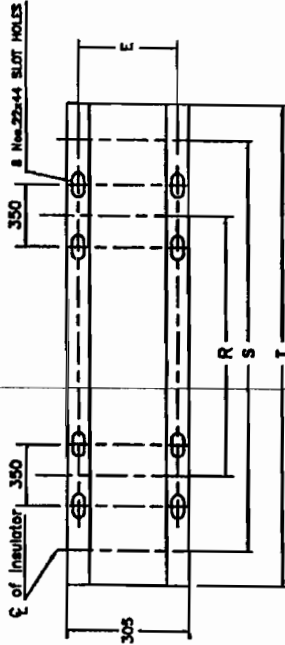
ALL DIMENSIONS ARE IN MM - IF ANY DOUBT PLEASE ASK.

PART LIST

SL.No.	DESCRIPTION	QTY/3POLE
01	Fixed contact	06 NOS.
02	Moving contact assembly	03 NOS.
03	Insulator stack & Fixing Bolts (in scope of CONTRACTOR)	09 NOS.
04	Rotating stool base with lever arm	03 NOS.
05	Base channel (200X75 mm--(2Nos/set) of ISMC Channels)	03 Sets.
06	Iso.Top operating mechanism assembly	03 NOS.
07	Operating pipe for ISOLATOR (ø50mm G.I.pipe, class 'B')	03 NOS.
08	Operating mechanism box for ISOLATOR (MOTOR)	03 NOS.
09	Corona shields on insulators	08 NOS.
10	Push pipe for main switch	03 NOS.
11	E.S.moving contact assembly	03 NOS.
12	E.S.fixed contact assembly	03 NOS.
13	Earth Switch..Top operating mechanism assembly	03 NOS.
14	E.S.operating pipe(ø50mm G.I.pipe, class 'B')	03 NOS.
15	E.S. Operating mechanism box(MOTOR)	03 NOS.
16	Copper flexible(90 Sq.mm)--4 nos/pole	12 NOS.
17	Interlocking Rod	03 NOS.
18	Corona shields(300ø) for E/S fixed contacts	06 NOS.
19	Counterbalancing spring	03 NOS.
20	Supporting structure (in scope of CONTRACTOR)	06 NOS.

REFERENCE DRAWINGS

For contact details ----- PGCIL-ASM-0114
 For M.S. operating mechanism details- PGCIL-OM-501
 For E.S.contact details----- PGCIL-ASE-0105
 For E.S.operating mechanism details- PGCIL-OM-503
 For Interlock between Main switch, & Earth Switches details----- PGCIL-AZ-0108
 For Corona Shield details----- PGCIL-AZ-0107
 For insulator details----- (In scope of CONTRACTOR)



BASE CHANNEL FIXING DETAILS

NOTES

- 01 All dimensions are in 'mm'
- 02 All ferrous parts are hot-dip galvanized
- 03 All non-ferrous contact points are silver plated to 25 microns(min)
- 04 Main rotating post shall have two bearings
- 05 The indicated dimensions are subject to the manufacturing tolerances :
 i) Upto 50mm---±3%, ii) 51 to 100mm---±2%,
 iii) 101 to 300mm---±1%, iv) Above 300mm---±0.5%
- 06 All G.I. pipes are 'Class B' type as per IS: 1239
- 07 Rated terminal load shall be as per IEC: 62271-102
- 08 Position of Earth switch is interchangeable from male to female
- 09 Contact side and vice versa without much modification
- 10 Earth switch provided on all three poles and individually motor operating mechanism.

QUANTITY:

WEIGHTS (For reference only)

Net weight of the Isolator, } 2010 Kgs (approx.)
 But without insulators }

DIMENSIONS

A	B	C	D	E	F	G	H	I
460	3650	70	200	220	8000	390	-	2435
L	M	N	P	R	S	T	U	V
1235	-	-	-	3870	4000	4800	5270	8000

Copper flexible 155 Sq.mm. designed to 60 Sq.mm. dia

REV. DATE DESCRIPTION

STANDARD DRAWING

TITLE 420KV, 3150A, 50Hz., TP, 'DBR'
 ISOLATOR WITH ONE EARTH SWITCH
 (ISOLATOR & EARTH SWITCH INDIVIDUAL POLE OPERATED)

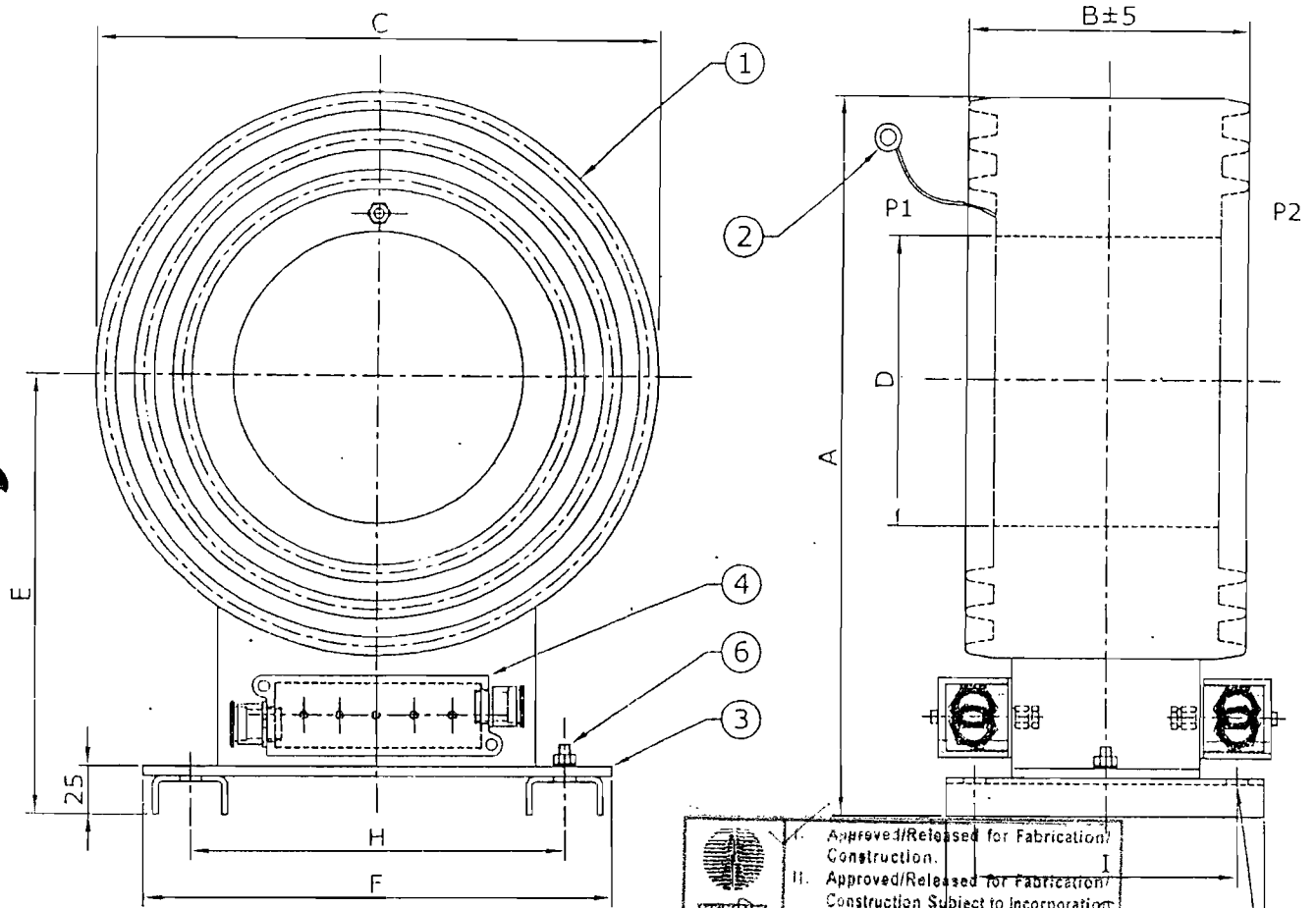
SCALE 1:10
 DATE 27-10-2009
 DRAWN SAKH
 CHECKED K. V. S.
 APPROVED K. V. S.
 DRO. NO. PGCIL-AS-0112

SIEMENS LTD
 PTO Division, Hyderabad
 Plot No. 88 & 90, L.A. Gandhi Nagar,
 P.O. Balanagar, Hyderabad - 57

REVISIONS
 I. As per drawing
 II. As per drawing
 III. As per drawing
 IV. As per drawing
 V. As per drawing
 VI. As per drawing
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REVISIONS
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 XXVIII. As per drawing
 XXIX. As per drawing
 XXX. As per drawing

REV	DESCRIPTION	DATE	APPROVED
01	Dim. 385 was 340, 235 was 190, 250 was 230	06.09.03	00000/
02	Cable Gland Position Change	27.07.05	00000/
03	3.6KV was 3.3KV	08.09.05	00000/
04	TYPE : 03 ADDED	08.10.05	00000/
05	Revised as per Power comentes	20.02.06	00000/
06	TYPE : 03 B Dim. 190 was 150 & D Dim. 150 was 200	18.03.06	00000/



1. RESIN BODY.
2. PIG TAIL (EQUIPOTENTIAL SCREEN).
3. BASE PLATE M.S. (ZINC PLATED/ PASSIVATED).
4. SECONDARY TERMINAL M5 X 10 DEEP WITH TERMINAL COVER.
5. MOUNTING HOLES 12Ø, 4 NOS.
6. EARTHING BOLT M6

 पावरग्रिड (Signature) DE (Designation) 07/04/06 (Date)	I. Approved/Released for Fabrication/ Construction.
	II. Approved/Released for Fabrication/ Construction Subject to Incorporation of Comments. Modification as Noted. Revised Drawing Required.
	III. To Be Resubmitted for Approval after incorporating the Comments.
	IV. For Information & Record.
	V. Not approved.

Power Grid Corporation of India Ltd.
Engg. Deptt. (SIS Group), Gurgaon Haryana

CUSTOMER POWERGRID CORPORATION OF INDIA LIMITED, NEW DELHI
 PROJECT: 40% Fixed series compensation package under Northern Region
 Strengthening Scheme-II for 400 kV Double Circuits Allahabad-Mainpuri Transmission
 Line at Mainpuri Sub-station.
 LOA NO: C-13004-S162-3/LOA-I&II/1558&59 dated 17.03.2005

CT RATIO	CORE	CORE POSITION	
		P1	P2
2000/1-1-1A	THREE	2 CORE	1 CORE
2000/1-1-1A	FOUR	2 CORE	2 CORE

	03	02	01	TYPE	A	B	C	D	E	F	G	H	I
	385	385	385										
	190	150	100										
	300	300	300										
	150	155	155										
	235	235	235										
	250	250	250										
	170	170	170										
	200	200	200										
	140	140	140										

GENERAL TOLERANCES					
DIMENSIONS	0.5 6	6 30	30 120	120 400	400 1000
TOLERANCES ±	0.1	0.2	0.3	0.5	0.8
ANGULAR ± 2° CONCENTRICITY Ø 0.1					

3.6KV WINDOW TYPE OUTDOOR
 CYCLOALIPHATIC EPOXY TYPE
 CURRENT TRANSFORMER

	SIGN	DATE
DRN.	000	02.08.03
CHD.	000	02.08.03
APPD.	000	02.08.03

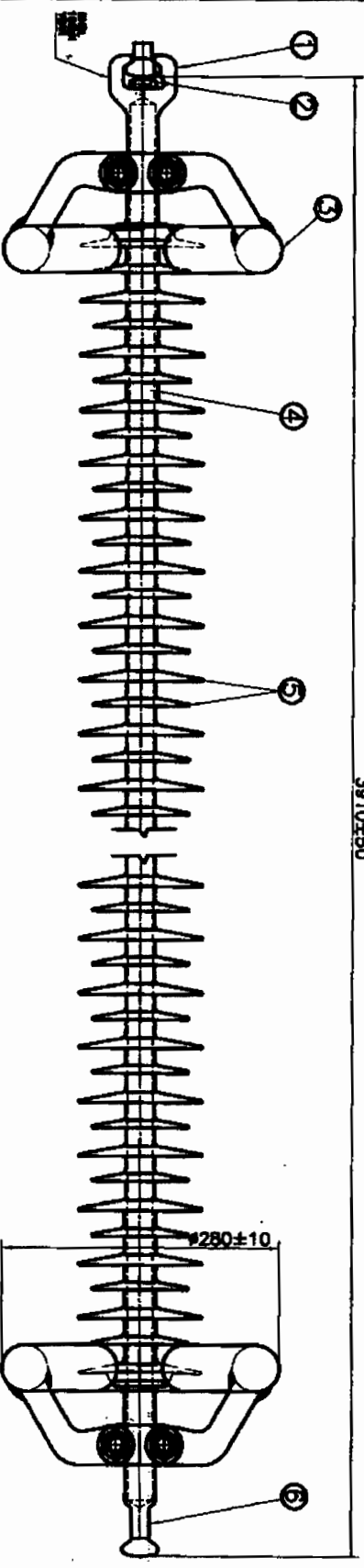
SCALE %		ELECTRICAL CONTROLS & SYSTEMS 866/2, G.I.D.C. ESTATE, MAKARPURA. VADODARA - 390 010 (GUJ.) INDIA	DRG.NO: E4-734/D10 REV : 06
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FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

CV 00351 60 296 7 3073
IN 000

3910±50



CONTROLLED COPY

TECHNICAL PARTICULARS

DESCRIPTIONS	UNIT	VALUES
1. CRADLE DISTANCE (MINIMUM)	MM	13,000
2. ARcing DISTANCE (NOMINAL)	MM	3400
Mechanical Values		
1. SPECIFIED MECHANICAL LOAD	KN	160
2. ROUTINE TEST LOAD	KN	80
3. COUPLING DERATING AS PER IS-80120	MM	20
Electrical Values		
1. POWER FREQUENCY WITHSTANDING VOLTAGE (WV & -WV)	KV	600
2. LIGHTNING IMPULSE WITHSTANDING VOLTAGE (WV & -WV)	KV	1050
3. SURFACE CORONA EXTENSION VOLTAGE (WV) DRY CONDITION	KV	1250
4. SURFACE CORONA EXTENSION VOLTAGE (WV) WET CONDITION	KV	1100
5. MAXIMUM HV FOR COMPLETE STRING AT 10°C	KV	<1000
6. FOR TEST VOLTAGE OF 320 KV (rms)		

- NOTES:**
1. STANDARD TEST SPECIFICATION IS-80380 & 81100

ITEM No.	DESCRIPTION	MATERIAL	QTY. (APPROX.)
1	SOCKET FITTING	MC/SGI CASTING	1
2	SECURITY CLIP	STAINLESS STEEL	1
3	CORONA RING	ALUMINIUM ALLOY	2
4	CONE ROD	FIBREGLASS	1
5	WEATHER SHEDS	SILICONE RUBBER	-
6	BALL FITTING	FORGED STEEL	1

CUSTOMER NAME :
PROJECT NAME :
SPECIFICATION No. :
LETTER OF AMEND No. & DATE :

REV		DATE	BY	DATE
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INVENTORY No.	SIGN AND DATE	REF. DRG. No.	DATE OF THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. IT IS NOT TO BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY
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COMPOSITE LONG ROD INSULATOR
FOR 400KV, 160KN RATING

EL.DG. 4.967 09 15300
REV. A0

REVISIONS DOW. No.

REV. 24 2000 A3 480 N 387

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

00
REV
3 SK 2622
DRG No.

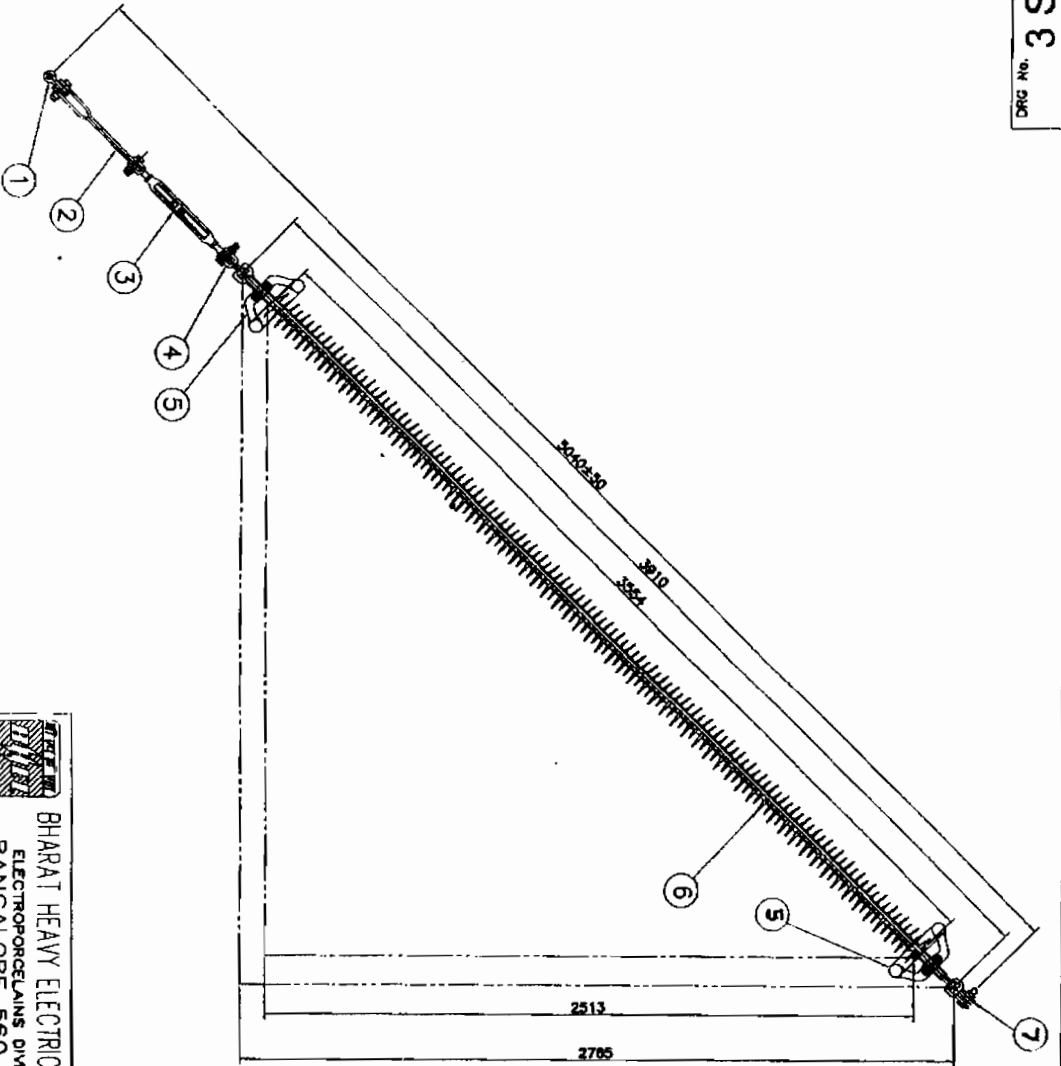
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REF. DRG. No.

SIGN AND DATE


INVENTORY No.

REV	DATE	ALTERED	REV	DATE	ALTERED
CHECKED			CHECKED		

NOTE :
HARDWARES DESIGNATION 20 mm

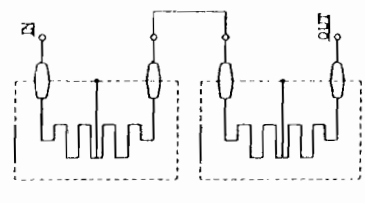
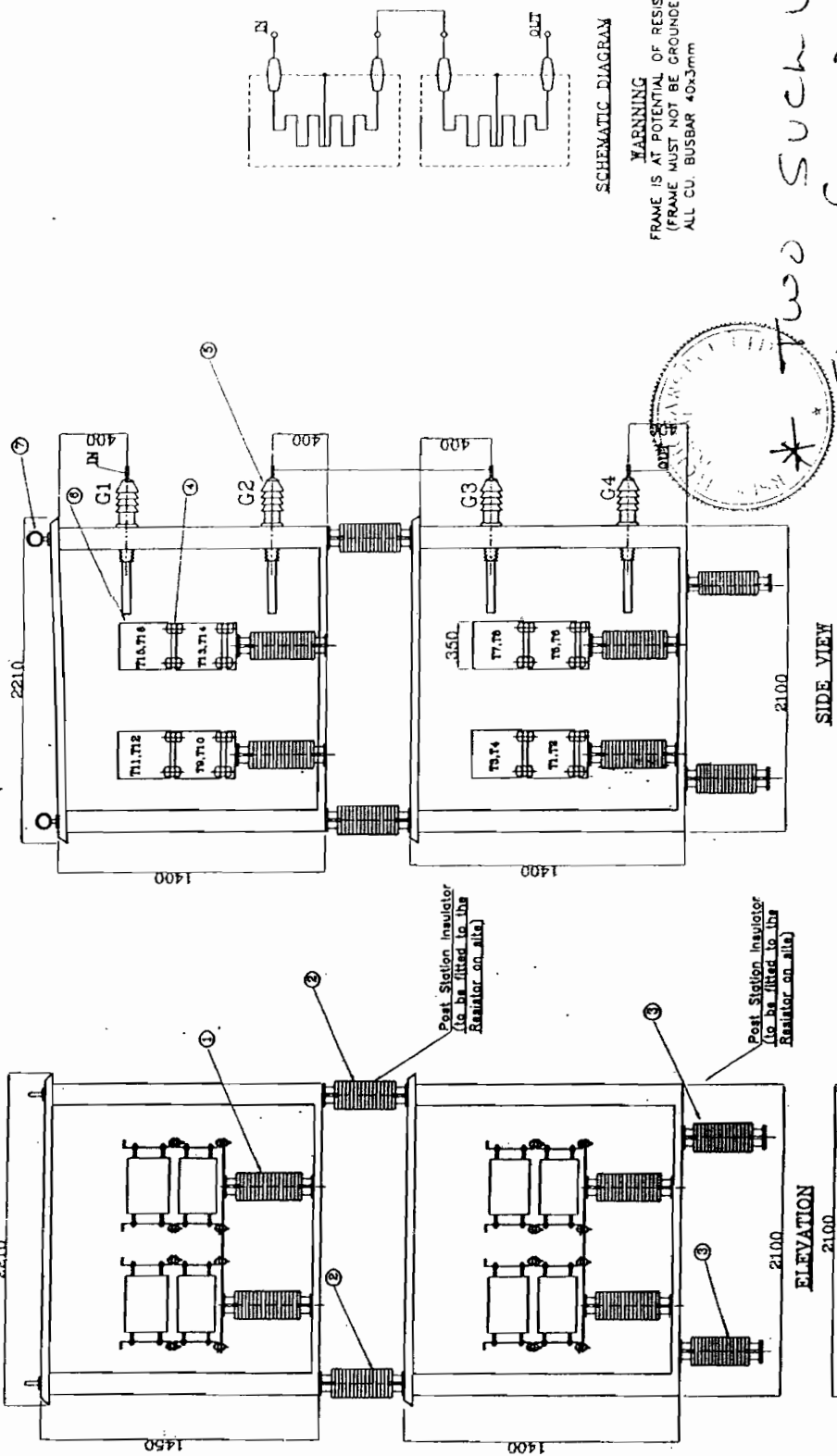
ITEM No.	DESCRIPTION	QTY.
7	SOCKET CLEVIS	1
6	INSULATOR AS PER DRG. No. 3.267 OR 15300	1
5	CORONA RING	2
4	BALL CLEVIS	1
3	TURN BUCKLE	1
2	THE ROD (450 mm length)	1
1	ANCHOR SHACKLE	1

BHARAT HEAVY ELECTRICALS LTD.
ELECTROPORCELAINS DIVISION
BANGALORE 560 012

DEPT	GRADE OF		SCALE	WEIGHT (kg) <small>(Approx)</small>	REF TO ASSY DRG	ITEM ITEM NO.	NO OF ITEMS
CODE	TOL DIM C/M/V		N T S				
TITLE 400KV/160KN COMPOSITE INSULATOR WITH HARDWARE FOR SERIES COMPENSATION CIRCUIT					DRAWING NO.	REV.	
					3 SK 2622	00	
					NO. OF SHEETS		

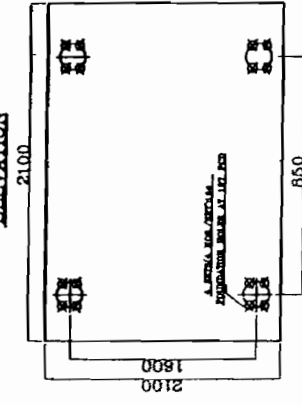
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2007-117



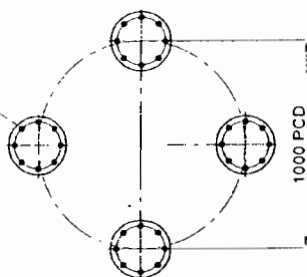
SCHEMATIC DIAGRAM
WARNING
FRAME IS AT POTENTIAL OF RESISTOR
(FRAME MUST NOT BE GROUNDED)
ALL CU. BUSBAR 40x3mm

*Two Such Units
Share Compensating
of 220 kv
Damping Rv10/1201
01/10/2008
Damping Resistor
Registered
Gover*

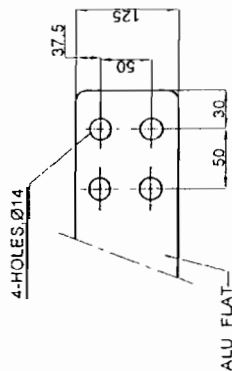


ELEVATION

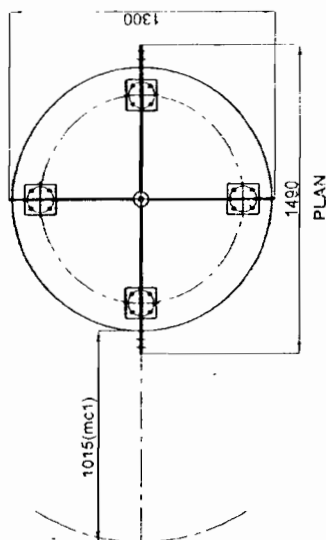
REV. NO.	DESCRIPTION	INITIAL	DATE	APPROVED	CHECKED	TRACED	DRAWN	NAME	DATE	CUSTOMER: M/S. BHARAT HEAVY ELECTRICALS LIMITED.	TITLE - OVERALL GA. OF DAMPING RESISTOR	RSI SWITCHGEAR PVT LTD 50, IDC, M.G. ROAD (GURGAON) (AN ISO-9001 COMPANY)	DRG. NO. A3-2007-117	CODE	REV
									13.06.08	CONSULTANT: -					2/3
										PROJECT: MAINPURI					
										PG. No. - 4578178.DTD. - 15.10.07					



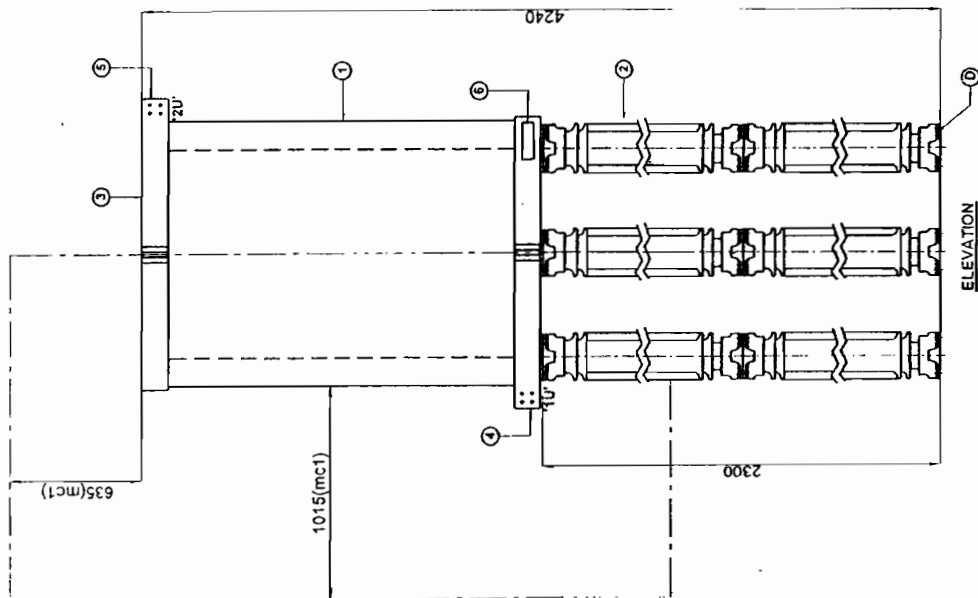
FOUNDATION DETAIL AT 'D'



INCOMING & OUTGOING TERMINALS (1U, 2U)



PLAN



ELEVATION

FOR TENDER PURPOSE
DIMENSIONS & WEIGHT SUBJECT TO CHANGE

Quality power

Electrical Equipments Pvt. Ltd.,
L-61 M.I.D.C. Kupwad, Sangli, INDIA

www.qualitypower.co.in

TITLE - GENERAL ARRANGEMENT DRAWING

CUSTOMER - BHEL:

No

REVISION MADE

DATE	DRN	CHD
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QP-4155

100

No.	DESCRIPTION	QTY
1	ALUMINUM WOUND COIL	1
2	SOLID CORE INSULATOR	2
3	CLAMPING SPIDER (ALUMINUM)	2
4	INCOMING TERMINAL 1/2"	1
5	OUTGOING TERMINAL 3/4"	1
6	RATING AND DIAGRAM PLATE	1

TYPE OF REACTOR

AIR CORE, AIR COOLED, ALUMINIUM WOUND EPOXY RESIN IMPREGNATED, DRY TYPE AIR CORE DAMPING REACTOR

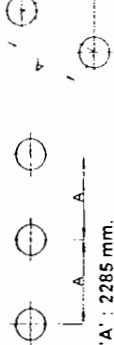
REFERENCE STANDARD	ILT 13.2.1984
COOLING	AN
RATED INDUCTANCE PER PHASE (μH)	800
SYSTEM VOLTAGE (kV)	420
NO OF PHASES	3- ϕ
RATED CONTINUOUS CURRENT (Amps)	3000
RATED SHORT TIME CURRENT (Amps)	4200 A 1 sec
FREQUENCY (Hz)	50
INSULATION LEVEL (KV/KVP)	46/ 1050
INSULATION CLASS	F
TEMPERISE IN WINDING OVER AMBIENT OF 50°C	no
TOTAL WEIGHT WITH SOLID CORE INSULATOR IN KG (APPROX)	1500

CONTROLLED COPY

CUSTOMER - POWERGRID CORPORATION OF INDIA
LIMITED NEW DELHI

**PROJECT - 40% FIXED SERIES COMPENSATION
ON 400 KV WARDHA-RAIPUR D/C
LINE AT WARDHA**

MINIMUM DISTANCES BETWEEN COILS



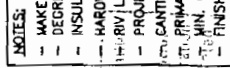
"A' : 2285 mm.

mc : Magnetic clearance.

NOTES

- 1 ALL DIMENSIONS ARE IN MM
2 OVERALL DIMENSIONS AND WEIGHT TO FINISH ± 10%

DAMPING REACTOR



TECHNICAL SPECIFICATIONS

- <1000 Meter.

NOTES:

- MAKE OF ALL ITEMS TO REGD'S QA APPROVAL.
- DEGREE OF PROTECTION FOR SECONDARY TERMINAL BOX- IP 55
- INSULATION OF OIL SHALL BE ENV GRADE AS PER IS:335-1993; IEC:296-1982
- HVL- HARMFUL M10 BELOW ELECTRICAL/VANISED M12 & ABOVE STAINLESS STEEL
- RIV- RIVET AT 46 W LESS THAN 500 MICRO VOLTS.
- PROJECTED AREA OF PRODUCT ~ 0.8 SQ.METER.
- SAND/LEAF LOAD OF INSULATOR= 420 Kgs.
- CT- PRIMARY NO OF TURN= 2
- MIN. CROSS SECTION= 288 mm.Sq.mm.ETP COPPER.
- FINISH : EPOXY PAINT SHADE = 697 OF IS:5-1984

Client

धनदत्त गिड करपोरिशन लिमिटेड
 (प्रा. म. सं. १९५५)
 POWER GID CORPORATION OF INDIA LIMITED.
 (INCORPORATED IN INDIA)

PROJECT : 40% FIXED SERIES COMPENSATION PACKAGE UNDER NORTHERN REGION
-STRENGTHENING SCHEME-II FOR 40D WV DOUBLE CIRCUITS
ALLAHABAD-MANUPURI TRANSMISSION LINE AT MANUPURI SUB-STATION
LOA NO. : C-45101-S162-3/LOA-1641/1558. DATED-17.03.2005

P. O. NO. : 4558369 DATED: 31.11.2005

CONTRACTOR : BHARAT HEAVY ELECTRICALS LTD.

MANUFACTURER : CROMPTON GREAVES LIMITED.

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NOTE: PLEASE REFER INSTRUCTION MANUAL FOR HANDLING & TRANSPORTATION OF CT.



Crompton Greaves
S6 DYN ALPINE/BLAD.

56 DVM AIRANCAPIAO.

CR

INVENTORY NO.

ELEVATION

1. COLOUR OF PANEL :

EXTERIOR - LIGHT ADMIRALTY GREY TO
SHADE NO. 697, IS: 5, SEMIGLOSSY.

INTERIOR - BRILLIANT WHITE TO SHADE NO. 9-102,
SP 1650, FULL GLOSSY.

POWDER COATED.

COAT THICKNESS : MIN. 80 MICRONS FOR ENTIRE PANEL INCLUDING FORMED EDGES AND LARGE SURFACE AREAS.

2. PANEL IS LOCATED ON 400 KV PLATFORM NEXT TO PPSCT.

SHEET THICKNESS (PANEL) : CRCS 2MM
SUNSHIELD THICKNESS : CRCS 1MM

PGCIL NOA NO. C-33020-S162-1/NOA-I/3004, DATED 24.03.2009.

PROJ : FSC FOR 400KV WARDHA-RAIPUR D/C LINE
CUSTOMER: POWERGRID CORPORATION (PGCIL).

BHARAT HEAVY ELECTRICALS LIMITED.
ELECTRONICS DIVISION, BANGALORE

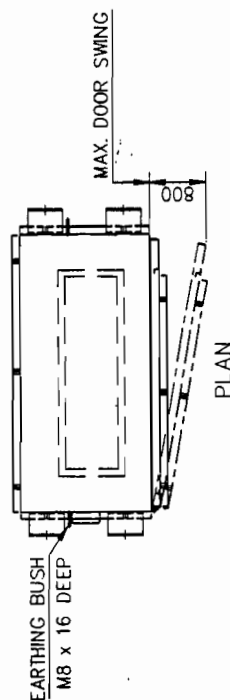
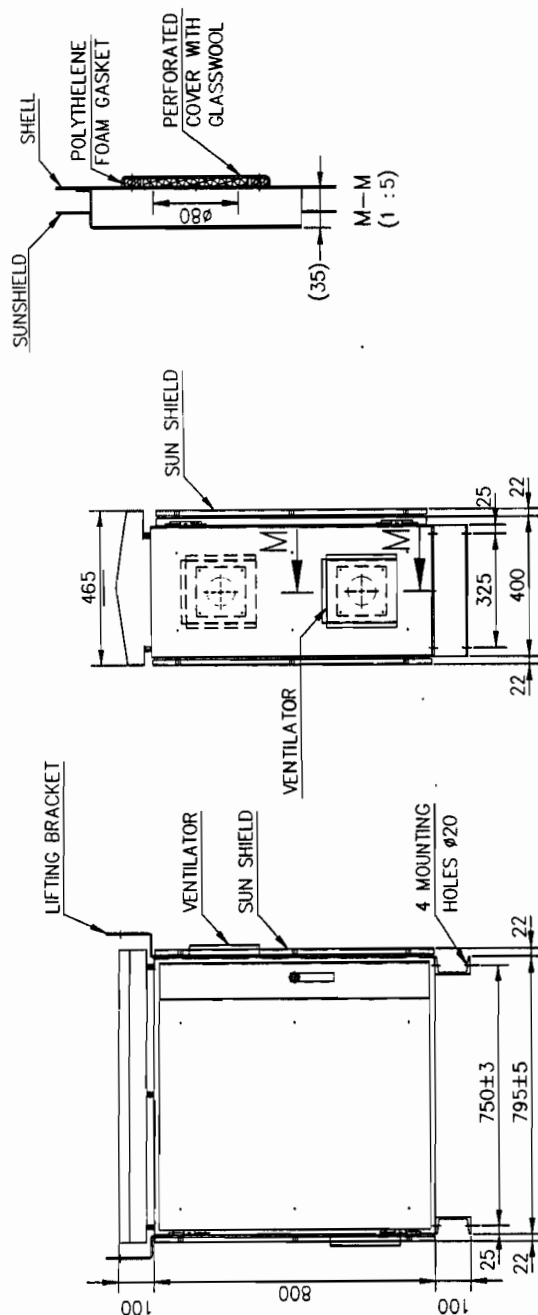
OGA FOR FSC CONTROL & PROT. EQPT.
PLATFORM POWER SUPPLY UNIT (PPSU)

WBS. No.	WBS NO. CE/0636-SH1-65
	WBS NO. CE/0636-SH2-65




DRG. No.

ORG. No. 3 665 00 00044

FORM NO. Δ3-03



SCALE 1:15

REV.	DATE	ALTERED	REV.	DATE	ALTERED	MGM		NAME	SIGN	DATE	
		CHECKED	01	25.08.09	CHECKED	NS, CGR					
		APPROVED			APPROVED	DD					
<div style="display: flex; justify-content: space-between;"> <div> DEPT. HVDC CODE 442 </div> <div> 27.07.09 12.08.09 12.08.09 </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;">   </div>											

RIGHT AND CONFIDENTIAL

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REF. ORG. No. 3665000004402

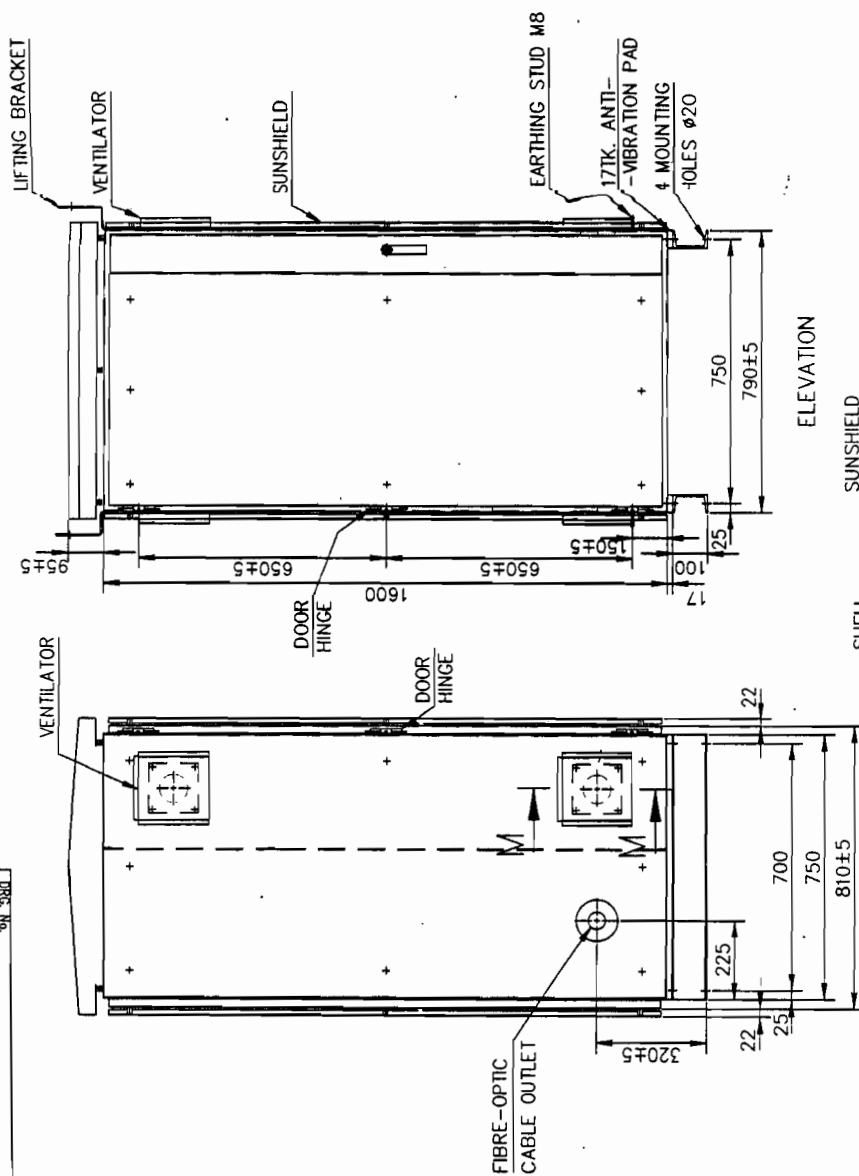
SIGN. & DATE

INVENTORY No.

FORM No. A3-03

REV.		ALTERED	DATE	REV.	DATE	ALTERNATED	MGM		NAME	SIGN	DATE				XPT. HYDC	CODE 442
		CHECKED		01	25.08.09	CHECKED	NS, CGR									
		APPROVED				APPROVED	DD									
						DRAWN							MGM		27.07.09	
						CHECKED							NS/CGR		12.08.09	
						APPROVED							DD		12.08.09	

TITLE: OGA FOR FSC CONTROL & PROT. EQPT. REMOTE DATA PANEL (RDP)		No. OF SHEETS	09
		SHEET No.	02
WBS. No.	WBS NO. CE /06.36- SH1-65 WBS NO. CE /06.36- SH2-65		
	DGR. No.		REV
	3 665 00 0004		01



ELEVATION

SIDE VIEW

(1 : 5)

SCALE 1:15



pt.	CODE
DC	442



NOTE :-

1. COLOUR OF PANEL :

EXTERIOR - LIGHT ADMIRALTY GREY TO
SHADE NO. 697, IS:5, SEMIGLOSSY.

INTERIOR - BRILLIANT WHITE TO SHADE NO. 9-102,
SP 1650, FULL GLOSSY.

POWDER COATED.

COAT THICKNESS : MIN. 80 MICRONS FOR ENTIRE PANEL INCLUDING FORMED EDGES AND LARGE SURFACE AREAS.

2. PANEL IS LOCATED ON 400 KV PLATFORM.

SHEET THICKNESS (PANEL) : CRCS 2MM
EARTH BAR SIZE : CU. 25x3MM
SUNSHIELD THICKNESS : CRCS 1MM

PGCIL NOA NO. C-33020-S162-1/NOA-I/3004, DATED 24.03.2009.

PROD / PROJ : FSC FOR 400KV WARDHA--RAIPUR D/C LINE

CUSTOMER: POWERGRID CORPORATION (PGCIL).

BHARAT HEAVY ELECTRICALS LIMITED.
ELECTRONICS DIVISION, BANGALORE

OGA FOR FSC CONTROL & PROT. EQPT.

REMOTE DATA PANEL (RDP)

WBS NO.	CE/0636-SH1-65
WBS NO.	CE/0636-SH2-65

WBS. No.

DRG. No.	NO.	R
3 665 00 0004		

A3 SIZE

47000 00 599 £

ON 200

TABLE OF EQUIPMENT

REF.	DESCRIPTION	QTY. PER SET	WEIGHT (IN KGS.)	POWER REQMT (IN WATTS)	PROT. CLASS	REF. SHEET NO
RDP	REMOTE DATA PANEL	3	500	50 (MAINTENANCE)	IP55	02
PPSCT	PLATFORM POWER SUPPLY CT	3	150	-	IP55	03
PPSU	PLATFORM POWER SUPPLY UNIT	3	100	-	IP55	04
SPGTU	SPARK GAP TRIGGERING TRANSFORMER UNIT	3	15	-	IP55	05
OSC	OPTICAL SIGNAL COLUMN	3	150	-	IP55	06
CP	CONTROL PANEL	1 SET (SUITE OF 3 PANELS)	1500	1000	IP31	07
TFR	TRANSIENT FAULT RECORDER PANEL	1 (BOTH SETS)	500	500	IP31	08
KIOSK	KIOSK	1 (BOTH SETS)	-	6000	IP55	09

NOTE :-

1. CABLE ENTRY FROM BOTTOM.
2. FOR FRONT PANEL FACIA OF CONTROL PANEL REFER DRG NO. 3 665 00 00045.
3. FOR OPTICAL SIGNAL COLUMN INSTALLATION ARRCT. REFER DRG NO. 3 665 00 00046.
OSC IS HUNG FROM THE PLATFORM ACCORDING TO SUPPLIER'S RECOMMENDATION.
4. WEIGHT & POWER REQUIREMENT INDICATED IN ABOVE TABLE IS FOR ONE NO. ONLY.
5. DRAWINGS ON SHEETS 02, 04, 05, 07, 08 & 09 ARE OF EMPTY PANELS ONLY.
6. QTY OF PANELS/ITEMS SHOWN IN ABOVE TABLE IS FOR ONE CIRCUIT ONLY EXCEPT TFR AND KIOSK.
7. RDP, PPSU, PPSCT, SPGTU ARE ALL LOCATED ON THE 400 KV PLATFORM.
CP AND TFR ARE LOCATED IN THE KIOSK.
8. WALL MOUNT ENCLOSURE 600x500x600H (ALL IN MM) - 1 PER SET FOR HOUSING
ETHERNET SWITCHES, LIU AND MEDIA CONVERTER FOR THE HMI IN CONTROL ROOM
WILL BE SUPPLIED. SUITABLE FREE WALL SPACE IS REQUIRED IN THE CONTROL ROOM
FOR MOUNTING THE ENCLOSURE WITHIN 10METRE DISTANCE FROM HMI WORK STATION.
9. FOR A TYPICAL LAYOUT OF EQUIPMENT INSIDE KIOSK REFER DRG. NO. 3 665 00 00047.

SCALE 1:1



REV.	DATE	ALTERED CHECKED	DATE	ALTERED CHECKED	MCM NS, CGR	NAME	SIGN	DATE
01	25.08.09	APPROVED		APPROVED DD				25.07.09
						DRAWN	MGM	12.08.09
						CHECKED	NS, CGR	12.08.09
						APPROVED	DD	12.08.09

BHARAT HEAVY ELECTRICALS LIMITED.
ELECTRONICS DIVISION, BANGALORE

TITLE: OGA FOR FSC CONTROL & PROT. EQPT.
TABLE OF EQUIPMENTS

WBS. No. WBS NO. CE/0636-SH1-65
WBS NO. CE/0636-SH2-65

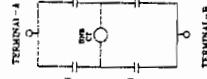
DRG. No.

3 665 00 00044

REV

01

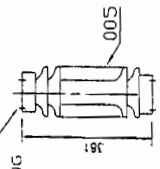
09



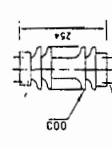
SINGLE LINE DIAGRAM OF CAPACITOR BANK

S = NO OF SERIES SECTION = 18 (S1=S2=9)
P = NO OF CAP. UNITS IN PARALLEL
PER SERIES SECTION = 40 (P1=P2=20)
TOTAL NO. OF UNITS = 720

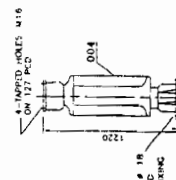
4-TAPPED HOLES M16 ON 127 PCD FOR INSULATING BOTH ENDS



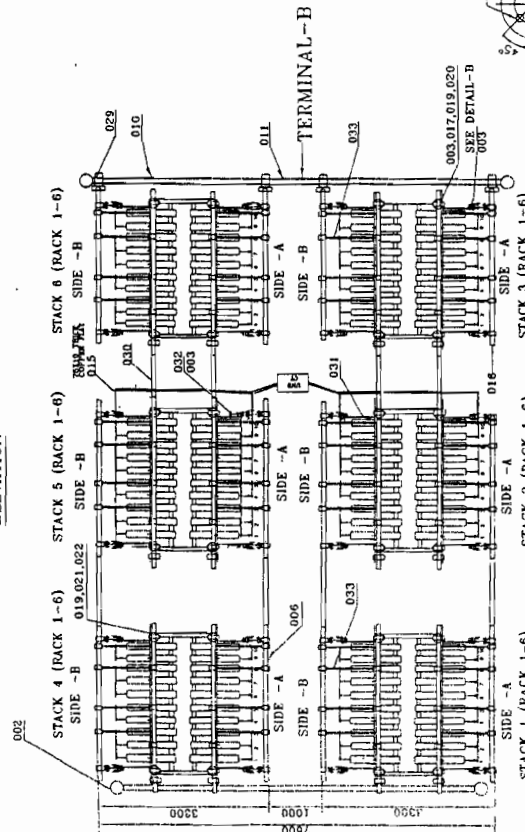
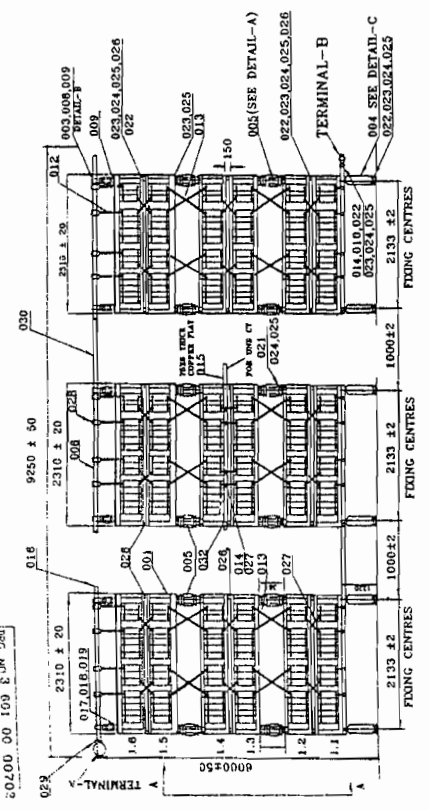
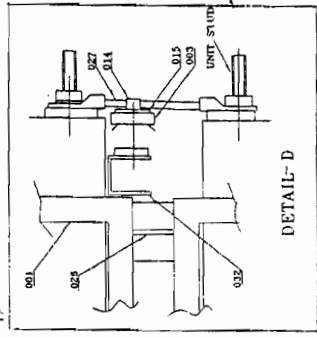
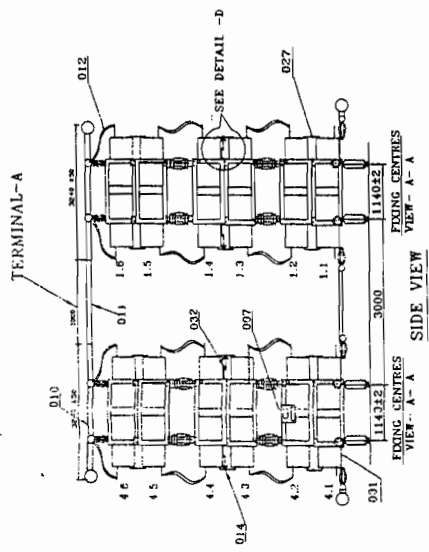
DETAIL - A
36 kV INSULATOR



DETAIL - B
24 kV INSULATOR



DETAIL - C
110 kV INSULATOR



MINIMUM CR-SPACE = 25 MM/KV

NO	PHASE	BANK RATING MVAR / KV	UNIT RATING MVAR / KV	TOTAL UNITS PER BANK	TOTAL UNITS PER RACK	NO OF TIER	NO OF S/C	TOTAL WEIGHT KGS
01	1	330.66/110.22	459.3/6.13	720	20	6	18	72000 ± 5%

NAME OF CUSTOMER - POWER GRID CORPORATION OF INDIA LIMITED
PROJECT - 402 FIXED SERIES COMPENSATION ON
MARCHA-RAIPUR D/C LINE AT WARDHA

STATUS OF DRAWING: PR
DISTRIBUTION OF PRINTS: 100 (100)
TENDERS/CUSTOMER: 100 (100)

DATE: 10/01/2008
SCALE: 1:100
DRAWN BY: [Signature]
CHECKED BY: [Signature]
APPROVED BY: [Signature]

REVISIONS: 1. 10/01/2008
2. 10/01/2008
3. 10/01/2008