



ಭಾರತ್ ಹೆವಿ ಎಲೆಕ್ಟ್ರಿಕಲ್ಸ್ ಲಿಮಿಟೆಡ್
भारत हेवी इलेक्ट्रिकल्स लिमिटेड

Bharat Heavy Electricals Limited

(A Government of India Undertaking)

ELECTRONICS DIVISION

P.B.No 2606, Mysore Road, Bangalore - 560 026

Phone : 080 – 26998978, Fax : 080 – 26989217 / 26989222, email id : extservices@bheledn.co.in

Dear Sirs,

Sub : Tender enquiry for sub-contract work of R&M - Erection & Commissioning support for SEE system (110MW) at Rajasthan Rajya Vidyut Utpadan Nigam Ltd. (RRVUNL) – Kota Super Thermal Power Station (KSTPS).

Tender Enquiry Number : CE/ES/2014-15/10/RRVUNL-KSTPS/RCS
Tender date : 12.08.2014
Tender due Date and Time : 05.09.2014 1300 Hrs.

Sealed tenders in single part are invited for taking up the subject contract work of Erection and Commissioning support of SEE system. Total SEE system to be Erected and Commissioned. The following details may be carefully studied and considered in responding to the enquiry.

1. No extension of time will be given for submission of offer under any circumstances.
2. Offer cover shall be super scribed with the Tender Enquiry number, due date and time.
3. Offer can be sent by post/courier addressed to the Addl. General Manager/ External Services Department, BHEL-EDN, P.B.No.2606, Mysore Road, Bangalore-560 026 so as to reach us before the due date and time.
4. Offers will be opened at Tender opening room situated near Reception, BHEL-EDN, Bangalore on 05.09.2014 at 1330 hours in the presence of bidder who wish to be present.
5. The tender is for ONE unit of SEE system.
6. The validity of offer shall be for 90 days from the date of opening.
7. The prices quoted shall be FIRM. No escalation in price/s will be allowed.

8. Service tax, if applicable, shall be paid extra on submission of ST registration certificate / details.
9. The tender is likely to be finalized in a very short time.
10. The bidder is advised to visit the project site to familiarize themselves with the project site conditions.
11. Estimated value of work: ₹3,00,000.00 (Rupees Three lakh) per unit exclusive of service tax.
12. The estimated time for completion of work is 25 days or inline with RRVUNL-KSTPS program for unit shut down and re-synchronising of the unit whichever is later.
13. Advance payment and interim payment will **not** be paid to the Contractor.
14. For any clarification on this tender, Addl. General Manager / External Services may please be contacted on phone no. 080-26989080 / 9945530203, Fax no. 080-26989222 / 26989217, email id: extservices@bheledn.co.in

Enquiry comprising of following documents are issued herewith:

- a) Section 1 : Special Instructions
- b) Section 2 : Scope Of Work
- c) Section 3 : Schedule of price (offer)
- d) Section 4 : List Of Drawing.
- e) Section 5 : Special conditions of contract.
- f) Section 6 : No deviation certificate.

BHEL reserves the right to cancel or reject the offer either partly or in full without assigning any reasons thereof.

Thanking you,

Yours Faithfully,
For & On behalf of BHEL-EDN

(RAJESH C SHAH)
MANAGER/ EXTERNAL SERVICES

SECTION 1
SPECIAL INSTRUCTIONS

1. The offer shall be submitted in a single part in a sealed envelope prominently super scribing the Tender Enquiry Number and due date as mentioned in the covering letter.
2. The bidder is requested to carefully and thoroughly read the instructions/ documents sent to them. For any further clarifications BHEL may be contacted.
3. The bidder is advised to visit project site to familiarize themselves with the site conditions before preparing the offer.
4. EARNEST MONEY DEPOSIT (EMD):
 - a. EMD for Rs. 10,000/- (Rupees Ten Thousand only) in the form of crossed Demand Draft drawn in favor of BHEL- Electronics Division Bangalore payable at Bangalore shall be sent along with the bid. EMD in any other form will not be accepted.
 - b. EMD shall not carry any interest.
 - c. EMD by the tenderer will be forfeited if after opening the tender, the tenderer revokes his tender within the validity period or increases his earlier quoted rates.
 - d. EMD by the tenderer will be forfeited if the tenderer does not commence the work within the period as per LOI/ contract.
 - e. EMD given by all unsuccessful tenderers shall be refunded normally within thirty days of acceptance of award of work by the successful tenderer
5. Security deposit @ 10% of the basic price of work order (including service tax) shall be paid by the successful bidder. The successful bidder has option to pay a minimum of 50% of the SD amount by pay order or demand draft in favour of BHEL, payable at Bangalore before start of work and balance 50% can be recovered while releasing the payment for work carried out.
6. The security deposit shall not carry any interest.
7. The Contractor will have to submit a certificate to BHEL declaring that the Contractor has complied to all the statutory provisions including and pertaining to Provident fund and ESI during the execution period of the contract.
8. Security Deposit amount will be returned after 90 days from the date of successful completion of work as per the contract after duly certified by BHEL Site Engineer and on receipt of compliance certificate (as per SI. No. 7 above).
9. Workmanship guarantee is applicable for a period of 90 days from the date of successful completion of work. Any rectification work to be carried out during the guarantee period shall be carried out at free of cost.
10. The Contractor shall mobilize his men, materials, tools & tackles to site within 2 days from the date of intimation from BHEL or release of LOI / WO

11. In addition to the local laws and regulations the bidder shall also comply with the Minimum Wages Act. The Payment of Wages Act and the rules made there under in respect of labour currently employed on or connected with the contract shall be followed.
12. A declaration indicating that there is no deviation from the conditions mentioned in tender documents should be given in the format as per section 6.
13. The work will be taken up as and when Customer/ RRVUNL-KSTPS gives the unit shut down for R&M work and the work shall be completed as per the BHEL's/ RRVUNL-KSTPS requirement.
14. Payment term: 100% payment (less 50% of SD amount, as applicable) will be released within 30 days from the date of receipt of bill at BHEL-EDN, Bangalore on completion of work and certification by BHEL site Engineer or BHEL-Customer. Bill shall be forwarded to BHEL-EDN, Bangalore for process and release of payment will be from Bangalore. .
15. Mode of payment: Payment will be made by EFT and the charges shall be borne by the Contractor. The Contractor will be required to submit required formats for EFT mode of payment.
16. No claim certificate to be submitted along with the invoice for payment
17. Service tax, if applicable, shall be paid extra. A copy of service tax registration certificate shall be enclosed with the offer.
18. Income tax plus surcharge as applicable will be deducted from the gross amount of each bill. Please indicate the IT PAN.

SECTION 2
ERECTION & COMMISSIONING WORK OF SEE SYSTEM AT RRVUNL-KSTPS

A) SCOPE OF WORK.

As described in Section-3.

B) OTHER WORKS:

- Assistance for verification of materials at site.
- Minor civil works for erection of panels including base frame fabrication/ modification as required. Fixing of foundation bolts and welding of base frame as required.
- Cable dressing / tagging etc.,
- Panel earthing including laying of cable up to Earth pit
- Removal of related debris and cleaning of area
- Any other minor work for satisfactory completion of contract

C) MAN POWER:

Supervisor, Electricians/Technicians and Helpers are to be provided to assist BHEL site engineer during testing, modifications and commissioning of SEE system.

D) SUPPLY OF MATERIALS:

Consumables for cable laying & termination such as, ferrules, lugs for cables, ties, tags, clamps, etc. as per the requirement to be procured and used by the Contractor at no extra cost to BHEL.

E) All tools & tackles required for carrying out the erection and commissioning work to be arranged by the Contractor including the following instruments:

- i) Megger 0-1KV – 1no.
- ii) Digital multimeter – 2 nos.
- iii) 3 phase Variac 5A - , 1 no.
- iv) 3 Phase Variac 15A – 1 no.
- v) Rheostat 5A – 3 nos.
- vi) Tong tester 0-20A – 1no.

Security of all the materials during erection of the equipment till the commissioning is in the scope of Contractor. Any loss due to damages and theft will be recovered from the Contractor in full.

Any other associated minor works required for the satisfactory completion of erection and commissioning of the system is in the scope of the Contractor even if it is not exclusively mentioned in the scope of work.

Being shutdown job, this work has to be completed within 25 days as said in point 12 (page 2 of 12) or will be carried out in phases depending upon RRVUNL-KSTPS schedule. However the starting of the job will depend on RRVUNL-KSTPS shut down program and shall be intimated 2 days in advance.

The Contractor should be able to depute required manpower as desired by BHEL Site Engineer as and when the job is taken up.

SECTION - 3
SCHEDULE OF PRICE

Sl.No.	Description
1	CHARGES TOWARDS DISMANTLING OF TOTAL SEE SYSTEM, REGULATION, FIELD FLASHING, FIELD BREAKER AND THYRISTOR BRIDGE PANEL (INCLUDING DISCONNECTION OF EXISTING POWER AND CONTROL CABLES) SHIFTING OF EXISTING CUBICLES TO DESIGNATED LOCATION.
2	ASSISTANCE FOR SHIFTING OF NEW SEE SYSTEM (REGULATION CUBICLE – SUITE OF 2, FIELD FLASHING CUBICLE – 1 NO., THYRISTOR CUBICLES – 2 NOS., FIELD BREAKER CUBICLE - 1 NO. FROM CUSTOMER STORES TO PLACE OF ERECTION, ERECTION OF CUBICLES. GROUTING OF FOUNDATION BOLTS OF MAIN EQUIPMENT / WELDING TO BASE FRAME.
3	MOUNTING OF CONSOLE OF APPROX SIZE 314 X 288MM ON CONTROL ROOM / DESK AND REMOVAL OF OLD PUSH BUTTONS / SWITCHES, IF ANY.
4	LAYING OF CONTROL CABLES MEASURING APPROX. 300 METERS TO CONTROL DESK AND INTER CUBICLES.
5	INTERCONNECTION OF ALL CABLES (POWER, SIGNAL, PRE-FABRICATED AND CONTROL), TERMINATION WORK & CABLE GLANDING IN NEW PANEL, SUPPLY OF CONSUMABLES LIKE FERRULES, LUGS (to be supplied for One unit and are indicative only): a) 300 Sq.mm Aluminum Tubular – 12 Nos. b) 1000 Sq.mm Aluminium Tubular – 6 Nos. c) 2.5 Sq.mm Cu Ring Insulated – 400 Nos. d) 1.5 Sq.mm Cu Ring / Pin Insulated – 200 Nos. e) 1 Sq.mm Crimping type Cu end sealing Insulated – 100 Nos. f) 25/50 Sq.mm Cu – 10 Nos. AND GLANDS ONLY FOR NEW CABLES, MARKERS, ETC. FOR TERMINATIONS. PANEL EARTHING
6	PROVIDING MAN POWER DURING PRE-COMMISSIONING CHECKS AND COMMISSIONING TILL THE COMPLETION OF WORK.

IN FIGURES:

ii) IN WORDS :

SERVICE TAX (PERCENTAGE AND AMOUNT):

TOTAL AMOUNT (INCLUDING SERVICE TAX):

(SIGNATURE WITH SEAL OF THE CONTRACTOR)

SECTION 4

LIST OF DRAWING / DOCUMENTS

1. OGA OF STATIC EXCITATION EQUIPMENT
- DRAWING NO. 3-653-00-11013 REV. 00

SECTION 5
SPECIAL CONDITIONS OF CONTRACT

The work is to be executed at RRVUNL-KSTPS.

1. The Contractors shall get themselves familiar with the site and nature of job in advance where the works is to be executed before quoting their rates.
2. Apart from Service tax any other govt. taxes as applicable from time to time shall be borne by the Contractor.
3. The Contractor shall arrange to obtain valid gate passes for his men and equipment's from the concerned authorities.
4. No man / material / equipment not covered by valid gate pass shall be permitted within the power station area and no material / equipment shall be permitted to be taken out of the power station unless authorized by concerned authority. The Contractor shall be held fully responsible for any delays / losses / damages that may result consequent on any lapses that may occur on the part of his employees in this regard.
5. Carrying / striking of matches, lighters or smoking or other acts which may cause fire hazards in the restricted area of power station such as Hydrogen plants, Hydrogen storage area, fuel oil plant / storage areas etc. is strictly prohibited.
6. In the prescribed areas of power station no hot work such as welding, gas cutting etc, which may cause fire hazards shall be carried out unless valid gas safety / fire permit is obtained from the BHEL site Engineer and necessary precautions are taken to avoid any risk of fire hazards.
7. The Contractor shall compulsorily provide personal protective equipment's to his employees & in the event of his not providing the same by date specified by Customer or as mentioned in contract, it will be provided by BHEL/RRVUNL-KSTPS at Contractor's risk and cost of the same will be recovered from the bills.
8. All necessary personal safety equipment as considered adequate by the BHEL site Engineer or the safety officer of RRVUNL-KSTPS should be made available at Contractor's cost for use by the persons employed at the site and be maintained in a condition suitable for immediate use. The Contractor should also give sufficient safety training and instructions to his workmen and ensure proper use of safety equipment by those concerned.
9. The Contractor shall obtain permission from appropriate authority / license if required under any applicable law regulations for engaging labours for execution of the work and observe all terms and conditions of the said authorization / license.

10. The Contractor shall comply with the provision of all applicable labour legislation / Acts pertaining to payment of wages and shall pay his workers wages not less than minimum as applicable in RRVUNL-KSTPS premises.
11. The Contractor has to make his own arrangement for T&P safety appliances and consumables required for the above job.
12. The work shall be executed as per the direction and to the satisfaction of BHEL site Engineer. Decision of BHEL site Engineer will be firm and binding on all matters.
13. Any person below the age of 18 years shall not be deployed for the work.
14. The Contractor shall be required to pay full wages to the workers as per prevailing rules.
15. If the Contractor fails to deploy required numbers of labors as per the terms of contract, then recovery @ double the minimum wages of unskilled labor shall be effected for number of labors less than the specified requirement, if not specially mentioned otherwise.
16. The Contractor has to comply with the safety requirement of the RRVUNL-KSTPS premises.
17. The Contractor shall possess independent PF code & ESI code. Contractor has to observe all formalities as per PF & ESI act or Workmen Compensation Insurance, as applicable.
18. The Contractor shall be liable to comply with provisions under the various labor legislations. Besides other obligations under the labor legislations he is required to ensure payment of minimum wages as per Minimum Wages Act, grant of leaves, as per the notification of Chief labor commissioner, Provident fund under the Provident Fund Act, compensation under the workmen compensation Act, Retrenchment compensation etc. The Contractor shall indemnify BHEL / RRVUNL-KSTPS against all claims, damages and compensations on account of his failure to comply with statutory provisions.
19. The Contractor shall not subcontract, transfer or assign any part or full work of this award without prior written permission from BHEL.
20. In case of any conflict amongst the various drawings and other tender documents, the decision of the BHEL site Engineer shall be final and binding.
21. If any dispute or difference of any kind whatsoever shall arise between BHEL-EDN and the Contractor arising out of the contract or with respect to its interpretation, whether during or after its completion or whether before or after its termination, abandonment or breach of the contract, it shall be referred to the sole arbitration of the Unit head of BHEL-EDN or any Officer duly authorized by him in this behalf and the decision of the Arbitrator shall be final and binding on the parties.

22. It would be the responsibility of the Contractor to give weekly off and other holidays to their employees as applicable at the place of working (RRVUNL-KSTPS).
23. As per RRVUNL-KSTPS statutory requirement, the Contractor and their workers shall follow all safety rules while working so that there should not be any accident, which may cause loss of life and damage to Customer's property. Contractor shall also take insurance cover for workmen compensation for the workers employed by him at his own cost.
24. No complaints from Contractor's workmen with regard to nature of work entrusted or place of work will be entertained.
25. The Contractor or his authorized representative shall be available at plant site daily for receiving necessary instructions from Engineer –In-Charge, BHEL and to carry out the work accordingly.
26. The Contractor should note that the labor under their contract will be working in the vicinity of running equipment's and they should give proper instructions to all the workers under their control to be careful so as to avoid any accidents.
27. The Contractor is required to carry out the work in controlled conditions so as to contain air pollution, water/land contamination within relevant legislative and statutory requirements.

Note: The term 'Company' means BHEL / RRVUNL-KSTPS and Customer means RRVUNL-KSTPS

**Sub-contract work of R & M of SEE system - Erection & Commissioning support of
SEE system at RRVUNL-KSTPS**

(PREFERABLY TO BE GIVEN ON SUB CONTRACTORS LETTER HEAD)

Section 6

CERTIFICATE FOR NO DEVIATION

I/We,

Of M/s.....

Hereby certify that there is no deviation from the tender specifications and conditions
either technical or commercial and I/We agree to all the terms and conditions mentioned
in the tender specification.

Signature of the Contractor
With seal

Place :

Date :

£1011 00 £59

(ALL DIMENSIONS ARE IN mm)

OVERALL GENERAL ARRANGEMENT FOR STATIC EXCITATION EQUIPMENT

PROJECT :- KOTA THERMAL POWER STATION
 RATING :- 2 X 110 MW UNIT-1 & 2
 CLIENT :- RAJASTHAN RAJYA VIDYUT NIGAM LIMITED
 W.B.S No. :- CE/1031-SH1-48-01 &
 CE/1031-SH2-48-01

STATUS AS :-

SUBMITTED	10.05.2013
APPROVED	

INVENTORY No. _____ REF. DRG. No. 36530010989/SRDP SIGN. & DATE _____		REV. DATE ALTERED CHECKED APPROVED 1 _____ 2 _____ 3 _____ 4 _____		NAME SIGN DATE PRADEEP KBR AL		DRAWN CHECKED APPROVED PRADEEP KBR AL		DEPT. CHCE 408 CODE 408 27.04.13 27.04.13 27.04.13		PROJECT : KOTA THERMAL POWER STATION BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE TITLE: OGA FOR STATIC EXCITATION EQUIPMENT (IDENTIFICATION SHEET)		W.B.S No. CE/1031-SH1-48-01 & CE/1031-SH2-48-01 DRG. No. 3 653 00 11013 No. OF SHEETS 12 SHEET No. 01 REV 00	
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£1011 00 559 2

(ALL DIMENSIONS ARE IN mm)

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 REF. DRG. No. 3 653 00 10989/SRD
 SIGN. & DATE
 INVENTORY No.

TABLE OF EQUIPMENTS

REF.	DESCRIPTION	PROT. CLASS	QTY.	TOTAL WEIGHT IN Kg. (App.)	LOSSES	No. OF SHIPPING
REG1	REGULATION CUBICLE 1	IP20	1	2100	3 KW	1
REG2	REGULATION CUBICLE 2		1			
FF	FIELD FLASHING CUBICLE		1	2000	0.5 KW	1
FB	FIELD BREAKER CUBICLE		1			
TY	THYRISTOR CUBICLES		2	1600	6 KW	1

COLOUR OF THE CUBICLE

SURFACE	COLOUR	SHADE	FINISH	REMARKS
EXTERIOR	LIGHT GREY	631 OF IS:5	SEMIGLOSSY	EPOXY BASED
INTERIOR	WHITE	No. 9-102, SP:1650	GLOSSY	

GUIDE LINES FOR INSTALLATION OF S.E.E.CUBICLES.

- S.E.E.CUBICLES ARE SUITABLE FOR PROTECTION CLASS AS GIVEN IN TABLE.
- ALL CUBICLES SHALL BE PLACED
 - IN A CLEAN AND DUST FREE PLACE AND
 - AWAY FROM STEAM/WATER/OIL PIPE/COAL DUST ETC.
- ALL CUBICLES ARE PROPOSED TO BE LOCATED IN AIR CONDITIONED ROOM.
- MINIMUM DISTANCE OF 1.5 METRES SHOULD BE KEPT BETWEEN CEILING AND THE TOP OF THE THYRISTOR FAN FOR BETTER COOLING.
- AFTER OPENING THE DOOR MINIMUM WORKING SPACE OF ONE METER SHALL BE LEFT ON FRONT AND REAR SIDES OF ALL THE CUBICLES FOR BETTER APPROACHABILITY AND MAINTAINABILITY.
- THE DISTANCE BETWEEN REGULATION CUBICLE AND NEAREST THYRISTOR CUBICLE SHOULD BE LESS THAN 10 METERS.

PROJECT : KOTA THERMAL POWER STATION

BHARAT HEAVY ELECTRICALS LIMITED.
 ELECTRONICS DIVISION, BANGALORE

TITLE: OGA FOR STATIC EXCITATION EQUIPMENT
 TABLE OF EQUIPMENTS/GENERAL NOTES

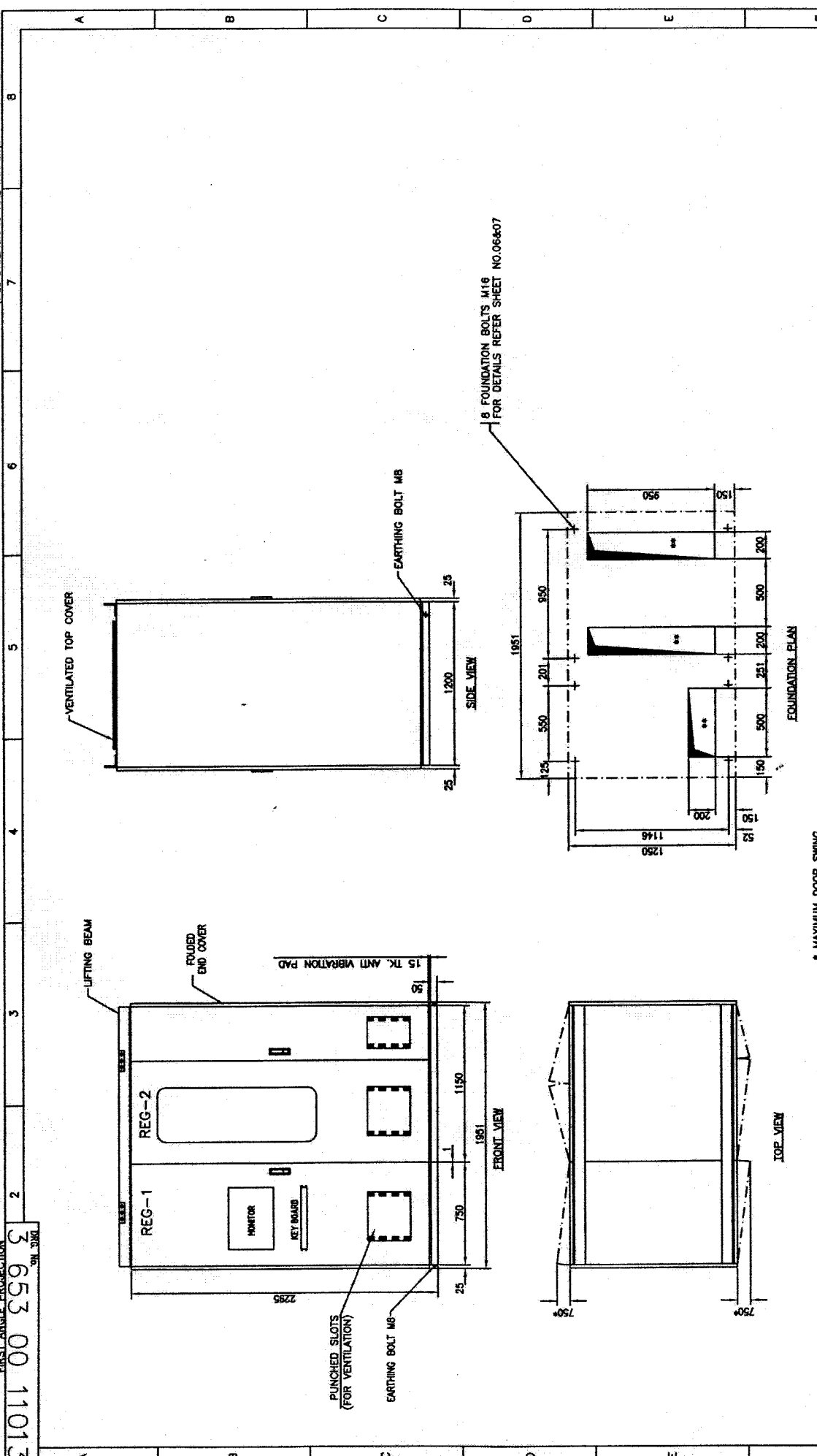
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 SHEET No. 02
 REV 00

W.B.S No. CE/1031-SH1-48-01 & CE/1031-SH2-48-01
 DRG. No. 3 653 00 11013
 AS SIZE

REV. DATE	ALTERED CHECKED APPROVED	DATE	ALTERED CHECKED APPROVED	NAME	SIGN
		27.04.13		PRADEEP	<i>PR</i>
		27.04.13		KBR	<i>KBR</i>
		27.04.13		AL	<i>AL</i>

(ALL DIMENSIONS ARE IN. mm)

FIRST ANGLE PROJECTION
3 653 00 11013

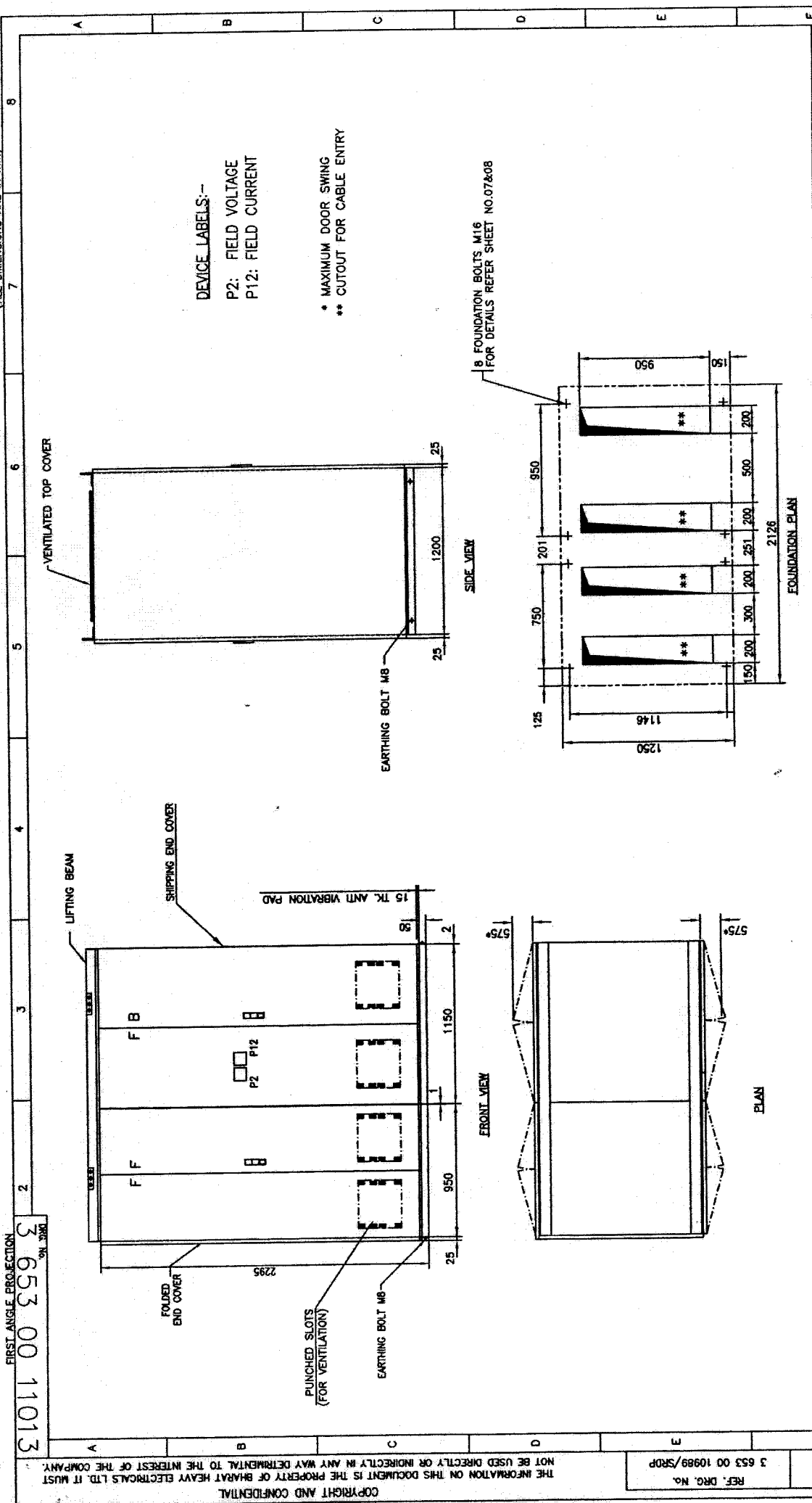


PROJECT : KOTA THERMAL POWER STATION
BHARAT HEAVY ELECTRICALS LIMITED.
ELECTRONICS DIVISION, BANGALORE
TITLE: OGA FOR STATIC EXCITATION EQUIPMENT
(REGULATION CUBICLES)
W.B.S No. CE/1031-SH1-48-01 & CE/1031-SH2-48-01
ORG. No. 3 653 00 11013
No. OF SHEETS 12
SHEET No. 03
REV 00

REV.	DATE	ALTERED CHECKED APPROVED	DATE	ALTERED CHECKED APPROVED	NAME	SIGN	DATE	DEPT. CHCE	CODE 408
					PRADEEP	<i>[Signature]</i>	27.04.13		
					KBR	<i>[Signature]</i>	27.04.13		
					AL	<i>[Signature]</i>	27.04.13		

* MAXIMUM DOOR SWING
** CUTOUT FOR CABLE ENTRY

(ALL DIMENSIONS ARE IN MM)



DEVICE LABELS:-
 P2: FIELD VOLTAGE
 P12: FIELD CURRENT

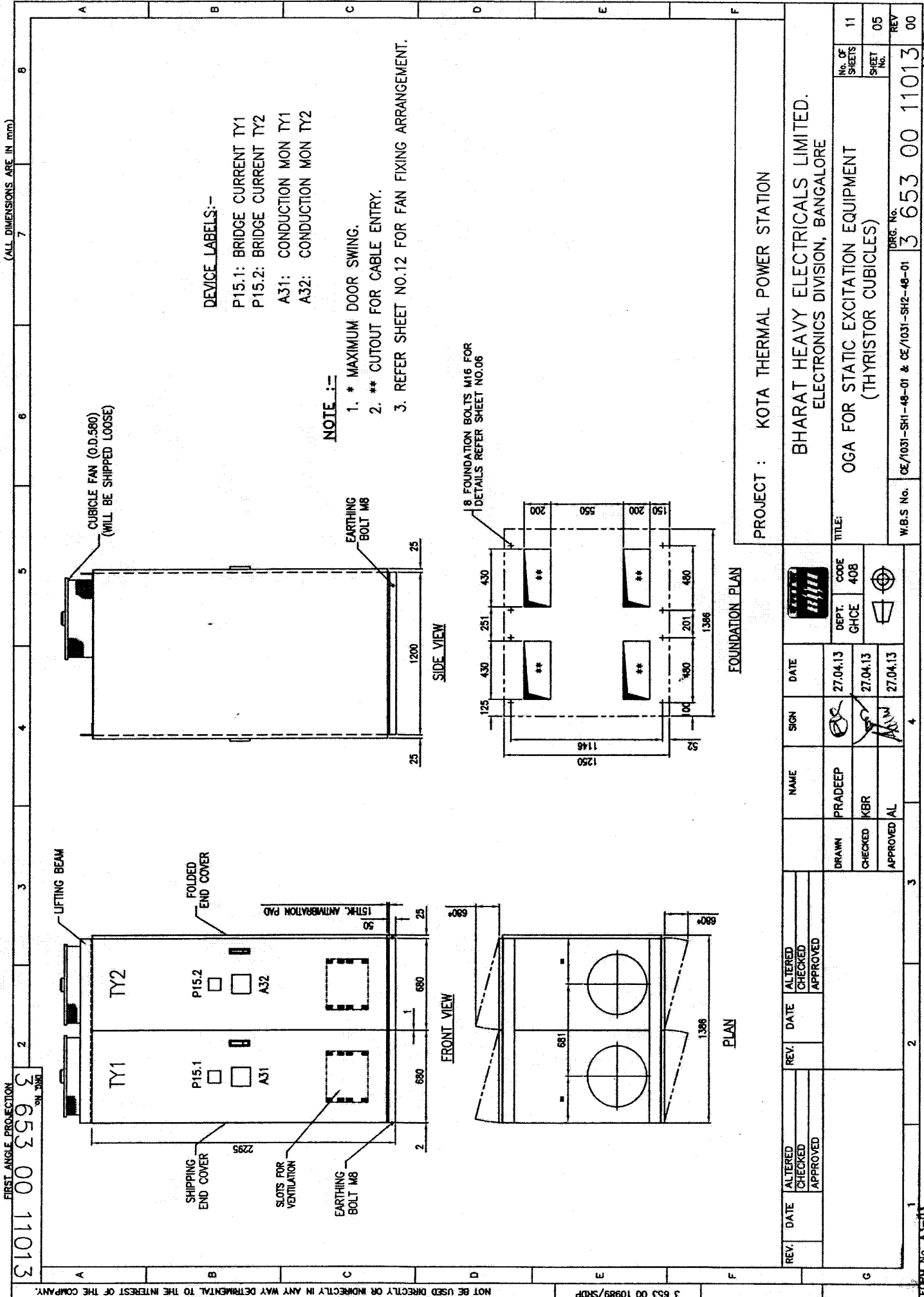
* MAXIMUM DOOR SWING
 ** CUTOUT FOR CABLE ENTRY

FIRST ANGLE PROJECTION
 3 653 00 11013

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DRAWN		NAME		SIGN		DATE	
CHECKED		PRADEEP		[Signature]		27.04.13	
APPROVED		KBR		[Signature]		27.04.13	
AL		AL		[Signature]		27.04.13	
TITILE		DEPT.		CODE		No. OF SHEETS	
OGA FOR STATIC EXCITATION EQUIPMENT (FIELD FLASHING & FIELD BREAKER CUBICLES)		GHCE		408		12	
W.B.S. No.		ORG. No.		REV		SHEET No.	
CE/1031-SH1-48-01 & CE/1031-SH2-48-01		3 653 00 11013		04		00	
PROJECT : KOTA THERMAL POWER STATION		BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE		A3 SIZE			

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FORM NO. A3-03



(ALL DIMENSIONS ARE IN mm)

31011 00 559 3

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DEVICE LABELS:-

- P15.1: BRIDGE CURRENT TY1
- P15.2: BRIDGE CURRENT TY2
- A31: CONDUCTION MON TY1
- A32: CONDUCTION MON TY2

NOTE :-

1. * MAXIMUM DOOR SWING.
2. ** CUTOUT FOR CABLE ENTRY.
3. REFER SHEET NO.12 FOR FAN FIXING ARRANGEMENT.

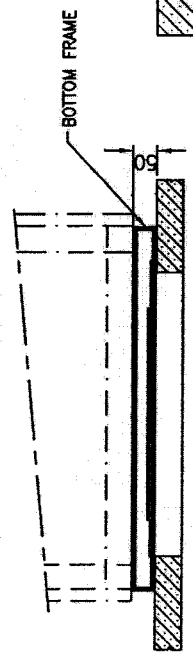
FOUNDATION PLAN

PROJECT : KOTA THERMAL POWER STATION		W.B.S No. CE/1031-SH1-48-01 & CE/1031-SH2-48-01		DRG. No. 3 653 00 11013		REV 00	
BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE		OGA FOR STATIC EXCITATION EQUIPMENT (THYRISTOR CUBICLES)		No. OF SHEETS 11		SHEET No. 05	
TITLE:		DEPT. GHCE		CODE 408		REV 00	
DRAWN PRADEEP		DATE 27.04.13		SIGN		REV 00	
CHECKED KBR		DATE 27.04.13		NAME		REV 00	
APPROVED AL		DATE 27.04.13		NAME		REV 00	

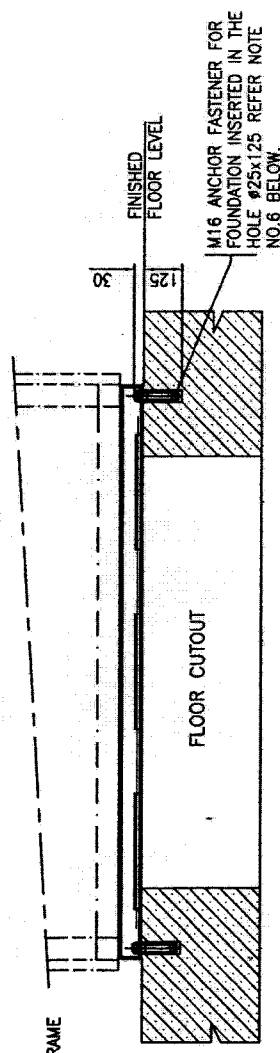
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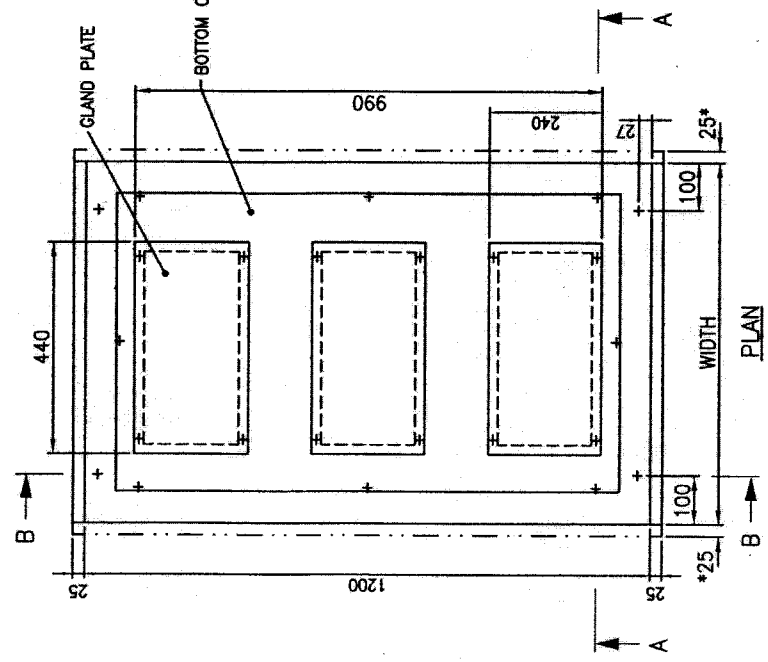
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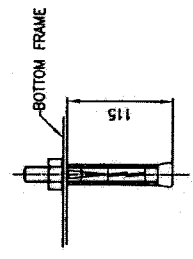
SECTION 'AA'



SECTION 'BB'



PLAN



FOUNDATION BOLT M16x140
 (CAN PROJECTION BOLT)

NOTE :-

1. GLAND PLATE MAY BE DRILLED AT SITE FOR SUITABLE CABLE GLANDS.
 2. BOTTOM FRAME HAS 4 HOLES #20 ONE AT EACH CORNER FOR FOUNDATION BOLTS.
 3. UNLESS OTHERWISE STATED THE VIEWS ARE NOT TO SCALE.
 4. GLAND PLATE / PLATES ABOVE FLOOR CUTOUT CAN BE REMOVED WITHOUT OPENING THE REMAINING.
 5. FOUNDATION BOLTS SUPPLIED LOOSE ALONG WITH THE PANEL.
 6. DRILL AND CLEAN ANCHOR HOLE TO #25 INSERT ANCHOR BOLT INTO DRILL.
 7. BOTTOM FRAME MATERIAL THICKNESS IS 3.15 MM.
 8. TIGHTEN NUT WITH CALIBRATED TORQUE WRENCH.(RECOMMENDED TORQUE 30N/mm²)
- *.DIMENSION IS APPLICABLE ONLY WHEN THERE IS NO ADJACENT PANEL.

PROJECT : KOTA THERMAL POWER STATION

BHARAT HEAVY ELECTRICALS LIMITED.
 ELECTRONICS DIVISION, BANGALORE

TITLE: OGA FOR STATIC EXCITATION EQUIPMENT
 (TYPICAL FOUNDATION DETAILS FOR REG-1, TY1 & TY2 CUBICLES)

No. OF SHEETS	11
SHEET No.	06

REV	00
DRG. No.	3 653 00 11013

REV.	DATE	ALTERED	CHECKED	APPROVED	NAME	SIGN	DATE
					PRADEEP		27.04.13
					KBR		27.04.13
					AL		27.04.13

W.B.S No.	CE/1031-SH1-48-01 & CE/1031-SH2-48-01
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INVENTORY No.	
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SIGN. & DATE

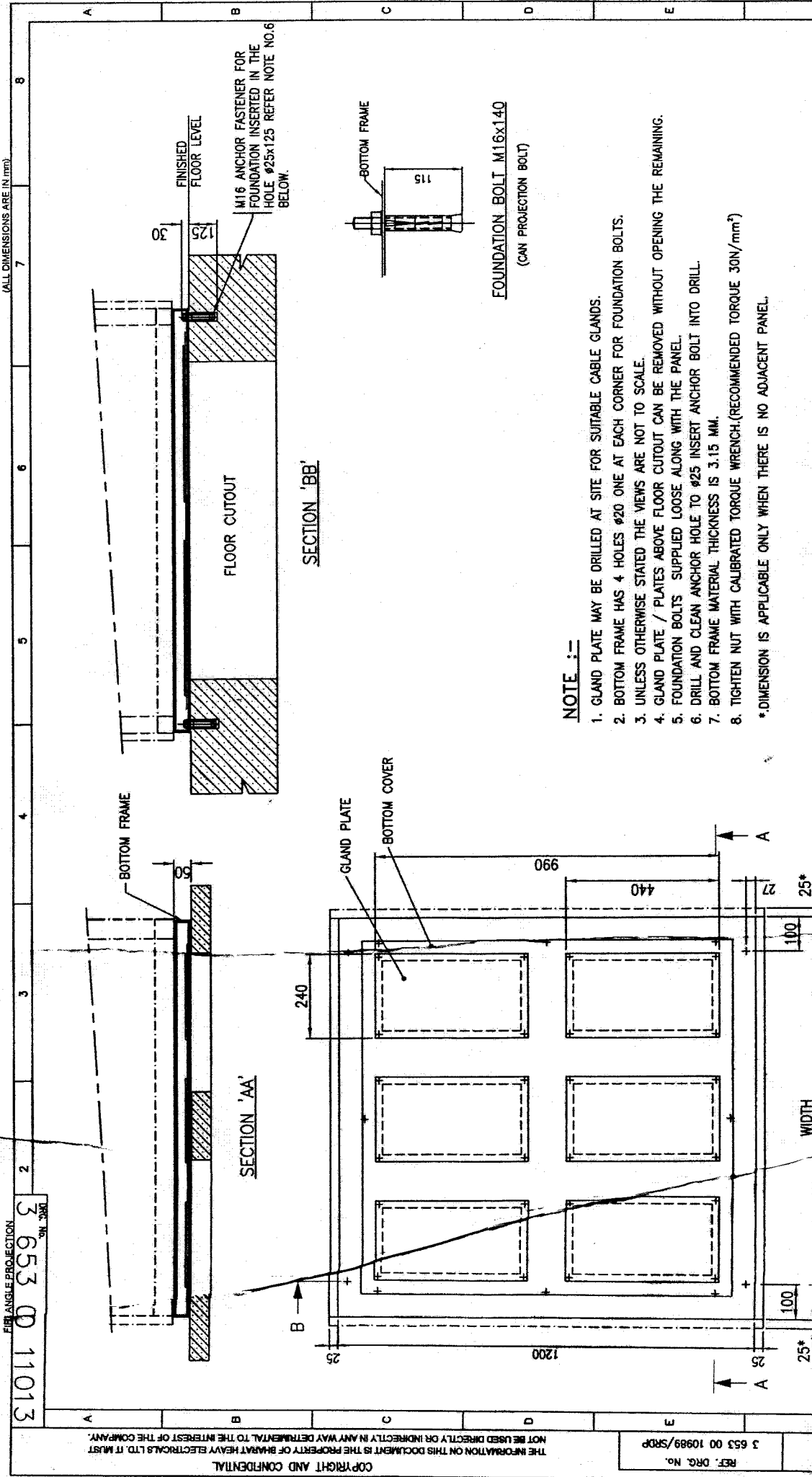
REF. DRG. No. 3 653 00 10989/SRP

FORM No. 73-03

A3 SIZE

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(ALL DIMENSIONS ARE IN (MM))

3 653 00 11013
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FOUNDATION BOLT M16x140
 (CAN PROJECTION BOLT)

NOTE :-

1. GLAND PLATE MAY BE DRILLED AT SITE FOR SUITABLE CABLE GLANDS.
2. BOTTOM FRAME HAS 4 HOLES #20 ONE AT EACH CORNER FOR FOUNDATION BOLTS.
3. UNLESS OTHERWISE STATED THE VIEWS ARE NOT TO SCALE.
4. GLAND PLATE / PLATES ABOVE FLOOR CUTOUT CAN BE REMOVED WITHOUT OPENING THE REMAINING.
5. FOUNDATION BOLTS SUPPLIED LOOSE ALONG WITH THE PANEL.
6. DRILL AND CLEAN ANCHOR HOLE TO #25 INSERT ANCHOR BOLT INTO DRILL.
7. BOTTOM FRAME MATERIAL THICKNESS IS 3.15 MM.
8. TIGHTEN NUT WITH CALIBRATED TORQUE WRENCH,(RECOMMENDED TORQUE 30N/mm²)

*DIMENSION IS APPLICABLE ONLY WHEN THERE IS NO ADJACENT PANEL.

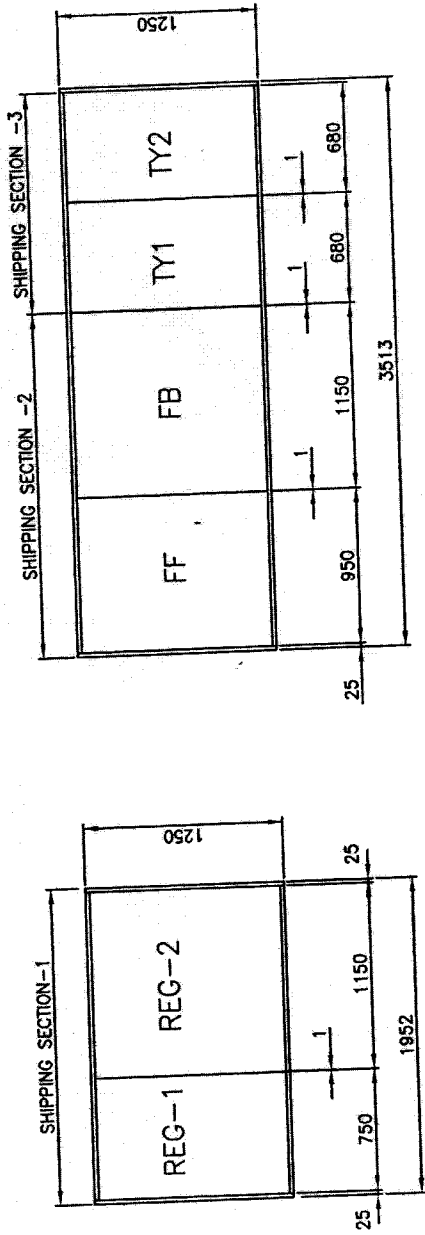
PROJECT : KOTA THERMAL POWER STATION		BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE		No. OF SHEETS 11	SHEET No. 07	REV 00	
TITLE: OGA FOR STATIC EXCITATION EQUIPMENT (FOUNDATION DETAILS FOR REG-2 & FB CUBICLES)		W.B.S No. CE/1031-SH1-48-01 & CE/1031-SH2-48-01		DRG. No. 3 653 00 11013		AS SIZE	
REV.	DATE	ALTERED CHECKED APPROVED	REV.	DATE	ALTERED CHECKED APPROVED	SIGN. & DATE	
DRAWN PRADEEP		DATE 27.04.13		SIGN 		DEPT. CODE GHCE 408	
CHECKED KBR		DATE 27.04.13		SIGN 		APPROVED	
APPROVED AL		DATE 27.04.13		SIGN 		APPROVED	

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REF. DRG. No. 3 653 00 10989/SRDP

FORM NO. 10-03

FIRST ANGLE PROJECTION
3 653 00 11013



GUIDE LINES FOR INSTALLATION OF S.E.E.CUBICLES.

1. S.E.E.CUBICLES ARE SUITABLE FOR PROTECTION CLASS AS GIVEN IN TABLE.
2. ALL CUBICLES SHALL BE PLACED
 - 2.1. IN A CLEAN AND DUST FREE PLACE AND
 - 2.2. AWAY FROM STEAM/WATER/OIL PIPE/COAL DUST ETC.
3. ALL CUBICLES ARE PROPOSED TO BE LOCATED IN AIR CONDITIONED ROOM.
4. MINIMUM DISTANCE OF 1.5 METRES SHOULD BE KEPT BETWEEN CEILING AND THE TOP OF THE THYRISTOR FAN FOR BETTER COOLING.
5. AFTER OPENING THE DOOR MINIMUM WORKING SPACE OF ONE METER SHALL BE LEFT ON FRONT AND REAR SIDES OF ALL THE CUBICLES FOR BETTER APPROACHABILITY AND MAINTAINABILITY.
6. THE DISTANCE BETWEEN REGULATION CUBICLE AND NEAREST THYRISTOR CUBICLE SHOULD BE LESS THAN 10 METRES.

PROJECT : KOTA THERMAL POWER STATION

BHARAT HEAVY ELECTRICALS LIMITED.
ELECTRONICS DIVISION, BANGALORE

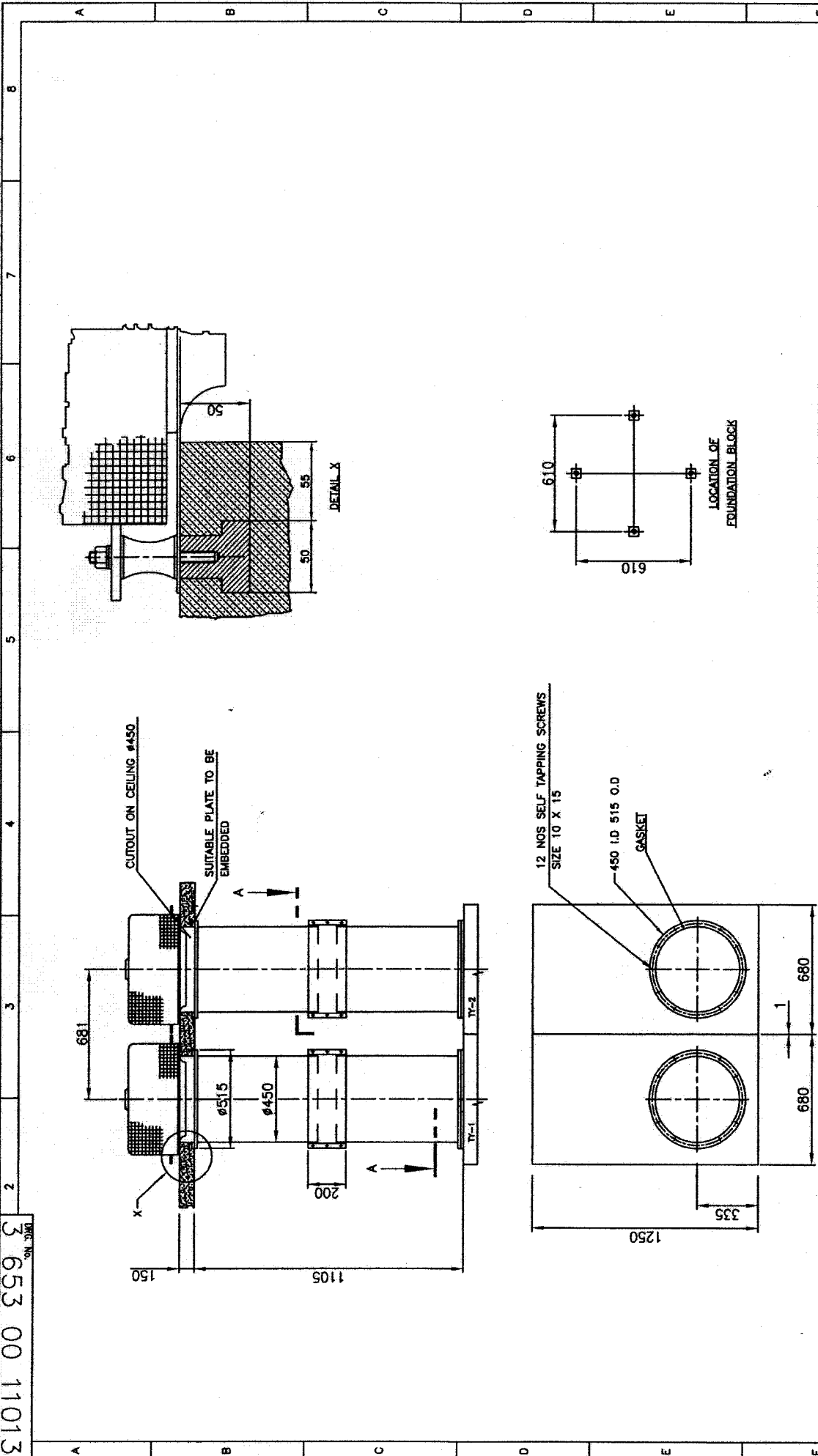
TITLE: OGA FOR STATIC EXCITATION EQUIPMENT
PROPOSED LAYOUT FOR EXCITATION EQUIPMENT

W.B.S No.	CE/1031-SH1-48-01 & CE/1031-SH2-48-01	DRG. No.	3 653 00 11013
No. OF SHEETS	12	SHEET No.	09
REV		REV	00

REV.	DATE	ALTERED CHECKED APPROVED	REV.	DATE	ALTERED CHECKED APPROVED	NAME	SIGN	DATE	DEPT. GHCE	CODE 406
				27.04.13		PRADEEP	[Signature]	27.04.13		
				27.04.13		KBR	[Signature]	27.04.13		
				27.04.13		AL	[Signature]	27.04.13		

FIRST ANGLE PROJECTION
3 653 00 11013
ON 3/11

(ALL DIMENSIONS ARE IN mm)



SIGN & DATE		REF. DRG. No.		36530010899/SRDP		COPYRIGHT AND CONFIDENTIAL	
INVENTORY No.		REV.		DATE		ALTERED	
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1		1		2		3	
APPROVED		APPROVED		APPROVED		APPROVED	
DRAWN		DRAWN		DRAWN		DRAWN	
KBR		KBR		KBR		KBR	
AL		AL		AL		AL	
NAME		NAME		NAME		NAME	
PRADEEP		PRADEEP		PRADEEP		PRADEEP	
SIGN		SIGN		SIGN		SIGN	
DATE		DATE		DATE		DATE	
27.04.13		27.04.13		27.04.13		27.04.13	
DEPT.		DEPT.		DEPT.		DEPT.	
GHCE		GHCE		GHCE		GHCE	
CODE		CODE		CODE		CODE	
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TITILE		TITILE		TITILE		TITILE	
OGA FOR STATIC EXCITATION EQUIPMENT (FAN FIXING ARRGT)		OGA FOR STATIC EXCITATION EQUIPMENT (FAN FIXING ARRGT)		OGA FOR STATIC EXCITATION EQUIPMENT (FAN FIXING ARRGT)		OGA FOR STATIC EXCITATION EQUIPMENT (FAN FIXING ARRGT)	
PROJECT :		PROJECT :		PROJECT :		PROJECT :	
KOTA THERMAL POWER STATION		KOTA THERMAL POWER STATION		KOTA THERMAL POWER STATION		KOTA THERMAL POWER STATION	
BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE		BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE		BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE		BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE	
W.B.S No.		W.B.S No.		W.B.S No.		W.B.S No.	
CE/1031-SH1-48-01		CE/1031-SH1-48-01		CE/1031-SH2-48-01		CE/1031-SH2-48-01	
DRG. No.		DRG. No.		DRG. No.		DRG. No.	
3 653 00 11013		3 653 00 11013		3 653 00 11013		3 653 00 11013	
REV		REV		REV		REV	
00		00		00		00	
SHEET No.		SHEET No.		SHEET No.		SHEET No.	
12		12		12		12	
No. OF SHEETS		No. OF SHEETS		No. OF SHEETS		No. OF SHEETS	
12		12		12		12	

A3 SIZE