



**TENDER BOX IS AVAILABLE AT VENDOR COMPLEX BEHIND
ADMN BUILDING FOR DROPPING FILLED TENDERS.**

**B H A R A T H E A V Y E L E C T R I C A L S L I M I T E D
RAMACHANDRAPURAM : : HYDERABAD – 502032
FACTORY CIVIL ENGINEERING DEPARTMENT**

TELEGRAM: BHARATELEC TELEPHONE NO. 23185059 & 23183515
FAX NO. 040 – 23186122

TENDER NOTICE NO. HY/FCD/OT-01/2011-12 DATED: 07.04.2011

Item No. 3

1. Name of work : **Construction of second floor on North
West side of Admn. Bldg.**
2. Earnest Money Deposit : **Rs. 1,50,000/-**
3. Approximate value of work : **Rs. 93.18 Lakhs**
4. Time of Completion : **9 Months**
5. Maintenance period : **12 Months**
6. Sale of Tenders : **15.04.2011 to 06.05.2011**
During 9.00 hrs to 14.00 hrs
(From the Office of AGM/Projects & Fy.Civil)
Down load from BHEL web site till the
date of Receipt of tenders
7. **Last date of receipt of tenders** : **07.05.2011 upto 11.00 hrs.**
8. **Date and time of opening of tenders** : **07.05.2011 @ 13.15 hrs.**
9. Cost of tender documents } : **Rs. 500/-** (if purchased from BHEL)
Including S.T } **Rs. 250/-** (if down loaded from web).

Name & Address:

EMD PAID / NOT PAID

BHARAT HEAVY ELECTRICALS LIMITED
RAMACHNADRAPURAM : : HYDERABAD – 32.

TENDER DOCUMENTS

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CONTRACTOR(S)

ISSUING OFFICER

TENDERING PROCESS

- A. Tender box will be kept in Vendor Complex building which is near ADMINISTRATIVE BUILDING AREA.**
- B. Tender documents are issued in two bid system.
1. Technical bid
 2. Price bid
- C. Tender opening
- The tender shall be on two part bids. Only technical bids are to be opened on date of opening of the bids. After scrutiny and acceptance of the technical bids, price bids of accepted parties only will be opened. The date of opening price bids will be intimated separately.
- D. The technical bid consists of technical schedule requiring documentary proof. In case the agency has not satisfied all the conditions along with documentary proof, the tender will be rejected.
- E. Technical and price bids must be in separate covers and superscribed as "Technical bid" and "Price Bid" separately with item Nos. clearly written on the covers. Tenders received mixed (with price and technical bids) will be rejected. Every page of the price bid document shall be Signed by the tenderer at the bottom of the page.
- F. In case of tender application and tender documents downloaded from web site, the tenderer shall pay cost of tender documents and EMD for item of work, he is tendering separately by means of two separate DDs (in favour of BHEL) one towards cost of tender documents and second towards EMD. Both DD's shall be enclosed along with the Technical bid. DD's may be drawn for cost of tender documents upto last date of Receipt of tenders if downloaded from web.

Signature of Contractor(s)

To be filled up by the bidder /Contractor

TECHNOCOMMERCIAL BID

Name of work : Construction of Second floor on North West side of Admn. Building

Tender Notice No & : HY/FCD/OT-01/11-12 Dt: 07.04.2011
Item No. : 03

S.No	Description	Data to be filled by Bidder/Contractor
1	Name of the Contractor Full Address Contractor's code No Contact person Phone , Fax Mobile Nos. Email ID	: : : : : : :
2	Details of DD/Cash receipt a) D.D or Cash receipt Nos for EMD b) DD/Cash receipt Nos for cost of tender documents. (DD/C. Rs has to be enclosed along with this bid).	: :
3	Particulars of experience/credentials as detailed in notice. (Completion certificate of works to be enclosed)	: :
4	ESI No. (Copy to be enclosed) (in case not available, proof of having applied with acknowledgement from Concerned authorities).	:
5	PF CODE No. (Copy to be enclosed)	:
6	PAN No . (Copy to be enclosed)	:
7	VAT Reg. No: (Copy to be enclosed)	:
8	Contact Person name in case conducting Reverse Auction	:
9	Mobile no:	:
10	FAX NO	:
11	E-MAIL ID	:

SIGNATURE OF CONTRACTOR

Contd:

: 2 :

S. No	Description	Data to be filled by Bidder/Contractor
8	LABOUR LICENCE (Copy to be enclosed if available) Valid up to : In case not available, bidder shall submit the Licence before commencement of the work .	:
9	Annual turnover during 3 years period - Year 2009-10, 2008-09 and Year 2007-08. (supporting documents along with Saral and P&L Account Sheet are to be enclosed)	2009-10 : 2008-09 : 2007-08:
10	Service Tax No (Copy of certificate/Proof of application to be enclosed)	:

NOTE:

- Without PAN ,VAT TIN No., and Service Tax Registration Nos contractors bills cannot be processed and payments will be held up.
- Technical bids will be scrutinised by the Dept and In case the agency has not satisfied all the above conditions with documentary proof the bid will be rejected and their price bid will not be opened.
- In case of a firm, the documents shall be in the name of the firm. However in case of sole proprietor or individuals these can be on the name of the sole proprietor or individual.
- Though some of above documents are available with BHEL for those agencies who are presently working with BHEL, they also should submit one copy of the same. Otherwise the offer will be rejected.
- All the relevant columns shall be filled with proper information. The unfinished/wrongly filled/ incomplete Tender Documents (Technical Bids /Price Bids) will be rejected.**
- BHEL reserves the right to reject any or all tenders in part or in full without assigning any reason.
- Any other works not mentioned but required for completion of the project are to be carried out by the contractor with mutually agreed rates and vetted by Finance.
- BHEL reserves the right to reduce/increase the items, quantities mentioned in the schedule.**
- Party shall comply all legal, statutory requirements applicable to execute the work before commencement of work.**
- The agencies are advised to visit the work site to understand the nature of work /quantum of work in its true perspective to avoid any complications in future .**
- Tenders submitted without EMD / Cost of documents will be rejected.**
- Any corrigendum or extension of due dates will be posted on BHEL website only**

Signature of Contractor(s)

PRE QUALIFICATION

I. The following conditions have to be satisfied by the tenderer, with documentary proof to be enclosed with tender bid **In case the agency fails to enclose the following documentary proof with tender the tender will be liable for rejection.**

- 1) Particulars of experience for the works executed of Similar nature for each work Experience of having successfully completed/Executed Similar works during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:-
 - a) Three similar works completed/Executed costing not less than the amount equal to **40%** of the estimated cost. **or**
 - b) Two similar works completed /Executed costing not less than the amount equal to **50%** of the estimated cost. **or**
 - c) One similar works completed /Executed costing not less than the amount equal to **80%** of the estimated cost.

Similar works: All interior works consisting the items of Full/half height glass partitions with toughened glass with / without aluminium frame work, false ceiling, roofing, wall panelling, Vitrified flooring, Granite flooring etc., Electrical, Air conditioning, Data & Voice only will be considered as similar works for this work

- 2) Average Annual financial turnover during the last 3 years, ending 31st March of the previous financial year duly **certified by chartered Accountant along with IT returns document,,** should be at least 30% of the estimated cost.
- 3) ESI code No: Proof of certificate /having applied with acknowledgement
- 4) P. F. Code No. Copy to be enclosed.
- 5) Labour licence :Central Government before commencement of work.
- 6) PAN No. (in case not available, proof of having applied with acknowledgement from concerned authorities)
- 7) APGST / TIN No: (in case not available, proof of having applied with acknowledgement from concerned authorities or an undertaking for submission of VAT registration certificate before concluding the Contract agreement).VAT registration certificate to be furnished for works costing more than Rs.5.00 Lakhs each.
- 8) Service tax registration no: (in case not available, proof of having applied with acknowledgement from concerned authorities).

Penalty: (I) 0.50 % of the gross value of work will be levied for every week's delay by the agency subject to a maximum of 10 % value of the work for the delay of completion period as specified in the NIT.

Contd..

Signature of Contractor(s)

- II Tenders must be submitted in sealed covers addressed to Addl. Gen Manager / Projects & Factory Civil, BHEL, Ramachandrapuram, Hyderabad 502 032. Tenderer shall write tender notice No, and name of work and address of the tenderer on the sealed cover. In case the agency fails to comply any of the above, the tender will be liable for rejection.

III. NOTES:

- 1 Period of contract shall be as mentioned in NIT.
2. Tenders are **on two - part bid method.**(Techno commercial bid and price bid).
3. Tender documents can be had through BHEL web site <http://www.bhel.com> cost of document shall be paid in the shape of Demand Draft or Bankers Cheque or Pay Order and separately enclosed to the tender bid.
4. The requisitions for tender documents shall be given in person to Addl. General Manager (Projects & Factory Civil), BHEL., Ramachandrapuram, Hyderabad 502 032 along with Demand Draft/Banker's Cheque drawn in favour of "BHARAT HEAVY ELECTRICALS LIMITED, HYDERABAD" or payment of cash in BHEL Cash Office (No other mode of payment will be accepted). Tender documents shall be collected in person by the contractor or his representative.
- 5 BHEL reserves the right to reject or cancel the tender at any stage of the tender process without assigning any reasons there of.
6. **The agencies are advised to visit the work site to understand the nature of work/quantum of work in its true perspective to avoid any complications in future .**

Signature of Contractor(s)**ACCEPTING AUTHORITY**

TECHNOCOMMERCIAL TERMS, CONDITIONS AND SPECIAL INSTRUCTIONS

- 1 **Reverse Auction (RA)**: BHEL reserve the right to resort to Reverse Auction procedure i.e On line bidding on internet, instead of opening the submitted sealed bid, which will be decided after technical evaluation. RA terms and condition will be intimated separately. In case any tenderer refuses to participate in the Reverse Auction process the tender will be rejected.

General Terms and conditions of RA are given in Annexure- AA' for information.
- 2 The agency shall quote (+) or (-) both in Figures and words over the BHEL estimate value given in the Price bid. In case of any difference in words and figures the percentage given in words will be considered for comparison and for awarding the work.
- 3 If the due date of tenders opening extended because of poor response the agencies who have already submitted tender bids earlier need not submit revised tender. The original tender only will be considered for evaluation.
- 4 The tenderer should quote the value inclusive of all taxes & duties levied by State and other Government organizations as well as all local authorities as applicable except **Service tax, which is extra will be paid by BHEL to the agency after submission of necessary documents.**
- 5 Bills /material proof of entry inside factory area shall be shown to the Engineer
- incharge for the bought out items
- 6 The tenderer shall accept all the terms and conditions of the techno commercial bid of the tender document. In case same is not confirmed by the tenderer, the offer will be liable for rejection.
- 7 The tenderer shall not include any additional conditions / alter conditions either in the Techno commercial bid or Price bid.
- 8 The tenderer must visit site and familiarise with the nature of work before submitting the tender.
- 9 All materials of BHEL free issue shall be lifted by the bidder from BHEL stores and transported to worksite . The rates shall include transportation costs also.
- 10 **The agency shall sign on each page of the tender schedule issued.**
- 11 Rates quoted shall be firm throughout the period of the contract.

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Signature of Contractor(s)

- 12 Sub contracting is not permitted under any circumstances without written consent of BHEL.
- 13 Contract to be closed in all respects including final measurement recording in M book and submitting the bill within two months from the completion time as mentioned in the tender or Approved date of completion whichever is later.
- 14 The departmental material will be issued keeping in mind the BHEL approved norm and the issue of material should be commensurate with the progress of work.

Swapping of the material from one job to other job is not permitted. In case of exigencies, the same can be done with recorded reasons after obtaining the prior approval of Executive Engineer of the job concerned and a copy of the same should be forwarded to finance bill passing section concurrently. No material will be issued on the day of completion and any unused, excess material has to be returned to stores preferably with in the completion date but under any circumstances not later than 7 days of completion date, beyond which the cost of unused, excess material will be recovered from the contractor.

Special Instructions:

1. All BHEL General Conditions of the Contract shall be applicable. A copy of which is available in the office of Sr. DGM/Planning for perusal.
2. Any statutory increase in the labour wages during the period of execution shall be borne by the agency. The agency shall quote the firm rates considering the possible labour escalation also.
3. The agency should affix his signature at the end of each page of the document.
4. The rates quoted shall be finished items of work including all lifts, leads and other incidental charges mentioned in the General Conditions of the Contract, unless otherwise specified.
5. The department reserves the right to split and award the work to more than one agency.
6. **The contractor should follow all the safety precautions**, special conditions of safety attached at annexure I while executing the work. While working above 2.5 M from ground level prior permission has to be obtained from BHEL by the agency before proceeding with the work.
7. The contractor should engage labours who should not be less than 18 (eighteen) years age.

Signature of Contractor(s)

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8. All the bills of contractors will be cleared by Finance Department subject to production of "Clearance Certificate" by the contractors in respect of compliance of all statutory requirement, issued by I R section of Human Resource Department.
9. All the materials including C R stones, bricks, sand and granite metal required for execution of civil works against items in the contract, are to be entered at CISF gates and supplied to site by contractor for using in works.
10. The tenderer should make fabrication detailed drawing along with BOM for fabricated structures. However BHEL will furnish sketches & design for the above.
11. Rates quoted shall be firm throughout the period of the contract and **no price escalation** is payable under this contract on any account.
12. The tenderer shall comply with all statutory requirement pertaining to the state or any government agencies or authorities Example, **PF, ESIC, workman's compensation & personnel accidents insurance** . The company will not be responsible for any claim made by the workers or government agencies / authorities.
13. Time is the essence of the contract . If agency fail to complete the work with in stipulated time , agency is liable to pay penalty as mentioned below.
0.50% of the gross value of work will be levied for every weeks delay by the agency subject to a maximum of 10% value of the work.
14. BHEL is an ISO 14001 & OHASAS 18001 certificate company and always strives for excellence in HSE management.
15. The samples of materials etc. should be tested in approved laboratory and reports submitted to Engineer –in charge whenever instructed and charges shall be borne by agency.
16. Agency will also ensure that qualified and experienced site staffs are available at all times during working hours in order to ensure proper supervision an to maintain the quality . You should take precaution regarding the safety of labour during the execution of the work. company shall not accept responsibility for the safe keeping of your tools, tackles and materials etc., you will therefore provide and maintain at your own cost locking , watch and ward when and where necessary .
17. The Tenderer should submit within a week from the receipt of this order BAR/PERT/CPM chart supported by manpower by designation, material and machinery and indicating week wise programme for completion time by the stipulated date, both physical and financial. Agency should also submit daily progress report along with consumption of materials at site, weekly progress report with photographs , all test reports, as well manufacture test certificates as when required. Pour card system is invariably followed by agency before any concreting duly signed pour should reach to the Engineer - In charge well in advance before the start of any concreting programme.

Signature of Contractor(s)

ISSUING/ACCEPTING AUTHORITY

ANNEXURE - AA

GENERAL TERMS AND CONDITIONS OF REVERSE AUCTION (RA)

Against this enquiry for the subject item/system with detailed scope of supply as per enquiry specifications, BHEL may resort to “ REVERSE AUCTION PROCEDURE” i.e ONLINE BIDDING (THROUGH A SERVICE PROVIDER)

- (i) For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- (ii) BHEL will engage the services of a Service Provider who will provide all necessary training and assistance/demonstration before commencement of on line bidding on internet.
- (iii) BHEL will inform the Vendors in writing the details of Service Provider to enable them to contact for training demonstration.
- (iv) Business rules like event date, time, start price, bid decrement, extensions etc. also will be communicated through Service Provider for compliance.
- (v) Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse Auction. Without this, the vendor will not be eligible to participate in the event.
- (vi) BHEL will provide the calculation sheet (e.g EXCEL sheet) which will help to arrive at “Total cost to BHEL” like schedule of items rates, inclusive of all taxes and duties except service tax which is extra as applicable for each of the vendor to enable them to fill in the price and keep it ready for keying in during the Auction.
- (vii) Reverse auction will be conducted on a scheduled date & time.
- (viii) At the end of Reverse Auction event, the lowest bid value will be known on the network.
- (ix) The lowest bidder has to fax/e-mail the duly signed filled-in prescribed format as provided to BHEL through Service Provider within 24 hours of Auction without fail.
- (x) **In the event of RA the sealed price bid envelope along with price impact envelope if any, of L1 bidder discovered in RA alone shall be opened to verify that the L1 bidder has quoted the same or lower price in the online sealed bid as compared to sealed cover bid. In case of higher online sealed bid price by that L1 bidder, Suitable action shall be taken on the bidder.**
- (xi) In case RA results are not fruitful, BHEL reserves the right to resort to normal tendering procedure for finalisation of the contract by opening the sealed price bids submitted by the tenderers.
- (xii) The agencies are advised to keep a copy of the Price bid submitted along with tender for their reference for providing at the time of online sealed bid value.

CONTRACTOR(S)

ISSUING OFFICER

GENERAL SPECIFICATION OF INTERIORS FOR 2nd FLOOR OF ADMN. BLDG.**1. SCOPE:**

Supply, installation/erection and commissioning of interior works comprising of works in the areas of

- Civil
- Air Conditioning Systems
- Electrical, Networking for voice & data
- Fire detection & alarm system and

As part of modernization of 2nd Floor of Admn building, scope of work includes civil works like dismantling of existing cabins, partitions, flooring and supply, installation and commissioning of all interiors and other related equipments with respect to flooring, false ceiling, wall paneling, partitions, automatic doors, air conditioning, fire alarm system, all electrical works, illuminations, telephones, networking complete in all respects, as per approved layout.

2. LOCATION:

Second floor of North West side of Admn.Bldg. interiors-Civil, Electrical, Communication, IT networking, Air Conditioning, BHEL, Ramachandrapuram, Hyderabad.

3. APPLICABLE STANDARDS/DOCUMENTS/LAYOUTS:

(i) Initial layout drawings with seating arrangement will be issued to the agency.

(ii) Agency shall submit detailed working and scheme drawings/layouts, for the following works with technical parameters for the following and the same shall be vetted by respective concerned departments.

- Air conditioning ducting
- Electrical and Networking cabling/wiring
- Fire detection and alarming system
- Data voice/telephone
- Listing/illumination

4. SUPPLY OF EQUIPMENT:

Supply of complete equipment shall be done, in a sequential manner for enabling smooth execution of work. Equipment brought inside shall be under the custody of the executing agency only.

Signature of Contractor(s)

5. EXECUTION OF WORK WITHIN SCHEDULE AND TERMS OF PENALTY CLAUSE:

Execution of the work shall be carried out as per the approved drawing and specification and direction of the Engineer-in-charge. In case of any delay in execution of work, a penalty @ ½ % of the total value per week of delay or part thereof, subject to a maximum of 10% total value shall be levied where the delay is attributable to the agency. The work shall be completed in all respects within 16 weeks from the date of handing over the site.

6. INSPECTION IN PROGRESS AND ACCEPTANCE:

Stage wise inspection and acceptance process shall be followed as per mutually agreed schedule between BHEL and the executing agency after award of contract.

7. COMPLETION CERTIFICATE:

Completion certificate shall be issued by BHEL after completion of all supplies, drawings and documents and satisfactory commissioning of the systems as per purchase order/work order.

8. FINAL DRAWINGS AND DOCUMENTS:

Agency shall submit the complete set of final “as built” drawings/documents in 3 sets, before submission of final bill. There shall include, “as built” drawings of Civil, Electrical, Air conditioning, Network, Fire Detection system, Communication, Ducting, termination details along with routing of raceways.

9. SAFETY:

All operation of the executing agency during execution stage shall be as per factory rules. Further, all safety norms shall be followed by the executing agency while executing the contract and BHEL shall in no way responsible for any mishap or untoward incident. Personal protective equipment is mandatory for the workmen engaged during execution of work.

10. GUARANTEE:

All works shall be guaranteed for 12 months after completion certificate is issued by BHEL. During the guarantee period, any equipment / items which develops problems or becomes non functional shall be freely replaced.

Signature of Contractor(s)

11. TERMS AND CONDITIONS:**CIVIL, ELECTRICAL/AIR CONDITIONING SYSTEM/FIRE ALARM & DETECTION SYSTEM:**

1. Final payments shall be made as per actual measurement of execution.
2. Standard penalty clause is applicable i.e. 0.50% of contract value per week subject to a maximum of 10% of contract value.
3. Progressive bills subject to a maximum of 3 bills during contract period may be released on submission of same by the agency, on certification of works executed by Engineer-in-charge.
4. Leakages of conditioned air, if any, in the floor after completion of works, shall be attended by the agency.
5. Air conditioning agency shall prove performance of A/c system parameters of temperature etc. to the satisfaction of Engineer-in-charge apart from conditions mentioned against this system schedule.
6. Fire system agency shall prove performance of the system by mock drills simulation.
7. Earthing system shall be installed and commissioned confirming to IE rules as per instruction of Engineer-in-charge. Single line diagram shall be submitted.
8. Power lines for computer systems, Air-conditioning and lighting distribution shall be laid without any interference.
9. Civil/Electrical/AC/Fire alarm systems, individually, shall be had a guarantee period of 12 months after successful commissioning of same.
10. All electrical equipments/works shall be as per IS/IE rules.
11. Ducting/tubing/wiring layout for the whole A/c system shall be submitted by agency for prior approval before implementation.
12. All raceways shall be laid systematically with tiles without affecting the aesthetics and levels / gradation of the floor.

Signature of Contractor(s)**ACCEPTING AUTHORITY**

**(THE AGENCIES WHO ARE NOT HAVING ONE TIME EMD WITH BHEL,
R.C.PURAM, HYDERABAD ARE REQUESTED TO SUBMIT THIS FORM
WELL INADVANCE FOR OBTAINING THE CERTIFICATE)**

Request for One time EMD

To,
Addl. General Manager
Projects and Fy. Civil ,
BHEL, Ramachandrapuram
Hyderabad-502032.

Dt:

Dear Sir,

Sub: Payment of one time EMD of Rs. 2.00 Lakhs -reg.

With reference to the above subject, I am prepared to pay one time EMD of Rs. 2.00 Lakh (Lumpsum) for quoting the works of value exceeding Rs.100.00 Lakhs each, depending on my legibility. I am aware that the EMD will not be released as long as I do the business with BHEL or _____ before *. Which ever is later I am aware that the EMD can't be converted into Security Deposit or it will not carry any interest. In case if I become lowest agency, I pay will security deposit separately and I will not ask for conversion into SD. In case of refusal to accept the offer after becoming lowest agency, I hereby authorise to forfeit the total money deposited under one time EMD.

In view of the above, I may be permitted to pay one time EMD of Rs. 2.00 Lakhs and quote for the works costing **Rs 2.00 Lakhs to 100.00 Lakhs and above** each in the above divisions.

Thanking your Sir

Yours faithfully,

Signature of the contractor with seal.

*Note :(1) Minimum of for one year shall be kept with BHEL.

(2) Under ONE TIME EMD exempted from payment of EMD with each tender of work costing **Rs 2.00 Lakhs to 100.00 Lakhs and above.**

ANNEXURE – E

EFT Form (The bidders who are already having EFT details with BHEL need not fill this form and the contractor who is new to BHEL may furnish their details in the letter head of their firm duely signed and authorized official of bank).

(Bidders to furnish this mandate on their Letter Head.)		Annexure E
To Dy. Manager/Finance-CM Bharat Heavy Electricals Limited Ramachandrapuram Hyderabad 502 032		Ref No: Date:
Dear Sir,		
Sub: Details for National Electronic Fund Transfer		
We request and authorize you to effect payment through NEFT to our Bank account, subject to RBI Guidelines, s per the details given below		
A. Sup code (As per PO/SCO) / Staffno	:	
B. Beneficiary (Name as per PO/SCO)	:	
C. PAN of Beneficiary	:	
D. TIN of Beneficiary	:	
E. e-mail address of Beneficiary	:	
F. City (of Beneficiary)	:	
G. Bank Name	:	
H. Branch (of Bank)	:	
I. A/c Number	:	
J. A/c type (Savings or Current)	:	
K. MICR Code of the branch (9 digit)	:	
L. IFSC for NEFT (11 char)	:	
M. IFSC for RTGS (If different from L)	:	
Thanking you,		(Signature with Seal) Authorised Signatory Name Designation
Certified that the particulars furnished above are correct as per our records		
Date	(Signature of authorized official of bank) Bank Stamp	

Signature of Contractor(s)

**BHARAT HEAVY ELECTRICALS LIMITED
RAMACHANDRAPURAM : : HYDERABAD-32**

TENDER NOTICE

No.: HY/FCD/OT-01/2011-12 Dated: 07.04.2011 Item No. 1

Sealed Tenders will be received by the Sr. DGM /Planning, Factory Civil, Bharat Heavy Electricals Limited Ramachandrapuram, Hyderabad-32 at his office up to **11.00** hours on **30.04.2011** for the work of **“Construction of Foundations for Stack pit, 90T balancing machine and spin tester in GT complex”**. Ramachandrapuram, Hyderabad-32.A.P., Tenders will be opened by the Bharat Heavy Electricals Limited, Ramachandrapuram, Hyderabad-32, on the date by 13.15 hours and at the place aforementioned. The tenderers's or their agents are expected to be present at the time of opening of the tenders. The tender receiving officer will, on opening such tender, attest over writings or corrections, if any, therein in the presence of the tenderes who may be present at the time. The CPWD/Andhra Pradesh Detailed Standard specification and other documents relating to the contract such as additional specifications, proforma for Bank Guarantees, descriptive specifications sheets regarding materials etc., can be seen at any time between **09.00 Hrs to 14.00 Hrs** in the office for Tender forms and other particulars regarding the proposed work can be obtained on any working day from **15.04.2011 to 29.04.2011 (9.00 hours to 14.00 hours)** on payment of the prescribed sum of **Rs. 500 /-** per set as non-refundable (**Rs.250/-** if downloaded from web). On tender opening day also the agencies can down load the tender documents from BHEL web site till the receipt of tenders.

1. Tenders must be submitted in sealed covers and should be addressed to
The AGM/Projects & Factory Civil, Bharat Heavy Electricals Limited,
Ramachandrapuram, Hyderabad – 32, the name of the tenderer and the name of
the work being noted on the cover.

Signature of Contractor(s)

Contd.....2

:: 2 ::

If the tender is made by a individual, it shall be signed with his name and his full address shall be given, If it is made by firm, it shall be signed with the co partnership name by a member or the firm, who shall also sign his own name and the name and address of each member of the firm shall be given, if the tender is made by a corporation, it shall be signed by a duly authorised officer who shall produce with his tender, satisfactory evidence of his authorisation. Such tendering corporation may be required before the agreement is executed, to furnish evidence of it's corporate existence.

2. Each tenderer must pay as Earnest Money, a sum of **Rs. 1,50,000/-** only and enclose with his tender the receipt endorsed accordingly. The earnest Money prescribed for this work may be offered in any of the following forms

Demand Draft/ Banker's Cheque drawn in favour of

" BHARAT HEAVY ELECTRICALS LIMITED, HYDERABAD " or payment of cash in BHEL Cash Office (No other mode of payment will be accepted).

The Earnest Money will be refunded to the unsuccessful tenderer after the intimation of rejection of the tender is sent. The Earnest Money will be retained in the case of the successful tenderer and get converted as a part of security Deposit for the due performance of the contract and in either case will no carry any interest. It will be dealt with as provided in the conditions attached to the tender. When a tender is to be accepted, the tender whose tender is under consideration, shall attend the Office of Sr. DGM/Planning/Factory Civil on the dates fixed by written information to him. He shall forth with upon intimation being given to him by the Sr. DGM/Planning/Factory Civil of acceptance of his tender, complete the execution of the agreement by signing all documents connected there with, Failure to do so shall entail for failure of the Earnest Money Deposit.

Contd.....3

Signature of Contractor(s)

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3. EMD by the Tenderer will be forfeited as per Tender Document if.
 - i) After opening the tender, the revokes his tender within the validity period or increased his quoted rates.
 - ii) The tenderer does not commence the work the period as per LOI/Contract. In case the LOI / contract is silent in this regard then within 15 days after award of contract.
4. EMD shall not carry any interest.
5. Tenderers shall peruse carefully the instructions laid in General Conditions of the contract and all other relevant documents before tendering for the work. The approximate quantity of work to be executed under each class is given in Schedule – “A”. the quantities are given with a view to enable form and for a uniform comparison of tenders. It shall be definitely understood that the Bharat Heavy Electricals Limited, does not accept any responsibility for correctness or completeness by commissions, deductions or additions at the discretion of accepting authority.
6. The Sr. DGM/Planning/Factory Civil reserves the right to reject any tender or part thereof or all the tenders with out assigning any reasons thereof.
- 7a. Tenders offering a percentage deduction from or increase on the estimate amount and those not submitted in proper form or in due time will be rejected.
- 7b. The offer shall be valid for a period of **120 days** from the date of opening of the tender.
8. Security Deposit shall be collected from the successful tenderer. The rate of Security Deposit will be as below:
- 9a. Security Deposit should be collected from the successful tenderer. The Rate of Security Deposit will be as below:

Upto Rs. 10 lakhs	10%
Above Rs. 10 lakhs upto Rs. 50 lakhs	Rs. 1 lakh + 7.5% of the amount exceeding Rs. 10 lakhs
Above Rs. 50 lakhs	Rs. 4 lakhs + 5% of the amount exceeding Rs. 50 lakhs

The Security Deposit should be deposited before start of the work by the contractor

Contd.....4

Signature of Contractor(s)

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9b. Security Deposit may be furnished in any one of the following forms.

- i) Cash (as permissible under the Income Tax Act)
- ii) Pay Order, Demand Draft in favour of BHEL.
- iii) Local cheques of scheduled banks, subject to realization.
- iv) Securities available from Post such as National savings Certificates, Kisan Vikas Patras etc.

- v) Bank Guarantee from schedules Banks / Public Financial Institutions as defined in the Companies Act subject to a maximum of 50% of the total security deposit value. The balance 50% has to be remitted either by cash or in the other form of security. The Bank Guarantee format should have the approval of BHEL. The Original bank guarantee should be sent to the BHEL directly under Registered Post(A.D).

- vi) Fixed Deposit Receipt issued by scheduled Banks / Public Financial Institutions as defined in the companies Act. The FDR should be in the name of the contractor, A/C BHEL, duly discharge on the back.
- vii) Security Deposit can also be recovered at the rate 10% from the running bills. However in such cases at least **50%** of the Security Deposit should be deposited before start of the work and the balance **50%** will be recovered from the running bills.
- viii) EMD of the successfully tender shall be converted and adjusted against the security deposit.

NOTE: Acceptance of Security Deposit against Sl. No. (iv) and (vi) above will be adjusted to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

9c. Security Deposit shall not be refundable to the contractor except in accordance With the terms of the contract.

The Security Deposit will be released along with final bill or after **12 Months** maintenance period which ever is later.

SIGNATURE OF CONTRACTOR (S)

ACCEPTING AUTHORITY

DIRECTIONS TO PARTIES FOR TENDERING

1. A list of materials, proposed to be supplied by the Bharat Heavy Electricals Limited, Ramachandrapuram, Hyderabad – 500 032, and the places where and the prices at which they are proposed to be supplied is given in Schedule-B. TENDERER MUST ACCEPT THESE MATERIALS AT THE SPECIFIED PRICES AND QUOTE FOR FINISHED WORK ACCORDINGLY. Not with standing any subsequent change in the market remains as originally entered in the Agreement. If at any time subsequent to the execution of this agreement, materials of B.H.E.L., other than those specified in the agreement are required by B.H.E.L., to be used on the work they will be charged at issue rate of BHEL. The contractor will be informed in writing of this and he should intimate in writing the rate which he demands for finished work in view of the fact that he is to use materials of B.H.E.L, and at the issue rate. No cartage or incidental charges will be borne by B.H.E.L., in connection with the supply of materials referred to in this paragraph. If at any time, B.H.E.L., supplies materials other than those specified in the agreement at the request of the contractor for use on work, they will be charged at the market value prevailing at the time of supply or issue rate plus 12 ½% whichever is greater.
2. Subsidiary items such as water for work, clearing and marking out site, hire of tools and plants should be separately entered. If such items are not so entered, it will be assumed that the rates quoted, in the schedule include provision for them also.
3. The tenderer shall examine closely, the Andhra Pradesh Standards specifications kept in Sr. Dy. Gen. Manager/Fy. Civil Office and also the relevant clauses of the standard preliminary specification before submitting his tender unit rates which shall be for finished work in site. The contractor should purchase a book of Andhra Pradesh Standards Specifications for his references. He shall also carefully study the drawings and additional specifications and all the documents which form part of the agreement to be into by the accepted tenderer.

Signature of Contractor(s)

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1. Each tenderer must also send a certificate of Current Income Tax Clearance from the appropriate Income Tax Authority in the form prescribed therefor. In the case of proprietary firm, it will be necessary to produce the certificate aforementioned for the proprietor or proprietors and for each of the partners as the case may be.
2. Every tenderer is expected, before quoting his rates to inspect the site of the proposed work. He should also inspect the quarries, and satisfy himself about the quality and availability of materials. The best class of materials shall be used on the work. In every case, the materials as comply with the relevant standards specifications. Samples of materials as called for in the Standard Specifications, or in this tender notice or as required by the Sr. DGM (Fy. Civil) having jurisdiction for the time being over the work, herein-after called Sr. DGM (Fy. Civil) should have the due approval before the supply to site of work is begun. Attention of the contractor is directed to standard preliminary specification regarding payment of seignior age, tools etc.,.
3. Time shall be considered as the essence of the contract. The rate of progress as mutually agreed to is required to be maintained. Date of commencement of this programme will be the date on which the site (or premises) is handed to the contractor.
4. The tenderer should quote specific rates for each item in the schedule and the rates should be in rupees and paise. The units and rates should be written both in words and figures. The schedule accompanying the tender shall be written legibly and free from erasures, over writings or corrections of figures. Corrections where unavoidable should be made by crossing out, initialing, dating and rewriting. No alterations which are made by the tenderer in the agreement form, the conditions of agreement, the drawings or specifications accompanying the same will be recognized and if any such alterations are made, the tender will be void.

SIGNATURE OF CONTRACTORS(S)

ACCEPTING AUTHORITY

TENDER FOR THE WORK

I/We_____do hereby tender to execute works of the under mentioned description and in accordance with the conditions noted below in consideration of payment being made for the quantity of work executed at the respective rates specified in the following schedule.

I / We hereby distinctly and expressly declare and acknowledge that before the submission of my / our tender I / We carefully followed the instructions in the tender notice and have read the Andhra Pradesh Standard specification and the clauses of the preliminary specifications and that I /We have made such examination of the contract documents and of the specifications etc., and of the location where the said work is to be done and such investigation of the work required to be done and in regard to the material required to be furnished as to enable me/us thoroughly to understand the intention of same and the requirements, covenants, agreements, stipulations and restrictions contained in the contract and in the said specifications and distinctly agree that I /We will not hereafter make any claim or demand upon the Bharat Heavy Electricals Limited based upon or arising out of the said requirements, covenants, agreements, stipulations, restrictions and conditions I /We, _____ enclose a income tax verifications certificate. I /We _____ have already produced income tax verification certificate during the current calendar year in respect of (here particulars of the previous occasion on which the certificate was produced should be given

_____.

Signature of Contractor (S)
Address

TENDERER'S AND CONTRACTOR'S CERTIFICATE

1. I hereby declare that I have perused in detail and examined closely the Andhra Pradesh Standard Specifications and it's addenda volume and also BHEL General Conditions of contract. I agree to be bound by and comply with all specifications contained in Andhra Pradesh Standard Specification and General Conditions of contract, for the various items of works specified in the Schedule "A" and the work as a whole.
2. I hereby declare that I shall pay the statutory minimum wages to my workers as applicable from time to time.

I shall also adhere to all the statutory obligations under Contract Labour (Regulation and Abolition) Act 1971 and Rules framed thereunder with subsequent revisions if any.

Date _____

SIGNATURE OF CONTRACTOR(S)

GENERAL TERMS & CONDITIONS

1. The contractor shall comply with the following general terms conditions and special instructions.
2. The contractor shall fully comply with the following en-actments:
 - a. Contractor Labour (R&A) Act, 1971.
 - b. Wage Rates not less than that notified by State Labour department from time to time.
 - c. Payment of Wages Act.
 - d. ESI Act, 1948.
 - e. EPF Act, 1952.
 - f. Workmen's Compensation Act, 1923.
 - g. The company's instructions as issued from time to time in regard to working hours, wages, leave, holidays etc.
3. The Contractor shall obtain license from the Assistant Labour Commissioner (Central), or appropriate Government if he engages 20 (Twenty) or more workmen only.
4. The contractor shall produce the following Registers and forms before commencement of work, verification by the Executing Officer of the company.
 - a. Form XIII - Register of workmen employed by contractor (Rule 75).
 - b. Form XIV - Employment card issued by contractor (Rule 76).
 - c. Form XVI - Muster Roll (Rule 78 (1) (a) (i)).
 - d. Form XVII - Register of Wages (Rule 78 (1) (a) (i)).
 - e. Form XVII - Register of wages - cum Muster Roll (in case of weekly payment).
 - f. Form XIX - Wage slip (Rule 78 (b)).
 - g. Form XX - Register of deduction for damages or loss (Rule 78 (1) (a) (ii)).
 - h. Form XXI - Register for fines (Rule 78 (1) (a) (ii)).
 - i. Form XXII - Register of advances (Rule 78 (1) (a) (ii)).
 - j. Form XXIII - Register of overtime (Rule 78 (1) (a) (iii)).
 - k. Form XXIV - Register to be sent by the contractor to licensing officer (Rule 82) (1).

The contractor shall maintain the above neatly, completely and legibly for inspection by various statutory authorities and the company officials even at short notice.

5. The contractor shall observe
 - (a) Weekly rest day.
 - (b) The company list of holidays.

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Signature of Contractor(s)

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6. Contractor shall obtain complete bio-data of the labour, employment certificate and Antecedent verification in the prescribed form for each labour and supervisor engaged by him and shall submit the same to the Personnel Department / IR section through the contract executing officers before commencement of the work.
7. The Entry permits are to be issued to the Contract Labour by Assistant Commandant / CISF (Plant), based on the requisition submitted by Contract Executing Officer and forwarded by Dy. General Manager / Personnel.
5. Every contractor shall submit a notice regarding commencement and completion, of work in form – VI A&B [Rule 25 (VIII) & 81 (3)] to Personnel Department, IR section through his contract executing officer, for forwarding the same to State Labour Department.
6. The contractor shall make himself of his representative available at the work spot everyday during execution of work, for effective supervision.
7. The contractor shall attend to all inspections notified / conducted by the Personnel Department, Labour Department, P.F. authorities. Factory Inspectors ESI Inspectors, or any other such authorities under the act.
8. Non – compliance of any provisions under the act/ rule/instructions / guidelines shall make the contractor liable for penal action including termination of contract.
9. Contractor shall furnish in a separate letter his place of residence and postal address. The delivery at the above named place or posting in a Post box regularly maintained by the post and telegraph Department or sending letters registered for acknowledgement of any notice, letter or other communication to the contractor. Change in address shall come into force at any time by an instrument executed by the contractor and delivered to the Company official who has signed the contract.
10. The contractor must satisfy himself by personal study and examination of the drawings / specifications furnished and understand thoroughly the scope of proposed work in detail and all conditions affecting the work before entering into the contract. There shall not be at any time dispute / complaint of any misunderstanding with regard to scope of work and interpretation of specifications or any misunderstanding with regard to nature or omission of the work to be done not shall any application for compensation in terms of time and money shall be accepted by company regarding the above.
11. Contractor shall in his absence keep competent agent constantly on the works and any directions or explanations given by the “Contract Signing Officer” or his representative to such agent shall be held to have been given to the contractor himself.

Signature of Contractor(s)

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12. Contractor on the advise of company official shall immediately remove any person employed by him, who may in the opinion of the company official is incompetent or misc. conducts himself and such persons shall not be again employed on the works without permission of the company official.
13. The contractor shall erect and maintain at his own cost temporary weather proof sheds at such places approved by the company for keeping materials under cover.
14. The contractor shall give all notices required by the acts regulations , bylaws, legal acts and pay all fees in connection therewith unless and otherwise arranged and decided in writing with the company. He shall also ensure that no attachments are made against materials or work forming part of or for the use of the contractor. In all such cases, contractor shall protect and indemnify the company against any claim or liability arising from or based on the violation of any such laws, ordinances, regulations ,orders, decrees or attachments either by himself or by his employees,
15. It shall be contractor's sole responsibility to protect the public and his employees against accident from any cause and provide required safety equipments and shall indemnify, the company against any claims for damages for injury to the person or property resulting from any such accidents and shall, where the provisions of the workmen's compensation act apply, take steps to properly insure against any claims thereunder.
16. In the event of any accident in respect of which compensation may become payable under the workmen's compensation act VIII of 1923 whether by the contractor or by the company as principle employer, it shall be lawful for the company to retain out of monies due and payable to the contractor such sum or sums of money as may, in the opinion of the company shall be final in regard to all matter arising in this clause.
17. No work shall be done on Sundays or on other declared holidays of the company without the written permission of the company officer in charge of the work. The contractor shall comply with the provisions of the Factories Act Rules framed thereunder if the same are applicable.
18. The contractor shall keep his work place clean and safe to avoid injuries to men and damage to finished products / equipments.
19. On the occurrence of an accident, which results in the death of any of the workmen employed by the contractor or which is so serious as to be likely to result in the death of any such workmen, the contractor shall within 24 hours of the happening of such an accident intimate in writing to the company official in charge of the work.

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Signature of Contractor(s)

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20. The contractor shall indemnify the company against all losses or damages sustained by the company resulting directly or indirectly from his failure to give intimation in the manner aforesaid including the penalties or dues if any and become payable by the company, as a consequence of failure, the company to give notice under the workmen's compensation act or otherwise confirm to the provisions of the said act in regard to such accident.
21. The contractor shall ensure adherence to all statutory requirements applicable to BHARAT HEAVY ELECTRICALS LIMITED, RAMACHANDRA PURAM, HYDERABAD-502032.
22. The contractor shall ensure abidance by all the labour laws especially including contract labour (R & A) Act, payment of wages Act, workmen's compensation act, minimum wages Act ESI Act and Provident Fund Act as amended from time to time.
23. The contractor shall comply with provident Fund Act either through PF code allotted to him are by the code provided by PF Department to work Centers in the FACTORY /TOWNSHIP CIVIL OF B.H.E.L. Ramachandrapuram, Hyderabad -502032
24. Notwithstanding the clause, in case of any financial loss incurred by the company on account of contravention of the Provident Fund regulations or any regulations of rule touching the same by the contractor, the contractor shall submit an undertaking to indemnify the company to the extent of the loss incurred by the company.
25. The contractor should engage only those labourers who shall be more than 18(eighteen) years of age.
26. The contractor shall not resort to sub-contracting under any circumstances .If found at a later date, BHEL reserves the right to take action what ever action it deems fit , including cancellation of the contract.
27. Contractor shall issue "Employment Card" as per statute to all the labour and supervisors covered under the job work contract.
28. The contractor shall be responsible to settle any grievances of the labour deployed by him.
29. Whenever the term "CONTRACTOR" is used, it shall be understood to refer to the particular person, firm or corporation with whom an agreement has been made by the concerned company official for executing the work defined in the concerned agreement and for the purpose of instructions regarding compliance with contract conditions, it shall include the contractor's authorised agents, who are entrusted with the work by contractor.

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Signature of Contractor(s)

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30. The quantities mentioned in the agreement schedule are worked out from the relevant drawings in the company and may not be the actuals required for execution. The company does not expressly or by implication agree that the actual amount of the work to be done shall correspond there with, but reserves the right to increase or decrease the quantity of any class or portion of the work as he deems necessary.
31. All the works shall be carried out in accordance with the directions and to the satisfaction of the company official in accordance with the drawings, specifications and instructions. Supplementing or explaining the same as may from time to time shall be done by the company official.
32. For all modifications, omissions or additions to the approved drawings and specifications, the company shall issue revised plans or written instructions and no modifications, omission or addition shall be made unless at any time before completion of the work.
33. The company shall have the privilege of ordering modifications, omissions, or additions at any time before completion of the work.
34. All materials, articles, and workmanship shall be the best of their respective kinds for the class of work described in the contract specifications and schedule and materials to be obtained by the contractor shall be from sources approved by the company.
35. Sample of materials shall be furnished by the contractor at his expense to the company when called for before execution of any work.
36. The company shall have power to reject at any stage, any work which is considered to be defective in quality of materials or workmanship and shall not be debarred from rejecting wrong material by reasons of having previously passed them in an unworked condition. Any portion of the work or materials rejected or pronounced to be inferior or not in accordance with specifications shall be taken down and removed from the work site at the contractor's expenses.
37. The decision of the company shall be final and binding on the contractor on all technical questions which may arise in the contract with respect to material, workmanship, removal; of improper work, interpretation of the working drawings, specifications, notes, procedures etc.
38. The decision of the "Contract Signing Officer" or any officer deputed by him duly authorised on his behalf, in respect of the rate of progress and the quality of work or material shall be final.
39. Contracts shall be deemed to have included in his tender price of all the plant. Machinery and appliances required for the purpose of all operations connected to secure a satisfactory quality of work within the opinion of the company will ensure the completion of the work within the time specified.

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Signature of Contractor(s)

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40. If at any time, during the progress of work or any part of it such methods or equipment appear to the company official to be insufficient or inappropriate for ensuring the quality of work required or rate of progress, he may order the contractor to increase their efficiency or to improve their quality of work and the contractor shall comply with such order and on failure of which the company may take such action as it deems it fit to improve the quality of work of the company may take such action as it deems it fit to improve the quality of work or the rate of progress required from the contractor and all such actions taken by the company shall be at the cost and risk of the contractor.
41. It is open to the company to lend or supply to the contractor any tools, implement, material and machinery that are needed by the contractor, which in the opinion of the company is essential to improve the quality or progress of work. The contractor shall pay such deposit or charges that may be fixed or determined by the company for any such articles or machinery lent or hired to the contractor.
42. Any electric power required for contractor's machinery for the purpose of work shall be supplied by the company at the written request of the contractor at one point subject to the observance of rules and regulations of Electric board / company and charges there on shall be recovered from the contractor.
43. The contractor shall conform to the regulations and laws of central / state govt. or any local authority and that of the company with whose system the machinery is supposed to be connected.
44. All rubbish as it accumulates shall be removed from the site to the point of disposal as indicated from time to time by the company. If this is not adhered to, the company shall remove the scrap and recover the cost of these operations from the bills of the contractor.
45. Any sum due from the contractor on account of tools and plants, stores, or any other items provided by the company shall be deducted from the respective bill due to him.
46. In case of breach of any of the terms and conditions of the contract, a claim shall be lodged under the bank guarantee with the guarantor at the discretion of the competent authority of the company. On successful completion of the contract to the satisfaction of the company, the bank guarantee shall be released after due claim period.
47. In the event of any question or dispute or under this contract, the same shall be referred to a competent Authority in the company for sole arbitration and his decision shall be final and binding on the parties to the contract.
48. In case of any suit or other legal proceeding arising under this contract, the courts at Sangareddy (Medak Dist.) A.P only shall have the Jurisdiction.

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Signature of Contractor(s)

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49. The company reserves the right to enter into parallel agreement with one or more contractor at their direction.
50. Disputes, grievances between the contractor and his labour, will have to be settled by the contractor only.
51. The labour employed by the contractor, if found in abetting and fellow labour or contractors or any BHEL employee, the same shall be considered as an act of indiscipline. Such labourers shall be removed from the services of the contractor, on the advice of BHEL. Further the contractor shall initiate every necessary action in accordance with the relevant Laws, Rules & Regulations and enactments of State and Central Government.
52. Wherever, BHEL/COMPANY standards are mentioned, copies of which are enclosed shall be strictly followed.
53. Nothing contained in the contract agreement and its conditions shall be deemed to preclude or render inoperative the service of any notice, letter or other communication upon the contractor personally.
54. The decision of the "Contracting Signing Officer" shall be final and binding on the contractor on all technical questions which may arise touching the contract with respect to the quality of material, workmanship, removal of improper work, interpretation of the working drawings, specifications, notes, procedures etc.

II) Special Instructions:

1. If an individual makes the tender, it shall be signed with his full name and his address shall be furnished. If it is made by firm, it shall be signed with the co-partnership name by a member of the firm, who shall also sign his own name, also furnish the name and corporation, it shall be signed by a duly authorised officer who shall produce with the tender, satisfactory evidence of his authorisation. Such tendering corporation / firm is required to furnish evidence of its existence along with bid.
2. The EMD will be refunded to the unsuccessful tenderers on application after rejection of the tender is intimated. The earnest money will be retained in the case of the successful tenderers and either of the cases will not carry any interest. It will be dealt with as provided in the conditions attached to the tender.
3. Whenever a tender is to be accepted, the tenderer, whose tender is under consideration, shall attend the office of "Office Inviting the Tender" on the date fixed by written intimation to him. He shall forthwith, upon intimation being given to him by the "Officer Inviting the Tender" [Ex. Sr.DGM (FCD)] for acceptance of his tender, complete the execution of the agreement by signing all documents connected therewith. Failure to do so and not to commence the work within one month from the date of intimation shall entail forfeiture of the earnest money.

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Signature of Contractor(s)

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4. Tenderers shall peruse carefully the instructions and directions to parties in tendering and the conditions of the agreement and all other relevant documents before tendering the rates for the work. The approximate quantity of work to be executed under each class is given in the schedule. The quantities are given with a view to enable tenderer to quote his overall rate for each class of work in the tender form and for an uniform comparison of tenderers. It shall be definitely understood that BHEL does not accept any responsibilities for the correctness or completeness of this schedule and that the schedule is liable to alterations by omission deductions, or additions at the discretion of accepting authority.
5. The tenderer shall keep the offer valid for a period of 120 days from the date of opening of tender. It is being understood that the tender documents have been sold / issued to the tenderer and the tenderer is being permitted to tender in consideration of the stipulation on his part that after submitting the tender, he will not recall his offer or modify the terms and conditions thereof in a manner not acceptable to the "Officer Inviting the Tender" Should the tenderer fail to observe or comply with the foregoing stipulation, the EMD shall be forfeited.
6. Tenderers have to quote their rates in the tender schedule legibly written in figures and words and those not submitted in proper form are liable for rejection.
7. The submission of tender shall be strictly in accordance with the terms and conditions stipulated in this tender notice. No counter conditions will be acceptable or valid.
8. The tenderers must satisfy themselves by personal study and examination of the drawings / specifications furnished and understand thoroughly the scope of proposed work in detail and all conditions affecting the work before entering into the contract. There shall be no dispute/ complaint or any nature regarding the scope of work and interpretation of specifications or any misunderstanding with regard to nature or omission of the work to be done nor shall any application for compensation in terms of time and only shall be accepted by BHEL in regard to the above.
9. Contractor shall be deemed to have included in his tender price of all the plant, machinery, all taxes, duties applicable and appliance required for the purpose of all operations connected with the work embraced under the contract to secure a satisfactory quality of work and rate of progress which in the opinion of the "Contract Signing Officer" will ensure the completion of the work within the time specified.

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Signature of Contractor(s)

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10. The contractor has to produce the bank guarantee in the prescribed proforma valid for the contract period for a value calculated at the rates mentioned towards security deposit. The claim period under the guarantee shall be valid for six months after expiry of the contract.
11. This is a time bound contract for period mentioned, and does not envisage any escalation of price.
12. The rates quoted by the contractor shall be firm for the contract period. There shall be no revision in contract rates due to increase in any statutory levies during the period of the contract and this increase shall be absorbed by the contractor himself in full.

SIG. OF CONTRACTOR(S)

ACCEPTING AUTHORITY

BHARAT HEAVY ELECTRICALS LIMITED
RAMACHANDRAPURAM : : HYDERABAD – 32.

(SPECIAL CONDITIONS – SAFETY)

1. The following are a few safety measures suggested while carrying the work. However all the items of work should be carried out in safe working manner taking all precautions.
2. Proper and necessary precautions shall have to be taken wherever the work involves breaking of reinforced cement concrete slab and dismantling of brick work. These items of work will have to be carried in the presence of the Engineer-in-charge.
3. Proper and necessary scaffolding is to be erected wherever dismantling of brick work is carried out at height more than 1.80 M
4. Reinforced cement concrete slab should be dismantled parallel to the main reinforcement, each piece not exceeding 300mm wide. Under no circumstances the supporting wall shall be cut or removed until the supporting slab is demolished.
5. The contractor shall keep supply all safety equipment like safety boots, goggles, helmets and safety belts, to all the workers.
6. The contractor shall keep a supervisor always at work site.
7. Power shut down shall be taken before commencement of the work wherever power cables are running.
8. Proper and necessary scaffolding and ladders are to be used for carrying out all types of works.

CONTRACTOR(S)

ISSUING/ACCEPTING AUTHORITY

ANNEXURE - C**CONTRACTOR'S OBLIGATIONS****I) CONTRACTUAL:**

- a) Contractor shall decide the number of employees to be deployed for execution of the work awarded to him and he or his authorized representative will be solely entitled to dictate such workers about the manner of carrying out the work as per the prescribed specifications and quality plan.
- b) Contractor shall supervise the work allotted to him and to be carried out by his employees.
- c) Contractor to ensure that the employees deployed in the premises of BHEL are physically and mentally fit and do not have any criminal record. Such employees should possess requisite skill, proficiency, qualification, experience etc.
- d) Contractor to maintain appropriate records of his employees deployed to carry out the job(s).
- e) Contractor should issue appropriate letters to his employees.
- f) Contractor to provide employment card/identity card with photograph duly verified and attested by the Contractor to his employees. Contractor to indicate the name of the proprietary/partnership firm/company, place of work, contract number and duration of validity of card.
- g) Contractor will be responsible for the good conduct of his employees. In case of any misconduct/ misbehavior by any employee, the contractor will replace such employee(s) immediately.
- h) Contractor will ensure that the job is executed through his employees on his rolls and under no circumstances the contractor will deploy any casual employee to carry out the job nor shall sub-contract the job without prior written permission.
- i) Contractor will keep watch on his employees and he will be liable for any pilferage / loss to BHEL due to acts of omission and commission by his employees. Similarly, liability for any compensation to outsiders on account of any act of omission and commission by the employees deployed by the contractor shall lie exclusively with him.
- j) Contractor to provide safety appliances and safety shoes to his employees. The contractor shall be responsible for enforcing all safety regulations as applicable.
- k) The contractor has to provide a distinct uniform different from BHEL employees. The uniform should have logo of the contractors firm / company. The uniform shall be kept in neat, tidy and wearable condition. Whenever necessary, the cap shall be integral part of the uniform.

Signature of Contractor(s)

- l) Contractor to ensure that all precautions are taken for safety of his employees and equipments.
- m) In the event of termination of contract for any reason whatsoever, the contractor shall withdraw all his employees from the establishment of BHEL. In case contractor decides to terminate services of his employees, he should settle all terminal dues including retrenchment compensation.
- n) Contractor shall provide to his employees all tools, tackles and equipment's and maintain the same to carry out the job under the contract at his cost and if necessary contractor may take insurance policy of his men, material, equipment's and tools and tackles.
- o) Contractor shall provide safety appliances and maintain the same at his own cost which may be required under the statute or otherwise.
- p) Contractor shall provide material at his cost mentioned in the contract to his employees for carrying out the job.

II) TOWARDS STATUTORY LIABILITY

- a) All statutory requirements under Minimum Wages Act, 1948, Payment of Wages Act, 1936, Workmen Compensation Act. 1923, EPF & MP Act, 1952, Payment of Gratuity Act, 1972, ESI Act, 1948. The Contract Labour (R&A) Act, 1970, Payment of Bonus Act, 1965, Income Tax Act, Service Tax Act and all other applicable Acts shall be complied with by the contractor.
- b) Contractor shall comply with all statutory requirements, rules, regulations, notifications in relation to employment of his employees issued from time by the concerned authorities.
- c) Contractor shall ensure payment of statutory prescribed minimum wages as applicable from time to time in the presence of authorized representative of BHEL and maintain proper records of their timely disbursements. These records need to be preserved for a period of at 3 years and should be made available even after the contract is over for any verification by the statutory authorities / BHEL authorities.
- d) Contractor to provide PF pass book to his employees and ensure payment of PF, EDLI, pension dues under EPF & MP Act, 1952 to the PRFC.
- e) Contractor shall ensure payment of ESI contribution under ESI Act, 1948 and provide ESI membership No. / card of each employee.
- f) Contractor shall produce proof of deductions as well as remittances of PF, EDLI, Pension, ESI contribution, administrative charges etc. wherever applicable and shall maintain proper records. Contractor to issue wage slips to his employees.

Signature of Contractor(s)

- g) Contractor shall furnish proper returns to the concerned statutory authorities and provide a copy of the same to BHEL.
- h) Contractor shall be solely responsible for non payment /delayed payment of wages / DA, contributions under EPF & MP Act, ESI Act etc.
- i) In case the contractor fails to make payment of wages to his employees or remittance of contribution to the concerned authorities, the security deposit / other dues / running bills under the contract can be utilized by BHEL to discharge the liability of the contractor.
- j) Contractor shall indemnify BHEL against all claims and losses under various Labour Laws, statutes or any civil or criminal law in connection with employees deployed by him.
- k) The liability for any compensation on account of injury sustained by an employee of the contractor will be exclusively that of the contractor.
- L) Contractor to obtain insurance cover for his employees / equipment / tools and tackles etc. and take third party risk insurance coverage at his own cost. BHEL shall not be responsible for any loss, damage, and pilferage of property and / or his employees.
- m) Contractor should have independent code numbers / exemptions under EPF & MP Act, 1952 and ESI Act, 1948 and shall cover his employees under the said codes.
- n) Payment of bonus under the payment of Bonus Act, Payment of gratuity under the Gratuity Act, and retrenchment compensation under Act will be the sole responsibility of the contractor.
- o) Over and above the daily wage rate, payment shall be made for leave with wages.
- p) Contractor shall observe Provisions of the Factories Act in respect of working hours, holidays, rest intervals, leave and overtime to his employee. No work shall be done on second/third shift, overtime, Sundays or on other declared hoildays without written permission.
- q) In case a contractor employs women as employee he will discharge his obligation under law in respect of such women workers such prohibition of engaging them during night-hours, prohibition of employing them for more than 9 hours per day, provision of crèche facility, grant of maternity leave as per rules etc.
- r) Contractor shall be responsible for making payment of wages before expiry of 7 days from the last day of wage period and to ensure disbursement of wages in the presence of the authorities representative of contract operating division who shall record under his signature at the end of entries in the Register of wages.
- s) Contractor to obtain license under CL(R&A) Act, 1970.

CONTRACTOR(S)

ACCEPTING AUTHORITY

ANNEXURE-D**GENERAL TERMS & CONDITIONS**

- 1) BHEL shall have the privity of the contract with the contractor only and will give instructions to the contractor or his authorized representatives. BHEL will have nothing to do or be concerned with the employment of employees working for the contractor. The relationship between BHEL and the Contractor will be that of independent entities and nothing herein contained will amount to joint venture, partnership or an employer-employee relationship.
- 2) The contractor shall maintain regular contact with the designated employee(s) of BHEL and will interact on matters relating to the work awarded under this contract.
- 3) In case the contractor does not carry out the Contractual / Statutory obligations or the services rendered by him are found to be unsatisfactory, BHEL shall bring the same to his notice and he will be obliged to discharge the obligations and rectify the deficiency/ anomaly within three days time failing which, BHEL reserves the right to terminate the contract without assigning any reason whatsoever. In such an event, no damages will be payable for short closure of the contract.
- 4) The contractor shall deposit an amount of Rs. _____ as security with BHEL in the form of pay order / bank guarantee / FDI in the name of contractor A/c.- BHEL duly discharged on the back. Alternatively, the amount of security deposit can be adjusted partly from EMD and balance amount from subsequent bills. This security deposit shall be liable to be returned to the contractor after termination of the contract or at the end of it, subject to deduction on account of company dues, non-deposit of statutory dues etc. No interest shall be payable on the security deposit.
- 5) The decision of BHEL regarding interpretation of any terms and conditions set forth in this agreement shall be final and binding on the contractor.
- 6) Any matter arising out of or in connection with the agreement shall be under jurisdiction of SangaReddy Court.
- 7) Notwithstanding anything contained in this Agreement, the contract may be terminated by BHEL without assigning any reason thereof by giving a notice of 30 days to the contractor.
- 8) The contract will commence on _____ date and will remain valid for a period of _____ year(s) till _____ date.
The parties reserves the right to extend the contract on mutually agreed terms and conditions.

Signature of Contractor(s)

- 9) All disputes arising in connection with the contract shall be settled by mutual consultation. If no agreement is reached the dispute shall be settled in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the rules made there under. The dispute shall be referred for arbitration to any arbitrator to be appointed by the Head of the unit. The award of the arbitrator shall be final and binding on both the parties. The venue of the Arbitration shall be Hyderabad in India. The Award to be given by the Arbitration shall be speaking award. All questions, disputes, differences arising under, out of or in connection with this contract shall be to the exclusive jurisdiction of Sanga Reddy Courts.

Guidelines and statutory payments to Contract work force for submitting tenders for Civil Works as per Circular issued by BHEL.

Daily wage rate is exclusive of Holiday and Leave Wage.
Wage rates as on date i.e 01.10.2010

U S W	: Rs. 314.65 per day	Inclusive of weekly off.
S S W	: Rs. 344.30	" "
S W	: Rs. 372.42	" "

i) Leaves and Holidays

+ 12 days paid holidays / per year
+ 18 paid leaves / per year.

ii) P F and E S I contributions wages

PF @ 13.61 % and ESI @ 4.75 % of basic wages should be contributed by the contractor on above daily wages.

The contractor's are advised to quote the rates considering the above statutory payments and also future increase in wage rate to contract work force.

CONTRACTOR(S)

ISSUING/ACCEPTING AUTHORITY

BHARAT HEAVY ELECTRICALS LIMITED
RAMACHNADRAPURAM : : HYDERABAD – 32.
SCHEDULE : “B”

ISSUE OF STORES TO THE CONTRACTOR

The following materials will be issued to the contractor unless otherwise specified in any term in the SCHEDULE ‘A’ by BHEL.

Sl. No.	Particulars	Issue Rate Rs.		Place of issue
1	Cement in Non Returnable 50 Kg bags.	One Bag	Rs.225/-	At BHEL central stores at Ramachandrapuram or any other place specified within the premises.
2	Mild steel Rounds & Tor steel all Diameters.	One M T	Rs.31,750/-	
				-do-

FREE ISSUES: Oxygen gas, acetylene, compressed air, raw structural steel, electrodes for fabrication, paints excluding red oxide primer at BHEL stores.

- a) It will be the responsibility of the contractor to submit his demands for stores in writing at least 7 days in advance of the actual requirements.
- b) Issue of all stores in subject to the extent of their availability at the place of issue noted above. The contractor should bring any of the materials shown above in case the BHEL desire so. The contractor shall not be entitled to any claim or compensation for non-supply of the materials, for delay in the supply of stores under any circumstances.
- c) The materials will be issued only during the working hours. The contractors should have to transport them to site of work at his own cost as soon as there are issued to him.
- d) Where cost of stores issued is recoverable from the contractors, recoveries will be made from the running bills for the gross quality issued and not for the net measured quantity of finished work.
- e) The contractor shall from time to time, render proper account of all materials issued to him by BHEL. If he fails to do so, no further issues of the materials will be made to him and he shall be held responsible for any delay in the execution of the work which may occur on this account.
- f) Where doors, windows, pipes, fittings, specials, glass, paints or others items are issued free of cost to the contractor, the contractor will have to make good at his own cost any loss or damage to part or whole of the items issued to him as above.

SIGNATURE OF CONTRACTOR(S)

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- g) All surplus material in good condition whether issued free of cost or on cost recovery basis and which are not returned to the BHEL Central Stores and also quantities of materials consumed in excess of the actual requirements shall be charged for at punitive rates which will be 100% more than the issue rates of BHEL. The decision of the Senior Engineer / Civil as to the extend to which the materials have been rendered surplus or have been consumed in excess of the actual requirements shall be final and binding on the contractor.

h) CEMENT

For the purpose of determining the actual requirement of cement, the theoretical consumption of cement as per Annexure "D" of General Conditions of contract shall be considered by the Senior Engineer / Civil.

The contractor shall construct store shed for storing cement, at his own cost and required site will be shown by the engineer-in-charge. Contractor shall store cement as directed by the Engineer-in-charge and shall maintain the record by entering day to day consumption and receipts. The contractors shall dismantle the temporary shed as soon as completion of work. Final bill will be forwarded subject to above conditions and certification by stores-in charge of factory civil department.

i) Reinforcement STEEL

Reinforcement Steel will be issued at lengths as stocked by the Bharat Heavy Electricals Limited. The surplus steel is represented by the difference between the quantity received and the quantity required and utilised on the work with an allowance of 5% towards scrap. The scrap will be the property of the contractor, The contractor will be responsible for the removal from the site in time as directed by the Senior Engineer / Civil. The cut pieces and surplus returned shall not be shorted than three meters in length.

j) STRUCTURAL STEEL

The structural steel will be issued by BHEL at FREE of cost from BHEL stores. However agency has to make necessary arrangements for transporting the material from BHEL stores including loading/unloading etc., The surplus steel is represented by the difference between the quantity received and the quantity required and utilised on the work with an allowance of 5% towards scrap. The scrap is the property of BHEL and the agency has to return to stores.

SIGNATURE OF CONTRACTOR(S) ACCEPTING AUTHORITY.

BHARAT HEAVY ELECTRICALS LIMITED
RAMACHNADRAPURAM : : HYDERABAD – 32.

SCHEDULE : “ C ”

SERVICES : VIZ., WATER AND ELECTRICITY TO THE SITE OF CONTRACTOR.

1. **WATER:**
Water required for construction purpose shall be supplied by Bharat Heavy Electricals Limited and chat Rs.15.00 per 1,000 liters. The supply will be made at a convenient point to the determined by the Senior Engineer (Civil) and Contractor has to make his own arrangements to distribute the water to places where required including cost of providing and fixing water meters. The charges for consumption of water will be as under, where water meters could not be provided by the contractor and prior permissions for the same has to be obtained in writing from the Senior Engineer / Civil.
- i)

On the total value of periodical maintenance items of building

.....

0.25%

ii)

On the total value of other Civil works

.....

0.50%

iii)

On the total value of road works

.....

0.75%
- Note: In respect of items (i) & (ii), only items where water is consumed on the work, will be considered for arriving at the total value.

In respect of item (iii) only the value of work on picking metal, earth work.

Asphalting will be excluded from the total value of road works.
2. **ELECTRICITY:**
Electricity current if required will be supplied at a convenient metered point to be determined by the Senior Engineer. Any extension required to the different work sites will have to be arranged by the Contractor him self. Energy consumed will be metered and charges at Rs. 4.95 (Rupees Four & Paise Ninety five only) per unit. Where meter could not be provided. Current charges will be recovered at 70 units per each Tonne of structural steel fabrication work done.

SIGNATURE OF CONTRACTOR(S)

ACCEPTING AUTHORITY.

SPECIAL CONDITIONS

1. Time is the essence of contract and the specified time of completion is up to **4 months** which will be reckoned from the date of commencement of work.
2. These special conditions supplement the conditions to tenders and contracts and the General conditions of contract and form part of the contract documents. Where these special conditions are at variance with the General conditions of contract, these special conditions shall prevail.
3. All rates quoted shall be finished work in site inclusive of all leads, lifts and other incidental charges and those in general conditions.
4. Before quoting his rates of the work, the tenderer shall inspect the site of work and the quarries from which various materials are to be brought and should satisfy himself about the nature and scope of work to be executed and quality of materials procurable from the quarries. In every case the materials shall confirm to the relevant APSS and shall be got approved by the Engineer-in-charge before they are used on the work. The Bharat Heavy Electricals Limited will not, however after acceptance of a contract rate, pay extra charges for any other reason, in case the contractor is found later on to have misjudged the nature and scope of the work and also the availability of materials.
5. The tenderer is not allowed to alter the specifications of the unit of work noted in the Schedule-A For the sake of uniformity in comparison of tenders, the tenders should not add any conditions of their own. Tenders not complying with these conditions are liable to be rejected.
6. The issues of materials are governed by the conditions specified in Schedule-B. All other materials shall be supplied by the contractor himself and the rates for the relevant items are inclusive of all such supplies.
7. The cement concrete work plain and reinforced shall be executed as per IS: 456 (latest). A tentative sketch/drawing of work is available in the office, which is intended to give a general idea of the work to be executed and is liable for modifications during the actual execution based on the designs prepared and approved by the Competent Authority.
8. The rate quoted for Reinforced Cement Concrete items shall include smooth finishing of exposed faces. The top surfaces of roof slab shall be laid to specified slope and mortar that comes to surface due to vibrations shall be trawled so as to obtain smooth and even surface.
9. The paint to be used shall be of standard make and shall be approved by the Engineer-in-charge before applying.

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SIGNATURE OF CONTRACTOR(S)

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10. The tenderer should specify the plant and machinery such as pan mixer, vibrators, steel shuttering etc., that he possesses and is going to use them on the work.
11. The Andhra Pradesh Standard Specification/ I.S. Specifications, those in Schedule-A shall be for all items of works. Wherever there is difference between the A.P.S.S. and I. S. Specifications , the later shall prevail.
12. The Sr. DGM (Fy. Civil) reserves the right to deviate either by addition or by deduction from the schedule of items of work given in the tender document after awarding the work.
13. In case of any difference between agreement wording and detailed drawings the interpretation of the Sr. DGM (Fy. Civil) shall be final and binding on the contractor.
14. The final acceptance of work in all items are subject proper behavior after testing regardless of whether the items are paid for or not.
15. All debris and surplus materials shall be cleared from the site a and when directed by the Engineer-in-charge. Any temporary structure/stores made by the contractor for the work shall be demolished and site cleared before payment of final bill.

SIGNATURE OF CONTRACTORS(S)

ACCEPTING AUTHORITY.

ANNEXURE – II

General information to the tenderers.

1. Necessary land shall be shown for the construction of site office and work shop only.
2. For arbitration clause 70 of BHEL general conditions of contract shall apply.
3. Clauses 60 and 61 of BHEL general conditions of contract shall apply.
4. No escalation of rates on the increase in the cost of materials, labour, diesel or petrol etc., is permitted.

Directions for submission of tender.

- 5) It is requested to go through the general conditions of contract of BHEL. a copy of which is uploaded in BHEL web.
- 6) No escalation of rate is permitted. The rates shall be firm and valid until the work is completed in all respects.
- 7) The tender should submitted along with required earnest money deposit on or before the specified date and time. Tender without earnest money deposit will not be considered.
- 8) For further information / clarifications if any it is advised to contact the office of the Sr. DGM/Planning-Fy. Civil during working days between 8.00 Hrs and 14.00 Hrs.

CONTRACTOR (S)

ACCEPTING AUTHORITY

ANNEXURE – III

The following Indian Standards codes shall be followed.

I. Steel work:

1. I.S 814 – 1974 : Part – I Specifications for covered electrodes for metal arc. Welding of structural steel – for welding products other than sheets.
Part II for welding sheets.
2. I.S 818 – 1968 : Code of practice for safety and health requirements
in electric and gas welding and cutting operations.
3. I.S 1852 – 1973 : Specifications for rolling and cutting tolerances for hot rolled and steel products.
4. I.S 816 – 1969 : Code of practice for use of metal arc welding for general construction in mild steel.
5. I.S 360 – 1973 : Method of testing fusion welded joints and weld metal in steel.
6. I.S 102 – 1992 : Ready mixed paint, brushing red lead non silting priming.
7. I.S 1363 – 1957 : Black hexagonal bolts, nuts, etc.
8. I.S 813 – 1961 : Scheme of symbol for welding.

II. Roof covering:

1. I.S code 3007 – 1964 : Code of practice for laying of corrugated sheets.

III. Design codes:

1. I.S 800 – 1975
2. I.S 875 – 1964
3. I.S 456 – 1978

IV. Any relevant I.S code of practices.

CONTRACTOR (S)

ACCEPTING AUTHORITY

DETAILED SPECIFICATIONS FOR EXECUTION OF WORK

1. The work site is situated near Ramachandrapuram, about 3 Kilometres of the 17th Mile stone, on the Hyderabad- Mumbai National High-way, Andhra Pradesh. The lay out of the Factory is available in the office.
2. The work under this contract comprises of preparation of necessary shop drawings, fabrication of steel work, testing, transporting and erection of steel work over prepared foundations, painting of steel work and erection of cloaking items as detailed in Schedule 'A'.
3. Fabrication of steel work shall be done in accordance with shop working drawings to be prepared by the Contractor on the basis of drawings furnished by Bharat Heavy Electricals Limited.
4. Further particulars relating to design and fabrication or clarifications, if any, may be obtained on reference to the Sr. Dy. General Manager (Civil Factory).
5. Rate to be quoted against item 1 of Schedule 'A' covers the fabrication of all the items and shall be an over all average rates. The quantities given are approximate. The actual quantities for payment shall, however, be as per drawing office Dispatch Lists accompanying the working drawings, to be prepared by the Contractor and approved by BHEL
6. The Contractor shall prepare detailed working drawings in respect of each item of fabrication and a set of drawings shown general arrangement and erection marks based on the designs furnished by Bharat Heavy Electrical Limited. It should be noted that, the details to be furnished by Bharat Heavy Electricals Limited, give only the basic Design sections and the forces and moments. The contractor shall design all the shop and site connections in welded, revitted or bolted, construction as specified including splices and prepare all the necessary working drawings. Each working drawing (or shop drawing) on completion shall be submitted to the Sr. Dy. General Manager (Civil Factory) for approval. Clarifications if any to enable preparations of working drawings can be obtained from Bharat Heavy Electricals Limited. The contractor shall furnish to Bharat Heavy Electricals Limited, six copies of approved drawings on ammonia paper.
7. Each shop drawing for approval should be accompanied by a Drawing Office Dispatch List (abbreviated D.O.D.L) to be prepared by the Contractor and approved by the Bharat Heavy Electricals Limited. These shall contain the Drawing Number, the designation of items, Number of pieces, dimensions and the calculated weights based on standard section weights without deduction for rivet and bolt holes and skew cuts. These D.O.D. lists shall be the basis for payment.

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Signature of Contractor(s)

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8. Fabrication shall generally be in accordance with IS 800-1962 entitled “Code of practice for use of structural steel in general building construction”. Welding shall be in accordance with IS 816-1956 entitled “Code of practice for use of metal are welding for general construction in mild steel”. Any specification not covered by the relevant Indian Standards Codes of practice shall be in accordance with the relevant B.S.S. or in its absence in accordance with well established Standards Engineering Practices.
9. As the designs include extensive welded fabrication, it is essential that the fabricator should have a well equipped workshop and equipment such as Automatic and Semi-automatic welding sets etc., and also qualified welders possessing operator qualification as required by I.S. 817-1957.
10. All Fabricated steel work shall be two coats given coat of Red Oxide paint as per relevant I.S. specifications before dispatch if assembled at shop or after assembly at site as the case may be.
11. The contractor shall stack all items of fabricated steel work at approved locations with due regard to the sequence of erection with consultation of the Sr. DGM (Fy. Civil)
12. Setting out and erection of steel work.
 - a. Erection of steel work shall generally be in accordance with the provisions of IS 800- 1962
 - b. Site assembly Members on the ground either by welding or riveting, as specified in the drawings, shall be inspected thoroughly before erection by Sr. DGM (Fy. Civil)
 - c. Proper plant such as Derrick Cranes, lifting trackless, wire ropes, chain pulleys, Jacks, Winches etc. as necessary shall be used, Care shall be taken to see that ropes in use are always in good condition.
 - d. Frames shall be lifted at such points that they are not liable to buckle or deform. Trusses shall be lifted only at nodes.
 - e. Temporary bracings shall, if required, be provided at no extra cost to relieve erection stresses.
 - f. In the case of Trusses, Roof girders and Trussed girders, all or at least a majority of the purlins and wind brackings shall be placed simultaneously with them. The columns shall be erected truly plumb on screed bars over the prepared pedestals true to centre, level and gauge of the Travelling Cranes. Alignment of columns and crane girders shall be done very carefully using high precision survey equipment and necessary adjustments made to suit. As the supply of all Block bolts and nuts required for site connections is the responsibility of the contractor, he shall ensure that there are sufficient quantities of bolts and nuts to commence erection.

Signature of Contractor(s)

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- g. All damages to steel work caused during transit or otherwise shall be made good before erection without any extra cost to Bharat Heavy Electricals Limited.
- h. The space under the column bases (25 mm thickness) shall be pressure grouted in general with cement grout 1:1 after completion of alignment including proper tightening of top nuts of H.D. bolts already provided. The contractor shall ensure that clearances for expansion are provided as specified in the Drawings.

13. Painting after erection:

All steel work shall be given two coats of painting after erection above the priming coat. The columns, crane girders, diaphragms steps and portal bracings shall be painted with two coats of approved paint as per I.S. 5-1955 paint. The rest of the steel structure above crane girder level shall be painted with two coats of aluminium paint satisfying standards I.S. 165-1950.

14. ERECTION OF CLOAKING ITEMS:

Erection of Asbestos Cement Corrugated/Semi-Corrugated, sheets, North light curves, Barge Boards and other accessories shall be done generally in accordance with the instructions given in the 'Code of Practice' of M/s. Asbestos Cement Limited.

- 15. The rain water pipes and accessories of P.V.C pipes shall be erected by means of suitable rain water pipe Clamps (which forms part of steel work) as per details shown in the drawings. Jointing shall be done using approved solvent. The jointing of pipes shall be done as per relevant I.S.S.
- 16. The patent aluminium glazing bars and accessories shall be fixed according to instructions of the firm from whom the patent glazing bars are obtained.
- 17. The flashings shall be cut and bent as per drawings, and fixed as instructed by the Sr. DGM.

CONTRACTOR (S)

ACCEPTING AUTHORITY

SPECIAL CONDITIONS OF CONTRACT FOR FABRICATION

SUPPLY AND ERECTION OF STRUCTURES

1. DELIVERY, OCTROI DUTIES ETC.

The fabrication is to be carried out within the Bharat Heavy Electricals Limited premises, to be earmarked for the purpose. Rates for fabrication shall be accordingly quoted.

2. DETAILS OF AUXILIARIES AND CONTRACTORS DRAWINGS.

- a. Within a reasonable time from the date of agreement, the contractor shall provide Sr. DGM (Civil- Factory), with details of all the auxiliaries to be supplied and also of there nor forming part of the Contractor's supply, but essential for the safe and satisfactory erection of the structures in terms of the contract.
- b. Within a fortnight from the date of settlement of major technical details of the structures, the Contractor shall submit to the Sr. DGM (Civil-Factory) a preliminary list of all the drawings with their respective identification numbers, titles, and expected date of submission of this list shall be amended or extended as necessary during the progress of the work, under the contract.
- c. All titles, notes and instructions on the drawings shall be in English.
- d. If any dimensions figured upon a drawing or a plan differ from those obtained by scaling the drawings or plan, the dimensions as figured upon the drawing or plan shall be taken as correct.

3. PROGRESS REPORTS.

Fortnightly progress reports shall be submitted, by the contractor. These shall give in detail, the position of receipt of raw materials at the Fabricator's yard and of fabrication.

4. DRAWINGS:

- a. Before proceeding with fabrication, the contractor shall submit for approval, the necessary shop drawings in duplicate of the structure necessary to demonstrate fully that all parts of the structures to be furnished will conform with the provisions and intent of the contract.
- b. One copy of the above drawings will be returned to the Contractor marked 'Approved', 'Approved with corrections indicated' or 'examined and returned for correction'. Six prints of each drawing on ammonia paper as approved shall then be submitted to the Sr. DGM (Civil- Factory), Bharat Heavy Electricals Limited.

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Signature of Contractor(s)

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- c. If minor revisions are made after a drawing has been approved, the Contractor shall furnish six additional prints subsequent to each revision. No major revision affecting the design shall be made after a drawing has been "Approved" without the prior approval of the Sr. DGM (Civil-Factory).

Every revision shall be shown number, date and subject in a revision block.

- d. Any construction work done prior to the approval of drawings by the Sr. DGM (Civil- Factory) shall be at the contractor's risk. The contractor shall make any changes in the design which are necessary to make the structure confirm to the provisions and intent of the contract, without additional cost of BHARAT HEAVY ELECTRICALS LIMITED, APPROVAL OF THE PART OF THE CONTRACTOR'S DRAWING SHALL NOT BE HELD TO RELIEVE THE CONTRACTOR OF ANY PART OF THE CONTRACTORS OBLIGATION TO MEET ALL OF THE RECRUITMENTS OF THE CONTRACT OR OF THE RESPONSIBILITY FOR THE CORRECTNESS OF THE CONTRACTOR'S DRAWINGS.
- e. Upon approval by the Engineer the drawings shall become the contract drawings and there after the contractor shall not depart from them in any way whatsoever, except by the written permission of the Sr. DGM(Civil-Factory)
- f. The detailed drawings of the structure furnished shall indicate the part numbers of the different components constituting the whole structure. The drawings shall also include a schedule of parts for each complete unit giving the part number with reference to the drawings and total number of each part.

5. ACCEPTING OF FABRICATED STEEL FOR DISPATCH:

When all the tests to be performed in the Contractor's or other premises under the terms of this contract have been successfully carried out the material / structure will be accepted, forthwith and the Inspecting Engineer or his duly authorized representative will issue an acceptance certificate, upon receipt of which the material / structure shall be taken out for erection.

6. TESTS AT SITE

In all cases where the contract provides for tests at site, the contractor, except where otherwise specified, shall provide, free of charge, such labour, materials, apparatus and instruments as may be required from time to time, and as may reasonable be demanded to carry out such tests on the materials or workmanship in accordance the contract.

Signature of Contractor(s)

7. TESTS ON COMPLETION:

Where possible, all tests shall be carried out before dispatch from fabricator's works at the contractor cost, should however, it become necessary for the final tests as to the performance and guarantees to be held over, until the structures are erected at site, they shall be carried out in the presence of the contractor's representatives, within one month of the completion of erection or such time as may be considered reasonable by Bharat Heavy Electricals Limited. Should the result of these tests not come within the margin specified, the test shall if required, be repeated, within one month from the date of the structure is again ready for test, and the contractor shall repay the Bharat Heavy Electrical Limited all reasonable expenses which may be put to by such re-tests. Trial assemblies shall be conducted at the site as and when required.

8. ERECTION OF DEFECTIVES STRUCTURE OR PORTION THEREOF

- a. If the completed structure, or any portion thereof, before it is taken under clause 1 below, be found defective or fails to fulfil the requirements of the contract, the Sr. DGM (Civil-Factory) shall give the Contractor notice setting forth particulars of such defects or failure, and the Contractor shall forthwith make the defective portions good, or alter the same to make it comply with the requirements of the Contract. Should he fail to do so within a reasonable time, Bharat Heavy Electricals Limited may reject and replace at the risk and cost of the Contractor the whole or any portion of the structure, as the case may be, which is defective or fails to fulfill the requirements of the contract.
- b. In the event of such rejection, Bharat Heavy Electricals Limited shall be entitled to the use of the structure in a reasonable and proper manner for a time reasonably sufficient to enable them to obtain other replacement of structure.
Nothing in this clause shall be deemed to deprive of Bharat Heavy Electricals Limited, or effect in any way their rights under the contract which they may otherwise have in respect of such defects or deficiencies or in any way relieve the Contractor of his obligations under the Contract.

9. TAKING OVER:

The structure on the site shall be deemed to have been taken over by the Bharat Heavy Electricals Limited when the Sr. DGM (Civil-Factory) will have certified in writing that the structure has satisfied the contract conditions and such certificate shall not unreasonably be with-held, nor shall delay the issue of such certificate solely on account of minor omissions or defects, which do not affect its functional utility without any serious risk to the structure, provided always that the contractor undertakes to make good such omissions and defects at the earliest possible moment. Such certificates, however, shall be deemed to be on account and shall in no way release the Contractor from his liabilities and responsibilities in respect of such structure.

Signature of Contractor(s)

10. MAINTENANCE AND THE GUARANTEE:

The contractor shall give the following guarantee in respect of the structure to be supplied and erected by him.

- a. All structure shall be free from any defects due to faulty materials, structural detailing and / or workmanship or improper packing.
- b. The above guarantees/shall be valid for a period of 12 (Twelve) calendar months after the date of final taking over by the Bharat Heavy Electricals Limited. During this period, the Contractor's liability shall be limited to the replacement immediately, or any of defective parts that may develop in structures or part of a structure of his own manufacturer those of his sub-contractors under the conditions provided for by the Contract, and arising solely from structural detailing, workmanship or improper packing provided always that such defective parts as are not repairable at site, and not essential in the meantime in the use of the structure, are returned to the contractor's works unless otherwise arranged.
- c. All such replacement of defective parts mentioned above shall be made free of cost at site by the contractor and the return of the defective parts to the contractor's works shall be the contractor's responsibility and shall be made at his expenses. Bharat Heavy Electricals Limited, will, however, render such assistance in this matter as will expedite the same. In the case of the defective parts not repairable at site but essential in mean time for the use of structure, the Contractor shall replace at site free of cost to Bharat Heavy Electrical Limited before the said defective parts are removed to his works.
- d. If it becomes necessary for the contractor to replace or renew any defective portions of the structure under this clause, the provisions of this clause shall apply to the portions of the structure so replaced or renewed until the expiration of six calendar months from the date of renew until the expiration of six calendar months from the date of such replacement or renewal or until the end of the above of the above mentioned period of twelve months whichever is later. If any defects be not remedied within a reasonable time, Bharat Heavy Electricals Limited may proceed to do the work at the Contractor's risk and cost, but without prejudice to any other rights which Bharat Heavy Electricals Limited may have against the Contractor in respect of such defects.
- e. If the replacements of renewals are of such character as may affect the efficiency of the structure, Bharat Heavy Electricals Limited shall have the right to give to the contractor within one month of such replacement or renewal, notice in writing that "tests on completion" be made once again, in which case such tests shall be carried out as provided in clause 7.
- f. All replacements or renewals to be carried out by the Contractor during the maintenance period shall be subject to such clauses of these conditions as may be considered reasonable by the Sr. DGM (Civil-Factory).

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- g. Until the final certificate has been issued, the Contractor shall have the right of entry, at the own risk and expense, by himself or his duly authorized representatives (whose names shall previously have been communicated in writing to the Executive Engineer) at all working hours to all necessary parts of the works, for the purpose of inspecting the structure and taking note there from, and if he so desires, making any tests at his own expense subject to the previous approval of the Executive Engineer.
- h. At the end of the maintenance period, the Contractor's liability ceases, except as regards workmanship which the Executive Engineer shall have previously given notice of the contractor to rectify.

11. CERTIFICATE OF THE ENGINEER:

- a. Every application to the Sr. DGM (Civil-Factory) for his certificate for payment, must be accompanied by a detailed invoice (in Quadruplicate), setting forth the claims in the same order as is found in the accepted Schedule of quantities and at the same rates. The said certificate will thereafter be issued by the Sr. DGM (Civil-Factory) at a reasonable time after receipt of the application.
- b. The Sr. DGM (Civil-Factory) may make any correction or modification in any previous certificate which may have issued by him and payments will be regulated and adjusted accordingly.

12. CERTIFICATE IPSO FACTO NOT TO AFFECT THE RIGHTS OF THE BHARAT HEAVY ELECTRICALS LIMITED OR CONTRACTOR:

No certificate of the Sr. DGM (Civil-Factory) on account, nor any sum paid on account by the Bharat Heavy Electricals Limited, Nor any extension of time for the execution of the works given to the Contractor shall in any way affect or prejudice the rights of Bharat Heavy Electricals Limited against the contractor, or relieve the contractor of his obligation for the due performance of the Contract or be interpreted as approval of the work done or of the materials supplied and no certificate ipso facto shall create liability in Bharat Heavy Electricals Limited, to pay for alternations, amendments, variations or discharge in the liability of the contractor for the payment of damages whether due, ascertained, or certified or not, or any sum against the payment of which he is bound to identify the Bharat Heavy Electricals Limited, nor shall any such certificate nor the acceptance by him of any sum paid on account or otherwise, affect or prejudice rights of the contractor against Bharat Heavy Electricals Limited.

13. CO-OPERATION WITH OTHER CONTRACTORS

The contractor shall agree to co-operate with the Bharat Heavy Electricals Limited's other contractors for associated work and freely exchange all technical information with them to obtain the most efficient and economical execution and to avoid unnecessary duplication of work. No remuneration shall be payable by Bharat Heavy Electricals Limited for such technical co-operation.

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The contractor shall forward to Bharat Heavy Electricals Limited copies of all correspondence and drawings so exchanged.

14. TIME AND PROGRESS CHART AND PROGRESS REPORTS

- a. The contractor shall submit at such times as may be requested by the Sr. DGM (Civil-Factory), Schedules showing the programme and order in which the contractor proposes to carry out the fabrication and erection work with dates and estimated completion times for various parts of the work, such Schedules shall be approved by the Executive Engineer prior to erection.
- b. During the progress of the work, The Contractor shall furnish the Sr. DGM (Civil-Factory) with fortnightly progress and such other reports as he may direct.

15. ENGINEER'S SUPERVISION:

All the work shall be carried out in co-operation with, and under the direction and to the reasonable satisfaction of the Sr. DGM (Civil-Factory).. The contractor shall be reasonable for the correctness of the positions, alignment and dimensions of the works according to the drawings, notwithstanding that he may have been assisted by the Sr. DGM (Civil-Factory) in setting out the same.

16. WORK AND SERVICES TO BE PROVIDED BY THE CONTRACTOR FOR THE ERECTION

The following major items of work and services shall be included in the work to be provided for by the contractor:

- a. All erection work of the structure including site bolts, nuts, rivets etc., final paintings, testing and putting into commission.
- b. Providing of all erection tools and tackle.
- c. Necessary supervisory personnel, tradesman, and unskilled labour.
- d. All consumables materials required for erection such as oil, kerosene, petrol, packing etc.
- e. All ladders platforms, temporary supports, safety belts, etc., required for erection, and
- f. All other works and services necessary for the due fulfillment of the contract.

17. CONSTRUCTION EQUIPMENT:

The contractor shall provide all equipments and tools needed to do the work efficiently. Bharat Heavy Electricals Limited shall not be under any obligation to arrange for or give on hire, any construction or erection equipment.

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18. WORK AT SITE:

- a. In the execution of the work, no persons other than the contractor, or his duly appointed representatives, subcontractors and workman shall be allowed to do work at the site, except by the special permission, in writing of the Sr. DGM (Civil-Factory) and his representative and other authorized officials or representatives of BHARAT HEAVY ELECTRICALS LIMITED.
- b. The work so far as it is carried out on Bharat Heavy Electricals Limited premises shall be carried out at such time as Bharat Heavy Electricals Limited, approved and so as not to interface unnecessarily with the conduct of Bharat Heavy Electricals Limited's business but Bharat Heavy Electricals Limited shall give the contractor all reasonable facilities for carry out the work.

19. POSSESSION PRIOR TO COMPLETION:

Bharat Heavy Electricals Limited shall have the right to take possession of, or use any completed or partially completed part of the work. Such possession or use shall not be deemed to be an acceptance of any work not in accordance with the contract.

20. WITH HOLDING PAYMENT:

B.H.E.Ltd., may withhold the whole or part of any payment for erection claimed by the contractor, which in the opinion of the B.H.E.Ltd. is necessary to protect itself from loss on account of:

- a. Defective work not remedied or guarantees not met,
- b. Claims filed against the Contractor.
- c. Failure by the Contractor to make due payment for materials or labour employed by him.
- d. Damage to another contractor.

Then the grounds withholding payments are removed, payments of the amount due to the contractor shall however be made by B.H.E.Ltd.

21. TIME AND DATE:

The time and date stipulated for progress and completion of the work and the rate of fabrication and erection according to the required sequence and be deemed to be the essence of the contract. The Contractor templating, jigs and fixtures, cutting, grinding and planning of the sections as necessary and assemble the sections as per the availability from time to time.

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22. WORKING DRAWING:

The contractor is required to prepare all the Fabrication/shop working drawings for the contract, based on the design drawings furnished by Bharat Heavy Electricals Limited, as per clause 6 of "Detailed Specifications". Even if the work under this contract is permitted to be sub-let or done in collaboration with other agencies, there shall be only one agency which shall co-ordinate the work of shop drawings and be reasonable for the same. While all the required information and details necessary for the preparation of shop drawings shall be furnished by Bharat Heavy Electricals Limited, it shall be the responsibility of the contractor to ensure completeness, accuracy of dimensions, prepare design of joints and site connections clearances and of required auxiliaries etc., in the drawings. The drawing Office Dispatch Lists to be prepared by the contractor on approval of each shop drawing as per clause 7 of Detailed specifications shall be checked by Bharat Heavy Electricals Limited, as they form the basis for payment. All the shop drawings shall be prepared in good time so as to enable commencement of fabrication work as soon as adequate quantities of raw steel are supplied.

23. SUPPLY OF RAW STRUCTURAL STEEL:

The raw structural steel sections referred to in Schedule 'A' will be supplied at the premises of the Bharat Heavy Electricals Limited, Ramachandrapuram. The contractors will take delivery within the time specified by the Sr. DGM (Civil-Factory) and arrange for safe loading, leading the steel sections and unloading and stacking them at their fabrication yard, all at their own cost. The point of supply of steel sections to the contractors will be within a lead of 3 kms., from the contractor's fabrication yard.

24. Fabrication of all items is proposed to be done in the premises of Bharat Heavy Electricals Limited, Ramachandrapuram, in a place ear-marked for the purpose by the Executing Engineer.

25. It shall be the sole responsibility of the contractor to ensure accuracy of alignment of steel work before grouting the columns and commencing clocking.

26. ERECTION OF CLOAKING ITEMS.

- a. Corrugated or semi corrugated Galvalume sheets, North light curves and Barge Boards shall all be included in schedule A. The measurement shall be based on actual area covered in roof sides, Gables and Louvers.
- b. Measurement in respect of glazing stated in Schedule 'A' shall include 4.5 mm thick polycarbonate sheets and Aluminium glazing bars with accessories .

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- c. The contractor shall prepare working drawings in consultation with Bharat Heavy Electricals Limited, showing details of erection of Roof sheeting, side sheeting louvers, rain water pipes and accessories and other cloaking items to suit the details of steel structures previously approved.
27. a. The structural steel has been planned in suitable sizes. Any splicing that may be required due to non-supply of steel in required lengths/sizes shall be done so that requirements as per IS 800-1962 are met with. The contractor shall prepare separate drawings for the same and get it approved by the Executive Engineer. No extra payment shall be made for splicing. However, the payment shall be made as per the DODL weights.
- b. No extra payment shall be entertained for straightening structural steel materials supplied to the contractor.
28. The Contractor shall study the drawings as well as the structures existing at the site and prepared drawings for suitable connections to the existing structures wherever necessary. Detailing of the various structural drawings may be made by inspection of existing structural work in similar factory buildings in Bharat Heavy Electricals Limited, Hyderabad. It may be noted that some of the existing structure such as A.C. sheeting, sheeting runners, and some other bolted connections for the auxiliary surge girders will have to be dismantled and re-erected later according to the requirements.
29. The quantity of steel indented, covers extra that will usually be involved in cutting and fabrication. In addition there will be extras to cover minor alternations, if any, and also extras arising out of accepting standard lengths in some cases and arising out of accepting minimum to (i.e. minimum of one wagon load) in some cases. The contractor shall arrange to receive all these steel supplied, account for it and keep it in safe custody. The surplus steel which is represented by the difference between the quantities received and the sum of quantities in the DODL list shall be returned to Bharat Heavy Electricals Limited on completion of the work. One percent of the fabrication tonnage of steel will be allowed towards unaccountable wastage which the contractor need not return. The surplus shall be divided as:
- a. Cut pieces and surplus i.e. RSJ, Channels, angles and plates not shorter than half a metre and M.S. plates not small than 600 sq.cm.
 - b. Scrap i.e. RSJ Channels, angles shorter than half a metre and M.S. plates small than 600 sq.cm. The cut pieces and surplus shall be set a part to be returned as "actuals". The scrap shall be returned in equivalent weight on actual area of glazing.

In case the contractor is to take delivery of the material from the railways, he should report of any short receipt to the railway authority and Bharat Heavy Electricals Limited immediately on taking delivery of the materials.

30. In respect of cloaking items one percent of the quantity placed on the work will be allowed towards wastage which need not be returned to Bharat Heavy Electrical Limited.

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31. All materials issued by Bharat Heavy Electricals Limited either as free issues or on cost recovery basis should be returned in kind and in good condition as detailed in Clauses 31 and 32.
32. While erecting the structural steel, painting etc., the contractor should take precautions against any damage to the existing sheeting structure, machinery, equipment services etc., any damage for the same shall be made good by the contractor at his own cost or compensated by him as per the assessment made by the Engineer-in-charge, which is final and binding on the contractor.
33. No extra claim or condition in regard to wages or materials escalation will be entertained and any tender containing such stipulation will be rejected.
34. All rates quoted shall be for finished work in situ inclusive of all leads, lifts and other incidental charges etc., and those in general conditions of contract.
35. The quantities indicated in the Schedule 'A' are approximate and liable for variation.
36. The Madras Detailed standard specifications, I.S. specifications those in annexure to schedule – A shall be followed for all items of work. Wherever there is a difference between the M.D.S.S. and I.S. specification, the later shall prevail.
37. These special conditions supplement the conditions to tenders and contracts and the general conditions of contract, and form part of the contract documents. Where these special conditions are at variance with the general conditions of contract, these special conditions shall prevail.

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INSTRUCTIONS FOR RAIL JOINTS BY ARC WELDING**Sub: Jointing of rails by arc welding process.**

Statement: Generally rails are joined by Thermit welding, but sometimes, it can also joined by arc welding process with satisfactory results. For this some precautions should be taken during welding which are stated below:

1. For jointing new rails the procedure should be followed which are stated below except grinding (see sketch).
2. For jointing new rails and used rails the under mentioned procedure should be followed (See sketch).
3. If longitudinal cracks develop on the surface of the rail, it is advisable to remove at least 2 M from the part and join both ends by arc welding process as shown in the sketch.

Base metal: Rail steel has the following composition:

C = 0.4 to 0.65 % Mn = 0.9 to 1.2 %

Tensile strength = 80 kg/mm²

Filler metal: The electrode (a) Universe or (b) Ferron-5 (low hydrogen) (a) manufactured by M/s. Advani Oerlikon, (b) manufactured by Indian Oxygen is suitable for buffer layer and (a) eltorail – 1 (b) duroid – 1 (Rutile type) of the above mentioned manufactures is suitable for toping.

Action:

1. The grooves have to be marked according to the sketch and prepared machine or by gas cutting torch. If by gas cutting, remove all gas cut burns by a hard steel wire brush, and then the surface of the groove should be cleaned by grinding.
2. Electrode (low hydrogen type) should be dried at a temperature of approximately 180⁰ C – 300⁰ C and the temperature should be maintained during welding.
3. The parts should be pre-heated each sides of the joint by 250⁰mm to a temperature of 250⁰C – 300⁰C and the temperature should be maintained during welding.
4. Welding should be started with the thinnest rod at the base say 10 SWG (3, 2.5 mm) and gradually used thickest electrode upto 6 SWG (5 mm). use cattails or upto 5 mm to 8 mm on the top.
5. (a). The groove 1a & 1b to be welded in rotation till top and jobs joined fully, (b). Groove 2a & 2b at the bottom to be welded with penetration (c). After wards rail top 3a & 3b to be welded.
6. All slags remaining on any head of welding shall be removed before laying the next host.
7. Current condition DC (+) current range for universe 100-140 for 3, 2.5 mm, 140-190 for 4 mm, 190-250 for 5 mm And 250-330 for 6 mm thickness.

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BHARAT HEAVY ELECTRICALS LIMITED
RAMACHANDRAPURAM::HYDERABAD-32.

SAFETY IN CIVIL ENGINEERING WORKS

1. While working at heights, a safe foot holds and hands holds should be provided.
2. No loose material should be allowed to remain in the vicinity of persons working at heights due to which they may inadvertently lose their balance and fall down.
3. Wherever, it is reasonable practical, workers should be made to use safety belts.
4. Ladders, crawling ladders and crawling boards are to be provided if a person has to pass across or work on or from any material liable to fracture under his weight and cause him to fall more than 1.98 metres.
5. In considering whether a material is likely to fracture beneath a person's weight, regard must be had to any additional weight he may be carrying or supporting.
6. Ladders crawling boards etc., to be securely supported and if necessary secured to prevent slipping.
7. Guard rails, coverings or other suitable means may be used to prevent person stepping on to fragile material, while working or passing near it if such material is likely to fracture under his weight and cause him to fall more than 1.98 metres.
8. While working on sloping roofs, suitable, crawling, boards or crawling ladders should be used. These crawling ladders should be properly supported and securely fastened to the sloping surface or the roof ridge.
9. Suitable and sufficient means are to be provided to prevent fall of articles from a sloping roof.

DEMOLITION:

1. Safe access should be provided to every place at which any person has to work. Scaffolds to be provided for all work that cannot safely be done otherwise.
2. Shoring or other steps are to be taken to prevent accidental collapse of the building or part of the building being dismantled.
3. Similar precautions are to be taken against collapse of any adjacent building, if this would involve danger.
4. No steel work or iron work is to be cut or released unless precautions are taken to avoid danger from sudden twist, spring or collapse.
5. No framing is to be removed unless all practicable steps are taken to avoid collapse of the structure.
6. Demolition work is to be placed under the supervision of a competent person experienced in demolition work.

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EXCAVATIONS:

1. Barriers are to be provided around excavations, shafts, pits and opening into which persons can fall a vertical distance of 1.98 metres. These barriers are to be as close as practicable to the edge of the excavations and are to be erected as soon as practicable after excavating begins. They are to be maintained in position except when necessarily removed for the access of persons or materials.
2. Adequate and suitable timbering should be used to prevent danger from falls or dislodgement of sides of excavations etc., or materials adjacent to it. Timbering is to be done as early as practicable in the course of work.
3. No person should be allowed to work in any excavation. Shaft or tunnels after explosives have been used in or near it, in a manner likely to affect stability, until a thorough examination has been made by a responsible person.
4. No person should be allowed to work in any excavation, Shaft or tunnels after an unexpected fall of work rock, earth or to her material or after substantial damager to timber or other supports, unless the part concerned is thoroughly examined by a responsible person declared safe.
5. No material should be placed near the edge of the excavation so as to endanger persons below. No load should be placed or removed near the edge of an excavation etc., where it is likely to cause the collapse of the side of the excavation and so endanger to any person.
6. If excavation is likely to affect the security of the another structure (permanent or temporary) steps must be taken to safeguard persons employed from possible collapse of that structure.
7. Means of reaching a place of safety is to be provided, when there may be danger from rising water or irruption of water or materials.
8. Means to prevent over running are to be taken when vehicle is used to tip material into pit or excavation or over the edge of embankment or earth work.

LADDERS:

1. Ladders to be used should be of good construction, of a suitable and sound material of adequate strength.
2. Ladders with missing or defective rungs should not be used.
3. Wooden stiles or sides and wooden rungs should have grain running length wise.
4. Rungs should be properly fixed to the sides.
5. Ladders standing on a base are to be equally and properly supported on each stile or side.

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6. Ladder standing on a base to be securely fixed near its upper resting place, if such fixing is impractical the ladder must be fixed at or near its lower end. If this is also impracticable a person, must be stationed at the feet of the ladder to prevent it from slipping.
7. Ladder should not be placed on loose bricks or loose packing.
8. Except when there is an adequate handled, ladder must rise to a height of a least 3 feet 6 inches (1.00 Mtr.) above the landing place or above the heights rung reached by the feet of persons using the ladder.
9. Space at each rung to be sufficient to provide adequate foot held.
10. Openings in landing places through which ladders pass should be as small as practicable.
11. Folding steps ladders should have level and firm footing and should not stand on loose bricks or other loose packing.

SCAFFOLDS:

1. Materials used for scaffolds should be of sound and adequate strength.
2. The timber used should be suitable quality, good condition, bark complete stripped off, and without paint or other treatment which would prevent defects from being easily seen.
3. Timber and material with projecting nails should not be used.
4. Metal parts should be of suitable quality, in good condition, free from corrosion or other patent defects likely to affect strength.
5. Defective parts or materials should not be used and no defective ropes or bonds should be used.
6. Standards or upright should be vertical or slightly inclined towards the building or other structure, where practicable and to be sufficiently close to ensure stability.
7. Displacement or sinking of standards or uprights to be prevented either by provision of base plates or either adequate means.
8. Ladders used as uprights to be adequate strength secured to prevent slipping and so placed that the two stiles of sides of each ladder are evenly supported.
9. Ladders are to be horizontal, as nearly as possible and should be secured to standards or uprights by efficient means.

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10. WORKING PLATFORMS:

1. All working platforms should be closely boarded, planked or plated.
2. Boards should be of sufficient thickness having regard to the distance between putlogs other supports.
3. All boards should be at least 51 mm thick and 210 mm wide.
4. Boards should rest securely and evenly on their supports. Each board should have at least three supports unless the thickness and the distance between the supports are such as to present on due or unequal staging when, supported on the two pipes.
5. No board should project beyond for more than four times its thickness, unless secured to prevent tipping.
6. No board should project to an extent which makes it unsafe having regard to its thickness and strength and the weight likely to be on it.
7. The platforms should be of adequate width to give sufficient working space.
8. The platforms should extend at least 600 mm. beyond, the end of wall or working face if work is being done at that end of the wall of face.
9. The platforms should have guard rails to a height of between 920 mm and 1150 mm. above the platform or any raised part of it.
10. The platforms should have toe-boards high enough to prevent falls of persons, tools and materials, with a minimum height of 155 mm. space between the toe-boards and the lowest guard rail should not exceed 760 mm. guard rails and toe-boards should be on the inside of uprights unless there is some other means of preventing their outward movement.
11. Guard rails and toe-boards should always remain in position except when removal is necessary for the access of persons or materials, or other necessary purposes of the work.

SAFETY NETS AND BELTS:

1. If all or any of the above requirements is not practicable, resources may be taken to use suitable safety belts or nets to prevent persons falling from heights of 1.98 metres and above.
2. Safety belts when used should be attached continuously to suitable and fixed anchorages.
3. Safety nets should be maintained in all positions necessary to protect persons at work, except in so far as they have to be temporarily removed for the passage of materials or for any other purposes.

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