



## INVITATION TO TENDER

**Ref: OPS/OS/WC/2016-17/51/069**

**Date: 10.03.2017**

**Sub:** Tender for providing Temporary Barricading at Desalter Plant, ONGC, Navagam, Ahmedabad site . Reg.

Sealed tenders are invited under **two bid system**, Techno-Commercial Bid (Part-I) and Price Bid (Part-II) from the reputed and experienced contractors with sound technical and financial capability for the subject work.

SL. No.	NAME OF THE WORK	ESTIMATE VALUE	EMD	WORK COMPLETION PERIOD	LAST DATE FOR RECEIPT OF TENDER
01	Tender for providing Temporary Barricading at Desalter Plant, ONGC, Navagam, Ahmedabad site	62.12 Lakhs	1,24,230/-	3 Months	<b>24.03.2017</b> up to 14.00 Hrs.

### 1. ELIGIBILITY CRITERIA

- I. Average annual turnover of the contractor during the last 3 years ending 31st March 2016 should be at least 30% of the estimated value (i.e. ₹ **18.63 Lakhs**).
- II. Tenderer should enclose copy of EPF, ESI, PAN, TIN, Service Tax New registration, Sales Tax / WCT/ Gujarat VAT Registration certificate, Income tax returns for last three years (FY 2013-14, 2014-15 & 2015-16) and Profit & Loss account and Balance Sheet certified by the Practicing Chartered Accountant for the last 3 years.
- III. The Contractor should have experience of completing similar works during last 7 years ending 28<sup>th</sup> February 2017 as given below:
  - (a) Three similar completed works costing not less than the amount equal to 40% of the estimated value (i.e. 24.85 Lakhs each)
  - OR
  - (b) Two similar completed works costing not less than the amount equal to 50% of the estimated value. (i.e. 31.06 Lakhs each)
  - OR
  - (c) One similar completed work costing not less than the amount equal to 80% of the estimated value. (i.e. 49.690 Lakhs)

Work orders & Job Completion Certificates from the customer shall be enclosed in support of successful and satisfactory completion of the orders.

**Note: Similar Works means Civil & Structural Works.**

- IV. The works executed in the own name of the tenderer will only be considered for eligibility criteria.

**The bidder has to submit the documentary proof along with technical bid for the above.**

Also Qualification Criteria shall be as per Clause 1.5 in page no. 4 of annexure- III i.e., GCC (Document No. PS: MSX: GCC.Rev.01).

- V. The data/ documents as specified in clause 1.7 in Page No.5 of annexure- III i.e., GCC (Document No. PS: MSX: GCC.Rev.01) are to be enclosed to technical bid.

## **2. BREIF DESCRIPTION OF WORK :**

- 2.1 Providing temporary barricading at Desalter Plant, ONGC, Navgam Plant as including supply of all materials, construction machineries, tools and tackles, skilled & unskilled labour/manpower etc. completion of works per drawings, standards & specifications in all respect. The scope of works is given in the Detailed Scope of Works (Annexure . I), Schedule of Quantity and Rates (Annexure-II A/B), Drawings, General Conditions of Contract (Annexure-III), Special conditions of the contract (Annexure-IV) and Standards Technical Specification (Annexure-VI) enclosed to NIT.
- 2.2 Since ONGC will not provide any space/area for fabrication of structural inside the plant premises, contractor has to arrange the fabrication of structural steel outside the ONGC premises at his own cost. Prefabricated steel members are to be brought to site for erection purpose on returnable basis.
- 2.3 The erection of the fabricated structures is to be done as per layout and drawings including Fit up, alignment, in-situ welding, grouting etc. complete in all respects. The crane required for erection of fabricated structures has to be arranged by the contractor and the rate quoted shall be inclusive of crane charges.
- 2.4 After completion of the site work, the contractor has to dismantle the barricading structure and take back the dismantled structure materials as buy back, leveling & cleaning of ground.
- 2.5 Contractor to submit their offer as per the pro-forma SOQR (Annexure-II/A) considering that, the dismantled structure materials shall be taken back by them after completion of site works after getting clearance from BHEL-HPVP.
- 2.6 At a later date, if BHEL-HPVP decides to retain the structure materials, then the contractor shall hand over the same to BHEL-HPVP at site. For this purpose, the Contractor to submit **separate optional unit price** as per the pro-forma SOQR (Annexure-II/B) for handing over all structural materials to BHEL-HPVP for their use. The optional item of successful bidder will be operated at the discretion of BHEL-HPVP prior to closure of BHEL-HPVP site at Desalter Plant, M/s ONGC-Navgam, Ahmedabad. BHEL-HPVP reserves the rights to operate the optional price or not. The decision of BHEL-HPVP will be final.
- 2.7 The contract will be evaluated and finalized based on rates quoted as per the pro-forma SOQR in Annexure-II/A. The optional price quoted as per the pro-forma SOQR in Annexure-II/B will not be considered for evaluation purpose.

## **3. LOCATION OF SITE:**

The site is located at Desalter Plant, M/s ONGC-Navgam, Ahmedabad (40 km approx. from Ahmedabad near Bareja). Bidders are advised to visit the site before submission of their offer to assess for themselves the site conditions, the entry restrictions, safety requirements, labour regulations, local conditions etc. at Desalter Plant, M/s ONGC- Navgam, Ahmedabad.

**4. EARNEST MONEY DEPOSIT:**

The tender shall be accompanied with a Demand Draft of ₹ 1,24,230/- (Rupees one Lakh twenty-four thousand two hundred and thirty only) towards EMD only in the following forms:

- a) Cash Deposit as permissible under the extant Income Tax Act (before tender opening).
  - b) Electronic Fund Transfer credited in BHEL account (before tender opening).
  - c) Banker's Cheque/ Pay Order/ Demand Draft, in favour of BHEL, Visakhapatnam along with offer
- I. EMD by the tenderer will be forfeited as per NIT conditions, if:
    - a) After opening the tender and within the offer validity period, the tenderer revokes his tender or makes any modification in his tender which is not acceptable to BHEL.
    - b) The contractor fails to deposit the required security deposit or commence the work within the period as per LOI/ Contract.
    - c) EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged under the provisions of extant %Guidelines on Suspension of business dealings with suppliers/ contractors+and forfeited/ released based on the action as determined under these guidelines.
  - II. EMD given by all unsuccessful tenderers shall be refunded normally within 15 days of award of work.
  - III. EMD shall not carry any interest.
  - IV. EMD of successful tenderer will be retained as part of Security Deposit.

**Note:** Micro & Small Enterprises (MSEs) are eligible for exemption of EMD as per clause no. 2.29 of annexure . III.

**5. WORK COMPLETION PERIOD:**

The entire scope of work is to be completed within **3 (Three) months** from the date of mobilization call or One month from the date of release of last work fronts at site whichever is later.

**6. LIQUIDATED DAMAGES:**

In the event of any delay in completion of work or part thereof as per the contractual completion period due to the reasons attributable to contractor, BHEL - HPVP shall have the right to impose Liquidated Damage at the rate of 0.5% of the contract value for every complete week of delay or part thereof subject to a maximum of 10% of the contract value.

**7. SECURITY DEPOSIT:**

Security Deposit shall be collected from the successful tenderer as per clause 1.10 of annexure- III

**8. INCOME TAX & WORK CONTRACT TAX:**

Income tax & work contract tax as per statutory requirement will be deducted on each payment made to the contractor and TDS certificate will be issued to this effect.

**9. PAYMENT TERMS:**

90 % progressive payment is based on work done against monthly RA bill.

10% shall be retained towards Performance Guarantee for Workmanship and shall become refundable after expiry of guarantee period/defect liability period, provided all the defects noticed during the guarantee period have been rectified and after deducting all expenses/other amounts due to BHEL. This retention amount can be released on commencement of guarantee period and submission of equivalent Performance bank guarantee valid for Defect liability period plus claim period of 3 months.

Contractor shall submit detailed billing break-up which is to be approved by BHEL-HPVP for submission of monthly RA bill after award of job.

#### **10. MODE OF PAYMENT:**

Payment shall be made based on the quantities executed at site and certified by BHEL Resident Engineer.

90% of the gross admitted value will be paid from HO after making deductions for materials/ services provided at site, IT and any other recoveries within 30 days of submission of bills and all requisite documents complete in all respects.

**Payment will be released only through RTGS/ NEFT and all documents required for the same as specified in SCC are to be submitted by contractor along with the bill.**

#### **FINAL BILL:**

Final bill shall be submitted after completion of all works and material reconciliation along with following documents as specified in General Conditions of contract.

- a) Work Completion Certificate by BHEL Site In charge.
- b) No Claim certificate by Contractor.
- c) Material reconciliation statement.
- d) Clearance Certificates wherever applicable viz. Clearance Certificates from Customer for gate pass clearance, labour wage clearance, stores clearance various statutory authorities like Labour Department, PF authorities, Commercial Tax Dept. etc.
- e) Indemnity Bond as per prescribed format.

#### **11. PRICE SCHEDULE, TAXES & DUTIES:**

- a. Prices shall be quoted in the price schedule attached to the tender for the complete scope of work.
- b. The quoted prices shall be inclusive of all applicable taxes & duties as applicable as on date of tender submission except service tax. However, Service Tax as applicable shall be reimbursed on submission of proof of payment.
- c. In addition to existing taxes, any new taxes imposed by Central/ State Govt. shall be payable by the contractor and same shall be reimbursed on submission of relevant documents/proof of payment.
- d. In case, any new tax is imposed instead of existing tax, difference of the amount shall be reimbursed/ recovered on submission of documentary evidence.
- e. Any new tax is imposed by Central/ State Govt. or there is any variation in taxes after expiry of delivery / contract period, the same shall be borne by contractor only.
- f. All terms & conditions of the contract in respect of taxes & duties are subject to new taxation laws introduced time to time by Govt. and terms & conditions will deemed to be modified in accordance with the provisions of New Laws (i.e., GST)
- g. The quoted prices shall be fixed & firm without any escalation during the entire period of contract and till completion of the work.
- h. Tenderer should quote the amounts in figures & words. It may be noted that corrections, overwriting etc. are not allowed.
- i. All rates shall be quoted in the tender format only.

**12. REVERSE AUCTION:**

BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on [www.bhel.com](http://www.bhel.com)) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders have to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit ~~Process~~ compliance formq (to the designated service provider) as well as ~~Online~~ sealed bidq in the Reverse Auction. Non-submission of ~~Process~~ compliance formq or ~~Online~~ sealed bidq by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/contractors (as available on [www.bhel.com](http://www.bhel.com)).

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/contractors (as available on [www.bhel.com](http://www.bhel.com)).

As a reminder to the bidders, system will flash following message (in RED Color) during the course of ~~online~~ sealed bidq

Bidders to submit online sealed bid less than or equal to their envelope sealed bid already submitted to BHEL.

General terms & conditions governing RA are mentioned in the special conditions at Annexure-VI

**13. VALIDITY OF OFFER:**

The offer shall be valid for a period of **Six months** from the last date for tender submission.

**14. RISK PURCHASE:**

**In case the contractor fails to execute the work due to any reason, BHEL reserves the right to get the same completed through some other party at the risk & cost of the contractor and any additional expenditure incurred due to the same shall be charged to the contractor.**

**15. GENERAL:**

**15.1 Bidders shall confirm their acceptance to all the terms & conditions of the tender enquiry.**

Deviations to the tender conditions are not acceptable and BHEL-HPVP reserves the right to reject such offers which do not meet Technical / Commercial requirements without any / further correspondence.

Bids not accompanied with requisite EMD/NSIC/MSME registration certificate, late / delayed bids, incomplete / conditional offers, bids not conforming to the terms & conditions specified in the tender documents are liable for rejection.

- 15.2 BHEL reserves the right to modify or cancel or short close the tender at any stage at its discretion without assigning any reason thereof.
- 15.3 The bidders shall study the Tender documents and all other relevant documents in detail for understanding the scope of work involved in various items before submission of offers.
- For any clarifications required on this tender document, scope of work etc., the bidders shall depute their authorized representatives to HPVP, Visakhapatnam with prior intimation to get clarifications from concerned authorities.
- 15.4 Manager (E&C) shall be the Engineer-in-charge for herein after referred to as such in the tender.
- 15.5 Lowest offer need not be the rate acceptable to BHEL-HPVP. BHEL-HPVP reserves the right for negotiation with the L1 bidders or opt for Reverse Auction as per applicable guidelines.
- 15.6 The following documents (enclosed) shall form part of the contract including this Notice Inviting Tender.

<b>INDEX OF CONTENTS</b>			
<b>Sl. No.</b>	<b>Description Of Documents</b>	<b>Documents / Drawings/ Standards/ Specification no.</b>	<b>Remarks</b>
1	Detailed scope of work		Annexure-I
2	Schedule of Quantities & Rates (Price Bid)		Annexure-II A & B
3	General Conditions of Contract		Annexure-III
4	Special Conditions of the Contract		Annexure- IV
5	Standards Technical Specification		Annexure-V
6	Terms & Conditions of Reverse Auction		Annexure. VI
7	Acceptance to the Tender terms & Conditions		Annexure . VII
8	Minimum Wages As Per Central Labour Department		Annexure- VIII
9	Contractor Information		Annexure - IX
10	Check List		Annexure - X
11	Drg. for Foundation details for Barricade Structure	1-35-210-00001	
12	Drg. for GA of Heater Barricading Structure	1-35-210-00002	
13	Offer forwarding letter / Tender submission letter	Form No: F-01 (Rev. 00)	
14	Declaration by authorized signatory of bidder	Form No: F-02 (Rev. 00)	
15	No deviation certificate	Form No: F-03 (Rev. 00)	
16	Declaration confirming knowledge about site conditions	Form No: F-04 (Rev. 00)	
17	Contract Agreement	Form No: F-10 (Rev. 00)	
18	Bank Guarantee for Security Deposit	Form No: F-11 (Rev. 00)	
19	Indemnity Bond	Form No: F-21 (Rev. 00)	
20	Power of Attorney for tender submission / signing of contract Agreement	Form No: F-25 (Rev. 00)	

**16. TENDER COLLECTION:**

Tender Documents can be downloaded from our Websites [www.bhelviz.co.in](http://www.bhelviz.co.in) & [www.bhel.co.in](http://www.bhel.co.in).

**17. TENDER SUBMISSION:**

**17.1 The Bid shall be submitted in two parts.**

**Part-I: Techno-Commercial Bid shall be placed in one cover** along with the following documents:

- a. Copy of complete tender document duly signed & stamped
- b. Proof of document for payment of Earnest Money Deposit of 1,24,230/-
- c. Income tax returns for last 3 year, Profit & Loss account and Balance Sheet certified by the Practicing Chartered Accountant for the last 3 years
- d. Copy of P.F. Registration Certificate.
- e. Copy of E.S.I Registration Certificate.
- f. Experience Certificates in line with eligibility criteria
- g. Copy of Service Tax Registration Certificate.
- h. Copy of PAN and TIN
- i. Copy of Sale Tax / WCT / Gujarat VAT Registration certificate.
- j. All other applicable documents as detailed in the tender

**Part-II: Price Bid** in the prescribed format shall be placed in **another separate cover**.

All the tender documents including the various supporting documents enclosed by the bidder should be **signed on all pages with seal**.

Both covers containing **Part- I & Part- II bids** shall be placed in another bigger size envelope **duly superscribing the Tender No. & Subject on the envelope**.

17.2 The tender completed in all respects shall be dropped in the **Outsourcing** tender box kept at reception counter, ADM building latest by **14.00 Hrs. on 24.03.2017**.

Bidder may also send their offers by Post/courier to the following address:

**“Outsourcing Tender Box,  
Admin. Building,  
BHEL - HPVP, Visakhapatnam – 530012”.**

Last date for receipt of tenders is **24.03.2017 up to 14.00 hrs**. BHEL-HPVP is not responsible for any postal or other delays in submission of offers.

Offers received in any other form will not be accepted.


17.3 Submission of offer by a tenderer implies that all the tender documents were read by the tenderer and the tenderer is aware of the scope and specifications of the work, site condition, local conditions and rates at which stores, tools and plant, free / chargeable materials etc., will be issued to him by BHEL - HPVP and other factors having bearing on the execution of the work.

**18. OPENING OF TENDERS:**

Techno-commercial Bids will be opened on **24.03.2017 at 14.00 Hrs.** at Customer Cell, Admin. Building, BHEL- HPVP. The bidders may depute their representatives at the time of opening. The price bid of the technically qualified bidders will also be opened in the presence of representatives of the bidders and the date & time of opening of price bids will be intimated later. In case of reverse auction, the date of conducting reverse auction will be intimated in advance at appropriate time

**If bids are not accompanied by requisite EMD/Valid NSIC Certificate/MSME registration certificate along with Part- I (Techno Commercial Bid), then Part-II (Price Bid) will not be considered for opening.**

Yours Faithfully,  
For BHARAT HEAVY ELECTRICALS LIMITED,



Sr. Manager (OS)

**DETAILED SCOPE OF WORK**

**PART – A (TECHNICAL)**

**1. OWNER:**

The owner of this project is M/s ONGC, Ahmadabad, Gujarat and the works are to be executed at ONGC, Navgam, Ahmadabad, premises.

**2. CONSULTANTS/ INSPECTION AGENCY:**

M/s. ONGC Ahmadabad or their authorized agency shall be the third party inspection agency for this project.

**3. SCOPE OF WORK:**

The scope of works is as mentioned below:

**3.1 Shallow equipment foundations**

Following are the list of equipments to be provided with shallow foundations with necessary grouting.

- Blowers (2 Nos.)

Following are the list of equipments which will be installed on the skid structure and the foundations for Skid structure are to be executed with necessary grouting.

- Heater Modules

**3.2 Pipe rack/Pipe trestles:**

Pipe rack/pipe trestles will be of steel structure and shallow RCC foundations with necessary grouting.

**3.3 General civil Works:**

Any other foundations/Civil works which are not covered in the above scope but required for completion of the project will also form a part of scope of work.

**3.4 Supply, Fabrication & Erection of Structures:**

- a) The Supply of structural steel as per drawings shall be in the scope of contractor. Fabrication of Structural Steel are to be done as per the drawings including assembly, Fit up, Welding / Bolting, and to be applied with primer paint (2 Coats) as per the painting schedule mentioned in Structural Works Item No. F of the SOQR. Surface preparation by Grit blasting to be done before application of Primer.

**Primer Paints are to be supplied by Contractor at his own cost and Price quoted should be inclusive of the same.**

- b) **Since ONGC will not provide any space/area for fabrication of structural, contractor has to arrange the fabrication of structural steel outside the ONGC premises at his own cost. Prefabricated steel members are to be brought to site for erection purpose on returnable basis.**
- c) The erection of the fabricated structures is to be done as per layout and drawings including Fit up, alignment, in-situ welding, grouting etc. all complete. The crane required for erection of fabricated structures has to be arranged by the contractor and the rate quoted shall be inclusive of crane charges.

- d) After erection, final painting (2 coats) to be done as per the painting schedule mentioned in Structural Works Item No. F of the SOQR.
- e) **Finish Paints is to be supplied by Contractor from the approved vendors at his own cost and Price quoted shall be inclusive of the same.**
- f) After completion of the site work, the contractor has to dismantle the barricading structure and take back the dismantled structure materials as buy back, leveling & cleaning of ground. Contractor to submit their offer as per the pro-forma SOQR in Annexure-II/A considering that, the dismantled structure materials shall be taken back by them after completion of site works after getting clearance from BHEL-HPVP.
- g) At a later date, if BHEL-HPVP decides to retain the structure materials, then the contractor shall hand over the same to BHEL-HPVP at site for that Contractor to submit the separate optional unit price as per the pro-forma SOQR in ANNEXURE-II/B for handing over all structural materials to BHEL-HPVP site at Desalter Plant, ONGC-Navgam for their use. The optional price of successful bidder will be operated at the discretion of BHEL-HPVP and BHEL-HPVP will reserve the rights to operate the optional price or not. The decision of BHEL-HPVP will be final.

**3.5 Health Checking of existing heater foundations and Blower foundation:**

Evaluation of strength of the existing heater foundations (6 nos.) and blower foundation (2 nos.) using Non-destructive concrete testing methods like Ultrasonic Pulse velocity, Rebound Hammer as per IS 13311 Part I&II respectively. The object of test is to establish

- i) The homogeneity of concrete
- ii) The presence of cracks, voids and other imperfections
- iii) Changes in the structure of the concrete which may occur with time
- iv) The quality of the concrete in relation to standard requirements
- v) The quality of one element of concrete in relation to another
- vi) The value of dynamic elastic modules of the concrete.

Contractor to engage a specialised party for the above health checking of foundation and certificate to be issued by the agency for healthiness of foundation after checking.

Contractor to obtain approval of agency from BHEL/ONGC prior to engage at site.

**4. PRECEDENCE OF SPECIAL CONDITIONS**

These special conditions are read in conjunction with General Conditions of contract. Where the provisions of these special conditions are at variance with the provisions of General conditions, the provisions in these special conditions shall take precedence.

**5. SETTING OUT OF WORKS AND SITE INSTRUCTIONS**

The Engineer-in-charge shall furnish the contractor with only the four corners of the work site and a level bench mark and the contractor shall set out the works and shall provide an efficient staff for the purpose and shall be solely responsible for the accuracy of such settings out.

- 5.1 The contractor shall provide, fix and be responsible for the maintenance of all necessary stakes, templates, bench marks, profiles, and other similar things and shall take all necessary precautions to prevent their removal or disturbance and shall be responsible for consequences of such removal or disturbance should the same takes place and for their efficient and timely reinstatement. The contractor shall also be responsible for the maintenance of all existing survey marks, either existing or supplied and fixed by the

contractor. The work shall be set out to the satisfaction of the Engineer-In-Charge / Resident Manager. The approval there of in setting out the work shall not relieve the contractor of his responsibility.

- 5.2 Before beginning the works, the Contractor shall, at his own cost, provide all necessary reference and level posts, bamboos, flags, ranging rods, strings and other materials for proper layout of the work in accordance with the scheme, for bearing marks acceptable to the Engineer-in Charge/Resident Manager. The Center, longitudinal or face lines and cross lines shall be marked by means of small masonry pillars. Each pillar shall have distinct marks at the center to enable the odolite to be set over it. No work shall be started until all these points are checked and approved by the Engineer-in-Charge/Site-in-Charge in Writing. Contractor shall also provide all labour, materials and other facilities, as necessary, for the proper checking of layout and inspection of the points during construction.
- 5.3 Pillars bearing geodetic marks located at the sites of units of works under construction should be protected and fenced by the Contractor.
- 5.4 On completion of works, the contractor shall submit the geodetic documents according to which the work was carried out.

#### **5.5 TEMPORARY WORKS**

All temporary, ancillary and testing works including enabling works connected with the work shall be the responsibility of the contractor and the price quoted by them for works shall be deemed to have been included the cost of such works, which shall be removed by the contractor at his cost, immediately after completion of his work.

### **6. DISTINCTION BETWEEN FOUNDATION AND SUPERSTRUCTURE**

To distinguish between work in foundations and super structures, the following criteria shall be applied:

For all equipment pedestals, pipe racks, other foundations and R.C.C structures, work done up to 500mm level above finished grade level or top of foundation as mentioned in drawing and whichever is at higher elevation is considered as work in foundation and work above this level will be treated as work in superstructures and payments would be made accordingly.

For buildings only, all works up to level corresponding to finished floor level shall be treated as work in %Foundation & Plinth+and all woks above the finished floor level shall be treated as %Work in superstructure+irrespective of what has been stated above.

All pavements, R.C.C Retaining wall, all pipe sleepers and any similar items would be taken as work done in foundations irrespective of locations nomenclature, and level given anywhere, where not specifically pointed out is considered as work in foundations. For the various works, in case of contradiction, the leads mentioned in the schedule of Quantities shall prevail over those indicated in Technical specifications.

### **7. RATE, QUANTUM AND QUALITY OF WORK**

7.1 The words %Schedule of Quantities/ Items/ Rates/ %wherever appearing in the tender documents shall have the same meaning.

7.2 The Schedule of quantities is /(are) to be read in conjunction with the form of tender, general and particular specifications, general and special conditions of contract and drawings. These documents are complimentary to each other and are explanatory and description of the works involved in the contract where the provision in the description of the item in the schedule of quantities are at variance with the provision of general conditions, Special

conditions, technical specification and drawings, the provisions in the description of the item shall take precedence.

- 7.3 Tenderers are advised to go through the tender provisions carefully and quote their rates taking into account all the various provisions of these documents and /or which are not specifically brought out by the tenderer at the time of submission of tender.
- 7.4 The drawings attached with these documents are for the purpose of tender only, giving the tenderer the general idea of the major and extent of works to be executed. Detailed approved construction drawings will be issued after final engineering for the purpose of construction.
- The rate quoted by the tenderer shall be deemed to be for the execution of works in accordance with the construction drawings to be supplied taking into account the design aspect of these drawings and the specifications of M/s BHEL- HPVP/Owner/ Consultants for materials and workmanship.
- 7.5 The quantities of work shown in the schedule of quantities are approximate and shall not be considered to be limiting the scope of the work in any way. Work shall be measured on completion and priced at the rates quoted in schedule of quantities under the relevant item of works.
- 7.6 General directions and description of works and materials given elsewhere in the tender documents are not necessarily repeated in the schedule (s) of quantities. Reference is to be made with the other documents for the full information/ details.
- 7.7 The tenderer shall be deemed to have visited the site before submitting the tender and to have examined for himself the conditions under which the work will be carried out. Risks and contingencies, means of access to site, subsoil conditions, including local conditions affecting labour and material procurement and to have satisfied himself that the rate quoted by him/them provide for all minor accessories and contingent works or services necessary for the works described even though they are not specifically defined there in.
- 7.8 Unless otherwise specified in the description of items of work in schedule of quantities the rates quoted by the tenderer shall be for all heights and depths.
- 7.9 The specifications for the entire work shall be in accordance with Technical Specification/I.S Codes.
- 7.10 IS codes/specifications referred shall mean latest IS code/ specifications amended up to date.
- 7.11 All materials/fittings shall be of approved quality/make/brand. All samples shall be arranged for approval.
- 7.12 The rates for the earth work in excavation in the schedule of quantities is to be given including bailing out ground water, seepage water from open drains, etc., and rain water, if any encountered during excavation. During excavation proper supports, props shoring etc., are to be provided to avoid damages for the existing drainage line and existing foundations etc., at no extra cost.
- 7.13 The rates quoted shall be deemed to be inclusive of cost of all materials, consumables (except as indicated in S.O.Q), labour as may be required for the construction on full protection of the work described, together with all general risks involved, liabilities and obligations set forth or implied in the documents on which the tender is based.
- 7.14 Unless otherwise provided in the schedule of quantities, rates for all concrete/construction work shall include for providing necessary cutouts etc., for various electrical and other

equipment and nothing extra shall be paid for the same. The positions of various inserts and cutouts etc. shall be indicated in the detailed drawings.

- 7.15 Rates for plastering work shall include for making grooves, drip courses, mouldings & bands etc., wherever required and nothing extra shall be paid for the same.
- 7.16 The rates quoted shall remain firm and valid for the quantum of work till completion of work.
- 7.17 The quantities mentioned in Schedule of Quantities are approximate and may increase or decrease during the execution. Payment will be made for the actual quantities executed duly certified by BHEL-HPVP Site In-charge at the agreed Scheduled rates. There will be no change in the scheduled rates even if the actual quantities found to be either less or in excess of scheduled quantity in respect of any one or all items.
- 7.18 No price variation shall be allowed in respect of items having a % Lump sum Price+even if there is any variation in the actual quantum of work for such items.

## **8. MEASUREMENT OF WORK**

- 8.1 Mode of measurement will be as per IS 1200 for Civil works and IS 800 for the Structural. Mode of measurement for earth work will be as per relevant IS codes.
- 8.2 For all payment purposes measurements will be based on the execution drawings. Wherever details are not available or inadequate in the execution drawings, physical measurements will be taken by the contractor in the presence of the representative of Engineer-in-charge. In such cases payment will be made on actual measurements. Measurements will be made in units as indicated in schedule of rates.
- 8.3 Measurement of weights will be in metric ton corrected to the nearest kilogram.
- 8.4 Linear measurement will be in meters corrected to the nearest millimeter.
- 8.5 Measurement for supply of items shall be made as per units and quantities indicated item wise in Schedule of Quantities.
- 8.6 All temporary lines and equipment required for flushing, testing, draining or drying shall be provided, installed and dismantled by contractor within the quoted rates.
- 8.7 Open ends of pipes shall be blanked for hydrostatic test and these blanks shall be removed and edge preparation shall be done after testing is completed by the contractor within his quoted rates. Any loss or damage to free issue materials while in contractor's custody, shall be recovered from the contractor at 200% book value or market rate whichever is higher.
- 8.8 The rates quoted for items such as fixing of inserts, foundation bolt etc., shall include the cost of supporting structure, template etc., as required at site including welding and no extra will be paid for these. The payment will be made for the weight of insert, foundation bolt, nut, washers only. Any reinforcement, structural used for positioning the bolts during concreting will be taken into account for reconciliation purpose only.

## **9. CONSTRUCTION WATER AND POWER.**

### **9.1. CONSTRUCTION WATER:**

Water will be provided by OWNER at one point free of charge. Further distribution to work spot with necessary piping, water meters etc. as per the safety rules and regulations in vogue at site shall be carried out by contractor at his own cost.

### **9.2. CONSTRUCTION POWER:**

OWNER will provide Power at one point on free of charge. The Contractor has to make his own arrangements for further distribution (like cable laying, Main switches, Distribution

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boards, ELCB, energy meter etc.) at his own cost as per safety rules & regulations in Vogue at site. Rates quoted for the respective items shall be inclusive of this.

**10. MATERIALS**

All materials required for execution and completion of Civil & Structural works for providing Temporary Barricading in all respect are to be arranged by contractor only at his own cost within the quoted price. **BHEL - HPVP/OWNER will not supply any materials to contractor except for the materials indicated in SOQR item no. H.**

**CEMENT AND REINFORCEMENT STEEL FOR CONCRETE WORKS AND STRUCTURAL STEEL:**

Cement, Reinforcement steel, Structural steel, Welding electrodes and Primer & Finish paints and all other materials are to be procured from approved Vendors only.

Material test certificates from manufacturers are to be submitted for all the materials supplied.

Random sampling & testing as per BHEL/ONGC Quality Plan are to be carried out and reports are to be submitted.

Contractor has to procure the materials in a phased manner based on the requirement/ drawings to suit the site requirement.

Payment against the supply of material will be released for the actual quantities only as per drawings / work executed. The quoted rates shall also include all the wastages/cutting allowances/ scraps etc.

For supply of Reinforcement steel and Structural steel, payments will be released on receipt of materials at site, on submission of all relevant documents and certification by Engineer in Charge. However, the payments released will be reconciled with actual quantities only as per drawings / work executed and will be regularized accordingly.

Contractor has to construct a suitable godown at his own cost for proper storage of cement and steel. The cement, reinforcement steel and structural steel shall be strictly accounted for, by the contractor. The contractor shall maintain proper records of stock and consumption of these materials.

Schedule of standards norms for consumptions of cement is as per CPWD norms. Final accounting of cement consumption will be based on this statement.

**11. CONCRETE MIX**

The contractor shall establish the Design Mix for all grades of R.C.C works with necessary testing to establish specified strength at approved laboratories and submit for the approval of BHEL/OWNER/Consultants well in advance of commencement of works. The contractor will have to submit their design mix for different grade of concrete keeping in view the requirements stipulated in IS: 456, specifically regarding slump and Water cement ratio, and specific gravity of Materials brought to site as analyzed in the laboratories. The design shall be based upon absolute volume method and theoretical consumption of Cement shall be worked out on this basis. For other than concrete items, the coefficients for consumption of Cement thus worked out shall be binding upon the contractor for reconciliation of cement. For any excess or under consumption based on this coefficient the contractor shall be suitably penalized.

Concrete for major RCC works shall be produced through weigh batching plant or from any other established batching plant. For PCC and minor RCC works concrete can be produced by weigh batching the ingredients.

The mixtures and the weigh batchers shall be maintained in clean, serviceable condition and the accuracy of the weigh batchers shall be periodically checked by approved agencies and the

calibration certificates are to be produced. They shall be setup on a firm ground and hoppers shall be loaded evenly. The needle shall be adjusted to Zero when the hopper is empty. Fine & coarse aggregates shall be weighed separately.

## **12. CONSTRUCTION EQUIPMENT AND SITE ORGANISATION**

### **12.1 CONSTRUCTION EQUIPMENT**

- i. The Contractor shall without prejudice to his overall responsibility to execute and complete the work as per specifications and time schedule, progressively deploy adequate equipments, tools & tackles and augment the same as decided by the engineer-in-charge depending on the exigencies of the work so as to suit the construction schedule. **The tenderer shall submit a list of construction equipments he proposes to deploy for the subject work along with deployment schedule. No construction Equipment shall be supplied by the BHEL – HPVP / Owner.**
- ii. The Contractor must have adequate number of the following equipments along with skilled operators for the same as per the exigencies for execution of works.
  - Excavators/JCB for Earthwork
  - Arrangements for Ready mix concrete for RCC & PCC by providing own mini batching plant or from an established batching plant.
  - Transit concrete mixers either own or on hire.
  - Weigh batchers, concrete mixtures, vibrators (pin and Screed), Vibro Rammer, Road roller etc.,
  - Dewatering Pumps
  - Motors and winches of suitable capacity, Power distribution boards/cables, DG power sets.
  - Crane of suitable capacity for erection of structural work etc.
  - Hydra crane for material handling, Tractor / Trailer.
  - Working platforms along with ladders, inspection cage, wire ropes of required capacity, D shackles etc.
  - Welding rectifier/machines with welding cables & Drilling Machines as per the requirement.
  - Laboratory equipment.

**12.2** In case contractor does not own the above equipment they should satisfy BHEL with necessary documentary evidence of their arrangements made to hire/acquire the same along with skilled operators. Decision of Engineer-in-Charge regarding deployment of equipment in sufficient numbers shall be final.

**12.3** Subject to the provision in the tender document and without prejudice to contractor's liabilities and responsibilities to provide adequate qualified and skilled personnel on the work contractor shall deploy site organization and augment the same as decided by the Engineer-in-charge depending on the exigencies of work.

**The tenderer shall submit the details of tentative site organization proposed by him.**

Site In-charge suitably qualified & experienced with legal power of attorney should be posted.

## **13. SUB-CONTRACTORS**

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The contractor shall not sublet any portion of the contract without the prior written approval of the accepting authority (Owner/BHEL-HPVP).

**14. COORDINATION WITH OTHER AGENCIES**

Work shall be carried out in such a manner that the work of other agencies operating at the site is not hampered due to any action of the contractor. Proper co-ordination with other agencies will be contractor's responsibility. In case of any dispute, the decision of Engineer-in-charge shall be final and binding on the Contractor.

**15. TESTS AND INSPECTION**

1. The Contractor shall carry out the various tests as enumerated in the technical specifications of this tender document and the technical documents that will be furnished to him during the performance of the work and no separate payment shall be made unless otherwise specified in schedule of quantities.
2. All the tests either on the field or at outside laboratories concerning the execution of the work, supply of materials by the Contractor shall be carried out by contractor at his own cost as per relevant standards and as per contractual obligations and the results shall be submitted. Materials & concrete cubes will be tested by Consultant/ Owner in their laboratories, if required, and their results are final and binding on the contractor. Manufacturer test certificates shall be submitted as desired by BHEL- HPVP /OWNER/Consultants.
3. The work is subject to inspection at all times by the Engineer-in-Charge / Consultant /OWNER. The contractor shall carry out all instructions given during inspection and shall ensure that the work is being carried out according to the technical specifications of this tender, the technical documents and the relevant codes of practice furnished to him during the performance of the work.
4. Any work not conforming to the execution drawing, specifications or codes shall be rejected forthwith and the Contractor shall carryout the rectifications at his own cost.
5. All results of inspection and tests will be recorded in the inspection reports, pro forma of which will be approved by the engineer-in-charge. These reports shall form part of the completion documents.
6. Inspection of works at all stages shall be done by BHEL - HPVP/OWNER/Consultant.
7. Inspection and acceptance of the work shall not relieve the contractor from any of his responsibilities under this Contract.
8. All Guarantee certificates for specialized jobs like Anti-termite treatment, water proofing etc., should be obtained from the expert agencies engaged by the contractor and these should be submitted on the closure of contract in the name of OWNER in the prescribed format.
9. All building and equipment foundations shall be marked for levels, center line of foundations; pockets etc, and obtain the clearance certificate from Mechanical/ Electrical agency. Foundation scheme shall be prepared by contractor and are to be checked & certified by Mechanical / Electrical counterparts.
10. All foundation bolts projecting above foundations shall be applied with grease and wax paper. Nuts and washers are to be handed over to Mech. Agency.

**16. FINAL INSPECTION**

After completion of all tests as per specification, the whole work will be subject to a final inspection to ensure that job has been completed as per requirement. If any defects noticed in

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the work are attributable to contractor, these shall be attended by the contractor at his own cost, as and when they are brought to his notice by the Owner/ PDIL. Owner & BHEL - HPVP shall have the right to have these defects rectified at the risk and cost of the contractor if he fails to attend to these defects immediately.

The following documents shall be submitted by the contractor,

- a) Material test certificates for all incoming material like cement reinforcement steel, structural steel, Bricks, Foundation bolts, Roof Sheeting, Flooring materials etc.
- b) Batch test certificates from manufacturer for cement, electrodes etc.
- c) Welders qualification tests and report.
- d) Hydrostatic and other test results and reports.
- e) Tolerances as obtained for erected structures etc.
- f) Any other certificates / reports / guarantees etc., as required for the works.

**17. BHEL-HPVP SCOPE:**

All AFC drawings and approved QAP for total job will be furnished by BHEL-HPVP.

**PART –B (RESPONSIBILITY OF CONTRACTOR)**

1. The Contractor has to deploy adequate skilled, unskilled and experienced man power for the execution job. Site activities are to be organized parallelly to the extent possible so that site works can be completed on or before the completion date. The following tentative experienced staffs are required to be deployed at site other than skilled and unskilled manpower for monitoring and smooth execution of site works.
  - a) Site In-charge : 1 No.
  - b) Civil & Structural Engineer : 2 Nos.
  - c) Quality Engineer : 1 Nos
  - d) Qualified Safety Supervisor : 1 Nos.
  - e) Fire man : 1 Nos.
  - f) Store supervisor : 1 Nos.
  - g) Supervisor for arranging day to day work permits: 1 No.
2. All necessary machinery, tools and tackles required for the satisfactory completion of works shall be deployed at site and contractor to arrange the suitable insurance policy while bringing the construction equipments to site.

For issue entry gate passes inside the ONGC premises, all the employees and labour engaged by the Contractor have to produce Police Verification certificate (PVC) from the police station where they hail from and same is to be submitted to Local police authorities for issue of PVC. Similarly, Photo Identity card for all the employees and workmen engaged by contractor are required for gate pass. Without PVC and Photo Identity card, Gate passes for entry inside the ONGC premises will not be issued.
3. Contractor shall arrange for the necessary transport, medical, accommodation and other facilities for his employees, staff and labour at his own cost and abide by all labour laws, Safety codes and statutory regulations and keep owner indemnified in respect thereof.

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Rest room with necessary facilities required for the Labour deployed as per the labour rules & regulations is to be established at site.

4. Contractor shall adhere to safe construction practices and shall comply with the safety rules of M/s BHEL - HPVP / ONGC in vogue at site and as per HSE & OHSAS in Chapter IX of Special Conditions of Contract and ONGC Standard.
  - a) Contractor and his employees shall follow all fire and safety, security regulations of ONGC.
  - b) Before start of any work, contractor shall apply & obtain well in advance not less than a day safety permit/hot permit etc., for execution of work. Liaisoning with BHEL-HPVP / ONGC for obtaining the above permits is to be taken care by contractor.
  - c) The safety items required for the workers and staff shall be provided by the contractor within his quoted rates viz.
    - i) Safety Helmets, Safety Belts, Safety Shoes, Safety gloves etc.
    - ii) Welders Gloves, Helmets, Apron etc.,
    - iii) Gas cutters Goggles, Grinders mask etc.,
    - iv) Safety Cloths / Jackets when needed.
  - d) During the execution of site work, the contractor at all times shall keep the work and storage area free from accumulation of waste materials, rubbish etc.
5. Contractor shall arrange Insurance as may be required under law for all his employees and labour engaged by him.
6. **The contractor has to obtain labour license before commencement of site works as per the Labour Act.** However, FORM-V will be issued by ONGC for the labour license. All liaisoning activities required for obtaining labour license from Labour Dept. to be done by contractor. It is the contractor's responsibility to maintain the documentation as per labour act.
7. The contractor shall fulfill all statutory obligations with regard to **Employee Provident Fund (EPF) & ESI** in respect of his employees / labour engaged by them and should submit proof to site In-charge / Resident Manager of BHEL - HPVP for the latest payments made to the concerned statutory authority along with each Running Account Bill.

The contractor shall be required to submit the following documents/details every month along with monthly RA bill.

- a) Copy of PF-ECR duly stamped by the designated Bank, along with a print of the digitally signed PDF data sheet of the ECR as proof of payment, each month.
- b) Copy of the online challan endorsed / stamped by the designated bank as proof of receipt of payment towards monthly contribution of ESI contribution.
- c) Copy of Return of contribution in respect of ESI for each contribution period of the six months i.e., for the contribution period ended 30<sup>th</sup> Sept and the contribution period ended 31<sup>st</sup> March.
- d) Contractor shall also ensure that all statutory obligations such as Labour License, ESI, and PF etc. are complied with as long as they work with BHEL-HPVP in ONGC premises.
- e) The contractor should ensure that workmen engaged at site should have Bank A/c No and photo Identity card. The wages paid to the workmen / supervisor etc. should be deposited to their Bank Account. No cash payment is acceptable.

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8. Since the heater is in the operating unit inside refinery, Contractor has to obtain all work permits viz. Hot Work permits, Cold work permits etc. daily before start of the job and all the formalities required to obtain the same are fulfilled by the contractor.

9. **SITE OFFICE / STORES SHED:**

No land will be provided for labor hutments but for temporary site office, stores (covered/open), to the extent area available can be provided. The contractor has to construct his site office, stores etc., and no material will be given for the same. Site office and storage area allotted to the contractor shall be barricaded and should keep his own security personnel for the safety of the materials etc. The contractor should construct cement godown at his own cost to accommodate at least 2 months peak consumption capacity adopting standard specifications.

The contractor should establish laboratory at site as required for testing of civil engineering works/materials, periodic testing of RCC works as stipulated in IS: 456.

Owner can ask the contractor to vacate the premises in 7 days time on security reasons, National interest or otherwise. The services shall be maintained in most hygienic condition at all times. On completion of the job temporary site office, storage yard, godown and any other temporary establishment etc. shall be dismantled, cleared of debris and handed over, and necessary site clearance certificate shall be obtained from BHEL- HPVP/ONGC.

10. Contractor has to arrange for Gate Entry of all the Raw materials, fabricated items & other materials dispatched from BHEL and different Vendors to ONGC site and all the formalities and liaisoning activities with CISF /ONGC are to be taken care by the contractor at his own cost.

Unloading of the materials from the Trucks / Trailers carrying the above materials to the site is to be done in the shortest possible time and delay / detention of the same, if attributable to contractor, will be charged to his account. Contractor has to deploy exclusive dedicated staff to take care of all the above activities.

11. Contractor has to provide one exclusive helper for BHEL Office at site to work as office boy till completion site work without any additional cost.

11.1 All expenses towards mobilization at site & demobilization including bringing in equipment, clearing the site etc., shall be deemed to be included in the prices quoted and no separate payments on account of such expenses shall be entertained.

11.2 It shall be entirely the contractor's responsibility to provide, operate and maintain all necessary construction equipments, scaffoldings and safety gadgets, cranes and other lifting tackles, tools and appliances to perform the work in a workman like and efficient manner and complete all the jobs as per time schedules.

11.3 Preparing approaches and working area for the movement and operation of the cranes, leveling the areas for assembly and erection shall also be the responsibility of the contractor. The contractor shall acquaint himself with access availability, facilities such as railway siding, local labour etc., to provide suitable allowances in this quotation. The Contractor may have to build temporary access roads to aid his own work & rates quoted are will be inclusive of supply of all these items.

12. **SAFETY:**

Contractor shall adhere to all safe construction practices and shall comply with all the safety rules of M/s BHEL - HPVP / EIL /ONGC in vogue at site and as per HSE & OHSAS.

Exclusive Safety Supervisors/ Engineers to be deployed at both Fabrication yard and Erection site by the contractor. Housekeeping is to be maintained as per the BHEL/ EIL / ONGC. Any

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penalties imposed by BHEL/ ONGC for noncompliance of safety practices and for poor housekeeping, the same amount will be deducted from the RA bills of the contractor.

**13. SECURITY:**

Contractor has to provide security arrangements by engaging Security Guards round the clock for safe custody and storage of FIM materials, machineries etc., both at fabrication yard and erection site within his quoted rates.

**PART –C (COMMERCIAL)**

**1. PRICE:**

- 1.1 Tenderer shall quote his best competitive price for the subject work as per the scope of works given in the DETAILED SCOPE OF WORKS (ANNEXURE. I), Schedule of Quantity and Rates (ANNEXURE- II A & B), Drawings, , General Conditions of Contract (ANNEXURE-III), Special conditions of the contract(ANNEXURE-IV) and Standards Technical Specification (ANNEXURE-V) in the pro-forma “**SCHEDULE OF QUANTITIES AND RATES**” (SOQR) enclosed at **Annexure – II/A. Prices shall be inclusive of all taxes and duties except for Service tax. Service Tax shall be reimbursed against proof of payment and submission of documents as per prevailing act.**
- 1.2 Tenderer to quote the Optional unit price for handing over of used structural materials after dismantling to BHEL-HPVP for their use in the pro-forma “**SCHEDULE OF QUANTITIES AND RATES**” (SOQR) enclosed at **Annexure – II/B.**

**2. TERMS OF PAYMENT:**

**90 %** progressive payment is based on work done against monthly RA bill.

**10%** shall be retained towards Performance Guarantee for Workmanship and shall become refundable after expiry of guarantee period/defect liability period, provided all the defects noticed during the guarantee period have been rectified and after deducting all expenses/other amounts due to BHEL. This retention amount can be released on commencement of guarantee period and submission of equivalent Performance bank guarantee valid for Defect liability period plus claim period of 3 months.

Contractor shall submit detailed billing break-up which is to be approved by BHEL-HPVP for submission of monthly RA bill after award of job.

**3. Mode of payment:**

Payment shall be made based on the quantities executed at site and certified by BHEL Resident Engineer.

90% of the gross admitted value will be paid from HO after making deductions for materials/ services provided at site, IT and any other recoveries within 30 days of submission of bills and all requisite documents complete in all respects.

**Payment will be released only through RTGS/ NEFT and all documents required for the same as specified in SCC are to be submitted by contractor along with the bill.**

**FINAL BILL**

Final bill shall be submitted after completion of all works and material reconciliation along with following documents as specified in General Conditions of contract.

- a) Work Completion Certificate by BHEL Site In-charge.
- b) No Claim certificate by Contractor.

- c) Material reconciliation statement.
- d) Clearance Certificates wherever applicable viz. Clearance Certificates from Customer for gate pass clearance, labour wage clearance, stores clearance various statutory authorities like Labour Department, PF authorities, Commercial Tax Dept. etc.
- e) Indemnity Bond as per prescribed format.

**4. SECURITY DEPOSIT:**

The successful tenderer shall submit Security Deposit before start of the work as per Clause No. 1.10 of General Conditions of Contract (Doc. No. PS: MSX: GCC. Rev.01)

**5. INCOME TAX:**

Income Tax will be recovered from each RA bill of the contractor as per the rules and regulations in force in accordance with the income tax act prevailing from time to time. TDS certificate to that effect will be issued by BHEL-HPVP.

**6. TAXES & DUTIES**

- a) The prices shall be inclusive of all taxes & duties, levies such as Excise duty, Sales tax / VAT, Works Contract Tax(WCT), Octroi, etc. as applicable in GUJARAT.
- b) Contractor has to pay the applicable Service Tax under original works contract service (40% of gross bill value at applicable service tax rate) against each RA bill and copy of proof of payment is to be enclosed to RA bill. Original Tax Invoice along with copy of the service tax remittance shall be submitted to BHEL . HPVP immediately after payment for reimbursement.
- c) Contractor has to pay the applicable WCT to authority against each RA bill and copy of proof of payment is to be submitted to BHEL . HPVP for reference and records. In case, the contractor fails to pay the WCT, then BHEL will recover the same from contractor RA bill.
- d) Contractor has to submit copies of Monthly/Quarterly returns as a proof that this turnover is reported to GUJRAT Sales Tax Authority. WCT TDS if applicable will be deducted from each RA bill as per the rules & regulations in force in accordance with the GUJARAT VAT act. TDS certificate to that effect will be issued by BHEL-HPVP.

**7. LAW GOVERNING CONTRACT AND COURT JURISDICTION:**

The contract shall be governed by the law for the time being in force in the republic of India. The Civil court having original civil jurisdiction at Visakhapatnam for HPVP shall alone have exclusive jurisdiction in regard to all claims in respect of the contract. No other civil court shall have jurisdiction in case of any dispute under this contract.

**8. MATERIAL ACCOUNTING:**

The contractor shall fully account all the materials issued to them and submit the material reconciliation statement which will be verified and certified by Resident Engineer, BHEL- HPVP. The store clearance has to be taken by the contractor and to be submitted along with final bill for processing final bill.

The surplus materials as well as the scrap after the material accounting shall be returned to BHEL-HPVP by the contractor.

**9. GUARANTEE / DEFECT LIABILITY PERIOD:**

The contractor will be responsible for quality of the workmanship and shall guarantee the work done and materials supplied for a period till completion of dismantling works in all respect as per work order. Should any defects be noticed in the materials (supplied by contractor) and /or workmanship within this period, BHEL-HPVP shall inform the Contractor and Contractor shall immediately on receipt of such intimation depute their personnel within 7 days to investigate the cause of defects and arrange rectification/replacement of the defects at site without any cost to BHEL within a reasonable period.

**10. LIQUIDATED DAMAGES:**

In the event of any delay in completion of work or part thereof as per the contractual completion period due to the reasons attributable to contractor, BHEL - HPVP shall have the right to impose Liquidated Damage at the rate of 0.5% of the contract value for every complete week of delay or part thereof subject to a maximum of 10% of the contract value.

**11. OVER RUN COMPENSATION (ORC) /IDLE CHARGES:**

The contractor shall not be entitled to claim and the company shall not be liable to pay any amount on account of overrun compensation and idle charges, the overrun/ idling may be for whatsoever reasons.

**12. PRICE VARIATION COMPENSATION (PVC):**

The contractor shall be paid only at contract rate/ rates for the work executed and the contractor shall not be entitled to claim or receive any extra amount on account of any price escalations either in materials, labour, taxes/ duties etc., or for any reasons whatsoever and the contract rates are firm and fixed till the completion of the work in all respects.

**13. SITE MOBILISATION:**

The contractor has to commence the work as per time indicated in Letter of Intent from BHEL and shall proceed with the same with due expedition without delay.

**14. PATENTS:**

M/s BHEL - HPVP warrant on their part that any design instructions given by BHEL-HPVP shall not be such, as will cause contractor to infringe any letters of patents, registered designs, trademarks, copy right or other protected right valid in India the performance of work. Subject to this, contractor has to indemnify BHEL-HPVP against any claim for infringement by Contractor or any letters of patent, registered designs, registered trademarks or copy right or other protected right valid in India in performance of contract.

**15. SECRECY:**

All the drawings, designs, specifications and other documents and information contained herein and any instruction given by BHEL-HPVP in the performance of contract, whether parenthetic or pardonable or not shall always remain the exclusive property of M/s BHEL - HPVP and contractor at no time shall question or dispute such right of M/s BHEL - HPVP. Such documents are given on loan by M/s BHEL - HPVP to contractor for the limited purpose of execution of work and shall be returned to M/s BHEL - HPVP in whole on completion of work. Contractor shall not publish or cause to be published any information on project, contract work covered by contract or contractor's participation in it without the prior written concerned of M/s BHEL - HPVP. The provisions of this article shall survive expiry or earlier termination/ suspension of contract.

# PART . II

**(PRICE BID )**

**SCHEDULE OF QUANTITY AND RATES (SOQR)****Name of wok :** Tender for providing Temporary Barricading at Desalter Plant, ONGC, Navagam, Ahmedabad site**IMPORTANT NOTES:**

1	Details of the items in these schedules shall be read in conjunction with the corresponding specifications, drawings and other tender documents. The work shall be carried out as per the schedule of item and drawings. Wherever difference between the schedule of items, drawings and specifications are noted the work shall be carried out as per the former. Between schedule of quantities and drawings, the drawings shall be final.
2	The quantities in this S.O.Q.R are on preliminary design & estimates, and are subject to variation during detailed design stage. However, payments shall be made on the actual quantities executed at site, and no variation in rate shall be made on the actual quantities executed at site, and no extra price shall be made because of variation in quantities. BHEL reserves the rights to change the quantities even at the time of issuing the work order. Therefore the unit rates quoted shall remain firm throughout the contract period.
3	The Contractor shall draw construction water and power, from a single point given by the customer free of cost. The contractor shall take all the required connections / equipment's / extensions up to the point of use, following all safety/statutory regulations stipulated. In case of the power cutoff, DG set shall be arranged by contractor at his cost, as an alternative measure.
4	Certain items are included in this S.O.Q.R without quantities. Contractor shall quote the rates for such items so that the same may be used in case of any requirement. All such rates shall remain firm and valid throughout the contract period.
5	Wherever "Supplying or Providing" is mentioned in the schedule of Items, means "Including cost of all materials, labour, tools and plant temporary arrangements required for the completion of the item of work.
6	Payment for the structural works shall be paid only on the finished weight as per BOM and no extra shall be paid on account of wastage, losses etc. Contractor to quote accordingly in the SOQR.
7	Payment for Tor-steel shall be paid only on the finished weights as per BOM and additional laps, lugs, chairs provided as per site in-charge shall be measured and paid. No extra on account of wastage, losses etc, is payable. Contractor to quote accordingly in the SOQR.
8	Since the proposed works are in Existing plant, all care shall be taken while executing the works, so as not to cause any damage to the existing structures / underground cables or pipes etc. The contractor shall make good immediately at his cost, if any damage occur to the existing facilities, at his cost.
9	Concrete mix design for M20 and M30 shall be done by contractor and to be submitted to Engineer in charge for approval before proceeding with work.
10	Concrete weigh batching as per the design mix is to be used for all concrete works.

11	Wherever mass concreting is to be done, continuous casting is required the contractor has to make all necessary arrangements like Machines, labour, tools, tackles, etc., with out charging extra.
12	In case of site grading and other items involving major earthwork, mechanical equipment like JCB, Bulldozer etc, are to be used, wherever necessary.
13	Specifications, standards, etc. enclosed are to be strictly followed while taking up the construction.
14	All the Codes / Standards referred shall be to the Latest Revisions unless otherwise specified.
15	Unless specifically mentioned otherwise in the contract, the tender shall quote his rates for the finished items and shall provide for the complete cost towards power, water, fuel, tools, tackles, equipment, construction plant, temporary works, labour, materials, levies, taxes, insurance, royalties, transport, layout, repairs, rectification, maintenance till handing over, supervision, shops & establishment services, temporary roads, revenue expenses, contingencies, overheads, profits and all incidental items not specifically implied but are reasonably implied and necessary to complete the work.
16	OPC Cement 43grade conforming to IS 8112 and HYSD TMT bars of Gr. Fe 500D conforming to IS 1786 shall be Supplied & used by Contractor in the works.
17	Disposal of excess soil out side the plant area to be identified by the contractor only, BHEL shall be indemnified of all statutory regulations in this regard.
18	The various activities/items mentioned in the SOQR are not exhaustive. Any other activities which may be required to complete the job in all respects even if not mentioned in SOQR description shall be deemed to have been included in the total quoted prices & no extra payment for these items shall be made under any circumstances.
19	The quantities indicated in SOQ/SOQR are tentative only and may vary +/- 15%. However the rates quoted by the contractor shall be firm & fixed & valid till completion of all works covered under this contract. No cost escalation will be paid on any account throughout the contract period for any item.
20	The quoted prices shall be inclusive of all applicable taxes & duties as applicable as on date of tender submission except service tax. However, Service Tax as applicable shall be reimbursed on submission of proof of payment.
21	No over run charges and escalation shall be paid to the contractor under any circumstances.
22	<b>L1 shall be evaluated based on the quoted total amount. However, BHEL reserves the right to negotiate with L1 vendor or go for Reverse Auction.</b>
23	<b>Offered discount / escalation will be considered for calculation of unit rate &amp; total amount for each item.</b>

ITEM No.	ITEM DESCRIPTION	UOM	QTY	Unit Rate in ₹	Amount in ₹
<b>A</b>	<b>EARTH WORK IN EXCAVATION AND BACK FILLING :</b>				
A.1	Excavation below ground level in basements, foundations, trenches, drains pits etc. in all types of soils, and soft rock. Rate shall include removal of vegetation and shrubs, cutting of sides in slope, dressing of sides and leveling or grading and ramming of bottoms, shoring & strutting wherever necessary, dewatering of accumulated water from any source and keeping the surface dry for subsequent works and removal of surplus excavated materials including loading & unloading, transporting up to a lead of 200 m and depositing after separating Moorum with Boulders in spoil heaps, etc. all complete:				
	a) Up to a depth of 2.00 m	Cu.M	650	540.00	3,51,000.00
	b) Beyond 2.0 m and up to and inclusive of 3.50 m	Cu.M	10	690.00	6,900.00
	c) In Hard rock (with muffled blasting) up to a depth of 2.00 m	Cu.M	10	850.00	8,500.00
A.2	Back filling after execution of the works or filling in plinth to proper grade and levels with selected materials from available excavated soil from spoil heaps within a lead of 200 m, including re-excavating the deposited soil excavated earlier, breaking clod, laying at all depths/heights in layers of 150mm thickness, watering and ramming/rolling and compacting to 90% maximum dry density as per IS 2720 Part VIII and proper dressing etc., all complete.	Cu.M	500	100.00	50,000.00
A.3	Loading, unloading of surplus earth into / from mechanical transport vehicle including re-excavating the deposited soil excavated earlier including all labour, tools & tackles etc., all complete and disposal of same.				
	a) Inside the plant through mechanical transport up to a lead of 1.5km. (Place of disposal shall be approved by Engineer-in-charge)	Cu.M	150	100.00	15,000.00
	b) to Outside the plant through mechanical transport up to a lead of 5km. (Place of disposal shall be approved by Engineer-in-charge)	Cu.M.	50	100.00	5,000.00

<b>B</b>	<b>PLAIN CEMENT CONCRETE:</b>				
B.1	Providing and laying plain cement concrete at all depths below and up to plinth level in foundations, fillings, blinding courses, mud mat, non-suspended floors etc., including tamping, curing but excluding shuttering, etc. all specified in any shape, position, thickness, and finishing the top surface rough or smooth as specified and directed etc., all complete excluding cost of cement.				
	a) Concrete of M10 grade with graded stone aggregate of 20mm and down size having a minimum 28 days crushing strength of 10 N / Sq.mm as per IS 456:2000	Cu.M.	30	6,400.00	1,92,000.00
B.2	Providing and laying Cement Grout with 1:2 cement sand mortar (1 Cement: 2 Sand) under shoe plates of trusses (over concrete) and under steel column / equipment / machine bases including filling foundation bolt holes, pockets and pipe sleeves in any thickness and shape with necessary shuttering and keeping the edge as shown and specified at all levels etc. all complete excluding cost of cement.	Cu.M.	0.5	10,000.00	5,000.00
B.3	Providing and laying of free flow, non shrink (Premix type) Grout with 28 days minimum cube crushing strength of 40 N/sq.mm mixed according to specifications or manufacturer's approved specification, under steel column / equipments / machines bases including filling foundation bolt holes, pockets and pipe sleeves in any thickness and shape with necessary shuttering and keeping the edge as shown and specified at all levels etc. <b>all complete excluding cost of cement.</b>	Cu.M.	0.5	10,000.00	5,000.00
<b>C</b>	<b>REINFORCED CEMENT CONCRETE:</b>				
C.1	Providing and laying structural controlled cement concrete for reinforced concrete work of Grade M – 30 using graded granite stone aggregate 20 mm and down size and minimum 400 kgs of cement per Cu. M. of concrete and as per design mix, at all depths, positions and in any shape and thickness below and up to plinth level including leaving pockets, chamfering wherever required, vibrating, tamping, curing and rendering if required to give a smooth and even surface as specified and shown in foundations of all types (e.g. footings, raft slabs, pavements, equipment / machine foundations, pedestals, columns, plinth beams, suspended or floor slab, drains, stair footings, ramps, cable trenches, wall etc.) all complete but excluding cost of cement, reinforcement steel and shuttering.	Cu.M.	95	6,800.00	6,46,000.00

<b>D</b>	<b>REINFORCEMENT:</b>				
D.1	Supplying of High Yield strength deformed TMT bars of Gr Fe500D conforming to IS: 1786 including unloading, conveyance to work site all labour etc., complete.	MT	7	65,000.00	4,55,000.00
D.2	Placing in position High Yield strength deformed TMT bars of Gr Fe500D conforming to IS: 1786 for RCC work at all heights and depths including carting the same from store / issue points to site of work, straightening, cleaning, de-coiling, cutting, bending to required shape and length as per details, including supply and binding with contractors own 16 SWG black soft annealed binding wire and placing with proper cover blocks, supports, chairs, spacers, return of unused / scrap / unserviceable steel to storage point etc., all complete in all works.	MT	7	22,000.00	1,54,000.00
<b>E</b>	<b>SHUTTERING:</b>				
	Note a) The price for shuttering shall include for providing splayed edges, matching, chamfering, and allowances for overlaps and passing at angles, battens, strutting, bolting wedging, easing, striking and removing.				
	b) The price is also to include for all necessary supports, struts, braces etc, dressing with oil (or other approved method) to prevent adhesion between concrete and form work and all raking and circular cutting and waste.				
	c) Only steel shuttering shall be used and it should produce plain, smooth and even surface, which will thus be integrally finished. If any impression of the shuttering joints is noticed after striking of the shuttering, the same should be treated by rubbing with carborandum stones, (Nothing extra shall be paid on this account).				
E.1	Providing and fixing form work, centering and shuttering for PCC / RCC works in footings, raft beams and slabs, retaining walls, jambs, trenches, equipment / machine foundations and pedestals, pipe sleepers, columns, plinth beams, suspend slabs, beams, stair cases, etc., including strutting, bracing, propping and keeping the same in position during concreting, and removing the same after specified period as per specifications complete for straight shuttering, (plain including) keeping necessary provision for inserts and projecting dowels etc., all complete for: a) Foundations, Slabs, pedestals etc., below and up to plinth level.	Sq. M	270	300.00	81,000.00

F	<p><b>STRUCTURAL WORK</b>                  The following painting specification will be followed for all structural steel.                  Surface preparation:                  Sand Blast cleaning to near white metal cleanliness, until at least 95% of each element of surface area is free of all visible residues with desired surface profile to SA 2.5 as per Swedish Standard SIS 05-59-00. After surface preparation two coats of epoxy polyamide cured zinc chromate primer to aDFT of 35 microns per coat shall be applied.</p>				
	<p>Primer Paint P1:                  Two coats of epoxy polyamide cured zinc chromate primer to a DFT of 35 microns per coat</p>				
	<p>Finish Paint FP1:                  Two coats of epoxy polyamide cured finish paint to a DFT of 35 microns per coat (Gray Colour)</p>				
F.1	<p>Supplying of Structural Steel Structural steel shall be of yield stress of E250 (Fe 410W) conforming to grade B of IS: 2062 and Rolled section as per IS: 808 and wide flange section as per IS: 12778. Tubular steel shall conform to Yst 240 of IS: 1161. Rectangular and square steel hollow sections (i.e. RHS &amp; SHS) shall confirm to Yst 310 of IS: 4923), including unloading, conveyance to work site, all labour etc., complete. <b>After completion of site work contractor shall take back the structural materials as buy back of structural materials. Accordingly contractor to quote the unit rate considering the buy back of structural materials.</b></p>	MT	30	47,244.00	14,17,320.00

F.2	<p>Carting and fabricating bolted and / or welded structural steel works at all levels, including all built – up sections; tubular and rolled sections etc, and / or plates in trusses, wind ties, purlins, portals, frame work, columns, crane gantries, surge girders, bracings, monorails, floor beams, lifting beams, side runners, sag rods, hangers roof and wind girders, platforms and stair cases (excluding chequered plates and gratings), ladders, stoppers, brackets, supports for equipments and technological accessories and process piping, railings, posts, trestles, etc., for all heights (Structural steel shall be of yield stress of E250 Fe 410W) conforming to grade B of IS: 2062 and Rolled section as per IS: 808 and wide flange section as per IS: 12778. Tubular steel shall conform to Yst 240 of IS: 1161. Rectangular and square steel hollow sections (i.e. RHS &amp; SHS) shall confirm to Yst 310 of IS: 4923), cutting to required size, straightening if required, bolting / welding of joints, rounding the unfinished edges by grinding fixing in line and level with temporary staging and removal of the same after final alignment including providing all tools, tackles, consumables like welding rods, erection bolts, jigs and fixtures; preparing the surface for painting, shot blast cleaning to SA 2-1/2 grade., removal of mills scale, dust, rust, oil or grease and applying primer and finish paint. Payment shall be made for the finished weight only. Including loading and unloading of raw structural steel but excluding cost of raw structural steel. <b>Since the customer is not providing fabrication yard inside their plant premises, Contractor has to arrange the fabrication of structural out side the plant at his own cost. All fabricated steel members are to be brought to site on returnable basis. Contractor to quote the unit rate considering that fabrication of structural steel to be carried out at contractor's work shop.</b></p>	MT	30	47,000.00	14,10,000.00
F.3	<p>Carrying from stacks to erection site and erection of fabricated steel work including all handling, conveying, assembling, hoisting, erecting in position, site welding and or bolting, alignment of structures , all as per drawings and standard specifications. Rate includes cost of bolts &amp; nuts of approved brand and quality, hire charges for cranes, lifting tackles, welding tools and plants, labour etc., but excluding cost of fabricated components. Weight of fasteners will not be accounted for payment.</p>	MT	30	10,000.00	3,00,000.00
F.4	<p>Fabricating and supplying and fixing threaded anchor bolts of all diameter, nuts, washers, anchor, plates, pipe sleeves, etc. in foundations, columns, slabs, beams and walls etc. or any other place as directed including necessary templates, providing auxiliary dummy structure, if required including necessary tying and welding with reinforcement, adjustment of shuttering, greasing exposed metal surface, covering bolts and packing sleeves with jute cloth etc., all complete(Measurement on the basis of weight of anchor bolts as per approved construction drawings).</p>	MT	1	1,25,000.00	1,25,000.00

F.5	Collecting, cleaning rust and grease and fixing fabricated anchor bolts of all sizes and shapes rigidly to lines and levels as per drawings with the help of temporary removable timber / steel zig with necessary welding of scrap cut piece reinforcement bars to anchor bolts and reinforcing rods including all materials. Only fabricated anchor bolts/ Nuts and washers will be supplied as free issue. (Measurements on the basis of wt. of anchor bolts as per approved construction drawing only). The party has to draw the material from BHEL including loading, transportation, unloading etc.	MT	1	50,000.00	50,000.00
G	Supplying of 43 grade Ordinary Portland Cement conforming to IS: 8112 including unloading, conveyance to work site all labour etc., complete.	MT	45	6,800.00	3,06,000.00
H	Carrying from stacks to erection site and fixing galvalume cladding sheets for barricading including cost of fixing screws, all tools, tackles etc. complete. Measurement shall be done for laid area only. <b>Cladding sheets will be supplied free of cost at our stock yard near site office.</b>	Sq. M	900	226.00	2,03,400.00
I	Evaluation of strength of the existing heater foundations (6 nos) and blower foundation (2 nos) using Non-destructive concrete testing methods like Ultrasonic Pulse velocity, Re-bounce Hammer as per IS 13311 Part I&II respectively. The object of test is to establish i) The homogeneity of concrete ii) The presence of cracks, voids and other imperfections iii) Changes in the structure of the concrete which may occur with time iv) The quality of the concrete in relation to standard requirements v) The quality of one element of concrete in relation to another vi) The value of dynamic elastic modulus of the concrete.	L.S.		1,70,400.00	1,70,400.00
J	Dismantling of Barricading structures, cleaning & leveling of ground including breaking of foundation upto grade level with all tools and tackles, labour etc complete in all respect.	MT	30	8,500.00	2,55,000.00
	<b>Total amount in ₹</b>				<b>62,11,520.00</b>
	<b>Discount / Escalation offered by Bidder on above total amount in %</b>				
	<b>Total Offered amount after Discount / Escalation offered by Bidder in ₹</b>				

SIGNATURE OF THE CONTRACTOR

**ANNEXURE-II/B**

**Name of wok** : Civil & Structural Works for providing Temporary Barricading at ONGC, Navagam, Ahmedabad site

Tender Enquiry No.: OPS/OS/WC/2016-17/51/069, Dated: 10.03.2017

**SCHEDULE OF QUANTITY AND RATES (SOQR) -OPTIONAL ITEMS**

<b>Sl. No</b>	<b>Description of items</b>	<b>Unit</b>	<b>Rate per MT in ₹</b>
1	Price for handing over all dismantled structural items to BHEL-HPVP site at Desalter Plant, ONGC-Navagam, Ahmedabad	MT	

**SIGNATURE OF THE CONTRACTOR**

Ref: OPS/OS/WC/2016-17/51/069

Date: 10.03.2017

ANNEXURE - III

## **GENERAL CONDITIONS OF CONTRACT**

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## **CHAPTER -1**

### **1. GENERAL INSTRUCTION TO TENDERERS**

#### **1.1. DESPATCH INSTRUCTION**

- i) The General Conditions of Contract form part of the Tender specifications. **All pages of the tender documents shall be duly signed, stamped and submitted along with the offer in token of complete acceptance thereof.** The information furnished shall be complete by itself. The tenderer is required to furnish all the details and other documents as required in the following pages
- ii) Tenderers are advised to study all the tender documents carefully. Any submission of tender by the tenderer shall be deemed to have been done after careful study and examination of the tender documents and with the full understanding of the implications thereof. Should the tenderers have any doubt about the meaning of any portion of the Tender Specification or find discrepancies or omissions in the drawings or the tender documents issued are incomplete or shall require clarification on any of the technical aspect, the scope of work etc., he shall at once, contact the authority inviting the tender well in time (so as not to affect last date of submission) for clarification before the submission of the tender. Tenderer's request for clarifications shall be with reference to Sections and Clause numbers given in the tender documents. The specifications and terms and conditions shall be deemed to have been accepted by the tenderer in his offer. Noncompliance with any of the requirements and instructions of the tender enquiry may result in the rejection of the tender.

#### **1.2. SUBMISSION OF TENDERS**

- 1.2.1 The tenderers must submit their tenders to Officer inviting tender as per instructions in the NIT
- 1.2.2 Tenders submitted by post shall be sent by 'REGISTERED POST ACKNOWLEDGEMENT DUE /by COURIER' and shall be posted with due allowance for any postal/courier delays. BHEL takes no responsibility for delay, loss or non-receipt of tenders sent by post/courier. **The tenders received after the specified time of their submission are treated as 'Late Tenders' and shall not be considered under any circumstances.** Offers received by Fax/Email/Internet shall be considered as per terms of NIT.
- 1.2.3 Tenders shall be opened by authorised Officer of BHEL at his office at the time and date as specified in the NIT, in the presence of such of those tenderers or their authorised representatives who may be present
- 1.2.4 Tenderers whose bids are found techno commercially qualified shall be informed the date and time of opening of the Price Bids and such Tenderers may depute their representatives to witness the opening of the price bids. BHEL's decision in this regard shall be final and binding.
- 1.2.5 Before submission of Offer, the tenderers are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour, means of transport and access to Site, accommodation, etc. No claim will be entertained later on the grounds of lack of knowledge of any of these conditions.

#### **1.3. LANGUAGE**

- 1.3.1 The tenderer shall quote the rates in English language and international numerals. These rates shall be entered in figures as well as in words. For the purpose of the tenders, the metric system of units shall be used.
- 1.3.2 All entries in the tender shall either be typed or written legibly in ink. Erasing and over-writing is not permitted and may render such tenders liable for rejection. All cancellations and insertions shall be duly attested by the tenderer.

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#### 1.4 **PRICE DISCREPANCY:**

1.4.1 **Conventional (Manual) Price Bid opening:** In the case of price bid opening without resorting to Reverse Auction, if there are differences between the rates given by the tenderer in words and figures or in amount worked out by him, the following procedure for evaluation and award shall be followed:

- i) When there is a difference between the rates in figures and in words, the rates which corresponds to the amounts worked out by the contractor, shall be taken as correct
- ii) When the amount of an item is not worked out by the contractor or it does not correspond with the rate written either in figure or in words, then the rate quoted by the contractor in words shall be taken as correct
- iii) When the rate quoted by the contractor in figures and words tallies but the amount is not worked out correctly, the rate quoted by the contractor shall be taken as correct and not the amount.
- iv) In case of lump sum price, if there is any difference between the amount in figures and in words, the amount quoted by the bidder in words shall be taken as correct.
- v) In case of omission in quoting any rate for one or more items, the evaluation shall be done considering the highest quoted rate obtained against the respective items by other tenderers for the subject tender. If the tenderer becomes L-1, the notional rates for the omission items shall be the lowest rates quoted for the respective items by the other tenderers against the respective omission items for the subject job and the 'Total quoted price (loaded for omissions)' shall be arrived at. However, the overall price remaining the same as quoted originally, the rates for all the items in the 'Total quoted price (loaded for omissions)' shall be reduced item wise in proportion to the ratio of 'Original' total price and the 'Total quoted price (loaded for omissions)'
- vi) The 'Final Total Amount' shall be arrived at after considering the amounts worked out in line with 'i' to 'iv' above.

1.4.2 **Reverse Auction:** In case of Reverse Auction, the successful bidder shall undertake to execute the work as per overall price offered by him during the Reverse Auction process. In case of omission of rates, the procedure shall be as per 'Guidelines for Reverse Auction' enclosed.

#### 1.5 **QUALIFICATION OF TENDERERS**

- i) Only tenderers who have previous experience in the work of the nature and description detailed in the Notice Inviting Tender and/or tender specification are expected to quote for this work duly detailing their experience along with offer.
- ii) Offers from tenderers who do not have proven and established experience in the field shall not be considered
- iii) Offers from tenderers who are under suspension (banned) by any Unit/Region/Division of BHEL shall not be considered.
- iv) Offers from tenderers who do not comply with the latest guidelines of Ministry/Commissions of Govt of India shall not be considered.

#### 1.6. **EVALUATION OF BIDS**

- i) Technical Bids submitted by the tenderer will be opened first and evaluated for fulfilling the Pre-Qualification criteria and other conditions in NIT/Tender documents, based on documentary evidences submitted along with the offer
- ii) In case the same qualifying experience is claimed by more than one agency, then the agency who has executed the work as per documentary evidence submitted shall only be qualified. Scope of qualifying work should be totally with the agency who has executed and in case it is only labour + consumables without T&P, then the responsibility of execution is assigned to the first agency and not to the agency who has executed only as labour supply contractor. Further, BHEL reserves the right to ask for further proofs including submission of TDS certificates for the said job.

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- iii) In case the qualifying experience is claimed by private organizations based on Work Order and completion certificates from another private organization, BHEL reserves the right to ask for further proofs including submission of TDS certificates for the said job
- iv) Assessing Bidder Capacity for executing the current tender shall be as per Notice Inviting Tender
- v) Price Bids of shortlisted bidders shall only be opened either through the conventional price bid opening or through electronic Reverse Auction, at the discretion of BHEL
- vi) Price Bids of unqualified bidders shall not be opened. Reasons for rejection shall be intimated in due course after issue of LOI/LOA to successful bidder and receipt of unqualified acceptance from the successful bidder

#### 1.7. **DATA TO BE ENCLOSED**

Full information shall be given by the tenderer in respect of the following. Non-submission of this information may lead to rejection of the offer.

##### i) **INCOME TAX PERMANENT ACCOUNT NUMBER**

Certified copies of Permanent Account Numbers as allotted by Income Tax Department for the Company/Firm/Individual Partners, etc. shall be furnished along with tender.

##### ii) **ORGANIZATION CHART**

The organization chart of the tenderer's organization, including the names, addresses and contact information of the Directors/Partners shall be furnished along with the offer.

- iii) An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor

##### iv) **IN CASE OF INDIVIDUAL TENDERER:**

His / her full name, address and place & nature of business.

##### v) **IN CASE OF PARTNERSHIP FIRM**

The names of all the partners and their addresses, a copy of the partnership deed/instrument of partnership duly certified by the Notary Public shall be enclosed.

##### vi) **IN CASE OF COMPANIES:**

- a. Date and place of registration including date of commencement certificate in case of Public Companies (certified copies of Memorandum and articles of Association are also to be furnished).
- b. Nature of business carried on by the Company and the provisions of the Memorandum relating thereof.

#### 1.8 **AUTHORISATION AND ATTESTATION**

Tenders shall be signed by a person duly authorized/empowered to do so. An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor shall be submitted along with the tenders.

#### 1.9 **EARNEST MONEY DEPOSIT**

A. EMD is to be paid by the tenderers for securing fulfillment of any obligations in terms of the NIT.

B. **Modes of Deposit:** The EMD may be accepted only in the following forms:

- a) Cash Deposit as permissible under the extant Income Tax Act (before tender opening).
- b) Electronic Fund Transfer credited in BHEL account (before tender opening).
- c) Bankers' Cheque / Pay Order/ Demand Draft, in favour of BHEL, Visakhapatnam along with offer.

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C. **Forfeiture of EMD:** EMD by the tenderer will be forfeited as per NIT conditions, if:

- a) After opening the tender and within the offer validity period, the tenderer revokes his tender or makes any modification in his tender which is not acceptable to BHEL.
- b) The contractor fails to deposit the required security deposit or commence the work within the period as per LOI/ Contract.
- c) EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged under the provisions of extant %Guidelines on Suspension of business dealings with suppliers/ contractors+ and forfeited/ released based on the action as determined under these guidelines.

D. EMD given by all unsuccessful tenderers shall be refunded normally within 15 days of award of work.

E. EMD shall not carry any interest

F. EMD of successful tenderer will be retained as part of Security Deposit

#### 1.10 SECURITY DEPOSIT

A. Security deposit means the security provided by the contractor towards fulfillment of any obligations in terms of the provisions of the contract.

B. The total amount of the security deposit will be **5% of the contract value**. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security deposit.

#### C. **Modes of Deposit:**

The balance amount to make up the required Security Deposit of 5% of the contract value may be accepted in the following forms:

- a) Cash (as permissible under the extant Income Tax Act)
- b) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.
- c) Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the company's act. The bank guarantee format should have the approval of BHEL.
- d) Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the company's act (FDR should be in the name of the contractor, a/c BHEL.
- e) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL)

(Note: 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)

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**D. Collection of Security deposit:**

At least 50% of the required security deposit, including the EMD, should be submitted before start of the work. Balance security deposit can be collected by deducting 10% of the gross amount progressively from each of the running bills of the contractor till the total amount of the required security deposit is collected.

E. Security deposit shall be released to the contractor upon fulfillment of contractual obligations as per the terms of the contract.

F. The security deposit shall not carry any interest.

1.10.4 In case the value of work exceeds / reduces from the awarded / accepted value, the Security Deposit shall be correspondingly enhanced / reduced as given below:

- i) The enhanced part of the Security Deposit shall be immediately deposited by the Contractor or adjusted against payments due to the Contractor.
- ii) There will be no reduction in Security Deposit value in case of variation in contract value upto the lower limit specified in Quantity variation clause. In case of reduction of contract value beyond the lower limit specified in Quantity Variation clause, then the Security Deposit shall be re adjusted in proportion.
- iii) In case of reduction, the reduced Contract value shall be certified by BHEL Construction Manager after ascertaining / freezing of BOQ / Drawings from the Design / Engineering Centre. The reduced Security Deposit value can only be considered after taking into account the adequacy of the securities held by BHEL to meet the liabilities of the contractor for the contract, and the performance of the contract in general.

**In such cases, the revised value of Security Deposit shall be worked out only after execution of not less than the lower limit of the revised scope of work/contract value as per quantity variation clause, and as certified by Construction Manager. This reduction in value of Security Deposit shall not entitle the contractor to any amendment of Contract and shall be operated at the discretion of BHEL**

iv) Void.

1.10.5 The validity of Bank Guarantees towards Security Deposit shall be initially up to the completion period as stipulated in the Letter of Intent/Award + 3 months, and the same shall be kept valid by proper renewal till the acceptance of Final Bills of the Contractor, by BHEL

1.10.7 BHEL reserves the right of forfeiture of Security Deposit in addition to other claims and penalties in the event of the Contractor's failure to fulfill any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserves the right to set off the Security Deposit against any claims of other contracts with BHEL.

**1.11 RETURN OF SECURITY DEPOSIT**

Security Deposit shall be refunded/Bank Guarantee(s) released to the Contractor along with the 'Final Bill' after deducting all expenses / other amounts due to BHEL under the contract / other contracts entered into with them by BHEL.

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### 1.12 BANK GUARANTEES

- Where ever Bank Guarantees are to be furnished/submitted by the contractor, the following shall be complied with
- i) Bank Guarantees shall be from Scheduled Banks / Public Financial Institutions as defined in the Companies Act.
  - ii) The Bank Guarantees shall be as per prescribed formats.
  - iii) It is the responsibility of the bidder to get the Bank Guarantees revalidated/extended for the required period (subject to a minimum period of six months), as per the advice of BHEL Site Engineer / Construction Manager. BHEL shall not be liable for issue of any reminders regarding expiry of the Bank Guarantees.
  - iv) In case extension/further extensions of any Bank Guarantees are not required, the bidders shall ensure that the same is explicitly endorsed by the Construction Manager and submitted to the Regional HQ issuing the LOI/LOA.
  - v) In case the Bank Guarantees are not extended before the expiry date, BHEL reserves the right to invoke the same by informing the concerned Bank in writing, without any advance notice/ communication to the concerned bidder
  - vi) Bidders to note that any corrections to Bank Guarantees shall be done by the issuing Bank, only through an amendment in an appropriate non judicial stamp paper.
  - vii) The Original Bank Guarantee shall be sent directly by the Bank to BHEL under Registered Post (Acknowledgement Due), addressed to the Subcontracting Department of the respective Region.

### 1.13 VALIDITY OF OFFER

The rates in the Tender shall be kept open for acceptance for a minimum period of **SIX MONTHS** from latest due date of offer submission (including extension, if any). In case BHEL (Bharat Heavy Electricals Ltd) calls for negotiations, such negotiations shall not amount to cancellation or withdrawal of the original offer which shall be binding on the tenderers.

### 1.14 EXECUTION OF CONTRACT AGREEMENT

The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Intent by Bharat Heavy Electricals Limited. The Tenderer shall submit an unqualified acceptance to the Letter of Intent/Award within the period stipulated therein.

The successful tenderer shall be required to execute an agreement in the prescribed form, with BHEL, within a reasonable time after the acceptance of the Letter of Intent/Award, and in any case before releasing the first running bill. The contract agreement shall be signed by a person duly authorized/empowered by the tenderer. The expenses for preparation of agreement document shall be borne by BHEL

### 1.15 REJECTION OF TENDER AND OTHER CONDITIONS

- 1.15.1 The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever: -
- a. To reject any or all of the tenders.
  - b. To split up the work amongst two or more tenderers as per NIT
  - c. To award the work in part if specified in NIT
  - d. In case of either of the contingencies stated in (b) and (c) above, the time for completion as stipulated in the tender shall be applicable.

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- 1.15.2 Conditional tenders, unsolicited tenders, tender which are incomplete or not in the form specified or defective or have been materially altered or not in accordance with the tender conditions, specifications etc., are liable to be rejected.
- 1.15.3 Tenders are liable to be rejected in case of unsatisfactory performance of the tenderer with BHEL, or tenderer under suspension (hold/banning /delisted) by any unit / region / division of BHEL or tenderers who do not comply with the latest guidelines of Ministry/Commissions of Govt. of India. BHEL reserves the right to reject a bidder in case it is observed that they are overloaded and may not be in a position to execute this job as per the required schedule. The decision of BHEL will be final in this regard.
- 1.15.4 If a tenderer who is a proprietor expires after the submission of his tender or after the acceptance of his tender, BHEL may at their discretion, cancel such tender. If a partner of a firm expires after the submission of tender or after the acceptance of the tender, BHEL may then cancel such tender at their discretion, unless the firm retains its character.
- 1.15.5 BHEL will not be bound by any Power of Attorney granted by changes in the composition of the firm made subsequent to the execution of the contract. They may, however, recognize such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.
- 1.15.6 If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract if awarded and forfeit the Earnest Money/Security Deposit/any other money due.
- 1.15.7 Canvassing in any form in connection with the tenders submitted by the Tenderer shall make his offer liable to rejection.
- 1.15.8 In case the Proprietor, Partner or Director of the Company/Firm submitting the Tender, has any relative or relation employed in BHEL, the authority inviting the Tender shall be informed of the fact as per specified format, along with the Offer. Failing to do so, BHEL may, at its sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money/Security Deposit.
- 1.15.9 The successful tenderer should not sub-contract part or complete work detailed in the tender specification undertaken by him without written permission of BHEL's Construction Manager/Site In-charge. The tenderer is solely responsible to BHEL for the work awarded to him.
- 1.15.10 The Tender submitted by a techno commercially qualified tenderer shall become the property of BHEL who shall be under no obligation to return the same to the bidder. However unopened price bids and late tenders shall be returned to the bidders
- 1.15.11 Unsolicited discount received after the due date and time of Bid Submission shall not be considered for evaluation. However, if the party who has submitted the unsolicited discount/rebate becomes the L-1 party, then the awarded price i.e contract value shall be worked out after considering the discount so offered.
- 1.15.12 BHEL shall not be liable for any expenses incurred by the bidder in the preparation of the tender irrespective of whether the tender is accepted or not.

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## **CHAPTER-2**

**2.1 DEFINITION:** The following terms shall have the meaning hereby assigned to them except where the context otherwise requires.

- i) BHEL shall mean Bharat Heavy Electricals Limited (of the respective Power Sector Region inviting the Tender), a company registered under Indian Companies Act 1956, with its Registered Office at BHEL HOUSE, SIRI FORT, NEW DELHI – 110 049, or its Power Sector Regional Offices or its Authorized Officers or its Site Engineers or other employees authorized to deal with any matters with which these persons are concerned on its behalf.
- ii) “EXECUTIVE DIRECTOR” or ‘GROUP GENERAL MANAGER’ or “GENERAL MANAGER (In charge)” or “GENERAL MANAGER” shall mean the Officer in Administrative charge of the respective Power Sector Region.
- iii) “COMPETENT AUTHORITY” shall mean Executive Director or Group General Manager or General Manager (In charge) or General Manager or BHEL Officers who are empowered to act on behalf of the Executive Director or General Manager (In charge) or General Manager of BHEL.
- iv) “ENGINEER” or “ENGINEER IN CHARGE” shall mean an Officer of BHEL as may be duly appointed and authorized by BHEL to act as “Engineer” on his behalf for the purpose of the Contract, to perform the duty set forth in this General Conditions of Contract and other Contract documents. The term also includes ‘CONSTRUCTION MANAGER’ or ‘SITE INCHARGE’ as well as Officers at Site or at the Headquarters of the respective Power Sector Regions.
- v) “SITE” shall mean the places or place at which the plants / equipment are to be erected and services are to be performed as per the specification of this Tender.
- vi) “CLIENT OF BHEL” or “CUSTOMER” shall mean the project authorities with whom BHEL has entered into a contract for supply of equipments or provision of services.
- vii) “CONTRACTOR” shall mean the successful Bidder/Tenderer who is awarded the Contract and shall include the Contractor’s successors, heirs, executors, administrators and permitted assigns.
- viii) “CONTRACT” or “CONTRACT DOCUMENT” shall mean and include the Agreement of Work Order, the accepted appendices of Rates, Schedules, Quantities if any, General Conditions of Contract, Special Conditions of Contract, Technical conditions and scope of work, Instructions to the Tenderers, Drawings, Technical Specifications, the Special Specifications if any, the Tender documents, subsequent amendments mutually agreed upon and the Letter of Intent/Acceptance issued by BHEL. Any conditions or terms stipulated by the contractor in the tender documents or subsequent letters shall not form part of the contract unless, specifically accepted in writing by BHEL in the Letter of Intent/Award and incorporated in the agreement.
- ix) “GENERAL CONDITIONS OF CONTRACT” shall mean the ‘Instructions to Tenderers’ and ‘General Conditions of Contract’ pertaining to the work for which above tenders have been called for.
- x) “TENDER SPECIFICATION” or “TENDER” or “TENDER DOCUMENTS” shall mean General Conditions, Common Conditions, Special Conditions, Technical conditions and scope of works, Price Bid, Rate Schedule, Technical Specifications, Appendices, Annexures, Corrigendums, Amendments, Forms, procedures, Site information, etc. and drawings/documents pertaining to the work for which the tenderers are required to submit their offers. Individual specification number will be assigned to each Tender Specification.
- xi) “LETTER OF INTENT” shall mean the intimation by a Letter/Fax/email to the tenderer that the tender has been accepted in accordance with provisions contained in the letter. The responsibility of the contractor commences from the date of issue of this letter and all terms and conditions of the contract are applicable from this date.

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<p>xii) "COMPLETION TIME" shall mean the period by 'date/month' specified in the 'Letter of Intent/Award' or date mutually agreed upon for handing over of the intended scope of work, the erected equipment/plant which are found acceptable by the Engineer, being of required standard and conforming to the specifications of the Contract.</p> <p>xiii) "PLANT" shall mean and connote the entire assembly of the plant and equipment covered by the contract.</p> <p>xiv) "EQUIPMENT" shall mean equipment, machineries, materials, structural, electrical and other components of the plant covered by the contract.</p> <p>xv) "TESTS" shall mean and include such test or tests to be carried out on the part of the contractor as are prescribed in the contract or considered necessary by BHEL, in order to ascertain the quality, workmanship, performance and efficiency of the contractor or part thereof.</p> <p>xvi) "APPROVED", "DIRECTED" or "INSTRUCTED" shall mean approved, directed or instructed by BHEL.</p> <p>xvii) "WORK or CONTRACT WORK" shall mean and include supply of all categories of labour, specified consumables, tools and tackles and Plants required for complete and satisfactory site transportation, handling, stacking, storing, erecting, testing and commissioning of the equipments to the entire satisfaction of BHEL.</p> <p>xviii) "SINGULAR AND PLURALS ETC" words carrying singular number shall also include plural and vice versa, where the context so requires. Words imparting the masculine Gender shall be taken to include the feminine Gender and words imparting persons shall include any Company or Associations or Body of Individuals, whether incorporated or not.</p> <p>xix) "HEADING" – The heading in these General Conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken as instructions thereof or of the contract.</p> <p>xx) "MONTH" shall mean calendar month unless otherwise specified in the Tender.</p> <p>xxi) Day' or 'Days' unless herein otherwise expressly defined shall mean calendar day or days of twenty four (24) hours each. A week shall mean continuous period of seven (7) days.</p> <p>xxii) "COMMISSIONING" shall mean the synchronization testing and achieving functional operation of the Equipment with associated system after all initial adjustments, trials, cleaning, re- assembly required at site if any, have been completed and Equipment with associated system is ready for taking into service.</p> <p>xxiii) "WRITING" shall include any manuscript type written or hand written or printed statement or electronically transmitted messages, under the signature or seal or transmittal of BHEL.</p> <p>xxiv) "TEMPORARY WORK" shall mean all temporary works for every kind required in or for the execution, completion, maintenance of the work.</p> <p>xxv) 'CONTRACT PRICE' or 'CONTRACT VALUE' shall mean the sum mentioned in the LOI/LOA/Contract Agreement subject to such additions thereto or deductions there from as may be made under provisions hereinafter contained.</p> <p>xxvi) "COMMENCEMENT DATE" or "START DATE" shall mean the commencement/start of work at Site as per terms defined in the Tender.</p> <p>xxvii) "SHORT CLOSING" or "FORE CLOSING" of Contract shall mean the premature closing of Contract, for reasons not attributable to the contractor and mutually agreed between BHEL and the contractor.</p> <p>xxviii) "TERMINATION" of Contract shall mean the pre mature closing of contract due to reasons as mentioned in the contract</p> <p>xxix) "DE MOBILISATION" shall mean the temporary winding up of Site establishment by Contractor leading to suspension of works temporarily for reasons not attributable to the contractor.</p> <p>xxx) "RE MOBILISATION" shall mean the resumption of work with all resources required for the work after demobilization.</p>	

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**2.2 LAW GOVERNING THE CONTRACT AND COURT JURISDICTION:**

Please refer Clause No. 7, Part-C of Annexure – I of NIT.

**2.3 ISSUE OF NOTICE**

**2.3.1 Service of notice on contractor**

Any notice to be given to the Contractor under the terms of the contract shall be served by sending the same **by Registered Post / Speed Post** to or leaving the same at the Contractor's last known address of the principal place of business (or in the event of the contractor being a company, to or at its Registered Office). In case of change of address, the notice shall be served at changed address as notified in writing by the Contractor to BHEL. Such posting or leaving of the notice shall be deemed to be good service of such notice and the time mentioned to the condition for doing any act after notice shall be reckoned from the date so mentioned in such notice.

**2.3.2 Service of notice on BHEL**

Any notice to be given to BHEL in-charge/Region under the terms of the Contract shall be served by sending the same by post to or leaving the same at BHEL address or changed address as notified in writing by BHEL to the Contractor.

**2.4 USE OF LAND**

No land belonging to BHEL or their Customer under temporary possession of BHEL shall be occupied by the contractor without written permission of BHEL.

**2.5 COMMENCEMENT OF WORK**

2.5.1 The contractor shall commence the work as per the time indicated in the Letter of Intent from BHEL and shall proceed with the same with due expedition without delay.

2.5.2 If the contractor fails to start the work within stipulated time as per LOI or as intimated by BHEL, then BHEL at its sole discretion will have the right to cancel the contract. The Earnest Money and/or Security Deposit with BHEL will stand forfeited without any further reference to him without prejudice to any and all of BHEL's other rights and remedies in this regard.

2.5.3 All the work shall be carried out under the direction and to the satisfaction of BHEL.

**2.6 MEASUREMENT OF WORK AND MODE OF PAYMENT:**

2.6.1 All payments due to the contractors shall be made by e mode only.

2.6.2 For progress running bill payments: - The Contractor shall present detailed measurement sheets in triplicate, duly indicating all relevant details based on technical documents and connected drawings for work done during the month/period under various categories in line with terms of payment as per contract. The basis of arriving at the quantities, weights shall be relevant documents and drawings released by BHEL. These measurement sheets shall be prepared jointly with BHEL Engineers and signed by both the parties.

2.6.3 These measurement sheets will be checked by BHEL Engineer and quantities and percentage eligible for payment under various groups shall be decided by BHEL Engineer. The abstract of quantities and percentage so arrived at based on the terms of payment shall be entered in Measurement sheets and signed by both the parties.

2.6.4 Based on the above quantities, contractor shall prepare the bills in prescribed format and work out the financial value. Payment shall be made by BHEL after effecting the recoveries due from the contractor.

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- 2.6.5 All recoveries due from the contractor for the month/period shall be effected in full from the corresponding running bills unless specific approval from the competent authorities is obtained to the contrary.
- 2.6.6 Measurement shall be restricted to that portion of work for which it is required to ascertain the financial liability of BHEL under this contract.
- 2.6.7 The measurement shall be taken jointly by persons duly authorized on the part of BHEL and by the Contractor.
- 2.6.8 The Contractor shall bear the expenditure involved if any, in making the measurements and testing of materials to be used/used in the work. The contractor shall, without extra charges, provide all the assistance with appliances and other things necessary for measurement.
- 2.6.9 If at any time due to any reason whatsoever, it becomes necessary to re-measure the work done in full or in part, the expenses towards such re measurements shall be borne by the contractor unless such re measurements are warranted solely for reasons not attributable to contractor.
- 2.6.10 Passing of bills covered by such measurements does not amount to acceptance of the completion of the work measured. Any left out work has to be completed, if pointed out at a later date by BHEL.
- 2.6.11 Final measurement bill shall be prepared in the final bill format prescribed for the purpose based on the certificate issued by BHEL Engineer that entire works as stipulated in tender specification has been completed in all respects to the entire satisfaction of BHEL. Contractor shall give unqualified "No Claim" Certificate. All the tools and tackles loaned to him should be returned in satisfactory condition to BHEL. The Final Bill shall be prepared and paid within a reasonable time after completion of work.
- 2.7 RIGHTS OF BHEL**  
BHEL reserves the following rights in respect of this contract during the original contract period or its extensions if any, as per the provisions of the contract, without entitling the contractor for any compensation.
- 2.7.1 To withdraw any portion of work and/or to restrict/alter quantum of work as indicated in the contract during the progress of work and get it done through other agencies to suit BHEL's commitment to its customer or in case BHEL decides to advance the date of completion due to other emergent reasons/ BHEL's obligation to its customer.
- 2.7.2 To terminate the contract or get any part of the work done through other agency or deploy BHEL's own/hired/otherwise arranged resources, at the risk and cost of the contractor after due notice of a period of two weeks by BHEL, in the event of: -
- i) Contractor's continued poor progress
  - ii) Withdrawal from or abandonment of the work before completion of the work
  - iii) Contractor's inability to progress the work for completion as stipulated in the contract
  - iv) Poor quality of work
  - v) Corrupt act of Contractor
  - vi) Insolvency of the Contractor
  - vii) Persistent disregard to the instructions of BHEL
  - viii) Assignment, transfer, sub-letting of contract without BHEL's written permission
  - ix) Non fulfillment of any contractual obligations
  - x) In the opinion of BHEL, the contractor is overloaded and is not in a position to execute the job as per required schedule.

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- 2.7.3 To meet the expenses including BHEL overheads on the differential cost at 5%, over and above the Liquidated damages/penalties arising out of "Risk & Cost" as explained above under Sl.No.  
2.7.2. BHEL shall recover the amount from any money due from Contractor, or from any money due to the Contractor including Security Deposit, or by forfeiting any T&P or material of the contractor under this contract or any other contract of BHEL or by any other means or any combination thereof
- 2.7.4 To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contract with their customer are terminated for any reason, as per mutual agreement.
- 2.7.5 To effect recovery from any amounts due to the contractor under this or any other contract or in any other form, the moneys BHEL is statutorily forced to pay to anybody, due to contractor's failure to fulfill any of his obligations. BHEL shall levy overheads of 5% on all such payments along with interest as defined elsewhere in the GCC.
- 2.7.6 While every endeavor will be made by BHEL to this end, they cannot guarantee uninterrupted work due to conditions beyond their control. The Contractor will not be normally entitled for any compensation/extra payment on this account unless otherwise specified elsewhere in the contract.
- 2.7.7 In case the execution of works comes to a complete halt or reaches a stage wherein worthwhile works cannot be executed and there is no possibility of commencement of work for a period of not less than two months, due to reasons not attributable to the contractor and other than Force Majeure conditions, BHEL may consider permitting the contractor to de mobilize forthwith and re mobilize at an agreed future date. Cost of such demobilization/remobilization shall be mutually agreed. The duration of contract/time extension shall accordingly get modified suitably. In case of any conflict, BHEL decision in this regard shall be final and binding on the contractor.
- 2.7.8 In the unforeseen event of inordinate delay in receipt of materials, drawings, fronts, etc., due to which inordinate discontinuity of work is anticipated, BHEL at its discretion may consider contractor's request to short close the contract in following cases:
- a) The balance works (including but not limited to Trial Operation, PG Test, etc.) are minor vis a vis the scope of work envisaged as per the contract.
  - b) There has been no significant work in past 6 months OR no significant work is expected in next 6 months (example in Hydro projects or in projects where work has stopped due to reasons beyond the control of BHEL)
  - c) The balance works cannot be done within a reasonable period of time as they are dependent on unit shutdown or on other facilities of customer or any other reasons not attributable to the contractor
- At the point of requesting for short closure, contractor shall establish that he has completed all works possible of completion and he is not able to proceed with the balance works due to constraints beyond his control. In such a case, the estimated value of the unexecuted portion of work (or estimated value of services to be provided for carrying out milestone/stage payments like Trial Operation/PG Test, etc.) as mutually agreed, shall however be reduced from the final contract value.
- 2.7.9 **LIQUIDATED DAMAGES/PENALTY:** Please refer Clause No. 10 (PART-C), of Annexure – I of NIT.

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**2.8 RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF LOCAL LAWS, EMPLOYMENT OF WORKERS ETC.**

The following are the responsibilities of the contractor in respect of observance of local laws, employment of personnel, payment of taxes etc. The subcontractor shall fully indemnify BHEL against any claims of whatsoever nature arising due to the failure of the contractor in discharging any of his responsibilities hereunder:

- 2.8.1 As far as possible, Unskilled Workers shall be engaged from the local areas in which the work is being executed.
- 2.8.2 The contractor at all times during the continuance of this contract shall, in all his dealings with local labour for the time being employed on or in connection with the work, have due regard to all local festivals and religious and other customs.
- 2.8.3 The contractor shall comply with all applicable State and Central Laws, Statutory Rules, Regulations etc. such as Payment of Wages Act, Minimum Wages Act, Workmen Compensation Act, Employer's Liability Act, Industrial Disputes Act, Employers Provident Act, Employees State Insurance Scheme, Contract Labour (Regulation and Abolition) Act 1970, Payment of Bonus & Gratuity Act and other Acts, Rules and Regulations for labour as may be enacted by the Government during the tenure of the Contract and having force or jurisdiction at Site. The Contractor shall also give to the local Governing Body, Police and other relevant Authorities all such notices as may be required by the Law.
- 2.8.4 The contractor shall obtain independent License under the Contract Labour (Regulations and Abolition Act, 1970 )as required from the concerned Authorities based on the certificate (Form-V) issued by the Principal Employer/Customer
- 2.8.5 The contractor shall pay all taxes, fees, license charges, deposits, duties, tolls, royalties, commission or other charges which may be leviable on account of his operations in executing the contract.
- 2.8.6 While BHEL would pay the inspection fees and Registration fees of Boiler/Electrical Inspectorate, all other arrangements for site visits periodically by the Inspectorate to site, Inspection certificate etc. will have to be made by contractor. However, BHEL will not make any payment to the Inspectorate in connection with contractor's Welders/Electricians qualification tests etc.
- 2.8.7 Contractor shall be responsible for provision of Health and Sanitary arrangements (more particularly described in Contract Labour Regulation & Abolition Act), Safety precautions etc. as may be required for safe and satisfactory execution of contract.
- 2.8.8 The contractor shall be responsible for proper accommodation including adequate medical facilities for personnel employed by him.
- 2.8.9 The contractor shall be responsible for the proper behavior and observance of all regulations by the staff employed by him.
- 2.8.10 The contractor shall ensure that no damage is caused to any person/property of other parties working at site. If any such damage is caused, it is responsibility of the contractor to make good the losses or compensate for the same.
- 2.8.11 All the properties/equipment/components of BHEL/their Client loaned with or without deposit to the contractor in connection with the contract shall remain properties of BHEL/their Client.

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- 2.8.12 The contractor shall use such properties for the purpose of execution of this contract. All such properties/equipment/components shall be deemed to be in good condition when received by the contractor unless he notifies within 48 hours to the contrary. The contractor shall return them in good condition as and when required by BHEL/their Client. In case of non-return, loss, damage, repairs etc, the cost thereof as may be fixed by BHEL Engineer will be recovered from the contractor
- 2.8.13 In case the contractor is required to undertake any work outside the scope of this contract, the rates payable shall be those mutually agreed upon if the item rates are not mentioned in existing contract.
- 2.8.14 Any delay in completion of works/or non-achievement of periodical targets due to the reasons attributable to the contractor, the same may have to be compensated by the contractor either by increasing manpower and resources or by working extra hours and/or by working more than one shift. All these are to be carried out by the contractor at no extra cost.
- 2.8.15 The contractor shall arrange, coordinate his work in such a manner as to cause no hindrance to other agencies working in the same premises.
- 2.8.16 All safety rules and codes applied by the Client/BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards, slings etc. or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view to prevent pilferage, accidents, fire hazards. Due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of Clerical staff, watch and ward, store keepers to take care of equipment/materials and construction tools and tackles shall be posted at site by the contractor till the completion of work under this contract.  
The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles etc. as per prescribed standards and practices. Contractor has to ensure the implementation of Health, Safety and Environment (HSE) requirements as per directions given by BHEL/Customer. The contractor has to assist in HSE audit by BHEL/Customer and submit compliance Report. The contractor has to generate and submit record/reports as per HSE plan/activities as per instruction of BHEL/Customer
- 2.8.17 The contractor will be directly responsible for payment of wages to his workmen. A pay roll sheet giving all the payments given to the workers and duly signed by the contractor's representative should be furnished to BHEL site for record purpose, if so called for.
- 2.8.18 In case of any class of work for which there is no such specification as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer.
- 2.8.19 Also, no idle charges will be admissible in the event of any stoppage caused in the work resulting in contractor's labour and Tools & Plants being rendered idle due to any reason at any time.
- 2.8.20 The contractor shall take all reasonable care to protect the materials and work till such time the plant/equipment has been taken over by BHEL or their Client whichever is earlier.
- 2.8.21 The contractor shall not stop the work or abandon the site for whatsoever reason of dispute, excepting force majeure conditions. All such problems/disputes shall be separately discussed and settled without affecting the progress of work. Such stoppage or abandonment shall be treated as breach of contract and dealt with accordingly

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- 2.8.22 The contractor shall keep the area of work clean and shall remove the debris etc. while executing day-to-day work. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Engineer. The contractor will also demolish all the hutments, sheds, offices, etc. constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the Engineer and the expenses recovered from the contractor.
- 2.8.23 The contractor shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and timely execution shall be the essence of this contract. The contractor shall be responsible to ensure that the quality, assembly and workmanship conform to the dimensions and clearance given in the drawings and/ or as per the instructions of the Engineer.
- 2.8.24 The Contractor to note that some of BHEL's T&Ps/MMDs may not be insured. The Contractor will take necessary precautions and due care to protect the same while in his custody from any damage/ loss till the same is handed over back to BHEL. In case the damage / loss is due to carelessness/ negligence on the part of the contractor, the Contractor is liable to get them repair/ replaced immediately and in case of his failure to do so within a reasonable time, BHEL will reserve the right to recover the loss from the contractor.
- 2.9 PROGRESS MONITORING, MONTHLY REVIEW AND PERFORMANCE EVALUATION**
- 2.9.1 A detailed plan/program for completion of the contractual scope of work as per the time schedule given in the contract shall be jointly agreed between BHEL and Contractor, before commencement of work. The above program shall be supported by month wise deployment of resources viz. Manpower, T&P, Consumables, etc. Progress will be reviewed periodically (Daily/Weekly/Monthly) vis a vis this jointly agreed program. The Contractor shall submit periodical progress reports (Daily/Weekly/Monthly) and other reports/information including manpower, consumables, T&P mobilization etc as desired by BHEL.
- 2.9.2 Monthly progress review between BHEL and Contractor shall be based on the agreed programme as above, availability of inputs/fronts etc., and constraints if any, as per prescribed formats. Manpower, T&P and consumable reports as per prescribed formats shall be submitted by contractor every month. Release of RA Bills shall be contingent upon certification by BHEL Site Engineer of the availability of the above prescribed formats duly filled in and signed.
- 2.9.3 The burden of proof that the causes leading to any shortfall is not due to any reasons attributable to the contractor is on the contractor himself. The monthly progress review shall record shortfalls attributable to (i) Contractor, (ii) Force Majeure Conditions, and (iii) BHEL
- 2.9.4 Performance of the Contractor shall be assessed as per prescribed formats and shall form the basis for 'Annual/Overall Performance Evaluation' of the Contractor and also for 'Assessment of Capacity of Bidder' for Tenders where the Contractor is a bidder. BHEL reserves the right to revise the evaluation formats during the course of execution of the works
- 2.10 TIME OF COMPLETION**
- 2.10.1 The time schedule shall be as prescribed in the Contract. The time for completion shall be reckoned from the date of commencement of work at Site as certified by BHEL Engineers.
- 2.10.2 The entire work shall be completed by the contractor within the time schedule or within such extended periods of time as may be allowed by BHEL under clause 2.11

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## 2.11 EXTENSION OF TIME FOR COMPLETION

- 2.11.1 If the completion of work as detailed in the scope of work gets delayed beyond the contract period, the contractor shall request for an extension of the contract and BHEL at its discretion may extend the Contract.
- 2.11.2 Based on the monthly reviews jointly signed, the works balance at the end of original contract period less the backlog attributable to the contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the contractor is bound to complete the portion of backlog attributable to the contractor. Any further 'Time extension' or 'Time extensions' at the end of the previous extension shall be worked out similarly.
- 2.11.3 However if any 'Time extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty/LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take at the risk and cost of contractor.
- 2.11.4 A joint programme shall be drawn for the balance amount of work to be completed during the period of 'Time Extension', along with matching resources (with weightages) to be deployed by the contractor as per specified format. Review of the programme and record of shortfall shall be done every month of the 'Time extension' period in the same manner as is done for the regular contract period.
- 2.11.5 During the period of 'Time extension', contractor shall maintain their resources as per mutually agreed program
- 2.11.6 At the end of total work completion as certified by BHEL Engineer, and upon analysis of the total delay, the portion of time extensions attributable to (i) Contractor, (ii) Force majeure conditions, and (iii) BHEL, shall be worked out and shall be considered to be exhausted in the same order. The total period of time extensions shall be the sum of (i), (ii) and (iii) above and shall be equal to period between the scheduled date of completion and the actual date of completion of contract. LD shall be imposed/levied for the portion of time extensions attributable to contractor and recoverable from the dues payable to the contractor.

**2.12 OVERRUN COMPENSATION:** Please refer Clause No. 11 (PART-C) of Annexure – I of NIT.

## 2.13 INTEREST BEARING RECOVERABLE ADVANCES

- 2.13.1 Normally no advance is payable to the contractor. However, advance payment in exceptional circumstances shall be interest bearing and secured through a Bank Guarantee and shall be limited to a maximum of 5% of contract value. This 'Interest Bearing Recoverable Advance' shall be payable in not less than two installments with any of the installment not exceeding 60% of the total eligible advance.
- 2.13.2 In exceptional circumstances, with due justification, Competent Authority of BHEL is empowered to approve proposals for payment of additional interim interest bearing advance against Bank Guarantee, for resource augmentation towards expediting work for project implementation.
- 2.13.3 Bank Guarantee towards 'Interest Bearing Recoverable Advance' shall be at least 110% of the advance so as to enable recovery of not only principle amount but also the interest portion, if so required.
- 2.13.4 Contractor shall establish the utilization of advance drawn before the release of next installment.
- 2.13.5 Payment and recovery of Interest Bearing Recoverable advance shall be at the sole discretion of BHEL and shall not be a subject matter of arbitration.

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- 2.13.6 The rate of interest applicable for the above advances shall be the prime lending rate of State Bank of India prevailing at the time of disbursement of the advance + 2%, and such rate will remain fixed till the total advance amount is recovered
- 2.13.7 Unadjusted amount of advances paid shall not exceed 5% of the total contract value at any point of time. Recovery of advances shall be made progressively from each Running Bill such that the advance amounts paid along with the interest is fully recovered by the time the contractor's billing reaches 80% of contract value.
- 2.13.8 Recovery rate per month shall be the sum of:
- Not less than 10% of Running Bill amount
  - Simple interest up to the date of RA Bill on the outstanding Principle amount/amounts
- 2.13.9 Contractor to submit Bank Guarantee as per prescribed formats for each of the advance and shall be valid for at least one year or the recovery duration or the balance contract period whichever is later. In case the recovery of dues does not get completed within the aforesaid BG period, the contractor shall renew the BG or submit fresh BG for the outstanding amount and the remaining recovery period.
- 2.13.10 BHEL is entitled to make recovery of the entire outstanding amount in case the contractor fails to comply with the BG requirement
- 2.14 QUANTITY VARIATION**
- 2.14.1 The quoted rates shall remain firm irrespective of any variations in the individual quantities. No compensation becomes payable in case the variation of the final executed contract value is within the limits of Plus (+) or Minus (-) 15% of awarded contract value.
- 2.14.2 Compensation due to variation of final executed value in excess of the limits defined in clause above, shall be as follows:
- In case the finally executed contract value reduces below the lower limit of Contract Value due to quantity variation specified above, the contractor will be eligible for compensation @ 15% of the difference between the lower limit of the contract value and the actual executed value.
  - In case the finally executed contract value increases above the upper limit of Contract Value due to quantity variation specified above, there will be no revision in the rates within the contract period.
- 2.15 EXTRA WORKS**
- 2.15.1 All rectifications/modifications, revamping, and reworks required for any reasons not due to the fault of the contractor, or needed due to any change in deviation from drawings and design of equipment, operation/maintenance requirements, mismatching, or due to damages in transit, storage and erection/commissioning, and other allied works which are not very specifically indicated in the drawings, but are found essential for satisfactory completion of the work, will be considered as extra works.
- 2.15.2 Extra works arising on account of the contractor's fault, irrespective of time consumed in rectification of the damage/loss, will have to be carried out by the contractor free of cost. Under such circumstances, any material and consumable required for this purpose will also have to be arranged by the contractor at his cost.
- 2.15.3 All the extra work should be carried out by a separately identifiable gang, without affecting routine activities. Daily log sheets in the pro-forma prescribed by BHEL should be maintained and shall be signed by the contractor's representative and BHEL engineer. No claim for extra work will be considered/ entertained in the absence of the said supporting documents i.e. daily log sheets. Signing of log sheets by BHEL engineer does not necessarily mean the acceptance of such works as extra works.

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- 2.15.4 BHEL retains the right to award or not to award any of the major repair/ rework/ modification/ rectification/ fabrication works to the contractor, at their discretion without assigning any reason for the same
- 2.15.5 After eligibility of extra works is established and finally accepted by BHEL engineer/designer, payment will be released on competent authority's approval at the following rate.

**MAN-HOUR RATE FOR ELIGIBLE EXTRA WORKS:** Single composite average labour man-hour rate, including overtime if any, supervision, use of tools and tackles and other site expenses and incidentals, consumables for carrying out any major rework/ repairs/ rectification/ modification/ fabrication as certified by site as may arise during the course of erection, testing, commissioning or extra works arising out of transit, storage and erection damages, payment, if found due will be at Rs 60/- per man hour.

- 2.15.6 The above composite labour man hour rate towards extra works shall remain firm and not subject to any variation during execution of the work.
- 2.15.7 **Extra Works for Civil Packages** shall be regulated as follows  
Rates for Extra Works arising due to (1) non availability of BOQ (Rate Schedule), OR (2) change in Specifications of materials/works (3) rectification/modification/dismantling & re-erecting etc. due to no fault of Contractor, shall be in the order of the following:
- Item rates are to be derived from similar nature of items in the BOQ (Rate Schedule) with applicable escalation derived from All India Consumer Price Index for Whole Sale Commodities.
  - As per CPWD-DSR-2007 (or latest edition) with applicable escalation derived from All India Consumer Price Index for Whole Sale Commodities, OR, Notification issued by the office of CPWD for 'Cost Index' in that Region where the project is being executed, whichever is less
  - Item rates are to be worked out on the basis of prevailing market rates mutually agreed between BHEL and Contractor, plus 15% towards Contractor's overheads and profit.

## 2.16 SUPPLEMENTARY ITEMS

### 2.16.1 For NON Civil Works

Supplementary items are items/works required for completion of entire work but not specified in the scope of work. Subject to certification of such items/works as supplementary items by BHEL Engineer, rates shall be derived on the basis of any one of the following on mutual agreement:

- Based on percentage breakup/rates indicated for similar/nearby items.
  - In case (i) above does not exist, then BHEL/site may derive the percentage breakup/rates to suit the type of work
- 2.16.2 **For Civil Works**
- Rates for Supplementary Works/Additional Works arising out due to additions/alterations in the original scope of works as per contract subject to certification of BHEL Engineer shall be worked out as under:
    - Item rates which are available in existing BOQ (Rate Schedule) shall be operated with applicable escalation derived from All India Consumer Price Index for Whole Sale Commodities
    - Items of works which are not available in existing BOQ shall be operated as an 'Extra Works' and rate shall be derived as per clause no 2.15.7
  - Execution of Supplementary Works/Additional Works through the Contractor shall be at the sole discretion of BHEL, and shall be considered as part of executed contract value for the purpose of Quantity Variation as per clause 2.14
  - BHEL Engineer's decision regarding fixing the rate as above is final and binding on the contractor.
  - PVC & ORC will not be applicable for (I) above.

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**2.17 PRICE VARIATION COMPENSATION:** Please refer Clause No. 12 (PART-C), of Annexure – I of NIT.

**2.18 INSURANCE**

2.18.1 BHEL/their customer shall arrange for insuring the materials/properties of BHEL/customer covering the risks during transit, storage, erection and commissioning.

2.18.2 It is the sole responsibility of the contractor to insure his materials, equipment, workmen, etc. against accidents and injury while at work and to pay compensation, if any, to workmen as per Workmen's compensation Act. The work will be carried out in a protected area and all the rules and regulations of the client /BHEL in the area of project which are in force from time to time will have to be followed by the contractor.

2.18.3 If due to negligence and or non-observation of safety and other precautions by the contractors, any accident/injury occurs to the property / manpower belong to third party, the contractor shall have to pay necessary compensation and other expense, if so decided by the appropriate authorities.

2.18.4 The contractor will take necessary precautions and due care to protect the material, while in his custody from any damage/ loss due to theft or otherwise till the same is taken over by BHEL or customer. For lodging / processing of insurance claim the contractor will submit necessary documents. BHEL will recover the loss including the deductible franchise from the contractor, in case the damage / loss is due to carelessness / negligence on the part of the contractor. In case of any theft of material under contractor's custody, matter shall be reported to police by the contractor immediately and copy of FIR and subsequently police investigation report shall be submitted to BHEL for taking up with insurance. However, this will not relieve the contractor of his contractual obligation for the material in his custody.

**2.19 STRIKES & LOCKOUT**

2.19.1 The contractor will be fully responsible for all disputes and other issues connected with his labour. In the event of the contractor's labour resorting to strike or the Contractor resorting to lockout and if the strike or lockout declared is not settled within a period of one month, BHEL shall have the right to get the work executed through any other agencies and the cost so incurred by BHEL shall be deducted from the Contractor's bills.

2.19.2 For all purposes whatsoever, the employees of the contractor shall not be deemed to be in the employment of BHEL

**2.20 FORCE MAJEURE**

The following shall amount to Force Majeure: -

2.20.1 Acts of God, act of any Government, War, Sabotage, Riots, Civil commotion, Police action, Revolution, Flood, Fire, Cyclones, Earth quake and Epidemic and other similar causes over which the contractor has no control.

2.20.2 If the contractor suffers delay in the due execution of the contractual obligation due to delays caused by force majeure as defined above, the agreed time of completion of the job covered by this contract or the obligations of the contractor shall be extended by a period of time equal to period of delay, provided that on the occurrence of any such contingency, the contractor immediately reports to BHEL in writing the causes of delay and the contractor shall not be eligible for any compensation.

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## 2.21 ARBITRATION & RECONCILIATION

In case amicable settlement is not reached in the event of any dispute or difference arising out of the execution of the Contract or the respective rights and liabilities of the parties or in relation to interpretation of any provision by the Contractor in any manner touching upon the Contract, such dispute or difference shall (except as to any matters, the decision of which is specifically provided for therein) be referred to the sole arbitration of the arbitrator appointed by BHEL/In charge(Region/Unit).

The award of the Arbitrator shall be binding upon the parties to the dispute

Subject as aforesaid, the provisions of Arbitration and Reconciliation Act 1996 (India) or statutory modifications or reenactments thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings under this clause. The venue of the arbitration shall be the place from which the contract is issued or such other place as the Arbitrator at his discretion may determine

2.21.2 In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

In the event of any dispute or difference relating to the interpretation and application of the provisions of the Contract, such dispute or difference shall be referred to by either party to the arbitration of one of the arbitrators in the department of public enterprises. The award of the arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law and Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary or Additional Secretary when so authorized by the Law Secretary, whose decision shall bind the parties hereto finally and conclusively.

2.21.3 The cost of arbitration shall be borne equally by the parties.

2.21.4 Work under the contract shall be continued during the arbitration proceedings.

## 2.22 RETENTION AMOUNT

2.22.1 Retention Amount shall be 10% of executed contract value and shall be recovered at the rate of 10% from each Running Bill admitted.

2.22.2 Refund of Retention Amount shall be as follows:

- i) The retention amount shall be retained towards 'Performance Guarantee for Workmanship' and shall become refundable after expiry of Guarantee period, provided all the defects noticed during the guarantee period has been rectified to the satisfaction of BHEL Site Engineer/BHEL Construction Manager, and after deducting all expenses/other amounts due to BHEL under the contract/other contracts entered into by BHEL with them. This retention amount can be released on commencement of the Guarantee period, on submission of equivalent Bank Guarantee.

## 2.23 PAYMENTS

Payments to Contractors are made in any one of the following forms

2.23.1 **Running Account Bills (RA Bills)**

- i) These are for interim payments when the contracts are in progress. The bills for such interim payments are to be prepared by Contractor in prescribed formats (RA Bill forms).
- ii) Payments shall be made according to the extent of work done as per measurements taken up to the end of the calendar month and in line with the terms of payments described in the Tender documents
- iii) Recoveries on account of electricity, water, statutory deductions, etc are made as per terms of contract

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- iv) Full rates for the work done shall be allowed only if the quantum of work has been done as per the specifications stipulated in the contract. If the work is not executed as per the stipulated specifications, BHEL may ask the contractor to re do the work according to the required specifications, without any extra cost. However, where this is not considered necessary 'OR' where the part work is done due to factors like non-availability of material to be supplied by BHEL 'OR' non availability of fronts 'OR' non availability of drawings, fraction payment against full rate, as is considered reasonable, may be allowed with due regard for the work remaining to be done. BHEL decision in this regard will be final and binding on the contractor
- v) In order to facilitate part payment, BHEL Site Engineer at his discretion may further split the contracted rates/percentages to suit site conditions, cash flow requirements according to the progress of work.

#### 2.23.2 Final Bill

'Final Bill' is used for final payment on closing of Running Account for works or for single payment after completion of works. 'Final Bill' shall be submitted as per prescribed format after completion of works as per scope and upon material reconciliation, along with the following.

- i) 'No Claim Certificate' by contractor
- ii) Clearance certificates where ever applicable viz. Clearance Certificates from Customer, various Statutory Authorities like Labour department, PF Authorities, Commercial Tax Department, etc.
- iii) Indemnity bond as per prescribed format

BHEL shall settle the final bills after deducting all liabilities of Contractor to BHEL

#### 2.24 PERFORMANCE GUARANTEE FOR WORKMANSHIP

2.24.1 Even though the work will be carried out under the supervision of BHEL Engineers the Contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of twelve months from the date of commencement of guarantee period for good workmanship and shall rectify free of cost all defects due to faulty erection detected during the guarantee period. In the event of the Contractor failing to repair the defective works within the time specified by the Engineer, BHEL may proceed to undertake the repairs of such defective works at the Contractor's risk and cost, without prejudice to any other rights and recover the same from the Guarantee money.

2.24.2 BHEL shall release the guarantee money subject to the following

- i) Contractor has submitted 'Final Bill'
- ii) Guarantee period as per contract has expired or against submission of Bank Guarantee for equivalent amount.
- iii) Contractor has furnished 'No Claim Certificate' in specified format
- iv) BHEL Site Engineer/Construction Manager has furnished the 'No Demand Certificate' in specified format
- v) Contractor has carried out the works required to be carried out by him during the period of Guarantee and all expenses incurred by BHEL on carrying out such works is included for adjustment from the Guarantee money refundable.

#### 2.25 CLOSING OF CONTRACTS

The Contract shall be considered completed and closed upon completion of all contractual obligations and settlement of Final Bill or completion of Guarantee period whichever is later. Upon closing of Contract, BHEL shall issue a completion certificate as per standard format, based on specific request of Contractor.

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**2.26 REVERSE AUCTION:**

BHEL reserves the right to go for Reverse Auction for Price Bid Opening by BHEL appointed service provider, instead of opening the submitted sealed price bid in the conventional way. The Business Rules for Reverse Auction shall be as per BHEL guidelines issued from time to time.

**2.27 SUSPENSION OF BUSINESS DEALINGS**

BHEL reserves the right to take action against Contractors who either fail to perform or Tenderers/Contractor who indulge in malpractices, by suspending business dealings with them in line with BHEL guidelines issued from time to time.

**2.28 OTHER ISSUES**

- 2.28.1 Value of Non judicial Stamp Paper for Bank Guarantees and for Contract Agreement shall be not less than Rs 100/- unless otherwise required under relevant statutes.
- 2.28.2 In case of any conflict between the General Conditions of Contract and Special Conditions of Contract, provisions contained in the Special Conditions of Contract shall prevail.
- 2.28.3 Unless otherwise specified in NIT, offers from consortium/JVs shall not be considered.
- 2.28.4 BHEL may not insist for signing of Contract Agreements in respect of low value and short time period contracts.

2.29 MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at annexure-A where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefits shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. Documents should be notarized or attested by a Gazetted officer”.

**2.30 Fraud Prevention Policy:**

“The bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice”.

2.31 In addition to existing taxes, any new taxes imposed by Central/ State Govt. shall be payable by the contractor and same shall be reimbursed on submission of relevant documents.

2.32 In case, any new tax is imposed instead of existing tax, difference of the amount shall be reimbursed/ recovered on submission of documentary evidence.

2.33 All corrigenda, addenda, amendments, time extensions, clarifications etc. to the tender will be hosted on our websites <http://www.bhelviz.co.in> & <http://www.bhel.com> only. Bidders should regularly visit website to keep themselves updated

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**SPECIAL CONDITIONS OF CONTRACT (SCC)**

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**SPECIAL CONDITIONS OF CONTRACT (SCC)****Chapter - I: General Intent of Specifications**

<b>1.0</b>	<b>INTENT OF THE SPECIFICATION</b>
1.1	The intent of this erection specification is to provide services for execution of the project according to most modern and proven techniques and codes. The omission of specific reference to any method, equipment or material necessary for the proper and efficient services towards installation of the plant shall not relieve the contractor of the responsibility of providing such services / facilities to complete the work or portion of work awarded to him. The quoted / accepted rates / price shall deem to be inclusive of all such contingencies.
1.2	The work shall conform to dimensions and tolerances given in various drawings and documents that will be provided during erection. If any portion of works is found to be defective in workmanship and not conforming to drawings / documents or other stipulations, the contractor shall dismantle and re-do the work duly replacing the defective materials at their own cost, failing which recoveries, as determined by BHEL, shall be effected from contractor's bills.
1.3	It is not the intent of this specification to specify herein all the details of erection and commissioning. However, the system shall conform in all respects to high standards of quality and workmanship for performing the required duties in a manner acceptable to purchaser who will interpret the meaning of drawings and specifications and shall be entitled to reject any work or material, which in his judgments is not in full accordance herewith.
1.4	The omission of specific reference to any fabrication / erection or other method, equipment or material necessary for proper and efficient working of the plant shall not relieve the tenderer of the responsibility of providing such facilities to complete the work at quoted rates. Any mismatch/ defect found due to mistake in fabrication / erection shall have to be rectified by the vendor free of cost. Inspection by BHEL/Customer does not relieve vendor of his responsibility of executing quality erection.
1.5	The work covered under this specification is of highly sophisticated nature, requiring the best quality workmanship, supervision, engineering and construction management. The contractor should ensure proper planning and successful and timely completion of the work to meet the overall project schedule. The contractor must deploy adequate quantity of tools & plants, modern / latest construction aids etc. He must also deploy adequate trained, qualified and experienced supervisory staff and skilled personnel.
1.6	Contractor shall erect and commission all the equipments and auxiliaries as per the sequence & methodology prescribed by BHEL depending upon the technical requirements. Availability of materials and fronts will decide this. BHEL Engineer's decision regarding correctness of the work and method of working shall be final and binding on the contractor. No claims for extra payment from the contractor will be entertained on the ground of deviation from the methods / sequence adopted in erection of similar sets elsewhere.
1.7	Following shall be the minimum responsibility of contractor and have to be provided within finally accepted rates / prices:
1.7.1	Provision as required of all types of labour, supervisors, engineers, watch and ward, tools & tackles, calibrated MMEs (Monitoring and Measuring Equipment) as specified and otherwise required for the work, consumables for erection, testing and commissioning including material handling.
1.7.2	Achieving Proper out-turn / Turn-over as per BHEL plan and commitment.
1.7.3	Completion of work as per BHEL Schedule.
1.7.4	Good quality and accurate workmanship for proper performance of the equipment
1.7.5	Repair and rectification
1.7.6	Preservation / Re-conservation of all components during storage / erection / commissioning till handing over.

**SPECIAL CONDITIONS OF CONTRACT (SCC)**  
**Chapter - II: General Services to be rendered by the Bidder**

<b>2.0</b>	<b>GENERAL SERVICES TO BE RENDERED BY THE BIDDER</b>
2.1	Services for construction, fabrication, equipment erection, testing as well as trial run & commissioning of various equipment and accessories under the contract shall include but not be limited to the following:
2.2	Issuing materials from store/open yard from time to time for erection as per the construction programme. The Contractor shall be the custodian of all the materials issued till the plant/equipment is officially taken over by the owner / BHEL after complete erection and successful trial run & commissioning.
2.3	Transport of material to their respective places of erection and erection of the complete plant & equipment as supplied under this specification.
2.4	Trial run and commissioning of individual equipment / sub-systems to the satisfaction of Owner/BHEL.
2.5	Deployment of all skilled and unskilled manpower required for erection, supervision of erection, watch & ward, commissioning and other services to be rendered under this specification.
2.6	Deployment of all erection tools & tackle, construction machinery, transportation vehicles and all other implements in adequate number and size, appropriate for the erection work to be handled under scope of this specification except otherwise specified.
2.7	Supply of all consumables, eg welding electrodes, gases, grinding/cutting wheels, cleaning agents, diesel oil, lubricant etc as well as materials required for temporary supports, scaffolding etc. as necessary for such erection work, unless specified otherwise.
2.8	Providing support services for the contractor's erection staff e.g. construction of site offices, temporary stores, residential accommodation and transport to work site for erection personnel, watch and ward for security and safety of the materials under the Contractor's custody etc. as required.
2.9	Maintaining proper documentation of all the site activities undertaken by the Contractor as per the proforma mutually agreed with BHEL, Submission of monthly progress reports and any such document as and when desired by BHEL/owner, taking approval of all statutory authorities i.e. Boiler Inspector, Factory Inspector, Inspector of Explosives etc. , as applicable for respective portions of work fall under the jurisdiction of such statutes of laws.
2.10	Any other service, although not specifically called for but required for a contract of the size and nature indicated in the specification.

**SPECIAL CONDITIONS OF CONTRACT (SCC)****Chapter - III: General Technical Requirements (Codes and Standards)**

<b>3.0</b>	<b>GENERAL TECHNICAL REQUIREMENTS (CODES AND STANDARDS)</b>
3.1	Except where otherwise specified, the plant/equipment shall comply with the appropriate Indian Standard or an agreed internationally accepted Standard Specification as mentioned elsewhere in contract specifications, each incorporating the latest revisions at the time of tendering. Where no internationally accepted standard is applicable, the Bidder shall give all particulars and details as necessary; to enable BHEL to identify all of the plant/equipment in the same detail as would be possible had there been a Standard Specification.
3.2	Where the Bidder proposes alternative codes or standards he shall include in his tender one copy (in English) of each Standard Specification to which materials offered shall comply. In such case, the adopted alternative standard shall be equivalent or superior to the standards mentioned in the specification.
3.3	In the event of any conflict between the codes and standards referred above, and the requirements of this specification, the requirements which are more stringent shall govern.
3.4	Tools used during erection and commissioning shall not be accepted except with the specific approval of the Engineer.

**SPECIAL CONDITIONS OF CONTRACT (SCC)****Chapter - IV: Obligations of Contractor**

<b>4.0</b>	<b>OBLIGATIONS OF CONTRACTOR</b>
<b>4.1</b>	<b>CONSUMABLES &amp; OTHER ITEMS</b>
4.1.1	The contractor shall provide within finally accepted price / rates, all consumables (except those indicated in BHEL scope) like welding electrodes (including alloy steel and stainless steel), filler wires, TIG filler wires, gases (inert, welding, cutting), soldering material, dye penetrants, radiography films, etc. Other erection consumables such as tapes, jointing compound, grease, mobile oil, M-seal, Araldite, petrol, CTC / other cleaning agents, grinding and cutting wheels are to be provided by the contractor. Steel, packers, shims, wooden planks, scaffolding materials hardware items etc. required for temporary works such as supports, scaffoldings are to be arranged by the contractor. Sealing compounds, gaskets, gland packing, wooden/concrete sleepers, for temporary work, required for completion of work except those which are specifically supplied by manufacturing unit are also to be arranged by the contractor.
4.1.2	All the shims, gaskets and packing, which are required for erection and alignment of equipments shall be supplied by contractor free of cost.
4.1.3	It shall be the responsibility of the contractor to plan the activities and store sufficient quantity of consumables. Non-availability of any consumable materials or equivalent suggested by BHEL cannot be considered as reason for not attaining the required progress or for additional claim.
4.1.4	<b>Void.</b>
4.1.5	It shall be the responsibility of the contractor to obtain prior approval of BHEL, regarding suppliers, type of electrodes etc. before procurement of welding electrodes. On receipt of electrodes at site these shall be subjected to inspection and approval by BHEL. The contractor shall inform BHEL details regarding type of electrodes, batch number, date of expiry etc. and produce test certificate for each lot / batch with correlation of batch / lot number with respective test certificate. No electrode without a valid test certificate will be used.
4.1.6	BHEL reserves the right to reject the use of any consumable including electrodes, gases, lubricants / special consumables if it is not found to be of the required standard / make / purity or when shelf life has expired. Contractor shall ensure display of shelf life on consumable wherever required and records maintained.
4.1.7	Storage of all consumables including welding electrodes shall be done as per requirement / instruction of the Engineer by the contractor at his cost.
4.1.8	In case of improper arrangement for procurement of any consumable, BHEL reserves the right to procure the same from any source and recover the cost from the Contractor's first subsequent bill at market value plus the departmental charges of BHEL from time to time. Postponement of such recovery is normally not permitted. The decision of Engineer in this regard shall be final and binding on the Contractor.
4.1.9	All lubricants and chemicals required for pre-commissioning, commissioning, testing, preservation and lubricants for trial runs of the equipment shall be supplied by BHEL / BHEL's client. All services including labour and T&P will be provided by the contractor for handling, filling, emptying, refilling etc. The consumption of lubricants / chemicals shall be properly accounted for. Surplus material if any shall be properly stacked/tagged and returned to BHEL/ CUSTOMER stores at no extra cost to BHEL. BHEL reserves the right to recover costs for wastage by the contractor.
4.1.10	Transportation of oil drums from stores, filling of oil for flushing, first filling, subsequent changeover if any; topping/making up till the unit is fully commissioned and handed over to customer is included in scope of this contract. The contractor shall have to return all the empty drums to BHEL / BHEL's client store at no extra cost. Any loss / damage to above drums shall be to contractor's account.
4.1.11	All charges on account of Octroi, terminal or sales tax and other duties on materials obtained from any source for carrying out the works in the scope of the contractor shall be borne by the contractor.
<b>4.2</b>	<b>TOOLS AND PLANTS / MONITORING AND MEASURING EQUIPMENT (MMEs)</b>
<b>4.2.1</b>	<b>T&amp;Ps and MMEs to be provided by Contractor</b>

## SPECIAL CONDITIONS OF CONTRACT (SCC)

## Chapter - IV: Obligations of Contractor

4.2.1.1	All T&Ps and MMEs excepting those specifically indicated in BHEL scope are to be provided by the Contractor. Contractor has to make his own arrangement at his cost for completing the formalities (including arrangement of Road permits, if any) if required with Sales Tax/VAT authorities, for bringing their materials, plants and equipments at site for the execution of work under this contract.
4.2.1.2	All suitable cranes for erection of equipments, pipe lines, structural, unloading & loading and material handling, lifting and transport equipments for material handling at stores/yard/siding of BHEL/Customer are included in contractor's scope. BHEL's cranes will not be available for this purpose unless otherwise specifically permitted as per contract conditions
4.2.1.3	All T&Ps to be deployed by the contractor shall have the approval of BHEL Engineer with regard to brand, quality and specification.
4.2.1.4	Indicative list of Major T&Ps in the scope of Contractor are given in the Technical Conditions of Contract. Bidders to note that these are only indicative and as such all other T&P necessary for timely and satisfactory completion of work in scope shall be mobilized by Contractor
4.2.1.5	Timely deployment of adequate T&Ps is the responsibility of the contractor. The contractor shall be prepared to augment the T&P at short notice to match the planned programme and to achieve the milestones.
4.2.1.6	Contractor shall maintain and operate his tools and plants in such a way that major breakdowns are avoided. In the event of major breakdown, contractor shall make alternative arrangements expeditiously so that the progress of work is not hampered.
4.2.1.7	In the event of contractor failing to arrange the required tools, plants, machinery, equipment, material or non-availability of the same owing to breakdown, BHEL will make alternative arrangement at the risk and cost of the contractor. Decision of BHEL shall be final and binding on the contractor
4.2.1.8	The T&P to be arranged by the contractor shall be in proper working condition and their operation shall not lead to unsafe condition. The movements of cranes, and other equipment should be such that no damage / breakage occurs to foundations, other equipments, material, property and men. All arrangements for the movement of the T&P etc. shall be the contractor's responsibility.
4.2.1.9	Use of welding generators / rectifiers only shall be permitted for welding. Use of welding transformers will be subject to specific approval of BHEL engineer.
4.2.1.10	The contractor at his cost shall carry out periodical testing of his construction equipments. Test certificates shall be furnished to BHEL.
4.2.1.11	Contractor shall ensure deployment of serviced and healthy T&Ps including cranes, lifting tackles, wire ropes, manila ropes, winches and slings etc. History card and maintenance records for major T&Ps will be maintained by the contractor and will be made available to BHEL Engineer for inspection as and when required. Fitness certificate / Test Certificates of T&P shall have to be submitted before it is put in use. Identification for such T&Ps will be done as per BHEL Engineer's advice. BHEL reserves the right to permit only new slings up to 20 mm and lifting tackles up to 3 MT capacities.
4.2.1.12	Contractor shall ensure deployment of reliable and calibrated MMEs (Inspection measuring and Monitoring equipment). The MMEs shall have test / calibration certificates from authorized / Government approved / accredited agencies traceable to National / International standards. Each MME shall have a label indicating calibration status i.e. date of calibration, calibration agency and due date for calibration. A list of such instruments deployed by contractor at site with its calibration status is to be submitted to BHEL Engineer for control.

## SPECIAL CONDITIONS OF CONTRACT (SCC)

## Chapter - IV: Obligations of Contractor

4.2.1.13	Re-testing / re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer within the contract price. The contractor will also have alternate arrangements for such MME so that work does not suffer when the particular instrument is sent for calibration. If any MMEs not found fit for use, BHEL shall have the right to stop the use of such item. It will be necessary for the contractor to deploy proper item. Any readings taken by the defective instrument will be recalled and repeat the readings taken by that instrument with a proper one. In case he fails to do so, BHEL may deploy MMEs and retake the readings at contractor's cost.
4.2.1.14	BHEL shall have lien on all T&P, MMEs and other equipment of the contractor brought to the site for the purpose of erection, testing and commissioning. BHEL shall continue to hold the lien on all such items throughout the period of contract / extended period. The contractor and / or his sub-contractors, without the prior written approval of the Engineer, shall remove no material brought to the site.
4.2.1.15	The month wise T&P deployment plan to execute the work is to be submitted as per relevant format as per the instruction of BHEL. It shall be the contractor's responsibility to deploy the required T&P, for timely and successful completion of the job, to any extent.
4.2.2	<b>Obligations in respect of T&amp;Ps and MMEs if provided by BHEL</b>
4.2.2.1	T&P / MMEs being provided by BHEL to sub- contractor free of hire charges shall be shared by other subcontractors working for BHEL at site and the allotment done by BHEL Engineer shall be final and binding.
4.2.2.2	BHEL T&P will be issued in basic assembled condition. Additional loose components / sub-assemblies / attachments as and when necessary, will be issued by BHEL. Assembly of such additional loose components/sub-assemblies/ attachments is in contractor's scope.
4.2.2.3	In case of non-availability of the T&Ps to be provided by BHEL due to breakdown, major overhauls, distribution pattern or any other reason, the contractor shall plan / amend / alter his activities to meet erection / commissioning targets in consultation with BHEL.
4.2.2.4	<b>void</b>
4.2.2.5	The contractor shall engage trained and experienced operators for the operation of BHEL's T&Ps. Their skill / performance will be checked by BHEL Engineer before they are allowed to operate the same. However checking of skills by BHEL does not absolve the contractor of his responsibilities for proper and safe handling of equipment, consistent good performance of operators and regular performance evaluation of operators.
4.2.2.6	void
4.2.2.7	Void
4.2.2.8	Increasing / shortening of the crane boom to suit work requirements shall have to be arranged by the indenting contractor at his cost including restoration to a state as directed by BHEL. All necessary manpower tools, support, consumables, illumination etc. will have to be arranged by contractor at his cost. If required,
4.2.2.9	The area and infrastructure development of the area to be carried out by the customer. However, in construction projects of this magnitude it is possible that all the areas / approaches may not be ready. In such cases backfilling of approaches where ever necessary, consolidation of ground and arrangement of sleepers / sand bag filling etc., for safe operation / movement of equipment including cranes / trailers etc., shall be the responsibility of the contractor at his cost. No compensation on this account shall be payable.
4.2.2.10	Void
4.2.2.11	Void
4.2.2.12	Void
4.2.2.13	Void
4.2.2.14	Void
4.2.2.15	Void
4.2.2.17	Void.

**SPECIAL CONDITIONS OF CONTRACT (SCC)****Chapter 6 V: Responsibilities of Contractor in respect of Labour, Supervisory Staff, etc.**

<b>5.0</b>	<b>RESPONSIBILITIES OF CONTRACTOR IN RESPECT OF LABOUR, SUPERVISORY STAFF, ETC.</b>
5.1	Refer relevant clauses of General Conditions of Contract (GCC) also in this regard
5.2	The contractor shall deploy all the necessary skilled, semiskilled, unskilled labour including highly skilled workmen etc. These workmen should have previous experience on similar job. They shall hold valid certificates wherever necessary. BHEL reserves the right to insist on removal of any employee of the contractor at any time if he is found to be unsuitable and the contractor shall forthwith remove him.
5.3	Contractor shall also comply with the requirements of local authorities/ project authorities calling for police verification of antecedents of the workmen, staff etc.
5.4	It is the responsibility of the contractor to engage his workmen in shifts and or on overtime basis for achieving the targets set by BHEL. This target may be set to suit BHEL's commitments to its customer or to advance date of completion of events or due to other reasons. The decision of BHEL in regard to setting the erection and commissioning targets will be final and binding on the contractor.
5.5	Contractor shall provide at different elevation suitable arrangement for urinal and drinking water facility with necessary plumbing & disposal arrangement including construction of septic tank. These installations shall be maintained in hygienic condition at all times.
5.6	The Contractor in the event of engaging 20 or more workmen, shall obtain Independent license under the Contract labour (Regulation and Abolition) Act 1970 from the concerned authorities based on Form-V issued by the Principal Employer/Customer. In order to issue Form-V by Customer, Contractor shall fulfill all Statutory requirements like Insurance Policy, PF Code/PF Account number etc as per the requirement of BHEL/Customer.
5.7	Contractor shall deduct the necessary amount towards Provident Fund and contribute equal amount as per Government of India laws. This amount will be deposited regularly to the provident Fund Commissioner. BHEL/Customer may insist for submission of the account code duly certified by PF Commissioner.
5.8	Contractor may also be required to comply with provisions of ESI Act in vogue if applicable and submit evidence to BHEL.
5.9	BHEL / customer may insist for witnessing the regular payment to the labour. They may also like to verify the relevant records for compliance with statutory requirements. Contractor shall enable such facilities to BHEL / Customer.
5.10	Contractor shall deploy only qualified and experienced engineers/ supervisors. They shall have professional approach in executing the work.
5.11	The contractor's supervisory staff shall execute the work in the most professional manner in the stipulated time. Accuracy of work and aesthetic finish are essential part of this contract. They shall be responsible to ensure that the assembly and workmanship conform to dimensions and tolerances given in the drawings / instructions given by BHEL engineer from time to time.
5.12	The supervisory staff employed by the contractor shall ensure proper outturn of work and discipline on the part of the labour put on the job by the contractor. Also in general they should see that the works are carried out in a safe and proper manner and in coordination with other labour and staff employed directly by BHEL or other contractors of BHEL or BHEL's client.
5.13	It is the responsibility of the contractor to arrange gate pass for all his employees, T&P etc for entering the project premises. Necessary coordination with customer officials is the responsibility of the contractor. Contractor to follow all the procedures laid down by the customer for making gate passes. Where permitted, by customer / BHEL, to work beyond normal working hours, the contractor shall arrange necessary work permits for working beyond normal working hours.
5.14	The actual deployment of Labour and Engineer/supervision staff shall be so as to satisfy the erection and commissioning targets set by BHEL. If at any time, it is found that the contractor is not in a position to deploy the required engineers/supervisors/workmen due to any reason, BHEL shall have the option to make alternate arrangements at the contractor's risk and cost. The expenditure incurred along with BHEL overheads thereon shall be recovered from the contractor
5.15	Contractor shall not deploy women labour at night.

## SPECIAL CONDITIONS OF CONTRACT (SCC)

## Chapter ó VI: Material Handling, Storage &amp; preservation

6.0	<b>MATERIAL HANDLING, STORAGE AND PRESERVATION ETC</b>
6.1	<b>MATERIAL HANDLING AND STORAGE</b>
6.1.1	All the equipments/materials furnished under this contract shall be received from the project stores, sheds / storage yards and transported to pre assembly area / erection site and stored in the storage spaces in a manner so that they are easily retrievable till the contractor erects them. <b>While drawing/lifting material from BHEL / customer stores, the contractor shall ensure that the balance / other materials are stacked back immediately. No claim is admissible on this account</b>
6.1.2	While BHEL will endeavor to store / stack / identify materials properly in their open / close / semi closed / tarpaulins covered storage yard / shed, it shall be contractor's responsibility to assist BHEL in identifying materials well in time for erection. They should take the delivery of the same, following the procedure indicated by BHEL, and transport the material safely to pre-assembly yard / erection site in time, according to program.
6.1.3	The contractor shall take delivery of components, equipment / consumables from storage area after getting the approval of BHEL Engineer on standard indent forms.
6.1.4	The contractor shall identify and deploy necessary Engineers / supervisors / workmen for the above work in sufficient number as may be needed by BHEL, for areas covering their scope.
6.1.5	All the equipment shall be handled very carefully to prevent any damage or loss. No untested wire ropes / slings etc. shall be used for unloading / handling. The equipment shall be properly protected to prevent damage either to the equipment or to the floor where they are stored. The equipment from the stores shall be moved to the actual location at the appropriate time so as to avoid damage of such equipment at site.
6.1.6	Contractor shall ensure that while lifting slings shall be put over the points indicated on the equipment or as indicated in the manufacturer's drawings. Slings / shackles of proper size shall be used for all lifting and rigging purposes. All care shall be taken to safe guard the equipment against any damage. Dragging of piping / valves should be avoided. In case of any damage the cost shall be covered from the contractor.
6.1.7	Approach road conditions from the stores / yards to the erection site may not be equipped and ideal for smooth transportation of the equipment. Contractor may have to be adequately prepared to transport the materials under the above circumstances without any extra cost. . The contractor may familiar himself with soil conditions at site.
6.1.8	Contractor shall be responsible for examining all the plant and materials issued to him and notify the Engineer immediately of any damage, shortage, discrepancy etc., before they are moved out of the stores / storage area. The contractor shall be solely responsible for any shortages or damages in transit, handling, storage and erection of the equipment once received by him. As the erection work will be spread in different areas / locations of the project, contractor has to arrange sufficient number of watch / ward personal to avoid any pilferage of material.
6.1.9	The contractor shall maintain an accurate and exhaustive record-detailing out the list of all equipment received by him for the purpose of erection and keep such record open for the inspection of the engineer at any time.
6.1.10	All the material in the custody of contractor and stored in the open or dusty locations must be covered with suitable weather proof / fire retardant covering material wherever applicable and shall be blocked up on raised level above ground. All covering materials including blocks and sleeper shall be arranged by the contractor at his cost.
6.1.11	If the material belonging to the contractor are stored in area other than those earmarked for his operation the engineer will have the right to get it moved to the area earmarked for the contractor at the contractors risk and cost.
6.1.12	The contractor shall be responsible for making suitable indoor storage facilities to store all equipment (drawn by the contractor from BHEL / customer stores), which require indoor storage till the time of their installation. The Engineer will direct the contractor in this regard, which item in his opinion will require indoor storage, and the contractor shall comply with Engineer's decision.

**SPECIAL CONDITIONS OF CONTRACT (SCC)****Chapter ó VI: Material Handling, Storage & preservation**

6.1.13	The contractor shall ensure that all surplus / damaged / scrap / unused material, packing wood / containers/ special transporting frames etc are returned to BHEL at a place in project area identified by the Engineer. The contractor will maintain an account for all items received and returned to BHEL. Any shortage in returning such items shall be chargeable to the contractor except allowable wastage for packing wood only.
6.1.14	The contractor shall hand over all parts / materials remaining extra over the normal requirement with proper identification tags to the stores as directed by the concerned BHEL engineer.
6.1.15	The contractor shall ensure that all the packing materials and protective devices installed on equipment during transit and storage are removed before installation.
6.1.16	It shall be the responsibility of the contractor to keep the work / storage areas in neat, tidy and working conditions. All surplus/unusable packing and other materials shall be removed and deposited at location(s) specified by BHEL within the project premises. If required weighing of the same within the project premises will have to be carried out.
6.2	<b>PRESERVATION OF COMPONENTS</b>
6.2.1	After taking delivery from BHEL / customer's stores, plant materials storage shall be subjected to the following protection besides other provisions indicated in these specifications elsewhere.
6.2.1.1	Items stored outdoors shall be stacked up at least six inches (6") off the ground. Items should not be stored in a low lying area where water logging is a possibility. Contractor should have sufficient numbers of wooden / concrete / steel sleepers for the job.
6.2.1.2	Motors, valves, electrical equipment, control equipment and instruments, and special or precision items requiring special care, etc shall be stored indoors. Motor windings shall be kept dry by use of external heat or space heaters.
6.2.1.3	Bearings and other wearing surfaces of plant materials shall be protected against corrosion and kept clean and should be regularly monitored.
6.2.1.4	Insulation materials shall be stored indoors or otherwise protected against getting wet/ damaged, using suitable measures and should be protected from direct rain.
6.2	<b>PRESERVATION OF COMPONENTS</b>
6.2.1	After taking delivery from BHEL / customer's stores, plant materials storage shall be subjected to the following protection besides other provisions indicated in these specifications elsewhere.
6.2.1.1	Items stored outdoors shall be stacked up at least six inches (6") off the ground. Items should not be stored in a low lying area where water logging is a possibility. Contractor should have sufficient numbers of wooden / concrete / steel sleepers for the job.
6.2.1.2	Motors, valves, electrical equipment, control equipment and instruments, and special or precision items requiring special care, etc shall be stored indoors. Motor windings shall be kept dry by use of external heat or space heaters.
6.2.1.3	Bearings and other wearing surfaces of plant materials shall be protected against corrosion and kept clean and should be regularly monitored.
6.2.1.4	Insulation materials shall be stored indoors or otherwise protected against getting wet/ damaged, using suitable measures and should be protected from direct rain.
6.2.2	It shall be the responsibility of the contractor to apply preservatives / touch up paints (primer) on equipment handled and erected by him till such time of final painting. It shall be contractor's responsibility to arrange for required paints (primer), thinners, labour, scaffolding materials, cleaning materials like wire brush, emery sheets, etc., cleaning of surface and provide one coat of preservatives / paints (primer) from time to time as decided by BHEL engineer. The accepted rate shall include this work also. It is to be noted that such painting may have to be done as and when required till such time the final painting is carried out.
6.2.3	The contractor shall effectively protect the finished work from action of weather and from damage or defacement and shall cover the finished parts then and there for their protection.
6.2.4	Any failure on the part of contractor to carry out works according to above clauses will entail BHEL to carry out the job from any other party and recover the cost from contractor.

**SPECIAL CONDITIONS OF CONTRACT (SCC)****Chapter ó VII: Drawings and documents**

<b>7.0</b>	<b>DRAWINGS AND DOCUMENTS</b>
7.1	The detailed drawings, specifications available with BHEL engineers will be made available to the contractor during execution of work at site. The contractor will also ensure availability of all drawings / documents at work place.
7.2	Necessary drawings to carry out the erection work will be furnished to the contractor by BHEL on loan, which shall be returned to BHEL Engineer at site after completion of work. Contractor shall ensure safe storage and quick retrieval of these documents.
7.3	The contractor shall maintain a record of all drawings and documents available with him in a register as per format given by BHEL Engineer. Contractor shall ensure use of pertinent drawings / data / documents and removal of obsolete ones from work place and returning to BHEL.
7.4	The data furnished in various annexure enclosed with this tender specification are only approximate and for guidance. However, the change in the design and in the quantity may occur as is usual in any such large scale of work. The contractors quoted rates shall be inclusive of the above factor
7.5	Should any error or ambiguity be discovered in the specification or information the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding on the contractor.
7.6	Deviation from design dimensions should not exceed permissible limit. The contractor shall not correct or alter any dimension / details, without specific approval of BHEL.

## SPECIAL CONDITIONS OF CONTRACT (SCC)

## Chapter ó VIII: Inspection and Quality

<b>8.0</b>	<b>INSPECTION AND QUALITY</b>
<b>8.1</b>	<b>Inspection, Quality Assurance, Quality Control</b>
8.1.1	Preparation of quality assurance log sheets and protocols with customer/ consultants/statutory authority, welding logs, NDE records, testing & calibration records and other quality control and quality assurance documentation as per BHEL engineer's instructions, is within the scope of work/specification. These records shall be submitted to BHEL/customer for approval from time to time.
8.1.2	The protocols between contractor and customer/ BHEL shall be made prior to installation for correctness of foundations, materials, procedures, at each stage of installation, generally as per the requirement of customer/ BHEL. This is necessary to ensure elimination of errors or keeping them within tolerable limits and to avoid accumulation and multiplication of errors.
8.1.3	A daily log book should be maintained by every supervisor/engineer of contractor on the job in duplicate (one for BHEL and one for contractor) for detailing and incorporating alignment/clearance / centering / leveling readings and inspection details of various equipments etc. High pressure welding details like serial number of weld joints, welders name, date of welding, details of repair, heat treatment etc. will be documented in welding log as per BHEL Engineer's instructions. Record of radiography containing details like serial number of weld joints, date of radiography, repairs, if any, re-shots etc shall also be maintained as per BHEL Engineer's instructions. <b>Record of heat treatments performed shall be maintained as prescribed by BHEL</b>
8.1.4	The performance of welders will be reviewed from time to time as per the BHEL standards. Welders' performance record shall be periodically furnished for scrutiny of BHEL's Engineer. Corrective action as informed by BHEL shall be taken in respect of those welders not conforming to these standards. This may include removal/ discontinuance of concerned welder(s). Contractor shall arrange for the alternate welders immediately
8.1.5	All the welders shall carry identity cards as per the proforma prescribed by BHEL/ Customer/Consultant. Only welders duly authorized by BHEL/customer/consultant shall be engaged on the work.
8.1.6	Contractor shall provide all the Measuring Monitoring Equipments (MMEs) required for completion of the work satisfactorily. These MMEs shall be of brand, quality and accuracy specified by BHEL Engineer and should have necessary calibration and other certificates as per the requirement of BHEL Engineer. Decision of BHEL Engineer regarding acceptance or otherwise of the measuring instruments/gauges/tools for the work under this specification, is final and binding on the contractor. BHEL may give an indicative list of MMEs required for this work and to be made available by the contractor. The list will be reviewed by BHEL and the contractor shall meet any augmentation needed wherever required.
8.1.7	It is the responsibility of the contractor to prove the accuracy of the testing/measuring/calibrating equipments brought by him based on the periodicity of calibration as called for in the BHEL's quality assurance standards/BHEL Engineer's instructions.
8.1.8	Any re-laying or re-termination of cables/re-erection of instruments/ recalibration of instruments etc. required due to contractor's mistake or design requirement and found at any stage inspection, shall be carried out by the contractor at no extra cost.

## SPECIAL CONDITIONS OF CONTRACT (SCC)

## Chapter ó VIII: Inspection and Quality

8.1.9	BHEL have already been accredited with ISO 9001 certification and as such this work is subject to various audits to meet ISO 9001 requirements. One particular aspect which needs special mention is about arrangement of calibration of instruments by the contractor. Contractor shall ensure deployment of reliable and calibrated MMEs (Measuring and Monitoring Equipments). The MMEs shall have test / calibration certificates from authorized / Government approved / Accredited agencies traceable to National / International Standards. Re-testing / re- calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer within the contract price. The contractor will also have alternate arrangements for such MMEs so that work does not suffer when the particular equipment / instrument is sent for calibration. Also if any MMEs not found fit for use, BHEL shall have the right to stop the use of such item and instruct the contractor to deploy proper item and recall ie repeat the readings taken by that instrument, failing which BHEL may deploy MME and retake the readings at Contractor's cost.
8.1.10	Re-work necessitated on account of use of invalid MMEs shall be entirely to the contractor's account. He shall be responsible to take all corrective actions, including resource augmentation if any, as specified by BHEL to make-up for the loss of time.
8.1.11	In the courses of erection, it may become necessary to carry repeated checks of the work with instruments recently calibrated, re-calibrated. BHEL may counter/ finally check the measurements with their own MMEs. Contractor shall render all assistance in conduct of such counter/final measurements.
8.1.12	Total Quality is the watchword of the work and Contractor shall strive to achieve the Quality Standards, procedures laid down by BHEL. He shall follow all the instructions as per BHEL drawings and Quality Standards.
8.2	<b>Stage Inspection By FES/QA Engineers</b>
8.2.1	Apart from day-to-day inspection by BHEL Engineers stationed at Site and Customer's Engineers, stage inspection of equipments under erection and commissioning at various stages shall also be conducted by teams of Engineers from Field Engineering Services of BHEL's Manufacturing Units, Quality Assurance teams from Field Quality Assurance, Unit/Factory Quality Assurance and Commissioning Engineers from Technical Services etc. Contractor shall arrange all labour, tools and tackles etc. along with proper access for such stage inspections free of cost.
8.2.2	Any modifications suggested by BHEL FES and QA Engineers' team shall be carried out by contractor.
8.3	<b>Statutory Inspection of Work</b>
8.3.1	<p>The work to be executed under these specifications has to be offered for inspection, at appropriate stages of work completion, to various statutory authorities for compliance with applicable regulations.</p> <p>The work related statutory inspections, though not limited to, are as under:</p> <ol style="list-style-type: none"> <li>1) Inspectorate of Steam Boilers and Smoke Nuisance</li> <li>2) Electrical Inspector</li> <li>3) Factory Inspector, Labour Commissioner, PF Commissioner and other authority connected to this project work</li> </ol> <p>The scope includes getting the approvals from the statutory authorities, which includes arranging for inspection visits of statutory authority periodically as per BHEL Engineer's instructions, arranging materials for ground inspection, taking rub outs for the pressure parts to be offered for inspection, submitting co-related inspection reports, documents, radiographs etc and following up the matter with them. Contractor shall also make all arrangements for offering the Products / Systems for inspection at location, as applicable, to the concerned authority.</p>

## SPECIAL CONDITIONS OF CONTRACT (SCC)

## Chapter ó VIII: Inspection and Quality

8.3.2	Contractor should be qualified to execute pressure parts & piping work coming under the purview of IBR, for which he should register himself with CIB of state concerned. contractor also should be aware of the latest IBR regulations and Electricity Act, including the amendments thereof.
8.3.3	Contractor shall comply with Qualification Tests for welders engaged in welding of Boilers and Steam Pipes under Construction, Erection and Fabrication at Site in India and in repairing Boilers and steam pipes by welding in line with Chapter XIII of Indian Boiler Regulations-1950, for testing his welders / men / workers, including all associated fees, procedures, required instruments and equipment and their calibration thereof. shall be contractor's responsibility to obtain approval of Statutory Authorities, wherever applicable, for the conducting of any work which comes under the purview of these authorities, at his cost.
8.3.4	The following fees shall be excluded from scope of Contractor: <ol style="list-style-type: none"> <li>1. Registration Fee as per Regulation 385 of Chapter IX of Indian Boiler Regulations-1950</li> <li>2. Fees for inspection of Boiler at the site of Construction as per Regulation 395 A, sl no 4 of Chapter IX of Indian Boiler Regulations-1950</li> </ol> However all other fees like visit fees charged by the Boiler Inspector and other arrangements for his visit or visits till satisfactory completion of work, shall be included in scope of Contractor
8.4	The Quality Management System of BHEL- HPVP have already been certified and accredited under ISO 9002 standards in this regard. The basic philosophy of the Quality Management System is to define the organizational responsibility, work as per documented procedures, verify the output with respect to acceptance norms, identify the non-conforming product/ procedure and take corrective action for removal of non-conformance specifying the steps for avoiding recurrence of such non-conformities, & maintain the relevant quality records. The non-conformities are to be identified through the conduct of periodical audit of implementation of quality systems at various locations/stages of work. Suppliers/vendors of various products/services contributing in the work are also considered as part of the quality management system. .as such the contractor is expected not only to conform to the quality management system of BHEL but also it is desirable that they themselves are accredited under any quality management system standard.
8.5	<b>Field Quality Assurance</b>
8.5.1	Contractor shall carry out all activities conforming to the approved Field Quality Plan (FQP) as revised from time to time. Total quality shall be the watchword of the work and contractor shall strive to achieve the quality standards, procedures laid down by BHEL. He shall follow all the instructions as per BHEL drawings and quality standards. Contractor shall provide the services of quality assurance engineer as per the relevant clauses.

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9.0	<p><b>OCCUPATIONAL HEALTH, SAFETY &amp; ENVIRONMENT MANAGEMENT/</b></p> <p><b>QUALITY ASSURANCE PROGRAMME:</b>          BHEL, HPVP is certified for ISO 9001. Quality of work to customer's satisfaction and fulfillment of system requirements are the essence of ISO 9001 certification. BHEL, have HSE certification (ISO 14001 &amp; OHSAS 18001) and therefore Contractor also shall organize/ plan/ perform all their activities to meet with the applicable requirements of these standards.</p>
9.1	<p><b>HSE (Health, safety &amp; Environment):</b>          Contractor will comply with HSE (Health, safety &amp; Environment) requirements of BHEL. HSE requirements in brief, are given below :-</p>
9.1.1	<p>Contractor will nominate one of their qualified and experienced employees as Safety Officer, who will be responsible for all HSE related issues of contractor's work area. Safety Officer will have authority to stop any activity, in case he observes that the activity is not being carried out in safe manner. He will conduct surprise inspection as well as periodic inspection/drill (at least once in a month) and submit such reports to BHEL. He will conduct periodic meetings with supervisors of different working groups and explain HSE issues and use of PPEs to them. Reports of such meetings will be submitted to BHEL. Contractor will develop suitable work procedures based upon HSE guidelines and OCPs and implement it. Such work procedures will consist of Area of work, T&amp;P Details, Work Procedure, PPE requirements etc. Please refer Schedule VIII of BOCW Rules for number of safety officers, qualification, duties etc. Contractor should highlight the requirement of safety to staff and labor through daily tool box meeting before start of the day's job.          Contractor to also submit monthly safety reports as per the format/procedure of BHEL.</p>
9.1.2	<p>The contractor shall arrange induction and regular health check of their employees as per schedule VII of BOCW rules by a registered medical practitioner. The contractor shall take special care of the employees affected with occupational diseases under rule 230 and schedule II of BOCW Rules. The employees not meeting the fitness requirement should not be engaged for such job</p>
9.1.3	<p>Following personnel protective equipments (PPEs), in adequate numbers, will be made available at site &amp; their regular use by all concerned will be ensured: -</p> <ul style="list-style-type: none"> <li>- HELMET</li> <li>- SAFETY GOGGLES &amp; WELDING FACE SHIELDS</li> <li>- SAFETY BELTS AND PROTECTIVE NET FOR WORKING AT HEIGHT</li> <li>- SAFETY SHOES</li> <li>- EAR PLUG</li> <li>- ANY OTHER SAFETY EQUIPMENT REQUIRED FOR SAFE COMPLETION OF THE WORK</li> </ul> <p>Contractor to also submit monthly reports on above as per the format/procedure of BHEL/ Consultant / customer.</p>
9.1.4	<p>Providing appropriate First Aid facilities for prompt treatment of injuries and illness at work place. Arranging training to contractor workmen/ employees for giving first aid.</p>
9.1.5	<p>Arranging ambulance in case of any emergency situation .</p>
9.1.6	<p>Identification of nearest hospital and health check-up of workmen/employees</p>
9.1.7	<p>Providing filtered drinking water at work place in cool container.</p>
9.1.8	<p>Providing Canteen, Rest Room, Washing facilities to the contracted employees as per provisions of Contract Labour Regulation Act 1970 (Chapter V).</p>
9.1.9	<p>Providing appropriate firefighting equipment at designated work place and nominate a fire officer/warden adequately trained for his job.</p>
9.1.10	<p>Identification of nearest fire station and display contact telephone nos. / person's name around work places for cases of emergencies .</p>
9.1.11	<p>Providing adequate no. of 24 V sources and ensure that no hand lamps are operating at voltage level above 24 Volts.</p>

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9.1.12	Fulfilling safety requirements at all power tapping points.
9.1.13	Red & White caution tape of proper width(1.5 to 2 inch) to be used for cordoning unsafe area such as open trench, excavation area etc.
9.1.14	Providing contractors company logo on cloths /uniform/ proper identity cards with photographs, for correct identification of people working at project site .
9.1.15	High/ Low pressure welders to be identified with separate colour clothings. No welders will be deployed without passing appropriate tests and holding valid welding certificates. Approved welding procedure should be displayed at work place.
9.1.16	Displaying safe handling procedures for all chemicals such as lube oil, acid, alkali, sealing compounds etc , at work place.
9.1.17	All scaffolding/ platforms should be made from materials of appropriate quality/grade so that these are safe for use. It should be certified/declared safe for use by an experienced contractor person, before any scaffolding/platform is used. Please refer IS:3696 part 1&2 and 4014 part 1 & 2
9.1.18	All T&Ps/ MMEs should be of reputed brand/appropriate quality & must have valid test/calibration certificates bearing endorsement from competent authority of BHEL. Contractor to also submit monthly reports of T&Ps deployed and validity test certificates to BHEL safety Officer as per the format/procedure of BHEL.
9.1.19	Ensure that the regulatory requirement of excessive weight limits (to carry/lift/ move weights beyond prescribed limits) for male and female workers are complied with.
9.1.20	Safety slogan, Safety/ Caution boards, wherever required to be displayed in consultation with BHEL.
9.1.21	Take suitable measures for waste management and environment related laws/legislation as a part of normal construction activities. Compliance with the legal requirements on storage/ disposal of paint drums (including the empty ones), Lubricant containers, Chemical Containers, and transportation and storage of hazardous chemicals will be strictly maintained. Ensure proper cleanliness of work place, housekeeping and waste management (including proper waste disposal ) on daily basis.
9.1.22	It is imperative on the part of the contractor to join and effectively contribute in joint measures such as tree plantation, environment protection, contributing towards social upliftment, conversion of packing woods to school furniture, keeping good relation with local populace etc.
9.1.23	The contractor shall carry out periodic air and water quality check and illumination level checking in his area of work place and take suitable control measure.
9.1.24	The Contractor is required to provide proper safety net systems (IS-11057) where ever the hazard of fall from height is present as per instruction of BHEL Engineer. The safety nets shall be fire resistant, duly tested and shall be of ISI Mark and the nets shall be located as per site requirements to arrest or to reduce the consequences of a possible fall of persons working at different heights.
9.1.25	Void..
9.2.	<b>SAFETY AND CLEANLINESS:</b> The contractor shall take all necessary safety precautions and arrange for appropriate appliances as per discretion of BHEL or its authorised officials (Site Construction Manager) to prevent loss of human lives, injuries, to personnel engaged and damage to property. Before commencing the work, the contractor shall submit a "Safety Plan" to the above authorised BHEL official and obtain approval on the same. The safety plan shall indicate in detail the measures that would be taken by the contractor to ensure safety of men, equipment, materials and environment during execution of the work. This will also include an organization structure, role and responsibilities of the concerned key personnel, the safety practices that will be followed, PPEs deployed, plan for handling critical activities and emergencies.
9.3	If the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions issued by the authorised BHEL official, BHEL shall have the right to take corrective steps at the risk and cost of the contractor.

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9.4	During the course of construction, alternation or repairs, scrap with protruding nail, sharp edge etc and all other debris shall be kept clean from working areas, passage, ways and stairs in and around site.
9.5	Combustible scrap and debris shall be removed at regular intervals during the course of execution. Safe means shall be provided to facilitate such removal. The combustible scrap should be stored in safe place away from the plant materials to avoid fire accidents. The area shall be chosen in consultation with the Engineer and to be cordoned off.
9.6	Rigging equipment for materials handling shall be inspected prior to use in each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment will be removed from service.
9.7	Rigging equipment shall not be loaded in excess of its recommended safe working load. Rigging equipment, when not in use, shall be removed from the original work area so as not to present a hazard to employees.
9.8	Contractor shall notify the engineer, of his intention to bring on to site any equipment or any container, with liquid or gaseous fuel or other substance which may create a hazard. The Engineer shall have the right to prescribe the condition under which such equipment or container may be handled and used during the performance of the works and the contractor shall strictly adhere to such instructions. The Engineer shall have the right to inspect any construction tool and to forbid its use, if in his opinion it is unsafe. No claim due to such prohibition will be entertained.
9.9	Where it is necessary to provide and/or store petroleum products or petroleum mixture & explosives, the contractor shall be responsible for carrying out such provision / storage in accordance with the rules & regulations laid down in the relevant petroleum act, explosive act and petroleum and carbide of calcium manual, published by the chief inspector of explosives of India. All such storage shall have prior approval if necessary from the chief inspector of explosives or any other statutory authority. The contractor shall be responsible for obtaining the same.
9.10	Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dragged, struck or permitted to strike each other violently.
9.11	When cylinders are transported by powered vehicle they shall be secured in a vertical position.
9.12	All workmen of the contractor working on construction area shall wear safety shoes, hand gloves, safety helmets and safety belt as applicable. The contractor shall provide to its workforce and ensure the use of following personnel protective equipment as found necessary and as directed by BHEL.
9.12.1	Safety Helmets conforming to IS-2925 : 1984
9.12.2	Safety Belts conforming to IS-3521:1983
9.12.3	Safety Shoes conforming to IS-1989 : 1978
9.12.4	Eye and face protection devices conforming to IS 6 1179:1967, IS 5983:1980, IS 8521 Part 1:1977, IS 8521 Part 2: 1994.
9.12.5	Hand and body protection devices conforming to IS 4770:1991 and IS- 6994: Part 1: 1973, IS 6 8619 : 1977
9.12.6	Ear protection IS-9167:1979
9.12.7	Respiratory Protective Devices as per IS-9473:2002, i4746:1999 and 14166:1994
9.13	The contractor shall insure his workmen against all accidents and the policy shall be presented to BHEL Engineer on demand. Otherwise, BHEL will arrange the same and the expenditure towards this will be debited to the contractor. In case of a fatal or disabling injury accident to any person at construction site due to lapses by the contractor, the victim and/or his/her dependents shall be compensated by the contractor as per statutory requirements. However, if considered necessary BHEL shall have the right to impose appropriate financial penalty on contractor and recover the same from payments due to the contractor for suitably compensating the victim and/or his/her dependence before imposing any such penalty. Appropriate enquiry shall be held by BHEL giving opportunity to the contractor for presenting his case. Above safety conditions are not exhaustive but give an idea for the contractor and contractor shall adhere to all safety precaution given by the Engineer at site.

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9.14	The contractor shall arrange at his cost adequate lighting facilities e.g. flood lighting, hand lamps, area lighting etc. at various levels for safe and proper working operations during night hours at the work spot as well as at the pre-assembly area.
9.15	The contractor shall be responsible for provision of all the safety notices and safety equipment as enjoined on him by the application of relevant statutory regulation / provisions and/or as called upon by BHEL from time to time. He shall be held responsible for any violation of statutory regulations (local, state or central) and BHEL instruction that may endanger safety of men, equipment and material.
9.16	The contractor shall provide temporary fencing wherever required as a safety measure against accident and damage to properties. Suitable caution notices shall be displayed where access to any part is found to be unsafe and hazardous.
9.17	Contractor shall ensure safety of all the workmen, material and equipment either belonging to him or to others working at site. He shall observe safety rules and codes applied by BHEL without exception.
9.18	It will be the responsibility of the contractor to ensure safe lifting of the equipment, taking due precaution to avoid any accident and damage to other equipment and personnel. All requisite tests and inspection of handling equipment, tools & tackle shall be periodically done by the contractor by engaging only the COMPETENT PERSONS as per law. Defective equipment or uncertified shall be removed from service. Any equipment shall not be loaded in excess of its recommended safe working load.
9.19	The contractor shall provide necessary first aid facilities as per schedule III. In addition, ambulance facilities, OHC and CMO as per schedule IV, V, X and XI of BOCW Rules as applicable for all his employees, representatives and workmen at site and BHEL shall have no obligation in this regard. The first aid boxes should be placed at various elevations so as to make them available within the reach and at the quickest possible time. The contractor should conduct periodical first aid classes to keep his supervisor and Engineers properly trained for attending to any emergency.
9.20	Training
9.20.1	The contractor shall arrange induction safety training for all employees before assigning work. In addition, awareness programme, mock drill at regular intervals and daily tool box meetings shall be arranged. Monthly report of the above to be given to BHEL safety Officer as per prescribed BHEL formats.
9.20.2	All the contractor's supervisory personnel and sufficient number of workers shall be trained for fire protection systems. Enough number of such trained personnel must be available during the tenure of contract. Contractor should nominate his supervisor to coordinate and implement the safety measures.
9.21	Contractor shall provide enough fire protecting equipment of the types and numbers at his office, stores, temporary structure in labour colony etc. Such fire protection equipment shall be easy and kept open at all times. The fire extinguishers shall be properly refilled and kept ready which should be certified at periodic intervals. The date of changing should be marked on the Cylinders. All other fire safety measures as laid down in the codes for fire safety at construction site issued by safety coordinator of BHEL shall be followed. Non-compliance of the above requirement under fire protection shall in no way relieve the contractor of any of his responsibility and liabilities to fire accident occurring either to his materials or equipment or those of others. Emergency contacts must be displayed at prominent locations.
9.22	The contractor shall at his cost, remove from vicinity of work at least once each day all combustible waste, scrap, painting materials, rubbish, unused or other materials and deposit them in places specified by BHEL to keep the work site clear and tidy. Use of undercoated canvas paper, corrugated paper, fabricated carton, plastic or other flammable materials shall be restricted to the minimum and promptly removed.

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9.23	The contractor shall not use any hand lamp energized by Electric power with supply voltage of more than 24 volts in confined spaces like inside water boxes, turbine casings, condensers etc.
9.24	All portable electric tools used by the contractor shall have safe plugging system to source of power and be appropriately earthed. Only electricians licensed by appropriate statutory authority shall be employed by the contractor to carry out all types of electrical works. Details of earth resource and their test dates to be given to BHEL safety officer as per the prescribed formats of BHEL.
9.25	In case of any delay in completion of a job due to mishaps attributable to lapses by the contractor, BHEL shall have the right to recover cost of such delay from the payments due to the contractor, after notifying the contractor suitably.
9.26	Valve protection caps shall be kept in place and secured.
9.27	The contractor shall be responsible for the safe storage and handling of his radio-active sources as per BARC rules and regulations.
9.28	Tarpaulin being inflammable should not be used (instead, only non-inflammable covering materials shall be used) as protective cover while preheating, welding, stress relieving etc. at site.
9.29	If the contractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given reasonable opportunity to do so and/or if the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instruction regarding safety issued by BHEL, BHEL shall have the right to take corrective steps at the risk and cost of the contractor after giving a notice of not less than 7 days indicating the steps that would be taken by BHEL.
9.30	If the contractor succeeds in carrying out its job in time without any fatal or disabling injury accident and without any damage to property BHEL may, at its sole discretion, favorably consider to reward the contractor suitably for the performance.
9.31	The contractor shall carefully follow the safety requirement of BHEL/ the purchaser with the regard to voltages used in critical areas.
9.32	The contractor shall use only properly insulated and armored cables which conform to the requirement of Indian Electricity Act and Rules for all wiring, electrical applications at site. BHEL reserves the right to replace any unsafe electrical installations, wiring, cabling etc. at the cost of the contractor. All electrical appliances used in the work shall be in good working condition and shall be properly earthed. No maintenance work shall be carried out on live equipment. The contractor shall maintain adequate number of qualified electricians to maintain his temporary electrical installations. Area wise Electrical safety inspection is to be carried out on monthly basis as per Electrical Safety Inspection checklist and the report is to be submitted to BHEL safety officer.
9.33	The contractor shall arrange adequate number of persons specifically for clearing any debris and for housekeeping of the erection area including restacking of components in the erection areas. Housekeeping to be carried out as per BHEL's check list and report is to be submitted to BHEL safety officer.
9.34	In case of any damage to property due to lapses by the contractor, BHEL shall have the right to recover the cost of such damages from the contractor after holding an appropriate enquiry.
9.35	The contractor shall submit report of all accidents, fires and property damage etc. to the Engineer immediately after such occurrence, but in any case not later than 24 hours of the occurrence. Such reports shall be furnished in the manner prescribed by BHEL. In addition, periodic reports on safety shall also be submitted by the contractor to BHEL from time to time as prescribed by the Engineer. Compiled monthly reports of all kinds of accidents, fires and property damage to be submitted to BHEL safety officer as per prescribed formats
9.36	Before commencing the work, the contractor shall appoint / nominate a responsible person to supervise implementation of all safety measures and liaison with his counterpart of BHEL.

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9.37	Suitable scaffolds shall be provided for workman for all works that cannot safely be done from the ground, or from solid construction except in the case of short duration of work which can be done safely from ladders. When a ladder is used, it shall be of rigid construction made of steel. The steps shall have a minimum width of 45 cm and a maximum rise of 30 cm. Suitable handholds of good quality wood or steel shall be provided and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ horizontal and 1 vertical.
9.38	Scaffolding or staging more than 3.6 m above the ground floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly bolted, braced or otherwise secured, at least 90 cm above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from savor, from swaying, from the building or structure.
9.39	Working platforms, gangways and stairways shall be so constructed that they do not sag unduly or unequally and if the height of the platform gangways provided is more than 3.6 m above ground level or floor level, they shall be closely boarded and shall have adequate width which shall not be less than 750 mm and be suitably fenced as described above.
9.40	Every opening in the floor or a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm.
9.41	Wherever there are open excavation in ground, they shall be fenced off by suitable railing and danger signals installed at night so as to prevent persons slipping into the excavations.
9.42	Safe means of access shall be provided to all working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 m in the length while the width between side rails in rung ladder shall in no case be less than app. 29.2 cm for ladder up to and including 3 m in length. For longer ladders this width shall be increased at least $\frac{1}{4}$ for each additional foot of length.
9.43	A sketch of the ladders and scaffolds proposed to be used shall be prepared and approval of the Engineer obtained prior to Construction.
9.44	All personnel of the Contactor working within the plant site shall be provided with safety helmets. All welders shall wear welding goggles while doing welding work and all metal worker shall be provided with safety gloves. Persons employed on metal cutting and grinding shall wear safety glasses.
9.45	Adequate precautions shall be taken to prevent danger for electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public.
9.46	All trenches, four feet or more in depth, shall at all times be supplied with at least one ladder for each 30 m in length or fraction thereof. The ladder shall be extended from bottom of the trench to at least 90 cm above the surface of the ground. Sides of the trenches which are 1.50 m or more in depth shall be stepped back to give suitable slope or securely held by timer bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.
9.47.1	The contractor shall take permission of BHEL prior to risky jobs such as working at height, hot work, lifting activities, etc. through permits. No job should be started without permits.
9.47.2	The Contactor shall take all measures at the sites of the work to protect all persons from accidents and shall be bound to bear the expenses of defense of every suit, action or other proceeding at law that may be brought by any persons for injury sustained or death owing to neglect of the above precautions and to pay any such persons such compensation or which may with the consent of the Contractor be paid to compromise any claim by any such person should such claim proceeding be filed against BHEL, the Contractor hereby agrees to indemnify BHEL against the same.

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9.48	Before any demolition work is commenced and also during the process of the work the following shall be ensured:
9.48.1	All roads and open areas adjacent to the work site shall either be closed or suitably protected.
9.48.2	No electric cable or apparatus which is liable to be a source of danger nor a cable or an apparatus used by the operator shall remain electrically charged.
9.48.3	All practical steps shall be taken to prevent danger to persons employed from the risks of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render them unsafe.
9.49	All necessary personnel safety equipment as considered adequate by the Engineer should be kept available for the use of the persons employed in the Site and maintained in a condition suitable for immediate use and the Contactor should take adequate steps to ensure proper use of equipment by those concerned.
9.49.1	Workers employed on mixing asphalted materials, cement and lime mortars shall be provided with protective foot wear and protective goggles.
9.49.2	Those engaged in white washing and mixing or stacking of cement bags or any materials which is injurious to the eyes shall be provided with protective goggles.
9.49.3	Those engaged in welding works shall be provided with welder's protective eyesight lids
9.49.4	Stone breakers shall be provided with protective goggles and protective clothing and seated sufficient to safe intervals.
9.49.5	Where workers are employed in sewers and manholes, which are in use, the Contractor shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into manhole, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.
9.49.6	The Contractor shall not employ men below the age of 18 years and women on the works of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precautions should be taken.
9.49.6.1	No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
9.49.6.2	Suitably face masks should be supplied for use by the workers where paints are applied in the form of spray or a surface having lead paint dry rubbed and crapped.
9.49.6.3	Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.
9.50	When the work is being done near any place where there is risk of drowning all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
9.51	Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safe guards. Hoisting appliance should be provided with such means as will reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials which are good conductor of electricity.
9.52	All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near the places of work.

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9.53	The contractor shall maintain and ensure necessary safety measures as required for inspection and tests HV test, Pneumatic test, Hydraulic test, Spring test, Bend test etc as applicable, to enable inspection Agency for performing Inspection. If any test equipment is found not complying with proper safety requirements then the Inspection Agency may withhold inspection, till such time the desired safety requirements are met.
9.54	The Contractor shall notify BHEL of his intention to bring to site any equipment or material which may create hazard. BHEL shall have the right to prescribe the conditions under which such equipment or materials may be handled and the contractor shall adhere to such instructions. BHEL may prohibit the use of any construction machinery, which according to him is unsafe. No claim for compensation due to such prohibition will be entertained by BHEL.
9.55	All safety precautions shall be taken for welding and cutting operations as per IS-818. All safety precautions shall be taken for foundation and other excavation marks as per IS-3764.
9.56	All gas cylinders shall be stored in upright position. Suitable trolley shall be used. There shall be flash-back arrestors conforming to IS-11006 at both cylinder and burner ends. Damaged tube and regulators must be immediately replaced. No of cylinders shall not exceed the specified quantity as per OCP
9.57	These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent, place at work spot. The persons responsible for compliance of the safety code shall be named therein by the Contractor
9.58	To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangement made by the contract shall be open to inspection by the Engineer of the Engineer's Representative.
9.59	Keeping the work area clean/ free from debris, removed scaffoldings, scraps, insulation/sheeting wastage /cut pieces, temporary structures, packing woods etc. will be in the scope of the contractor. Such cleanings have to be done by contractor within quoted rate, on daily basis by an identified group. If such activity is not carried out by contractor / BHEL is not satisfied, then BHEL may get it done by other agency and actual cost along with BHEL overheads will be deducted from contractor's bill. Such decisions of BHEL shall be binding on the contractor.
9.60	Notwithstanding the above clauses there is nothing to exit the Contractor from the operations of any other Act or Rule in force in area of work in this respect. Provided always that all safety measures apart from those specifically provided in this agreement which are brought to the notice of the Contractor from time to time by the Engineer shall be complied by the Contractor. Provided further that all consequences, damages, or losses arising by reason of any safety code shall be met with by the Contractor.

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9.61	<b><u>NON COMPLIANCE: -</u></b>		
	<b>NONCONFORMITY OF SAFETY RULES AND SAFETY APPLIANCES WILL BE VIEWED SERIOUSLY AND BHEL HAS RIGHT TO IMPOSE FINES ON THE CONTRACTOR AS UNDER <u>for every instance of violation noticed:</u></b>		
	<b>SN</b>	<b>Violation of Safety Norms</b>	<b>Fine (in Rs)</b>
	1	Not Wearing Safety Helmet	50/- *
	2	Not wearing Safety Belt or not anchoring life line	100/-*
	3	Not wearing safety shoe	100/-*
	4	Not keeping gas cylinders vertically	100/-
	5	Not using flash back arrestors	50/-
	6	Not wearing gloves	50/- *
	7	Grinding Without Goggles	50/- *
	8	Not using 24 V Supply For Internal Work	500/-
	9	Electrical Plugs Not used for hand Machine	100/-
	10	Not Slinging property	200/-
	11	Using Damaged Sling	200/-
	12	Lifting Cylinders Without Cage	500/-
	13	Not Using Proper Welding Cable With Lot of Joints And Not Insulated Property.	200/-
	14	Not Removing Small Scrap From Platforms	200/-
	15	Gas Cutting Without Taking Not Using Sheet Below Gas Cutting	200/-
	16	Not Maintaining Electric Operated Dangerously	500/-
	17	Improper Earthing Of Electrical T&P	500/-
	18	No or improper barricading	500/-
19	Activity carried out without Safety work permit (Height work, Lifting activity, Hot work-each person/case)	1000/-	
20	Accident Resulting in Partial Loss in Earning Capacity	25,000/- per victim	
21	Fatal Accident/Accidents Resulting in total loss in Earning Capacity	1,00,000/per victim #	
<p>Legend: -*: per head, #: or as deducted by Customer whichever is higher.  Any other non-conformity noticed not listed above will also be fined as deemed fit by BHEL. The decision of BHEL engineer is final on the above. The amount will be deducted from running bills of the contractor. The amount collected above will be utilized for giving award to the employees who could avoid accident by following safety rules. Also the amount will be spent for purchasing the safety appliances and supporting the safety activity at site.</p>			

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SPECIAL CONDITIONS OF CONTRACT (SCC)

Chapter-IX: HSE & OHSAS

9.61	<p><b><u>CITATION</u></b>:-If safety record of the contractor in execution of the awarded job is to the satisfaction of safety department of BHEL, issue of an appropriate certificate to recognize the safety performance of the contractor may be considered by BHEL after completion of the job.</p>
9.62	<p><b><u>MEMORANDUM OF UNDERSTANDING</u></b>                  After Award of Work, Contractors Are Required to Enter into A Memorandum of Understanding as Given Below:</p> <p style="text-align: center;"><b><u>Memorandum of Understanding</u></b></p> <p>BHEL, Power Sector _____ Region is committed to Health, Safety and Environment Policy (EHS Policy).                  M/s _____ do hereby also commit to the same EHS Policy while executing the Contract Number _____                  M/s _____ shall ensure that safe work practices not limited to the above are followed by all construction workers and supervisors. Spirit and content therein shall be reached to all workers and supervisors for compliance.                  BHEL will be carrying out EHS audits twice a year and M/s _____ shall ensure to close any non-conformity observed / reported within fifteen days.</p> <p>Signed by authorized representative of M/s -----</p> <p>Name _____</p> <p>Place &amp; Date _____</p>

## SPECIAL CONDITIONS OF CONTRACT (SCC)

## Chapter-X: RA Bill Payments

<b>10.0</b>	<b>RA Bill Payments</b>
10.1	The contractor shall submit his monthly RA bills with all the details required by BHEL-HPVP on specified date every month covering progress of work in all respects and areas for the previous calendar month.
10.2	Mode of payment and measurement of work completed shall be as per relevant clauses of General Conditions of Contract
10.3	Release of payment in each running bill will be restricted to 90% of the value of work admitted as per stages of progressive pro rata payments.
10.4	The 10% thus remaining shall be treated as Retention Amount and shall be released as per terms specified in the General Conditions of Contract.
10.5	The payment for running bills will normally be released from BHE_HPVP Head Office at Visakhapatnam within 30 days of submission of running bill complete in all respects with all documents. It is the responsibility of the contractor to make his own arrangements for making timely payments towards labour wages, statutory payments, outstanding dues etc and other dues in the meanwhile.
10.6	BHEL shall release payment through Electronic Fund Transfer (EFT)/RTGS from Head Office. In order to implement this system, Contractor to furnish details pertaining to his Bank Accounts where proceeds will be transferred through BHEL's banker, as per prescribed formats: Note: BHEL may also choose to release payment by other alternative modes as Applicable
10.7	Void

## SPECIAL CONDITIONS OF CONTRACT (SCC)

## Chapter-XI: Performance Monitoring

<b>11.0</b>	<b>Performance Monitoring</b>
11.1	Performance of the contractor is monitored through various reports/reviews and shall be jointly evaluated every month for unit wise identified packages as per prescribed formats. Based on the net weighted scores obtained, Contractors shall be rated -Goodø or -Satisfactoryø or -Unsatisfactoryø
11.2	In case of any dispute on performance rating and the contractor refuses to sign on the performance rating given by BHEL package In-charge, the same shall be reviewed by BHEL site In-charge/Construction Manager and his decision shall be final.
11.3	Void.
11.4	Performance of the contractor will be taken into consideration for assessing the capacity of the bidder to execute future jobs under tender, as detailed in the Notice Inviting Tender. Risk of non-evaluation or non-availability of the Monthly performance evaluation reports is to be borne by the Bidder.
11.5	In case of -Unsatisfactory performanceø for a continuous period of three or more months for a package or packages, BHEL has the right to get the balance works executed at the risk and cost of the contractor.
11.6	In case of -Unsatisfactory performanceø in a financial year, BHEL reserves the right to put on hold such Contractors for a period of six months for similar package or similar packages

## SPECIAL CONDITIONS OF CONTRACT (SCC)

## Chapter-XII: Suspension of Business Dealings

<b>12.0</b>	<b>Suspension of Business dealings</b>
12.1	BHEL reserves the right to take action against contractors who fail to perform or indulge in malpractices, by suspending business dealings with them.
12.2	Suspension could be in the form of <del>Hold</del> <del>De-listing</del> or <del>Banning</del> a contractor.
12.3	A bidder may be put on HOLD for a period of 6 months, for future tenders for specific works on the basis of one or more of the following reasons: <ul style="list-style-type: none"> <li>a) Bidder does not honour his own offer or any of its conditions within the validity period.</li> <li>b) Bidder fails to respond against three consecutive enquires of BHEL.</li> <li>c) After placement of order, Bidder fails to execute a contract.</li> <li>d) Bidder fails to settle sundry debt account, for which he is legitimately liable, within one year of its occurrence.</li> <li>e) Bidder's performance rating falls below 60% in specific category (more fully described in chapter <del>Performance Monitoring</del>)</li> <li>f) Bidder works are under strike/ lockout for a long period.</li> </ul>
12.4	A Bidder may be de-listed from the list of registered Bidders of the region for a period of 1 year on the basis of one or more of the following reasons: - <ul style="list-style-type: none"> <li>a) Bidder tampers with tendering procedure affecting ordering process or commits any misconduct which is contrary to business ethics.</li> <li>b) Bidder has substituted, damaged, failed to return, short returned or unauthorized disposed off materials/ documents/ drawings/ tools etc., of BHEL.</li> <li>c) Bidder no longer has the technical staff, equipment, financial resources etc. required to execute the orders/ contracts.</li> </ul>
12.5	A Bidder can be banned from doing any business with all Units of BHEL for a period of 3 years on the basis of one or more of the following reasons: <ul style="list-style-type: none"> <li>a) Bidder is found to be responsible for submitting fake/ false/ forged documents, certificates, or information prejudicial to BHEL's interest.</li> <li>b) In spite of warnings, the Bidder persistently violates or circumvents the provisions of labour laws/ regulations/ rules and other statutory requirements.</li> <li>c) Bidder is found to be involved in cartel formation</li> <li>d) The Bidder has indulged in malpractices or misconduct such as bribery, corruption and fraud, pilferage etc. which are contrary to business ethics.</li> <li>e) The Bidder is found guilty by any court of law for criminal activity/ offences involving moral turpitude in relation to business dealings.</li> <li>f) The Bidder is declared bankrupt, insolvent, has wound up or been dissolved; i.e. ceases to exist for all practical purposes.</li> <li>g) Bidder is found to have obtained Official Company information/ documentation by questionable means.</li> <li>h) Communication is received from the administrative Ministry of BHEL to ban the Bidder from business dealings.</li> </ul>
12.6	Contracts already entered with a contractor before the date of issue of order of <del>HOLD</del> or <del>DE-LISTING</del> shall not be affected.
12.7	All existing contracts with a <del>BANNED</del> contractor shall normally be short closed.
12.8	Once the order for suspension is passed, existing offers/new offers of the contractor shall not be entertained.
12.9	The above guidelines are not exhaustive but enunciate broad principles governing action against contractors

# **STANDARD / SPECIFICATION / DRAWINGS FOR CIVIL AND STRUCTURAL WORKS**

## STANDARD SPECIFICATION FOR CIVIL AND STRUCTURAL WORKS

### 1. Site Clearance

All the area upon which the construction is to be carried out and areas which are required by the Contractor for his construction facilities are to be cleared off all rubbish and objectionable matter at Contractors own cost. Trees, if any, shall not be uprooted or cut without the prior approval of the Engineer-in-charge. All spoils, unserviceable materials and rubbish shall be burnt or removed from site. Usable materials, saleable timber, fire-wood etc., shall be stocked properly at work site in the manner as directed by the Engineer-in-charge. The cost of clearing the areas shall be deemed to have been included by the tenderer in his general rate.

### 2. Earthwork for Foundations

Earthwork excavation for foundations and filling in foundations shall conform to I.S1200 . part-IS & 2720. The area to be excavated or filled in with excavated materials shall be clearly demarcated in the field by the Contractor. Excavation shall be done to lines and levels defined. Excavation shall be carried out to such widths, lengths, depths, profiles and grades as shown in the drawing or as may be specified by the Engineer – in – charge. Rough Excavation may be carried out up to a depth 15 cm less than the final level but the balance shall be excavated to precise level with special care. All soft pockets of soil met with even below the final level shall be removed and the excavation filled up as directed by Engineer-in-charge. The methods of excavation shall in every case be subject to the approval of the Engineer-in-charge and the contractor shall ensure the safety and stability of the excavations, being executed by him as well adjacent buildings, structures, services and other works in the vicinity of the site of work. Wherever necessary Engineer-in-charge may direct that the sides of the excavation should be timbered and shored at the contractor's own cost, adopting a proper method approved by the Engineer-in-charge. Notwithstanding the above, should any slip occur, the contractor shall remove all the slipped materials from the excavated pit, at his own cost. He shall also make good at his own all damages caused to the work as well as adjacent buildings, structures etc., as a result of the slip, referred to.

All excavation work shall be subject to inspection and approved by the Engineer-in-charge before any further works in the excavated areas allowed commencing. Should any excavation be carried out beyond the specified depth, the contractor should fill it up at his own cost with the same type and class of material as it is proposed to be laid over the excavated portion. No payment will however be made to the contractor on his account.

The contractor shall ensure that the excavations and the structures under construction are kept free from water logging at all stages of construction. He shall take all necessary precautions and `streams, aquifers, springs, surface flows etc., are excluded effectively so as to ensure that the works are carried out in a reasonable dry conditions in accordance with the construction schedule.

Back filling around the foundations, trenches, plinth and under the floor shall be done in accordance with I.S:1200 & I.S2720. The finished level of the plinth filling shall be trimmed to the slope required to be given to the finished floor. Back filling, watering and consolidation of excavated earth in layers etc., complete as per specifications shall be done unless otherwise stipulated in the tender schedule.

#### Removal of Hard rock by blasting

This shall include all rock occurring in large masses which cannot be removed except by blasting. Blasting shall be done as per the instruction contained in I.S:4701 and as instructed by the Engineer-in-charge. When rock blasting has to be done adjacent to structures, the following precautions shall be observed:

- (1) All blasting should be completely muffled to prevent damage by flying pieces.
- (2) Blasting within 3 meters of the structures shall be avoided
- (3) No blasting should be done within 1.5 meters of concrete / masonry structures.
- (4) An isolated boulder extending under the existing structure but projecting within the area of blasting should be blasted.
- (5) The contractor shall be responsible for all damages caused by blasting and shall replace or repair the damaged structures at his own cost.

### 3. Plain and Reinforced Cement Concrete Works:

All design and construction shall be performed in accordance with the Indian standard code of Practice for plain and reinforced concrete –IS 456. Any Special requirements noted on the drawings or bill of quantities shall govern over the provisions of this specifications. Controlled concrete shall be used wherever specified in the schedule

of items complying with all requirements of IS: 456 and as per special specifications appended herewith.

The coarse aggregate to be used shall be of hard broken granite stone jelly of various sizes as specified under respective items in the Bill of Quantities, conforming to IS 383 latest editions. The Engineer-in-charge may require the contractor to carryout moisture content tests in both fine and coarse aggregates. For determination of moisture content IS -2386 shall be referred to. The amount of water to be added shall be then adjusted to compensate for any observed variation in the moisture contents. Proper control of mixing water is deemed of paramount importance. Mixtures with automatic water measuring drums shall be used or else. Water should be measured by volume in calibrated buckets. All measuring equipments shall be maintained in a clean serviceable condition and the accuracy periodically checked and got certified by the Engineer-in-charge. The contractor shall carryout slump tests apart from taking test cubes at regular intervals. All such methods of sampling and analysis of concrete shall be in accordance with IS - 1199.

Mixing of concrete shall be strictly carried out in an approved type mechanical mixer. The mixing equipment shall be capable of combining the aggregates, cement and water within the specified time (not less than 2 Minutes) into a thoroughly mixed and uniform mass and of discharging the mixture without segregation. Mixing shall be continued until there is a uniform colour and consistency, Concrete shall be handled from the place of mixing to the place of final deposit as rapidly as practicable by methods which will prevent segregation or loss of any of the ingredients. Before depositing the concrete, all debris and dirt shall be removed from the space to be occupied by concrete. Concreting shall not be done unless the formwork conform to the shapes, lines and dimension as shown in the drawings.

Unless otherwise approved, concrete shall be placed on single operation to the full thickness of slabs and beams and similar members and not exceeding 1-meter-deep in walls, columns and similar members. Concrete shall be placed continuously until completion of the part of the work between construction joints or as directed by the Engineer-in-charge. The concrete after being laid shall be compacted by means of vibrators of approved type under proper supervision as directed by the Engineer-in-charge. Care should be taken to avoid segregation and formation of air bubbles. The whole process starting from the mixing of concrete to the placing and compaction shall not take more than 20 minute and the process shall be completed before the initial setting takes place. Curing shall be accomplished in accordance with IS-456 by keeping the concrete covered with a layer of sacking, canvas or similar absorbent materials and kept constantly wet for the period as directed by the Engineer-in-charge.

### **Reinforcement**

All reinforcement shall be clean and free from pitting, loose mill-scales, dust, loose rust and coats of paint, oil or other coatings which may destroy or reduce bond. General construction details and workmanship relative to reinforcement including bar bends, lap splices and installation shall be in accordance with the IS-2502 as well as IS-456. All bars be bent as per the bar bending schedules indicated in the drawings or supplied separately relevant to particular drawing. The contractor shall in all cases verify himself the correctness of schedules, giving the number, length and the bending details of the bars. The numbers, sizes, shape and position of all the reinforcement shall, unless otherwise, directed or authorized by the Engineer-in-charge be strictly in accordance with the drawing. The reinforcement shall be adequately held in position by 18 / 20 SWG soft black annealed binding wire. The contractor must obtain the approval of Engineer-in-charge for the reinforcement placed, before any concrete is placed in the form. All reinforcing bars shall be so tied as to form a rigid cage to prevent displacement before or during concreting. Rate quoted for reinforcement should include cost of transporting M.S. Rods / CTD bars from HPVP Store to site of work, cleaning, cutting, bending, placing, binding with contractor's own binding wire and providing necessary cover blocks of concrete but excluding cost of steel which shall be supplied free of cost at HPVP Stores.

### **Form Work**

Formwork shall conform to the shape, lines and dimensions of concrete and RCC structures as shown in the drawings and shall be well within the permissible tolerance. Formwork for concrete shall be of plywood, steel, good seasoned timber or other approved materials, properly designed easy for removal and cleaning. They shall be of sufficient strength and rigidity to maintain their position and shape under loads incidental to placing concrete. The number of props, their sizes and dispositions shall be such as to able safely carry the full dead load area constructional loads. The arrangement and alignment of formwork shall be got approved by the Engineer-in-charge prior to concreting. However, this shall not relieve the contractor from his responsibility for proper work and safety. Formwork shall be sufficiently tight to prevent loss of cement slurry from the concrete. All joints and holes in the formwork shall be caulked with putty jute cloth or other approved materials to the satisfaction of the Engineer-in-charge. The stripping time for the shuttering and the formwork shall in general conform to the provisions in the relevant clauses of IS 456. Unless otherwise specified rates for reinforced cement concrete shall include cost of centering, shuttering charges also.

### **Expansion and Other Joints**

Expansion Joints in concrete structures shall be provided at specified places as indicated in the drawings. The material shall be as specified by the Engineer-in-charge, expansion joints, with or without metal strip shall be as shown on drawings the filler shall be EXPANDEX JOINT FILLER premoulded non-extruded type fibrous joint filler impregnated with bitumen conforming to IS: 1838. The filler shall be durable, waterproof and compressible and shall have a high degree recovery after compression is released, ensuring thereby that no free space develops in the expansion joints. The top 25 mm, or as specified in the drawings, shall be sealed with "SHALITEX SEALING COMPOUND" or equivalent after application of approved primer.

#### 4. Stone Masonry

General: Stone masonry shall conform to IS, 1123, 1127, 1597 part I & II, Stone shall be obtained from the approved quarry and shall be free from decay and weathering.

All stones shall be thoroughly wetted before use. The mortar used for jointing shall be as specified under the respective items of the „ Bill of Quantities".

The walls shall be carried up truly plumb. Every stone shall be carefully fitted to the adjacent stones so as to form neat and closed joints.

To give sufficient lateral bond, vertical joints shall be avoided. Prescribed number of headers as required shall be provided to give sufficient transverse bond. At junctions of wall the stones each alternate course shall be so carried into each of the respective walls as to unite the work thoroughly. Where breaks are unavoidable in carrying up the work continuously in horizontal course sufficiently long steps shall be left to join the old and new work building of two thin faces and filling up the middle with small stuff or dry packing shall be strictly avoided. When plastering or raised pointing is not required to be done joints shall be struck flush and finished simultaneously.

#### Coursed Rubble Masonry

Coursed rubble masonry shall conform to IS 1597 (part-I) & 1123 Faces shall be accurately squared and all face joints shall be dressed at right angles. This bushing on the facing stones shall not project more than 38mm.

Face stones shall be laid alternate headers and stretchers. Depth of each course shall not be less than 150 mm. No course shall be greater than any course below. The height shall not exceed the breadth of stones of face. No stone shall tail into the wall less than its height. No pinning shall be allowed on the face. The stones shall be solidly bedded set full in mortar with joints not exceeding 12 mm in thickness.

#### Random rubble masonry

Random rubble masonry work shall conform to IS 1159 (part-I) Stones shall be hammer dressed at faces and joints to enable them to come into close proximity with each other. The face stone shall be laid headers and stretchers alternately; so as to break joint by at least 75mm. Thickness of joint shall not exceed 12mm. No pinning shall be used on the face and face stone shall extend well back into the headers. Stones less than 130 mm. in height shall not be used on the face.

Bond stones running through the wall shall be provided at 1.8M intervals in walls up to 0.60 M. thickness and if the wall is more than 0.60 M. thick a line of headers shall be laid from face to back each header overlapping the other by at least 150 mm.

#### 5. Brick Masonry

First class Bricks: Brick shall be sound, hard, tough, and rectangular in shape and size, well burnt of uniform deep red or copper colour and conform to IS . 1077. Brick shall be free from cracks, chips, flaws, stone or humps of any kind. Bricks shall be homogeneous in texture and emit a clear ringing sound on being struck and shall have a minimum compressive strength of 50KG / sq.cm. and shall not absorb water more than 20% of its weight, when soaked cold water for 24 Hrs. All bricks shall be table moulded.

Second Class Bricks: These shall be ground moulded but should otherwise conform to the specifications of first class bricks except for some surface cracks are allowable. These shall have minimum compressive strength of 50 Kg./sq.cm.

Samples of each type of brick, shall be got approved by the Engineer-in-charge before being used. All subsequent deliveries shall be up to the standards of the approved samples.

Brickwork shall conform to IS 3102, 2177 and IS - 2212.

Brick works shall be classified as first or second class according to the classification of bricks used and the method of laying. The thickness of joints shall not exceed 6 mm in first class brickwork and 10 mm in second

class brick work.

Bricks shall be well soaked before use on works for at least 6 hrs. The soaked bricks shall be kept on wooden planks or platform. Brick required for masonry with clay or lime mortars shall not be soaked.

Brickwork shall be laid with specified mortar to be prepared in accordance with IS -2250. Brick works shall be laid in English Bond unless otherwise specified. Half or cut bricks shall not be used except when needed to complete the bond. Each course shall be taken up truly plumb, if battered; the batter is to be truly maintained. The level of brickwork shall be checked up at every one-meter interval. Bricks shall be laid with frogs upward, while laying bricks shall be thoroughly bedded and flushed in mortar and taped into position with a wooden mallet and the superfluous mortar removed. Walls of all structures shall be carried up regularly in all cases, leaving no part, one meter lower than the other. Where the masonry of one part has to be delayed, the work shall be raked back according to bond (and not toothed) an angle not exceeding 45 Deg. But the raking back should not start within 60cm. of a corner. Vertical joints in alternate courses shall come directly over one another. The brickwork shall not be raised more than 14 courses per day. All iron fixtures, pipes, conduits, drains, sleeves, bolts, holdfasts of doors and windows etc. which are required to be built in walls shall be embedded in cement mortar or cement concrete as specified, in their correct position as the work proceeds.

#### **FLY ASH – LIME GYPSUM (FALG) BRICCKS- SPECIFICATION**

Classification:

Class	Average compressive Strength (N/mm <sup>2</sup> )	
	Not Less Than	Less Than
10	10.0	15.0

All other physical characteristics to be as per IS 12894: 1996

#### **GENERAL REQUIREMENTS:**

Visually the bricks shall be sound, compact and uniform in shape. The bricks shall be free from visible cracks, warpage and organic matter.

The bricks shall be solid and with or without frog 10 to 20 mm deep on one of its flat side.

The bricks shall have smooth rectangular faces with sharp and square corners.

#### **DIMENSION AND TOLERANCES:**

The size of the fly ash-lime bricks shall be 190 mm x 90 mm 90 mm. The tolerance on length shall be + or . 3 mm and that on breadth and height shall be + or . 2 mm.

**Note:** By agreement between the purchaser and the manufacturer, fly ash-lime bricks may be manufactured in other sizes also the tolerance requirements on length, breadth and height shall remain the same as given below.

#### **MATERIALS:**

1) Fly Ash :

Fly ash shall conform to Grade 1 or Grade 2 of IS 3812: 1981

2) Bottom Ash :

Bottom ash used, as replacement of sand shall not have more than 12% loss on ignition when tested according to IS: 1727:1967

3) Sand :

Deleterious materials such as clay and silt in sand shall preferably be less than 5%. Any change in type of brick will be informed to the contractor and will be incorporated with mutual agreement.

#### **Joints**

Joints shall be restricted to 6 mm in first class brickwork and 10mm in second class brick work. All bed joints shall be normal to the pressure upon them, radial in arches and at right angles to the face in battered retaining walls. Care shall be taken that all joints are fully mortared (proportion as specified in the schedule items) well flushed up and in case where no pointing to be done, neatly struck at the work proceeds. The joints in faces which are to be plastered or pointed shall be squarely raked out to a depth of 12 mm while the mortar is still green. The raked joints shall be well brushed to remove loose particles. After the work the faces of work shall be cleared well by brush so as to remove any splashed mortar during the course of raising the brickwork.

#### **Curing**

Green work shall be protected from rain by suitable covering. Masonry work shall be kept thoroughly well watered on all faces for at least 10 days after completion. In case of fat lime mortar curing shall commence two days after laying of masonry and shall continue for seven days.

#### **6. Scaffolding**

Scaffolding will generally be single but may be double if warranted for the particular work as approved by the Engineer-in-charge. The contractor shall take all measure to ensure safety of work and the working people.

Payment for brickwork shall be made on cubic meter basis on the volume of actual work done. Half brick wall and brick on edge wall shall be paid on square meter basis. The rate of brick work shall include scaffolding and all items mentioned above and no extra payment will be made for cutting bricks if required either for openings or for rounding or insertions or for recesses at the time of brick wall construction.

#### **7. Damp Proof Course**

Damp proof course shall either be with cement concrete or with cement mortar of specified thickness as mentioned in the relevant item of schedule. Damp proof course shall not be carried across doorways. It shall be laid for all walls except verandah retaining wall or for particular wall only directed by the Engineer-in-charge. It shall be laid flush with floor level or as instructed by the Engineer-in-charge.

Damp proof course with cement concrete shall be of 25 or 38 mm thick in cement concrete M15/M20 as specified using 12mm. and down size aggregate well rammed and smoothed with trowel. It will be kept wet for 40 hours and after it has dried, two coats of hot bitumen shall be applied over it and allowed it to dry after which sand shall be sprinkled over it.

Damp proof course with cement mortar shall be 12 or 20 mm thick in cement mortar 1:3 well mixed with crude oil at 5% by weight of cement used.

#### **8. Cement Plastering:**

Cement plastering shall be in accordance with IS – 1661 and IS 2394 &1200 (part-IX) Cement mortar shall conform to IS – 269. The mortar of specified mix and thickness shall be used.

The surface to be plastered shall be thoroughly cleaned so that it is free from dust, oil, salts etc., The joints of masonry shall be racked out to a depth of at least 12 mm. On cement concrete surfaces the surface shall be cleaned with wire brush and scarified by lines with trowel or hacking done. The surfaces in both cases shall be washed properly and kept wet for 4 hours before plastering is commenced.

Plastering shall be started from top and gradually worked down towards the floor. It shall not at any place be thinner than specified. To ensure even thickness plaster of about 15 cm X 15 cm shall be first applied horizontally and vertically at not more than 2 meters intervals over the entire surface to serve as gauges. The surface of these gauges shall be truly in the plane of finished surface. The mortar shall then be laid in the wall or other surfaces between the gauges and finished even. All corners shall be rounded to a radius of 24 mm unless otherwise directed. The contractor shall not be paid for any extra thickness of plaster done than as specified.

Plaster, when more than 15 mm thick shall be applied in two coats, a base coat followed by the finishing coat. Thickness of the base coat shall be just sufficient to fill up unevenness in the surface, no single coat, however, shall exceed 12mm in thickness. The under coat shall be roughened or scratched before it is fully hardened.

Curing shall start 24 hours after the plaster is laid. It shall be kept wet for 14 days. During this period it shall be suitably protected from all damages at the contractor's cost by such means as approved by the Engineer- in - charge.

Any cracks which appear in the surface shall be cut out in rectangular shape and redone as directed by the Engineer-in-charge. Wherever specified standard waterproofing compound as approved by the Engineer-in-charge shall be added to the mortar at the rate of 2% or as specified by the manufacturer by the weight of cement for which the rate shall be paid separately. The rate for plastering shall include cost of scaffolding, swing etc., needed for the work with labour and material all complete.

#### **9. Steel Door, Windows and Ventilators:**

All steel doors, windows and ventilators shall conform to IS – 1038, IS – 1361 and IS 1081 or equivalent as mentioned in the bill of quantities and as approved by the Engineer-in-charge.

Rolled steel sections shall conform to IS – 226. The sections shall be cold straightened and finished goods shall be free from bends and other defects. Materials used in the fabrication shall be the best procurable and conforming to relevant IS specification. Thickness and specification of the glass to be provided shall be as indicated in the relevant item of the bill of quantities. Glass shall be free from flaws, specks, bubbles, etc., Bolts, nuts, screws, peg stays and other mild steel fittings shall be treated for corrosion as per relevant Indian Standards. Putty for glazing shall conform to IS –420.

Doors, windows and ventilators, etc., shall be truly square and free from twist and warp. They shall be constructed of sections which have been cut to the required lengths and welded or riveted at the corners as per standard specifications.

All steel surfaces shall first be thoroughly cleaned free of rust scale or dirt and mill scale by approved means and shall be painted with one coat of approved primer conforming IS – 102 before dispatch. Alternatively, if specified they may be galvanized by the “Hot dip” zinc spray or electro galvanizing process described IS –1361. Doors, windows and ventilators shall be fixed in positions, as specified under IS 1081.

Whenever contractor is required to supply the doors, windows and ventilators etc., he shall first submit to the Engineer-in-charge, the details about source of supply, detailed drawing and specifications etc. for prior approval.

#### **10. M.S Rolling Shutters:**

It shall be of approved quality, made out of 18 gauge 75 mm black laths mechanically operated by reduction gear type mechanism. It shall be fitted with two self-aligning ball bearing with locking arrangements (both inside and outside) including M.S pressed side guides bottom rails brackets and top rolling spring pressed etc., complete provided with locking arrangements for padlocks, pulling hooks, handles, top cover etc., It shall be painted with one coat of approved primer conforming to Is – 102 before dispatch.

#### **11. Wooden Doors, Windows and Ventilators:**

All wood work for doors, windows, ventilators cup board, shelves, etc., conform to relevant IS specification and shall be well seasoned teak wood or well seasoned country wood (pillamarudu or karumarudu) as the case may be. Timber shall be best quality and shall be free from knots, injurious open shales, bore holes, decay, soft or spongy spots, hollow pockets and all other defects and blemishes. Timber shall conform to IS 1003 (Part 1). Size of doors, windows and ventilators shall as specified in the relevant item of schedule and detailed drawings and generally in conformity with IS – 1003, part I and part II. The rates for doors, windows and ventilators etc., shall be for the finished work inclusive of fixing them in position with necessary iron hold fasts and furniture fitting of oxidized iron or aluminum or oxidized brass as stated in the description of the relevant items of the bill of quantities and as directed by the Engineer-in-charge. Fittings and furniture shall be of best quality and machine made and robust type. Wherever glazed shutters are to be provided, the cost of glass panes of specified thickness and fixing them in position should be included in the quoted rate. All glass shall be of superior quality from approved manufacturer. In case of solid core flush doors, they should conform to IS: 2202 Part I and Part II. The flush door shutters should have a finished thickness as specified in the scheduled item. Flush door shutters shall be obtained from firms of repute as approved by the Engineer-in-charge.

#### **12. ROOFING: (A) R.C.C Slabs:**

Roof slab shall be of RCC of specified mix conforming to IS : 456, with adequate main tensile, transverse and adhesive reinforcement of ribbed steel bars of mild steel rounds. Unless otherwise mentioned the rates for RCC slab shall include cost of concrete, centering and shuttering charges, vibration charges, rounding of corners, curing and finishing etc., complete. Expansion joints in reinforced cement slabs shall be as per relevant IS codes The ceiling should be finished as per standard practice and Engineer-in-charge of No extra payment shall be made towards cost of ceiling plaster necessitated on account of defective centering materials used or poor workmanship.

The top of roof slab shall be finished with weathering course treatment if so specified. The weathering course work shall conform to standard practice & as per relevant IS codes and consist of concrete with broken brick in neat slacked lime of specified thickness finished with one course of pressed split tiles / pressed tiles of specified thickness and size as described in the bill of quantities.

#### **(B) Roofing and Side Cladding with A.C. sheets:**

The A.C. sheets shall be of specified and approved quality and shall conform to IS 459- 1962 in all respects. The sheet shall be laid with the smooth side upwards and with a minimum end lap of 15cm. and for every flatter slope this should be 20cm. The laying operation shall include scaffolding works involved. Sheets shall be secured to the purlins by means of 8mm galvanized iron J or L hook bolts and nuts. The grip of the hook bolt on the side of the purlin shall be not less than 25mm. Each bolt shall have a bitumen washer and galvanized iron washer placed over the sheet before the nuts are screwed down from above. Hole for hook bolts etc., shall be drilled and not punched in the ridges of the corrugations in the exact positions. The diameter of these holes shall 1.5 mm more than the diameter of the fixing bolts. The payment will be square meter basis of the laid area.

#### **13. A.C. Rain Water Pipes**

The pipes shall be of standard quality conforming to IS 1628. These shall be straight, true smooth and regular in thickness. They shall be free from cracks and other flaws. The supply shall include all necessary pipe fittings and accessories.

All pipes shall be fixed to wall or columns by standard M.S butt holder clamps of approved make. The spigot of the upper pipe shall be properly fitted into the socket of the lower pipe, such that there is uniform annular space for

filling with the jointing materials. One third depth of this annular space is to be filled with spun yarn soaked in bitumen of approved quality and properly pressed with caulking tool. The remaining two, third depth of the joint is to be filled with Cement Mortar 1:2 (1Cement: 2 coarse sand) and shall be pressed with caulking tool and finished smooth at the top at an angle of 45 Deg. sloping up.

The rate shall include supplying and fixing pipes with specials and accessories, including sizing as required, jointing, testing, cutting of walls and making good necessary scaffolding etc., complete.

#### **14. Flooring:**

Flooring shall consist of a base course of cement concrete of specified thickness and proportion laid over the compacted earth or sand filling as specified and a finishing layer of concrete, mosaic, glazed tiles or any other material as specified to be laid. Flooring work for Factory shop floors as well as mosaic flooring shall be done as per the special specifications.

The bed flooring shall be prepared either level or sloped as per relevant drawing or as instructed by the Engineer-in-charge. Filling in basement with earth or sand shall be done as per standard practice & as per IS codes. On the prepared bed, cement concrete of specified mix and thickness shall be laid and well consolidated.

##### **A. Ellis pattern, 1<sup>st</sup> Sort Flooring**

On the clean wet surface of the concrete base, before it has set, will be laid a layer of cement concrete to give a finished depth of 20/25 mm over the base concrete. The cement concrete will be of 1:3 proportions (one cement and 3 hard broken stone chippings 3 to 10 mm Size). To make a coloured floor red oxide iron powder or other approved materials should be mixed with cement at the rate 10% of the weight of cement or as directed by the Engineer-in-charge. Ellis pattern flooring shall be done as described under relevant IS codes & as per instruction of Engineer . in-charge

##### **B. Glazed Tile Flooring**

The tiles shall be of ceramic white or coloured and of specified dimensions as described in the schedule item. The top surface of tiles shall be glazed with a neat finish of uniform colour and texture and free from flaws, cracks, craze, specks or other imperfections. Tiles shall be true and shape with straight edges, non-absorbing and non – fading. Samples of tiles together with manufacturer's literature shall be submitted to the Engineer-in-charge for approval. Tiles shall conform to IS 177 latest.

Over the prepared surface of the floor a bedding layer of Cement Mortar (1:3) of specified thickness shall be laid-in-proper level and slope using screed patterns. The bedding layer shall be deeply scratched while it is set. Mortar set bed of 6 mm thickness in cement lime mortar 1:1:3 (one cement one lime putty and three sand), shall be laid over the bedding layer. After mortar setting, bed has been leveled; a skin of neat cement shall be trowelled to the mortar setting bed immediately before the tiles are set. As soon as the mortar setting bed has sufficiently hardened, all tiles shall be finally secured in place and gently beaten in and finished surface brought to desired level. When grouting the glazed tiles, special care shall be taken to prevent scratching of the glazed surface. Joints shall be pointed with white or coloured cement to match the tile surface and cured. No joint shall be more than 1.5 mm thick.

#### **15. White Washing and Colour Washing**

White washing and colour washing shall be done as per IS 6278. The surface shall be thoroughly cleaned off mortar drops and foreign matter. All patchings must be scraped properly. The white washing shall be done from pure shell lime / Janathacem. Samples of lime shall be got approved by the Engineer-in-charge. The wash shall be applied with a brush, the coats being laid on vertically and horizontally alternatively, each coat being allowed to dry before next coat is applied. For colour washing the desired shade shall be obtained by mixing approved quantity of colouring matter or distemper with shell lime solution and applied as per white. The contractor shall take every precaution to prevent white wash being splashed on wall, floor and other places and articles not to be white washed. No colour wash shall be done unless a sample pattern of the mixed colour has been approved by the Engineer-in-charge. The rates shall be inclusive of scaffolding charges, cost of ladder etc.

#### **16. Painting**

All painting work shall be done in accordance with IS 427,428, 5410, 2935 & 337 and the relevant Indian Standard Specifications. Paints, varnishes, cement paints etc., shall be the highest grade products of well known approved manufacturer and shall be delivered to site in original sealed containers. It is desired that materials of one manufacturer only shall be used as far as possible. Colours shall be uniform and non-fading. Samples of all colours selected shall be submitted to the Engineer in charge for approval before bulk purchase is made. All finished work shall match corresponding samples kept with the Engineer.

##### **Preparation of Surface:**

Before painting wooden surfaces, protruding timber fibers shall be removed and nail marks shall be

covered with putty. The surface shall be thoroughly cleaned and sand prepared. In case of steel work it shall be scraped, well brushed and cleaned free of rust, scale dirt. Base preparation for painting concrete, masonry and plastered surfaces shall be carried out as per IS 2395 – Part I. Before actually proceeding with the work of painting the concrete, masonry and plastered surfaces, it shall be verified that the surfaces shall be completely dry, free from efflorescence and alkaline effect.

### Application

The primer shall be applied with brushes and spread as evenly and as smooth as possible. For steel work a priming coat of Red Oxide / Zinc Chromate paint shall be applied. Painting shall be done by skilled labourers in a work-man like manner. All coats shall be of proper consistency and shall be well brushed out, so that no brush marks are visible. The under coating should be nearest to the specified colour of the finishing coat. Unless otherwise specified ready mixed synthetic enamel paints shall be used for painting, wood and steel work. Under coats should be completely dry before finishing coat is taken up. Priming coat and under coat shall be rubbed with sand paper and dusted clean. The finished coat of approved paint shall then be applied.

### 17. Cement Painting

Cement Paint solution shall be applied to the surface with hair brushes in a number of coats to get uniform finish. After the first coat of paints has hardened, it shall be cured with water at least for 24 hours. The surface shall be wetted again before the application of the second coat. At least 24 hours should lapse between the two coats; number of coats shall be as specified in the schedule of quantities. It shall be kept damp at least for seven days.

### 18. French Polish

French polish to be used shall comply with IS 348. Polishing shall be obtained by dissolving 1 lbs, of shellac in one gallon of methylated spirit without applying any source of heat. After the shellac has dissolved ¼ lbs of cobalt, ¼ lbs of lobano and 0.4 oz of crystals of desired pigment shall be added. The solution shall be applied with a pad of fine muslin cloth tied as per general practice. The pad shall be dipped into the solution and wrung with fingers and be rubbed hard on the surface in this way, the first coat is to be given after this gets dried up, the successive coats shall be given in the same fashion till the mirror like surface is obtained. The wood to be polished shall be first applied with filler composed of 1.25 Kg. of whiting mixed with one liter of methylated spirit and then sand papered when dry. The finished surface shall have uniform texture and gloss. Approved transparent sealer shall only be used in base preparation.

## SPECIAL SPECIFICATION FOR CONTROLLED CONCRETE

### a) PROPORTIONING MIX:

The proportion of aggregate, Cement and water to be used for controlled concrete shall be designed by preliminary tests of the materials to be actually used to obtain the densest to workable concrete requiring the minimum quantity of cement paste for binding the materials to give the required strength. However, the maximum total quantity per 50 kg of cement shall not normally exceed 450kg. All proportions shall be by weight. However, water may be added by weight or volume.

### b) MIX DESIGN:

Immediately upon the receipt of the award of the contract, the Contractor shall inform the Engineer-in-charge the exact location of the sources of materials which he proposes to use and get the materials approved. The mix with the actual approved materials to be used shall be got designed by the Contractor in an approved laboratory chosen by HPVP and got approved by the Engineer-in-charge. These proportions shall be used so long as the materials continue to be the same quality and from the same sources. If during the progress of work, the Contractor wishes to change the materials, the proportions shall be fixed on the basis of fresh preliminary tests to give the required strength. No change of materials shall be allowed unless fresh tests with new materials show satisfactory results.

### c) STRENGTH REQUIREMENTS OF CONCRETE:

Controlled concrete shall be in the following grades, M 15, M 20, M 25, M 30, M 35 & M 40. The concrete mix shall be designed to produce the grade of concrete having the required workability and characteristic strength not less than the appropriate values (as per I.S. 456) as given in table below:

Sl. No	Grade of. Concrete	Specified Characteristic Cube strength
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Preliminary test N/mm<sup>2</sup>    Works test N/mm<sup>2</sup>

1.	M 15	20	15
2.	M 20	26	20
3.	M 25	32	25
4.	M 30	38	30
5.	M 35	44	35
6.	M 40	50	40

**d) WORKABILITY OF CONCRETE:**

The proportions chosen shall be such that the concrete is of adequate workability for the conditions prevailing on the work in question, and shall be properly compacted. Water shall be added to the mixer to give the required workability. The water content of each batch shall be adjusted as necessary to maintain the required workability with simultaneous adjustment of cement concrete such that the water cement ratio is not changed. The workability tests shall be carried out in accordance with IS: 1199 - Latest, "Methods of sampling and analysis".

Workability of concrete shall be controlled by direct measurement of water content, making allowance for any surface water in the fine and coarse aggregates. Allowance shall be made for surface water present in the aggregate when computing the water content. Surface water shall be determined by one of the field methods described in IS: 2386, Part III.

**e) CONSISTENCY AND SLUMP:**

The concrete shall have a consistency such that it will be workable in the required position. It shall be of such consistency that when properly vibrated it will flow around reinforcing steel and all embedded parts. The slump for concrete as determined by slump tests as per Indian Standard 456 (latest edition) shall not exceed the maximum slumps indicated below for each type of construction as approved by the Engineer-in-charge.

Slump in MM	Type of Construction		Workability
	Min.	Max.	
Medium	40	80	All RCC works

The contractor shall not place concrete having a slump outside the limits specified without the approval of the Engineer-in-charge.

At least one slump test shall be made for every compressive strength test carried out. More frequent tests shall be made if there is a distinct change in job conditions or if required by the Engineer-in-charge.

**f) TESTS:**

Test shall conform to the specifications laid down in IS: 456. These tests shall be got done in an approved laboratory and in accordance with IS : 516 - Latest at the cost of the Contractor (for making necessary cube moulds, transporting the cubes to the Laboratory and all other incidental etc.). The test fees for the cubes shall be borne by the contractor. In order to ensure proper quality control sampling of the concrete of each specification placed on any day in work shall be done in accordance with the following table.

Quantity of Concrete in work	Total Number of samples (each sample to consist of 6 test cubes)
Up to 5.00 Cu.m.	1
Greater than 5.00 Cu.m. and less than 15.00 Cu.m	2
Greater than 15.00 Cu.m. and less than 30.00 Cu.m.	3

Greater than 30.00 Cu.m. and less than 50.00 Cu.m.

4

Greater than 50.00 Cu.m.

4 + one additional sample for each  
additional 50 Cu.m. or part thereof.

i) The sampling shall be spread as evenly as possible throughout the day. When wide changes in weather conditions occur during concreting, additional samples may be taken as desired by Engineer-in-charge. Each sample shall consist of 6 cubes of 15 x 15 x 15 cm concrete. Test cubes shall be kept immersed in water until required for test which will be usually at 7 days and minimum crushing strength of not less than the following:

Grade Of Concrete	M15	M20	M25	M30	M35	M40
Crushing strength in N/mn2 At the end of						
N/mm2 at the end of						
a) 7 days	10	13.50	17	20	23.50	27
b) 28 days	15	20	25	30	35	40

All costs connected with the preliminary tests for proportioning the mix, sampling, curing, handling, other incidental charges, labour charges and cost of materials shall be borne entirely by the Contractor. Testing charges for cubes (work tests) shall be borne by contractor. Such testing shall normally be conducted at the HPVP Central Laboratory or any other approved laboratory as directed by the Engineer-in-charge.

All samples for tests shall be taken in the presence of Engineer-in-charge and the Contractor or his authorized agents.

A set of six specimens from random mixer batches, shall constitute a test, three being tested for 7 days and three being tested for 28 days strength.

The strength test result shall be the average strength of the three companion test specimens, tested at 28 days, except that, if one specimen in a test shows manifest evidence of improper sampling, moulding or testing, the result shall be discarded and the remaining two strengths averaged.

ii) Normally, 7 days and 28 days tests shall be made on specimens. For any mix, a correlation between 7 days and 28 days strengths may be made in the laboratory. Soon after a job starts, a similar correlation will be evolved for samples of a concrete taken from the mixer. After that correlation has been established, the results of the 7 days test may be used as an indicator of the compressive strength which should be expected at 28 days, provided such results are consistent, if 7 days tests shown compressive strength that are too low, corrective measures shall be taken at once, at the Engineer's direction, without waiting for the results of the 28 days tests.

iii) Each class of concrete shall meet the following strength requirements:

The average of any three consecutive strength tests shall have a value equal to or greater than the specified strength subject to the condition that only one out of three consecutive tests may give a value less than the specified strength but this shall not be less than 90% of the specified strength.

iv) In the event that concrete tested in accordance with the requirements of this specification, fails to meet the requirement, the Engineer shall have the right to require any one or all the following.

- Changes in the concrete mix proportions for the remaining work.
- Curing and testing of the concrete represented by the tests which failed.
- Replacement of any such portions of the structure. (No payment for dismantled concrete, associated from worker or reinforcement shall be made. Embedded fixtures, reinforcement and adjoining structures, damaged during dismantling shall be made good by the Contractor at his own expense).**
- Extended curing of the concrete represented by the specimen.
- The contractor shall carry out all such measures as directed at his own expense.

Load tests of structural members may be required by the Engineer when the strength of the job control tests falls below the required strength and is not acceptable as per "Acceptance Criteria" stated earlier. The entire

cost of the load test shall be borne by the Contractor. If the load testing is decided by the Engineer, the member under consideration shall be subjected to a superimposed load equal to one and quarter (1.25) times the specified superimposed load used for design and this load shall be maintained for a period of 24 hours before removal.

The detailed procedure of the test shall be decided by the Engineer-in-charge.

If, within 24 hours of the removal of the load, the structure does not show a recovery of at least 75 percent of the deflection after the 24 hours under load, the test should be repeated. The structure should be considered to have failed to pass the test if the recovery after the second test is not at least 80 percent of the maximum deflection occurring during the second test.

If the member shows evident failure, such changes as are necessary to make the structure adequately strong, shall be made by the contractor free of cost to the Department. If on the other hand, the failure becomes apparent, the Engineer under special circumstances, can retain the portion of the structure under test, provided suitable strengthening and or load dispersed arrangement is feasible. Cost of such strengthening or load dispersed arrangement shall be borne by the Contractor.

Load test shall not be made until the expiry of 56 days of effective hardening of the concrete.

If a portion of the structure is found to be unacceptable it shall be dismantled and replaced by a fresh structure as per specification. The cost of such dismantling and reconstruction should be borne by the Contractor.

The proportions of cement, fine aggregate, coarse aggregate and water necessary to produce a concrete mix which will fulfill the requirements of this specification for each grade of concrete shall be determined on the basis of trial mixes conducted with the samples of the material to be used in the work by the Engineer-in-charge in the field Laboratory.

All mix design and test data and results shall be maintained as part of the record of the contract and shall be signed by the Engineer-in-charge and the Contractor. A register showing such record shall be maintained at site of work as shown below.

**ANNEXURE - V**

NAME OF WORK:

Sl No. (1)	Date & Time (2)	Sample No. (3)	No. of cubes (4)	Identification Marks (5)	Promotion Of Mix (6)	Description of work represented by sample and quantity of concrete represented by the sample (7)	Initial of S. O/ A. E. in whose presence sample is taken (8)	Date of Test (9)	
7 days test result of each cube (10)	Average 7 days strength (11)	Standard 7 days strength (12)	Date of Test cube (13)	28 days test result of each cube (14)	Average 28 days strength (15)	Standard 28 days strength (16)	Remarks ( the reference nos. of test report should be recorded here) (17)	Review and remarks by asst. Engineer (18)	Review and remarks by Executive. Engineer (19)

**STANDARD SPECIFICATION FOR STRUCTURAL WORKS**

1. Broadly, the work under this contract comprises of conveying of raw structural steel sections from HPVP Store to site fabrication shop, fabrication of steel work at the site fabrication shop including one priming coat of Zinc Chromate/red oxide primer, transportation of fabricated steel structures to the erection site including loading, unloading, leading, stacking as required and all handling costs, erection of steel work over prepared foundations or on RCC brackets as the case may be and painting of steel work two coats with approved synthetic enamel ready mixed paint or as specified in the Bill of quantities carrying from HPVP stores and erection of cloaking items etc. complete.
2. If found necessary the tenderer may also be required to supply some raw structural steel sections also as required for this work in accordance with the latest editions of the Indian Standard Specifications:- **IS 2062 & IS 1977**. He will be required to submit the necessary test certificates for the materials so supplied for use on this work.
3. The detailed fabrication drawings as approved for fabrication will be the responsibility of HPVP. The Detailed Shop Drawings will be supplied by HPVP to the contractor progressively to suit the fabrication and erection sequence. The Contractor shall not depart from the drawings approved by HPVP without the written permission of the Engineer-in-charge.
4. Based on the detailed shop Drawings approved by the HPVP the Contractor shall prepare at his cost, the Drawing Office Dispatch Lists (abbreviated as D.O.D.L.'s) and get them approved by HPVP. These shall contain the drawing number, the designation of items, number of pieces, based on the section weights as adopted for supply of raw materials without deduction for bolt holes and skew cuts. The DOD Lists shall form the basis for payment.
5. Rate quoted against item(s) of the Bill of Quantities cover the fabrication of all items involved and shall therefore be an Overall-average-rate. The actual quantities for payment shall be based on the drawing office dispatch lists to be prepared by the Contractor and got approved by HPVP as aforesaid.
6. All Civil works like preparation of foundations for columns, including embedding of holding down bolts etc., also have to be carried out and hence included in the present enquiry. All works shall be performed and completed in a thoroughly workmen like manner and the contractor shall follow the best modern practice in the manufacture of high grade structures not withstanding any omission in the specifications.
7. (a) Fabrication shall generally be in accordance with IS 800 (latest issue) entitled "Code of practice for use of structural steel in general building constructions". Welding shall be in accordance with IS 816 entitled "Code of practice for use of metal arc welding for general construction in mild steel". The contractor shall provide necessary splicing as approved by the Engineer-in-charge, to suit the available lengths of raw steel, and no extra amount shall be paid on this account. Any specifications not covered by the Relevant Indian Standard Codes of practice shall be in accordance with the relevant BS or in its absence in accordance with the well established standard Engineering practice to be acceptable to HPVP.  
(b) Under the contract, site fabrication is to be adopted for which a suitable site near and inside the factory premises will be made available by HPVP at free of ground rent. The Contractor shall provide all plant and equipments, tools covered sheds and other facilities required for site fabrication work at his own cost.  
(c) The Contractor shall take into consideration the exiting foundation structures and make necessary provisions in the fabricated components with the approval of the Engineer-in-charge so that proper alignment, vertically and easy connection / erection of structures is ensured, should this involve any extra work on the part of the contractor beyond his normal scope, the same will be paid for at mutually agreed rates.
8. All fabricated steel work shall be given one coat of Red Oxide / Zinc Chromate primer conforming to Relevant IS code before erection. All fabricated steel work shall be match marked suitably to facilitate their erection in position without any difficulty.
9. Materials to be supplied by this organization will be supplied in standard/random sizes/lengths as stocked by HPVP. Hence the Contractor will be required to receive extra materials to cover conversion, wastage, alteration etc. He shall do so without any claim for extra payment, whatsoever on this account.
10. All breakages after the A.C. materials are handed over to the contractor shall be to Contractor's account. As far as possible partially broken A.C. materials should be cut suitably and used for smaller sizes with the approval of HPVP, without any extra claim. A breakage allowance of 3% of the consumed quantity is permissible for A.C. materials, if size of sheets supplied vary with actual requirement the actual size as supplied shall be allowed, for material accounting.
11. The Contractor should prepare in advance cutting lists for materials so as to obtain efficient and economical use of all types of materials including steel.
12. Normally no night work will be permitted. But in case of emergency and urgent in nature where night

work is warranted, the Contractor shall arrange for night works providing all facilities including illumination at his own cost, after obtaining written permission from Engineer-in-charge under intimation to Security and Safety Departments.

13. The Contractor shall closely scrutinize all the drawings for the work issued by this organization and bring to the notice of the Engineer-in-charge any discrepancies/ omissions noticed in the drawings before undertaking the actual work.

14. M/s HPVP through their duly authorized representative shall have all reasonable times access to the Contractor's premises or works and shall have the power at all reasonable times to inspect any portion of the work or examine the materials and workmanship of the structures during their manufacture and test. The Contractor shall give notice in writing to the inspecting Engineer of HPVP when the materials to be supplied are ready for inspection and test, no materials shall be used on the fabrication work until the inspecting Engineer has certified in writing that such materials have been inspected and approved by him. The contractor shall provide at his own cost all facilities for the required tests on fabricated structures as required by the Engineer-in-charge. Defective fabrication structures shall be made good/replaced by the Contractor at his own cost to the full satisfaction HPVP. This also applies to loss or damage of raw materials, if special tests only will be borne by HPVP.

15. Weekly progress reports shall be submitted giving in detail the position of receipt of raw materials, progress of fabrication and completion of fabricated structures etc. The contractor shall submit at such times as may be requested by the Engineer-in-charge, schedules showing the programme and order in which the Contractor proposes to carryout the fabrication and erection works with dates and estimated completion times for various portions of the work. Such schedules shall be approved by the Engineer-in-charge prior to the starting of the relevant works.

16. HPVP would expect the contractor to take up simultaneously wherever possible both fabrication and erection of structures especially where a good deal of assembly work, which is in fact a continuation of the fabrication work, is required to be done at site. The painting and cloaking items of works, wherever possible, should be done simultaneously to save time. The contractor may with the prior approval of HPVP sublet the work. The main contractor shall however, be responsible for all works executed on his behalf by the sub-contractors.

#### **17. SETTING OUT AND ERECTING OF STEEL WORK:**

a) Erection of steel work shall generally be in accordance with the provision of IS 800 (Code of practice for use of structural steel in General Constructions).

b) Site assembly of members on the ground by welding, bolting or otherwise as specified in shall be inspected thoroughly by the Engineer-in-charge or his authorized representative and approved before erection.

c) All equipments, facilities and consumables for site fabrication as well as erection plant requirement, etc., such as derricks, cranes, lifting tackles, wire ropes, chain pulley blocks, jacks, winches etc. as necessary shall be arranged for by the Contractor at his own cost. Care shall be taken to see that all equipments, tools and tackles and wire ropes etc. in use are always in good working conditions and fit for use. For all the tools and plants, periodical calibration certificate from approved agency should be obtained. The above lists should be enclosed along with the tender.

d) Frames shall be lifted at such points that they will not buckle or deform. Trusses shall be lifted only at nodes. Temporary bracing shall, if required, be provided at no extra cost, to relieve erection stresses.

e) In the case of trusses and similar roof structures all or atleast a majority of the purlins and wind bracings, shall be erected side by side with the erection of these structures. Columns shall be erected true to plumb, (no screed bars provided and fixed by the Contractor over the prepared pedestals), true to center line, level and gauge of traveling cranes. Alignment of the columns, crane girders and rails shall be done very carefully using high precision survey instruments and necessary adjustments made to suit actual requirements. A list of survey instruments proposed to be used shall be furnished in the tender.

f) All damages to the steel work caused during the transit or otherwise shall be made good to full satisfaction of HPVP at Contractor's own cost, before erection.

g) It shall be the sole responsibility of the Contractor to ensure accuracy of level, plumb, span and alignment of steel work before erection of other components.

#### **18. PAINTING AFTER ERECTION:**

a) All steel work shall be given two coats of approved brands of first quality synthetic enamel ready mixed paint after erection (over the priming coat already provided). Painting shall be done as per IS 800. The shade, make, quality and other particulars of the paint proposed to be used, shall be subject to prior approval by HPVP.

b) It is the responsibility of the Contractor to procure sufficient quantities of the approved paints well in

advance to ensure their availability in time.

19. TIME ALLOWED (Period of Contract)

The following programme should be strictly followed.

- (i) Fabrication of structural steel works} progressively from the date of award of to be completed} work
- (ii) Erection, painting of the above } progressively from the date on structures, supply and  
erection of } which completion of civil work and cloaking items etc. to be  
completed } the readiness of site declared as fit for  
} erection

20. The contractor will have to provide and fix the necessary screed bars etc. at his own cost in proper line, level and position to facilitate the erection work. Further, the contractor should lay and maintain necessary temporary approaches within his working areas at his own cost to facilitate his work and for easy movement of vehicles, cranes etc. deployed on the work. Only reasonable areas will be provided by HPVP.

21. Till the expiry of the maintenance period of SIX MONTHS after the completion of the entire contract work and handing over to HPVP, the contractor should retain the minimum equipments and staff required and should carry out the maintenance works with the least possible interference to the routine works of the new shop. Till the expiry of the maintenance period the contractor shall be responsible for all damages occurring due to any fault on his part or on the part of his workmen, sub-contractor or other agencies engaged by him.

22. HPVP 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 acceptance of any work not in accordance with the contract.

23. The contractor shall observe all safety regulations and take necessary safety precautions as called for under the Factories Act or other relevant statute as applicable including the use of safety boots, safety belts, helmets and other equipments and accessories for ensuring safe execution of the contract and freedom from accidents.

24. The rates quoted in the Bill of Quantities of the tender for the fabrication item shall cover also the cost of preparation of DODL and similar incidental items. Fabrication works shall be undertaken only after the issue of approval of shop drawings.

25. The Contractor should co-operate with other contractors who may be executing their work in the same area in order to facilitate efficient execution of the entire project work in this area.

26. HPVP is registered as an indenter for materials on rate contract with DGS & D. Tenderers who are on DGS & D List of rate contracts should mention their rate contract number and furnish a copy of the rate contract document with the tender.

27. The Guarantee / Warranty period for this contract shall be SIX MONTHS from the date of completion of the entire work and handing over to HPVP. During this period the successful tenderer shall be at site on his own expense for replacement or repair of all defects arising out of faulty materials and/or workmanship.

28. Further particulars relating to design and fabrication and clarifications, if any, may be obtained on reference to the Sr. Dy. General Manager/Civil / Factory, HPVP, Visakhapatnam or his nominee.

29. The contractor shall engage a level-II NDT Inspector for inspection of NDT works.

30. Inspection will be done by HPVP Staff/Agencies appointed by HPVP for the works covered in the tender.

31. Painting, DFT of primer should be 25 micron.

32. Finish coat Painting, DFT 20 micron for each coat. Paint shall be of first quality product of approved brand as per list of approved brands for materials enclosed in the price bid.

33. Pre heating and post heating required shall be as per AWS (latest).

34. Welded qualification is to be done before commencement of the work and approved & qualified welder only shall be engaged in work. Necessary testing charges shall be borne by the contractor.

35. For the supply of material the manufacturer's test certificate is to be produced.

**Grouting:**

Grouting of anchor bolts, holes, pockets and under base plate of structure has been broadly classified into two categories e.g. non-shrinkage grout and ordinary grout.

1. Non-Shrinkage grout shall consist of 1 part of ordinary Portland cement : 1part of clean, dry well graded sand : 1 part of Ferro grout or similar approved additive as per manufacturer's specification. Non shrinkage grout shall be used for all structural frame supports or platforms having a height of more than 6 m and for all vertical columns, towers, vessels, reactors having equipment height more than 6 m for anchor base, all horizontal vessels, etc.
2. The mortar mix for ordinary grout shall consist of one part of ordinary Portland cement, 2 parts of clean well-dried, well graded sand and mixed to minimum consistency required. Ordinary grout shall be used for grouting purposes in
  - a. All structural frames and platforms having height less than 6 m.
  - b. All horizontal vessels having diameter less than 1000 m.
  - c. All vertical columns, tower, vessel, reactor having less than 6 m from anchor base.
  - d. All pumps, horizontal or vertical, all heat exchangers.

#### **GENERAL QUALITY CONTROL PROCEDURE FOR STRUCTURAL STEEL WORKS**

The following quality standards are required to be maintained in all the structural steel fabrication components.

1. All the raw materials will be generally conform to IS 2062-1999 or equivalent.
2. The welding electrodes shall be kept in oven only.
- 3 a. Submerged Arc welding has to be done for crane girder flange to web joints and built up column as per the details given in the approved drawings.
- 3 b. E7018 Welding electrode rods shall be used where the thickness of plates is 20mm and more and as specified in the drawings issued.
- 3 c. All the other weld in crane girder and butt welds in columns and beams shall be done with E 7018 welding electrodes.
- 3 d. All the welds in Nodal points of trusses and lattice girders shall be done with E 7018 welding electrodes.
4. Pre heating shall be done for plates having thickness 25mm & more and the temperature shall be maintained by checking with thermal chalk, as per quality standards.
5. All erection welding, of any component shall be done using E 7018 Welding Electrodes.
6. 100% visual check shall be carried out for raw materials and welding on all components and the welding areas during inspection, to be tested for LPI / MPI / UT / Radiography / PWHT as provided in the Quality Control Procedure.
7. Base plate to column shall be perfectly checked for perpendicularity.
8. All the components shall be checked for dimension at fit-up stage itself before the commencement of welding operation.
9. Contractor shall buy & use Black Hex. bolts and nuts as per IS Specifications as detailed below for fabrication & erection of steel structures.

Black Hex Bolts	IS 1363 - 1984 Part – I (Class 5.6/5.8)
Black Hex Nuts	IS 1363 - 1984 Part - III
Plain MS washer	IS 2016 - 1975
Taper washer for beams	IS 5274 - 1975
Taper washer for channel	IS 5372 - 1975
Spring washer	IS 3063 - 1964

#### **10. Contractor shall buy & use the following welding consumables as detailed below:**

a)

<b>SMAW No</b>	<b>Electrodes</b>	<b>Manufacturer</b>
1.	E 6013 & E 7018	D & H Secheron
2.	E 6013 & E 7018	ESAB India Ltd.

3.	E 6013 & E 7018	Modi Arc Electrode Co.
4.	E 6013 & E 7018	D & H Welding Electrode (I) Ltd.
5.	E 6013 & E 7018	Mantek Electrods (P) Ltd.
6.	E 6013 & E 7018	Ador Welding Ltd.
7.	E 6013 & E 7018	Varun Electrodes Pvt. Ltd.

**b) SAW Wire**

SI No.	Brand	Manufacturer
1	AUTO melt Grade A	Ador Welding
2	Mantek Grade A	Mantek Wires
3	Metaspool S1 dia. 4mm	Precision Wires
4	OK Aut Rod 12.08 L	ESAB India Ltd

**c) Flux**

SI No.	Brand	Manufacturer
1	Super S41	Super Elec Inds
2	Mantek 22	Mantek Welded Flux Co
3	RMH Auto Weld Grade 1	RMH Chemicals
4	SWP 40 T	Super Weld Prod

**d) GMAW ( Co2)**

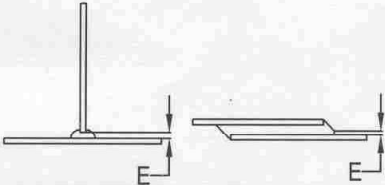
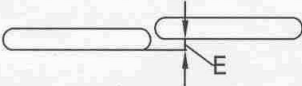
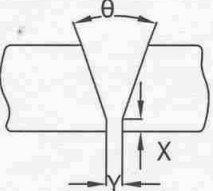
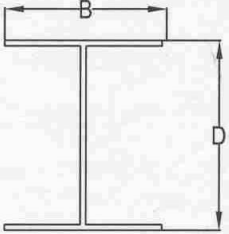
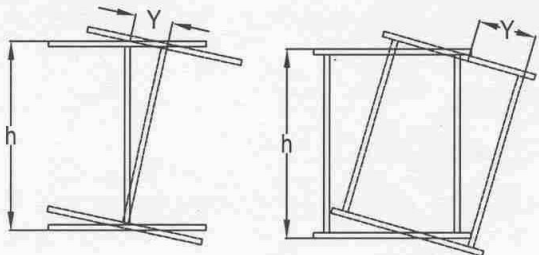
Electrode	Brand	Manufacturer
ER70S-6 Co2 WIRE	Automig-1	Ador Welding Ltd.
ER70S-6 Co2 WIRE	Esab MW1	Esab India Ltd., Chennai
ER70S-6 Co2 WIRE	Mantek Mig	Mantek Wiress
ER70S-6 Co2 WIRE	Nouvarc Autofil-6 Prima Mig/Mag	Nouveax Industries (P) Ltd., Kangayam Voltrac Electrode Pvt. Ltd., Tirupathi. ER70S-6 Co2 WIRE Varun Electrodes Pvt. Ltd., Panipat.

11. Rolled steel sections of depth greater than 450mm need to be visually checked for lamination before the process of fabrication. The doubtful area is to be tested for LPI and if lamination is found UT Test to be carried-out.

12. The welding code of practice, procedures, specifications for electrodes / consumables etc., for manual welding and auto welding shall conform to AWS D1.1/D1.1M:2006 (Latest) and as per the QCP issued by HPVP component-wise.

13. All the fabrication and erection works shall have to be executed as per the QCP issued by HPVP.

14. All the fabrication and erection works will be inspected for Quality Control by a third party inspection agency as fixed by HPVP.

DESIGNATION	DETAIL OF SKETCH	PERMISSIBLE DEVIATION
FILLET WELD FIT UP	FIG:2 	MAX.LOCALISED GAP =1.5mm
BUTT WELD	FIG:3 	CUT OF ALIGNMENT = 3 mm MAX
FIT UP	FIG:4 	FOR ,X ,Y, $\theta$ REFER =1.2 &3 OF CL 7:4:3
SECTION SIZE	FIG:5 	D: UPTO 1M : $\pm 3$ mm 1M TO 2M : $\pm 4.5$ mm OVER 2M : + 7.5 mm - 4.5mm B: $\pm 3$ mm
TWIST ON SECTION (Y)		$Y=0.005h$ 10 mm MAX

LINE OF FLAME HEATING

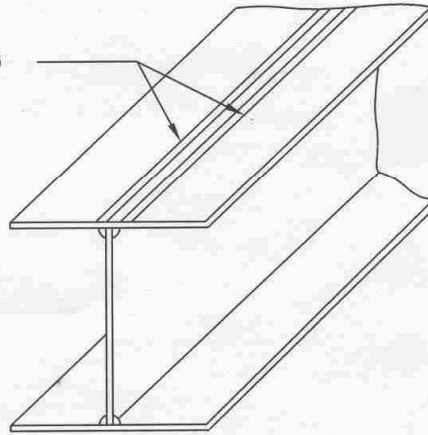
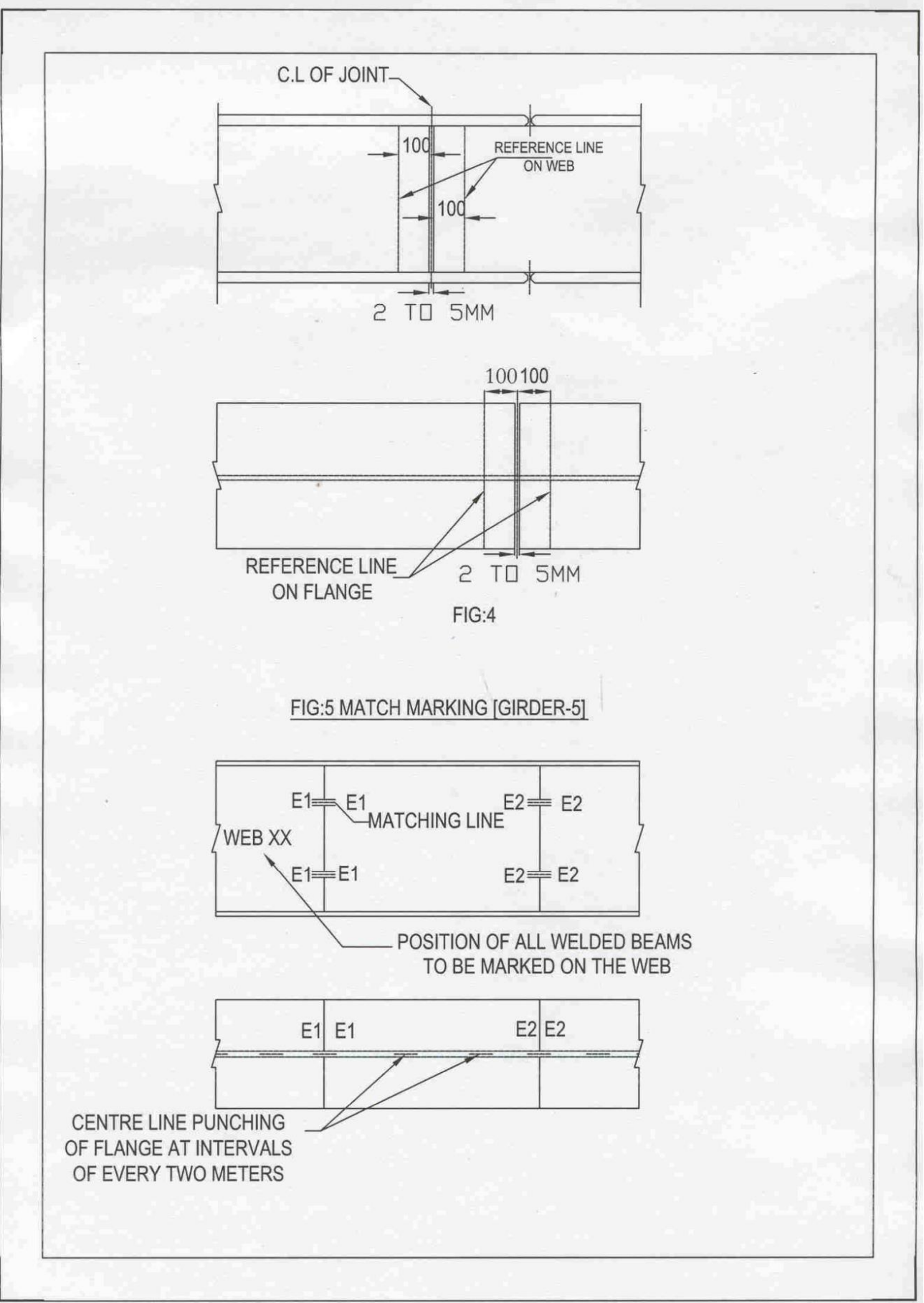
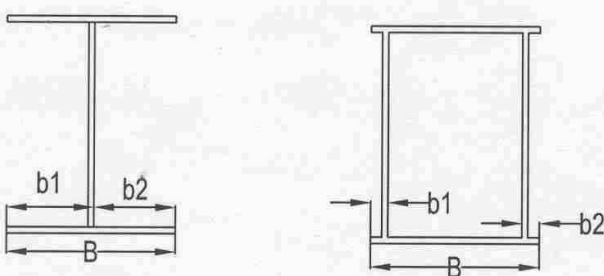
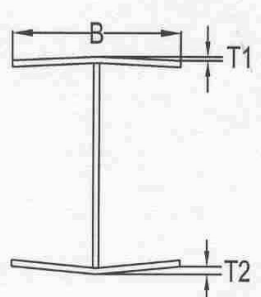
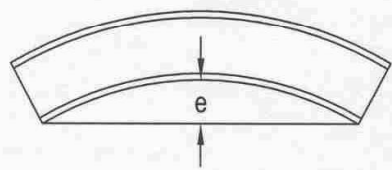


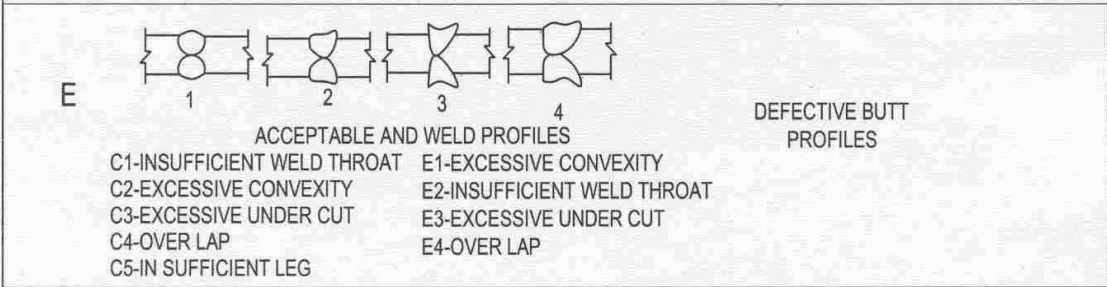
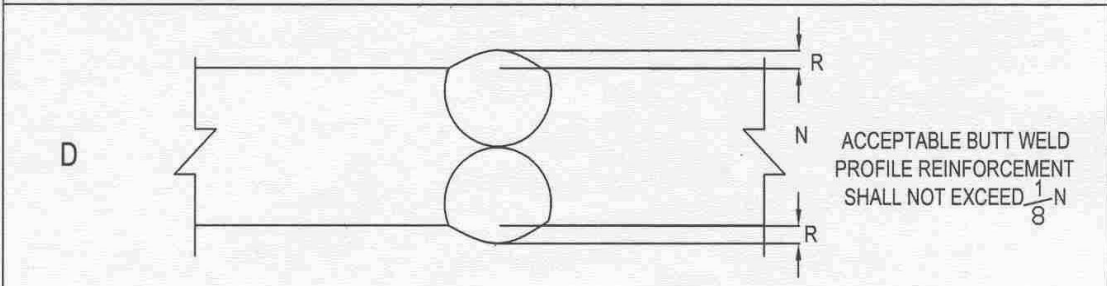
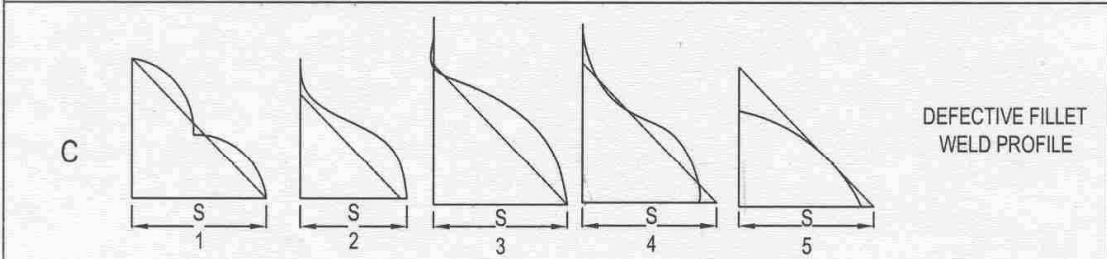
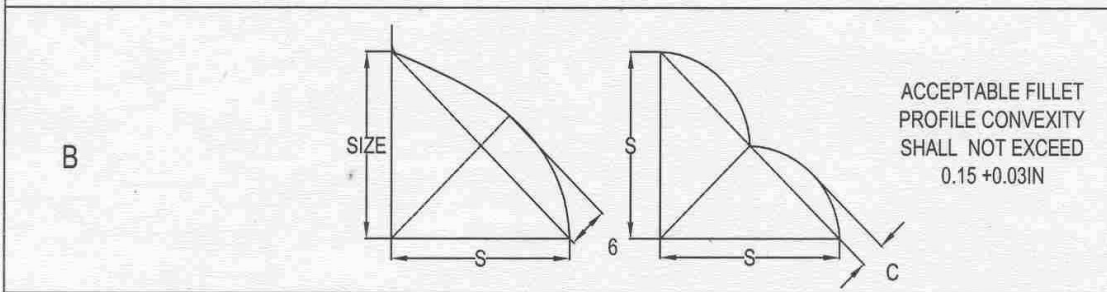
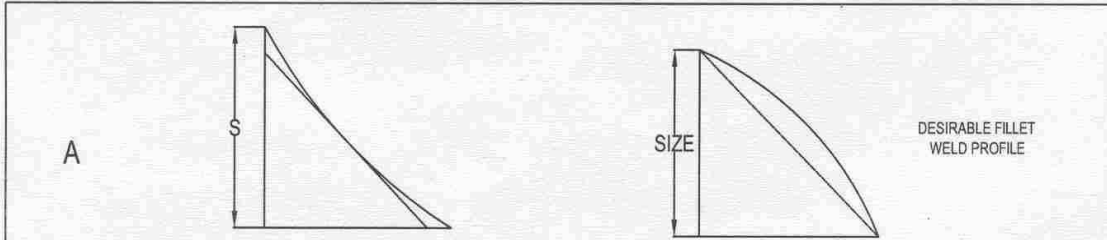
FIG:1

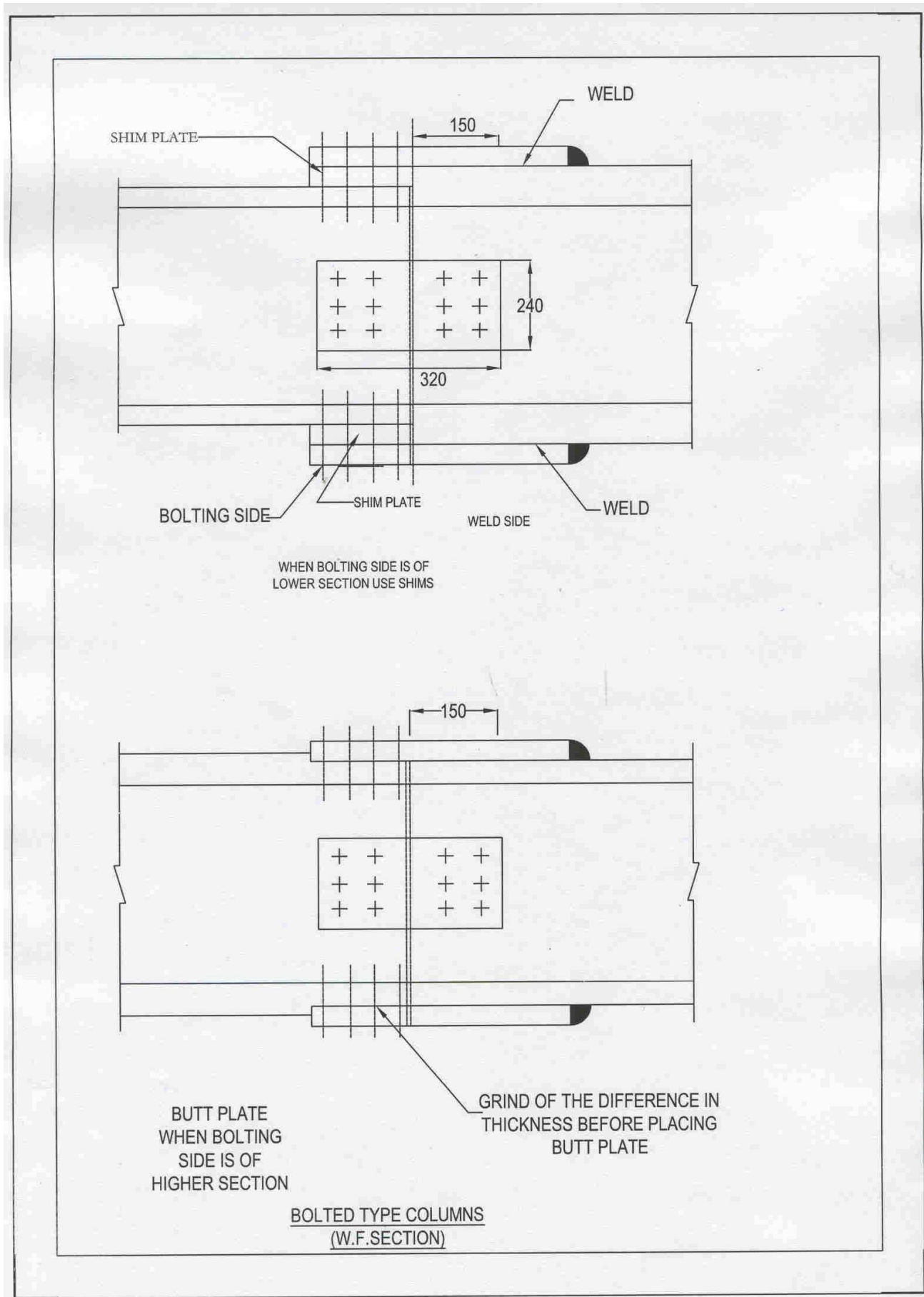
CORRECTION OF FLANGE WARPAGE

DESIGNATION	DETAIL OF SKETCH	PERMISSIBLE DEVIATION
WEB SHIFT	<p>FIG:2</p> <p>The diagram shows a T-beam cross-section. The top flange has a width 'B'. The web has a thickness 'b1' on the left side and 'b2' on the right side. The bottom flange is shown with a slight offset.</p>	$\frac{b1 - b2}{2} = 2\text{mm}$
FLANGE WARPAGE	<p>FIG:3</p> <p>The diagram shows a T-beam cross-section with a curved top flange. The width of the top flange is 'B'. The maximum upward deviation of the top flange is 'T1'. The maximum downward deviation of the bottom flange is 'T2'.</p>	$T1+T2 = \frac{B}{100} \text{ OR } 6\text{MM}$



DESIGNATION	DETAIL OF SKETCH	PERMISSIBLE DEVIATION
WEB SHIFT	<p>FIGURE-7</p> 	$\frac{b1 - b2}{2} = 2\text{mm MAX}$
FLANGE WARPAGE	<p>FIGURE-8</p> 	$T1+T2 = \frac{B}{100} \text{ OR } 6\text{MM}$
CAMBER	<p>FIGURE-9</p> 	<p><math>E = 1/1000 \times \text{length}</math> SUBJECT TO MAX.] OF 10mm.</p>





**LIST OF SAFETY CODES FOR CIVIL WORKS PUBLISHED BY BUREAU OF INDIAN  
STANDARDS**

Sl. No.	Code No.	Title
01	IS : 818	Code of Practice for Safety and Health Requirements in Electric and Gas Welding and Cutting Operations – First Revision.
02	IS : 875	Code of practice for Structural safety of buildings: Masonry walls
03	IS : 933	Specification for Portable Chemical Fire Extinguisher, Foam Type - Second Revision
04	IS :1179	Specification for Equipment for Eye and Face Protection during Welding – First Revision.
05	IS : 1904	Code of practice for Structural safety of buildings: Shallow foundations
06	IS : 1905	Code of practice for Structural safety of buildings: Masonry walls
07	IS : 2171	Specification for Portable Fire Extinguishers, Dry Powder Type –Second Revision
08	IS : 2361	Specification for Building Grips – First Revision
09	IS : 2750	Specification for Steel Scaffoldings.
10	IS : 2925	Specification for Industrial Safety Helmets – First Revision
11	IS : 3016	Code of Practice for Fires Precautions in Welding and Cutting Operations – First Revision
12	IS : 3521	Industrial safety belts and harnesses
13	IS : 3696	Safety Code for Scaffolds and Ladders: Part I – Scaffolds.
14	IS : 3696	Safety Code for Scaffolds and Ladders: Part II – Ladders.
15	IS : 3764	Safety Code for Excavation Work
16	IS : 4014	Part I & II Code of practice for Steel tubular scaffolding
17	IS : 4081	Safety Code for Blasting and Related Drilling Operations.
18	IS : 4082	Recommendations on staking and storage of construction materials at site
19	IS : 4130	Safety Code for Demolition of Buildings – First Revision.
20	IS : 4138	Safety Code Working in Compressed Air-First Revision
21	IS : 4912	Safety requirements for Floor and Wall Openings, Railings and toe Boards –First Revision.
22	IS : 5121	Safety Code for Piling and other Deep Foundations.
23	IS : 5916	Safety Code for Construction involving use of Hot Bituminous
24		Specification for Eye Protectors – First Revision.
25	IS : 6922	Structures subject to underground blasts, criteria for safety and design
26	IS : 7205	Safety Code for Erection on Structural Steel Works.
27	IS : 7069	Safety Code for Handling and Storage of Building Materials.
28	IS :7293	Safety Code for Working with Construction Machinery.
29	IS : 7969	Safety code for handling and storage of building material

30	IS : 8758	Recommendation for Fire Precautionary Measures in construction of Temporary Structures and Pandals.
31	IS : 8989	Safety Code for Erection of Concrete Framed Structures
32	IS : 9759	Guidelines for de-watering during construction
33	IS : 11057	Code of practice for Industrial safety nets
34	IS : 13415	Code of Practice on safety for Protective barriers in and around building
35	IS : 13416	Recommendations for preventive measures against hazards at working places

**STANDARD NORMS FOR CEMENT CONSUMPTION**

For calculating the requirement of the cement in various items of works, the following standards shall be adopted. Allowances for wastage and all incidentals are included in these standards.

Sl. No.	Brief Description of the Item	Cement Requirement / Unit (Bags)
1	a) Brick work in CM 1:4	1.90 bags per Cu. Mtr. of BW
	b) Brick work in CM 1:5	1.56 bags per Cu. Mtr. of BW
	c) Brick work in CM 1:6	1.24 bags per Cu. Mtr. of BW
2	a) % Brick work in M <sup>2</sup> 1:4	2.13 bags per 10 M <sup>2</sup> area
	b) % Brick work in M <sup>2</sup> 1:3	2.86 bags per 10 M <sup>2</sup> area
3	a) 75 mm Thk. Brick in CM 1:4	1.29 bags per 10 M <sup>2</sup> area
	b) 75 mm Thk. Brick in CM 1:3	1.66 bags per 10 M <sup>2</sup> area
4	a) R.R. Masonary in CM 1:6	1.70 bags per Cu. Mtr.
	b) R.R. Masonary in CM 1:4	2.50 bags per Cu. Mtr.
5	Pre cast CC blocks (1:2:4) in masonry in CM 1:2	
	a) With solid wall bricks	7.54 bags per Cu. Mtr.
	b) With hollow bricks	3.48 bags per Cu. Mtr.
6	Pre cast CC blocks (1:3:6) in masonry in CM 1:2	1.90 bags per Cu. Mtr.
	a) With solid wall bricks	5.56 bags per Cu. Mtr.
	b) With hollow bricks	2.56 bags per Cu. Mtr.
7	Projected brick bands drip course etc. In CM 1:6 finished 12 mm Thk. Cement plaster 12:6	3.33 bags per Cu. Mtr.
8	a) RCC /PCC of nominal mix concrete complete (excluding finishing with CP) 1:5:10	2.60 bags per Cu. Mtr. of concrete
	b) RCC /PCC of nominal mix concrete complete (excluding finishing with CP) 1:4:8	3.40 bags per Cu. Mtr. of concrete

	c) RCC /PCC of nominal mix concrete complete (excluding finishing with CP) 1:3:6	4.40 bags per Cu. Mtr. of concrete
9	a) Reinforced cement concrete of nominal Mix 1:2:4	6.40 bags per Cu. Mtr. of concrete
	b) Reinforced cement concrete of nominal Mix 1:1 ½ :3	8.00 bags per Cu. Mtr. of concrete
	c) Reinforced cement concrete of nominal Mix 1:1:2	12.20 bags per Cu. Mtr. of concrete
10	Controlled concrete AMA30, M25, M20 and M15 as per specification	The quantity of cement per unit of concrete in the approved mix as the standard of cement consumption. No wastage will be allowed over this
11	a) Cement mortar grout 1:1	20.40 bags per Cu. Mtr.
	b) Cement mortar grout 1:2	14.36 bags per Cu. Mtr.
	c) Cement mortar grout 1:3	10.80 bags per Cu. Mtr.
12	a) 25 mm thk. CC in DPC 1:2:4	1.60 bags per 10 M <sup>2</sup> area
	b) 40 mm thk. CC in DPC 1:2:4	2.60 bags per 10 M <sup>2</sup> area
	c) 50 mm thk. CC in DPC 1:2:4	3.20 bags per 10 M <sup>2</sup> area
13	Pre-cast concrete jalli (1:1:1:4) including fixing in CM 1:3	1.01bags per 10 M <sup>2</sup> area
14	Cement for fixing Jallies	0.328 bags per 10 M <sup>2</sup> area
15	Pointing in CM 1:6	0.26 bags per 10 M <sup>2</sup> area
16	Ruled pointing in CM 1:4	0.34bags per 10 M <sup>2</sup> area
17	Flush pointing in CM 1:4 over brick on edge paving	0.20 bags per 10 M <sup>2</sup> area
18	Rounding of junction with CM 1:4 cement punning	0.40 bags per 10 M <sup>2</sup> area
19	Moulding over staircase	0.69 bags per 10 M <sup>2</sup> area
20	a) 6 mm thk. CP in CM 1:3	1.468 bags per 10 M <sup>2</sup> area
	b) 6 mm thk. CP in CM 1:4	0.55 bags per 10 M <sup>2</sup> area
21	a) 12 mm thk. CP in CM 1:3	1.468bags per 10 M <sup>2</sup> area
	b) 12 mm thk. CP in CM 1:6	0.72 bags per 10 M <sup>2</sup> area
	c) 12 mm thk. CP in CM 1:4	1.094 bags per 10 M <sup>2</sup> area
22	a) 15 thk. CP in CM 1:6	0.86 bags per 10 M <sup>2</sup> area
	b) 15 thk. CP in CM 1:4	1.31 bags per 10 M <sup>2</sup> area

	c)15 thk. CP in CM 1:3	1.754 bags per 10 M <sup>2</sup> area
23	a) 19 mm thk. CP in CM 1:8	0.06 bags per 10 M <sup>2</sup> area
	b) 19 mm thk. CP in CM 1:6	1.11 bags per 10 M <sup>2</sup> area
	c) 19 mm thk. CP in CM 1:4	1.56 bags per 10 M <sup>2</sup> area
24	a) 20 mm thk. CP in CM 1:6	1.12 bags per 10 M <sup>2</sup> area
	b) 20 mm thk. CP in CM 1:6	1.70 bags per 10 M <sup>2</sup> area
	c) 20 mm thk. CP in CM 1:6	2.28 bags per 10 M <sup>2</sup> area
25	25 mm thk. CP in CM 1:6	1.12 bags per 10 M <sup>2</sup> area
26	12 mm thk. Bearing plaster in CM 1:4 neat cement finish	1.18 bags per 10 M <sup>2</sup> area
27	Neat Cement punning	0.44 bags per 10 M <sup>2</sup> area
28	Cement plaster skirting, dado, risers of steps and edges of ground sink with cement mortar 1:3 finished with floating coat of neat cement.	1.754 bags per 10 M <sup>2</sup> area
	a) 12 mm thk.	1.60 bags per 10 M <sup>2</sup> area
	b) 15 mm thk.	1.99 bags per 10 M <sup>2</sup> area
	c) 18 mm thk.	3.20 bags per 10 M <sup>2</sup> area
	d) 21 mm thk.	3.50 bags per 10 M <sup>2</sup> area
29	Cement concrete flooring 40 mm thk.	3.40 bags per 10 M <sup>2</sup> area
30	IPS flooring 40 mm thk.	3.15 bags per 10 M <sup>2</sup> area
31	Eronite flooring	3.0 bags per 10 M <sup>2</sup> area
32	Brick flooring with modular FPS bricks in CM 1:4 including cement slurry	3.70 bags per 10 M <sup>2</sup> area
33	Grey artificial stone flooring with a floating coat of neat cement punning.	
	a) 25 mm thk.	2.04 bags per 10 M <sup>2</sup> area
	b) 40 mm thk.	3.00 bags per 10 M <sup>2</sup> area
34	25 mm thk. Cast-in-situ grey terrazzo flooring	2.74 bags per 10 M <sup>2</sup> area
35	Cast-in-site grey terrazzo for flooring (excluding a slurry coat prior to laying of under layer)	
	a) 30 mm thk.	2.52 bags per 10 M <sup>2</sup> area

	b) 40 mm tk.	1.754 bags per 10 M <sup>2</sup> area
36	13 mm thk. Grey terrazzo skirting	1.51 bags per 10 M <sup>2</sup> area
37	12 mm thk. Grey terrazzo finish urinal partition	1.40 bags per 10 M <sup>2</sup> area
38	19 mm thk. Grey terrazzo skirting dodo	2.28 bags per 10 M <sup>2</sup> area
39	6 mm grey terrazzo finishing	0.28 bags per 10 M <sup>2</sup> area
40	23 mm thk. Rough cast cement plaster with 13 mm cement plaster in CM 1:6 and 9 mm cement plaster in CM 1:3	1.84 bags per 10 M <sup>2</sup> area
41	Masonry chullah including flue etc. As per drawing (average)	0.20 bags per 10 M <sup>2</sup> area
42	Fixing steel windows	0.60 bags per 10 M <sup>2</sup> area
43	AC rain water pipe 100 mm dia	1.45 bags per 100 RM of pipe
44	AC rain water pipe 150 mm dia	1.64 bags per 100 RM of Pipe
45	Fixing IWC pan with trap and flushing cistern compete	0.25 bags each
46	Fixing HCl pipe and special 100 mm and 75 mm dia including making good the holes	0.25 bags per 10 RM of pipe
47	Fixing G.I. pipes of all dia with clamps (for inside work only)	0.03 bags per 10 RM of pipe
48	Gully chamber	0.77 bags each
49	Fixing & finishing for floor trap	0.03 bags each
50	Stop cock chamber 300mm x 300mm x 375 mm	0.37 bags each
51	Jointing SW pipe of 100 mm dia	0.18 bags per 10 RM of pipe
52	C 1:5:10 bed for SW Pipe	0.16 bags per RM of pipe
53	RCC(M20 grade) Pavement	
	a) 150 mm thk.	1.20 bags per Sq.m of area
	b) 200 mm thk.	1.60 bags per Sq.m of area
54	Inspection chamber	
	i) 1200 mm x 900 mm 600 mm deep	4.30 bags each
	ii) 750 mm x 600 mm x 600 mm deep	2.87 bags each
	iii) 600 mm x 600 mm x 600 mm deep	2.85 bags each

	iv) 600 mm x 400 mm x 400 mm deep	2.30 bags each
	v) 1200 mm x 90 mm x 1200 mm deep	7.00 bags each
	vi) 900 mm x 900 mm x 1200 mm deep	3.77 bags each
55	Extra depth of inspection chamber	
	i) 1200 mm x 600 mm x 600 mm deep	3.67 bags per one RM of additional depth
	ii) 750 mm x 600 mm x 600 mm deep	2.59 bags per one RM of additional depth
	iii) 600 mm 600 mm 600 mm deep	1.61 bags per one RM of additional depth
	iv) 1200 mm x 900 mm x 1200 mm deep	3.67 bags per one RM of additional depth
	v) 900 mm x 900 mm x 1200 mm deep	2.92 bags per one RM of additional depth
56	Jointing SW pipe 150 mm dia	0.23 bags per 10 RM of pipe
57	Concrete bed for 150 mm dia SW pipe	0.24 bags per 10 RM of pipe
58	Fixing Urinal Cistern including pipes	0.05 bags each
59	Fixing EWC pan with trap and flushing Cistern complete	0.05 bags each
60	Fixing wash and basin and kitchen sinks	0.05 bags per each fitting
61	Fixing of drain board	0.02 bags each
62	Providing gola 75 mm x 75 mm in CC (1:2:4) including finishing with CM (1:3)	0.07 bags per RM

**GENERAL TERMS AND CONDITIONS OF RA (REVERSE AUCTION)**

BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit online sealed bid in the Reverse Auction. Non-submission of online sealed bid by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.+

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., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit online sealed bid in the Reverse Auction. Non-submission of online sealed bid by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at ~~Total Cost to BHEL~~+like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.

**Ref: OPS/OS/WC/2016-17/51/069**

**Date: 10.03.2017**

**GENERAL TERMS AND CONDITIONS OF RA (REVERSE AUCTION)**

10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL s standard practice.
12. Bidders shall be required to read the %Terms and Conditions+section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the sBusiness Rules of Reverse Auction , which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per extant BHEL guidelines*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder(s) (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

**SIGNATURE OF THE BIDDER WITH STAMP**

\* \* \*

**Ref: OPS/OS/WC/2016-17/51/069**

**Date: 10.03.2017**

**ACCEPTANCE TO TENDER TERMS & CONDITIONS**

Sub: Tender for providing Temporary Barricading at Desalter Plant, ONGC, Navagam, Ahmedabad site

I / We hereby confirm that the Tender documents, all annexures etc. have been studied in detail and we have fully understood the scope of work.

I / We accept to all the Terms and Conditions of the Tender Enquiry and the prices quoted are in accordance with the same.

I / We accept to offer valid for a period of **6 months** from the last date for tender submission.

I / We give our acceptance to participate in Reverse Auction in case BHEL decides to go for reverse auction for this tender.

**Tender documents duly signed on all the pages by the Owner / authorized representative of the bidder are attached herewith.**

**SIGNATURE OF THE BIDDER WITH STAMP**

**MINIMUM WAGES AS PER CENTRAL LABOUR DEPARTMENT**

w.e.f 01.10.2016

All values are in

<b>SL. No</b>	<b>DESCRIPTION</b>	<b>Unskilled</b>	<b>Semi-Skilled</b>	<b>Skilled</b>
1	Minimum Wage	<b>312.00</b>	<b>353.00</b>	<b>414.00</b>
2	PF @ 13.6%	42.46	48.04	56.34
3	ESI @ 4.75%	14.82	16.76	19.66
4	Bonus @ 8.33%	25.98	29.40	34.48
5	Leave Wages (18 days / Year)	18.00	20.36	23.88
6	Terminal Benefit for (15 days / year)	15.00	16.97	19.90
7	Holidays for 10 days	10.00	11.31	13.26
	<b>TOTAL</b>	<b>438.26</b>	<b>495.84</b>	<b>581.52</b>

**SIGNATURE OF THE BIDDER WITH STAMP**

**CONTRACTOR INFORMATION**

<b>Sl.No.</b>	<b>Particulars</b>	<b>To be Filled by Bidder</b>
01.	Name of the Contractor	
02.	Nature of Firm / Concern (Proprietor/Partnership/Pvt. Limited/Public Ltd.) Note: In case of partnership concern, please enclose photo copies of the partnership deed	
03.	Full address	
04.	Name of the Proprietor/Partner	
05.	Name of the Person(s) and designation authorized for signing the contract/dealing with BHEL	
06.	Telephone No. of the firm	
07.	Fax No.	
08.	Mobile No.	
09.	E-mail ID	
09.	Organizational structure with name and designation	

**CHECK LIST**

Sl. No.	Particulars	Document Enclosed (Yes / No)	Document No
01.	Name of the Contractor		
02.	Tender Document Signed & Stamped		
03.	Earnest Money Deposit (EMD) @ 1,24,230/-		
04.	PF Registration Certificate		
05.	ESI Registration Certificate		
06.	Service Tax Registration Certificate		
07.	PAN Number		
08.	Income Tax Returns for last 3 years		
09.	Profit & Loss account and Balance Sheet certified by the Practicing Chartered Accountant for the last 3 years		
10.	Work orders & Job Completion Certificates in similar works as mentioned in eligibility criteria.		
11.	MSE Registration Documents, if applicable  EM II certificate having deemed validity (5 years from date of issue of acknowledgement in EM II) <b>or</b>  valid NSIC certificate <b>or</b>  EM II certificate along with attested copy of a CA certificate (Format enclosed at <b>annexure-A</b> where deemed validity of EM II certificate of five years has expired)		

**Certificate by Chartered Accountant on letter head**

This is to certify that M/S [redacted] .

(hereinafter referred to as 'company') having its registered office at [redacted] is registered under MSMED Act 2006, (Entrepreneur Memorandum No (part-II) [redacted] dated [redacted] ., Category: [redacted] (Micro/small). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year [redacted] . as per MSMED Act 2006 is as follows:

- 1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of small scale industries vide its notification No.S.O.1722(E) dated October 5, 2006:

[redacted] ..Lakhs

- 2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and Furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:

[redacted] Lakhs

**(Strike off whichever is not applicable)**

The above investment of [redacted] Lakhs is within permissible limit of [redacted] .Lakhs for [redacted] Micro/ Small (strike off which is not applicable) Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/ Small) (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is [redacted] .. (dd/mm/yyyy) Which is within the period of 3 year from the date of graduation of such enterprise from its original category as notified vide S.O. No. 3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name -

Membership number .

Seal of Charatered Accountant

**ACCEPTANCE FOR ELECTRONIC FUND TRANSFER / RTGS / NEFT TRANSFER**

01	NAME & ADDRESS OF THE SUPPLIER / SUBCONTRACTOR	
02	VENDOR CODE ASSIGNED BY BHEL,HPVP LTD	

**DETAILS OF BANK ACCOUNT**

03	NAME & ADDRESS OF THE BANK	
04	NAME OF THE BRANCH	
05	BRANCH CODE	
06	MICR CODE	
07	ACCOUNT NUMBER	
08	TYPE OF ACCOUNT	
09	BENEFICIARY'S NAME	
10	IFSC CODE OF THE BRANCH	
11	EMAIL ID	
12	TELEPHONE / MOBILE NUMBER	

**CERTIFICATE**

I / We here by agree to receive the payments due from M/s Bharat Heavy Electricals Ltd., by the National Electronic Fund Transfer / or RTGS Transfer mode by credit to my / our above mentioned Bank account. I / We also agree that payments made to the above mentioned account are a valid discharge of the liability of M/s Bharat Heavy Electricals Ltd. I / We also agree to bear the applicable Bank charges for the above mode of transfer. A copy of the cheque leaf/ cancelled cheque leaf of the above account is sent herewith.

(Authorized Signatories with name & seal)

**BANKER'S CERTIFICATION**

We confirm that we are enabled for receiving RTGS and NEFT credits and we further confirm that the account number of \_\_\_\_\_ (name of account holder), the signature of authorized signatory and the MICR and IFSC codes of our branch mentioned above are correct.

Place:  
Date:  
seal

Bank Manager / Officer  
Signature with Bank stamp and name

**FORWARDED TO ACCOUNTS DEPARTMENT / CASH SECTION**

We confirm the above details are verified with the records available with us

Signature of BHEL Official with name & seal  
Operating the contract / Services

# FORMS & PROCEDURES

Form No: F- 01 (Rev 00)

## OFFER FORWARDING LETTER / TENDER SUBMISSION LETTER

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

-----  
Offer Reference No.: 0 0 0 0 0 0 0 .

Date: 0 0 0 0 0 0 0 0 0

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : Submission of Offer against Tender Specification No: 0 0 0 0 0 0 0 0 0

I/We hereby offer to carry out the work detailed in the Tender Specification issued by Bharat Heavy Electricals Limited, HPVP, Visakhapatnam, in accordance with the terms and conditions thereof. I/We have carefully perused the following listed documents connected with the above work and agree to abide by the same.

1. Amendments/Clarifications/Corrigenda/Errata/etc issued in respect of the Tender document sby BHEL.
2. Notice Inviting Tender (NIT)
3. Price Bid
4. Technical Conditions of Contract
5. Special Conditions of Contract
6. General Conditions of Contract
7. Forms and Procedures

Should our Offer be accepted by BHEL for Award, I/we further agree to furnish ~~Security~~ Deposit for the work as provided for in the Tender Conditions within the stipulated time as may be indicated by BHEL. I/We further agree to execute all the works referred to in the said Tender documents upon the terms and conditions contained or referred to therein and as detailed in the appendices annexed thereto.

I/We have deposited/depositing herewith the requisite Earnest Money Deposit (EMD) as per details furnished in the Check List.

### **Authorised Representative of Bidder**

Signature :

Name :

Address :

Place:

Date:

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# FORMS & PROCEDURES

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Form No: F-02 (Rev 00)

## DECLARATION BY AUTHORISED SIGNATORY OF BIDDER

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

---

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : **Declaration by Authorised Signatory**

Ref : 1) NIT/Tender Specification No: 0 0 0 0 0 0 0 0 0 0 ,  
2) All other pertinent issues till date

I/We, hereby certify that all the information and data furnished by me with regard to the above Tender Specification are true and complete to the best of my knowledge. I have gone through the specifications, conditions, stipulations and all other pertinent issues till date, and agree to comply with the requirements and Intent of the specification.

I further certify that I am authorised to represent on behalf of my Company/Firm for the above mentioned tender and a valid Power of Attorney to this effect is also enclosed.

Yours faithfully,

(Signature, Date & Seal of Authorized  
Signatory of the Bidder)

Date:

Enclosed : Power of Attorney

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Form No: F-03 (Rev 00)

# FORMS & PROCEDURES

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## NO DEVIATION CERTIFICATE

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

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To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : **No Deviation Certificate**

Ref : 1) NIT/Tender Specification No: 0 0 0 0 0 0 0 0 0 ..0 0 0 .,  
2) All other pertinent issues till date

We hereby confirm that we have not changed/ modified/materially altered any of the tender documents as downloaded from the website/ issued by BHEL and in case of such observance at any stage, it shall be treated as null and void.

We also hereby confirm that we have neither set any Terms and Conditions and nor have we taken any deviation from the Tender conditions together with other references applicable for the above referred NIT/Tender Specification.

We further confirm our unqualified acceptance to all Terms and Conditions, unqualified compliance to Tender Conditions, Integrity Pact (if applicable) and acceptance to Reverse Auctioning process.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)

# FORMS & PROCEDURES

Form No: F-04 (Rev 00)

## **DECLARATION CONFIRMING KNOWLEDGE ABOUT SITE CONDITIONS**

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

-----  
To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : **Declaration confirming knowledge about Site conditions**

Ref : 1) NIT/Tender Specification No: 0 0 0 0 0 0 0 0 0 0 ,

2) All other pertinent issues till date

I/We, \_\_\_\_\_ hereby declare and confirm that we have visited the Project Site as referred in BHEL Tender Specifications and acquired full knowledge and information about the Site conditions including Wage structure, Industrial Climate, the Law & Order and other conditions prevalent at and around the Site. We further confirm that the above information is true and correct and we shall not raise any claim of any nature due to lack of knowledge of Site conditions.

I/We, hereby offer to carry out work as detailed in above mentioned Tender Specification, in accordance with Terms & Conditions thereof.

Yours faithfully,

(Signature, Date & Seal of Authorized Representative of the Bidder)

Date :

Place:

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# FORMS & PROCEDURES

## CONTRACT AGREEMENT

THIS AGREEMENT MADE THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ between BHARAT HEAVY ELECTRICALS LIMITED (A Government of India Enterprise) a Company incorporated under the Companies Act, 1956, having its Registered Office at BHEL House, Siri Fort New Delhi- 110049 (herein after called BHEL) of the ONE PART.

AND

M/S \_\_\_\_\_  
\_\_\_\_\_ (hereinafter called the 'Contractor') of the SECOND PART.

Whereas M/s. \_\_\_\_\_ state that they have acquired and possess extensive experience in the field of \_\_\_\_\_.

And whereas in response to an invitation to Tender No. \_\_\_\_\_ issued by BHEL for execution of \_\_\_\_\_, the contractor submitted their offer no. \_\_\_\_\_, and whereas BHEL has accepted the offer \_\_\_\_\_ of the contractor on terms and conditions specified in the Letter of Intent No. \_\_\_\_\_, Dated: \_\_\_\_\_

Read with the references \_\_\_\_\_.

THIS AGREEMENT WITNESSES AND it is hereby agreed by and between the parties as follows:

1. That the contractor shall execute the work of \_\_\_\_\_ and more particularly described in Tender Specification No \_\_\_\_\_ including Drawings and Specifications (hereinafter called the said works) in accordance with and subject to terms and conditions contained in these presents, instructions to Tenderers, General Conditions of Contract, Special Conditions, Annexures, Letter of Intent dated \_\_\_\_\_ and such other instructions, Drawings, Specifications given to him from time to time by BHEL.
2. The Contractor is required to furnish to BHEL Security deposit in the form of cash/ approved securities/ Bank Guarantee valid upto \_\_\_\_\_ for a sum of Rs. \_\_\_\_\_ towards satisfactory performance and completion of the Contract.
3. The Contractor has furnished a Bank Guarantee bearing no. \_\_\_\_\_ dated \_\_\_\_\_ For a sum of Rs \_\_\_\_\_ executed by \_\_\_\_\_ in favour of BHEL towards Security Deposit valid upto \_\_\_\_\_

OR

The Contractor has furnished to BHEL an initial Security Deposit of Rs. \_\_\_\_\_ in the form of cash/ approved Securities/ B. G. No. \_\_\_\_\_, Dated: for Rs. \_\_\_\_\_ executed by \_\_\_\_\_ in favour of BHEL valid upto \_\_\_\_\_ and has agreed for recovery of the balance security deposit by BHEL @10% of the value of the work done from each running bill till the entire Security Deposit is recovered.

OR

## FORMS & PROCEDURES

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The contractor has furnished to BHEL an initial Security Deposit of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) vide Bank draft No. \_\_\_\_\_ dated: \_\_\_\_\_ and by adjusting EMD of Rs. \_\_\_\_\_ submitted vide Bank draft No. \_\_\_\_\_ Dated: \_\_\_\_\_ and has agreed for recovery of balance Security Deposit by BHEL @ 10% of the value of work done from each running bill till the entire security deposit is recovered.

4. The Contractor hereby agrees to extend the validity of the Bank Guarantee for such further period or periods as may be required by BHEL and if the Contractor fails to obtain such extension(s) from the Bank, the Contractor, shall pay forthwith or accept recovery of Rs.----- from the bills in one installment and the contractor further agrees that failure to extend the validity of the Bank Guarantee or failure to pay the aforesaid amount in the manner specified above shall constitute breach of contract. In addition to above, BHEL shall be entitled to take such action as deemed fit and proper for recovering the said sum of Rs.------

OR

In case the contractor furnishes the bank guarantee at a later date the contractor hereby agrees to extend the validity of bank guarantee for such further period or periods as may be required by BHEL and if the contractor fails to obtain such extension(s) from the bank, the contractor shall pay forthwith or accept recovery of the amount of bank guarantee given in lieu of security deposit from the bills in one installment and the contractor further agrees that failure to extend the validity of bank guarantee or failure to pay the aforesaid amount in the manner specified above shall constitute breach of contract. In addition to above, BHEL shall be entitled to take such action as deemed fit and proper for recovering the said sum.

5. That in consideration of the payments to be made to the Contractor by BHEL in accordance with this Agreement the Contractor hereby covenants and undertakes with BHEL that they shall execute, construct, complete the works in conformity, in all respects, with the terms and conditions specified in this Agreement and the documents governing the same.
6. That the Contractor shall be deemed to have carefully examined this Agreement and the documents governing the same and also to have satisfied himself as to the nature and character of the Works to be executed by him.
7. That the Contractor shall carry out and complete the execution of the said works to the entire satisfaction of the Engineer or such other officer authorised by BHEL, within the agreed time schedule, the time of completion being the essence of the Contract.
8. That BHEL shall, after proper scrutiny of the bills submitted by the Contractor, pay to him during the progress of the said works such sum as determined by BHEL in accordance with this Agreement.
9. That this Agreement shall be deemed to have come into force from \_\_\_\_\_ the date on which the letter of intent has been issued to the Contractor.

# FORMS & PROCEDURES

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10. That whenever under this contract or otherwise, any sum of money shall be recoverable from or payable by the Contractor, the same may be deducted in the manner as set out in the General Conditions of Contract or other conditions governing this Agreement.
11. That all charges on account of Octroi, Terminal and other taxes including sales tax or other duties on material obtained for execution of the said works shall be borne and paid by the Contractor.
12. That BHEL shall be entitled to deduct from the Contractor's running bills or otherwise Income Tax under Section 194 (C) of the Income Tax Act, 1961.
13. That BHEL shall be further entitled to recover from the running bills of the Contractor or otherwise such sum as may be determined by BHEL from time to time in respect of consumables supplied by BHEL, hire charges for tools and plants issued (Where applicable) and any other dues owed by the Contractor.
14. That it is hereby agreed by and between the parties that non- exercise, forbearance or omission of any of the powers conferred on BHEL and /or any of its authorities will not in any manner constitute waiver of the conditions hereto contained in these presents and the liability of the Contractor with respect to compensation payable to BHEL or Contractor's obligations shall remain unaffected.
15. It is clearly understood by and between the parties that in the event of any conflict between the Letter of Intent and other documents governing this Agreement, the provisions in the Letter of Intent shall prevail.
16. The following documents
  1. Invitation to Tender No. \_\_\_\_\_ and the documents specified therein.
  2. Contractor's Offer No \_\_\_\_\_ Dated: \_\_\_\_\_
  3. \_\_\_\_\_
  4. \_\_\_\_\_
  5. \_\_\_\_\_
  6. Letter of Intent No \_\_\_\_\_ dated: \_\_\_\_\_
  7. \_\_\_\_\_shall also form part of and govern this Agreement.

IN WITNESS HEREOF, the parties hereto have respectively set their signatures in the presence of

# FORMS & PROCEDURES

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WITNESS

(CONTRACTOR)

1.

(To be signed by a person holding  
a valid Power of Attorney)

2.

WITNESS

(For and on behalf of BHEL)

1.

2.

# FORMS & PROCEDURES

## BANK GUARANTEE FOR SECURITY DEPOSIT

Form No: F-11 (Rev 00)

B.G. No...

Date:

This deed of Guarantee made this ----- day of -----two thousand ---- by \_\_\_\_\_ (Name and Address of Bank) hereinafter called the "The Guarantor" (which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors and assigns) in favour of M/s Bharat Heavy Electrical Limited ( A Govt. of India Undertaking) a company incorporated under the Companies Act, 1956, having its registered office at BHEL House, Siri Fort, Asiad, New Delhi . 110049 through its unit at Bharat Heavy Electricals Limited . HPVP, Visakhapatnam -530012, hereinafter called "The Company" (which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors and assigns)

WHEREA < Contractor's Name and Address > (hereinafter referred to as the Contractor) have entered into a contract arising out of Letter of Intent no. < LOI REF & Date > (hereinafter referred to as "the contract") for < Name of Work > with the company.

AND WHEREAS the contract inter-alia provides that the contractor shall furnish to the company a sum of Rs.----- (Rupees-----) towards security deposit for due and faithful performance of the contract in the form and manner specified therein.

AND WHEREAS the contractor has approached the Guarantor and in consideration of the arrangement arrived at between the contractor and the Guarantor, the Guarantor has agreed to give the Guarantee as hereinafter mentioned in favour of the company.

The Guarantor do hereby guarantee to the company the due and faithful performance, observance or discharge of the Contract by the contractor and further unconditionally and irrevocably undertake to pay to the Company without demur and merely on a demand, to the extent of Rs.----- (Rupees-----) against any claim by the company on them for any loss, damage, costs, charges and expenses caused to or suffered by the company by reasons of the contractor making any default in the performance, observance or discharge of the terms, conditions, stipulations or undertakings or any of them as contained in the contract.

## FORMS & PROCEDURES

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The decision of the company whether any default has occurred or has been committed by the contractor in the performance, observance or discharge of any of the terms, conditions, stipulations or undertakings or any one of them as contained in the contract and / or as to the extent of loss, damage, costs, charges and expenses caused to or suffered by the company by reason of the contractor making any default in the performance, observance or discharge of any of the terms, conditions, stipulations or undertakings or any one of them shall be conclusive and binding on the Guarantor irrespective of the fact whether the contractor admits or denies the default or questions the correctness of any demand made by the company in any Court, Tribunal or Arbitration proceedings or before any other Authority.

The company shall have the fullest liberty without affecting in any way the liability of the Guarantor under this Guarantee, from time to time to vary any of the terms and conditions of the contract or extend time of performance by the contractor or to postpone for any time and from time to time any of the powers exercisable by it against the contractor and either enforce or forebear from enforcing any of the terms and conditions governing the contract or securities available to the company and the Guarantor shall not be released from its liability under these presents by any exercise by the company of the liberty with reference to the matters aforesaid or by reasons of time being given to the contractor or any other forbearance, act or commission on the part of the company or any indulgence by the company to the contractor or any other matter or thing whatsoever which under the law relating to sureties would, but for this provision have the effect of so releasing the Guarantor from its liability under this guarantee.

The Guarantor further agrees that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the contract and its claim satisfied or discharged and till the company certifies that the terms and conditions of the contract have been fully and properly carried out by the contractor and accordingly discharges this Guarantee, subject however, that the company shall have no claim under this Guarantee after ----  
----- i.e. (the present date of validity of Bank Guarantee unless the date of validity of this Bank Guarantee is further extended from time to time, as the case may be) unless a notice of the claim under this Guarantee has been served on the Guarantor before the expiry of the said period in which case the same shall be enforceable against the Guarantor notwithstanding the fact that the same is enforced after the expiry of the said period.

## FORMS & PROCEDURES

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The Guarantor undertakes not to revoke this Guarantee during the period it is in force except with the previous consent of the Company in writing and agrees that any liquidation or winding up or insolvency or dissolution or any change in the constitution of the contractor or the Guarantor shall not discharge the Guarantor's liability hereunder.

It shall not be necessary for the company to proceed against the contractor before proceeding against the Guarantor and the Guarantee herein contained shall be enforceable against them notwithstanding any security which the Company may have obtained or obtain from the Contractor shall at the time when proceedings are taken against the Guarantor hereunder be outstanding or unrealized.

Notwithstanding anything contained herein before, our liability under the Guarantee is restricted to Rs. ----- (Rupees-----). Our guarantee shall remain in force until -----, i.e. (the present date of validity of Bank Guarantee unless the date of validity of this Bank Guarantee is further extended from time to time) unless a claim or demand under this guarantee is made against us on or before ----- we shall be discharged from our liabilities under this Guarantee thereafter.

Any claim or dispute arising under the terms of this documents shall only be enforced or settled in the courts of at Nagpur only.

The Guarantor hereby declares that it has power to execute this guarantee and the executant has full powers to do so on behalf of the Guarantor.

# FORMS & PROCEDURES

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IN WITNESS whereof the ----- (Bank) has hereunto set and subscribed its hand the day, month and year first, above written.

(Name of the Bank)

Signed for and on behalf of the Bank

(Designation of the Authorized Person Signing the Guarantee)

(Signatory No. -----)

DATED:

SEAL

=====

Notes :

1. The BG shall be executed on non-judicial stamp papers of adequate value procured in the name of the Bank in the State where the Bank is located.
2. The BG is required to be sent by the executing Bank directly to BHEL at the address where tender is submitted / accepted under sealed cover.

# FORMS & PROCEDURES

Form No.F-21(Rev-00)

## INDEMNITY BOND

(To be executed on a Non Judicial Stamp Paper of the requisite value as per Stamp Duty prevalent in the respective State)

This Indemnity Bond executed by <name of company> having their Registered Office at \_\_\_\_\_ in favour of M/s Bharat Heavy Electricals Limited, a Company incorporated under the Companies Act, 1956, having its Registered Office at BHEL House, Siri Fort, Asiad, New Delhi - 110049 through its Unit at Power Sector \_\_\_\_\_ Region, \_\_\_\_\_ State. (Hereinafter referred to as the Company)

And whereas the Company has entered into a Contract with M/s xxxxxxxxxxxxxxxxxxxx, the executants of this Deed (hereinafter referred to as the Contractor) as its contractor in respect of the work of %xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx+

AND WHEREAS under the provisions of GCC further stipulates that the Contractor shall indemnify the Company against all claims of whatever nature arising during the course of execution of Contract including defects liability period of <xx Months > i.e till <xx xx xxxx>

Now this deed witness that in case the Company is made liable by any Authority including Court to pay any claim or compensation etc. in respect of all labourers or other matters at any stage under or relating to the Contract with the Contractor , the Contractor hereby covenants and agrees with the Company that they shall indemnify and reimburse the Company to the extent of such payments and for any fee, including litigation charges, lawyersqfees, etc, penalty or damages claimed against the Company by reason of the Contractor falling to comply with Central/States Laws, Rules etc, or his failure to comply with Contract ( including all expenses and charges incurred by the Company).

The Contractor further indemnifies the Company for the amount which the Company may be liable to pay by way of penalty for not making deductions from the Bills of the Contractor towards such amount and depositing the same in the Government Treasury.

## FORMS & PROCEDURES

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The Contractor further agree that the Company shall be entitled to with hold and adjust the Security Deposit and/or with hold and adjust payment of Bills of Contractor pertaining to this Contract against any payment which the Company has made or is required to make for which the Contractor is liable under the Contract and that such amount can be withheld, adjusted by the Company till satisfactory and final settlement of all pending matters and the Contractor hereby gives his consent for the same.

The Contractor further agrees that the terms of indemnity shall survive the termination or completion of this contract.

The contractor further agrees that the liability of the contractor shall be extended on actual basis notwithstanding the limitations of liability clause, in respect of :

1. breach of terms of contract by the contractor
2. breach of laws by the contractor
3. breach of Intellectual property rights by the contractor
4. breach of confidentiality by the contractor

Nothing contained in this deed, shall be construed as absolving or limiting the liability of the Contractor under said Contract between the Company and the Contractor. That this Indemnity Bond is irrevocable and the condition of the bond is that the Contractor shall duly and punctually comply with the terms and the conditions of this deed and contractual provisions to the satisfaction of the Company.

In witness where of M/s xxxxxxxxxxxxxx these presents on the day, month and year first, above written at xxxxxxxx by the hand of its signatory Mr. xxxxxxxxxxxxxx.

Signed for and on behalf of  
M/s xxxxxxxxxxxxxxxxxxxx

Witness:

- 1.
- 2.

# FORMS & PROCEDURES

Form No: F-25 (Rev 00)

## POWER OF ATTORNEY for SUBMISSION OF TENDER/SIGNING CONTRACT AGREEMENT

(To be typed on non judicial Stamp Papers of appropriate value as applicable and Notarised)

KNOW ALL MEN BY THESE PRESENTS, that I/We do hereby make, nominate, constitute and appoint Mr \_\_\_\_\_, whose signature given below herewith to be true and lawful Attorney of M/s \_\_\_\_\_ hereinafter called "Company" for submitting Tender/entering into Contract and inter alia, sign, execute all papers and to do necessary lawful acts on behalf of Company with M/s Bharat Heavy Electricals Ltd, Power Sector \_\_\_\_\_ Region, \_\_\_\_\_, in connection with \_\_\_\_\_

vide Tender Specification No.: \_\_\_\_\_, Dated: \_\_\_\_\_

And the Company do hereby agree to ratify and confirm all acts, deeds, things or proceedings as may be lawfully done by the said attorney and by or on behalf of the company and in the name of the company, by virtue of the powers conferred herein and the same shall be binding on the company and shall have full force and effect.

IN WITNESS WHEREOF the common seal of the company has been hereunto affixed in the manner hereinafter appearing on the document.

Dated at \_\_\_\_\_, this \_\_\_\_\_ day of \_\_\_\_\_

Director/CMD/Partner/Proprietor

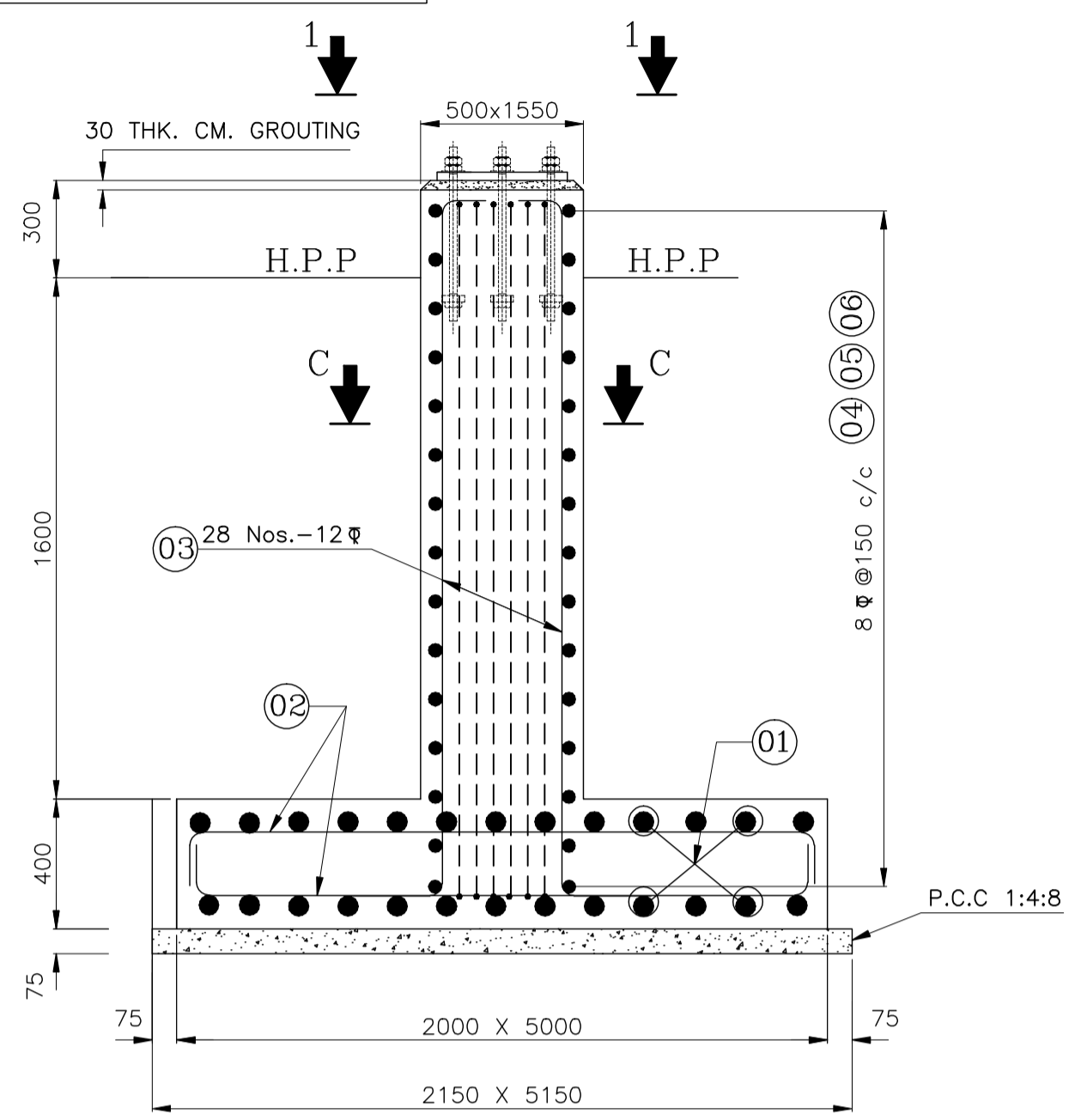
Signature of Mr \_\_\_\_\_ (Attorney)

Attested by: Director/CMD/Partner/Proprietor

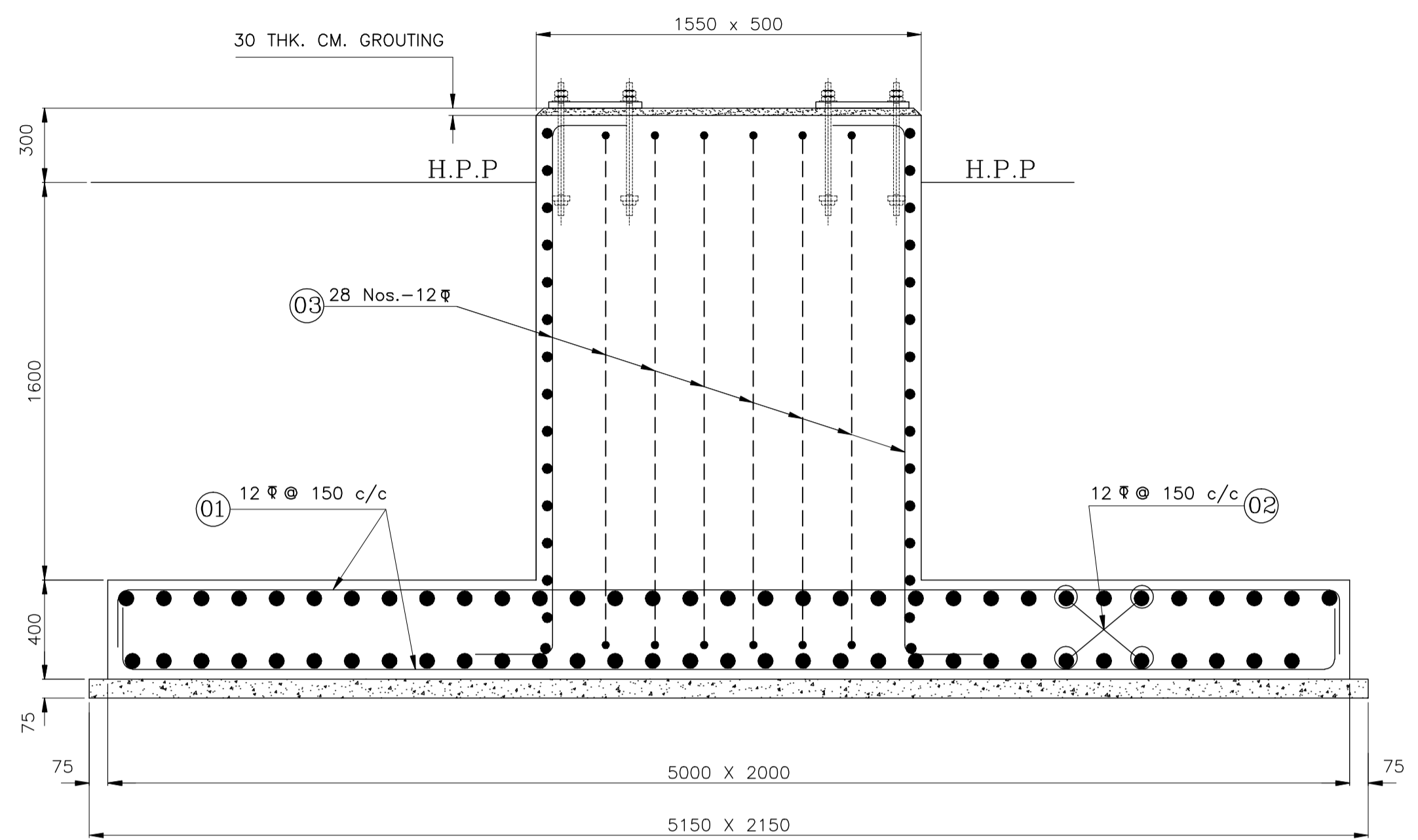
Witness

Notary Public

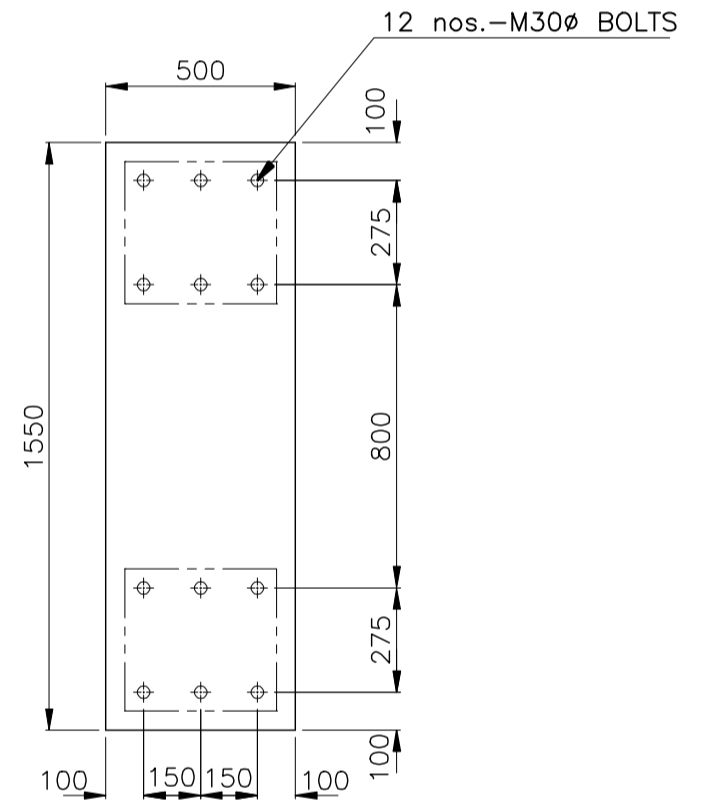
1-35-210-0000



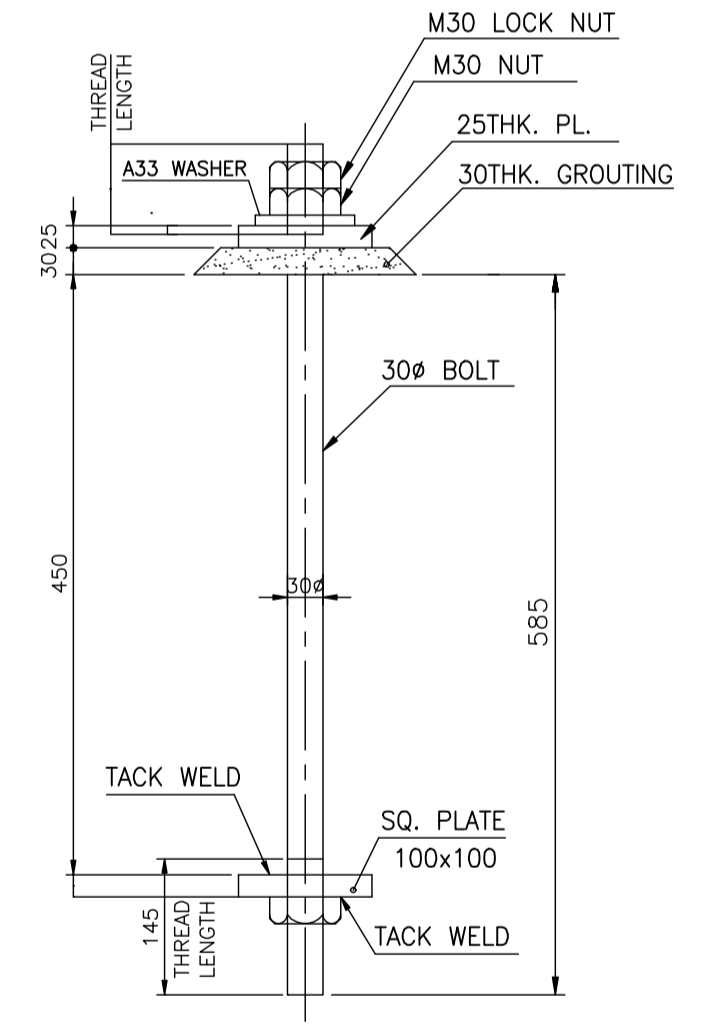
**SECTION A-A**  
FOOTING MKD. F1 (5000 x 2000) (13 NoS. Reqd.)  
PEDESTAL MKD. P1 (500 x 1550) (13 Nos. Reqd.)  
SCALE : 4:1



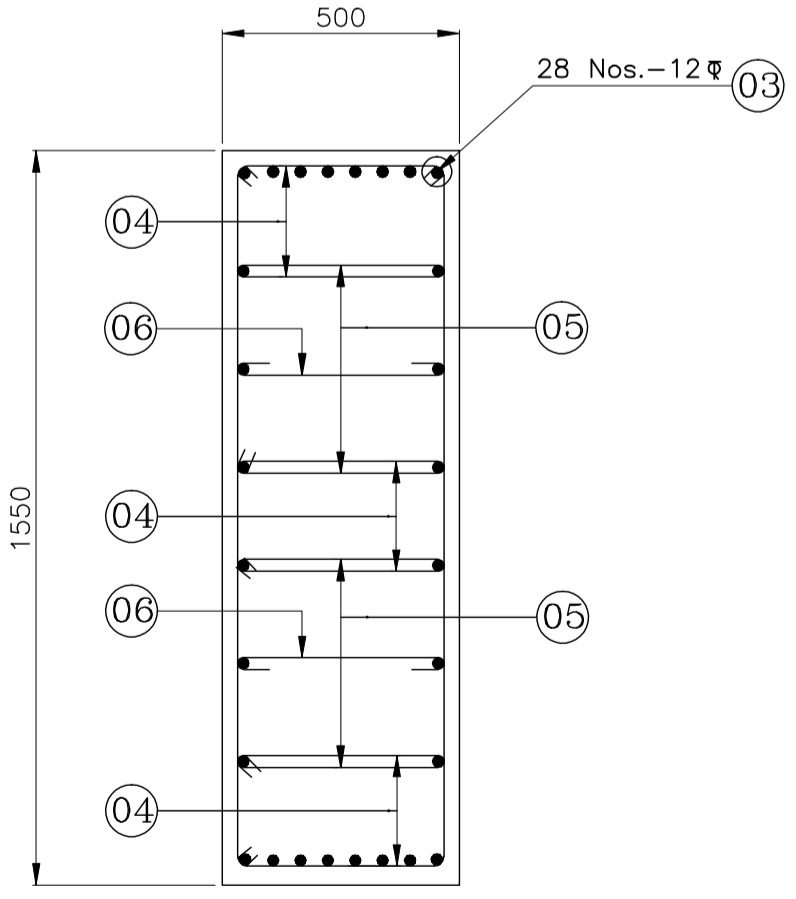
**SECTION B-B**  
SCALE : 4:1



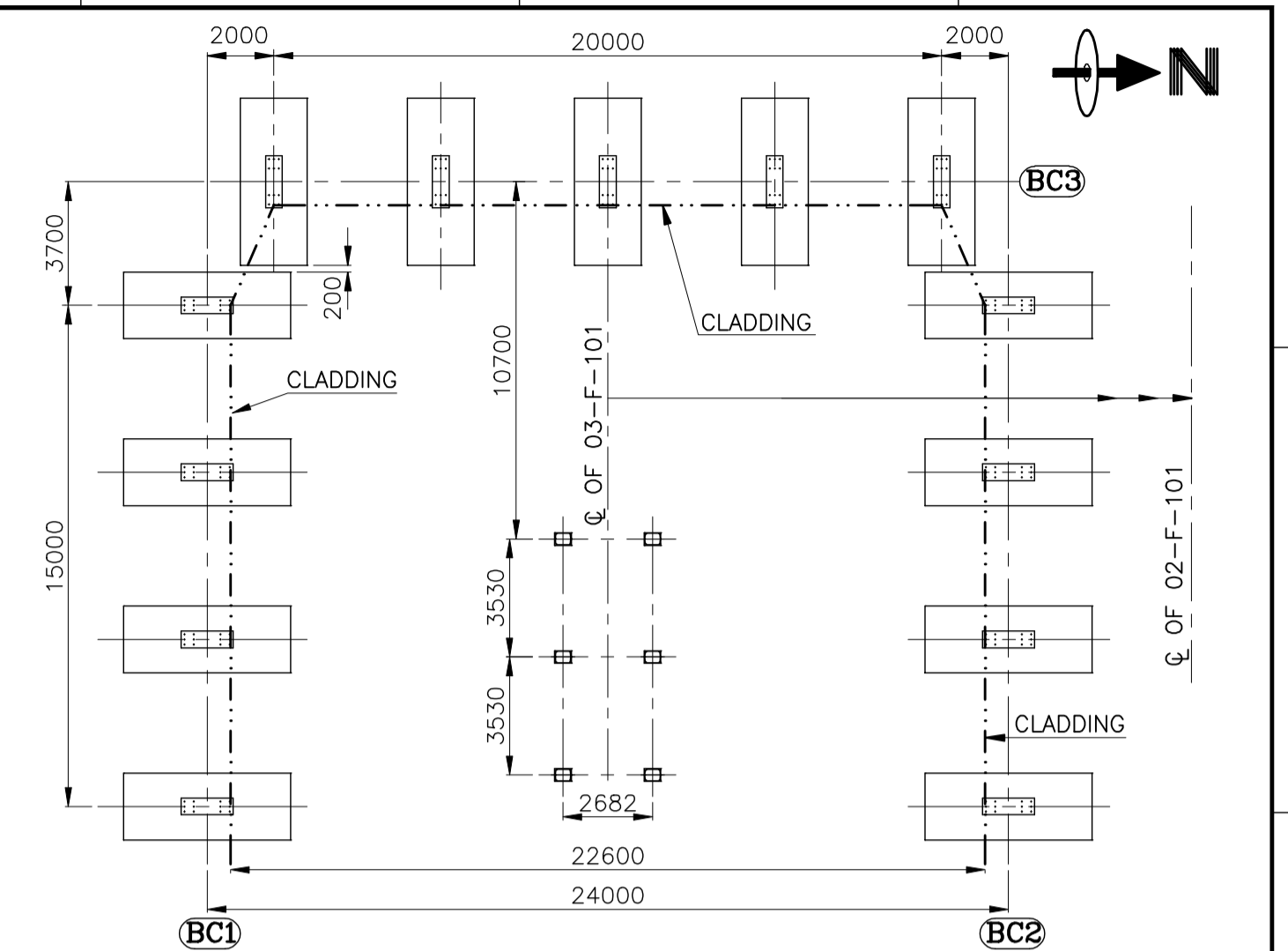
**VIEW 1-1**  
DETAIL OF BOLT POSITION  
SCALE : 4:1



**DETAIL OF FOUNDATION BOLT (M-30)**



**SECTION C-C**  
(ALL LINKS ARE 8 TOR @ 150 c/c)  
SCALE : 5:1

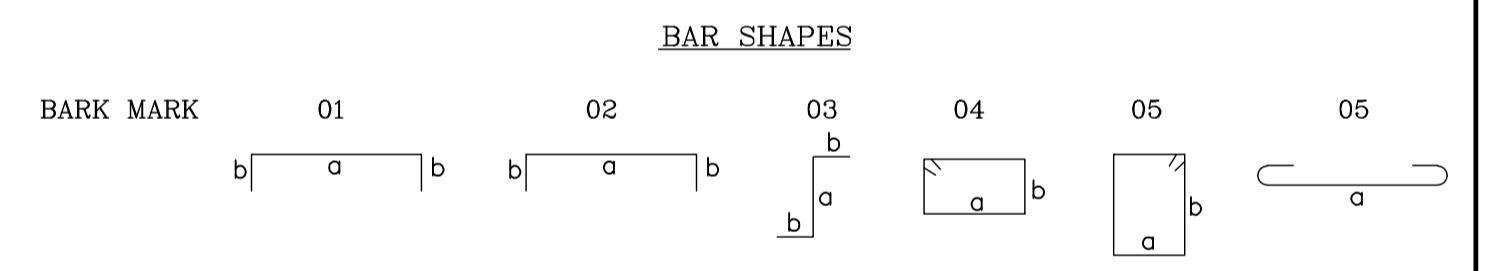


**KEY PLAN FOR BARRICADE FOUNDATION**  
SCALE : 1:2.5

BAR BENDING SCHEDULE									
BAR MARK	BAR DIA IN mm	DIMENSIONS ARE IN mm					CUT LENGTH IN mm.	QTY.	TOTAL LENGTH IN mts.
		a	b	c	d	LAP			
01	12 TOR	4900	300	300	0	0	5428	364	1975.79
02	12 TOR	1900	300	300	0	0	2428	884	2146.35
03	12 TOR	2145	300	300	0	0	2673	364	972.97
04	8 TOR	400	220	0	0	0	1432	585	837.72
05	8 TOR	400	425	0	0	0	1842	390	718.38
06	8 TOR	400	0	0	0	0	656	390	255.84

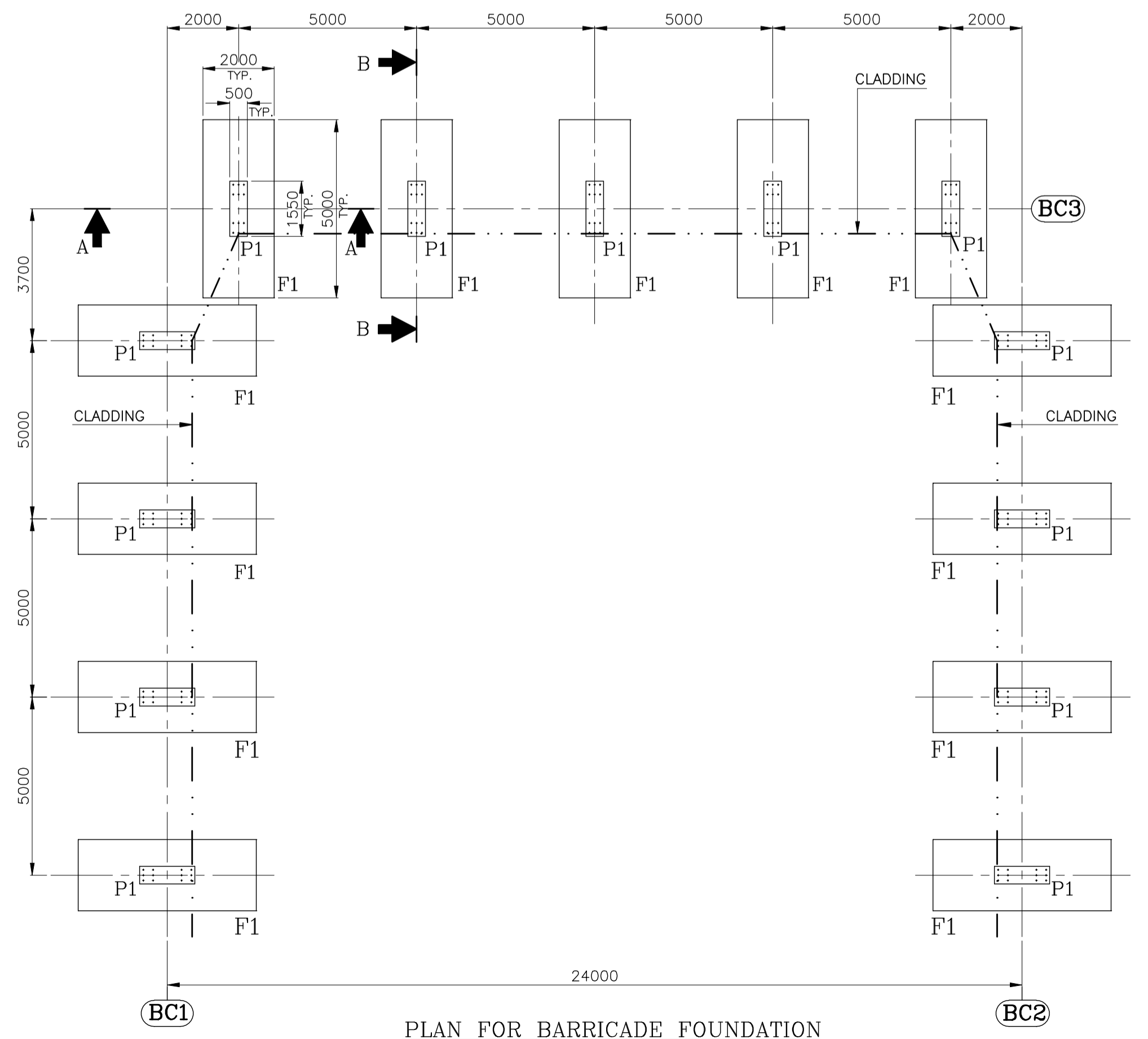
STEEL QUANTITY				
12 TOR				5095.12
8 TOR				1811.94
				<b>714.94</b>
				<b>TOTAL WEIGHT IN Kg</b>
				<b>5238.33</b>

CONCRETE QUANTITY				
GRROUTING	0.30225	POCKETS	0	TOTAL CUM
P.C.C	10.79569			TOTAL CUM
R.C.C	52	18.84025	0	TOTAL CUM
				70.84025



**NOTES:**

- ALL DIMENSIONS ARE IN mm AND LEVELS ARE IN mts.
- ALL CONCRETE WORK SHALL BE WITH M30 GR. CONCRETE AS PER IS:456-2000
- ALL REINFORCEMENT SHALL BE H.Y.S.D BARS CONFIRMING TO IS:1786(LATEST) Gr.Fe415.
- ALL LAPS ANCHORAGE LENGTH SHALL BE 50xDIA OF BAR
- CLEAR COVER TO MAIN REINFORCEMENT:  
FOR FOOTING = 50 mm  
FOR PEDESTAL = 50 mm
- NET SAFE BEARING CAPACITY OF SOIL AT 2.0 m DEPTH BELOW F.G.L IS CONSIDERED TO BE 100 KN/m<sup>2</sup>
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRG. NO. 1-35-210-00002



**PLAN FOR BARRICADE FOUNDATION**  
SCALE : 1:1.5

CUST. No. 4050

M/s. OIL & NATURAL GAS CORPORATION LTD. - NAVAGAM  
FGR HEATER

DRN	A. Subrah	DATE	14.02.2017
CHD	R. Srinivasan		
APPD	S.P.K. Prasad		

DEPT: ALL DIMENSIONS ARE IN MM  
PROJECTION: 1ST ANGLE  
SCALE: 1:76  
WEIGHT (kg): REF TO ASSY / OLD DWG

TITLE: **FOUNDATION DETAILS FOR BARRICADE STRUCTURE**

DRAWING NO: **1-35-210-00001**

REV: **A**

REV NO.	DATE	BRIEF RECORD OF REVISIONS	PPD.	CHD.	APPD.
A	14-02-2017	SUBMITTED FOR INFORMATION			

FORM NO. 0425/2

A1 SIZE

