

TENDER NO. BHEL/NR/SCT/BATHINDA-GGSRP/STORES/548

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TENDER SPECIFICATION

TENDER NO. BHEL/NR/SCT/BATHINDA-GGSRP/STORES/548

FOR

Construction of Site Office, Storage Shed and other infrastructure facilities at 153 MW, CPP, GGSRP, Bathinda, Punjab.

PART I – TECHNICAL BID



भारत हैवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northern Region,
Plot No. 25, Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301. INDIA



ISO 9001-2000, ISO 14001 and
OHSAS 18001 certified company
SubContract and Purchase Deptt.

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Phone: 0120-2515476/ 2416407/ 2515479

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IMPORTANT NOTE

PURCHASER OF THIS TENDER DOCUMENT IS ADVISED TO CHECK AND ENSURE COMPLETION OF ALL PAGES OF TENDER DOCUMENT AND REPORT ANY DISCREPANCY TIMELY FOR CORRECTIVE ACTION, IF ANY, TO THE ISSUING AUTHORITY BEFORE THE BIDS ARE SUBMITTED. ORIGINAL COPY OF TENDER DOCUMENT COMPLETE IN ALL RESPECTS MUST BE SUBMITTED BACK AS PART OF THE BID WITHOUT WHICH THE SAME IS LIABLE TO BE REJECTED BY BHEL.

THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

INDEX

Sl. No.	CONTENTS	PAGE
1.	Tender Notice	04-05
2.	Tender Notice- Newspaper	06
3.	Procedure for submission of tender	07
4.	Project Synopsis	08
5.	General Conditions of Contract (GCC) Sections I and II	Separate file
6.	Section-III Special Conditions of Contract (SCC)	09-42
7.	Annexure-I Indicative list of T&Ps to be arranged by the contractor at his own cost	43
8.	Annexure-II Indicative list of IMTEs to be arranged by the contractor at his own cost	44
9.	Annexure-III Certificate of declaration for confirming the knowledge of site conditions	45
10.	Annexure-IV Non Disclosure Agreement	46
11.	Annexure-V Format for e-payment details	47
12.	Annexure-VI 16 m High Mast Lighting System	48-51



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TENDER NOTICE

Sealed tenders are invited from the contractors fulfilling qualifying requirements for the “Construction of Site Office, Storage Shed and other infrastructure facilities at 153 MW, CPP, GGSRP, Bathinda, Punjab.”

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QUALIFYING REQUIREMENTS:

- 1.0 Tenderer who wish to participate should have carried out during the last seven years:
 - 1.1 One single work of similar nature of around Rs. 160 lacs.
‘OR’
 - 1.2 Two works of similar nature of around Rs. 100 lacs each or of higher contract value.
‘OR’
 - 1.3 Three works of similar nature of around Rs. 80 lacs each or higher contract value.”
- 2.0 Party should also have an average annual turnover of minimum of Rs. 280 Lacs during preceding three years (2004-05, 2005-06 & 2006-07) or (2005-06, 2006-07 & 2007-08)”. The bidders shall submit audited balance sheets in support of this.

NOTES:

- (i) The Tender Documents comprise of following;
 - (a) General Conditions of Contract
 - (b) Special Conditions of Contract, Tender Notice, Project Synopsis etc.
 - (c) Rate Schedule
 - (d) Closed shed and Office layout

TENDER NO. BHEL/NR/SCT/BATHINDA-GGSRP/STORES/548

- (ii) Tender Documents with complete details are hosted in this web page. Bidder(s) intending to participate may download the tender document from the web site. Bidder(s) downloading the tender documents from the web site, shall remit Rs.1,000/- (Rupees One thousand only) in the form of crossed demand draft (non-refundable), in favour of BHEL, NOIDA along with their offer
- (iii) Bidder(s) can also purchase hard copy of tender documents from this office. Tender documents (non transferable) will be issued on all working days between 09.30 Hrs. to 12.30 Hrs within the sale period i.e. **upto 12.09.2008** on payment of Rs.1,000/- (non-refundable) either in cash or by crossed demand draft in favour of BHEL, NOIDA. Request for issue of tender document should clearly indicate Tender No. and work.
- (iii) Tenders must be submitted to the undersigned latest by **12.09.2008** before opening of technical bids commences. Technical bids shall be opened at **15-30 Hrs. on 12.09.2008**.
- (iv) Earnest Money Deposit (EMD): Refundable, Non-interest bearing EMD of **Rs 2,00,000/-** shall be deposited by Account Payee Pay Order 'OR' Demand Draft in favour of "Bharat Heavy Electricals Limited" payable at Delhi/ NOIDA. Those bidders who have already deposited 'One Time 'EMD' of Rs. 2,00,000/- with BHEL, PSNR, NOIDA need not submit EMD with the present tender.
- (v) Tenders not accompanied with Full Earnest Money Deposit, as indicated above, will not be considered.
- (vi) All corrigenda, addenda, amendments and clarifications to this Tender will be hosted in this web page and not in the newspaper. Bidders shall keep themselves updated with all such amendments.
- (vii) BHEL reserves the right to accept or reject any or all tenders without assigning any reason whatsoever.
- (viii) BHEL takes no responsibility for any delay/ loss of documents or correspondences sent by courier/ post.
- (ix) Bids, once submitted, shall not be returned.
- (x) Unsolicited rebate/discount shall not be accepted after bid opening.
- (xi) Purchase Preference will be given to CPSUs as per Govt. Guidelines.

DGM/ SCP



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DOMESTIC NOTICE INVITING TENDER

LAST DATE OF SALE : 12.09.2008

DATE OF OPENING : 12.09.2008

NIT NO. / NAME OF WORK

TENDER NO. BHEL/NR/SCT/BATHINDA-GGSRP/STORES/548

Sealed tenders are invited from the contractors fulfilling qualifying requirements for the “Construction of Site Office, Storage Shed and other infrastructure facilities at 153 MW, CPP, GGSRP, Bathinda, Punjab.”

NOTES

1. Purchase Preference will be given to CPSU as per Govt. Guidelines.
2. Please visit our website at www.bhel.com for details of NIT including Qualifying Requirements.

DGM/ SCP

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Power Sector – Northern Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301.INDIA

PROCEDURE FOR SUBMISSION OF SEALED TENDERS:

The tenderers must submit their tenders as required in two parts in separate sealed covers prominently superscribed as Part-I Technical bid and Part-II ,Price bid also indicating on each of the cover tender specification no., date and time as mentioned in tender notice.

TECHNICAL BID (COVER-I)

Except Price bid Part-II, complete set of tender document consisting of General conditions of Contract, “Technical specification & Special terms and condition” (Part-I) issued by BHEL shall be enclosed in Part I Technical Bid only. All schedules, data sheets and details called for in the specification shall also be submitted along with technical bid. All details/ Data/ Schedules including offer letter duly signed and stamped are to be submitted in duplicate.

PRICE BID (COVER-II)

Tenderers may please note that price bid is to be submitted only in original copy of Tender i.e. Price bid (Part-II) issued by BHEL and no duplicate copy of same is required.

These Two separate covers i.e. cover I & II shall together be enclosed in a third envelope (Cover-III) and this sealed cover shall be superscribed with tender specification No., due date, time and submitted to officer inviting tender as indicated in tender notice on or before due date as indicated.

PROJECT SYNOPSIS

153 MW GURU GOBIND SINGH REFINERIES PROJECT (CPP), BATHINDA OF HPCL MITTAL ENERGY LTD

M/s HPCL - MITTAL Energy Ltd. (HMEL) - Guru Gobind Singh Refineries Project, Bathinda, Punjab has entrusted BHEL to install CCP to meet the Steam & Power requirement of the refinery project of 153 MW – CCPP Comprising of 4X240 TPH UTILITY BOILERS, 2X110 TPH HRSG WITH SF, 2X34.5 MW STG (Db Ext), 1X35 MW STG (Bk Pr), 2XFR-6 GTG & BOP's. The plant is to be engineered, supplied, erected and commissioned on EPC basis by BHEL.

The site is located on NH 64 near Village Gurthui (Bhatinda-Dabwali section), 2 Km away from town of Raman Mandi and 30 Km from Bathinda. Tattangarh (Kanakwall) is the nearest Railway station located about 3 Km from the project. Bhisiana, Bathinda is the nearest Airport, located about 30Km away.

SECTION - III

SPECIAL CONDITION OF CONTRACT

Clause No.	Title
34.0	Scope of Work
35.0	Instruction to Tenderers
36.0	Contractor's Supervision
37.0	Supervisory Staff & workmen
38.0	Tools & Plants / IMTEs
38.0	Material
40.0	Execution of the work
41.0	Methods of measurement
42.0	Deviation
43.0	Valuation of deviation
44.0	Compliance to regulation & bye laws
45.0	Facilities to be provided by BHEL/ Contractor
46.0	Progress reporting
47.0	Drawing & documents
48.0	Delay & Extension of Time
49.0	Price Variation
50.0	Income tax & Sales Tax
51.0	Time Schedule
52.0	Terms of payment
53.0	Rate schedule cum BOQ
54.0	Final Bill
55.0	Liquidated Damages
56.0	Security Deposit
57.0	Others

SECTION-III

SPECIAL CONDITIONS of CONTRACTS

34.0 SCOPE OF WORK

- 34.1 BHEL have been awarded the work of 153 MW –CPP Comprising of 4X240 TPH UTILITY BOILERS, 2X110 TPH HRSG WITH SF, 2X34.5 MW STG (Db Ext), 1X35 MW STG (Bk Pr), 2XFR-6 GTG & BOP's. The plant is to be engineered, supplied, erected and commissioned on EPC basis by BHEL.

The tender specification covers the construction of all works for development of BHEL site office at CPP,GGSRP, BATHINDA, PUNJAB. Work under this tender includes supply & erection of steel trusses, columns etc, AC sheet roofing and false ceiling, steel / wooden door, WBM roads, plumbing, sanitation, sewage, electrical works etc. including supply of all materials, labour, consumables, transportation, sample testing etc.

- 34.2 **(A)**The Scope for construction of BHEL Site Office, Closed stores, Semi closed Stores and open yard at GGSR, Bathinda covers all works for development of structural steel shed (with AC sheet roofing) for BHEL Office & Stores complex at site.This includes Earth work including excavation, filling, compaction, leveling and grading
- Plain & Reinforced cement concrete and Masonry(Full and half brick work)
 - Structural & reinforcement steel work, AC sheet roofing/side cladding & partition work
 - Scaffolding & Formwork
 - Finishing work including plastering, flooring, false ceiling, painting etc.
 - Water supply and Sanitary work.
 - Electrification of Building by providing Incoming cable, Main Distribution Board, Wiring for all installation Light fixtures, power sockets, Exhaust fans, Energy meter Etc
 - Drainage(open and covered)
 - Stone Soling
 - MS gates for Entrance/Exit
 - Road work
 - High Mast Lighting

The scope includes supply of all materials labour, consumables, tools & plants, transportation, storage, sample testing, etc., and any other materials to complete the work.

2. The scope of work will also include such other related works although they may not be specifically mentioned in the above paragraph and all such incidental items not specified but reasonably implied and necessary for completion of the job as a whole

all as desired and as directed by the engineer. The detail scope of work covered above is not a comprehensive list of items of work involved. The detail scope of work may vary considerably depending on the actual construction requirements.

3. Unless otherwise specified, the work to be provided by the contractor for the items mentioned in the "Bill of Quantities", shall include but not be limited to the following:
 - a) Furnishing all labour, materials, supervision, construction plans, equipment supplies, transport, to and from the site, fuel, electricity, compressed air, water, transit and storage insurance and all other incidental items and temporary works not shown on specified but reasonably implied or necessary for the proper completion, maintenance and handling over the works, except in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provided by the engineer during the course of works
 - b) Furnishing samples of all materials required by the engineers for testing / inspection and approval for use in the works. The samples may be retained by the engineer for final incorporation in the works.
 - c) Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.
 - d) Giving all notices, paying all fees, taxes etc. in accordance with the general conditions of contract, that are required for all works including temporary works.
 - e) Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
 - f) Providing all incidental items not shown or specified but reasonably implied or necessary for the successful completion of the work in accordance with contract.
4. The contractor shall be fully responsible for the proper and accuracy layout, alignment, orientation of all elements of the construction work which shall be carried out by him accurately in accordance with drawings and obtaining clarifications from BHEL/Architects if required by him, including for any discrepancy if any, before the work is executed by him. The setting out and the construction work shall be carried out by suitable precision instruments and checked from time to time and got approved. The contractor shall provide all equipment and instruments as required at the site at his own cost.
5. BHEL-Power Sector (NR) is ISO 9001-2000, ISO 14001-1996 and OHSAS 18001-1999 certified company. Quality of work, to customer's satisfaction and system requirements is the essence of these certifications. The contractor in all respects will organize his work, systems, environment, process control documentation, tools,

plant, inspection, measuring and testing equipments etc. as per instructions of BHEL engineer.

The contractor shall also comply with applicable legislation and regulations with regards to Health, Safety and environmental aspects for minimizing risk arising from occupational health, safety hazards, controlling pollution and wastage

B. SITE OFFICE

The office shed shall be developed having the built up area of Approx. 600 Sqm. on land given by BHEL. The layout plan of the office block is attached for reference. The office along with a 5X5 mtr porch on the front side shall be made of Brickwork, truss, bottom ties, wind ties of minimum 25 x 5mm over the roof sheets along the purlins, AC sheets. The foundation is to rest on firm rock/ ground as instructed/ approved by Engineer-in-charge and around 900 mm below existing ground surface. The foundation is to rest over 75 mm PCC on firm rock/ ground as instructed/ approved by Engineer-in-charge. Corrugated AC sheets shall be provided with polymer coated J or L hooks, 8mm nut bolts for roofing with appropriate anchoring, fixing and drainage arrangements. Approved quality Enamel paint shall be used for painting work to MS. The wall above Finished floor level is of brick masonry of 23cm width course, to a height of 3500 mm minimum, in cement mortar 1:6 and plastered with CM 1:5. Below the Finished floor level brick masonry of 46 cm width course, to a depth of 200 mm minimum, in cement mortar 1:6 is to be laid which shall rest on top of PCC 75 mm thick and 600 mm wide. Above 2 brick wide course shall be 1.5 brick wide masonry of height 600 mm and 23 cm wide brick masonry thereafter. The finished floor level of the stores shall be atleast 400 mm above existing ground level. A Damp proof course shall be laid at 350 mm above existing ground level. The main office flooring consists of 100 mm minimum thick PCC over which approved vitrified tiles (600 x 600) are to be laid. The all round walls, of 230mm thick and inside walls (115mm), partitions over a DPC course of CM 1:5 & 40mm thick with water proof compound (1kg per bag of cement), are to be constructed with brick work in CM 1:6 and plastered with CM 1:5, 12 mm thick minimum on both sides, the inside plastered surface is to be distempored with two coats minimum over a priming coat and the outside plastered surface is to be painted with approved snowcem or equivalent cement paint with two coats minimum over a priming coat. The doors and window frames and shutters are to be made of approved M.S. frame as per relevant I.S. Main entrance door shall be of powder coated Al section, pivoted and provide with lock, Al safety grill, handles, etc. The decorative flush door shutters minimum 35mm thick, solid core block board, with both side laminated with thick to 0.8 to 1mm. The windows (1500x1200 or as specified) are of steel shutters double leaved with glass panel of 4mm thick. Frames are to be provided with 12mm MS bars @ 120mm intervals. The door & windows are to be properly fixed with the wall using hold faster of minimum 200mm long. The doors will have flush shutters, with all fixtures like aldrops, tower bolts, handles, locking arrangement, wind stopper etc. and similarly the windows will have fixtures like hook and eye, towel bolts, minimum of two handles,. There will be five ceramic wash basins of approved colour & make ,one at Construction Manager's room, one at Conference hall toilet and others in

general toilet alongwith mirror of size 600 x 450mm minimum, towel rail, soap dish etc. There will be 5 European ceramic water closets of approved colour and make. All required G.I. water lines (min 15mm dia), sewer lines (100mm – 150mm), soak pit of minimum 1.2m dia and depth to suit at site, fixtures required for proper functioning like traps, chambers wall plugs, clamps, screws, (low height fibre made) Flushing cisterns of minimum 5Ltr capacity each. Taps for water wash basins & toilets along soap dish etc. are in the contractor's scope. Contractor to note no fixtures, specials or any material will be given for any work which is required for the completion of works. The pantry is to be provided with kitchen sink and counter with Granite stone top.

The false ceiling shall consist of 12mm thick Gypsum board laid over Aluminium Tees and edge angles at a grid size of 600mm x 600mm with arrangements for lighting fixtures, Fans etc as per instructions.

Wiring for light point, fan point etc. are to be with 1.5 sqmm PVC insulated conductor wire. Wiring for a 3 pin 250 volts 5/15 Amp single phase and neutral switch socket outlet, with 2.5 sqmm PVC insulated conductor wire. The wiring is to be done with good and approved quality PVC tubes of 19mm dia, above false ceiling and PVC channels below false ceiling with double interlock. The fans of size 52 inch and tube light fittings of approved ISI makes are to be provided. The switches are to be modular switches of approved make are to be used. The three phase distribution with three phase energy meter with reqd. ELCB is in contractor scope. All samples are to be got approved by the Engineer-in-charge before the purchase and installation.

One/Two 500 Ltr. PVC Syntax/ Rotax / Polymer make water tanks is to be provided at side of the building with supporting structure of 3.60m height made with 65 x 65 x 6mm and 50 x 50 x 6mm angles duly painted with 2 coats finish paint over a primer coat provided and the required incoming and outgoing water lines to the services with minimum 20mm dia GI pipe, is in the contractor scope only. The incoming GI line is to be laid from nearby water line source (which is feeding surrounding place) up to overhead tanks and one direct line is to be provided in the pantry.

The Plinth level of the building is to be decided at site to suit the site condition by the Engineer-in-charge. The relevant Indian standards are to be followed for all works.

The entire scope of work is with the contractor and BHEL will not provide any material, manpower etc. for the satisfactory completion of work. The decision of the Engineer-in-charge is final and binding.

Covered parking (atleast 5.0x5.0 mtr) shall be provided with tubular columns and purlins and AC sheets. PCC as specified in BOQ shall be done under covered parking, porch and approach road as per drawings. Horticulture work as specified shall be completed.

Incoming supply will be drawn from Identified power source with atleast 3 ½ core 95 Sq. mm Al Cond Armoured PVC insulated cable will be laid underground & on surface duly supported. Suitable size GI pipe is to be provided for Road crossing. Connections at both the ends will be made by suitable size lugs & double compression glands. The minimum depth of the cable shall be 300 mm where no vehicles or equipment movement is there. Whenever the vehicles or equipment movement is there, the depth of cable should be 800 mm or to be provided through GI pipe of suitable size.

C. CLOSED STORE AND SEMI CLOSED STORE SHED

The stores shall be developed on land given by BHEL having the built up area of Approx.2500 Sqm.

Closed Shed (50x12 mtr) - 2 no.
Semi Closed Shed (50x12 mtr) - 2 no.

The Store area shall be cleared of all vegetation, scrap and debris. The stores shall be made of ISMB 150 columns, tubular truss, purlins, side ties, bottom ties, wind ties of minimum 25mm x 5mm over the roof sheets along the purlins, as specified (drawings attached for reference).The working/ shop drgs for Steel structures, trusses, etc shall be got approved before start of work.

The columns are erected with holding down foundation bolts in the RCC 1:1.5:3 (using 20 mm size coarse aggregate) foundation of pedestal size 1200mm high 500x400 mm minimum and raft size 1500x1500x300 mm. The raft is to be provided with a reinforcement of 10mm bars @ 125mm C/C both ways and the pedestal is to be provided with 4 no.16mm & 8 no. 12 mm bar vertically with a minimum 'L' of 200mm and with 8mm stirrups @ 150 C/C. The foundation is to rest over 100 mm PCC on firm rock/ ground as instructed/ approved by Engineer-in-charge. Corrugated AC sheets shall be provided with polymer coated J or L hooks, 8mm nut bolts for roofing and side cladding with appropriate anchoring, fixing and drainage arrangements. Approved quality Enamel paint shall be used for painting work to MS. The wall above Finished floor level is of brick masonry of 23cm width course, to a height of 600 mm minimum in store portion, in cement mortar 1:6 and plastered with CM 1:5. Below the Finished floor level brick masonry of 23 cm width course, to a depth of 700 mm minimum, in cement mortar 1:6 is to be laid which shall rest on top of 230 x 300 mm plinth beam (5- 16 mm dia bars and stirrups 8 mm @ 200 mm c/c). The base course under plinth beam shall be PCC 100 mm thick and 400 mm wide. The top of the plinth beam shall be 300 mm below the existing ground level. The finished floor level of the stores shall be atleast 400 mm above existing ground level.The Store flooring consists of raising the Ground level by filling good earth and 100 mm PCC over which approved hardened CC flooring is to be laid, as specified. The extended outside portion is of 750 mm wide plinth protection as specified. Extended roofing shall also be provided as per the instructions of the Engr. I/C. Sliding shutters (5.0x 5.0 mtrs) complete with all guides, rollers, anchors, etc shall be provided. The inside store plastered surface is to be white washed with two coats minimum. Outside plastered area shall be provided with cement based paint of approved shade, colour and make. Contractor to note no fixtures, specials or any material will be given for any work which is required for the completion of works. Average 300 mm deep and 300 mm wide drains shall be constructed along the plinth if directed by the Engr I/C.

It is proposed to electrify the closed shed as follows:

4 Nos HPSV flood light fittings with lamps of 250 W with Choke & accessories etc. each to be provided on top of each store shed with 2 mtrs. height rigid GI pole provided with adequate brackets for mounting the flood lights and tie rods duly grouted or welded to permanent structure. Two lights should be provided with independent MCB switch.

The connection to all HPSV fittings is to be provided by 2.5 Sq. mm PVC insulated copper conductor in PVC conduit for fittings mounted on store shed.

Providing 15/5Amps Single phase socket and 20Amps – 3 phase socket as per instructions.

Providing pedestal fan & air circulator & heavy duty exhaust fan as per instructions.

Providing common main panel to cater requirement of all total layout, laying incoming cable for the above panel from the outside nearest source, providing feeder panel, lights & sockets requirement etc., laying interconnecting panel between common main panel and feeder main panel, providing MCB distribution board to cater lights, sockets & fans requirement.

Providing earth electrode and earth conductors as per requirement.

The scope of work has to be completed in all the manner to meet the functional requirement thereby to commission the system as a whole.

All the material used to be approved by Engineer-in-charge and in case of non-availability of approved make of material, BHEL Engineer-in-charge is authorized to substitute the same.

D. STORAGE YARD AND ROADS

The Storage yards and roads shall be developed on land given by BHEL having the built up area of Approx. 75000 Sqm. Storage Yard shall be of Grid structure intercepted by the road network and drains.

There shall be 1 no. 6.0 mtr wide 1.5 mtr high entrance/exit gates of MS built up welded tubular and box sections as required and. Near the entrance/exit gate there will be 2.7X2.7 mtr security sheds. The Gates shall be complete with bottom rails, locking arrangement, etc. as per instructions of the Engineer I/C.

The entire storage yard is to be leveled first by making good the undulations, watered, compacted and rolled with road rollers to required slope (1: 300) towards the drains so that no waterlogging is present. The road area, subgrade shall be prepared after dressing to camber and consolidation with 8-12 T Road rollers, over which 150mm water bound macadam is to be laid with stone aggregate 63 mm to 45 mm, stone screenings, moorum, red bajri, binding earth etc and is to be compacted and rolled with road roller. The road surface shall be atleast 100 mm above the compacted yard area and appropriate approaches shall be to made to Closed and open storage areas from the roads. The internal road of storage yard is to be

connected with existing approach road. This is in the contractor's scope. The roads and storage yard as per sketch will have proper slope for proper drainage. Open and covered PCC/Brick drains as specified shall be provided and terminated at Existing drains as per the attached sketch for proper and sufficient rainwater drainage.

Contractor to note no machinery, tools & plants, material, manpower shall be provided by BHEL.

E. MAST LIGHTING

16 mtr high mast lighting of approved make shall be provided at specified locations for electrification of open yard area. Annexure for Mast lighting specifications is attached. Power cable of atleast 3.5x50 sqmm shall be laid from the power source to the mast lights as specified.

F. APPROVED MAKE OF MATERIALS

- | | | | |
|----|---|---|--|
| 1. | STRUCTURAL/REINF. STEEL | : | SAIL
TATA
RATHI |
| 2. | CEMENT | : | ACC
BIRLA
JAYPEE |
| 3. | ENAMEL PAINTS | : | JOHNSON & NICHOLSON
BERGER
ICI
ASIAN PAINT
NEROLAC |
| 4. | GI & MS PIPES | : | SURYA,
PRAKASH
JINDAL-HISSAR
TATA |
| 5. | LT CABLES: | | |
| | SINGLE CORE COPPER CONDUCTOR
1100 V GRADE PVC/ FRLS
CABLES (STANDARD/FLEXIBLE): | | |
| a) | PVC INSULATED WIRES : | | FINOLEX/ BATRA HENLAY/
RALLISON/POLYCAB |
| b) | FRLS INSULATED WIRES | : | FINOLEX BATRA HENLAY/
RALLISON/POLYCAB |

- c) ARMOURED LT CABLES : NICCO/ BATRA HENLAY/ RALLISON/
PVCAA-IS-1554 (PART-I) POLYCAB
XLPE-IS-7098 (PART-I)

6. ELECTRICAL ACCESSORIES

- a) SWITCHES AND SOCKETS: ANCHOR, MK, LK
(MODULAR TYPE SWITCHES)

7. ELECTRICAL EQUIPMENT:

- a) EXHAUST FANS : ALSTOM / CROMTON/ GC/ Nutech
b) LIGHT FITTINGS : CROMPTON/PHILIPS /WIPRO/BAJAJ
c) WALL MOUNTING FANS : ORIENT/ CROMPTON/ GC/USHA
d) CFL & FL LAMPS : PHILIPS/ OSRAM/WIPRO/BAJAJ
e) KWH METERS ETC : BHEL/ GE/ L&T /HAVELS
f) MCBs & MCB DBs (10 KA) : MDS/ L&T-HAGGER/ HPL/ HAVELS
EURO
g) EARTH LEAKAGE CIRCUIT: MDS/ L&T-HAGGER/ HPL/
BREAKER HAVELS EURO

Note: Approval of BHEL engineer is to be obtained before procurement of materials specifies above. The make of material mention if not available in the market or is not suiting the site condition & the make of material not mentioned in the above list, equivalent make may be used after the approval from BHEL engineer. The scope of work shall generally include but not limited to the construction of the following. The contractor is required to carry out all the items indicated in the BOQ cum rate schedule.

The Contractor is required to cut / relocate some of the existing plants / trees and to implant and maintain at least **50 new plants/ trees and land scalping with flowers** etc. of approximately 100 Sq. M of assorted type at BHEL office or around within first month of the contract and maintain it till the tenure of the contract. No separate payment will be made for this work.

- 34.3 The work to be performed under this specification consists of providing labour, supervision, all materials (except those to be issued by BHEL as free issue items), scaffoldings, Construction equipment, tool & plants, supplies, transportation and storage of all items including such items which are not shown or specified but reasonably implied or necessary for successful completion of work including contractor's supervision and in accordance with drawings and specifications.

- 34.6 The work under this contract shall be carried out as per BOQ Cum Rate Schedule. In case the description/ specifications as per BOQ are found to be incomplete CPWD specifications shall be followed. Quantities mentioned in the rate schedules are approximate only and liable for variation due to change of scope of work / variation in schedule of quantities, changes in design etc. The tenderers shall undertake to execute actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out on the basis of quantities actually erected at site and payments will also be regulated for the same. The quantities indicated against each item may vary to any extent and no compensation will be payable in variation of Individual quantity. **However, in case of overall reduction in contract value beyond 30%, the contractor will be eligible for compensation as per the following provision:**

“The actual executed value shall be raised by 10 % subject to the condition that the total value of work executed plus increase as above shall be limited to 70 % of the awarded contract value”

Contractors are required to take above into account while quoting. The contractor confirms that unit rates quoted above takes care of such variation during execution stage.

34.7 Health, Safety & Environment management (HSE)

- 34.7.1 BHEL-Power Sector (NR) is ISO 9001-2000, ISO 14001-1996, OHSAS 18001-1999, ISO 27001 and SA-8000 certified company. Quality of work, to customer's satisfaction and system requirements is the essence of these certifications. The contractor in all respects will organize his work, systems, environment, process control documentation, tools, plant, inspection, measuring and testing equipments etc. as per instructions of BHEL engineer.

The **Contractor will be responsible for Health, Safety & Environment management (HSE) at site for the construction activities to be carried out by them in accordance with requirements given under section I (a) of GCC and elsewhere in this tender document. The contractor, who is awarded the work, shall have to sign an MOU w.r.t implementation of HSE conditions with BHEL.** Contractor shall ensure **deployment of Qualified & Experienced Safety Engineer / Officer** at site. **The Contractor shall be fully responsible for accidents caused due to him or his agents or workmen's negligence or carelessness in regard to the observance of the safety requirements and shall be liable to pay compensation for injuries.**

Contractor shall submit a HSE plan as per prevailing codes /practices as applicable to refineries and acceptable to HMEL.

The Contractor shall adhere consistently to all provisions of HSE requirement. **In case of non compliance or repeated failure in implementation of the HSE provisions BHEL/EIL/HPML may impose stoppage of work without any cost & time implication to the Owner and /or impose a suitable penalty. The amount of penalty to be levied shall be up to cumulative limit of 0.2% of the contract value limited to ceiling of Rs.1,00,000/=**

TENDER NO. BHEL/NR/SCT/BATHINDA-GGSRP/STORES/548

The amount of penalty applicable on different types of HSE violations is specified below:

SL.No	Voilation of HSE norms	Penalty Amount
1	For not using PPE	Rs.250/-per day/Item/Person
2	Working without Work Permit/clearance	Rs.5000/-per occasion
3	Unsafe Electrical	Rs.3000/- per item/day
4	Working at height without full body harness Using non standard /rejected scaffolding and Not arranging fall protection arrangement as Required like Safety Nets.	Rs.3000/-per case per day
5	Unsafe handling of compressed gas cylinders (No trolley, jubilee clips double gauge regulator, Improper storage/handling.)	Rs.100/-per Item per day
6	Use of domestic LPG for cutting purpose.	Rs.1000/-per occasion
7	No fencing/barricading of excavated areas	Rs.1000/-per occasion
8	Not providing shoring/strutting/proper slope and not keeping the excavated earth at least 1.5M away from excavated area	Rs.5000/-per occasion
9	Non display of caution board, list of hospitals, emergency services available at work location.	Rs.500/-per occasion
10	Traffic rules violation	Rs.1000/-per occasion
11	Failure to maintain safety records by contractor safety person.	Rs.1000/-per month
12	Failure to conduct daily site inspection, HSE	Rs.1000/-per month
13	Failure to submit the monthly HSE report by 5th of subsequent month to Engineer-in-Charge.	Rs.5000/-per occasion And 100/-per day for further delays
14	Poor House Keeping	Rs.1000/-per occasion
15	Failure to report & follow up accident (including near miss) reporting system.	Rs.10000/-per occasion
16	Degradation of environment (not confining toxic spills, spilling oil/lubricants onto ground.	Rs.1000/-per occasion
17	Not medically examining the workersbefore allowing them to work at height,not providing ear muffs while allowing them to work in noise polluted areas , made them to work in air polluted areas without respiratory protective devices,etc.	Rs.1000/-per occasion
18	Voilation of any other safety condition as per job HSE plan, work permit and HSE conditions of contract (using crowbar on cable trenches, improper welding booth, not keeping fire extinguisher ready at hot work site, unsafe rigging practices, non-availability of First-Aid box, etc.)	Rs.1000/-per occasion
19	Any violation not covered above.	To be decided by BHEL/EIL/HMEL

34.7.2 Besides provision with regard to SAFETY under Clause 27 of GCC, the contractor will be responsible for Health, Safety & Environment management at site for the construction activities to be carried out by them in accordance with requirements **given under section I(a) of GCC of this document**. The contractor shall continuously take special care to ensure the safety and prevention of human and equipment accidents and maintain good sanitary conditions in and around the site. All the construction work and plant operation must be carried out in the safest possible manner. The Engineer reserves the right to stop any process which, in the Engineer's opinion, is being performed dangerously. In this case the contractor must immediately adhere the requisite safety precautions and any delays attributed to the work stoppage on this account shall not affect the agreed contractual finishing dates.

The contractor shall appoint dedicated full-time Qualified Safety Officers who shall have full authority to ensure that all necessary safety precautions are observed by the Contractor's employees and sub-contractors. These appointees shall have full responsibility for the safety of all personnel within the contractor's area of the works.

34.7.3 Some of the common safety rules to be followed during working are as follows:-

- No body is allowed to enter at construction site without Safety Shoe.
- Never enter work area without Safety helmet & chin strap in place.
- No climbing/working allowed without proper safety belt above 2 m. height.
- Do not exceed the speed limit 25 Kmph within premises.
- No debris obstacles allowed on the roads & passages.
- Do not walk on pipelines or false ceiling.
- Maintain good Housekeeping at work site.
- No photography/ Videography allowed without permission
- All Site supervisors & engineers (including subcontractors) must be imparted structured training on construction safety before start of the job & record to be maintained.
- Availability of qualified & trained Site Engineer at site during all working hours.
- Site Safety training to be imparted to all workers & plan to be made to cover every worker.
- Tools box talk (5-15 minutes) by supervisor prior to commencement of any job.
- All accident/ incidents(Near Miss) to be reported & investigated.(formats & procedure should be finalized)
- Daily Safety Checking by Each Site Engineer along with Safety engineer.
- Weekly co-ordination meeting of all Safety engineers with BHEL safety officer.
- Monthly safety meeting with Site In-charges.
- All Safety equipment must be ISI marked & checked by Safety officer before use.
- Tag system for erection & use of scaffoldings.
- Bamboo/wooden Scaffolding material not allowed.

- LPG cylinders not allowed for gas cutting.
- Good House keeping. Separate waste bins to be used for flammable & non flammable material.
- Safety awareness programs for workers by display of boards, posters, competitions, talks etc.
- Deployment of Safety Supervisors for every 250 workers and part there of at work site.
- Display of List of First Aid trained persons.
- Testing certificates for lifting tools & tackle.
- Provision & maintenance of fire extinguishers at construction site & material stores.
- Display of emergency telephone numbers at various locations.
- For work in confined space use 24 V lamp fitting & use tools with air motors or electric tools with max. 24 V.
- For confined space entry Gas test must be done before & at regular intervals.
- Checking & tag of equipment like grinding machine, welding machine, gas cutting set etc. by supervisors before use.

34.7.4 Contractor shall ensure following:

1. Contractor has to maintain contact with local hospital having ambulance facility , scanning & other ultra modern medical facilities required during emergency.
2. Contractor has to ensure pre employment medical check for all staff & workers.
3. Contractor has to ensure availability of adequate First Aid facilities with trained Nurse.

34.7.5 The amount towards penalties as above will be deducted from running bills of the Contractor. The amount so collected above will be utilized for supporting the safety activities at site. The decision of BHEL on above will be final and binding on the Contractor.

34.7.6 The contractor shall comply with following towards Social Accountability;

- (a) The contractor shall not employ any employee less than 15 years of age in pursuant to ILO convention. If any child labour were found to have been engaged, the Contractor shall be levied with expenses of bearing his education expenditure which will include stipend to substantiate appropriate education or employ any other member of family enabling to bear the child education expenditure.
- (b) The contractor shall not engage Forced/ Bonded Labour and shall abide by abolition of Bonded Labour System (Abolition) Act, 1976.
- (c) The contractor shall maintain Health & safety requirement as stipulated in the Contract and Contract Labour (Regulation & Abolition) Act, 1970.
- (d) The Contractor shall abide by UN convention w.r.t Human Rights and shall be liable for Discrimination/ Corporal punishment for failure in meeting with relevant requirements.
- (e) The Contractor shall abide the requirement of Contract Labour(Regulation & Abolition) Act,1970 for working hours.

- (f) The Contractor shall abide by the Statutory requirement of Minimum Wages Act 1948, payment of Wages Act 1936.
- (g) The Contractor shall arrange potable drinking water to its employees & workers.

35.0 INSTRUCTIONS TO TENDERERS

- 35.1 The tenderers are advised to physically visit the site and fully acquaint themselves with site conditions, transportation routes, various distances and the fact that other contractors would be working in this area their structures are to be protected. The material brought and stacked for construction should not make hindrance to other contractors. Necessary precaution and arrangements including sprinkling of water during work as acceptable to BHEL for safety & security for the above have to be made by the contractor. No claim will be entertained by BHEL on ground of lack of knowledge and the contractor's rates shall be deemed to have taken this into account.
- 35.2 The contractor, in the event of this work awarded to him, shall establish a office at site and keep posted an authorised, responsible officer with valid Power of Attorney for the purpose of the contract. Any order or instructions of the 'BHEL Engineer' or his duly authorised representative, communicated to the contractor's representative at site office will be deemed to have been communicated to the contractor at his legal address.

36.0 CONTRACTOR'S SUPERVISION

- 36.1 The Contractor shall either himself supervise the execution of the Contract or shall appoint a competent Engineer/ agent approved by the BHEL Engineer to act in his stead.
- 36.2 The Contractor shall employ an Engineer/ Agent having atleast a 'Degree of Bachelor in Civil Engineering' from a recognised university (for any work with a contract value exceeding Rupees Twenty Lacs) or having atleast a 'Diploma in Civil Engineering' from a recognised college (for work with a contract value exceeding Rs.Two lacs but not exceeding Rupees 20 Lacs).
- 36.3 The employment of an Engineer/ Agent as aforesaid shall not be necessary if the Contractor himself is in possession of a recognised technical qualification and is in the opinion of the BHEL Engineer capable of receiving instructions of the BHEL Engineer and of executing the work to the satisfaction of the BHEL Engineer.
- 36.4 If the Contractor fails to appoint a suitable Engineer/ Agent as aforesaid, the BHEL Engineer shall have full powers to suspend the execution of work and stop payment of any money that may have become due until such date as a suitable Engineer / Agent is appointed and the Contractor shall be held responsible for the

delay caused to the work and no extension of time on this account shall be given to him.

- 36.5 Orders given to the Contractor's Engineer / Agent shall be considered to have the same force as if they had been given to the Contractor himself.
- 36.6 The Contractor or his Agent shall be in attendance at the site during all working hours and shall supervise the execution of work with such additional assistance in each grade as the BHEL Engineer may consider necessary.
- 36.7 The Contractor or his accredited Agent shall attend, whenever required and without making any claim for doing so, either the office of the BHEL Engineer or the work site to receive instructions.
- 36.8 The BHEL Engineer shall have full powers to instruct the Contractor to arrange for immediate termination of services, in connection with this contract, of any Agent, servant or employee whose continued employment is, in his opinion, undesirable, without assigning any reason.

37.0 SUPERVISORY STAFF AND WORKMEN

- 37.1 The contractor shall deploy all the experienced skilled, semiskilled and unskilled workmen required for all the works under these specification. BHEL reserves the right to decide on the suitability of the workers and other personnel who will be deployed by the contractor. BHEL reserves the right to insist on removal of any employee of the contractor at any time, if they find him unsuitable and the contractor shall forth with remove him.
- 37.2 The supervisory staff including qualified Engineers deployed by the contractor shall ensure proper out-turn of work and discipline on the part of the labour put on the job by the contractor and in general see that the works are carried out in a safe and proper manner and in coordination with other labour and staff deployed directly by BHEL or other contractors of BHEL / BHEL's Client / other agency.
- 37.3 The work shall be executed under the usual conditions like rain, insufficient space, improper approach roads etc., effecting major construction work and in conjunction with numerous other operations at site. The contractor and his personnel shall cooperate with other personnel / contractor, coordinating their work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 37.4 The contractor's supervisory staff shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and aesthetic finish are essential part of this contract. The contractor shall be responsible to ensure that assembly and workmanship conform to the dimensions and tolerances given in the drawings / documents / instructions given by BHEL Engineer from time to time.

- 37.5 It is the responsibility of the contractor to engage his workmen in shifts or on overtime basis for achieving the targets set by BHEL. The contractor's finally accepted rates shall include all these contingencies.
- 37.6 During the course of construction, if the progress is found unsatisfactory, or in the opinion of BHEL, if it is found that the skilled workmen like masons, carpenter, bar binder, welder, piling rig operators, fitters, technicians etc. deployed are not sufficient, BHEL after giving reasonable opportunity to the contractor, will induct on the work the required workmen in addition to contractor's workmen to improve the progress and **shall recover additional cost from the contractor's bills as per BHEL norms.**
- 37.7 If the contractor or his workmen or employees shall break, deface, injure or destroy any part of a building, road kerb, fence, enclosure, water pipes, cables, drains, electric or telephone posts or wire, trees or any other property or to any part of erected components etc., the contractor shall make the same good at his own expense or in default, BHEL may cause the same to be made good by other workmen or by other means and deduct the expenses (of which BHEL's decision will be final) from any money due to the contractor.
- 37.8 **The monthwise manpower deployment plan to be submitted as per format (at Annexure-C to General Conditions of Contract) is only to assess the capability as well as understanding of the contractor to execute the work.** It shall be the contractor's responsibility to deploy the required manpower, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan (including those which are not covered in the plan submitted) without any compensation on this account.

38.0 TOOLS AND PLANTS / IMTEs

- 38.1 All the T&Ps and IMTEs (Inspection Measuring and Testing Equipment) required for successful and timely execution of the work covered within the scope of this tender, shall be arranged and provided by the contractor at his own cost in working condition. In the event of the failure of contractor to bring necessary and sufficient T&Ps/ and IMTEs, BHEL will be at liberty to arrange the same at the risk and cost of contractor including transportation cost of same from any of BHEL site/place and hire charges as applicable shall be deducted from contractor's bill. Decision of BHEL in this regard shall be final and binding on contractor.
- 38.2 All distribution boards, connecting cables / welding cables, wire ropes, hoses etc. including temporary air / water/ electrical connections etc. shall have to be arranged by the contractor at his own cost.
- 38.3 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.

- 38.4 Contractor shall ensure deployment of serviced and healthy T&Ps including cranes, lifting tackles, wire ropes, Manila ropes, winches and slings etc. as per the site requirement. 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. Identification for such T&Ps will be done as per BHEL Engineer's advice.
- 38.5 Contractor shall ensure deployment of reliable and calibrated IMTEs (Inspection measuring and Test equipment). The IMTEs shall have test/ calibration certificates from authorised / Govt. approved / accredited agencies traceable to National / International standards. Each IMTE 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.
- 38.6 Retesting / re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer with in the contract price. The contractor will also have alternate arrangements for such IMTE so that work does not suffer when the particular instrument is sent for calibration. Also if any IMTEs 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 i.e. repeat the readings taken by that instrument, failing which BHEL may deploy IMTEs and retake the readings at contractor's cost.
- 38.7 BHEL shall have lien on all T&PS, IMTEs & 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. No material brought to the Site shall be removed from the Site by the Contractor and/or his Sub-contractors without the prior written approval of the Engineer.
- 38.8 The monthwise T&P deployment plan to be submitted as per format (at Annexure-D to general conditions of contract) is only to assess the capability as well as understanding of the contractor to execute the work. It shall be the contractor's responsibility to deploy the required T&P, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan (including those which are not covered in the plan submitted) without any compensation on this account.

39.0 MATERIALS

- 39.1 The contractor shall, at his own expenses (Inclusive of Taxes), provide all materials required for the work.
- 39.2 All stores and materials to be provided by the Contractor shall be of the best kind in conformity with the specifications laid down in the contract or as per relevant Indian standard and the Contractor shall, if requested by the BHEL Engineer, furnish proof to the satisfaction of BHEL Engineer that the materials so comply.

- 39.3 The Contractor shall, at his own expense and without delay, supply to the BHEL Engineer samples of materials proposed to be used in the works. The BHEL Engineer shall within seven days of supply of samples or within such further period as he may require will intimate to the Contractor in writing, whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the BHEL Engineer for his approval fresh samples complying with the specifications laid down in the Contract. Any delay in approval of samples (original or fresh ones) shall not make the contractor eligible for any compensation.
- 39.4 The BHEL Engineer shall have full powers for removal of any or all of the materials brought to site by the Contractor which are not in accordance with the Contract specifications or do not conform in character or quality to samples approved by him. In case of default on the part of the Contractor in removing rejected materials, the Engineer shall be at liberty to have them removed by other means. The BHEL Engineer shall have full powers to procure other proper material to be substituted for rejected materials and in the event of the Contractor refusing to comply, he may cause the same to be supplied by other means. All costs, which may attend upon such removal and / or substitution shall be borne by the Contractor.
- 39.5 The Contractor shall indemnify BHEL, its representatives or employees against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties or other charges which may be payable in respect of any article or material or part thereof included in the Contract. In the event of any claim being made or action being brought against BHEL or any agent, servant or employee of BHEL in respect of any such matters as aforesaid, the Contractor shall immediately be notified thereof, provided that such indemnity shall not apply when such infringement has taken place in complying with the specific directions issued by BHEL but the Contractor shall pay any royalties or other charges payable in respect of any such use, the amount so paid being reimbursed to the Contractor only if the use was the result of any drawings / specifications issued after submission of the tender.
- 39.6 The BHEL Engineer shall be entitled to have tests carried out as specified in the Contract for any materials supplied by the Contractor other than those for which, as stated above, satisfactory proof has already been furnished, at the cost of the Contractor and the Contractor shall provide at his expense all facilities which the Engineer may require for the purpose. If no tests are specified in the Contract, and such tests are required by the Engineer, the Contractor shall provide all facilities required for the purpose and the charges for these tests shall be borne by the Contractor only. The cost of materials consumed in tests shall be borne by the Contractor in all cases except when otherwise provided.

- 39.7 In addition, the Contractor shall perform / submit at his own cost such tests / samples as may be required by the BHEL Engineer out of the materials used by the company except for the costs of materials used in such tests/ samples.
- 39.8 After acceptance of the Contract, if Contractor desires BHEL to supply any other materials, such material may be supplied by BHEL, if available, at rates to be fixed by the BHEL Engineer along with prevailing departmental charges (current rate of 30%). BHEL reserve the right not to issue any material. The non issue of such material will not entitle the Contractor for any compensation whatsoever either in time or in cost.
- 39.9 Material required for the works, whether brought by the Contractor or supplied by BHEL, shall be stored by the Contractor only at places approved by the Engineer. Storage and safe custody of material shall be the responsibility of the contractor.
- 39.10 BHEL's officials concerned with the Contract shall be entitled at any time to inspect and examine any materials intended to be used in or on the works, either on the Site or at factory or workshop or other place(s) where such materials are assembled, fabricated, manufactured or at any place (s) where these are lying or from which these are being obtained and the Contractor shall give such facilities as may be required for such inspection and examination.
- 39.11 All materials brought to the Site shall become and remain the property of BHEL and shall not be removed off the Site without the prior written approval of the Engineer. But whenever the Works are finally completed and advance, if any, in respect of any such material is fully recovered, the Contractor shall at his own expense forthwith remove from the Site all surplus material originally supplied by him and upon such removal, the same shall re-vest in and become the property of the Contractor.
- 39.12 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 / TIG wires. 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 No., date of expiry etc. and produce test certificate for each lot / batch with correlation of batch/ lot no. with respective test certificate. No electrode will be allowed to be used without valid test certificate.
- 39.13 All charges on account of Octroi, terminal or sales tax and other duties on material obtained for the works from any source shall be borne by the contractor.

40.0 EXECUTION OF WORK

- 40.1 The work shall be executed in a workman like manner and to the entire satisfaction of the Engineer and as per technical specification issued with tender , IS codes,

CPWD specifications as applicable. In case of conflict, the decision of the BHEL Engineer shall be final & binding.

- 40.2 The BHEL Engineer will communicate or confirm his instructions to the Contractor in respect of the execution of the work in a "Work Site Order Book" maintained at his office and the Contractor shall visit this office daily and shall confirm receipt of such instructions by signing the relevant entries in this book. Such entries will rank as order or notices in writing within the intent and meaning of these conditions.
- 40.3 Only BHEL approved make of electrodes will be used. All electrodes shall be heated and dried in the electric electrode drying oven to the required temperature for the period specified by the BHEL Engineer before these are used in erection work. All welders shall have electrodes drying portable oven at the work spot. The electrodes brought to site will have valid manufacturing test certificate. The test certificate will have co-relation with the lot no. / batch no. given on electrode packets. No electrodes will be allowed to be used in the absence of above requirement. The thermostat and thermometer of electrode drying oven will be also calibrated and test certificate from Govt. approved/ accredited test house traceable to National / International standards) will be submitted to BHEL before putting the oven in use. Periodical calibration for the same shall also be arranged by the contractor within the finally accepted rates.

40.4 SETTING OUT

- 40.4.1 All the works shall be set out to the true lines, grades and elevation indicated on the drawing. The contractor shall be responsible to locate and set out the works. Only one grid reference line and bench mark shall be made available for setting out the works under the contract. This reference lines shall be used as datum for the works under the contract and the contractor has to establish for his work area at available points horizontal and vertical control points. The contractor shall inform BHEL well in advance of the times & places at which he wishes to do work in the area allotted to him so that suitable datum points established by him are checked by BHEL / Customer to enable the contractor to proceed with the works. Any work done without being properly located may be removed and / or dismantled by BHEL / Customer at contractor's expenses.
- 40.4.2 The contractor shall at his own expense take all proper and responsible precautions to preserve and maintain these datum marks to its true position. In the event of these marks being disturbed or obliterated by accident or due to any other cause whatsoever, the same may be deemed necessary placed by BHEL / Customer at contractor's expenses.

40.5 SITE DRAINAGE

- 40.5.1 All water including sub-soil water which may accumulate on the Site during the progress of the works or in trenches and excavations, including monsoon period

shall be removed by the contractor from the Site to the satisfaction of the Engineer. It will also be responsibility of the contractor to de-water all the foundation pits, trenches with suitable de-watering methods like, pumping out, well point system etc. considering the depth of water table at plant site. All such expenditure on de-watering shall be deemed to be included in quoted rates.

40.6 INSPECTION AND STAGE APPROVAL OF THE WORK

- 40.6.1 The owner or his duly authorised representative shall have at all reasonable times access to the contractor's premises or works and shall have the power to inspect drawings or any portion of the work, examine the materials and workmanship and shall have the authority to reject any work. This would be implemented through joint inspection by the representative of the owner and BHEL and in the form of joint protocols without any extra claims and loss of time and amount.
- 40.6.2 All work embracing more than one process shall be subject to examination and approval at each stage thereof and the Contractor shall give due notice in writing to the Engineer when each stage is ready. In default of such notice being received, the Engineer shall be entitled to approve the quality and extent thereof at any time he may choose and in the event of any dispute, the decision of the Engineer thereon shall be final and conclusive.

40.7 UNCOVERING AND MAKING GOOD

- 40.7.1 The Contractor shall uncover any part of the Works and/or make openings in or through the same as the Engineer may from time to time direct for his verification and shall reinstate and make good such part to the satisfaction of the Engineer. If any such part has been covered up or put out of view after being approved by the Engineer and is subsequently found on uncovering to be executed in accordance with the Contract, the expenses of uncovering and / or making opening in or through, reinstating and making good the same shall be borne by BHEL. In any other case all such expenses shall be borne by the Contractor.

40.8 DISCREPANCIES AND ADJUSTMENT OF ERRORS

- 40.8.1 The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawings and figures dimensions in preference to scale and special conditions in preference to general conditions.
- 40.8.2 In case of discrepancies between schedule of quantities, the specification and / or the drawings, the following order of preference shall be observed.
- (a) Description in schedule of quantities.
 - (b) Special conditions
 - (c) Drawings

- (d) Technical Specifications
- (e) General conditions of contract

If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer shall be the deciding authority with regard to the document.

40.8.3 Any error in description, quantity in schedule of quantities or any omission therefrom shall not vitiate the contract or release the contractor from the execution of the whole or any part of the works comprised therein according to the drawings and specifications or from any of his obligations under the contract.

40.8.4 If on check there are found to be differences between the rates given by the contractor in words and figures or in the amount worked out by him in the schedule of quantities and general summary, the same shall be adjusted in accordance with the following rules:

- (a) In the event of discrepancies between description in words and figures quoted by a tenderer, the lesser of the two will be treated as valid rate.
- (b) In the event of an error occurring in the amount column of schedule of quantities as a result of wrong extension of the unit rate and quantity, the unit rate shall be regarded as firm and extension shall be amended on the basis of the rate.
- (c) All errors in totaling in the amount column and in carrying forward totals shall be corrected.
- (d) The totals of various sections of bill of quantities amended shall be carried over to the general summary and the tendered sum amended accordingly. The tendered sum so altered shall, for the purpose of tender, be substituted for the sum originally tendered and considered for acceptance instead of the original sum quoted by the tenderer. Any rounding of quantities or in sections of bill of quantities or in general summary, by the tenderer, shall be ignored.

40.8.5 If neither drawing nor specification contain any mention of minor details of construction which in the opinion of the Engineer whose decision shall be final and conclusive, are reasonable and obviously and fairly intended for satisfactory completion of work, such details shall be provided by the contractor without any extra cost, as if they were specially mentioned and shall be deemed to be included in the **scope**.

40.9 SAFETY CODE

40.9.1 Besides provision with regard to SAFETY under Clause 27, Contractor shall note that Explosives shall not be used on the work by contractor except with permission in writing of the ENGINEER of BHEL/ EIL/ HMEL/Local Administration and in manner and to the extent to which he has prescribed. Where explosives are used, the same shall be stored in a special magazine to be provided by and at the

cost of the contractor who shall be liable for all damages, losses and injury to any person or property and shall be responsible for complying with all statutory obligations in these respect.

40.10 NUISANCE

40.10.1 The Contractor shall not at any time do, cause or permit any nuisance on Site or do anything which shall cause unnecessary disturbance or inconvenience to owners, tenants or occupiers of other properties near the Site and to the public generally.

40.11 MATERIAL OBTAINED FROM EXCAVATION

40.11.1 Materials of any kind obtained from excavation on the Site shall remain the property of BHEL / its client and shall be disposed of as the Engineer may direct, at no extra cost.

40.12 TREASURE , TROVE , FOSSILS etc.

40.12.1 All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the site shall be the absolute property of BHEL / BHEL's client and the Contractor shall take reasonable precautions to prevent his workmen or any other person from removing or damaging any such article or thing, shall immediately upon discovery thereof and before removal acquaint the Engineer with such discovery and carryout the Engineer's directions as to the disposal of the same.

40.13 PROTECTION OF WORKS

40.13.1 Trees designated by the Engineer shall be protected from damage during the course of the Works and earth level within 1 meter of each such tree shall not be charged. Where necessary, such trees shall be protected by providing temporary fencing.

40.13.2 The contractor shall provide and maintain at his own expense all lights, guards, fencing and watching when and where necessary or required by the Engineer for the protection of the Works or for the safety and convenience of those employed on the Works or the public.

40.13.3 The contractor shall have total responsibility for protecting his works till it is finally taken over by the Engineer. No claim will be entertained by the Engineer for any damage or loss to the contractor's works and the contractor shall be responsible for the complete restoration of the damaged works to its original condition to comply with the specifications and drawings. Should any such damage to the contractor's works occur because of other party not under his

supervision or control, the contractor shall make his claim directly with the party concerned. The contractor shall not cause any delay in the repair of such damaged works because of any delay in the resolution of such disputes. The contractor shall proceed to repair the work immediately and no cause thereof will be assigned pending resolution of such disputes.

40.14 RECORD FOR MATERIALS CONSUMED

40.14.1 The contractor shall maintain and furnish to the Engineer the record of materials consumed in the works for each activity. The statement showing the theoretical vis-à-vis actual consumption of specified materials, such as structural /reinforcement steel, cement, bitumen, lead, paint etc., shall be enclosed along with the running bills submitted by the contractor. Contractor has also to furnish the test results of the concrete cubes, bricks, stone aggregates and other materials used in the work as per IS specifications.

40.15 PROTECTION OF EMBEDMENTS, BOLTS ETC.

40.15.1 The contractor shall ensure proper protection to the satisfaction of the Engineer, of all bolts, inserts, embedments etc. from weather etc/ by greasing, rapping them with gunny bags or canvas or by any other means as directed by Engineer. Cost of such protections shall be deemed to be included in the rates quoted for the item.

40.16 CLEARANCE OF SITE AND REPAIRS.

40.16.1 Contractor has to clear the site / area where mechanical and electrical erection work is to be commenced / or in progress. The contractor shall remove construction materials and equipment lying in the vicinity and causing obstruction in the erection work within 24 hrs. notice. In case, he fails to clear the site, this will be done at his risk & cost by BHEL.

40.17 QUALITY ASSURANCE

40.17 The contractor has to establish / arrange at site the field testing facilities for testing of civil construction materials and concrete cubes for ensuring the proper quality, grade and strength of the materials used in the construction in line with approved field quality check list of BHEL/ its client. Contractor has to submit detailed report for testing of all material used etc. All testing shall be done as per IS code specifications/ BHEL's quality plan. If further test is required by the engineer to be carried from outside laboratory, the cost of the same shall be borne by the contractor.

40.18 COMPLETION OF WORK

40.18.1 The works shall be completed to the entire satisfaction of the Engineer and in accordance with the completion schedule as specified in the Contract, and all unused stores and materials, tools, plant, equipment, temporary buildings, site office, labour hutments and other things shall be removed and the site and work cleared of rubbish and all waste materials and delivered up clean and tidy to the satisfaction of the Engineer at the Contractor's expenses.

40.18.2 BHEL shall have power to take over from the Contractor from time to time such sections of the work as have been completed to the satisfaction of the Engineer. Such work however shall not be treated as have been completed until the extra works are executed to the satisfaction of Engineer. The Guarantee period shall commence only after handing over of the entire works.

40.18.3 The Engineer shall certify to the contractor the date on which the work is completed and the date thereof.

40.19 RECORDS AND MEASUREMENTS

40.19.1 All items having a financial value shall be entered in BHEL measurement Book so that a complete record is obtained of all works performed under the Contract.

40.19.2 Lump sum omissions will be entered for deduction. Measurement shall be restricted to that required to ascertain the financial liability of BHEL under the contract.

40.19.3 Work which fails to be measured in details shall be measured physically without reference to any local custom that may obtain excepting where it may otherwise be directed in the tender documents. The measurements shall be taken jointly by any person duly authorised on the part of BHEL and by the Contractor.

40.19.4 The Engineer shall give reasonable notice in writing to the Contractor of appointment for measurement.

40.19.5 The Contractor shall, without extra charge, provide assistance with appliances and other things necessary for measurement and shall bear all the cost of measurement of his work.

40.19.6 Measurement shall be entered in BHEL Measurement Book and signed and dated by both parties each day at the site on completion of measurement. If the Contractor objects to any of the measurements recorded on the behalf of BHEL, a note to that effect will be made in BHEL Measurement Book or against the item or items objected to and such note shall be signed and dated by both the parties engaged in taking the measurement.

40.19.7 If, as a result of such objection, it becomes necessary to re-measure the work wholly or in part the expense of such re-measurement shall be borne by the contractor.

40.19.8 If the Contractor's representative fails to attend when required, the Engineer shall have power to proceed by himself to take measurements and in that case these measurements shall be accepted by the Contractor as final.

40.19.9 The Contractor shall, once in every month, submit to the Engineer details of his claims for the work done by him upto and including the previous month which are not covered by this Contract Agreement in any of the following respects:

- (a) Deviation from the items and Specifications provided in the tender.
- (b) Extra items/new items of work.
- (c) Quantities in excess of those provided in the Contract Schedule.
- (d) Items in respect of which rates have not been settled.

41.0 METHOD OF MEASUREMENT

41.1 Method of measurements if not specified in the tender, shall be as per relevant IS Codes/ CPWD codes.

42.0 DEVIATION

42.1 The Contractor shall not make any alteration in, addition to or omission from the work as described in the tender documents except in pursuance of the written instructions of the Engineer. No such deviation from the work described in the tender documents shall be valid unless the same has been specifically confirmed and accepted by the Engineer in writing and incorporated in the Contract.

42.2 The Engineer may deviate, either by way of addition or deduction, from the work so described, provided that the Contract sum be not thereby varied on the whole by more than the percentage set out in the tender documents. The value of all additions and deductions shall be added to or deducted from the Contract sum. (Whenever the Engineer intends to exercise such a right his intentions shall specify the deviations which are to be made, the lumpsum assessment or the proposed basis of payment, the extra time allowed, if any, and the date for completion of the (entire contract). Any objection by the contractor to any matter concerning the order shall be notified by him in writing to the Engineer within seven days from the date of such order, but under no circumstances shall the work be stopped (unless so ordered by the Engineer) owing to differences or controversy that may arise from such an objection. In the absence of such a notification of objection by the Contractor, he will be deemed to have accepted the order and the conditions stated therein.

43.0 VALUATION OF DEVIATIONS

Rates for deviated items or new items of work shall be as follows:

- 43.1 If the rates for the additional, altered or substituted work are specified in the Contract for the work, the Contractor is bound to carry out the additional, altered or substituted work at the same rates as are specified in the Contract for the work.
- 43.2 If the rates for the additional, altered or substituted work are not specifically provided in the Contract for the work, the rates will be derived from the rates for a similar class of work as are specified in the Contract for the work.
- 43.3 If the rates for the altered, additional or substituted work cannot be determined in the manner specified in above clauses the rate for such part or parts will be determined by the Engineer on the basis of prevailing market rates when the work was done and the decision given in this behalf shall be final and binding on the Contractor. Rate analysis will be worked on CPWD manual of rate analysis as guidance.
- 43.4 If the rates for the altered, additional or substituted work cannot be determined in the manner specified in above clauses, then the contractor shall within 7 days of the date of receipt of order to carry out the work shall inform the Engineer of the rate at which it is his intention or charge for such class of work, supported by analysis of the rate or rates claimed, and the Engineer shall determine the rate or rates on the basis of prevailing market rates and pay the Contractor accordingly. However, the Engineer, by notice in writing, will be at liberty to cancel his order to carryout such class of work and arrange to carry it out in such manner as he may consider advisable. But under no circumstance the Contractor shall suspend the work on the plea of non-settlement of rates falling under the clause or claim any compensation on that account. Elements of profit, overheads, supervision and establishment charges will be taken as 15% over direct cost.

44.0 COMPLIANCE TO REGULATIONS AND BYELAWS

- 44.1 The Contractor shall conform to the provisions of any statute relating to the work and regulations and bylaws of any local authority and of any water and lighting Companies or Undertaking with whose system the work is proposed to be connected. He shall, before making any variation from the drawings or the specifications that may be necessitated for such connections give the Engineer, notice specifying the variation proposed to be made and the reasons therefore and shall not carryout any such variation until he has received instructions from the Engineer in respect thereof. The Contractor shall be bound to give all notices required by statute, regulations or bye-laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.

45.0 FACILITIES TO BE PROVIDED BY BHEL / CONTRACTOR

- 45.1 BHEL shall provide free of rent limited open space for office and store as and where made available by its customer. It is the responsibility of the contractor to construct sheds, provide all utilities as a part of his scope of work.
- 45.2 Contractor shall be responsible for providing all necessary facilities like residential accommodation, transport, electricity, water, medical facilities etc. as required under

various labour laws and statutory rules and regulations framed there under to the personnel employed by him.

- 45.3 **Construction power for Civil Works will have to be arranged by the contractor for civil construction/ Fabrication work within the quoted rates.** All wiring must comply with local regulations and will be subject to Engineer's inspection and approval before connecting supply.
- 45.4 Provision of distribution lines of power from the central points to the required place with proper distribution boards observing the safety rules laid down by the authorities of the state shall be done by the contractor, supplying all the materials like cables, distribution board, switch boards, TPN, CBS, ELCBS/ MCCBS/ Copper/ Brass clamps, copper conductor, change over switches pipes etc. at his own cost. If any failure is caused in supply of the power and water, it is the responsibility of the contractor to make alternate arrangements at his cost. The contractor shall adjust his working shift / hours accordingly and deploy additional manpower if necessary so as to achieve the targets.
- 45.5 In case of power cuts/ load shedding no compensation for idle labour or extension of time for completion of work will be given to contractor.
- 45.6 Adequate lighting facilities such as flood lamps, hand lamps and area lighting shall be arranged by the contractor at the site of construction, contractor's material storage area etc. within finally accepted rates.
- 45.7 No claim for damages will be entertained by the Company on account of interruptions of water supply or limitation of quantity of water as aforesaid or on account of the water so taken being not fit for construction purposes or on any other account in connection with such water supply.
- 45.8 **CONTRACTOR HAS TO ARRANGE FOR CONSTRUCTION WATER BY PROVIDING SUITABLE BORE WELL WITHIN THE QUOTED RATES.** Contractor to satisfy himself that the water drawn by him is fit for construction / consumption and adequately treat such water at his cost when it is not found fit for the said purposes.
- 45.9 The Contractor shall during the progress of the work, provide, erect and maintain at his own expenses all necessary temporary workshops, stores, consumables, offices, etc. required for the proper and efficient execution of the work. The planning, setting and erection of these buildings shall have the approval of the Engineer and the Contractor shall at all times keep them tidy and in a clean and sanitary condition to the entire satisfaction of the Engineer.
- 45.10 On completion of work or as and when required by BHEL, all the temporary buildings, structures, pipe lines, cables etc. within the plant and in labour colony shall be dismantled and leveled and debris shall be removed as per instruction of BHEL by the contractor at his cost. In the event of his failure to do so, same will be got done by the Engineer and expenses incurred shall be recovered from the

contractor along with prevailing overhead. The decision of BHEL Engineer in this regard shall be final.

46.0 PROGRESS REPORTING

- 46.1 Contractor is required to draw mutually agreed monthly programme in consultation with BHEL well in advance. Contractor shall ensure achievement of agreed programme and shall also timely arrange additional resources considered necessary at no extra cost to BHEL.
- 46.2 Weekly progress review meetings will be held at site during which actual progress during the week vis-a-vis scheduled programme shall be discussed for actions to be taken for achieving targets. The programme for subsequent week shall also be presented by contractor for discussions. The contractor shall constantly update/revise his work programme to meet the overall requirement. All quality problems shall be discussed during above review meetings. Necessary preventive and corrective action, shall be discussed and decided upon in such review meetings and shall be implemented by the contractor in time bound manner so as to eliminate the cause of non-conformities.
- 46.3 The contractor shall submit weekly and monthly progress reports, materials reports, consumables (gases/ electrodes) report and other reports as per Performa considered necessary by the Engineer.
- 46.4 The progress report shall indicate the progress achieved against planned, with reasons indicating delays, if any, and shall give the remedial actions which the contractor intends to take to make good the slippage or lost time, so that further works again proceed as per the original programme and the slippage do not accumulate and effect the overall programme.
- 46.5 The daily manpower reports shall clearly indicate the manpower deployed, category-wise specifying also the activities in which they are engaged.

47.0 DRAWING AND DOCUMENTS

- 47.1 The detailed drawings, specifications available with BHEL engineers will form part of this tender specification. These documents 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.
- 47.2 Necessary drawings/ documents to carry out the construction 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.
- 47.3 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 return to BHEL.

- 47.4 The data furnished in various annexures 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.
- 47.5 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.
- 47.6 Deviation from design dimensions should not exceed permissible limit. The contractor shall not correct or alter any dimension/ details, without specific approval of BHEL.

48.0 DELAY AND EXTENSION OF TIME

48.1 If, in the opinion of the Engineer, the work is delayed

- (a) by reason of abnormally bad weather, OR
- (b) by reason of serious loss or damage by fire, OR
- (c) by reason of civil commotion, local combination of workmen, strike or lockout, affecting any of the trades employed on the work, OR
- (d) by delay on the part of the agency or tradesmen engaged by the BHEL in executing work not forming part of the Contract, OR
- (e) by reason of any other cause which in the absolute discretion of the Engineer is beyond the Contractor's control,

then in any such case, the Engineer (or higher authority) may make fair and reasonable extension in the completion dates of the individual items of work or the Contract as a whole. Such extension which will be communicated to the Contractor by the Engineer in writing shall be final and binding on the Contractor. No other claim in this respect for compensation or otherwise howsoever is admissible. Upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer but shall nevertheless use constantly his best endeavor to prevent or make good the delay and shall do all that may reasonably be required to the satisfaction of the Engineer to proceed with the work.

49.0 PRICE VARIATION

49.1 The prices shall remain firm through out the contract period.

50.0 TAXES AND DUTIES

- 50.1 **TDS under Income Tax, Sales Tax, VAT and surcharge etc**, if any, shall be deducted at prevailing rates on gross invoice value from the running bills unless Exemption Certificate from appropriate Authority/ Authorities is furnished.
- 50.2 **Price quoted shall be inclusive of all taxes except service tax.** This being works contract service, the service tax along with education cess, if any, will be paid against contractor's proper cenvettable invoice considering the latest applicable Service Tax Notification wherein option of composition is available. However, contractor shall have to submit proof of service tax deposited by them immediately after the deposit but not later than the next bill submitted after the due date of deposit. The contractor shall furnish proof of Service Tax registration with Central Excise Division covering the services covered under this contract. Registration should also bear endorsement for the premises from where the billing shall be done by contractor on BHEL for this project. The contractor shall obtain prior approval of BHEL before billing the service tax amount and should submit proper CENVATABLE invoice as per Service Tax Rules.
- 50.3 In VAT applicable States, "Tax Invoice" if required under the relevant State VAT law shall be submitted alongwith other compliances as per concerned VAT Act.
- 50.4 Contractor shall get his organization registered with concerned Sales Tax/ VAT authorities within 15 days of award of this contract, if applicable. The delay on this account and delay in bringing the material shall be to contractor's account and no extension of time shall be allowed on this account. The Sales Tax/ VAT registration for this contractor shall be forwarded to BHEL within 30 days from the date of LOI. In case the contractor is already registered for Sales Tax/ VAT with Govt. Authorities he must quote his registration no, while submitting their tender.
- 50.5 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 equipment at site for the execution of the work under this contract.

51.0 TIME SCHEDULE

- 51.1 The contractor is required to commence the work within **7** days from the date of issue of letter of intent unless BHEL decides to fix any other later date. However, the actual date of start of work will be certified by BHEL Engineer after adequate mobilisation of materials, manpower and T&Ps by the contractor.
- 51.2 Most of the work under this contract is required to be completed within four months from start of work and entire work in all respect is to be completed within **SIX MONTHS** from the date of start of work.
- a) Office Building Completion – 2-3 months
b) Store Building Completion – 4-6 months (ONE COVERED STORE READINESS BY 2-3 MONTHS)

c) Storage Yard Completion – 2- 5 months

51.3 The work under the scope of this contract is deemed to be completed in all respects, only when all the works are carried out as per satisfaction of BHEL. The decision of BHEL on completion date shall be final and binding on the contractor.

52.0 TERMS OF PAYMENT

52.1 The Contractor shall be paid monthly running bill to a maximum of 95% of the value of the work actually executed on site provided the work has been executed to the satisfaction of the Engineer. The Engineer may after a measured bill allow and certify payment to the contractor on the basis of abstract measurement bill submitted by the contractor. From this amount recoveries such as advances, security deposit, taxes etc. would be made. The certificate of the Engineer regarding such approval and passing of sums so payable shall be final and conclusive against the contractor.

- The 2.5% of Final contract value (worked out based on actual work carried out) shall be payable on completion of all pending work, rework wherever required, site clearing and reconciliation of materials.
- The balance 2.5% of Final contract value (worked out based on actual work carried out) will become payable 3 months after completion of work in all respect, handing over to BHEL and on submission and passing of Final bill. The certificate of Engineer regarding such approval and passing of sums shall be final and conclusive against the contractor.

52.2 Any certificate relating to the work done may be modified by any subsequent interim certificates or by the final certificates and no certificate of the Engineer supporting an advance payment shall of itself be conclusive evidence that any work or materials to which it relates are in accordance with the contract.

52.3 All such intermediate payments shall be regarded as advance against the final payment only and shall not be considered as an admission of the due performance of the contract or any part thereof in any respect of the occurring of any claim whatsoever. Such intermediate payments shall not conclude, determine or effect in any way the powers of the Engineer as to the final settlement and adjustment of the account of otherwise, or in any way vary or effect the Contract.

53.0 RATE SCHEDULE

53.1 Contractor shall fully understand description and scope of work before quoting. The scope of work and responsibility of the contractor as mentioned under these specifications shall be covered within the quoted/ finally accepted rates.

53.2 The tenderer shall quote the prices/ rates for entire scope of work as per the rate schedule only, in part II price bid (Original). Price quoted shall be exclusive of

Service Tax and the same shall be borne by BHEL, if applicable. **Conditional price bids or price bids with any deviation/ clarification etc. are liable to be rejected. No cutting/ erasing/ over writing shall be done.**

- 53.3 Contractor's total quoted price as per rate schedule will be taken as tentative only. The contractor undertakes to carryout actual quantities against each item as per project requirement and accordingly the final contract price shall be adjusted on the basis of quantities actually erected at site and payments will also be regulated for the same. The contractor confirms that unit rates quoted above takes care of such variation during execution stage.

54.0 FINAL BILL

- 54.1 As soon as possible after the completion of the work to the satisfaction of the Engineer, the Contractor shall prepare a certified final accounts on BHEL forms, in duplicate. It shall be accompanied by the all **abstracts**, vouchers, etc. in support thereof and shall be prepared in the manner prescribed by the Engineer.

55.0 LIQUIDATED DAMAGES(LD)

- 55.1 For delay in completion of work attributable to the contractor, the LD shall be applicable at the rate of ½% of the contract value per week of delay or part thereof limited to a ceiling of 10% of the contract value as mentioned under clause no.25.5 of the GCC of the tender.

56.0 SECURITY DEPOSIT

- 56.1 The contractor shall submit Security Deposit within 15 days from the date of issue of LOI as per clause no. 16.2 of the General Conditions of Contract (GCC). In case the contractor opts to furnish Bank Guarantee as a part of Security Deposit, the BG shall be issued as per the Performa enclosed as per Annexure-H of the GCC and also that the BG should be issued preferably through any of the Member Banks listed in the GCC;

For BG through any other Nationalized Bank (Not covered in the list of Member Banks of GCC), the discretion of its acceptance shall lie solely with BHEL.

57.0 OTHERS

- 57.1 In case of any contradiction between General Conditions of Contract (GCC) and Special Conditions of Contract (SCC), the latter shall prevail.
- 57.2 The tenderer shall specifically confirm he has inspected the site of work and is fully conversant with the prevailing conditions under which work is to be executed and will not raise claim of any nature due to lack of knowledge of site condition. He will also confirm that local taxation laws at the site have been clearly understood by him.

- 57.3 The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of pre-qualification evaluation/ Techno-commercial bids. BHEL reserves the right to reject the bidders with unsatisfactory past performance in the execution of a contract. BHEL's decision in this regard shall be final & binding.

INDICATIVE LIST OF T&Ps TO BE ARRANGED BY THE CONTRACTOR AT HIS OWN COST

Sl. No.	EQUIPMENT	QTY
1	Concrete Mixer M/c of suitable capacity	1 NO. (minimum)
2	Concrete Vibrators	AS PER WORK REQUIREMENT
3	JCB, Excavator, Dozer, Jack Hammers with compressor, Equipment for controlled blasting	AS PER WORK REQUIREMENT
4	Trucks/ lorries	AS PER WORK REQUIREMENT
5	Water Tanker	1 NO. Minimum
6	Dewatering Pump	AS PER WORK REQUIREMENT
7	Winches	AS PER WORK REQUIREMENT
8	Welding Machines	AS PER WORK REQUIREMENT
9	Portable Ovens	AS PER WORK REQUIREMENT
10	Road Rollers	AS PER WORK REQUIREMENT
11	DG Set	1 no

Notes:

1. The above list specifies only major T&Ps (may not be complete to be deployed by the contractor). All additional/ other tools and plants, including lorries/ trucks, tools & tackles, devices, machines, measuring instruments etc. in good and safe working conditions which are required for satisfactory & timely completion of work shall also be deployed by the contractor within finally accepted rate/ price.
2. For other terms and conditions regarding above items, also please refer clause 38 T&Ps/ IMTEs).

Annexure-II

INDICATIVE LIST OF IMTEs TO BE ARRANGED BY THE CONTRACTOR AT HIS OWN COST

SL NO	EQUIPMENT	QTY
1	Theodolite	1 NO.
2	Dumpy Level	1 NO.
3	Measuring Tape	AS PER REQUIREMENT

NOTES:

1. The above list specifies only major IMTEs (may not be complete to be deployed by the contractor). Contractor has to have arrangements for material & concrete testing. All additional/ other IMTEs/ measuring instruments etc. in good and safe working conditions which are required for satisfactory & timely completion of work shall also be deployed by the contractor within finally accepted rate/ price.
2. Other terms and conditions regarding above items please also refer clause 38 T&Ps/IMTEs).

Annexure-III

CERTIFICATE OF DECLARATION FOR CONFIRMING THE KNOWLEDGE OF SITE CONDITIONS

We,..... Hereby declare and confirm that we have visited the project site under the subject namely,and acquired full knowledge and information about the site conditions, wage structure, Industrial climate and total work involved. We further confirm that the above information is true and correct and we will not raise any claim of any nature due to lack of knowledge of site condition.

Tenderer's Name and Address.

Place:

(Signature of the Tenderer's
With stamp)

Date:

**NON DISCLOSURE AGREEMENT
Memorandum of Understanding**

BHEL PSNR is committed to Information Security Management System as per Information Security Policy.

M/s.....

providing.....service to BHEL PSNR, Noida hereby undertake to comply with the following in line with Information Security Policy of BHEL PSNR;

- **To maintain confidentiality of documents & information which shall be used during the execution of the Contract.**
- **The documents & information shall not be revealed to or shared with third party which shall not be in the business interest of BHEL PSNR.**

(
M/s. BHEL, PSNR)

(
M/s.....)

FORMAT FOR E-PAYMENT DETAILS : - BHEL-PSNR-NOIDA

(To be given in Company letterhead)

Beneficiary Name :

Bank Name & Branch :

M ICR Code (9 Digit) :

IFSC CODE :
(VALID FOR NEFT)

Beneficiary Account No. :

Beneficiary E-mail ID :
(for payment confirmation)

16M HIGH MAST LIGHTING SYSTEM**Annexure-VI****1.0 SUPPLY PART**

- 1.1 Supply of Raising & Lowering type 16 M high mast system: Mast shaft shall be in **two sections**, hot dip galvanized, inside and outside in single dip, suitable for wind velocity as per IS 875 part 3. **There shall be only one longitudinal seam weld per section and no circumferential weld.** It shall also include accessories for high mast including head frame, 2-point suspension system with steel wire rope 6mm dia (7/19 construction) double drum winch, Galvanised Lantern carriage arrangement suitable for 12 luminaires symmetrically & its CG boxes & lighting final. The mast shall have integral type power tool at the base compartment for its operation. NO 01
- 1.2 Supply of foundation bolts manufactured from special steel along with nuts, washers, anchor plates & templates. SET 01
- 1.3 Supply of Non-integral floodlight luminaire type Bajaj Make BGENF 22R or reputed equivalent make with two nos. 400W SON T lamps and its control gear boxes. NO 10
- 1.4 Supply of twin dome aviation obstruction lights of type with 100W GLS lamp. NO 01
- 1.5 Supply of control panel housing suitable control circuit for automatic switching On and OFF of the mast. The control panel shall also have necessary controls for Power Tool. SET 01

2.0 ERECTION PART

- 2.1 Construction of suitable shallow foundation with 'M20' grade concrete for the high mast considering the safe soil bearing capacity at site as 10T/ sqmtr at 2 mt depth with all materials & labour. NO 01
- 2.2 Erection of the high mast with the help of suitable equipments and wiring of luminaries with all wiring material & labour. NO 01
- 2.3 Provision of GI pipe earthing for High Mast with 2.5M long 40mm dia G.I. Pipe including connection of High mast earth terminal with 25 x 3mm GI flats with all materials & labour. NO 02
- 2.4 Installation of control panel on suitable foundation including all material & labour. NO 01
- 2.5 Supply & Laying of power supply/control cables from (i) control panel to the base compartment of mast. NO 01

3.0 TESTING & COMMISSIONING

- 3.1 Testing & Commissioning of above High Mast system NO 02

TECHNICAL DATA SHEET FOR 16MTR HIGH MAST AND COMPONENTS

1. HIGHMAST STRUCTURE		
a)	Height of mast (Mtr) Make	16 Mtr Bajaj
b)	Material of construction	Grade S355 as per BS EN 10 025 for shaft and gusset Grade Fe 410W as per IS 2062 for flange & door stiffeners
c)	Number of sections	Two (2)
d)	Thickness of sheet (in mm)	Top : 3mm, Bottom : 4mm
e)	Cross section of Mast in Polygon (number of sides)	20 sides
f)	No. of longitudinal welds / section	One
g)	No. of circumferential welds / section	None
h)	Length of individual sections (approx)	Top 5520mm Bottom 10980mm
i)	Base dia and top diameter	Top diameter 150mm Bottom diameter 460mm
j)	Type of joints	Stress fit side joints
k)	Length of overlap	0.50 Mt
l)	Metal protection treatment for Mast section	Hot Dip Galvanised through single dip process as per BS EN ISO 1461
m)	Thickness of galvanization (min)	65 Micron : Top 85 Micron : Bottom
n)	Size of opening and doot at base	1200 x 250 mm
o)	Type of locking arrangement	Vandal Resistant
p)	Details of slack board inside the base compartment	Resin bonded plywood 600 mm x 200 mm x 8 mm
q)	Provision for cable termination	TPN MCB Isolator
r)	Thickness & diameter of base plate	25mm thk., 670mm OD
s)	Size of anchor plate and thickness	8mm thk. With uniform PCD of 590 mm
t)	Details of template	Uniform PCD of 590 mm
u)	Weight in kgs. Of 16 mtr. Mast	750 kgs. Approx
v)	Lightning protection finial	Provided
2. DYNAMIC LOADING AS PREVAILING AT SITE.		
a)	Max. wind speed	As per IS 875 part 3
b)	Max. gust speed time	3 seconds
c)	Height above ground level these two factors are measured	10 Mt.
d)	Factor of safety for wind load	1.25
e)	Factor of safety for other load	1.15
3. FOUNDATION DETAILS		
a)	Type of foundation	Open raft shallow footing

TENDER NO. BHEL/NR/SCT/BATHINDA-GGSRP/STORES/548

b)	Size of foundation	As per Design
c)	Designed load bearing capacity	10T per sq M at 2M depth
d)	Design safety factor	>2.0
e)	Considered wind pressure (Kg/Mt2)	As per IS-875-1987
f)	Considered wind speed Km/hr)	As per IS-875-1987
g)	Depth of foundation	Max. 1.5 Mtr. Below G.L.
h)	Average soil bearing capacity	As confirmed
i)	Number of foundation bolts	8 Nos.
j)	PCD of foundation bolts	590 mm
k)	Type of foundation bolts	High yield tensile cold rolled pitched threads (680 N/sqmm)
l)	Bolt diameter	27 mm
4. LANTERN CARRIAGE		
a)	Material construction	Class B – M.S. Tubes
b)	Diameter of carriage ring (mm)	535 mm / 2200mm approx.
c)	Construction	To suit requirement
d)	Number of joints	2
e)	Buffer arrangement between Carriage and Masts	PVC sleeve on carriage
f)	Load carrying capacity	750 Kgs.
g)	Total weight of assembly with fittings	As per number of Luminaires
h)	Number of fittings	Suitable for up to 12 nos. symmetrically
i)	Type of fittings / fixture	Bajaj Make BGENF 22R (2x400W) or reputed equivalent make
5 WINCH		
a)	Make of winch Number of drums / winch	Bajaj Double drum type or equivalent
b)	Gear Ratio	53 : 1
c)	Operating speed	180 RPM
d)	Method of operation	Manual / Electrical
e)	Lubrication arrangement	Permanent oil bath
6 STAINLESS STEEL WIRE ROPE		
a)	Make	B.W. LTD / Eqvt.
b)	Grade	AISI 316
c)	Number of ropes	2-point suspension system
d)	Construction	7 / 19
e)	Centre core material	Stainless steel core
f)	Diameter (mm)	6 mm
g)	Thimbles & Talurit	SS Thimble, Copper Talurit
h)	Braking load capacity	2350 kgs.
i)	Factor safety	>5 for system full load
7 CABLE		
a)	Type	5 core, Cu conductor, flexible PCP / EPR
b)	Material	EPR insulated PCP Sheathed

TENDER NO. BHEL/NR/SCT/BATHINDA-GGSRP/STORES/548

c)	Make	ISI marked
d)	Current carrying capacity	21 Amp.
e)	Conductor size	4 sq.mm
f)	No. of cores	5Nos
g)	No. of circuits	One
8	POWER TOOL	
a)	Model	Integral
b)	Input supply	415V, 3 Ph, 50 Hz
c)	Wattage	1100 Watt
d)	Number of speeds	Single speed
e)	Operating speed	1440 rpm
f)	Control	Push button
9	TORQUE LIMITER	
a)	Lifting capacity	750 kgs.
b)	Adjustable / Non-adjustable	Adjustable
c)	Tripping device	Mechanical