



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 01

Ref: PSER:SCT:KLN-C1910:TCN-01

Date: 26-07-2018

Sub	Tender change notice (TCN) 01	
Job	PACKAGE 10B: Civil, structural & architectural works (except pile, pilecap, pedestal and associated works) for AUX building for 2X660 MW Maitree Rampal Project, Bangladesh.	
Ref	1.0	Tender no PSER:SCT:KLN-C1910:18
	2.0	BHEL's NIT, vide reference no PSER:SCT:KLN-C1910:6939 Date: 05-07-2018.
	3.0	All other pertinent issues till date.

With reference to above, following points/ documents, relevant to tender, may please be noted and complied with while submitting offer.

- 1.0 Extension of due date of offer submission from **26-07-2018** to **30-07-2018 (15:00 Hrs)**.
- 2.0 Revised **PRICE SCHEDULE VOLUME-III, R-1** is attached **superseding VOLUME-III PRICE SCHEDULE, REV-0** issued earlier along with NIT. Bidder shall quote as per this revised Volume-III, Rev-1 only.
- 3.0 Revised VOL-IF-TCC-CML-REV-1 is attached herewith, superseding TECHNICAL CONDITIONS OF CONTRACT (TCC), VOL-IF-TCC-CML-REV-0 issued earlier along with NIT. (Revision in cl. no. 2.1). However, bidder shall go through entire volume before submitting their bid.
- 4.0 Clarification to bidder's queries as per attached Annexure-A.
- 5.0 Format for EXIM BANK undertaking as attached as per Annexure-C.
- 6.0 Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
- 7.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

DY.MGR (SCT)

Encl : As above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

BHARAT HEAVY ELECTRICALS LIMITED,
Power Sector - Eastern Region,
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	PACKAGE 13: Civil, structural & architectural works for Induced Draft Cooling Tower, unit # 1 & 2 for 2X660 MW Maitree RampaL Project, Bangladesh	
Ref	1.0	Tender no PSER:SCT:KLN-C1904:18
	2.0	BHEL's NIT, vide reference no PSER:SCT:KLN-C1904:6872 Dated 14-06-2018
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KLN-C1904:TCN-01, Dated 28-06-2018.
	4.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted/uploaded offer/documents in accordance with tender instructions with acceptance of the terms & conditions of the tender by us and as per aforesaid references.

Thanking you,

Yours faithfully,

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

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION DJ-9/1, SECTOR-II, SALLAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : (033) 2339-8000/ 2339-8231

ANNEXURE-A TO TCN-01				
PACKAGE 10B: Civil, structural & architectural works (except pile, pilecap, pedestal and associated works) for AUX building for 2X660 MW Maitree Rampal Project, Bangladesh.				
Tender no PSER:SCT:KLN-C1910:18				
S.No.	Reference Clause of Tender Document	Existing Provision	Bidders Query	BHEL's Clarifications
1	Volume-III. BOO. Item No-A2222	Supply, laying and jointing vitrified clay pipe with leak proof lead Joints including bends, branches and all other necessary fittings, approved holder bats/clamps, cutting and making good the walls and floors, jointing, Testing etc all complete as per specification, manufacturer's recommendations, relevant BS or equivalent International standards and/or as approved by BIFPCL /BHEL.for following	Bidder is requesting you to provide the detail specifications and vendors name of "vitrified clay pipe".	"Vitrified clay pipe (VCP) is pipe made from a blend of clay and shale that has been subjected to high temperature to achieve vitrification, which results in a hard, inert ceramic. There are three main types of VCP produced.: Bell & Spigot Pipe (with factory-applied compression joints), Band-Seal pipe (with rubber compression couplings and NO-DIG(R) Pipe (for trenchless installation with an elastomeric gasket and stainless steel collar for a low-profile compression joint). All VCP manufactured must comply with ASTM C425 to provide a flexible leak-free joint." Approved vendor list for the above pipe is not available with BHEL. A vendor approval is required before supplying of the above pipe to site
2	Tender Part-1, Annexure-C- Undertaking		In this Annexure, we found a different Format instead of undertaking. Hence, you are requested to have a look and clarify the same.	Format attached with this TCN
3	NIT	Last date of submission of Bid IS 26th July, 2018,Time :15.00 Hrs	As the work involves bought out items and specialized agencies to quote our best competitive bid we need to get the competitive rate from vendors & Agencies. Considering the above, we earnestly request you to extend the last date of submission of Bid for a minimum of 15 days i.e. 14-08-2018	DDS of the bid extended up to 30.07.2018

UNDERTAKING
(To be submitted in the company's letter head)

THIS UNDERTAKING (“Undertaking”) executed at **(Location)** on this **(Date)** by:

1. **(Company Name)**, registered office at _____,

IN FAVOUR OF

2. **Bharat Heavy Electricals Limited**, a company incorporated under the company Act, 1956 of India having its registered office at BHEL House, Siri Fort, New Delhi-110049 and Power Sector Eastern Region Office at DJ-9/1, Sector-II, Saltlake City, Kolkata-700091, India.

1. UNDERTAKING

1.1 We hereby confirm that we are not a black listed company/organization by EXIM Bank of India as on the latest due date of bid submission.

1.2 During scrutiny if it is found otherwise w.r.t. undertaking furnished above, BHEL shall have right to cancel our bid for further evaluation.

Signed & Delivered on behalf of

(Company Name):

Official Representative:-

Designation:-

Date:-

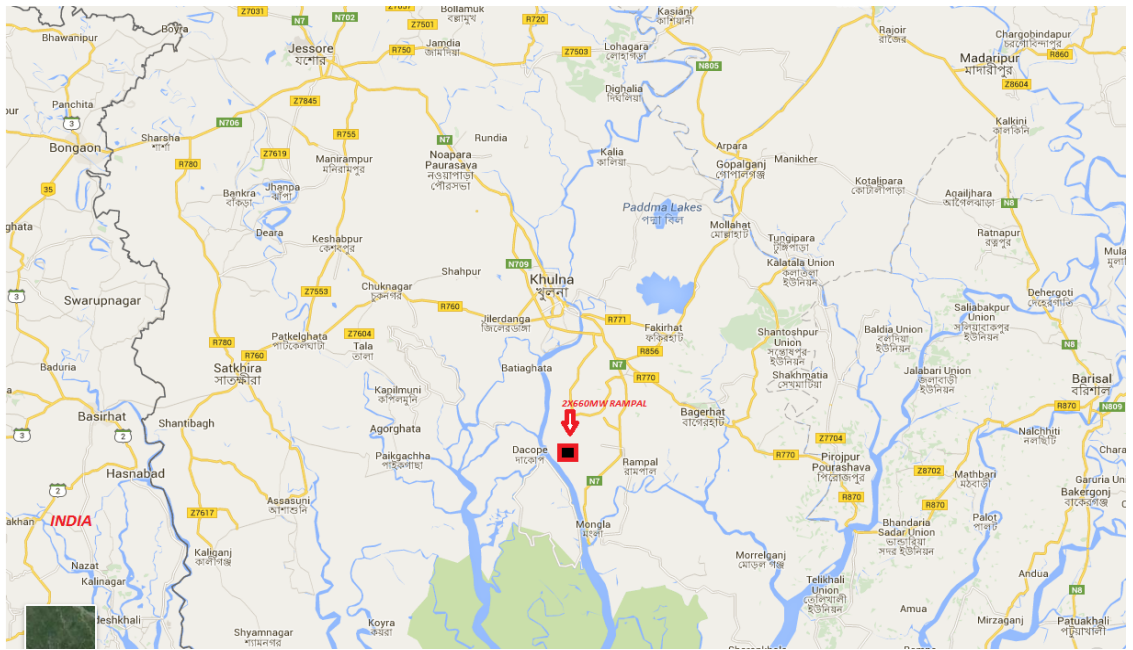
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1.0 PROJECT SYNOPSIS AND GENERAL INFORMATION

1.1 The 2 x 660 MW MAITREE SUPER THERMAL POWER PROJECT is located in Moithara Village, Rampal Upazila, Bagerhat District, Bangladesh.

The Bidder shall acquaint himself by a visit to the site, with the conditions prevailing at site before submission of the bid. The information given here in under is for general guidance and shall not be contractually binding on the Owner. All relevant site data / information as may be necessary shall have to be obtained / collected by the Bidder.



LOCATION MAP:2X660MW MAITREE RAMPAL PROJECT



LOCATION MAP:2X660MW MAITREE RAMPAL PROJECT

1.2

APPROACH TO SITE

The nearest town Khulna is at a distance of 23 km from project site. The site is Connected by road from Mangla- Khulna Highway.

Nearest Domestic airport is Jessor, Bangladesh at a distance of about 93 KM and international airport is Dhaka at a distance of 263 KM, Bangladesh

1.3

Owner: BIFPCL (**BANGLADESH-INDIA FRIENDSHIP POWER COMPANY (PVT.) LIMITED**)

2.0**SCOPE OF THE CONTRACT**

2.1

CIVIL, STRUCTURAL & ARCHITECTURAL WORKS (**EXCEPT PILE, PILE CAP, PEDESTAL OF STEEL BUILDINGS & ASSOCIATED WORKS**) FOR MAIN PLANT AREA # UNIT 1 & 2 FOR 2X660 MW MAITREE RAMPAL PROJECT, BANGLADESH. THE DETAILED THE SCOPE OF WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING.

- PIPE AND CABLE RACK OUTSIDE POWER BLOCK,
- LAYING OF CW AND ACW PIPING OUTSIDE POWER BLOCK,
- CW PUMP HOUSE AND CHANNEL,
- GAS CHLORINATION PLANT FOR CWPH,
- SEWAGE TREATMENT PLANT,
- CW TREATMENT PLANT AND MAKE UP SYSTEM,
- EFFLUENT TREATMENT PLANT
- CHEMICAL LAB,
- FGD
- FGD WASTE WATER TREATMENT PLANT,
- RODM PLANT,

	<ul style="list-style-type: none"> • SOLID WATE TREATMENT PLANT • INTAKE PUMP HOUSE AND DESILITING CHAMBER, • MISC TANK FOUNDATION ETC, • AUX BOILER, • FOAM PUMP HOUSE • CPU REGENERATION BUILDING, • GAS CHLORINATION PLANT FOR RIVER INTAKE • HYDROGEN PLANT BUILDING, • LOCAL SERVICE BUILDING , • CW MAKE UP AND DESALINATION FEED WATER PUMP HOUSE, • CLARIFIED PUMP HOUSE, • GAS CYLINDER ROOM, • DESALINATED WATER STORAGE TANK, • PRE TREATED WATER STORAGE TANK, • PRE TREATMENT PLANT • MISC PUMP HOUSE, • WORKSHOP AND O &M STORE. • FIRE PROTECTION SYSTEM WITHIN POWER BLOCK • FIRE WATER PUMP HOUSE • SWITCH YARD • WEIGH BRIDGE • ASH HANDLING UNIT • DUCTING FOR AIR CONDITIONING & VENTILATION SYSTEM • ANY OTHER MISC.WORK FOR 2X660 MW MAITREE RAMPAL PROJECT, BANGLADESH.
2.2	<p>The works to be performed under this contract consist of providing all labour, supervision, material, scaffolding, construction equipments, tools and plants, temporary works, supplies including POL, transportation and all incidental items not shown or specified but reasonably implied or necessary for the proper completion of work in all respects. Testing of all materials, concrete, earthwork other allied works, preparation of bar bending schedules on the basis of construction drawings, preparation of fabrication drawings etc. are included on the rates of items of work. Works shall only be carried out with approved structural fabrication drawings.</p>
2.3	<p>The area of work shall be cleared of all vegetation, rubbish and other objectionable matter and materials remove shall be burnt or otherwise disposed of as directed by the Engineer-in-Charge.</p> <p>No separate payment for these operations shall be made. The cost of all these operations shall be deemed to have been included in the unit rates rendered for the different items under bill of quantities.</p>
2.4	<p>All the works areas shall be adequately flood lighted to the satisfaction of the Engineer-in-Charge when the work is in progress during the night shifts.</p>
2.5	<p>The unit rates shall include all material equipment, fixtures, labour construction plant, temporary works and everything whether of permanent or temporary nature necessary for the completion of job in all respects.</p>
2.6	<p>The unit rates for various items of B.O.Q shall include all the stipulations mentioned in Section C and technical specifications under Section D and nothing extra over B.O.Q rates shall be payable.</p>
2.7	<p>Drawings showing enough details for the construction as per the specification shall be furnished to the contractor in a phased manner as far as possible.</p>

2.8	The bidder should fully apprise himself of the prevailing conditions at the proposed site, climatic conditions including monsoon pattern, local conditions, soil strata and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may have not been specifically brought out in the specifications.
3.0	SITE VISIT
3.1	Contractor should visit site and acquire full knowledge & information about site conditions prevailing at site and in and around the plant premises together with all the statutory, obligatory, mandatory requirements of various authorities before submission of the bid. In line with the above, site visit confirmation will be required to be submitted by the bidder with the technical bid.
3.1	OPEN SPACE FOR OFFICE & STORAGE
3.1.1	Open spaces for material storage yard & construction of temporary site office may be allocated as made available by the customer / BHEL free / hire charges. Contractor has to make his own arrangements for labour colony including Electricity and water for the labour colony.
3.1.2	Construction of necessary stores and storage of materials shall be in contractor's scope. BHEL shall provide available space as received from customer on mutually agreed basis. Security of stores & work place shall be in Contractor's scope.
3.1.3	REMOVAL OF TEMPORARY FACILITIES
	When the Work is completed all such temporary structures and facilities shall be removed from the Site and the area shall be restored to its original condition
3.2	WATER
3.2.1	BHEL will provide construction water at one point at mutually agreed point or within 500 m from work premises, free of cost to the contractor . Bidder to note that no ground water is allowed for construction purpose by the project authority.
3.2.2	Further necessary network for construction water system shall be done by the bidder at his own cost.
3.2.3	Contractor should arrange on their own drinking water in their labour colony.
3.2.4	BHEL shall not be responsible for any inconvenience or delay caused due to any interruption of water supply and the contractor shall claim no compensation for delay in work for such interruption. Contractor may make standby arrangement for water for which no separate payment shall be made by BHEL.
3.2.5	Contractor will have to arrange for storage of water to meet the day-to-day requirement.
3.2.6	The availability of water (construction as well as drinking) in Maitree project may be limited. Contractor shall ensure that no water is wasted. In this regard the contractor shall take all necessary measure towards preservation of water.
3.3	ELECTRICITY
3.3.1	CONSTRUCTION POWER & GENERAL ILLUMINATION NETWORK:- BHEL Shall Provide Construction Power free of charge at 415V level at one point (within 500 M from his workplace / batching plant), bidder has to make his own distribution arrangement to draw electricity. The bidder will have to procure & install adequate area illumination system during construction right from start of his work. This system will include temporary pole lighting,

	<p>portable lighting towers with sufficient DG back-up for area lighting at different working areas for execution of the work & safety of workmen within the quoted rate.</p> <p>The illumination should be such that minimum illumination requirement as specified in specification or any-where for general illumination is maintained.</p> <p>GENERAL:- If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor will have to provide at his own cost necessary calibrated energy meters (tamper proof, suitably housed in a weather proof box with lock & key arrangement) at point of power supply along with calibration certificate from authorized / accredited agency for working out the power consumption. In case of recalibration required for any reason the necessary charges including replacement by calibrated meters is to be borne by the contractor. Supply of electricity shall be governed by Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.</p>
3.3.2	The bidder shall have to provide earth leakage circuit breaker at each point wherever human operated electrical drives / T&Ps are deployed.
3.3.3	The power supply will be from the available source of customer. BHEL shall not be responsible for any inconvenience or delay caused due to any interruption of power supply / variation in voltage level and no compensation for delay in work can be claimed by the contractor due to such non-supply on the grounds of idle labour, machinery or any other grounds.
3.3.4	Bidder will have to arrange sufficient illumination at their own work areas.
3.3.5	The contractor should ensure that the work in critical areas is not held up in the event of power breakdown. In the event of breakdown in the electric supply, if the progress of work is hampered, it will be the responsibility of the contractor to step up the progress of work after restoration of electric supply so that overall progress of work is not affected.
3.3.6	The contractor shall have to make arrangement at their own cost for illumination that will be required in the working area for execution of the work & safety of workmen.
3.3.7	The contractor shall have to make arrangement at their own cost for illumination etc. in labor colony. However there may be provision of Chargeable Power for labor colony for which contractor has to install meters and necessary accessories
4.0	TOOLS & PLANTS
4.1	All the tools and plants required for execution of the above work are in contractor's scope.
5.0	MATERIAL HANDLING (BHEL ISSUED MATERIAL)
5.1.1	Reinforcement (TMT bar) earthing Strip/Bar, structural steel (MS plate/ ISMB/ channel/ angle/chequered plate/ stainless steel plate/liner) only will be issued free of cost by BHEL for use in the work covered in this contract. All other materials required for proper completion of job shall be provided by contractor and quoted rates shall be inclusive of this. Please note that BHEL will only issue the above free materials if has written in the description of the BOQ.
5.1.2	Consignment steel will be directly issued to the contractor as received by BHEL, on weight basis from its supplier, as per delivery challan of supplier.
5.1.3	Handling of steel of total project including its unloading will be in vendor's scope for

	which no separate payment will be given by BHEL.
5.1.4	It would be the responsibility of the contractor to keep in constant contact with BHEL/ site to find out the delivery status, arrival of the consignments and arrange for escort to accompany the truck/ trailer for transportation of above materials by BHEL'S supplier, as necessary. The lorry, truck way bill for the consignment as shall be received by BHEL would be handed over to the contractor immediately for unloading of materials including all arrangement for necessary gate passes etc. All arrangement for necessary gate passes etc shall be the responsibility of contractor.
5.1.5	Payment of all demurrages that may result due to contractor's fault/ delay would be the responsibility of the contractor. If BHEL have to make payment of demurrage together with freight, the amount so paid as demurrages for the reasons stated above, shall be recovered from the bills of the contractor. The decision of BHEL's engineer in this regard will be final and binding on the contractor. However the contractor has to clear all such charges, if any in this regard and complete the job without waiting for BHEL's decision.
5.1.6	It would be the responsibility of the contractor to sign on the delivery book acknowledgement slip of supplier/ transport authorities etc.
5.1.7	Consignments coming on Sundays and holidays are also required to be handled/ unloaded by the contractor. Since the offices and stores will probably remain closed on such days, it will be the responsibility of the contractor to contact BHEL engineers at their residence and obtain instructions.
5.1.8	Since the consignments are expected to arrive during any time of the day or night, contractor shall have, his workmen round the clock at site as well as other places as required to unload the materials immediately on arrival.
5.1.9	Unloading of materials at the storage yard or at places designated by BHEL, stacking & restacking, shifting & reshifting, using contractor's own cranes, trailers and other equipments with the valid road permit for their operation, unloading and stacking etc shall be responsibility of the contractor under this contract. All materials/equipments shall be stacked, stored above ground level by use of concrete or wooden sleepers No materials shall remain on ground at any time. All concrete sleepers required for stacking the materials shall be arranged by contractor (successful bidder of this package). All other material handling equipments like winches, d-shackles, slings of various sizes, max puller, pulley blocks, jacks, trucks, tailors etc required for such material handling of steel etc. shall be arranged by contractor within quoted/accepted rates.
5.1.10	It will be the responsibility of the contractor to submit computerized account of all such consignments of materials received by them, daily to BHEL.
5.1.11	BHEL reserve the right to recover from the contractor any loss arising out of damage/ theft or any other causes of the materials issued to him at any point.
5.1.12	Open land (very limited space) for storage shall be provided by BHEL on free of cost basis as per availability. You shall maintain one centralized fenced store cum bar bending yard (Area Approx. 50mx50m). Hard surfacing of this yard and all round drain shall be carried out by you at your own cost within the accepted rate. Batching plant area shall be provided within plant premises and you shall make use of the area for installation and operation of the Batching Plant at your own cost. You shall make complete arrangement of necessary security personnel, to safeguard all such materials in your custody. Materials issued will be used only for construction of permanent work. You shall take care of material issued by BHEL and shall protect the

	<p>same from theft, damage and weathering.</p> <p>Barbed wire fencing of the steel storage yard, batching plant area, reinforcement bending yard area etc. are to be done by the contractor at his own cost. Contractor shall also remove grass, bushes, trees etc. wherever required off the land provided to him and shall make proper continuous up-keepment of the open yard/ land by removing grass, bushes trees etc and same is included under the scope of his work & no extra payment shall be made to the contractor in this regard.</p>
5.1.13	The contractor shall construct waterproof cement store (capacity up to 300 MT) for storing and stacking of cement, CGI / asbestos roofing (slope) with brick masonry wall, PCC flooring or container. Materials required for the same shall be provided by contractor at his own cost. Cement has to be kept over wooden raised platform. Stacking of cement is to be done as per BS codes with proper illumination and locking arrangements.
5.1.14	The contractor shall in no case be entitled for any compensation or damages on account of any delay in supply or non-supply thereof for all or any such material.
5.1.15	Excessive rusting of steel must be avoided. In case, due to any cause attributable to the contractor, such clotting of and/ or rusting of steel occur rendering the same unusable, then such quantity of steel shall be recovered from the interim payment at the penal rate specified in the tender.
5.1.16	No material shall be issued to the contractor except as those indicated above, i.e. steel unless otherwise expressly provided for in the contract. Contractor will have to make his own arrangement at his own cost for procurement of any other material as required for the works and of such quality as acceptable to BHEL.
5.1.17	The contractor shall maintain proper store account for all the BHEL issued materials and shall give three copies of monthly computerised reconciliation statement of such account to the BHEL.
5.1.18	Contractor shall carry out in complete association with BHEL, material management functions and execution like day to day update of materials, issued to contractor, accounting for surplus/ scrap material returned etc. These functions shall also be carried out through computerised system utilizing suitable software. Contractor shall provide experienced software personnel to associate on dedicated basis for efficient discharge of the same.
5.1.19	The contractor shall solely be responsible for the safety & quality of material after it is handed over and issued to contractor by BHEL.
5.1.20	BHEL issued materials shall not under any circumstances be taken out of the project site unless otherwise permitted by BHEL.
5.1.21	All the necessary lifting tackles, cranes, hydra, tools & plants including tractors, trailers, trucks, pulley blocks, jacks, winches, wire ropes etc, of suitable capacities and other equipments incidental to carry out this work shall have to be arranged by the contractor at his cost. BHEL engineer reserves the right to inspect lifting tackles and equipment before allowing their use. Such approval however shall not relieve the responsibility of the contractor to ensure safe handling of equipment taking the precautions to avoid any accident and damage to other equipment and personnel.
5.1.22	No separate rate will be applicable for the above job. The contractor will quote the rate for the items inclusive of all charges for the above job.
5.1.23	Bidder's scope of handling of steel under the scope of this tender includes stacking/ storing of materials over concrete sleeper USD Bidder scope shall include provision of concrete sleepers for this purpose and no separate payment against the same will be made by BHEL. After completion of the job bidder shall take back the sleeper USD

	Bidder's quoted rate/ price shall be in consideration to this.
5.2	DELETED
5.3	ISSUE OF STEEL (Steel shall be provided against respective items of the BOQ where mentioned that Steel shall be supplied by BHEL as free of cost)
5.3.1	The steel shall be issued to the contractor free of cost on the following basis.
5.3.1.1	Structural steel (MS plate, angle, channel, ISMB, Stainless steel plate/Liner, chequered plate and EOT crane rails) – Weighment basis (unit – MT).
5.3.1.2	Reinforcement steel(TMT) and earthing rod (MS round) – Weighment basis (unit – MT).
5.3.2	All the steel (structural steel, reinforcement, earthing strip/bar) issued by BHEL shall be properly accounted for. The total quantity of steel required for the work will be calculated from the approved Bar Bending schedule, fabrication drawings, approved laps, chairs and lugs. The measurement for payment as well as for accounting shall be based on the sectional weights
5.3.3	In case any such sectional weights are not available in the above documents, the manufacturer recommendation shall be binding.
5.3.4	The steel issued to the contractor shall be mainly in standard length and sections as received from the supplier. However, the contractor shall be bound to accept the steel in length as available in the project stores no claims for extra payment because of issue of non-standard length will be entertained.
5.3.5	In case MS flats as required in the fabrication of structures are not available, you shall cut such width out of the available MS plates to make flats at no extra cost till such material is available and procured by BHEL.
5.3.3	The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by contractor from BHEL stores.
5.4	ISSUE OF READY MIX DESIGN(RMC)
5.4.1	The RMC shall be issued to the contractor free of cost as per item of the Price Schedule.
5.5	Quarterly requirement of steel must be positively submitted by the contractor at the last month of the previous quarter, In addition, the contractor shall also furnish the estimated requirement of steel during a month by the third week of the previous month indicating his requirement.
5.6	Bidders to ensure that no lamination materials are taken over by them from BHEL. Fabrication wastage, if any due to above, shall not be compensated by BHEL
5.7	Bidder to note that steel required for his enabling job like store/ site office etc. shall be arranged at his own cost.
5.8	RETURN OF MATERIALS
5.8.1	RETURN OF STEEL INCLUDING SCRAP
5.8.1.1	All surplus steel and all wastage materials will be taken back on weighment basis.
5.8.1.2	Surplus, unused and un-tampered steel shall be sorted section-wise and returned separately for a place directed by BHEL/ engineer within the project area. Return of such materials will not be entitled to any handling and incidental charges.
5.8.1.3	All wastage/ scrap (including wastage, unusable scrap) shall be returned to the stores on weighment basis and a receipt obtained for material accounting purposes. Return of such material will not be entitled to any additional cost due to handling and transportation and incidental charge.
5.8.1.4	Scrap for reinforcement steel and structural steel shall be returned separately

5.9	RMC & STEEL CONSUMPTION AND WASTAGE	
5.9.1	READY MIX CONCRETE (RMC) WASTAGE	
5.9.1.1	Allowable wastage – One and half (+1.5%) of theoretical consumption of RMC unless specified otherwise in the technical specification.	
5.9.1.2	For any material issued by BHEL to the contractor free of cost, and which is not accounted for by the contractor to BHEL, then recovery for such material shall be affected at penal rates.	
	SL	RMC consumption
	C-1	Theoretical consumption (without considering any wastage or loss).
	C-2	Actual consumption being Limited to plus one and half percent (+1.5%) of aforesaid theoretical consumption towards allowable wastage.
	C-3	Actual consumption beyond one and half percent (+1.5%) of above (C-1).
	Basis of issue & penal recovery	
		Free
		Free
		Penal rate
5.9.5	REINFORCEMENT STEEL CONSUMPTION	
5.9.5.1	The theoretical consumption of various diameters of reinforcement and earthing MS round shall be based on approved construction drawing and bar bending schedule. Weight shall be calculated considering the sectional weights as per Indian standards. No extra cost shall be payable to the contractor for any deviation in weights for the different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.	
5.9.5.2	Actual consumption = Issue – Surplus.	
5.9.5.3	Surplus = Un-tampered and unused quantity of steel returned by the contractor to BHEL store along-with relevant documents. However, cutpieces of length greater than or equal to 5.0 m in good condition as per judgement of the engineer will also be treated as surplus steel. If contractor will be deposited/handed over to BHEL more than wastage quantity as specified in clause No. 5.10.1 & 5.12.1 then same quantity will not be taken in Reconciliation statement and bidder will not be received of any financial benefit.	
5.9.5.4	Wastage = Actual consumption – Theoretical consumption.	
5.10	REINFORCEMENT STEEL WASTAGE	
5.10.1	Allowable wastage – Three Percent (+3%) of the theoretical consumption shall be considered as allowable wastage.	
5.10.2	Wastage and scrap shall be as per actual weighment basis.	
	SL	Reinforcement steel
	R-1	Theoretical consumption (without considering wastage and scrap or loss)
	R-2	Wastage limited to plus three percent (+3%) of aforesaid theoretical consumption (R-1) towards allowable wastage.
	R-3	Wastage beyond three percent (+3%) of the theoretical consumption above (R-1).
	Basis of issue & penal recovery	
		Free
		Free
		Penal rate
5.11	STRUCTURAL STEEL CONSUMPTION	
5.11.1	The theoretical consumption of various sections shall be based on approved drawings. Weights shall be calculated considering the sectional weights as per Indian standard as mentioned in relevant clause. No extra shall be payable to the contractor for any deviation in weights for the two different procedures adopted for issue and calculation of	

	the theoretical consumption including rolling tolerances.	
5.11.2	Actual consumption = Issue – Surplus.	
5.11.3	Surplus = Untempered, unused, uncut quantity of steel returned by the contractor to BHEL store.	
5.11.4	Wastage = Actual consumption – Theoretical consumption.	
5.12	STRUCTURAL STEEL WASTAGE (Except Fabricated Structural Steel as supplied by BHEL as free of cost, NO wastage will be permitted for fabricated structural steel)	
5.12.1	Allowable wastage – 4 % (four percent) of the theoretical consumption shall be considered. Wastage is further classified as cut pieces and scrap measured as per actual weightment basis. Invisible wastage (loss of materials due to gas cutting, straightening of edges etc) shall be limited to 0.5 % (zero point five percent) of theoretical consumption and shall be considered for reconciliation purposes only. But this invisible wastage shall be considered to be included in allowable wastage (i.e. four percent).	
	Sl no	Basis of issue & penal recovery
	Structural steel materials	
	S-1	Theoretical consumption (without considering any wastage, scrap or loss) as per specification & drg.
	S-2	Wastage limited to plus four percent (+4%) of the aforesaid theoretical consumption (S-1) towards allowable wastage.
	S-3	Wastage beyond four percent (4%) of the aforesaid theoretical consumption (S-1).
5.13	COPPER STRIP/BAR/CONDUCTOR CONSUMPTION	
5.13.1	The theoretical consumption of various sections shall be based on approved drawings. Weights shall be calculated considering the sectional weights as per Indian standard as mentioned in relevant clause. No extra shall be payable to the contractor for any deviation in weights for the two different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.	
5.12.2	Actual consumption = Issue – Surplus.	
5.12.3	Surplus = Un-tempered, unused, uncut quantity of steel returned by the contractor to BHEL store.	
5.12.4	Wastage = Actual consumption – Theoretical consumption.	
5.13	COPPER STRIP/BAR/CONDUCTOR - WASTAGE	
5.13.1	Allowable wastage – 0.5% (Half percent) of the theoretical consumption shall be considered.	
5.14	All wastage reinforcement, MS round/Copper Strip/Copper bar, structural steel shall be returned to BHEL.	
5.15	RECONCILIATION OF BHEL ISSUED MATERIALS	
5.15.1	The contractor shall submit a reconciliation statement of RMC and steel issued to him once in two months. The same may be submitted along with each RA bill.	
5.15.2	At the time of submission of bills, the contractor shall properly account for the material issued to him as specified herein to the satisfaction of BHEL certifying that the balance material are available with contractor's custody at site.	
5.15.3	If it is noticed by BHEL that the wastage is high and calls recovery at the penal rate, then BHEL will proceed for recovery for the excess wastage as per penal recovery rates as specified.	
5.15.4	The approved drawings/ bar bending schedules are to be considered for the purpose of	

	reconciliation of materials.	
5.16.0	RECOVERY OF MATERIAL	
5.16.1	If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly RA bill at the penal rate stipulated below.	
5.16.2	PENAL RATE OF MATERIALS	
	Item	Penal rate (USD)
	Reinforcement steel etc.	1000/- per MT.
	Structural steel/GI Flat	1560/- per MT.
	Tined Copper Strip/Bar/Conductor/SS Plate	9000/- per MT.
	Ready Mix Concrete (RMC)	105% of BHEL purchase cost.
6.0	INSPECTION, TESTING AND INSPECTION CERTIFICATES	
6.1	The engineer, his duly authorized representative and / or an outside inspection agency acting on behalf of BHEL / owner shall have access at all reasonable times to inspect & examine the materials & workmanship of the works during its manufacture and if part of the works is being manufactured or assembled on other premises or works, the vendor shall obtain for the engineer and for their duly authorized representative permission to inspect as if the works were manufactured or assembled on vendor's own premises or works. Necessary arrangement for carrying out inspection including supply of labour, IMTEs, area illumination and scaffolding, if required will be vendor's responsibility and same has to be carried out within the quoted price.	
6.2	To facilitate advance planning of inspection in addition to giving inspection notice the vendor shall furnish quarterly inspection program indicating schedule dates of inspection at customer hold point and final inspection stages. Updated quarterly inspection plans will be made for each 3 consecutive months and shall be furnished before beginning of each calendar month.	
6.3	Before any plant / equipment leaves the place of manufacture, BHEL shall be given the option of witnessing inspections & tests for compliance with specifications & related standards. The vendor shall give the engineer/ inspector 15 days written notice of any material being ready for testing. Such test shall be to the vendor's account except for the expenses of the inspector. The engineer / inspector, unless the inspection is waived will attend such tests within 15 days of the date on which the equipment is notified as being ready for test / inspection, failing which the vendor may proceed with test which shall be deemed to have been made in the inspector's presence and he shall forthwith forward to the Inspector duly certified copies of test reports.	
6.4	The engineer or inspector shall within 15 days from the date of inspection as defined herein give notice to the vendor of any objection w.r.t. drawing / equipment / workmanship which in his opinion not in accordance with the specification / contract. The vendor shall either make modification as may be necessary to meet the said objection or explain to the engineer/ inspector giving reasons that no modifications are necessary to comply with the contract.	
6.5	When the factory tests have been completed at the vendor's or sub-vendor's works, the engineer or inspector shall issue a certificate to this effect within reasonable time after completion of tests but if the tests are not witnessed by the engineer or Inspector the certificate shall be issued within 15 days of the receipt of vendor's test certificate by the engineer inspector. Completion of these tests or the issue of the certificates shall not bind BHEL to accept the equipment should it on further tests after erection be found not to comply with the contract.	
6.6	In all cases where the vendor provides the tests at the premises of the vendor or any sub-vendor, the vendor except where otherwise specified shall provide free of charge	

	such items as labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably demanded by the engineer/ inspector to carry out effectively such tests on the equipment in accordance with the contract and shall give facilities to the engineer/ inspector to accomplish testing.						
7.0	INSURANCE						
	The contractor shall make available the original insurance cover(s) taken by him, against his T&P, assets and workmen compensation and any other cover as may be pertinent to his works and obligatory in terms of law, to BHEL for necessary verification in regard to their adequacy, before commencement of work. However, irrespective of such verification/ acceptance, the responsibility to maintain adequate insurance coverage at all times during the period of the contract shall be of the contractor alone. Such insurance covers to be taken shall be in the joint names of the owner and the contractor. The contractor shall however be authorised to deal directly with the Insurance company(s) and shall be responsible in regard to maintenance of such insurance cover. USD Insurance covers to be taken by BHEL / Customer shall be as stipulated under relevant clause of Volume-IB.						
8.0	DEVIATIONS/ CLARIFICATIONS						
8.1	Normally no deviation with respect to tender is acceptable to BHEL. However, in case of unavoidable circumstances, the bidder may submit their query for seeking clarifications of BHEL as per modality stipulated in NIT or may submit the same along with his offer as per prescribed schedule/ format without any ambiguity. Any assumptions, presumptions, deviations etc. indicated or implied anywhere by the bidder except those indicated in the deviation schedule/ format will not be recognized and will not form a part of consideration/ offer. In the absence of such filled-up schedule/ format it will be understood and agreed that the bidder's offer is based on strict conformance to the specification and no negotiation would be allowed in this regard. BHEL reserve the right not to recognize any/ all deviations submitted after opening of the bid.						
9.0	DEWATERING						
9.1	Contractor shall ensure at all times that his work area & approach / access roads are free from accumulation of water, so that the materials are safe and the erection / progress schedule are not affected. No separate claim in this regard shall be admitted by BHEL. No separate payments for dewatering of subsoil, surface water or catchments water, if required, at any time during execution of the work including monsoon period shall be considered by BHEL.						
10.0	TIME SCHEDULE/ COMPLETION PERIOD						
10.1	<p>The entire work under the scope of work shall be successfully completed in all respect within 30 (Thirty) months from date of start of work, as certified by Construction Manager, BHEL.</p> <p>Mobilization at site shall be done within 20 days from date of written intimation from BHEL. The exact date of start of work shall be reckoned based on certificate of Construction Manager, BHEL.</p> <table border="1" data-bbox="370 1696 1490 1925"> <thead> <tr> <th>SI no.</th> <th>Major Milestone</th> <th>Months from date of start of work</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>INTAKE PUMP HOUSE , DESILITING CHAMBER & CLARIFIED</td> <td>12</td> </tr> </tbody> </table>	SI no.	Major Milestone	Months from date of start of work	1	INTAKE PUMP HOUSE , DESILITING CHAMBER & CLARIFIED	12
SI no.	Major Milestone	Months from date of start of work					
1	INTAKE PUMP HOUSE , DESILITING CHAMBER & CLARIFIED	12					

		PUMP HOUSE	
2		AUX BOILER	12
3		RODM PLANT	13
4		CW PUMP HOUSE AND CHANNEL	14
5		CW PIPING WORK	15
6		PIPE AND CABLE RACK OUTSIDE POWER BLOCK	22
7		Completion of all the Balance structure as mentioned in Scope of work.	28
8		Completion of Misc. work and Handing over to BHEL/BIFPCL	30
<p>The above milestones have been prepared in line with L2 schedule of BHEL & BIFPCL. Contractor shall also responsible to complete the foundations/structures in their scope of contract within schedule time frame as prescribed by BHEL/BIFPCL.</p>			
11.0	PRICE BID		
11.1	Bidders should quote prices in USD as per format, Volume-III-Price Schedule provided in the tender. Bids shall be evaluated based on total price quoted.		
12.0	TERMS OF PAYMENT		
12.1	<p>The contractor shall submit his running bill (RA bill) once in a month at the end of each month in line with payment terms/ billing schedule indicated below. The RA bill complete in all respects accompanied by BHEL engineers certified/ measurement sheet, jointly signed, will be paid after passing of the bill subject to completeness & correctness. The measurement will be taken as specified in terms & conditions of contract and certified by the BHEL engineer of actual work. However, no extra payment shall be made in the event of delay in release of payment.</p> <p>90% pro-rata monthly RA payment shall be considered for payment based on monthly work completion certificate to be issued by BHEL engineer as per approved BBU/Price Schedule.</p> <p>The payment shall be released within 60 days from the date of receipt of complete invoice along with all necessary documents including Engineering Certificate.</p>		
12.2	Out of above 90%, 1.5 % of gross bill amount shall be paid in the following manner on certification by BHEL engineer after compliance of each of following activity in each month. In case of non-fulfilment of respective activity by contractor in each month, no payment shall be made by BHEL against corresponding activity and no claim of bidder at a later date, whatsoever, in this regard shall be entertained by BHEL.		
12.2.1	0.7 % shall be paid on compliance of housekeeping of contractor's working area and store/ office areas.		
12.2.2	0.3 % shall be paid on compliance of general illumination of contractor's working area and stores, office area.		
12.2.3	0.2 % shall be paid on compliance of applicable OHSAS requirement as per guidelines of BHEL/ PSER and as specified in the tender.		

12.2.4	0.3 % shall be paid on compliance of applicable safety requirement as per guidelines of BHEL/ PSER and as specified in the tender.
12.3	5% of contract value shall be paid against PAC (Preliminary Acceptance Certificate) to be issued by BHEL/BIFPCL on completion of job.
12.4	Balance 5% of contract value shall be paid against FAC (Final Acceptance Certificate) to be issued by BHEL / BIFPCL after completion of warranty period. However, if desired by vendor, this 5% may be released by BHEL against submission of equivalent amount bank guarantee as per Performance Bank Guarantee format, to be kept valid till warranty period, subject to the followings:
12.4.1	(i) Receipt of certificate that all works are completed in all respects;
12.4.2	(ii) Reconciliation of materials / T&P / MMD;
12.4.3	(iii) Completion of final bill formalities and
12.4.4	(iv) Handing over to BHEL.
12.5	Contractor shall make their own arrangement for making payment of impending labour wages and other dues in the meanwhile.
12.6	Contractor have to submit BHEL entry gate pass of steel, and other materials required for the work, in absence of which their corresponding RA bills shall not be processed.
12.7	Subject to any deduction which BHEL may be authorized to make under the contract, the contractor shall on the certification of the BHEL engineer at site, be entitled to payment explained hereunder.
12.8	The bills will be sent to BHEL, Site Finance for scrutiny and payment will be made after processing / verification only.
12.9	The measurement will be taken by BHEL engineer as per relevant clause of GCC and certify regarding actual work executed in measurement book and bills for work. However no additional payment shall be made in the event of delay in release of payment beyond the stated period.
12.10	All admissible recovery / adjustment, etc. shall be made from interim payable amount.
12.11	BHEL site at its discretion may split up percentage break up and effect payment to suit the site condition, cash flow requirement, according to the progress of work.
12.12	Payment shall be made in USD as per order. However for reasons, solely at the discretion of BHEL, if USD amount is not possible to be paid then BDT equivalent of USD will be paid as per of our currency Matrix. The quoted / accepted rate shall remain Firm throughout the contract period including extension period, if any, without any escalation till handing over.
13.0	DELETED
14.0	TAXES, DUTIES ETC
14.1.0	IMPORT DUTIES:
14.1	Bidder may please note that import for the project shall be in the name of our Employer / Owner of the Plant / Project and such import other than Office and Household Equipment shall be exempted from payment of Customs Duty, VAT & Supplementary Duty as per S.R.O-73 dtd. 19-03-1997. Also Regulatory Duty(RD), Advance Trade VAT(ATV) & AIT are exempted / not applicable. Any documentation needed for availing of Duty Free Imports will be submitted by the bidder in reasonable time having regard to the time for delivery of the work and the time for completion.
14.1.2	However, if any of the taxes as mentioned above are paid by the bidder as per the extant law in force in Bangladesh, the same shall be reimbursed at actuals subject to production of documentary evidence in support of such payment. However, the bidder

	shall obtain prior approval of BHEL before deposition of such taxes.
14.1.3	Temporarily imported erection materials, machineries and spare parts during construction period of Project are exempted from payment of Customs Duty and VAT. Such items shall be exported within six months from the commercial operation date. Documentation for the same to be submitted / maintained by the bidder.
14.1.4	Any Taxes for exporting material from source country & as applicable in the source country shall be on bidder's account. However, bidder to take into consideration Duty Free Export Provisions in source country, as applicable, including that in GST in case of exports from India. As such, while offering the rates, the bidder may take into account the benefit of above provisions, as the cost of input to the bidder will be net of such taxes and adjust their offer price accordingly to make it more competitive.
14.2.0	BANGLADESH VAT
14.2.1	The Bidder shall submit copy of VAT registration Certificate (Musak-8), TIN Certificate, Trade License to the BHEL site office immediately after receiving the Order but before raising the first Tax Invoice against this tender.
14.2.2	The subject job shall be a Construction Job. As per Section 6(4aa) of The Bangladesh Value Added Tax Act, 1991, VAT shall not be collected by the bidder from BHEL as the Employer (i.e. Customer of BHEL) shall make deduction of VAT from BHEL's invoice and deposit the same to the Government Treasury. Documentary evidence shall be provided to the bidder
14.2.3	Adequate documents for not charging/ claiming VAT from BHEL shall be made available to the Bidder.
14.2.4	The bidder shall raise Tax Invoice (Challan Patra) as per Rule 16(1) (Musak-11) of the Value Added Tax Rules, 1991 mentioning Name, Address and VAT Registration Number of BHEL site office.
14.2.5	Bidder shall note that the Tax Invoice complying with Rule 16(1) of the Value Added Tax Rules, 1991 must contain the 'Bill to' and 'Ship to' details as below: BHEL Bangladesh VAT Regn. No. 00761853 Bharat Heavy Electricals Limited Power Sector Eastern Region, 2x660 MW Maitree Super Thermal Power Project, Moidara Village, Rampal Upazila, Bagerhat District, Bangladesh
14.2.6	Bidders shall quote price excluding Bangladesh VAT envisaging VAT exemption on the same. In this connection please note that VAT, if and as applicable, on Bidders Quoted Price and in case BHEL is unable to provide exemption documents shall be payable extra. In such case bidder shall submit self-certified copy of the Treasury Challan and / or self-attested copy of the Current Account (Musak-18) along with the Tax Invoice as an evidence of payment of output tax claimed from BHEL.
14.2.7	Value Added Tax Deduction at Source:
14.2.7.1	BHEL will not deduct any VAT from Bidder's Gross Bill and such bidder need not to load any Output VAT in Bidder's quoted price
14.3.0	INCOME TAX DEDUCTION AT SOURCE:
14.3.1	Bidder should have valid 12-digit TIN number in Bangladesh prior to start of work. Advance Income Tax (AIT) under the Income Tax Ordinance, 1984 (and rules made thereunder) shall be deducted at prevailing rates on Gross Invoice value from the bills unless Exemption Certificate from the appropriate authority/ authorities is/ are furnished under Income Tax Laws of Bangladesh
14.3.2	Since payment shall be made in Bangladesh. Bangladesh Income Tax (AIT) shall be deducted, if applicable.

14.4.0	The Bidder shall carry out their own tax diligence to get acquainted with the relevant rules and regulations of Bangladesh pertaining to the subject job.
14.5.0	Except otherwise mentioned above bidder shall quote their rates/ price inclusive of all taxes, duties, cess, any State or Central Levy, social security contribution and other Taxes in or outside Bangladesh (but excluding Bangladesh VAT & Import Duties) in line with provisions as mentioned above etc. together with variation thereto during contract period including extension, if any. BHEL shall not release any additional payment in this regard.
14.6.0	The bidder is responsible for compliance of all relevant Tax Laws of Bangladesh and all other related places outside Bangladesh in connection with this contract and BHEL will not bear any such liability.
14.7.0	New tax & duties, if imposed subsequent to latest due date of offer submission, as per NIT & TCN, as applicable, by statutory authority after due date of submission of latest price offer and within the contract period including extension, if any (provided reason for extension is not attributable to vendor), shall be reimbursed by BHEL at actual on production of relevant supporting document to the satisfaction of BHEL. However, the vendor shall obtain prior approval from BHEL before depositing new taxes & duties. Benefits and/or abolition of all existing taxes must be passed on to BHEL against new Taxes, if any, proposed to be introduced at a later date.
15.0	PROJECT MANAGEMENT/ CONSTRUCTION MANAGEMENT To meet the need of construction management at site, contractor shall provide the following services within quoted/ accepted rates.
15.1	CUSTOMS CLEARANCE The Contractor shall be responsible for Bangladesh customs clearance of all materials, supplies, equipment, tools and other articles shipped into Bangladesh by him for the implementation of his works, including the food and the personal effects of the Contractor's personnel. All payment for clearance charge, storage charge, etc. which are imposed by the relevant agencies of the Government of Bangladesh, relating to the clearance of equipment, materials and Plant that will be incorporated in the Permanent Works or relating to the Temporary Works shall be borne by the Contractor. Further, if the Contractor is delayed in submitting necessary shipping documents to the Employer, the demurrage charges by the Port Authority will be borne by the Contractor. Tools and equipment and other equipment of the Contractor for use during construction but which are to remain the property of the Contractor and which are to be exported by the Contractor from Bangladesh at the completion of the Work shall be carefully documented and specially listed to facilitate both import and export. The Contractor shall determine prior to shipment the customs regulations applicable to this special case as well as normal import rules and regulations applicable. The Contractor shall also be responsible for inland transport by barge/ truck/train to the Site.
15.2	RECEIVING, TRANSPORTING, HANDLING AND STORAGE The Contractor shall receive, transport, handle, store and install all materials and equipment furnished under these specifications, or otherwise involved in the implementation of this Contract. It shall be the responsibility of the Contractor to determine the availability and capacity of transportation and unloading facilities (including for the transportation, delivery and receipt of all equipment, materials, Plant to the Site) and to make the required arrangements to secure the necessary facilities for the same.

	<p>The Contractor shall be responsible for the prompt unloading of all equipment or materials. The Contractor shall pay any demurrage incurred due to delay in unloading and for any other reasons.</p> <p>The Contractor shall handle materials and equipment carefully to prevent damage or loss. The use of bare rope slings for handling will not be permitted unless specifically approved by the Engineer. Special handling devices shall be used when necessary to avoid damage.</p> <p>In addition the Contractor shall also comply with the requirements of Technical Specification with respect to the receipt, transportation, handling and storage.</p> <p>If BHEL has to unload of RS, SS, Copper or any other free issue materials before mobilization of the contractor for the interest of the project or If contractor fails to unload the BHEL free issue materials at site for any reason then BHEL shall be unloading the same and the cost of unloading with following rates shall be deducted from contractor RA Bill.</p> <p>i) For RS, SS, Copper or any other materials:- USD 4/MT or actual cost , whichever is higher.</p>
15.3	<p>PLATFORMS</p> <p>Open platforms shall be constructed by the Contractor at least 50 cm above grade and shall have adequate flooring and base structure to support the stored materials and equipment.</p>
15.4	<p>INDOOR STORAGE</p> <p>Indoor storage sheds shall be constructed by the Contractor by suitable means for keeping materials and equipment from contact with the ground and to protect it from the environment and outside atmosphere. Sensitive equipment (including inter-alia, electrical, I&C and other equipment) must be kept in dust proof and ventilated rooms and means have to be provided to maintain the moisture content at required levels, in accordance with Good Industry Practices.</p>
15.5	<p>SHORING</p> <p>Shoring shall be provided by the Contractor to safely support materials and equipment not less than 30 cm above the ground. The ground shall be compacted and concreted or asphalted.</p>
15.6	<p>WEATHERPROOF COVERINGS</p> <p>Weatherproof and flame resistant sheeting of sufficient size for outdoor storage shall be provided by the Contractor. The sheeting shall be carefully placed and tied down to prevent moisture and wind from entering underneath the sheeting and to otherwise protect the equipment, materials and other Plant.</p>
15.7	<p>IDENTIFICATION OF CONTRACTOR'S EMPLOYEES, VEHICLES & BUILDINGS</p>

	<p>The Contractor shall provide each of his employees and his Subcontractor's employees with a name tag bearing the picture, the name or initials of the employee, a serial number and the name of the Contractor. Each employee shall wear his badge visibly to the security personnel at any time.</p> <p>Subcontractor's employees with a name tag bearing the picture, the name or initials of the employee, a serial number and the name of the Contractor. Each employee shall wear his badge visibly to the security personnel at any time.</p> <p>All vehicles and large equipment furnished and used by the Contractor or his Subcontractors on the Work shall be clearly marked with the Contractor's or Subcontractor's business name. The Contractor's offices, stores, depots and other facilities shall also be clearly identified. The detailed requirements are defined in the Health, Safety and Environment (HSE) Plan of BHEL.</p> <p>Around-the-clock security presence and operational routine shall be maintained throughout the year. Passes and temporary identification permits shall be issued and examined and access to any part of the Site, the site offices and living accommodation shall be controlled and limited to those who have an authorization.</p>
15.8	<p>EXPATRIATE PERSONNEL</p> <p>The Contractor shall submit to Employer data of all personnel he intends to bring into Bangladesh for the performance of the Work. This data shall include the name and present address of each person, his intended assignment and responsibility in connection with the Work and a concise resume of his experience in the type of work to which he will be assigned. This data shall be submitted to the Employer at least thirty (30) days prior to their expected arrival in Bangladesh.</p> <p>Any expense associated with illness of the Contractor's personnel, including replacement thereof, shall be to the Contractor's account.</p> <p>Costs of passports, visas, travel documents, inoculations and other incidental expenses incurred by the Contractor's non-Bangladesh employees and their dependents occasioned by travel to and from Bangladesh shall be borne by the Contractor.</p> <p>All accommodations and amenities for the Contractor's personnel and families (including all staff and labour) must be provided by the Contractor, and the Employer shall not have any liability for the same.</p>
15.9	<p>SAFETY</p> <p>The Contractor shall comply with all ordinances and regulations including, but not limited to, National, State, Municipal laws and Department of Labour, Transmigration and Co-operation Regulations, and other Applicable Laws that are in force in the locality of the Works and shall comply with any instructions that may be from time to time issued by Employer. The safety rules and regulations laid down in the Health, Safety and Environment (HSE) Plan are to be strictly adhered to.</p>
15.10	<p>CONTRACT PLANNING AND CONTROL</p>

	<p>Before starting the Work at the Site, the Contractor shall submit the detail site management organization for approval by the Employer. Such proposals shall show clearly the Contractor's key personnel, classification and qualification with the detailed information and curriculum vitae for above key personnel.</p> <p>The Contractor's Representative, site manager and senior key personnel who will be responsible for working closely with the Employers staff to achieve efficient execution of the Contract shall be competent to conduct meetings and communications in the English language.</p> <p>The management organization shall include a planning and programming tools covering the Work, and shall apply the latest techniques in communication and analysis. The Contractor shall nominate a planning engineer to co-ordinate all planning activities.</p>
15.11	<p>RELEASE OF INFORMATION</p> <p>The Contractor shall not communicate or use in advertising, publicity, or sales release, photographs or other reproductions of the Work under this Contract, or descriptions of the size, dimensions, quantity, quality, or other information concerning the Work unless prior written permission has been obtained from the Employer.</p>
15.12	<p>SAFETY AND ACCIDENT PREVENTION</p> <p>It shall be the Contractor's responsibility to maintain throughout the construction period, a safety and accident prevention program satisfactory to the Employer which meets the requirements of Applicable Laws and of all other Governmental Authorities authority having jurisdiction over the Works. The rules and regulations laid down in the Health, Safety and Environment (HSE) Plan must be adhered to at all times.</p>
15.13	<p>SECURITY</p> <p>The Contractor shall be solely responsible for the security of all equipment and materials incorporated or to be incorporated in the Work by him and all equipment, materials, tools, supplies, structures, facilities and others properly used in the execution of the Work while in his care and custody.</p> <p>The Contractor shall conform also to any specific security requirements of Employer but such compliance shall not relieve the Contractor from the total responsibility for security.</p>
15.14	<p>HOUSING & TRANSPORT</p> <p>The Contractor shall arrange for suitable housing units together with furnishing and utilities in the close proximity of the construction Site for accommodation of all his expatriate personnel. If the services of any expatriate personnel of the Contractor or its Subcontractors</p> <p>If the Contractor decides in consultation with the Employer that the health or safety of any of his personnel is or might be jeopardized by political or health hazards in Bangladesh, the Contractor may, after forty eight (48) hours' notice, order its employees and the employees of its Subcontractors and suppliers to return to their headquarters or other safe location, in which case the Work will be deemed to be suspended for the duration.</p> <p>The Contractor shall provide to the extent agreed transport vehicles for use during</p>

	construction period by the expatriate as well as local personnel.
15.15	<p>PROPRIETARY NAMES</p> <p>Whenever a material or article is specified or described on the plants by using the name of a proprietary product or by using the name of a particular manufacturer or vendor, the specific item mentioned shall be understood as establishing the type, function and quantity desired. Unless otherwise specified, other manufacturers' products which in the opinion of the Employer are equivalent of those specified will be accepted. Such items shall be submitted for approval prior to their incorporation in the Works.</p>
15.16	<p>PERFORMANCE OF THE WORK</p> <p>The Contractor shall conduct all Works in such a manner as to cause the least possible disturbance or damage to the environment. In cases where some temporary disturbance or damage is unavoidably caused due to the nature of the work, the Contractor shall, as soon as possible, remove the cause of such temporary disturbance, repair the damage and, in general, restore the affected areas to their original condition to the extent possible, and in a manner satisfactory to the Employer, the landowner and any authorities.</p> <p>Prior to commencement of the Work, the Contractor shall provide details of its EMP specifically addressing the following: Environmental management system and manual – policies, standards and procedures, and programs; organization / responsibilities;</p> <p>Training Incident and accident investigation; Management support; Environmental protection, mitigation and restoration; Emergency preparedness and response;</p> <ul style="list-style-type: none"> • Socio-economic plans, including historical and cultural resources; • audit, monitoring and corrective action; • information and records management; and, • Integration of safety & health requirements with the EMP. <p>All aspects of the EMP and the environment work requirements are the Contractor's accountability and the Contractor, its management and its Site supervisory staff will be held responsible for its implementation.</p> <p>All relevant Health, Safety and Environment (HSE) issues, results of audit and monitoring plans and programs, and HSE performance indicators will be communicated to the Contractor's management and the Employer through daily inspection meetings and reports, weekly construction meetings, monthly meetings, and in terms of the monthly project report.</p> <p>The Contractor shall ensure that he has complete knowledge of all the laws, statutes,</p>

	<p>statutory instruments, regulations, rules, treaties and conventions (by whatever name or title), environmental protection regimes and other Applicable Laws, in each of the jurisdictions where he shall perform the Work. The Contractor shall also take all necessary measures to protect the atmosphere, ocean, rivers, groundwater, seaports and land from pollution. In any event the Contractor shall promptly use its best efforts to eliminate and clean up any pollution caused, directly or indirectly, by the Contractor or which occurs at the Site, or other sites associated with this Work.</p> <p>The Contractor shall cooperate in all respects with any participant environmental representatives and with governmental persons, and allow them to inspect any and all equipment or operations that they wish to observe. The Contractor shall, at all times, be ready to discuss the implementation of the Contractor’s safety, health and environmental protection program.</p>
15.17	<p>INSTRUCTION TO WORKERS (ORIENTATION / INDUCTION)</p> <p>The Contractor shall ensure that all employees, subcontractors, servants and agents (and employees, servants and agents of all Subcontractors) participating in the Work, are advised about the strategy and plan for managing the environmental-social issues related to the work, and on their role and responsibility; instructed on the requirements of environmental laws, rules, regulations and specific permit conditions applicable to the area and the Work; instructed on the application and use of the required personal protective equipment (PPE) for their job duties and functions; and, have received the appropriate training in the use, application and maintenance of PPE.</p>
15.18	<p>RISK MANAGEMENT</p> <p>The Contractor shall clearly state the management methods and techniques to be used to identify potential hazards and risks at any stage prior to the execution of a particular activity. If required, specific procedures shall be developed by the Contractor to eliminate or mitigate the hazard to a safe level prior to the work being authorized. All requirements of the project’s environmental impact assessments (“EIA”) and other relevant assessments and conditions of approvals accorded by the relevant Governmental Authorities must be considered by the Contractor in the development of the Contractor’s Health, Safety and Environment (HSE) Plan, EMP and other related/relevant plans. The Contractor is required to implement a system whereby all risks associated with hazardous substances, whether chemicals, by-products, effluents or waste materials, are minimized and/or eliminated. In conjunction with its emergency plans and procedures, the Contractor shall develop and submit to the Employer’s Representative a “Safety Philosophy Document” that details the strategy to be adopted for control and shutdown systems, including alarms and programmable electronic control systems.</p>
15.19	<p>EMERGENCY PREPAREDNESS, RESPONSE & CONTINGENCY PLAN</p> <p>The Contractor shall prepare an Emergency Preparedness, Response and Contingency Plan (a detailed program of action to minimize the effects of an abnormal event requiring prompt actions beyond normal procedures to protect human life, minimize injury and safeguard the environment) for environmental and personal safety emergencies or incidents. This plan shall be found within the</p>

	Contractor's Safety & Health and/or Environmental Programs. The purpose of the plan shall be to limit insurance and damage to people, property and the environment respectively. The plans, procedures, and trained personnel shall be in place for the duration of the Contract to manage and control emergency situations and incidents in a proper and expeditious manner.
15.20	<p>SERVICING AND FUELLING</p> <p>To ensure adequate response capability in the event of a fuel, ground spill or other spill, all fuel transport vehicles and the Contractor's foreman vehicles shall carry a suitable amount of commercial absorbent material. In addition, floating absorbent pads and booms for spill clean- up on open water shall be kept accessible on the construction Site.</p> <p>All service vehicles and/or equipment utilized for re-fuelling must be equipped with automatic shut-off valves. All equipment or servicing activities with the potential for accidental spills (e.g., oil changes, hydraulic repair, coolants) will require appropriate containment methods to be in place (i.e., storage containers, impervious liners, absorbent materials, etc.) prior to the start of the activity.</p>
15.21	<p>SOIL AND GROUNDWATER PROTECTION</p> <p>The Contractor shall develop and implement soil and groundwater protection measures. Protection measures shall include building and impervious floors, where appropriate. The Contractor shall make an assessment of groundwater quality prior to the start of construction and prior to commissioning to demonstrate to Employer's Representative that construction activities have not adversely affected the environment. Groundwater quality shall be monitored throughout the construction phase.</p>
15.22	<p>HEALTH HAZARDS</p> <p>Worker and public health is a critical part of any HSE management program. The Contractor shall control substances and materials that may be a hazard to worker's health. These controls shall be a combination of hazard communication, safe work systems and the controlled handling and disposal of hazardous materials. The Contractor's controls shall commence at contract preparations and procurement stages, where all vendors and subcontractors shall be required to submit Material Safety Data Sheets ("MSDS") for all hazardous materials that will be supplied, provided or brought onto the Site. These MSDSs shall be forwarded to Contractor's HSE Manager for review and records management.</p> <p>In the event hazardous materials are to be used, the Contractor shall carry out assessments according to recognized international standards, to determine if there are any more suitable or less hazardous materials that could be substituted for the original materials. Only when the Project Manager, Employer and his Engineer and the Contractor are satisfied that assessments have been completed, and control measures are adequate to protect worker health, the materials shall be allowed on the project worksite. The Contractor's control measures shall include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Material transport, storage, labelling, packaging, and disposal,

- Personnel protective equipment (PPE),
- Health surveillance and monitoring, and
- Emergency procedures and training.

All explosive materials to be used for blasting during Site preparation shall only be handled by approved and qualified personnel. All explosive materials shall be stored in a secure, limited access sites, protected from workers and the public, and removed from the site every day and immediately after use.

All radioactive equipment and materials shall only be used by qualified, approved and permitted personnel. Radioactive materials must be stored in approved and protected containeUSD Radioactive materials and waste products shall not be disposed of on-site but removed in protective containers and disposed at government approved storage and disposal sites

15.23 WASTE MATERIAL MANAGEMENT

The Contractor shall ensure that waste management identification, handling, transport and disposal are addressed in the development of their HSE management plans.

The Contractor's employees responsible for handling hazardous materials (including wastes) shall receive training and certification in the handling, transport, storage and disposal of chemicals and regulated or hazardous materials. Where applicable, Workplace Hazardous Materials Information System ("WHMIS") certification and training, or its equivalent, shall be made available to employees. Regular written updates shall be included for continued employee awareness.

The Contractor shall ensure proper segregation and isolation for wastes that could react together in the event of a leak or other incident. These facilities shall include lockable, fire proof cabinets or storage in shelving units separated by fireproof barriers or walls.

The Contractor shall dedicate a space for waste and drum storage. The storage area must be easily accessible for spill containment and emergency response and not be susceptible to flooding.

For any waste storage area which could accumulate hazardous gases, vapors, or dust due to the nature of the wastes stored, the Contractor must supply suitable ventilation or other controls to ensure exposure by employees is kept below required minimum standards. Storage areas for hazardous wastes shall be designated as restricted areas and shall be suitably equipped to control an incident involving a leak or spill.

The Contractor shall make available suitable fire extinguishing equipment and proper electrical bonding equipment in all areas involving the handling and storage of flammable and reactive wastes.

Disposal of wastes by burning will not be allowed on the construction site.

Sumps and waste pits shall not be used for waste storage at the work site. Sumps

	<p>should only be used for temporary control and containment of spills, equipment leaks, etc. If the Contractor encounters former sump sites or waste pits during ground surveys, the Contractor shall identify and investigate the same. If any contamination is suspected, the Contractor shall excavate, remove and where required replace with an approved sump container system.</p> <p>The Contractor shall develop and implement a waste disposal control system. This system shall control every load of waste leaving the worksite, detailing the type of waste disposal, waste origin and destination, approximate weight, date and transport details on a waste manifest/document. These documents shall be audited.</p>
<p>15.24</p>	<p>SPILL RESPONSE AND CONTROL</p> <p>All spills shall be stopped and cleaned up immediately to avoid potential impact to water and soil quality. All spills shall be reported using the Incident Management Process. Under no circumstance contaminated material may be “stored” on the work site.</p> <p>All spills shall be rapidly stopped and appropriately eliminated as defined in the Contractor’s Emergency Preparedness, Response and Contingency Plan. Spills shall be contained in a way that will prevent their redistribution. All ground spills shall be contained as quickly as possible through diking, suction methods, excavation and the use of absorbents or other appropriate recovery techniques.</p> <p>A list including the type, quantity and location of the storage of retaining and clean up equipment to be used during construction shall be prepared. The list shall include the procedures and mitigation measures to be used in case of a spill. A written inventory will also be prepared, before starting construction works, including lubricants, fuels, solvents, chemicals and other materials that might be accidentally discharged during construction.</p> <p>All on-site fuel storage tanks shall be located in an impermeable secondary containment area with a holding capacity equal to 110% of the largest tank within the berm. For above ground tanks, the tanks shall be surrounded by a berm, the entire area covered with a suitable commercial absorbent material and with a sealed plastic liner to form an area that can be pumped out in the event of a leak in the tank. A waste handling plan shall be made with the purpose of identifying the procedures necessary for cleaning and disposing of residues from a major spill. In the event of a spill, the Contractor shall make all resources available to contain and clean up the spill. Traffic shall be minimized in and around the spill site.</p>
<p>15.25</p>	<p>NOISE CONTROL</p> <p>Noise level specifications to be followed by the Contractor in design, assessment and monitoring activities are based upon the maximum (acceptable) levels which plant personnel may be exposed during their normal working duties. The Contractor shall be familiar with and comply with the environmental guidelines as issued by the relevant Governmental Authorities in Bangladesh, including the Department of Environment, Government of Bangladesh and other relevant Applicable Laws.</p> <p>All internal combustion motors of vehicles, machinery and equipment used during the</p>

	<p>construction phase, shall have adequate noise silencers, and shall be kept in good operating conditions, during the entire construction period. Where temporary noise pollution of greater than 85 dBA will occur, temporary silencers shall be used. Equipment noise should not exceed the specified limits at accessible locations.</p>
15.26	<p>CONSTRUCTION TRAFFIC PLANNING</p> <p>The Contractor shall ensure that the construction Site is organized in such a way that pedestrians can move safely and without risk. The Contractor shall firstly select the lowest period of traffic flow for equipment crossings; and secondly, ensure that traffic patterns and entrances to private and public roads for access are not obstructed during construction activities. All site entry will be controlled by vehicular passes. Road closures, on-site and off-site, shall be with the approval of the Contractor's site manager and/or road closure permit. Site traffic shall be minimized and speed limits posted and enforced.</p>
15.27	<p>HOUSEKEEPING</p> <p>All construction debris and other garbage shall be continuously collected and disposed at an approved facility. At the end of each day, all waste material shall be removed from the construction Site and deposited at the approved allocated area. The approved procedures to manage waste shall be specified in the Contractor's waste management plan. All empty hazardous material containers shall be removed from the work area as soon as is practicable. All empty gas containers and bottles shall be returned to their storage area and secured properly.</p> <p>The Contractor's shall prepare a pest and vector control program to address specific site conditions, including a mosquito control program.</p>
15.28	<p>CONSTRUCTION CAMPS</p> <p>The location of work places, camps, areas of storage and installation of works, compression, regulation and communication stations shall be located on levelled land, avoiding areas with non-cohesive soils to avoid erosive processes.</p> <p>Health conditions in the camp shall be controlled in order to prevent contamination of adjacent groundwater or surface water resources. Domestic sewage generated at the construction sites shall be eliminated by two systems of septic/absorption tanks or chemical toilets located on the sites.</p> <p>Solid combustible garbage shall be collected and secured daily, until disposal, to prevent the attraction of livestock, vermins and wild animals. Residue shall be disposed of, along with non-combustible garbage, in a disposal location approved by the Authorities.</p> <p>Upon abandonment, the camp site area shall be cleared of all trailers, piping, cable, insulation, lumber, blockage, metal wastes, etc., and re-graded according to the landscaping concept. These guidelines and procedures for the management of domestic and other waste shall be specified in a plan.</p>
15.29	<p>SITE REGULATION MANUAL</p> <p>The Contractor shall thirty (30) days prior starting any Work at the Site furnish a detailed and comprehensive site regulation manual for its proposed operation and works on the Site, which shall be based on the site related regulations and requirements in the Contract and which shall be subject to Employer's approval. All</p>

	work on the Site, shall be carried out in compliance with the so approved site regulation manual.
15.30	PLANNING & MONITORING
15.30.1	The bidder shall prepare detail construction schedule (L-3) as per completion dates given in this document. This schedule must include all milestone and key activities for each subsystems / components in the areas of engineering (wherever applicable), procurement, manufacture (wherever applicable), excavation / construction / erection. This network must conform to the overall project schedule. The bidder should also ensure monitoring of these activities at least weekly basis to start with and on daily basis whenever required by BHEL.
15.30.2	The bidder shall also prepare progress report indicating progress on key activities, management summary for critical activities and list of actions requiring attention of BHEL. This schedule is to be preferably made in PRIMAVERA / MS PROJECTS, so that the same is compatible with BHEL's project management software.
15.30.3	<p>The bidder will have to Supply & install of 2 Nos. PCs (multimedia PC work station Pentium- Core-i5-650, 3.2 GHZ or above, 500 GB HDD, 4 GB RAM, 100 /1000 MBPS LAN card) of HP / HCL / COMPAQ/ ZENITH or equivalent make with window 10 or higher, 64 bit (with roll back to 32 bit O/S and required software like MS Office 2010 or higher, AutoCAD 2014 or higher, PageMaker (7.0 etc.), ADOBE PDF CREATOR with two nos. Multifunction (scanner/copy/print) as per instruction of BHEL for exclusive use of BHEL.</p> <p>These computers / printer/Multifunction shall remain BHEL's property and they will be not allowed to take out the same after completion of contract period. The contractor shall provide data / information etc. in prescribed formats for periodical updating of the progress reports, material management reports, updating of network pertaining to the contractor's scope of work etc.</p> <p>The contractor shall also provide 2 (Two) Number computer operators and 2 (Two) number service staff for miscellaneous service for BHEL's use at site / Kolkata for reconciliation, progress review & day-to-day planning purpose, documentation etc. These facilities are to be provided within 30 days from LOI date till completion of scheduled contract period.</p> <p>If BHEL do not availed the service of computer / printer / personnel as per requirement, BHEL shall have the right to deduct the amount as per following rates on prorated basis, from contractor's RA bill or any other dues.</p>
15.30.3.1	@ USD 300 / month for each computer operator.
15.30.3.2	@ USD 250 / month for each service staff.
15.30.3.3	@ USD 40 / month for each set of computer & printer.
15.30.3.4	In the event of the contract period getting extended beyond the stipulated time for reasons not attributable to you, above services may either be withdrawn or retained as per instruction of BHEL. If services are retained, you will be reimbursed at the above 70% of the mentioned rate or (actual +15%), whichever is lower, if the services of operator / service staff are being used by BHEL.
15.30.3.5	The contractor's site office must have facilities of communications like Fax, E-mail, and telephone with STD facility within a month from LOI.
15.30.2	PROGRESS REPORTING
15.30.2.1	The bidder shall submit daily, weekly and monthly progress reports for work force, materials reports, consumables (steel / gases / electrodes) report and other reports as

	per pro-forma considered necessary by BHEL. In case of any failure on contractor's part to comply with this, BHEL may at its discretion, consider to withhold part payment against their RA bills.
15.30.2.2	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 program and the slippages do not accumulate and effect the overall program.
15.30.2.3	The daily work force reports shall clearly indicate the work force deployed, category-wise specifying also the activities in which they are engaged.
15.30.2.4	Weekly progress review meetings will be held at site during which actual progress during the week vis-à-vis scheduled program shall be discussed or actions to be taken for achieving targets. For discussions, the contractor shall present program of subsequent week. The contractor shall constantly update/revise his work program to meet the overall requirement.
15.30.2.5	Periodic progress reviews on the entire activities of execution in respect of supply and works in scope of bidder will be held once in a month at Kolkata / site. These meetings will be attended by reasonably higher officials of the contractor and will be used as a forum for discussing all areas where progress needs to be speeded up. The contractor shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings.
15.30.2.6	During construction contractor shall take an average twenty colour digital photograph / slides each month (not less than four per week) of the works during progress. In case of failure in providing such photograph in each month, an amount of USD 260 per month shall be deducted from contractor's RA bill.
15.30.2.7	Successful bidder has to provide for electronic/ computerized storing and re-production / printing / plotting of various data, log sheets, protocols, measurements etc. These may be stored in CD (as per requirement) and handed over to BHEL as per requirement.
15.30.2.8	PHOTOGRAPHS The Contractor shall furnish to the Employer three (3) hard copies (and three (3) soft copies in .jpeg or .pdf format on separate CDs/DVDs) of each photograph taken to show shop assembly of equipment and the monthly stages of equipment installation. Each photograph shall show upon its face, the date, the Contractor's name, and description of the view taken. Photographs shall be taken of each assembly or sub- assembly to indicate the progress of the Work. Additional photographs shall be taken when and where required as directed by Employer and/or the Engineer. Shop photograph shall be not smaller than 120 mm by 150 mm in size.
15.30.3	SITE ORGANIZATION
15.30.3.1	The contractor shall maintain a site organization of adequate strength in respect of manpower, construction machinery and other implements at all time for smooth execution of the contract headed by a competent construction manager for site operations with sufficient level of authority to take site decisions. The vendor will submit organization chart (showing the name of SITE-IN-CHARGE) with individual bio-data indicating various levels of experts to be posted for supervision in the fields of supervision and execution, quality, material management, planning, safety, etc. The organization shall be reinforced from time to time, as required to make up slippage (if any) from the schedule without any commercial implication to BHEL. The organization chart is to be submitted within 10 days from the date from start of work.

15.30.3.2	Following (minimum) engineering manpower with power plant construction background to be deployed at site by the successful vendor for their day to day supervision etc.	
15.30.3.2.1	Qualified safety officers with assistants (exclusive for safety supervision for project jobs).	Officer – Minimum One No. Assistant – Minimum Two Nos. Manpower and Infrastructure details available in Annexure B. Contractor shall be implemented / deployed of Manpower at site as mentioned in Annexure B.
15.30.3.2.2	Engineer & Supervisors for quality inspection.	Engineer-One Number Two supervisor
15.30.3.2.3	Site supervising engineer and supervisors for civil works	As per requirement
15.30.3.2.5	Chemist/Quality engineer for Civil Laboratory	One no. Assistant - Two Nos.
15.30.3.2.6	Planning Engineer (exclusively for planning)	One no. Engineer Assistant - One Nos.
15.30.3.3	Deputation of above man-power shall be jointly decided at site in line with construction schedule.	
15.30.3.4	Engineer / supervisor for other functions like store & purchase, material management, fin, administration etc. are to be provided as per site requirement and not considered above.	
15.30.3.5	In the event of non-deputation of engineer/ supervisor by the bidder as per above agreed schedule, BHEL shall reserve the right to deduct USD 1050 per man-month for engineer, USD 650 per man-month for the supervisor / safety officer / chemist and USD 650 per man-month for safety supervisor from RA bills. Further induction of manpower regarding site supervisor & site engineer will be decided at site as per requirement without any financial implication.	
15.30.3.6	BHEL reserves the right to reject or approve the list of personnel proposed by the contractor. The persons whose bio-data have been approved by BHEL will have to be posted at site and deviation in this regard will not be permitted unless specific & reasonable justification is made.	
15.30.3.7	In addition to above, a well experienced qualified engineer to be designated, as 'Project Co-coordinator', shall be deployed by the contractor. Such engineer shall have adequate exposure on the job and shall remain fully involved in all planning activities, guidance etc. to contractor's own team during the complete execution period of contract.	
15.30.3.8	The contractor should also submit to BHEL for approval a list of T&Ps along with their fitness certificates. The tools & tackles shall not be removed from site without written permission of BHEL.	
15.30.3.9	The contractor should also submit network programs for the erection of various items. These networks shall show the BIFCL/ BHEL hold points, which have to be cleared by BIFCL/ BHEL, or their authorized representatives before further erection can take place. These programs for the erection would clearly identify responsibilities of the contractor and BIFCL/ BHEL. It is the responsibility of the contractor to get the Networks approved by BHEL within four weeks of the date of finalization of award of work/ placement from start of work.	
16.0	QUALITY CONTROL & QUALITY ASSURANCE	
16.1	Contractor's engineers & supervisors shall be adequately qualified and also inclined to do a quality job. The quality assurance engineer shall co-ordinate all aspects of quality control, inspection, implementation of quality assurance procedures laid down in Quality	

	Plan and technical specification by BHEL. He shall fill up quality assurance log sheets / formats and submit to BHEL for joint inspection and acceptance. The contractor shall fill up, maintain & preserve the quality records in computerized media. BHEL's authorized representative shall be given free access at all time to such quality related records etc. for inspection, review etc.
17.0	QUALITY ASSURANCE PROGRAMME
17.1	The contractor shall arrange for suitable quality assurance programme to control all activities pertaining to the scope of work, as necessary. Such programs shall be outlined by the contractor & shall be finally accepted by BHEL. A quality assurance programme of the contractor shall generally cover the following
17.2	Organization structure and qualification data for key personnel of the contractor for the management and implementation of proposed quality assurance programme
17.3	The procedure for source inspection, incoming raw material inspection, verification of material purchased etc.
17.4	System for maintenance of records.
18.0	GENERAL REQUIREMENTS – QUALITY ASSURANCE
18.1	All materials, components and equipment covered under the specification shall be procured, manufactured, erected, commissioned and tested, as applicable, at all stages as per comprehensive quality assurance program. An indicative program for inspection / test, to be carried out by the contractor, for some of the major items is given in the respective technical specification.
18.2	Field quality plan will detail out the quality practices and procedures etc. to be followed by the contractor's site quality control organization, during various stages of site activities from receipt of material / equipment at site.
18.3	BHEL reserves the right to carry out quality audit and quality surveillance of the systems and procedures of contractor's quality management. Contractor shall provide all necessary assistance to enable BHEL to carry out such audit.
18.4	Quality audit / approval of the results of test & inspection will not prejudice the right of BHEL to reject an equipment service not giving desired performance and shall not in any way limit the liabilities and responsibilities of the contractor in earning satisfactory performances of equipment/ service as per specification.
18.5	Repair / rectification procedure to be adopted to make any job acceptable shall be subject to the approval of BHEL.
18.6	All the latest relevant codes as per technical specification should be available with the contractor at site within 15 days from the date of placement from start of work or otherwise specified by Construction Manager/ Project Manager, BHEL.
19.0	HEALTH, SAFETY & ENVIRONMENT
19.1	REFER DOCUMENT NUMBER :-HSEP:14-MAITREE:VENDOR: DATE: 05.05.16
	DOCUMENT TITLE:-HEALTH, SAFETY AND ENVIRONMENT PLAN FOR 2X660MW MAITREE SUPER THERMAL POWER PROJECT
20.0	SPECIFIC REQUIREMENTS FOR ISO 9002
20.1	Contractors shall ensure that all their staff / employees are exposed to periodical training programs conducted by qualified agencies/ personnel on ISO 9002 Standards.
20.2	Contractor shall ensure that the quality is maintained in all the works connected with this contract at all stages of the requirement of BHEL.
20.3	Contractor shall ensure that all MMDs that are used, whether owned by the contractors or used on loan, are calibrated by the authorized agencies and the valid calibration certificate will be available with them for verification by BHEL. A list of such instruments possessed by the contractor at site with its calibration status is to be submitted to BHEL Engineer for control.

20.4	Contractor shall ensure that fitness certificate of the tools & plants, that are in use, whether owned by contractor or issued on loan, are tested by authorised agency and the valid fitness certificate is available for verification by BHEL.
20.5	Contractors shall arrange for the inspection of the works at various stages as required by BHEL. The contractors shall take immediate corrective action for the non-conformances if any, observed and pointed out by BHEL.
21.0	INTEREST BEARING RECOVERABLE ADVANCE/ MOBILISATION ADVANCE
21.1	Not applicable for this tender.
22.0	OVER RUN CHARGES
23.0	REVISION ON ACCEPTED CONTRACT RATE
23.1	Not applicable in this tender
24.0	PRICE VARIATION CLAUSE / ESCALATION
24.1	Not applicable for this tender.
25.0	LIQUIDATED DAMAGE
25.1	Intermediate Milestones
25.1.1	In case delay in achieving the Milestone as mentioned in Serial No. 3 of CL. No. 10.1 above, is solely attributable to the contractor, 0.5% per week of executable contact value*, limited to maximum 2% of executable contact value, will be withheld.
25.1.2	In case delay in achieving the Milestone as mentioned in Serial No. 6 of CL. No. 10.1 above, is solely attributable to the contractor, 0.5% per week of executable contact value*, limited to maximum 3% of executable contact value, will be withheld.
25.1.3	Amount already withheld, if any against slippage of Serial No. 3 of CL. No. 10.1 above, shall be released only if there is no delay attributable to contractor in achievement of Milestone as mentioned in Serial No. 6 of CL. No. 10.1 above.
25.1.4	Amount to be withheld on account of slippage of identified intermediate milestone(s) shall be withheld out of respective milestone payment and balance amount (if any) shall be withheld @10% of RA Bill amount from subsequent RA bills.
25.1.5	Final deduction towards LD (if applicable), on account of delay attributable to contractor shall be based on final delay analysis on completion/closure of contract. Withheld amount, if any due to slippage of identified intermediate milestone(s) shall be adjusted against LD or released as the case may be.
25.1.6	In case of termination of contract due to any reason attributable to contractor before completion of work, the amount already withheld against slippage of intermediate milestones shall not be released and be converted into recovery.
25.2	Overall Completion
25.2.1	If the contractor fails to maintain the required progress of work which results in delay in the completion of the works as per the contractual completion period, BHEL shall have the right to impose Liquidated Damage / Penalty at the rate of 0.5% of the contract value, per week of delay or part thereof subject to a maximum of ceiling specified below. For this purpose, the period of delay shall be the delay attributable to the Contractor for the completion of work as per contract. Contract Value for this purpose, shall be the final executed value exclusive of ORC, Extra Works executed, Supplementary / Additional Items and PVC.
25.2.2	If Completion of work goes beyond specified contract period of 30 (Thirty) months from date of start of work, as certified by Construction Manager, BHEL, LD will be imposed with maximum LD amount shall be 10 % of total contract value.
25.2.3	BHEL shall deduct the amount of such compensation from any money due or which may become due to the contractor and/or recover such compensation from the bank guarantees / security deposit of the contractor. To be entitled to impose such

	compensation, BHEL will not be required to prove that he has incurred such amount as actual damage.
25.2.4	BHEL reserve the right to cancel the order/ contract or a portion thereof at the risk & cost of the contractor and the contractor shall be liable to BHEL for any excess costs thereof.
Note:-	*Executable Contract value- <i>Value of work for which inputs/fronts were made available to contractor and were scheduled for execution till the date of achievement of that milestone.</i>
26.0	GUARANTEE / WARRANTY
26.1	The contractor will be responsible for the quality of workmanship, quality of materials/ items and design for which the contractor is responsible.
26.2	Guarantee / warranty period shall be 24 months from the date of issue of PAC including dredging work till completion of the Guarantee/Warranty period as per relevant clause of GCC. Commencement of guarantee period shall be from the date completion of work under the contract as certified by BHEL.
27.0	EXTENSION OF TIME FOR COMPLETION
27.1	If the completion of work as detailed in the scope of work gets delayed beyond the contract/ completion period due to reasons not attributable to contractor, the contractor shall make request for an extension of the contract and BHEL at its discretion may extend the contract. However such extension shall not entitle the vendor for price revision or price compensation as this being FIRM price contract.
27.2	Based on review of agreed & jointly signed L-2 / construction schedule (as enumerated in the tender), the balance work at the end of original contract period less the backlog attributable to the contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the contractor is bound to complete the portion of backlog attributable to contractor. Further 'Time extension' or 'Time extensions' at the end of previous extension shall be worked out similarly.
27.3	However if any 'Time extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty / LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take at the risk and cost of contractor.
27.4	A joint program shall be drawn for the balance amount of work to be completed during the period of 'Time Extension', along with matching resources to be deployed by the contractor as per specified format. Review of the programme and record of shortfall shall be done.
27.5	During the period of 'Time extension', contractor shall maintain their resources as per mutually agreed program
27.6	At the end of total work completion as certified by BHEL engineer, and upon analysis of the total delay, the portion of time extensions attributable to (i) Contractor, (ii) Force majeure conditions, and (iii) BHEL, shall be worked out and shall be considered to be exhausted in the same order. The total period of time extensions shall be the sum of (i), (ii) and (iii) above and shall be equal to period between the scheduled date of completion and the actual date of completion of contract. LD shall be imposed/ levied for the portion of time extensions attributable solely to contractor after adjusting delay attributable to BHEL& Force majeure and recoverable from the dues payable to the contractor.
28.0	EARNEST MONEY DEPOSIT (EMD / SECURITY DEPOSIT (SD) / PERFORMANCE BOND (PB)

28.1	EARNEST MONEY DEPOSIT (EMD)
28.1.1	<p>EMD is to be paid by tenderers for securing fulfilment of any obligations in terms of the NIT.</p> <p>In case of EMD submitted in USD by the successful tenderer, the same shall be converted and adjusted towards the required amount of Security Deposit of 50%. In case of EMD in INR, whole EMD shall be converted into USD as per stipulated selling conversion rate of INR to USD as per State Bank of India (SBI) publication on tender floating date. In case of EMD in BDT, whole EMD shall be converted into USD as per stipulated selling conversion rate of BDT to USD as per Bangladesh Bank publication on tender floating date.</p> <p>Tender cost & EMD can be submitted in INR/ USD/ BDT for this tender.</p> <p>Exchange Rate of currency as available in the web site of Bangladesh Bank on the tender floating/publishing date. If the date happens to be a holiday / or rate is not published, then the exchange rate of next day / next published day will be considered.</p> <p>Irrespective of submission in any of the aforesaid modes, amount of refund of EMD shall be net of submitted EMD less applicable Bank charges.</p>
28.1.2	<p>EMD & Tender cost amount can also be submitted directly by Foreign Bidders (other than Indian bidders) to the followings Bharat Heavy Electricals Limited bank account in Bangladesh-</p> <p>EMD & Tender cost amount can also be submitted directly by Foreign Bidders (other than Indian bidders) to the followings Bharat Heavy Electricals Limited bank account in Bangladesh-</p> <ol style="list-style-type: none"> 1. SBI (Branch Address:-Khulna, Bangladesh), A/C No. 05620257520201, BDT Account., SWIFT: SBINBDDH056, Routing number : 220471543 2. SBI (Branch Address:- Khulna, Bangladesh), A/C No. 05620257520202, USD Account, SWIFT: SBINBDDH056, Routing number : 220471543
28.1.3	<p>EMD & Tender cost amount can also be submitted directly by Indian Bidders to the followings Bharat Heavy Electricals Limited bank account in India-</p> <ol style="list-style-type: none"> 1. SBI(Branch Address:-Commercial Branch, Saltlake, Sector V, Kolkata ,Branch Code SBIN0004289),A/C No. 11107800029,INR Account.
28.1.4	Amount of EMD exceeding INR 20 Lakh may be submitted in the form of Bank Guarantee (INR or eqv. USD).
28.1.5	All other terms & conditions shall be as per GCC.
28.2	SECURITY DEPOSIT(SD)
28.2.1	The total amount of Security Deposit will be 5% of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit.
28.2.2	At least 50% of the required Security Deposit, including the EMD, shall be collected in before start of the work. Balance of the Security Deposit shall be collected by deducting

	<p>10% of the gross amount in USD progressively from each of the running bills of the Contractor till the total amount of the required Security Deposit is collected.</p> <p>If the value of work done at any time exceeds the contract value, the amount of Security Deposit shall be correspondingly enhanced and the additional Security Deposit shall be immediately deposited by the Contractor or recovered from payment/s due to the Contractor.</p> <p>The recoveries made from running bills (cash deduction towards balance SD amount) can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work, with the approval of the authority competent to award the work.</p>
28.2.3	All other terms & conditions shall be as per GCC.
28.3	PERFORMANCE BOND
28.3.1	Performance bond is not applicable.
29.0	CERTIFICATE TOWARDS COMPLETION
29.1	The work under the scope of the contractor shall be deemed to have been completed in all respects only when so certified by BHEL / owner. The decision of BHEL in this regard shall be final and binding on the contractor.
30.0	CIVIL LABORATORY
30.1	Contractor shall establish and maintain civil laboratory with necessary equipment (as per Annexure-A) for conducting relevant tests at site, as required.
	Any testing required to be carried out at site as per joint discussion at site and technical specification have to be arranged by you for all the works at your own cost.
31.0	CONSTRUCTION SCHEDULE
31.1	Entire work shall be carried out in accordance with the broad construction schedule given in CL No.10.1 above. Within 30 days from start of work, the contractor shall discuss with BHEL site engineer & furnish detail construction schedule (L-3/ L-4) indicating all milestones on the basis of major activities and get it approved from BHEL engineer. This schedule will undergo review and based on progress vis-à-vis project requirement, contractor shall have to submit revised schedule for approval of BHEL.
31.2	Deleted
31.3	The contractor shall plan his work in such a manner so as to meet the overall project schedule, in consultation with BHEL/ BIFCL engineer.
31.4	Contractor shall submit daily work program based on above construction schedule. Deferment of above schedule is not acceptable. Contractor will adhere to schedule and resource planning to be augmented to ensure completion as per schedule.
31.5	Periodic progress reviews on the entire activities of execution in respect of supply & works in scope of contractor will be held once in a month at Kolkata / site. These meetings will be attended by reasonably higher officials of the contractor and will be used as a forum for discussing all areas where progress needs to be speeded up. The contractor shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings.
31.6	Above schedule is indicative. The contractor shall plan his work in such a manner so as to meet the overall project schedule, in consultation with BHEL/BIFCL Engineer.
32.0	PAYMENT FOR ADDITIONAL/EXTRA ITEMS FOR CIVIL FOUNDATION WORKS
32.1	It shall be as per relevant clause of the GCC. However, “BPWD Schedule of Rates

	2014” as mentioned in the price schedule will be considered.	
33.0	DELETED	
34.0	TOOLS & PLANTS (TO BE PROVIDED BY CONTRACTOR)	
34.1	Tentative list of T&P to be deployed by contractor for successful completion of work is detailed below.	
34.2	It may be noted that the list is not exhaustive and is only for general guidance. The contractor is required to provide all necessary T&P (other than those specified to be provided by BHEL, if any) measuring (calibrated) instruments & handing equipments to maintain work progress for timely completion of total work as per contract. In case of project requirement, some activities may have to pre-pone. In such cases the contractor may have to deploy additional T&P. Quoted rate shall be inclusive of such emerging requirements. However, contractor shall submit deployment plan of all T&P along with tender bid.	
34.3	In the event of any failure on the part of the contractor to deploy T & P to sustain desired work progress , BHEL may at his discretion also terminate the contract on this ground and take out any or whole amount of the contract from the scope of the contractor. In the event of failure of contractor to deploy necessary and sufficient T&P/ IMTEs to maintain work progress , BHEL will be at liberty to arrange the same at the risk & cost of contractor including transportation cost of same from any of BHEL site/ other agency & charges as applicable shall be deducted from contractor’s RA bill. Decision of BHEL in this regard will be final & binding on contractor.	
34.4	Following Major T&Ps to be arranged by contractor within the indicated time	
	Major T&P items	Broad Mobilizing time from date of start of work
34.4.1	Deleted	Deleted
34.4.2	1 No. 75 T capacity crawler crane for pre-assembly.	within 60 days
34.4.3	2 nos. crawler cranes 40/45 T capacity crawler/tyre mounted crane	within 50 days
34.4.4	2 nos. TRX of Escorts group or equivalent (12/ 14 T cap)	1st – within 25 days from start of work. Balance progressively as per site requirement
34.4.5	2 nos. magnetic base drill machine (All Cut)	As per site requirement.
34.4.6	1 nos. submerged arch welding machine	As per site requirement.
34.4.7	Deleted	
34.4.8	15 nos. welding rectifier	As per site requirement.
34.4.9	1 no. trailor – 15T	Within 30 days
34.4.10	1 no. 30 T trailer	within 100 days
34.4.11	3 no. Hydraulic HSFG bolt torque tightening m/c	As per site requirement.
34.4.12	Bolt Tension calibrator-1 No.	As per site requirement.
34.4.13	Sufficient quantity of steel ladders for approach up to the top of each erected column to be required during erection of columns.	As per site requirement.
34.4.14	1 No. jack hammers/pavement breakeUSD	As per site requirement
34.4.15	Power winch – 3T - 2 nos for structural erection	Within 90 days

34.4.16	Power winch – 5T - 2 nos for structural erection	Within 120 days
34.4.17	1 no ultra-sonography testing machine for structural work(Recordable type)	As per site requirement
34.4.18	2 No. hydraulic excavator / Poclain (one no. with rock breaker attachment)	1 st – before start of work 2 nd – within 30 days from start of work.
34.4.19	2 No. JCB / Pay Loader	1 st --before start of work 2 nd – within 75 days
34.4.20	1 no. portable automatic concrete batching plant	As per requirement
34.4.21	6 nos. transit mixer (4.5/5/6 M3 capacity)	1st 2 no. within 35 days. 4 nos. within 75 days. Balance 2 as per requirement
34.4.22	1 no. Truck mounted concrete mixer cum pump alongwith placing boom minimum 36 m high	Within 90 days.
34.4.23	2 nos. concrete pump (20 cum/ hr min capacity & lift 70M)	1 st - Within 40 days 2 nd – Within 75 days.
34.4.24	1 no. Concrete cutting power tools (DD2E of HILTI/BOSCH make)	As per site requirement
34.4.25	1 no. Concrete core Cutting machine for drilling in concrete upto 300 mm dia alongwith diamond bits	As per site requirement.
34.4.26	2 nos. self priming dewatering pump 5 HP (diesel/ electric)	Within 20 days.
34.4.27	One no. 10 HP submersible mono-block electric pump (KOS-1040+ of Kirloskar or equivalent),	Within 60 days.
34.4.28	1 nos. self priming dewatering pump 2 HP (diesel/ electric)	Within 30 days.
34.4.29	2 nos. curing pump – 1.5 /2 HP (pump for curing at heights)	Within 60 days.
34.4.30	1 no. dozer.	Within 25 days.
34.4.31	3 nos. dumper	5 nos. Within 20 days. Balance within 30 days
34.4.32	2 nos. reinforcement bending machine	Within 30 days.
34.4.33	2 nos. reinforcement cutting machine	Within 30 days.
34.4.34	2 nos. power driven earth rammer	Within 60 days.
34.4.35	1 no. vibromax (earth compacter)	Within 45 days.
34.4.36	2 nos. Vibro compactor/ plate compactor – drum width 750mm	Within 120 days
34.4.37	1 no. compression testing machine (200 T cap)	Within 45 days.
34.4.38	2 nos. electric winch with building hoist	As per site requirement.
34.4.39	2 no total station with adequate arrangement for SurveyoUSD	Within 15 days.
34.4.40	1 no. auto level & staff + 2 nos as required	Within 15 days.
34.4.50	75 nos concrete cube moulds	Within 15 days.
34.4.51	Deleted	Deleted

34.4.52	Adequate no. of small trucks 2T/5T for movement within site	As per requirement.
34.4.53	TWO nos drinking water tank – 5000 lit.	Within 30 days.
34.4.54	1 nos truck mounted water tank (minimum 5000 lit) capacity with sprinkler arrangement.	Within 30 days.
34.4.55	1 No. 125KVA Electric Generator	Within 30 days
34.4.56	10 Nos. Concrete vibrator with adequate needle (3Nos. diesel driven +7Nos. electric driven)	5 Nos (at least 2nos. diesel driven) within 30 Days. Balance diesel/electric by 60 to 75 days
34.4.57	4 nos. mobile lighting mast with DG set attachment (8 mtUSD High & above capacity. (These towers shall be of 30 ft. height, noiseless, have 4x1000W metal halide lights, with Fuel tank capacity of 12 hUSD duty cycles, completed with panels, self starter for DG set, manual winch etc.)	First 2 no. - Within 30 days Second set of 2 no. by 75 days
34.4.58	Portable fire extinguishers as below: Soda acid – 10 sets. Dry chemical powder – 10 sets CO2 – 5 sets. Water & sand bucket (4 buckets in one stand) – 5 sets. Fire hose with nozzle (50 M length) – 4 sets.	Within 40 days
34.5	T&P shown in the above mentioned list are tentative based on planned progress requirement. Actual Mobilisation schedule, based on front availability, drawings, construction schedule and material availability at site is to be reviewed and mutually agreed with BHEL site periodically from time to time for mobilisation of major T&Ps, and the same have to be adhered to. No change will be permitted without written approval of Construction Manager, BHEL site. Further requirement will be reviewed time to time at site and contractor will provide additional T&P/equipments to ensure completion of entire work within schedule time without any financial implication to BHEL. All other T&Ps shall be provided by the contractor without any extra cost to BHEL. Vendor will give advance intimation & certification regarding capacity etc prior to dispatch of heavy equipments.	
34.6	All T&P and all IMTEs, which are 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.	
34.7	In the event of non mobilisation of any T&P by the successful bidder and as a result progress of work suffered, BHEL reserves the right to deduct suitable amount from the dues of the bidder, with assigning reasons thereof at the following rates	
	Major T&P items	Recovery rates
34.7.1	Deleted	Deleted
34.7.2	75 T capacity crawler crane for pre-assembly with adequate plates for	USD 500 /- per week or part thereof

	movement	
34.7.3	crawler cranes 40/45 T capacity crawler/tyre mounted crane	USD 350/- per week or part thereof
34.7.4	4 nos. TRX of Escorts group or equivalent (10/ 12 T cap	USD 200/- per week or part thereof
34.7.5	magnetic base drill machine (All Cut)	USD 70/- per week or part thereof
34.7.6	submerged arch welding machine	USD 70/- per week or part thereof
34.7.7	MIG machine	USD 50/- per week or part thereof
34.7.8	welding rectifier	USD 15/- per week or part thereof
34.7.9	Trailor – 15T	USD 150/- per week or part thereof
34.7.10	Trailor – 30T	USD 170/- per week or part thereof
34.7.11	Power driven HSFG bolt tightening m/c	USD 70/- per week or part thereof
34.7.12	Torque tightening m/c. (2 no. Capacity up to 30 dia HSFG bolt tightening)	USD 70/- per week or part thereof
34.7.13	Jack hammers/pavement breakeUSD	USD 70/- per week or part thereof
34.7.14	Power winch – 3T	USD 30/- per week or part thereof
34.7.15	Power winch – 5T	USD 50/- per week or part thereof
34.7.16	ultra-sonography testing machine for structural work.	USD 50/- per week or part thereof
34.7.17	Hydraulic excavator / Poclain	USD 800/- per week or part thereof
34.7.18	JCB / Pay Loader	USD 800/- per week or part thereof
34.7.19	Deleted	
34.7.20	Deleted	
34.7.21	Transit mixer (4.5/5/6 M3 capacity), peak period 4 nos. transit mixer	USD 100/- per week or part thereof
34.7.22	Truck mounted concrete mixer cum pump alongwith placing boom minimum 40 m high	USD 300/- per week or part thereof
34.7.23	concrete pump (20 cum/ hr min capacity & lift 70M)	USD 300/- per week or part thereof
34.7.24	Concrete cutting power tools (DD2E of HILTI/BOSCH make)	USD 70/- per week or part thereof
34.7.25	Concrete core Cutting machine for drilling in concrete upto 75mm dia alongwith diamond bits	USD 70/- per week or part thereof
34.7.26	self priming dewatering pump 5 HP (diesel/ electric)	USD 25/- per week or part thereof
34.7.27	10 HP submersible mono-block electric pump (KOS-1040+ of Kirloskar or equivalent),	USD 25/- per week or part thereof
34.7.28	self priming dewatering pump 2 HP (diesel/ electric)	USD 25/- per week or part thereof
34.7.29	curing pump – 1.5 /2 HP (pump for curing at heights)	USD 25/- per week or part thereof
34.7.30	dozer	USD 625/- per week or part thereof
34.7.31	dumper	USD 70/- per week or part thereof
34.7.32	reinforcement bending machine	USD 70/- per week or part thereof
34.7.33	reinforcement cutting machine	USD 70/- per week or part thereof
34.7.34	power driven earth rammer	USD 10/- per week or part thereof

34.7.35	vibromax (earth compacter)	USD 625/- per week or part thereof
34.7.36	Vibro compactor/ plate compactor – drum width 750mm	USD 300/- per week or part thereof
34.7.37	compression testing machine (200 T cap)	USD 50/- per week or part thereof
34.7.38	Deleted	
34.7.39	Electric winch with building hoist	USD 25/- per week or part thereof
34.7.40	Total station with adequate arrangement for SurveyoUSD	USD 70/- per week or part thereof
34.7.41	Auto level & staff + 1 nos if required	USD 70/- per week or part thereof
34.7.42	drinking water tank – 5000 lit.	USD 70/- per week or part thereof
34.7.43	truck mounted water tank (minimum 5000 lit) capacity with sprinkler arrangement.	USD 140/- per week or part thereof
34.7.44	Concrete vibrator with adequate needle (3 Nos. diesel driven + 6 Nos. electric driven)	USD 50/- per week or part their of
34.7.45	Mobile lighting mast with DG set attachment (8 mtUSD High & above capacity. (These towers shall be of 30 ft. height, noiseless, have 4x1000W metal halide lights, with Fuel tank capacity of 12 hUSD duty cycles, completed with panels, self starter for DG set, manual winch etc.)	USD 70/- per week or part their of
34.7.46	Any other instrument	As per discretion of the BHEL engineer
35.0	T&P TO BE PROVIDED BY BHEL	
35.1	BHEL shall not be provided of any T&P to contractor. Contractor shall arrange the required T&P for construction of the structures.	
36.0	OTHER TERMS	
39.1	All other term & conditions of this specification shall be governed by the pertinent provisions of GCC and other volumes of this tender, as applicable.	

ANNEXURE – A
LIST OF EQUIPMENTS FOR CIVIL SITE LABORATORY
CONCRETE TESTING EQUIPMENT

SL NO.	NAME OF TEST	NAME OF EQUIPMENT	SIZE OF EQUIPMENT
1	Concrete Compressive test	Digital Compressive Testing Machine with 2000 KN capacity.	2000KN capacity
2	Concrete Cube casting	Concrete testing Mould	Minimum 125 sets desired considering major concreting activity.
3	Workability of concrete	Slump cone	Standard, at least 04 Nos.
4	Course aggregate Sieve analysis (Concrete & Road Works)	Sieve set	450mm dia GI Frames Size: 125 mm, 90 mm, 75 mm, 63 mm, 53 mm, 40 mm, 20 mm, 16 mm, 12.5 mm, 10 mm, 4.75 mm, Pan and cover
5	Fine aggregate sieve analysis	Sieve set	Minimum 200 mm dia Brass sieves; Size 4.75 mm, 2.36 mm, 1.18 mm 600 micron, 300 micron, 150 micron, 75 micron, 75 micron, Pan and cover
Soil Testing Equipment (Levelling & Grading)			
1	Compaction of filling test	Core cutter apparatus	Rammer, 6 Nos. of standard core cutter mould, dolly
2	Proctor density test	Standard proctor Compaction apparatus	Standard
3	Moisture Content	Rapid moisture meter	Standard, at least 02 Nos.
Process Control Accessories			
1	Electronic balance	1 Nos.	600gx0.01g, 10g and 10 kg
2	Physical balance	5 kg capacity	Weights up to 5 kg
3	Thermometer	Temperature range 0° C to 150° C. 2 Nos.	Digital
4	Measuring jars	2 Nos. set of each size	100ml, 200ml, 500ml & 1000 ml
5	Spatula	2 Nos. each size	100mm & 200 mm with long blade wooden handle
6	Venire calipers	2 Nos. each	12" and 6" Sizes
7	Digital pH meter	01 Nos.	.01 mm least count
8	Digital micrometer	01 Nos.	0.01 mm least count
9	GI tray	02 Nos. each	600x450x50mm, 450x300x40mm, 300x250x40mm
10	Rebound hammer test	01 Nos.	Digital Rebound hammer
11	Screw Gauge	02 Nos.	0.1 mm-10mm, Least count 0.05

ANNEXURE B**HSE REQUIREMENTS-MAITREE PROJECT****MANPOWER AND INFRASTRUCTURE**

<u>SL NO.</u>	<u>ITEM</u>	<u>REQUIREMENTS</u>	<u>REMARKS</u>
1	HSE Manager	1 No. if no of HSE officers more than 1.	CV to be vetted by customer. Candidate should have <ul style="list-style-type: none"> • Degree/ diploma in Engg/Technology • Degree/ Diploma in H&S, • min 5 years' experience in field of safety incldg min 3 years experience in construction
2	Shift HSE Officer	Min 1 for every 500 workers or part thereof. Any sub-contractors with more than 20 workers must have a HSE officer. Each major work area must have a dedicated shift HSE officer as advised by BHEL HSE manager/officer.	Candidate should have <ul style="list-style-type: none"> • Degree/ diploma in Engg/Technology • Degree/ Diploma in H&S, min 2 years' experience in field of safety for Degree holder in Engg or Min 5 years with Diploma holder in Engg
3	Shift HSE stewards	Min 1 Steward for every 100 workers or part thereof. Deployment to be approved by BHEL HSE manager.	Candidate should have passed HSC(12 th standard) and attended a certificate course on construction safety or allied subjects
4	First aid box	1 in each office and major work area/floor	Items as per clause 76(2) of Bangladesh labour Rules and clause 7.4.5.3 of HSE plan for sub-contractors
5	Shift First aider	1 for each 150 workers USD Minor contractors may have tie up with major contractor with permission of BHEL HSE manager in this regard.	The candidate must have passed HSC and have a certificate from Bangladesh Red-cross society or as recognized by Govt. (PI refer 7.4.5.2 of HSE Plan for sub-contractors)
6	Ambulance	Round the clock experienced paramedical personnel with first aid facility & one ambulance including driver, fuel etc. shall be arranged/provided by you/other vendor . The above facilities will be	On running cost sharing basis with other sub-contractors USD Modalities to be worked out by site team.

		shared by various BHEL contractors working at site on chargeable basis to the providing agency (actual cost distributed among the various vendors present at site availing the facility on a prorata basis). The subject facility will be strengthened as per the requirement during peak work progress at site, by other vendor. Individual vendor may co-ordinate with the providing agency in this regard.	
7	Sick room	Shall be available at site, being provided by other agency.	PI refer 7.4.5.1 of HSE Plan for sub-contractors for details. Running cost & construction cost to be shared among all sub-contractors USD Modalities to be worked out by site team
8	Emergency vehicle	To be available in all shifts of work	Must be a 4-wheeler.
10	Walky-talky	If contractor engaged in height works- 1 No.	
11	Binoculars	If contractor engaged in height works- 1 No.	
12	Height Rescue-kit	If contractor engaged in height works- 1 No.	
15	HSE related instruments	<ol style="list-style-type: none"> 1. Lux meter- 1no, 2. ELCB Tester-1 no.- 3. Earth Megger- 1 No. 4. Anemometer-1 no- 5. Alcohol Breath Analyser-1 	To be made available to BHEL as and when demanded or to be shared with other sub-contractors as instructed by BHEL

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Special Notes:

1. The following welfare measures, in addition to those covered above, are to be taken at the site :
 - a. Adequate Drinking Water
 - b. Adequate no of toilets and washing area
 - c. Canteen
 - d. Rest Shed
 - e. Hygienic Accommodation (Labour Colony) and allied facilities
2. Water sprinkling arrangement for suppression of dust to be made
3. A Safety Park will be put up with participation by all major contractors
4. It must be ensured that no contaminated water including those discharged from Toilets, Canteen, Office and Labour Colony shall be discharged to under-ground water table and river water
5. AS THIS SITE IS LOACTED IN A CYCLONE-PRONE AREA, ALL BUILDINGS AND SHED MUST BE CONSTRUCTED STRONG ENOUGH TO WITHSTAND ADVERSE WEATHER CONDITION
6. FURTHER TO POINT#6, MASS EVACUATION OF PEOPLE FROM SITE MAY BE CALLED FOR, IF ADVISED SO, BY GOVT AGENCIES. AS IT WILL BE EXTREMELY DIFFICULT TO FIND A REST SHELTER FOR A FEW THOUSAND PEOPLE, IT IS FURTHER EMPHASISED THAT ACCOMMODATION MUST BE STRONG ENOUGH TO SURVIVE SUCH EXTREME WEATHER CONDITION.
7. BHEL shall be provided drawing for labour accommodation and contractor shall be constructed as per BHEL drawing with contractor own contribution/expenses.
8. It is assumed that First aider will be sitting in a porta-cabin.