



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

( भारत सरकार का उपक्रम )

**BHARAT HEAVY ELECTRICALS LIMITED**

(A Govt. of India Undertaking)

TCN - 02

Ref: PSER:SCT:KGN-C1892:TCN-02

Date: 19-04-2018

Sub	Tender Change Notice (TCN) - 02	
Job	Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC, Bhagalpur, Bihar.	
Ref	1.0	Tender no PSER:SCT:KGN-C1892:18
	2.0	BHEL's NIT, vide reference no. PSER:SCT:KGN-C1892:6663 Dated 30-03-2018.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KGN-C1892:TCN-01 Date: 12-04-2018.
	4.0	Other References, if any.

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

- 1) Extension of due date of offer submission from 20-04-2018 to 25-04-2018 (15:00 Hrs)
- 2) 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) Revised VOL-IF-TCC-CML-REV-1 is attached herewith, superseding SPECIAL CONDITIONS OF CONTRACT (SUPPLY), VOL-IF-TCC-CML-REV-0 issued earlier along with NIT. (Revision in cl. no. 32.4). However, bidder shall go through entire volume before submitting their bid.
- 4) Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
- 5) 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 : (033) 2339-8000/ 2339 8231

**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	Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC, Bhagalpur, Bihar.	
Ref	1.0	Tender no PSER:SCT:KGN-C1892:18
	2.0	BHEL's NIT, vide reference no. PSER:SCT:KGN-C1892:6663 Dated 30-03-2018.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KGN-C1892:TCN-01 Date: 12-04-2018.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:KGN-C1892:TCN-02 Date: 19-04-2018.
	5.0	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, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : (033) 23398000

TENDER NO – PSER:SCT:KGN-C1892:18 (TCN-02)		
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This section of Technical conditions of contract (TCC) is applicable for the contract. The conditions mentioned inscribed hereunder shall be read along with other volumes of tender, i.e. general conditions of contract (GCC, Volume-IB), Volume-II, Volume-III etc and in case of any conflict or inconsistency, the provision of the TCC, Volume- IF shall prevail.

<b>1.0</b>	<b>PROJECT SYNOPSIS AND GENERAL INFORMATION</b>
1.1	<p>Kahalgaon Super Thermal Power Project has been set up by NTPC is located near Kahalgaon town in Bhagalpur district of Bihar State. The Stage-I, Phase-I of the Project shall comprise of four (4) units of 210 MW presently under commercial operation.</p> <p><b>LOCATION AND APPROACH</b></p> <p>The proposed work of the project is located at latitude and longitude 25<sup>0</sup>15' N and 87<sup>0</sup> 15' E respectively. The nearest railhead is Kahalgaon Railway Station of Eastern Railway is approximately 2.0 km away from the project site. The Bhagalpur-Sahibganj State Highway runs parallel to the railway track. Bhagalpur, the nearest major town, is about 30-km southwest of project site. The nearest commercial airport is Patna and located at a distance of approximately 250-km.</p> <p>Kahalgaon Railway station is 400 Km away from Howrah.</p> <p>Further to the information given in this sub-section, Bidders are also advised visit the project site and collect data on local site conditions.</p>
<b>2.0</b>	<b>SCOPE OF THE CONTRACT</b>
2.1	<p>The scope of works covers Civil, structural and architectural works for retrofitting of ESPs for ESP R &amp; M 4X210 MW (U#1,2,3&amp;4) Kahalgaon STPP, NTPC, Bhagalpur, Bihar.</p> <p>The scope covers providing labour, supervision, materials, T&amp;Ps etc. for entire work as per specification and tender terms &amp; conditions. for The scope of work is indicative but not limited to the given below.</p> <p>Civil Works for Retrofitting of ESP and R &amp;M Work of Unit 1, 2, 3 &amp; 4 and Other Work Detailed Below:</p> <ul style="list-style-type: none"> <li>• Dismantling, demolishing of existing structure as required for foundation work for R &amp;M Work for Unit 1 2, 3 &amp; 4.</li> <li>• Pile, Pile Cap, Pedestal for one no additional ESP pass of Unit 1, 2, 3 &amp; 4, Ash handling system, Ash silo, Utility Building &amp; other building work.</li> <li>• Foundation for Ash Handling System from new ESP to Ash Silo / Ash slurry pump House</li> <li>• Modification / extension of ESP Control Room.</li> <li>• Silo &amp; Silo utility Building</li> <li>• Modification and extension of civil work for Mill Reject system</li> <li>• Any Other Misc. Civil work required for R &amp;M Work for Unit 1 2, 3 &amp; 4.</li> <li>• Foundation for station transformer of each unit.</li> <li>• Wall opening and closing , cable trench if required.</li> <li>• Earthing pit and earthing on ground level.</li> <li>• Civil structural work for compressure house</li> </ul>
2.2	Mix design( M 15, M 20, M 25 ,M 30, M 35/M 40) for all concreting shall be carried out either at site or from a reputed institute, contractor has to ensure adding of admixture and minimizing of cement content in line with IS 456 as advised by BHEL time to time without any additional cost.
2.3	The works to be performed under this contract consist of providing all labour,

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	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.
2.4	The scope shall also include setting up by the bidder a testing laboratory (one AC lab size 4.5mtr x 6mtr and 1 non AC lab 4.5 mtr x 4.5 mtr.) in the field to carry out all relevant tests. Detail of laboratory equipment as per Annexure-A is to be arranged by the contractor within quoted rate. For conducting day to day one no. chemist/Qualified quality engineer to be deployed as necessary.
2.5	All quality standards, tolerances, welding standards & other technical requirements shall be strictly adhered to. The Bidder shall fully apprise himself of the prevailing conditions at the proposed site, climatic conditions including monsoon pattern, soil conditions, local conditions and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may not have been specifically brought out in the specifications.
2.6	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.  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.
2.7	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.
2.8	The unit rates for various items of B.O.Q shall include all the stipulations mentioned in technical specifications and nothing extra over B.O.Q rates shall be payable.
2.9	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.
<b>3.0</b>	<b>SITE VISIT</b>
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. <b>In line with the above, site visit confirmation will be required to be submitted by the bidder with the technical bid.</b>
3.1	<b>OPEN SPACE FOR OFFICE &amp; STORAGE</b>
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. 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.

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3.1.3	<p><b>REMOVAL OF TEMPORARY FACILITIES</b></p> <p>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</p>
3.2	<b>WATER</b>
3.2.1	<p>BHEL will provide construction water at one point, as available from customer, approximately or within 300 m from work premises, <b>free of cost to the contractor.</b></p> <p>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.</p>
3.2.2	Further necessary network for water system shall be done by the bidder at his own cost.
3.2.3	Contractor should arrange on their own, water in their labour colony.
3.2.4	Contractor will have to arrange for storage of water to meet the day-to-day requirement. Bidder will ensure adequate supply of construction water to meet the requirement of water during major concreting
3.2.5	The availability of water (construction as well as drinking) in Kahalgaon 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	<b>ELECTRICITY</b>
3.3.1	<p><b>CONSTRUCTION POWER &amp; GENERAL ILLUMINATION NET-WORK:-</b> BHEL Shall Provide Construction Power <b>free of charge</b> at 415V level at one point (within 200 M from his work place / batching plant), bidder has to make his own distribution arrangement to draw electricity. Contractor may make standby arrangement for electricity for which no separate payment shall be made by BHEL.</p> <p>The bidder will have to procure &amp; install adequate area illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with sufficient DG back-up for area lighting at different working areas for execution of the work &amp; 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><b>GENERAL: -</b> 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 &amp; 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</p>

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	accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.
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
<b>4.0</b>	<b>TOOLS &amp; PLANTS</b>
4.1	All the tools and plants required for execution of the above work are in contractor's scope.
<b>5.0</b>	<b>MATERIAL HANDLING &amp; BHEL ISSUED MATERIAL</b>
5.1	Fabricated embedment (form BHEL Units) 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.
5.2	It would be the responsibility of the contractor to sign on the delivery book acknowledgement slip of supplier/ transport authorities etc.
5.3	Consignments coming on 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.
5.4	Reconciliation shall have to be done and no wastage is allowed for the fabricated embedment issued by BHEL. In case of excess, all materials are to be returned to BHEL Store. In case of any missing items, recovery shall be made @ actual cost + 30%.
5.5	The contractor shall construct waterproof cement store (Minimum 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 IS codes with proper illumination and locking arrangements.
5.6	All reinforcement steel, structural steel & other steel procured by the bidder shall be stored on elevated platform / sleepers to avoid direct touch with earth to reduce the corrosion.
<b>6.0</b>	<b>INSPECTION, TESTING AND INSPECTION CERTIFICATES</b>

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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.
<b>7.0</b>	<b>INSURANCE</b>
	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



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	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 covers. Insurance covers to be taken by BHEL / Customer shall be as stipulated under relevant clause of Volume-IB.
<b>8.0</b>	<b>DEVIATIONS/ CLARIFICATIONS</b>
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.
<b>9.0</b>	<b>DEWATERING</b>
9.1	Contractor shall ensure at all times that ground of 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.
<b>10.0</b>	<b>TIME SCHEDULE/ COMPLETION PERIOD</b>
10.1	The entire work under the scope of work shall be successfully completed in all respect within 18 (eighteen) months from date of start of work, as certified by Construction Manager, BHEL. 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.
<b>11.0</b>	<b>TERMS OF PAYMENT</b>
11.1	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. 95% 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. The payment shall be released within 60 days from the date of receipt of complete invoice along with all necessary documents including Engineering Certificate.
11.2	Out of above 95%, 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

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	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.
11.2.1	0.7 % shall be paid on compliance of housekeeping of contractor's working area and store/ office areas.
11.2.2	0.3 % shall be paid on compliance of general illumination of contractor's working area and stores, office area.
11.2.3	0.2 % shall be paid on compliance of applicable OHSAS requirement as per guidelines of BHEL/ PSER and as specified in the tender.
11.2.4	0.3 % shall be paid on compliance of applicable safety requirement as per guidelines of BHEL/ PSER and as specified in the tender.
11.3	5% of contract value shall be paid along with final bill on completion of job & followings:
11.3.1	(i) Receipt of certificate that all works are completed in all respects;
11.3.2	(ii) Reconciliation of materials / T&P / MMD;
11.3.3	(iii) Completion of final bill formalities and
11.3.4	(iv) Handing over to BHEL.
11.3.5	(v) Confirmation of full GST Credit to BHEL. Any Interest if levied thereon for reasons elaborated in Tax & duties clause of the contract and attributable to you shall be recovered for the Final Payment/ Retention amount.
11.5	Contractor shall make their own arrangement for making payment of impending labour wages and other dues in the meanwhile.
11.6	Contractor have to submit BHEL entry gate pass for cement, steel, and other materials required for the work, in absence of which their corresponding RA bills shall not be processed.
11.7	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.
11.8	The bills will be sent to BHEL, Finance for scrutiny and payment will be made after processing / verification only.
11.9	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.
11.10	All admissible recovery / adjustment, etc. shall be made from interim payable amount.
11.11	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.
11.12	Applicable GST, which can be claimed at any point, shall be released to you upon compliance of following:
11.12.1	You declaring such Invoice in his GSTR-1
11.12.2	Receipt of Goods/ services and Tax Invoice by BHEL
11.12.3	Confirmation of payment of GST thereon by you on GSTN Portal
11.12.4	Above is subject to receipt of goods / service and tax invoice thereof alongwith you declaring invoice in your return and paying GST within timeline prescribed for availing ITC by BHEL.
<b>12.0</b>	<b>MOBILISATION ADVANCE / IBRA</b>
12.1	No mobilization advance / IBRA will be paid to the contractor.
<b>13.0</b>	<b>TAXES, DUTIES ETC</b>

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13.1	All taxes excluding GST & BOCW Cess (as specified elsewhere in the tender) but including, Charges, Royalties, any State or Central Levy and other taxes for materials if any obtained for the work and for execution of the contract shall be borne by successful bidder and shall not be payable extra by BHEL. Any increase of above at any stage during execution of contract, including extension of the contract, shall have to be borne by successful bidder contractor. Bidder's quoted/ accepted rates/ price shall be inclusive of all such requirements.
13.2	GST along with Cess (as applicable) legally leviable & payable by successful bidder as per GST Law shall be paid by BHEL, extra. Hence, bidder shall not include GST along with Cess (as applicable) in their quoted rates/ price.
13.3	Successful bidder shall furnish proof of GST registration with GSTN Portal covering the services under this contract. Registration should also bear endorsement for the premises from where the billing shall be done by successful bidder on BHEL for this project / work.
13.4	Since GST on output will be paid by BHEL separately as enumerated above, bidder's your quoted rates / price should be after considering the Input Credit under GST law at bidder's end.
13.5	TDS under Income Tax shall be deducted at prevailing rates on gross invoice value from the running bills (RA bills) unless exemption certificate from the appropriate authority / authorities is furnished.
13.6	TDS under GST (if / as & when applicable later) shall be deducted at applicable rates on gross invoice value from the running bills (RA bills). However, as on date no TDS under GST is applicable.
13.7	Bidder shall note that GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act & Rules referred thereunder) wherein the 'Bill To' details shall encompass following. BHEL GSTN – Refer attached GSTN code table of BHEL. Name - BHARAT HEAVY ELECTRICALS LIMITED Address - Shall be intimated later. Specific details of BHEL GSTN, Name and Address as stated above, have been specified elsewhere in the tender.
13.8	Successful bidder to intimate immediately on the day of removal of goods (in case of any supply of goods) to BHEL along with all relevant details and send a scanned copy of Tax Invoice to BHEL through following communication mode for enabling BHEL to meet its GST related compliances. Portal address. and Email address – Shall be intimated later. Specific details of above shall be intimated to successful bidder by BHEL at appropriate juncture.
13.9	In case of delay in submission of above mentioned documents on the date of despatch, BHEL may incur penalty / interest for not adhering to Invoicing Rules under GST Law. The same will be liable to be recovered from successful bidder, in case such delay is not attributable to BHEL.
13.10	In case of raising any Supplementary Tax Invoice (Debit / Credit Note), successful bidder shall issue the same containing all the details as referred to in Section 34 read with Section 31 of GST Act & Rules referred there under.
13.11	Successful bidder shall comply with the Time Limit prescribed under the GST Law and rules thereof for raising of the Tax Invoice. If any supply of goods is applicable, successful bidder shall also ensure prompt delivery of goods after despatch.
13.12	Bidder shall note that in case GST credit is delayed / denied to BHEL due to delayed / non receipt of goods and / or Tax Invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reasons, not attributable to BHEL, GST amount shall be recoverable from successful bidder along with

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	interest levied/ leviable on BHEL, as the case may be.
13.13	Successful bidder shall upload the invoices raised on BHEL in GSTR-1 within the prescribed time as given in the GST Act. Bidder shall note that in case of delay in declaring such invoice in your return and GST credit availed by BHEL is denied or reversed subsequently as per GST Law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from the successful bidder along with interest levied / leviable on BHEL.
13.14	Way Bill: Successful bidder to arrange for way bill / e-waybill for any transfer of goods for the execution of the contract. Successful bidder has to make their own arrangement at their cost for completing the formalities, if required, with Issuing Authorities, for bringing materials, plants & machinery at site for execution of the works under this contract, Road Permit / Way Bill, if required, shall be arranged by successful bidder and BHEL will not supply any Road Permit/ Way Bill for this purpose.
13.15	Any new taxes & duties, if imposed subsequent to due date of offer submission as per NIT & TCN, by statutory authority during contract period (including extension, if the same is not attributable to you), shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties.
13.16	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.
<b>14.0</b>	<b>IDLE CHARGES</b>
14.1	Not applicable.
<b>15.0</b>	<b>PRICE VARIATION CLAUSE</b>
15.1	The price shall remain firm throughout the contract period including extension period, if any.
<b>16.0</b>	<b>OVER RUN CHARGES / RATE REVISION</b>
16.1	No overrun charges/ rate revision will be admissible/ applicable for this contract.
<b>17.0</b>	<b>PROJECT MANAGEMENT/ CONSTRUCTION MANAGEMENT</b>
17.1	<p>To meet the need of construction management at site, contractor shall provide the following services within quoted/ accepted rates:</p> <p>The bidder will have to supply &amp; install of 2 Nos. PCs (multimedia PC work station Pentium- Core-i5 / i7, 3.2 GHZ or above, 1000 GB HDD, 8 GB RAM, 100 /1000 MBPS LAN card) of HP / HCL / COMPAQ or equivalent make with window 10 or higher, 64 bit O/S and required software like MS Office 2010 or higher, AutoCAD 2014 or higher, ADOBE PDF CREATOR with one no laser jet printer compatible for A3 size printing (ink/ cartridge for which to be supplied as and when required), one no. laser jet printer compatible for A4 size printing (ink / cartridge for which to be supplied as and when required) with power backup at places, as per instruction of BHEL for exclusive use of BHEL.</p> <p>These computers / printers shall remain contractor's property and they will be 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 1 (one) Nos. computer operators and 2 (Two) numbers service staff for miscellaneous service for BHEL's use at site / Kolkata for reconciliation, progress review &amp; day-to-day planning purpose, documentation etc. These facilities are to be provided within 30 days from LOI date till completion of</p>

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	scheduled contract period.
17.2	If contractor fails to provide computer / printer / personnel as per requirement, for a continuous period of fifteen days or more, 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 at rate given below:
17.2.1	Rs. 16000 / month for each computer operator.
17.2.2	Rs. 14000 / month for each service staff.
17.2.3	Rs. 10000 / month for each set of computer & printer.
17.2.4	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.
17.3	The contractor's site office must have facilities of communications like E-mail, and telephone with STD facility within a month from LOI.
<b>17.4</b>	<b>HOUSEKEEPING</b> 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. The Contractor's shall prepare a pest and vector control program to address specific site conditions, including a mosquito control program.
<b>17.5</b>	<b>PLANNING &amp; MONITORING</b>
17.5.1	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 subsystem / 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.
17.5.2	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.
<b>17.6</b>	<b>CONSTRUCTION CAMPS</b> 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. 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. Solid combustible garbage shall be collected and secured daily, until disposal, to prevent the attraction of livestock, vermins and wild animals. Residue shall be

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	disposed of, along with non-combustible garbage, in a disposal location approved by the Authorities. 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.
<b>17.7</b>	<b>PROGRESS REPORTING</b>
17.7.1	The bidder shall submit daily, weekly and monthly progress reports for work force, materials reports, consumables (cement / 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.
17.7.2	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.
17.7.3	The daily work force reports shall clearly indicate the work force deployed, category-wise specifying also the activities in which they are engaged.
17.7.4	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.
17.7.5	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.
17.7.6	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.
17.7.7	Successful bidder has to provide for electronic/ computerized storing and reproduction / 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.
<b>17.8</b>	<b>PHOTOGRAPHS</b>
	The Contractor shall furnish to the Employer one (1) hard copies (and two (2) 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.
<b>17.9</b>	<b>SITE ORGANIZATION</b>
17.9.1	The contractor shall maintain a site organization of adequate strength in respect of

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	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.
17.9.2	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.
17.9.2.1	Qualified safety officers with assistants (exclusive for safety supervision for project jobs).
17.9.2.2	Engineer & Supervisors for quality inspection.
17.9.2.3	Site supervising engineer and supervisors for civil works
17.9.2.5	Chemist/Quality engineer for Civil Laboratory
17.9.2.6	Planning Engineer (exclusively for planning)
17.9.3	Deputation of above man-power shall be jointly decided at site in line with construction schedule.
17.9.4	Engineer / supervisor for other functions like store & purchase, material management, fin, administration etc. are to be provided as per site requirement and <b>not considered above.</b>
17.9.5	In the event of non-deputation of engineer/ supervisor by the bidder as per above agreed schedule, BHEL shall reserve the right to deduct Rs. 50000/- per month for engineer, Rs. 35000/- per month for the supervisor / safety officer / 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.
17.9.6	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.
17.9.7	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.
17.9.8	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.
17.9.9	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.
<b>18.0</b>	<b>CONSTRUCTION SCHEDULE</b>

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18.1	Entire work shall be carried out in accordance with the broad construction schedule given below, within the stipulated completion period. 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. Major Milestones are	
	<b>Major Milestone</b>	<b>Months from date of start of work</b>
18.1.1	Completion of Pile, Pile Cap & Pedestals including backfilling of ESP unit # 1 & 2&Structural work of compressor House building	06
18.1.2	Completion of Pile, Pile Cap & Pedestals including backfilling of ESP unit # 3 & 4	07
18.1.3	Pedestal for Ash handling System unit 1, 2, 3 & 4	09
18.1.4	Dismantling & readiness for foundation for Silo, Transfer point & Trench, Completion of pavement & other works in ESP Unit # 1, 2, 3 & 4	12
18.1.5	Completion of Ash Silo	16
18.1.6	Completion of Utility Building & ESP Control Room extension / modification work	6 th-16th
18.1.7	Any other Misc. Job	18
18.2	Contractor shall establish mix design for all concreting from a reputed institution approved by BHEL / Customer.	
18.3	The contractor shall plan his work in such a manner so as to meet the overall project schedule, in consultation with BHEL / NTPC engineer.	
18.4	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.	
18.5	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.	
<b>19.0</b>	<b>GUARANTEE / WARRANTY</b>	
19.1	The contractor will be responsible for the quality of workmanship, quality of materials / items and design for which the contractor is responsible.	
19.2	Guarantee period shall be <b>12 months</b> from the date start of guarantee 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	
<b>20.0</b>	<b>DELETED</b>	
<b>21.0</b>	<b>CONTRACT PRICE</b>	
21.1	Bidder shall quote their rates strictly in accordance with prescribed Price Schedule, Volume-III (latest revision).	



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21.2	The quantities of various items mentioned in the price schedule, Volume-III are approximate, based on very preliminary information and may vary to any extent or to be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of the work executed under any part of the this contract including extra items, if any, but excluding any price variation remains, if any, remains within (+/-) 15% (plus / minus fifteen percent) of the awarded price of LOI.
<b>22.0</b>	<b>QUALITY CONTROL &amp; QUALITY ASSURANCE</b>
22.1	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.
<b>23.0</b>	<b>QUALITY ASSURANCE PROGRAMME</b>
23.1	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
23.2	Organization structure and qualification data for key personnel of the contractor for the management and implementation of proposed quality assurance programme
23.3	The procedure for source inspection, incoming raw material inspection, verification of material purchased etc.
23.4	System for maintenance of records.
<b>24.0</b>	<b>GENERAL REQUIREMENTS – QUALITY ASSURANCE</b>
24.1	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.
24.2	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.
24.3	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.
24.4	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.
24.5	Repair / rectification procedure to be adopted to make any job acceptable shall be subject to the approval of BHEL.
24.6	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.
<b>25.0</b>	<b>WORK &amp; SAFETY REGULATIONS</b>

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25.1	The contractor shall ensure the safety of all workmen, materials and equipment either belonging to him or to others working at site. He shall observe safety rules and codes applied by the owner/ BHEL at site without exception.		
25.2	Non-conformity of safety rules and safety appliances will be viewed seriously and BHEL has right to impose fines on the contractor on each incident/ each non-conformity as per details given below.		
	<b>Safety Measure</b>	<b>Fine ( Rs.)</b>	
	Not wearing safety helmet.	25/workmen	
	Not wearing safety Shoe	25/workmen	
	Not wearing safety belt.	50/workmen	
	Grinding without goggles.	50/workmen	
	Gas cutting without goggles	50/workmen	
	Not using 24V supply for internal work.	500/case	
	Electrical plugs not used for hand machines.	100/case	
	Welding cables, electrical wires using insulated with proper/ standard.	500/joint	
	Not removing scrap from platform	Actual cost for removal %	plus 30 %
	Gas cutting without taking proper precaution/ not using sheet below per incidence.	100/case	
	Electrical winches having no guards earthed properly etc.	500/case	
	Improper earthing of electrical T&P.	200/equipment	
	Not protecting/ locating the gas cylinder to avoid catching of fire.	100/cylinder	
	Not providing earth leakage circuit breaker as per direction of BHEL.	1000/point	
25.3	Any other non-conformity noticed not listed above will also be fined. The decision of BHEL engineer on the above will be final and binding on the contractor. The amount will be deducted from running bills of the contractor. The amount collected on the above will be dispatch for giving award to the employee who could avoid accidents by following safety rules. Also, the amount will be spent for improving the safety at site.		
25.4	Where it is necessary to provide and / or store petroleum products or petroleum mixtures and explosives, the contractor shall be responsible for carrying-out such provision and / or storage in accordance with the rules and regulations laid down in Petroleum Act 1934, Explosives Act, 1948, and Petroleum and Carbide of Calcium Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of BHEL / NTPC. In case, any approvals are necessary from the Chief Inspector (Explosives) or any statutory authorities, the contractor shall be responsible for obtaining the same.		
25.5	All equipment used in construction by contractor shall meet Indian / International Standards and where such standards do not exist, the contractor shall ensure these to be absolutely safe. All equipment shall be strictly operated and maintained in accordance with manufacturer's operation manual and safety instructions and as per guidelines / rules of NTPC in this regard.		

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25.6	Periodical examinations and all tests for all lifting/ hoisting equipment & tackles shall be carried-out in accordance with the relevant provisions of Factories Act 1948, Indian Electricity Act 1910 and associated Laws / Rules in force from time to time. A register of such examinations and tests shall be properly maintained by the contractor and will be promptly produced as & when desired by BHEL / NTPC or by the person authorized by them.
25.7	The contractor shall be fully responsible for the safe storage of his and BHEL sub-contractor's radioactive sources in accordance with BARC / DAE (Bhabha Atomic Research Center / Department of Atomic Energy, Govt. of India) Rules and other applicable provisions. All precautionary measures stipulated by BARC / DAE in connection with use, contractor would take storage and handling of such material.
25.8	The contractor shall provide suitable safety equipment of prescribed standard to all employees and workmen according to the need, as may be directed by BHEL / NTPC who will also have right to examine these safety equipment to determine their suitability, reliability, acceptability and adaptability.
25.9	The contractor shall provide safe working conditions to all workmen and employees at the Site including safe means of access, railings, stairs, ladders, scaffoldings etc. The scaffoldings shall be erected under the control & supervision of an experienced and competent person. For construction, the contractor only shall use good and standard quality of material.
25.10	The contractor shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to BHEL / NTPC or other contractors under any circumstances, whatsoever, unless expressly permitted in writing by NTPC to handle such fuses, wiring or electrical equipment.
25.11	Before the contractor connects any electrical appliances to any plug or socket belonging to the other contractor or BHEL / NTPC, he shall comply with following.
25.11.1	Satisfy the BHEL / NTPC that the appliance is in good working condition.
25.11.2	Inform the BHEL / NTPC of the maximum current rating, voltage and phases of the appliances.
25.11.3	Obtain permission of the BHEL / NTPC detailing the sockets to which the appliances may be connected.
25.12	BHEL / NTPC will not grant permission to connect until he is satisfied with following.
25.12.1	The appliance is in good condition and is fitted with suitable plug;
25.12.2	The appliance is fitted with a suitable cable having two earth conductors, one of which shall be an earthed metal sheath surrounding the cores.
25.13	No electric cable in use by the contractor / BHEL / NTPC will be disturbed without prior permission. No weight of any description will be imposed on any cable and no ladder or similar equipment will rest against or attached to it.
25.13	No repair work shall be carried out on any live equipment. BHEL / NTPC must declare the equipment safe and a permit to work shall be issued by the BHEL / NTPC before the contractor carries out any repair work. While working on electric lines / equipment whether live or dead, suitable type and sufficient quantity of tools will have to be provided by contractor to electricians / workmen / officers.
25.15	The contractors shall employ necessary number of qualified, full time Electricians / Electrical Supervisors to maintain his temporary electrical installations.
25.16	In case any accident occurs during the construction or other associated activities undertaken by the contractor thereby causing any minor or major or fatal injury to his employees due to any reason, whatsoever, it shall be the responsibility of the contractor to promptly inform the same to BHEL / NTPC in prescribed form and also

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	to all the authorities envisaged under the applicable laws.
25.17	BHEL/ NTPC shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipment. In such cases, the contractor shall be informed in writing about the nature of hazards and possible injury / accident and he shall comply to remove shortcomings promptly.
25.18	The contractor shall not be entitled for any damages / compensation for stoppage of work due to safety reasons above and the period of such stoppage of work will not be taken as an extension of time for completion of the facilities and will not be the ground for waiver of levy of penalty.
25.19	The contractor shall follow and comply with all Safety Rules of BHEL / NTPC, relevant provisions of applicable laws pertaining to the safety of workmen, employee's plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservation. In case of any inconformity between statutory requirement and NTPC's Safety Rules of BHEL / NTPC referred above, the later shall be binding on contractor unless statutory provisions are more stringent.
25.20	If the contractor fails in providing safe working environment as per the NTPC's Safety Rules or continues the work even after being instructed to stop work by BHEL / NTPC as provided above, the contractor shall promptly pay to BHEL / NTPC, on demand by the BHEL / NTPC compensation at the rate of Rs. 5,000.00 per day or part thereof till the instructions are complied with and so certified by BHEL / NTPC. However, in case of accident taking place-causing injury, to any individual, the provisions contained in relevant paragraph shall also apply in addition to compensation mentioned in this paragraph.
25.21	If the contractor does not take all safety precautions and / or fails to comply with the Safety Rules as prescribed by NTPC or under the applicable law for the safety of the equipment & plant and for the safety of personnel and the contractor does not prevent hazardous conditions which cause injury to his own employees or employees of other contractors, or the NTPC employees or any other person who are at Site or adjacent thereto, the contractor shall be responsible for payment of compensation to NTPC as per the following schedule:
25.21.1	Fatal injury or accident causing death – Rs 2,00,000/ person.
25.21.2	Major injuries or accident causing 25% or more permanent disablement to workmen or employees – Rs 50,000/ person.
25.22	Permanent disablement shall have same meaning as indicated in Workmen's Compensation Act. The compensation mentioned above shall be in addition to the compensation payable to the workmen/employees under the relevant provisions of the Workmen's Compensation Act and rules framed there under or any other applicable laws as applicable from time to time. In case the BHEL / NTPC is made to pay such Compensation then the contractor is liable to reimburse BHEL / NTPC such amount in addition to the compensation indicated above.
25.23	These insurance covers have to be taken prior to start of his work at the subject project and he shall make available the Policy to BHEL Construction Manager for necessary verification before commencement of work. However, irrespective of such verification/ acceptance, the sole responsibility to maintain adequate insurance cover for his workmen, T&P, assets etc. at all times during the period of contract shall lie with the contractor. Regarding the aforesaid insurance cover, the contractor shall directly deal with the Insurance Company for all matters regarding

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	the insurance in his scope.
25.24	All terms and conditions detailed in GCC / SCC towards HSE shall have to be adhered to strictly by the contractor during execution of contract. If principal customer / statutory and regulatory bodies impose some penalty on HSE due to the non-compliance of the sub-contractor, the same shall be borne by them. The penalty amount shall be recovered from sub-contractor from their RA bills / Final bill.
25.25	<p><b>SALIENT FEATURES &amp; DESIGN CONCEPT OF LABOUR COLONY</b></p> <p><b>13.25.1 Labour Colony, if established by the contractor shall comprises of:</b></p> <ul style="list-style-type: none"> <li>i. Labour Sheds for male labours.</li> <li>ii. Cubicles for labours staying with families.</li> <li>iii. Land for Labour Colony is required to be leveled to avoid water logging.</li> <li>iv. Provision of electricity (including ELCB of 30 mili amp. for safety), lighting fixtures and fans. Provision of DG set for backup power, to ensure power in the evening hours.</li> <li>v. Community kitchen and common toilets/ bath rooms.</li> <li>vi. Provision of Primary Health Centre, Canteen and shops for essential commodities (common for all modules).</li> <li>vii. Bore well for potable water, WBM roads / Brick on edge pathways and sewage system preferably with septic tank and soak pit.</li> <li>viii. General area lighting</li> <li>ix. Provision for common open space for children’s play/community/recreational activities.</li> <li>x. Fencing for safety and security.</li> </ul> <p><b>13.25.2</b> Brief description of the above mentioned Labour sheds for male labours is furnished herein:</p> <p><b>a) Labour Shed for Male labourers</b></p> <p>This building shall be Load Bearing structure having 230 thick brick wall with CC floors and Pre-Coated G.I sheet roofing. For the Labour hutment modules, floor height shall be as per architectural drawing attached. Connecting corridor, Cooking area and Toilet and Bathroom with each module shall be provided. The building walls shall comprise of 230 / 115 mm thick FPS bricks/ fly ash bricks (if available near the project site) from ground floor to roof level. Footing shall be provided according to Soil investigation report approved by NTPC. The grade of concrete for RCC frame (including foundation) shall be M25 (If required).</p> <p>Each module of this labour sheds shall be Single storied and shall be provided within 57M x 27M approximate plot area for 128 labour. Brick masonry wall shall be provided for the full height of the building for both external and internal walls. Floor height shall be minimum 2.40m. A connecting corridor, Cooking area and toilets shall be provided at operating floor level. The floor of the labour sheds, connecting corridor, toilet / bath, Kitchen and wash area shall have minimum cement concrete flooring. The roof shall be pre-coated GI sheet with specifications as per DSR 2007 item no 12.50 over MS pipe / structural steel truss and purlins.</p> <p>MS window with grill / CC jail shall be provided for windows and ventilator. 35 mm thick flush Doors of non-decorative type shall be provided with commercial veneered painted with Synthetic enamel paint. (Specifications shall be as per DSR item no 9.21)</p> <p>Road network, Proper drainage and sewerage network with septic tank, soak pit</p>

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	<p>and potable water supply shall be provided within labour colony. Walls shall be plastered with 12mm / 15 mm thick cement plaster. Internal wall shall be finished with Dry Distemper. Doors/ windows and other steel item shall be finished with synthetic enamel paint over suitable primer.</p> <p>External finishing shall be of Acrylic smooth exterior paint. (Drawing for Labour shed is attached herewith for reference)</p> <p>b) Cubicles for labourers staying with families, Primary Health Centre, Canteen and shops for essential commodities shall be designed and Executed by the Contractor in association with the drawings attached for labour sheds for male labours.</p> <p>c) All buildings and structures shall be architecturally treated in such a way so as to be in complete harmony with the main power house area buildings, surrounding structures and environment. Due considerations shall be given to landscape design, and interior design. For adequate light and ventilation, National Building Code recommendations shall be followed. All the buildings shall be architecturally designed to meet the National Building Code requirement.</p> <p>In addition to the above said facilities Contractor has to provide following for labours:-</p> <p>a) Proper sanitation in labour colony.</p> <p>b) Clean and safe drinking water facilities both at colony and work place.</p> <p>c) Proper lighting facilities.</p> <p>d) Construction of rest rooms at work place.</p> <p>e) Construction of Child care rooms for female labours.</p> <p>f) Proper canteen facilities as work place.</p> <p>g) Ambulance and minimum first aid facility at work place.</p> <p>h) Construction of toilets for Gents and Ladies at work place.</p> <p>i) Recreation facilities for labourers in Colony.</p>
<b>26.0</b>	<b>LIQUIDATED DAMAGE / PENALTY-</b>
<b>26.1</b>	<b>Intermediate Milestones</b>
26.1.1	In case delay in achieving the Milestone as mentioned in Clause 18.1.1 & 18.1.2 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.
26.1.2	In case delay in achieving the Milestone as mentioned in Clause 18.1.4& 18.2.5 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.
26.1.3	Amount already withheld, if any against slippage of clause 18.1.1, 18.1.2, 18.1.4& 18.1.5 above, shall be released only if there is no delay attributable to contractor in achievement of Milestone as mentioned in clause 18.6 & 18.7 above.
26.1.4	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.
26.1.5	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.
26.1.6	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.
<b>27.0</b>	<b>PERFORMANCE BOND</b>

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27.1	Performance bond is not applicable.
<b>28.0</b>	<b>CERTIFICATE TOWARDS COMPLETION</b>
28.1	<b>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.</b>
<b>29.0</b>	<b>CIVIL LABORATORY</b>
29.1	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.
<b>30.0</b>	<b>EXTENSION OF TIME FOR COMPLETION</b>
30.1	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.
30.2	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.
30.3	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.
30.4	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.
30.5	During the period of 'Time extension', contractor shall maintain their resources as per mutually agreed program
30.6	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.
<b>31.0</b>	<b>PAYMENT FOR ADDITIONAL/EXTRA ITEMS FOR WORKS</b>
31.1	It shall be as per relevant clause of the GCC. However, "CPWD Schedule of Rates 2016" as mentioned in the price schedule will be considered.
<b>32.0</b>	<b>TOOLS &amp; PLANTS (TO BE PROVIDED BY CONTRACTOR)</b>

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32.1	Tentative list of T&P to be deployed by contractor for successful completion of work is detailed below. No T&P shall be provided by BHEL	
32.2	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 & handling 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.	
32.3	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.	
32.4	Following Major T&Ps to be arranged by contractor within the indicated time	
	<b>Major T&amp;P items</b>	<b>Deployment Schedule from LOI date</b>
32.4.1	1 Nos. Hydraulic Pile Rig Crawler mounted	As desired by Construction Manager
32.4.2	8 Set. Conventional DMC / RMC / TMR piling rigs and accessories	2 Sets within 15 days, 2 Sets within 45 days, balance as per requirement
32.4.3	Two Sets of Pile Load Test arrangement	1 Set. within 30 days balance 1 No. within 60 days
32.4.4	2 Nos. Hydraulic Excavator / Poclairn	1 <sup>st</sup> within 45 days & 2 <sup>nd</sup> as per requirement
32.4.5	1 no. dozer	Within 30 days
32.4.6	5 Nos. dumper	3 Nos. within 45 days balance 2 Nos. as per requirement
32.4.7	1 no. vibromax /earth compactor	Within 60 days
32.4.8	1 No. Jack Hammer with Compressor	Within 60 days
32.4.9	1 no 18/20 T crawler crane	Within 30 days
32.4.10	1 no hydra (10 / 12 T capacity) or equivalent	Within 40 days
32.4.11	Welding rectifier (as per requirement)	Within 30 days
32.4.12	1 No. stationary automatic batching plant with printing facility (approx. 20 Cum/Hr.) – to be commissioned at site.	Within 50 days
32.4.13	1 No. stationary /Mobile automatic batching equipment with printing facility (approx. 10 Cum/Hr.) – to be commissioned at site.	Within 30 days
32.4.14	3 Nos. transit mixer (4.5/5/6 M3 capacity)	2 Nos. Within 40 days balance as per requirement
32.4.15	2 no concrete pump (20 cum/hr. min capacity) or 1 no. Truck mounted concrete mixer cum pump along with placing boom minimum 36 m Length	Within 60 days balance as per requirement



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32.4.16	2 Nos. self-priming dewatering pump 10 HP (diesel/ electric)	1 no. Within 40 days balance 1 no. within 75 days
32.4.17	2 Nos. self-priming dewatering pump 5 HP or higher(diesel/ electric)	1 no. Within 30 days balance 1 no. within 75 days
32.4.18	2 Nos. reinforcement bending machine	1 no. Within 30 days balance 1 no. within 60 days
32.4.19	2 Nos. reinforcement cutting machine	1 no. Within 30 days balance 1 no. within 60 days
32.4.20	1 no compression testing machine (200 T cap)	Within 50 days
32.4.21	7 Nos. Concrete vibrator with adequate needle (3 Nos. diesel driven + 4 Nos. electric driven)	4 Nos. Within 50 days & 2 Nos. within 75 days
32.4.22	1 No. total station	Within 20 days
32.4.23	2 Nos. auto level & staff	Within 20 days
32.4.24	1 Nos. DG set 125KVA	Within 30 days
32.4.25	Concrete compressive strength testing moulds – 75 Nos.	Within 50 days
32.4.26	1 no trailer – 20T,	Within 50 days
32.4.27	1 no drinking water tank – 2000 lit.	Within 20 days
32.4.28	Portable fire extinguishers as below: Soda acid – 3 sets. Dry chemical powder – 3 sets CO2 – 3 sets. Water & sand bucket (4 buckets in one stand) – 3 sets. Fire hose with nozzle (50 M length) – 3 sets	Within 70 days from start of work
32.5	<p>T&amp;P shown in the above mentioned list are tentative based on planned progress requirement.</p> <p>Actual Mobilization schedule, based on front availability, drawings, construction schedule and material availability at site is to be reviewed and mutually agreed with CM, BHEL site periodically from time to time for mobilization of major T&amp;Ps, and the same have to be adhered to. No change will be permitted without written approval of Construction Manager, BHEL site.</p> <p>Further requirement will be reviewed time to time at site and contractor will provide additional T&amp;P/equipments to ensure completion of entire work within schedule time without any financial implication to BHEL. All other T&amp;Ps shall be provided by the contractor without any extra cost to BHEL. Vendor will give advance intimation &amp; certification regarding capacity etc. prior to dispatch of heavy equipments.</p>	
32.6	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.	
32.7	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
32.7.1	Hydraulic Pile Rig Crawler mounted	Rs. 20000/- per week or part thereof
32.7.2	Pile Load Test arrangement	Rs. 10000/- per week or part thereof
32.7.3	Hydraulic Excavator / Poclain	Rs. 15000/- per week or part thereof
32.7.4	Dozer	Rs. 10000/- per week or part thereof
32.7.5	Dumper	Rs. 2000/- per week or part thereof
32.7.6	Vibromax / Earth compactor	Rs. 5000/- per week or part thereof

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32.7.7	Jack Hammer with Compressor	Rs. 1000/- per week or part thereof
32.7.8	18/20 T crawler crane	Rs. 2000/- per week or part thereof
32.7.9	Hydra (10 / 12 T capacity) or equivalent	Rs. 3000/- per week or part thereof
32.7.10	Welding rectifier (as per requirement)	Rs. 700/- per week or part thereof
32.7.11.1	Stationary automatic batching plant with printing facility (approx. 20 Cum/Hr.)	Rs. 25000/- per week or part thereof
32.7.11.2	Stationary automatic batching plant with printing facility (approx. 15 Cum/Hr.)	Rs. 15000/- per week or part thereof
32.7.12	Transit mixer (4.5/5/6 M3 capacity)	Rs. 7500/- per week or part thereof
32.7.13	Concrete pump (20 cum/ hr. min capacity) or Truck mounted concrete mixer cum pump along with placing boom minimum 36 m Length	Rs. 10000/- per week or part thereof
32.7.14	Self-priming dewatering pump 10 HP (diesel/ electric)	Rs. 200/- per week or part thereof
32.7.15	Self-priming dewatering pump 20 HP or higher(diesel/ electric)	Rs. 300/- per week or part thereof
32.7.16	Reinforcement bending machine	Rs. 1000/- per week or part thereof
32.7.17	Reinforcement cutting machine	Rs. 1000/- per week or part thereof
32.7.18	Compression testing machine (200 T capacity)	Rs. 2000/- per week or part thereof
32.7.19	Concrete vibrator with adequate needle	Rs. 500/- per week or part thereof
32.7.20	Total station	Rs. 500/- per week or part thereof
32.7.21	Auto level & staff	Rs. 300/- per week or part thereof
32.7.22	DG set 125KVA	Rs. 5000/- per week or part thereof
32.7.23	Concrete compressive strength testing moulds	Rs. 100/- per week or part thereof
32.7.24	Trailer – 20T,	Rs. 5000/- per week or part thereof
32.7.25	Drinking water tank – 2000 lit.	Rs. 500/- per week or part thereof
32.7.26	Portable fire extinguishers as below: Soda acid – 3 sets. Dry chemical powder – 3 sets CO2 – 3 sets. Water & sand bucket (4 buckets in one stand) – 3 sets. Fire hose with nozzle (50 M length) – 3 sets	Rs. 1000/- per week or part thereof
32.7.27	Any other instrument	As per discretion of the engineer
<b>33.0</b>	<b>OTHER TERMS</b>	
33.1	All other term & conditions of this specification shall be governed by the pertinent provisions of GCC and other volumes of this tender, as applicable.	

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**ANNEXURE- A**  
**LIST OF EQUIPMENTS FOR CIVIL SITE LABORATORY**

<b>CONCRETE TESTING EQUIPMENT</b>				
<b>SL NO.</b>	<b>NAME OF TEST</b>	<b>NAME OF EQUIPMENT</b>	<b>SIZE OF EQUIPMENT</b>	<b>IS REF.</b>
1	Initial & final setting time, Consistency of cement	Vicat Apparatus with desk pot	Standard	IS 5513
2	Aggregate crushing value test	Crushing value apparatus	Standard	IS 2386
3	Flakiness index	Thickness gauge for measuring flakiness index	Standard	IS 2386
4	Elongation Index	Elongation gauge	Standard	IS 2386
5	Bulk density, voids and bulking apparatus	Measuring cylinders	3, 5,10 & 15 liters cylinders	
6	Concrete Compressive test	Digital / analog Compressive Testing Machine with 2000 KN capacity.	2000KN capacity	IS 2505
7	Cement mortar cube casting	Mortar Cube mould	70.6 x 70.6 x 70.6 mm, minimum 10 sets desired.	IS 10086
8	Concrete Cube casting	Concrete Cube Mould	150x150x150mm, minimum 75 sets desired considering major concreting activity.	IS 10086
9	Workability of concrete	Slump cone	Standard, at least 04 nos.	IS 456
10	Specific gravity of aggregates	Pycnometer	Standard, at least 02 nos.	IS 383
11	Cement mortar cube vibrating	Motorised vibration machine for cement testing	Standard	IS 4031
12	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	IS 383
13	Fine aggregate sieve analysis	Sieve set	200 mm dia. Brass sieves; Size 4.75 mm, 2.36 mm, 1.18 mm 600 micron, 300 micron, 150 micron,	IS 383

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			75 micron, 75 micron, Pan and cover	
14	Silt content check	Sand silt content beaker	Standard	

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SL NO.	NAME OF TEST	NAME OF EQUIPMENT	SIZE OF EQUIPMENT	IS REF.
<b>Soil Testing Equipment (Levelling &amp; Grading)</b>				
1	Core Cutter test	core cutter apparatus	Rammer, 6 nos. of std. core cutter mould, dolly	IS 2720
2	Proctor density test	Std. proctor Compaction apparatus	Standard	IS 2720
3	Moisture Content	Rapid moisture meter	Standard, atleast 04 nos.	IS 2720

<b>Process Control Accessories</b>				
1	Hot air oven	Temperature range 50° C to 300° C	600x600x600mm (min. size)	
2	Electronic balance	3 nos.	600gx0.01g, 10 Kg and 50 kg	
3	Physical balance	5 kg capacity	Weights upto 5 kg	
4	Thermometer 3 Nos.	Temperature range 0° C to 150° C	Digital	
5	Measuring jars	2 nos. set of each size	100ml, 200ml, 500ml & 1000 ml	
6	Gauging trowel	4 nos.	100mm & 200 mm with wooden handle	
7	Spatula	2 nos. each size	100mm & 200 mm with long blade wooden handle	
8	Stainless steel scoop	2 nos. each	2 kg and 5 kg	
9	Vernier calipers	2 nos. each	12" and 6" Sizes	
10	Digital pH meter	01 nos.	.01 mm least count	
11	Digital micrometer	01 nos.	0.01 mm least count	
12	GI tray	02 nos. each	600x450x50mm, 450x300x40mm, 300x250x40mm	
13	Screw Gauge	02 nos.	0.1 mm-10mm, Least count 0.05	

<b>VOLUME-III PRICE SCHEDULE, REV-1</b>	
<b>Civil, structural and architectural works for retrofitting of ESP for R&amp;M 4X210 MW (U#1,2,3&amp;4) Kahalgaon STPP, NTPC, Bhagalpur, Bihar.</b>	
<b>Tender no PSER:SCT:KGN-C1892:18</b>	
<b>SL</b>	<b>PREAMBLE</b>
1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully before filling in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender and other tender sections as applicable and shall have precedence over any contrary statement mentioned any where in this document.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with the tender are only preliminary and for tender purposes and giving some idea of the work involved. The work is to be executed as per drawings & documents, which shall be furnished during execution.
3	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule.
5	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains, within fifteen percent ( $\pm 15\%$ ) of the awarded price as per LOI .
6	Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plus fifty percent) limit during execution and approval to be obtained before execution of further quantity for this item.
7	In case Sealed /Paper Price Bids are opened for finalisation of the tender, for any Item Rate/BOQ based contract, possibility of variation of quantity/ addition/deletion of items can not be ruled out. Under such circumstances, after execution of work, if it is observed that standing as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebate to maintain your standing as L-1. Since this aspect can be assessed at the end of execution, necessary adjustment will be effected at the end of execution in final bill. This condition shall not be applicable where the tender is finalised through Reverse Auction.
8	BHEL reserve the right to rationalize the rates, quoted by L-1 bidder against unit rate items and/ or other optional items with respect to item-wise lowest rates (amongst the participating bidders), before placement of order.
9	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing , clearing of old structures and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same. However, if separate rate for such item is available in the rate schedule, the same shall be considered.
10	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
11	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted as per BHEL approved payment schedule/billing break-up.
12	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
13	No splitting of the job is envisaged. Decision of BHEL in this regard shall be final and binding to the bidders.

<b>VOLUME-III PRICE SCHEDULE, REV-1</b>	
<b>Civil, structural and architectural works for retrofitting of ESP for R&amp;M 4X210 MW (U#1,2,3&amp;4) Kahalgaon STPP, NTPC, Bhagalpur, Bihar.</b>	
<b>Tender no PSER:SCT:KGN-C1892:18</b>	
<b>SL</b>	<b>PREAMBLE</b>
14	Bidders are not allowed to alter the Price Schedule format including item description, quantity etc. and the offer is liable for rejection if the bidders submit their prices in Price Schedules modified by them. BHEL reserves the right to reject the offers of bidders who submit offers in Price Formats which are modified/altered by them. Also putting any comments instead of rates/price in the designated column of the rate schedule shall make the offer liable for rejection.
15	Bidders to note that for Civil &/Structural packages, against a particular item against a ST No. appearing in more than one schedule of the BOQ, same rate must be quoted in all schedules for that particular items with same descriptions. If by error, different rates are quoted in different schedules for same ST No. (i.e. item with same description), then the higher of the rates shall be considered for evaluation but awarding shall be done with the lower rate, if the bidder becomes L-1."
16	For Lumpsum Service Contract : The items/components indicated in the tender is indicative and may vary to any extent. No compensation shall be payable in case of any variation in the items/components listed in the bill of quantities if the executed weight remains within the variation limit. However, in case of deletion of any item or addition of new items over and above the items listed or variation of existing quantity beyond variation limit specified, adjustment (i.e. Payment or recovery as the case may be ) shall be done on pro-rata basis based on the Rate per MT worked out from the quoted lump-sum Price and the total weight of components listed /indicated in price schedule plus 15% weight variation limit.
17	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
18	In case of tender for Civil and/or Structural works, if the Non-schedule items are not quoted by the bidder, it will be treated at par with rate of corresponding item of CPWD/PWD/DSR schedule as prescribed in the tender/BOQ cum Rate Schedule.
19	No interest, whatsoever, shall be payable by BHEL on the security deposit, any bank guarantee submitted or any amount due to successful bidder/contractor.
20	Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rate schedule. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate column, taking unit as mentioned in the quantity column. Rates shall be filled in both figures and words. Amount shall be calculated based upon these rates multiplied by the mentioned quantity for the respective items.
21	Bidder's Total price will be shall be considered for evaluation unless stated otherwise.
22	In case of BOP packages, if Bidder does not quote/indicate the price for freight chages against indicated rate schedule, the same shall be considered as 2% of basic price and adjusted with the total quoted price against each item keeping the total quoted price unaltered.

**VOLUME-III  
PRICE SCHEDULE, REV-1**

**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC, Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-1 - TOTAL PRICE**

SL NO	DESCRIPTION	<u>TOTAL PRICE (IN INR)</u>
1.0	<b>TOTAL PRICE</b>	
2.0	<b>NON-SCHEDULE ITEM</b> <b>For items not covered IN Schedule 3 &amp; 4, quote % above or below the CPWD Schedule of rates 2016</b>	
a)	Rate of complete item	_____ % above / _____ % below / at per of CPWD Rate
b)	Rate of supply of material at site only	_____ % above / _____ % below / at per of CPWD Rate
c)	Rate for execution complete excluding supply of materials.	_____ % above / _____ % below / at per of CPWD Rate
<b>NOTE</b>		
1.0	Bidder shall quote total price for total price of SCH-1- Part only at SI No. 1 above. All other amounts / rates of each item of works in respective schedules / parts will be derived based on allocated percentages. As such, any uncalled figure/ amount noted at any other place / schedule of Volume-III will not be reckoned & will stand null & void.	
2.0	Bidder to note that total price at SI No. 1 above shall be considered for evaluation & awarding. As such grand total price should be complete in all respect for the full scope defined and considering all terms and conditions.	
3.0	Bidder's quoted total price of SCH-3 & SCH-4 at SI. No 1 above, respectively shall be apportioned into amount of various items of works based on allocated percentages against respective item, in respective schedules / parts. As such, bidder shall not indicate / quote any amount / rate in these schedules / parts and any amount / rate quoted against any item shall not be taken into cognizance / account and offer may be liable for rejection.	
4.0	Based on the itemwise percentage allocations, the amount for the individual items of the Bill of Quantity shall be arrived at. The rates of individual items shall be derived from the amount against each items after rounded off .	
5.0	Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.4.0 above.	
6.0	Based on the itemwise percentage allocations, the amount for the individual items of the Bill of Quantity shall be arrived at. The rates of individual items shall be derived from the amount against each items and its quantity after rounding off to upto 9 decimal places. However, RA bill payment shall be done after rounding off the gross amount to two decimal points. Any adjustment, if required, due to such methodology, will be effected / adjusted in final bill.	
7.0	Any item as per scope of work, if not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.	
8.0	Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer.	
9.0	The quoted price shall be excluding GST including freight on FOR site basis.	
10	The quantity of items may vary during execution mainly due to actual requirement etc. The unit rates work out from the overall amount quoted & accepted by BHEL shall be considered and no separate unit rates shall be allowed. Unit rates shall be valid throughout the contract period.	
11.0	For payment of non schedule items, the rate shall be derived from CPWD Schedule - 2014.	



<b>VOLUME-III</b>		
<b>PRICE SCHEDULE, REV-1</b>		
<b>Civil, structural and architectural works for retrofitting of ESP for R&amp;M 4X210 MW (U#1,2,3&amp;4)</b>		
<b>Kahalgaon STPP, NTPC, Bhagalpur, Bihar.</b>		
<b>TENDER NO - PSER:SCT:KGN-C1892:18</b>		
<b>SCH-2 - TOTAL PRICE BREAK UP</b>		
<b>SL NO</b>	<b>DESCRIPTION</b>	<b>WEIGHTAGE</b>
1.0	TOTAL SCHEDULE 3 - SERVICE	<b>0.659701820</b>
2.0	TOTAL SCHEDULE 4 - SUPPLY	<b>0.340298180</b>
3.0	TOTAL	<b>1.000000000</b>

**VOLUME-III  
PRICE SCHEDULE, REV-1**

**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC,  
Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
<b>100</b>	<b>EARTH WORK</b>			
	<b>Earth work In excavation, backfilling and disposal including necessary men / women, materials, equipment, loading, transportation, unloading, dewatering etc. all complete as per customer &amp; contract specification and drawing and as directed by engineer- in-charge for the following.</b>			
101	Earth work in excavation in <b>all types of soil including ash</b> which can be excavated by any means including setting out, levelling, <b>dewatering (but excluding special type of dewatering viz. well point method)</b> , sheeting, shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming / compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead up to 500 m, spreading / levelling of disposed materials etc. all complete as per customer & contract specification and drawing.			
a	Depth from ground level but not exceeding 2 m	CUM	25350	0.005154860
b	Depth exceeding 2 m but not exceeding 4 m	CUM	12075	0.003151120
c	Depth exceeding 4 m but not exceeding 6 m	CUM	6000	0.001992800
d	Depth exceeding 6 m but not exceeding 8 m	CUM	210	0.000088250
102 (a)	Extra over ST No. 101 for dewatering of ground water by well point method as per IS: 9759.	CUM	30600	0.004305920
102 (b)	Extra over ST No. 101 for dewatering of ground water by deep bore method	CUM	10500	0.001477520
103	Earth work in excavation in <b>soft rock (rock without any recovery of excavated materials in the form of hard stone / boulder)</b> including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming / compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead up to 500 m, spreading / levelling of disposed materials etc. all complete as per customer & contract specification and drawing.			
a	Depth from ground level but not exceeding 2 m	CUM	50	0.000015590
b	Depth exceeding 2 m but not exceeding 4 m	CUM	50	0.000018950
c	Depth exceeding 4 m but not exceeding 6 m	CUM	50	0.000022970
106	Earth work in excavation in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required, setting out, levelling, deawtering (wherever required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 500m, spreading / levelling of disposed materials etc all complete for following depths below ground level.			
a	Depth from ground level but not exceeding 2 m	CUM	50	0.000250800
b	Depth exceeding 2 m but not exceeding 4 m	CUM	50	0.000301120
c	Depth exceeding 4 m but not exceeding 6 m	CUM	50	0.000361620
107	Back filling up to any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding <b>300 mm thickness using / with selected materials from compulsorily excavated soil available within a lead up to 500m</b> and compacted as specified including re-excavation of stacked earth, watering, ramming / compaction by manual / mechanical means, dressing etc. all complete as per customer & contract specification and drawing.			
b	Each layer compacted so as to achieve 90% of the standard proctor density at OMC. as per IS-2720 (Part-VII)	CUM	17570	0.003215530
108	Back filling up to any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding <b>300 mm thickness using / with selected materials directly from excavation and compacted as specified</b> including watering, ramming / compaction by manual / mechanical means, dressing etc. all complete as per customer & contract specification and drawing.			
a	Each layer compacted so as to achieve 95% of the standard proctor density at OMC. as per IS-2720	CUM	105	0.000007830
b	Each layer compacted so as to achieve 90% of the standard proctor density at OMC. as per IS-2720	CUM	5850	0.000475830

**VOLUME-III  
PRICE SCHEDULE, REV-1**

**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC,  
Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
109	Extra over ST No. 101 and 103 to 107 for carriage of excavated earth / selected materials for every 1 km or part thereof by Mechanical means beyond an initial lead of 500m.			
a	Carriage beyond 500 m and not exceeding 1 Km	CUM	80000	0.001897910
b	Carriage beyond 1 Km and not exceeding 2 Km	CUM	35000	0.001660670
c	Carriage beyond 2 Km and not exceeding 3 Km	CUM	22900	0.001086550
110	Back filling up to any depth below ground level around foundations, plinths, trenches, drains,rails & roads etc to proper grade and level in layers not exceeding <b>300 mm thickness using / with approved borrowed soil from borrow areas</b> and compacted as specified including supplying borrowed soil, royalty (if any), watering, ramming / compaction by manual / mechanical means, dressing etc. all complete as per customer & <u>contract specification and drawing.</u>			
a	Each layer compacted so as to achieve 90% of the standard proctor density at OMC. as per IS-2720	CUM	500	0.000364330
111	<b>Supplying and filling sand</b> up to any depth under floors, around foundations, plinths etc. in layers not exceeding <b>300mm thickness and compacted so as to achieve at least 80% relative density</b> as per IS-2720 (Part-XIV) including spreading, watering, ramming / compaction by manual / mechanical means, dressing, royalty (if any) etc. All complete as per customer & contract specification and drawing.	CUM	515	0.000814490
<b>200</b>	<b>CONCRETE WORKS</b>			
	<b>Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching, mixing, placing, vibrating and curing, (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. all complete as per customer &amp; contract specification and drawing.</b>			
	Note: <u>Cement</u> - Fly ash based portland pozzolana cement conforming to IS:1489 (Part - 1) shall preferably be used ( unless required otherwise to counteract soil water chemical environment). However, the contractor may use portland slag cement conforming IS:455 or ordinary portland cement conforming to IS:269 or IS:8112. <u>Coarse aggregate</u> - Coarse aggregate for concrete shall be chemically inert, hard, strong, durable against weathering of limited porosity and free from deleterious materials. It shall be properly graded. It shall meet the requirement of IS:383, <u>Fine aggregate</u> - Sand shall be hard, durable, clean and free from adherent coatings of organic matter and clay balls or pellets. Sand, when used as fine aggregate in concrete shall conform to IS:383.			
201	<b>Plain Cement Concrete of grade M 7.5</b> (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as filling course at any depth below finished floor level, under and around foundations / floors, mass fill etc. all complete as per customer & <u>contract specification and drawing.</u>	CUM	1570	0.021491180
202	<b>Plain Cement Concrete of grade M 10</b> (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as filling course at any depth below finished floor level, under and around foundations / floors, mass fill etc aAll complete as per customer & <u>contract specification and drawing.</u>	CUM	180	0.002578270
203 a)	<b>Plain Cement Concrete of grade M15</b> (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) under masonry wall foundation etc .All complete as per customer & <u>contract specification and drawing.</u>	CUM	11	0.000164870
204	Reinforced Cement Concrete <b>under floors, paving, plinth protection, pipe encasing, column encasing etc complete</b> with 20 mm nominal size graded aggregate at any depth below finished floor level. All complete as per customer & contract specification and drawing.			
a	<b>M20 Grade</b>	CUM	5	0.000081130
205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS:10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in <b>foundations / substructure, grade slab, paving, drains, under floors etc at any level below finished floor level</b> , any shape, position or thickness etc complete including use of plasticizer / super plasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per customer & contract specification and drawing.			

**VOLUME-III  
PRICE SCHEDULE, REV-1**

**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC,  
Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
a	<b>M25 Grade</b>	CUM	6650	0.112690440
206	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in <b>superstructure at any level above</b> finished floor level, any shape, position or thickness etc complete including use of plasticizer / super plasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per customer & contract specification and drawing.			
a	<b>M25 Grade</b>	CUM	1950	0.032948410
210	Providing and <b>encasing of structural steel</b> member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh / chicken wire mesh with proper lap etc. all complete as per customer & contract specification and drawing.			
a	<b>M20 grade</b>	CUM	5	0.000085640
b	<b>M25 grade</b>	CUM	150	0.002569170
213	Providing and laying Design Mix cement concrete as per IS:456 & IS:10262-2009 for reinforced concrete works using graded aggregate for Concrete in <b>precast works like roof slabs / trench covers, fins, lintels, chajas, beams, fencing posts</b> columns, wall panels, facias etc.at all levels in all kinds of work including formwork / moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transporting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20 / 12.5 / 10 mm) all complete as per customer & contract specification and drawing.		0	
a	<b>M 20 grade</b>	CUM	5	0.000124360
b	<b>M 25 grade</b>	CUM	60	0.001492320
c	<b>M 35 grade</b>	CUM	11	0.000277340
214	Providing and laying Design Mix cement concrete as per IS:456, IS:3370 & IS:10262 2009 for reinforced concrete works using graded aggregate for Concrete in water retaining / conveying structures including addition of suitable plastisizer cum waterproofing cement additives confirming to IS:9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades all complete as per customer & contract specification and drawing.			
a	<b>M 25 grade</b>	CUM	10	0.000210320
b	<b>M 35 grade</b>	CUM	215	0.004521640
215	<b>Dismantling concrete work</b> for all types of structures at all levels including stacking of serviceable material to a lead of 500 m and disposal of unserviceable material up to a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc. all complete as per customer & contract specification and drawing.			
a	Plain cement concrete of all grades	CUM	1350	0.002932780
b	Reinforced cement concrete of all grades	CUM	2500	0.008735470
216.A	Chipping manually (wherever machine cutting is not possible) of masonry / PCC / RCC work for making pockets, openings at any floors / foundations of all levels and according to shapes and sizes as per drawing, including making good broken edges / surface with cement mortar (1:3), disposal of waste materials upto a lead of 2 km as directed by engineer. <b>(Measurement shall be paid as per peripheral length of cutting multiplied by thickness.)</b>	SQM	50	0.000009320
216.B	Cutting of masonry / PCC / RCC work for making openings / pockets at any floors / walls of all levels and according to shapes and sizes as per drg by using power cutting tool (DD2E of Hilti make or equivalent), disposal of waste materials upto a lead of 1 km as directed by engineer including equipment, making good broken edges/ surfaces with cement mortar (1:3) etc complete as per instructions of BHEL (Measurement shall be paid as per peripheral length of cutting multiplied by thickness).	SQM	50	0.004931170

**VOLUME-III  
PRICE SCHEDULE, REV-1**

**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC,  
Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
217	Extra over and above St No 216.A & 216.B for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer-in-charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	105	0.000001780
218	<b>Cutting Reinforced concrete with mechanised tools</b> like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.All complete as per customer & contract specification and drawing.	CUDM	525	0.000345180
220	Providing & laying Plum cement concrete 1:3:6 with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm all complete as per customer & contract specification and drawing.	CUM	105	0.001414900
<b>300</b>	<b>FORM WORKS</b>			
	<b>Providing, fixing and removing formwork at any elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering complete including pockets etc. all complete as per customer &amp; contract specification and drawing and as per direction of engineer in charge for the following.</b>			
301	<b>Fairface form work</b> with good quality water proof ply wood of required thickness and smooth surface <b>below finished ground floor level</b> for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	13500	0.024772600
302	<b>Fairface form work</b> with good quality water proof ply wood of required thickness and smooth surface <b>above finished ground floor level</b> for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights all complete as per customer & contract specification and drawing and as per direction of engineer-in-charge.	SQM	4875	0.010280800
304	<b>Providing, fixing and removing formwork</b> in block-outs / pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per customer & contract specification and drawing.			
a	Up to 150 mm depth	Each	1275	0.000953760
b	Pockets of depths more than 150mm and up to 300 mm depth	Each	900	0.001154200
c	Pockets of depths more than 300mm and up to 600 mm depth	Each	65	0.000150640
d	Pockets of depths more than 600mm and up to 1000 mm depth	Each	21	0.000076510
e	Pockets of depths more than 1000 mm depth	Each	21	0.000111460
<b>400</b>	<b>REINFORCEMENT INCLUSIVE OF PILING WORKS</b>			
401	Straightening, cutting, bending, placing in position at any level, binding of mild steel reinforcements conforming to grade 1 of IS:432 part 1 in concrete including cost of reinforcement and binding wire, labour, scaffolding, transportation to site of work from stores etc. all complete as per specifications & drawings. <b>Note: Raw material shall be supplied &amp; paid in ST No. S 401 of Schedule-4-SUPPLY.</b>	MT	5	0.000198380
402	Straightening, cutting, bending, placing in position at any level, binding in position <b>High yield deformed bar of IS: 1786 (Fe. 500)</b> with minimum 14.5 percent elongation. All complete as per customer & contract specification and drawing and as per direction of engineer in charge. <b>Note: Raw material shall be supplied &amp; paid in ST No. S 402 of Schedule-4-SUPPLY.</b>	MT	1770	0.070227350
406	Straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in brickwork excluding cost of reinforcement and binding wire, labour, scaffolding etc. all complete as per customer & contract specification and drawing and as per direction of engineer in charge. <b>Note: Raw material shall be supplied &amp; paid in ST No. S 401 of Schedule-4-SUPPLY.</b>	MT	2	0.000079350
<b>500</b>	<b>WATER PROOFING WORKS</b>			
	<b>Water proofing works including all labour, material, equipment, transportation, handling, curing, sampling, testing etc at any level.All complete as per customer &amp; contract specification and drawing.</b>			

**VOLUME-III  
PRICE SCHEDULE, REV-1**

**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaoon STPP, NTPC,  
Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
501.a	Providing roof water treatment as following, including all material, labour, equipments, transportation, handling etc. all complete as per customer & contract specification and drawing. i) Providing and laying polymerised mastic over the RCC roof as a primary coat. ii) Application of high solid content liquid applied urethanebase elastomeric water proofing membrane, over the primer coat, to give uniform joint less dry film thickness of minimum 1.5 mm (as per ASTM C 898-89 and 836-89a). iii) For efficient disposal of rain water, the run off gradient for the roof shall not be less than 1:100. This gradient shall be provided by screed concrete M-15 (using 12.5 mm coarse aggregate) and / or cement mortar (1: 4) over the elastomeric water proofing membrane with 25mm thick cement mortar (1:4) topping. Roof drain level shall be provided with 45cm x 45cm x 30mm thick khurras with 1:2:4 PCC over PVC sheet of 1m x 1m x 400 micron (thick) & finished with 12mm thick 1:3 cement sand plaster. iv) Wearing course at top shall consist of 25 mm thick PCC (M15) cast in panels reinforced with 0.56 mm diameter galvanised chicken mesh & sealing of joints using sealing compound /elastometric water proofing membrane. <b>Cost of khurras shall be paid seperately</b>	SQM	860	0.005114040
516	providing and making making 45cm x 45cm khurras with minimum 30mm of 1:2:4 PCC over PVC sheet of 1m x 1m x 400 micron thk. & finished with 12 mm thick 1:3 cement sand plaster etc. all compelte as per approved drawings, directions of engineer in charge and customer specifications.	each	25	0.000078270
517	Providing and laying <b>24 / 20 SWG Chicken wire mesh</b> to slope in panels not exceeding 6 sq.m area over roof slab, encasing of steel structures etc. all complete as per customer specifications.	SQM	210	0.000106760
518	Providing <b>gola</b> 75mm x 75mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10mm and down gauge) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design :In 75mm x 75mm deep chase	RM	205	0.000641800
<b>600</b>	<b>JOINTS AND FILLERS</b>			
	<b>Joints &amp; fillers including all labour, material, equipment, transportation, handling etc at any level. All complete as per customer &amp; contract specification and drawing and directed by engineer - in - charge.</b>			
601	Supplying & installation of <b>preformed bitumen impregnated fibre board</b> conforming to IS:1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch / bitumen etc. all complete as per customer & contract specification and drawing.			
a	12mm to 15mm thk wide joints	SQM	42	0.000071830
b	20 mm wide joints.	SQM	5	0.000011320
d	50mm thick joints	SQM	31	0.000099660
602	Providing and applying <b>polysulphide based sealant</b> conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. All complete as per customer & contract specification and drawing.			
a	12mm X 25mm	RM	1000	0.000890500
b	20mm X 25mm	RM	5	0.000007420
c	50mm X 25mm	RM	210	0.000779190
606	Providing and fixing <b>PVC water stops in joints</b> conforming to IS:12200 & IS:15058 all complete as per customer & contract specification and drawing.			
c	150 mm wide and 6 mm thick	RM	21	0.000013730
d	230 mm wide and 6 mm thick	RM	21	0.000021720
<b>700</b>	<b>MS EMBEDMENTS</b>			
703	<b>Fixing of mild steel embedments, BOLTS assembly, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates, anchor bolts and its assembly of various diameters, plates of dimensions as required etc. including scaffolding, setting in position and / or, transportation from BHEL site stores to work spot etc. All complete as per customer &amp; contract specification and drawing.</b> <b>Note: Fabricated material shall be supplied &amp; paid in ST No. S 703 of Schedule-4-SUPPLY.</b>	MT	119	0.008199410

**VOLUME-III  
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**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC,  
Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
704	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of <b>"High Tensile fixing with Bolts and nuts</b> shall respectively be as per IS:3757 and IS:6623.	MT	1	0.000403310
705	Providing, fabricating, transporting, erecting and installing at all elevations miscellaneous steel/PVC pipes, expansion fasteners in concrete/brickwall, for all kind of works, including the cost of labour, material and equipment, setting material in concrete, layout, scaffolding, handling at site, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete as per drawings and specifications and instructions of engineer. Contractor to supply all materials.			
a	MS pipes of all diameters	Quintal	25	0.000663420
b	PVC pipes / conduits of all diameters	Quintal	25	0.001544760
d	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:			
i	Upto 250 kg	Each	21	0.000005060
ii	Beyond 250 Kg and upto 500 kg	Each	21	0.000005000
iii	Beyond 500 Kg and upto 750 kg	Each	21	0.000006390
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:			
i	Upto 250 kg	Each	21	0.000013900
ii	Beyond 250 Kg and upto 500 kg	Each	21	0.000042340
iii	Beyond 500 Kg and upto 750 kg	Each	21	0.000138970
<b>800</b>	<b>GROUTING</b>			
	<b>Grouting including all labour, material, equipment, roughening surface, cleaning, ramming, curing etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer-in-charge all complete as per customer &amp; contract specification and drawing.</b>			
802	Providing & grouting of <b>pocket holes, pipe sleeves and under base plates</b> of structural steel work/ machinery / pipe supporting structures etc including roughening of surface, cleaning, ramming, curing etc. all complete with nonshrink cementitious flowable grout (Fosroc OR EQUIVALENT) of minimum <b>Grade M-30</b> . (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor) all complete as per customer & contract specification and drawing.	CUM	30	0.003569560
805	Providing & grouting for <b>equipment foundation</b> etc including roughening of surface, cleaning, ramming, curing etc. all complete with ready mixed nonshrink chloride free ,cement based,free flowing,non metallic grout (Fosroc OR EQUIVALENT) of minimum <b>Grade M-60</b> . (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor) all complete as per customer & contract specification and drawing.	CUM	11	0.001384010
<b>900</b>	<b>DOORS, WINDOWS, VENTILATORS, LOUVERS</b>			
	<b>Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material, equipments, transportation, handling, preparation of working drawings etc. at any level as per specification, drawings and as directed by engineer-in-charge all complete as per customer &amp; contract specification and drawing.</b>			
901	Providing and fixing wooden frame conforming to IS:4021 made of best quality seasoned CP teakwood free from large or loose knots, cracks or other defects including sand paper smoothening, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place all complete as per customer & contract specification and drawing.	CUM	2	0.001051610

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PRICE SCHEDULE, REV-1**

**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC,  
Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
903	Providing, fitting and fixing solid core flush door shutter e as per IS:2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, particle board core conforming to IS:3087 type I, 35mm x 12 mm thick teakwood beading all around including preparation of working drawings. Godrej or equivalent make mortice lock with handles on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16mm x 300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges all complete as per customer & contract specification and drawing.	SQM	10	0.000228660
904	Providing and fixing of steel doors double flush type steel construction of 35 mm (minimum) thickness panels (two outer sheet) and connecting stiffeners of 18G (1.25mm) thick sheet with mineral wool insulation between two sheets. The door frame shall be of pressed steel construction of 16G (1.6mm) thick sheet, rubber sealing, complete with all hardware and fixtures like door closer, tower bolts, handles, stoppers, stiffeners, aldrops etc., side, top and bottom edges of the shutters be reinforced by continuous pressed steel channel of minimum 1.2mm thick all complete as per contract specifications.			
i	Single shutter	SQM	10	0.000249120
ii	Double shutter	SQM	10	0.000249120
906	Providing and fixing <b>anodized extruded aluminium doors</b> (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL or equivalent make having minimum 2mm wall thickness as per IS:1285, IS:733 electro statically powder coated (min 30 microns) fixed with rawl plugs, expansion fasteners, SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be as per specified thickness, conforming to IS:2553 including rubber lining or EPDM gasket and extruded anodised aluminium beading, snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc. all complete as per customer & contract specification and drawing. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. <b>Glazing shall be paid separately.</b>	SQM	10	0.000080150
907	Providing and fixing <b>fire proof steel doors</b> (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 1.6mm galvanized steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop painting with approved post office / signal red colour fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	10	0.000273510
908	Providing and fixing <b>steel windows / ventilator</b> with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including all fittings, metal beadings, hold fasts, shop and final powder coating, glazing etc. all complete. <b>(Glazing shall be paid separately).</b>		0	
a	Openable type	sqm	42	0.000353410
b	Fixed type	sqm	26	0.000145350



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Bhagalpur, Bihar.**

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**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard and other sections including all fittings & fixtures and accessories of approved make conforming to IS:733 and IS:1285, electro statically powdered coated (min 30 microns) to required shade, fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC / neoprene felt for bi-metallic protection etc. including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing / panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass / stainless steel screws, providing and fixing hinges / pivots, and making provision for fixing of fitting wherever required including cost of PVC / neoprene gasket all complete as per drawing, specification and instructions of engineer- in-charge all complete as per customer & contract specification and drawing. <b>Glazing and panelling shall be paid separately. Weight of aluminium section only shall be measured. .</b>	Kg	147	0.000247710
910	Providing and fixing of aluminium composite panel (ACP) of following thickness with PVDF or polyester coating for interior partition of approved shade ,color etc all complete as per specification.			
a	3mm	SQM	11	0.000102600
b	4mm	SQM	11	0.000119040
c	5mm	SQM	11	0.000129670
911	Providing and fixing of <b>door closers</b> as per IS:3564 ,of approved make & quality all complete of following type			
a	Over head hydraulic door closures	Each	12	0.000055290
b	Floor mounted Hydraulic door closers	Each	12	0.000118000
912	Providing and fixing pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles / weather bars, paintings etc. all complete as per customer & contract specification and drawing.	Kg	360	0.000169870
913	Providing and fixing in position rolling shutters of approved make as per IS:6248, made of 75mm x 1.2mm hot rolled double dipped galvanized steel laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, 3 coats of approved enamel paint etc. all complete as per customer & contract specification and drawing.			
b	Mechanically Operated	SQM	6	0.000053230
c	Electrically operated	SQM	63	0.000596040
915	Providing, fixing and fitting of <b>glazing</b> in steel / aluminium / wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete. Below mentioned glass thickness are bare minimum only and actual thickness will depend on the panel size of the glazing to be provided. Glazing shall have uniform refractive index all complete as per customer & contract specification and drawing. <b>(Note - Payment shall be made on measured clear area after gasket/sealant Only)</b>			
e	6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	10	0.000072180
h	6 mm thick toughened glass plain / tinted	SQM	12	0.000086530
l	8 mm thick toughened glass plain / tinted	SQM	42	0.000403800
i	Two nos. 6 mm thick clear toughened float glass hermetically sealed by beading of anodized aluminium and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	42	0.000487060
k	One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick plain float glass hermetically sealed by beading of anodized aluminium.and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	37	0.000506640

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**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
917	Providing and fixing <b>12 mm thick BWP Homogeneous particle board</b> , decorative veneer (prelaminated) on both sides bonded with BWP type Phenol Formaldehyde Synthetic resin confirming to IS:3087, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete as per customer & contract specification and drawing. (excluding aluminium works)	SQM	5	0.000026230
918	Providing and fixing <b>steel louvered window with ISMC 100</b> frame all round including Z shaped louver blade & verticals with 18G pressed steel louvers in E27 steel frames, powder coating etc. all complete as per customer & contract specification and drawing..	SQM	26	0.000231750
923	Supply and placing in position suitable grill for all windows and ventilators on ground floor of all buildings all complete as per customer & contract specification and drawing.			
a	steel	KG	95	0.000021250
b	aluminium	KG	26	0.000035010
<b>1000</b>	<b>BRICKWORK</b>			
	<b>Brickwork masonry including all labour, material, equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer-in-charge. with burnt clay bricks / fly ash bricks / solid concrete blocks / hollow concrete blocks all complete as per customer &amp; contract specification and drawing.</b>			
1001	Providing <b>brick work</b> in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions <b>below plinth</b> including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.			
a	Using <b>fly ash lime bricks</b> confirming to IS:12894 with crushing strength of 75 kg/cm <sup>2</sup>	CUM	30	0.000656480
b	Using <b>burnt clay bricks</b> of class designation 5.0 of nominal dimension	CUM	5	0.000109410
1002	Providing <b>brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers</b> etc. in thickness 230mm at all heights, places and position <b>above plinth</b> including raking out joints, curing, scaffolding etc All complete as per customer & contract specification and drawing.			
a	Using <b>fly ash lime bricks</b> confirming to IS:12894 with crushing strength of 75 kg/cm <sup>2</sup>	CUM	255	0.006574040
b	Using <b>burnt clay bricks</b> of class designation 5.0 of nominal dimension	CUM	5	0.000128900
1003	Providing <b>brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers</b> etc. in thickness 115mm at all heights, places and position above or below plinth / graded level including providing two nos. 6 mm diameter MS bars at every third layer, raking out joints, curing, scaffolding etc. complete as per customer specifications:			
a	Using <b>fly ash lime bricks</b> confirming to IS 12894 with crushing strength of 75 kg/cm <sup>2</sup>	SQM	75	0.000237500
b	Using <b>burnt clay bricks</b> of class designation 5.0 of nominal dimension	SQM	5	0.000015830
1004	Providing brick soling including spreading of earth, ramming, watering including 25mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item). <b>Using brick on edge</b> all complete as per customer & contract specification and drawing.			
a	Using fly ash lime bricks confirming to IS:12894 with crushing strength of 75 kg/cm <sup>2</sup>	SQM	5	0.000012590
d	Using burnt clay bricks of class designation 5.0 of nominal dimension	SQM	5	0.000012720
1006	<b>Breaking of existing brick work</b> at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	21	0.000101560
1007	Providing and <b>encasing of structural steel member with masonry work</b> around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with chicken wire mesh with 50mm lap / mild steel wire fabric etc. complete as per specification. (Chicken wire mesh / mild steel wire fabric to paid separately).	CUM	2	0.000046320
1009	<b>Making openings</b> in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	2	0.000011460

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**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC,  
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**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1011	Filling existing brick wall / partition wall opening at all level including making good the broken edges / surface with cement mortar, painting, finishing to match with existing finishing, scaffolding / supporting at any level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete as per customer & contract specification and drawing.	SQM	5	0.000017320
1012	Providing and filling <b>brick bats in soak pits</b> all complete.	CUM	5	0.000023130
<b>1100</b>	<b>DAMP PROOF COURSE</b>			
	<b>Damp proof course including all labour, material, equipment, transportation, handling, shuttering, centering, curing etc at any level all complete as per customer &amp; contract specification and drawing and directed by engineer-in-charge.</b>			
1101	Providing Damp Proof Course 50mm thick 1:1.5:3 cement concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete as per IS:2645. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC all complete as per customer specifications & drawing.	SQM	30	0.000046700
<b>1200</b>	<b>CEMENT MORTAR PLASTER</b>			
	<b>Cement mortar plaster including making grooves wherever required including all labour, material, scaffolding, curing, chicken mesh etc at any level. All complete as per customer &amp; contract specification and drawing and directed by engineer-in-charge.</b>			
1201	Providing <b>18mm thick plaster</b> in two layers <b>outside</b> the building / boundary wall in cement mortar <b>1:6</b> on walls, finished to a smooth finish including providing 3mm x 3mm size grooves at junctions of two dissimilar materials all complete.	SQM	1075	0.000844140
1202	Providing <b>12mm thick plaster inside</b> the building wall in cement mortar 1:6 on walls finished to a smooth finish all complete as per customer specifications.	SQM	2300	0.001237790
1204	Providing <b>6mm thick plaster on ceiling</b> in cement mortar 1:4 finished to a smooth all complete as per customer specifications.	SQM	650	0.000376150
1205	Providing <b>12mm thick plaster in walls, drains / culverts</b> in cement mortar 1:4 finished to a smooth with a paste of neat cement @ 1kg/sqm and rubbed smooth with trowel etc. all complete.	SQM	250	0.000129740
1207	<b>Forming groove</b> (horizontal & vertical) of uniform size 20 x 10mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battens, repair of the edges of plaster panel and finishing the groove etc. complete as customer specification :	RM	100	0.000010850
1208	Providing <b>drip course</b> on plastered surface with 1:3 cement sand mortar at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	235	0.000067920
1210	Ruled pointing in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	105	0.000055270
<b>1300</b>	<b>FINISHES TO CONCRETE / PLASTERED SURFACES</b>			
	<b>Finishes, painting to concrete, plastered surfaces including all labour, material, equipment, surface preparation, scaffolding etc. at any level All complete as per customer &amp; contract specification and drawing and directed by engineer-in-charge.</b>			
1301	<b>Two or more coats of white wash / colour wash</b> as per IS:627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	105	0.000011380
1304	Providing and applying <b>two or more coats of acrylic destemper</b> as per IS:428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface all complete as per customer specifications	SQM	2725	0.000733680
1305	Providing and applying two or more coats of <b>acrylic emulsion paint</b> as per IS:5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	525	0.000212300

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**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC, Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1306	Providing and applying 2 or more coats of acid / alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer conforming to IS:158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	265	0.000249940
1307	Two or more coats of fire resistant transparent paint as per IS:162 on all woodwork over french polish as per IS:348 or flat oil paint as per IS:137 of approved grade and manufacture to give an even shade as per specifications.	SQM	11	0.000009110
1308	Two or more coats of black anti-corrosive bitumastic painting of approved brand and manufacture to give an even shade complete.	SQM	11	0.000002810
1309	Two or more coats of <b>synthetic enamel paint</b> of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to wooden and Steel surfaces complete.	SQM	60	0.000015600
1310	Providing and applying two or more <b>coats of water proof cement based paint</b> as per IS:5410 of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat .All complete as per customer & contract specification and drawing and directed by engineer-in-charge.	SQM	105	0.000026270
1311	Providing and applying resin bonded granular textured finish, for external applications shall consist of crushed stone / quartz chips of .5 mm to 2.5 mm size and of approved natural color / shade and bonded with synthetic resins, adhesives and additives altogether in a single pack mix, applied on cured and dried plaster surface with a dry film thickness of minimum 2 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification / drawing / approval of engineer in charge.	SQM	5	0.000007940
1312	Providing and applying <b>2 mm thick plaster of paris (polymer based) punning on walls</b> including preparation of surface, staging, etc. to achieve a smooth even surface All complete as per customer & contract specification and drawing and directed by engineer-in-charge.	SQM	525	0.000177600
1315	Providing and applying two or more coats of Premium Acrylic emulsion paints based weather coat. The paint shall be (premium acrylic smooth exterior paint with silicon additives) of approved brand and manufacture. This paint shall be brought to the site of work by the contractor in its original containers in sealed condition. The material shall be brought in at a time in adequate quantities to suffice for the whole work or at least a fortnight's work. The materials shall be kept in the joint custody of the contractor and the Employer. The empty containers shall not be removed from the site of work till the relevant item of work has been completed and permission obtained from the Employer. The cost is all including of base coat, primer shade etc. to meet the customer requirement all complete as per customer & contract specification and drawing and directed by engineer-in-charge.	SQM	1575	0.001273830
<b>1400</b>	<b>FLOORING AND SKIRTING</b>			
	<b>Flooring and skirting at any level including base layer, labour, material, equipments, transportation, handling, curing, polishing etc. at any level as per specification, drawings and as directed by engineer-in-charge</b>			
1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron paricles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound : 2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete as per customer & contract specification and drawing and directed by engineer-in-charge. (Quoted item rate shall be inclusive of providing glass joint strips).	SQM	1575	0.003013900

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Bhagalpur, Bihar.**

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**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1402	Providing and laying 50 mm thick heavy duty cement concrete mix 1:2:4 (1 cement : 2 sand : 4 stone aggregates) flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado all complete as per customer & contract specification and drawing and directed by engineer-in-charge.	SQM	95	0.000180110
1408	Providing polished <b>Kota stone 18mm to 20mm thk</b> in staircase, lobby & skirting, dado projecting 6mm from adjacent plaster including cutting brick wall up to the required depth, edging, finishing etc. all complete as per customer specifications.	SQM	60	0.000389710
1416	Providing and laying polished mirror <b>Vitrified Ceramic tiles of size 600mm x 600mm</b> shall be as per approved manufacturer's standards, complete including under bed of cement mortar 1:3 with neat cement slurry etc. all complete as per customer specifications.			
b	10mm thick tiles In flooring	SQM	140	0.000793330
d	10mm thick tiles In skirting and dado upto specific height	SQM	22	0.000126560
1420	Providing and laying <b>Heavy Duty dust pressed Ceramic Tiles in flooring / dado</b> of 7mm thick of reputed manufacturer of approved finish shade and colour including underbed of cement mortar 1:3 with neat cement slurry etc. all complete.		101	
a	300X300 mm	SQM	101	0.000444840
b	600X600 mm	SQM	5	0.000023600
1422	Providing & fixing <b>Acid / Alkali resistant (Chemical resistant) tiles</b> confirming to IS:4457 in <b>flooring / Dado</b> and shall be laid over bitumin primer confirming to IS:158 followed by bitumastic lining of min 12mm thick ( to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable all complete as per customer & contract specification and drawing and directed by engineer-in-charge.			
a	20mm thick	SQM	125	0.001650780
b	38mm thick	SQM	5	0.000033330
1428	Providing and laying 3mm thick antistatic PVC flooring / skirting of approved shade as per IS:3462 and laying as per IS:5318 all complete as per customer & contract specification and drawing and directed by engineer-in-charge.	SQM	5	0.000012320
1432	Providing and fixing <b>false flooring</b> of removable metallic false flooring system shall be provided. The same shall comprise of special grade steel panels (of size 600 x 600mm) without any dimensional tolerance 1.2mm thick die cast to shape having 1mm thick top MS sheet spot welded together to form a composite steel panel, sitting on aluminium die casted heads & mounted on steel pedestals of 25mm diameter rod of adjustable height and supporting 1.2mm thick channel frame work at-top and 2mm thick 150mm x 150mm base plate. The top finish shall be 2mm thick antistatic PVC sheet or High pressures laminate. Cavity area below the false flooring shall be made dust proof by using Polyurethane paint.including all its accessories required for fitting and installation of false floor of following depth all complete as per customer & contract specification and drawing and directed by engineer-in-charge.			
a	Up to 400 mm depth	SQM	5	0.000552900
b	Up to 600 mm depth	SQM	5	0.000605150
c	Up to 1000 mm depth	SQM	5	0.000636520
1435	<b>Chequerred precast cement concrete tiles 22 mm thick</b> in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement : 4 coarse sand). Light shade using white cement.	SQM	205	0.000279200
<b>1500</b>	<b>ROOF/CLADDING</b>			
	<b>Roofing / side cladding work including all labour, material, equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces, sealant, rock wool insulation, glass wool insulation etc. including all roofing and cladding accessories such as ridges and hips, flashings, trimmings, closure for vertical and horizontal joints, cappings etc. confirming to the same material requirements at any level all complete as per customer &amp; contract specification and drawing and directed by engineer-in-charge.</b>			

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Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1501	Providing & fixing troughed permanently colour coated for Wall Cladding & Roofing Material conform any one of the following Troughed permanently colour coated sheet of approved shade and colour including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners (as per specification) with suitable cap, flashing etc. all complete. Steel shall be colour coated with total coating thickness of at least 40 microns (nominal) comprising of silicon modified polyester (SMP with silicon content of 30% to 50%) paint or Super Polyester paint, of minimum 20 microns (nominal) dry film thickness (DFT) on external face over primer coat of minimum 5 microns (nominal) and minimum 10 microns (nominal) SMP or super polyester paint over primer coat of minimum 5 microns (nominal) on internal face. SMP and Super polyester paint systems shall be of industrial finish of product type 4 of AS/NZ2728: i) Shall be either of steel with minimum 0.6mm bare metal thickness (i.e. excluding the thickness of galvanizing / aluminium-zinc coating and painting) of grade G-250 as per AS 1397 / grade SS-255 as per ASTM A653M / grade S-250GD as per EN 10326 with zinc coating to class Z-275 / aluminium-zinc alloy coating to class AZ-150. ii) or of minimum 0.5mm BMT (i.e. excluding the thickness of galvanizing / aluminium-zinc coating and painting) of grade G-350 as per AS-1397 / grade SS-340 class 4 as per ASTM A792M / grade S-250GD as per EN 10326 with zinc coating to class Z-275 /	sqm	1125	0.002915700
1502	providing & fixing floor / roof decking troughed permanently colour coated metal decking sheets Thickness tolerance of (+/-) 0.04mm including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners (as per specification) with suitable cap, flashing etc. all complete. Steel shall be colour coated with total coating thickness of at least 40 microns (nominal) comprising of silicon modified polyester (SMP with silicon content of 30% to 50%) paint or Super Polyester paint, of minimum 20 microns (nominal) dry film thickness (DFT) on external face over primer coat of minimum 5 microns (nominal) and minimum 10 microns (nominal) SMP or super polyester paint over primer coat of minimum 5 microns (nominal) on internal face. SMP and Super polyester paint systems shall be of industrial finish of product type 4 of AS / NZ2728 and conform to any one of the following: i) either of steel with minimum 0.8mm bare metal thickness (i.e. excluding the thickness of galvanizing / aluminium-zinc coating and painting) of grade G-250 as per AS-1397 / grade SS-255 as per ASTM A653M / grade S-250GD as per EN 10326 with zinc coating to class Z-275 ii) or of minimum 0.6mm BMT (i.e. excluding the thickness of galvanizing / aluminium-zinc coating and painting) of grade G-350 as per AS-1397 / grade SS-340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 with zinc coating to class Z-275. iii) or of steel of minimum 0.6mm BMT (i.e. excluding the thickness of galvanizing /			
a	span upto 1800mm	sqm	560	0.001548240
1503	Providing and fixing shear anchor studs for fixing metal deck sheet to floor structural beams shall conform to Type-B studs specified in AWS D1.1 / D1.1M or equivalent as shear connector of 19mm diameter and 100mm length manufactured from cold drawn round steel bars conforming to the requirement of ASTM A-29, of grade designation 1010 through 1020, of standard quality with either semi-killed or killed, welded by Drawn Arc Stud Welding through metal deck sheet.	Qunital	5	0.000537040
1504	Providing and fixing shear anchor studs for fixing metal deck sheet to roof structural purlins shall conform to Type-B studs specified in AWS D1.1 / D1.1M or equivalent as shear connector of 16mm diameter and 65mm length manufactured from cold drawn round steel bars conforming to the requirement of ASTM A-29, of grade designation 1010 through 1020, of standard quality with either semi-killed or killed, welded by Drawn Arc Stud Welding through metal deck sheet.	Qunital	5	0.000349070
1600	<b>FALSE CEILING</b>			
	<b>False ceiling including all labour, material, equipment, transportation, handling, suspension system etc at any level. All complete as per customer &amp; contract specification and drawing and directed by engineer-in-charge.</b>			

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**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1606	Providing and fixing False ceiling of 15 mm thick mineral fibre board, in tile form of size 600mm x 600mm, along with galvanised light gauge rolled form supporting system in double web construction pre painted with steel capping, of approved shade and colour, to give grid of maximum size of 1200mm x 600mm. as per manufacturers details including supporting grid system, expansion fasteners for suspension arrangement from RCC, providing openings for AC ducts, return air grills, light fixtures, etc., all complete suspension system shall be as per manufacturer's specification supported over movement platform. The work to be complete as per specifications, drawings and direction of engineer.	SQM	170	0.000731160
1608	Providing and Fixing <b>Under deck insulation</b> provided on the ceiling (underside of roof slab) and underside of floor slab of air conditioned areas depending upon the functional requirements. This under deck insulation shall consist of 50 mm thick mineral wool insulation mat conforming 10 IS:8183 having a density of 32 kg/cum for glass wool backed with 0.05mm thick aluminium foil and 24G x 25 mm mesh wire netting and shall be fixed to the ceiling with 14G wire ties.	SQM	85	0.000137890
1609	Providing and Fixing Under deck insulation provided on the ceiling (underside of roof slab) and underside of floor slab of air conditioned areas depending upon the functional requirements. This under deck insulation shall consist of 50 mm thick mineral wool insulation mat conforming 10 IS:8183 having a density of 48 kg/cum for rock-wool, backed with 0.05mm thick aluminium foil and 24G x 25 mm mesh wire netting and shall be fixed to the ceiling with 14G wire ties.	SQM	85	0.000139460
<b>1700</b>	<b>RAIN WATER DOWN TAKE PIPES</b>			
	<b>Rain water down take pipes including all labour, material, transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc at any level as per specification, drawings and as directed by engineer-in-charge.</b>			
1703	Providing and fixing <b>Medium grade galvanised mild steel downtake pipes</b> of minimum 100mm dia. Provided with welded joints and with grating shoe bends, junctions, brackets, cast iron clamps & painted with anticorrosive paint over coat of primer. Galvanisation shall be as per IS:4736 etc. all complete as per customer specifications	RM	105	0.000285760
<b>1800</b>	<b>MISCELLANEOUS WORKS</b>			
	<b>Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified. All complete as per customer &amp; contract specification and drawing and directed by engineer-in-charge.</b>			
1801	<b>Providing and Filling in trenches, plinths, area paving and other underground structures</b> with rubble soling stone (63 mm down graded hard stone aggregate as per IRC specification in layers not exceeding 230 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	1270	0.006351950
1808	Providing and fixing <b>aluminium strips</b> minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including brass / aluminium screws, rawl plugs etc. all complete.	Kg	5	0.000009030
1810	Providing, laying and fixing <b>rails and guide rails in concrete</b> for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.	MT	2	0.000558380
1815	Providing and fixing <b>GI rungs</b> in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	21	0.000005570
1817	Providing and fixing <b>HDPE pipes</b> in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.			
a	Upto 75 mm dia	RM	5	0.000001930
b	100 mm dia	RM	21	0.000010340
c	150 mm dia	RM	5	0.000003870
d	200 mm dia	RM	21	0.000021650
1826	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	10	0.000081690
1826A	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	10	0.000095440
<b>2000</b>	<b>FENCING AND GATES</b>			

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**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
	<b>Fencing and gates including all labour, material, equipment etc at any level. All complete as per customer &amp; contract specification and drawing and directed by engineer-in-charge.</b>			
2001	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating ) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire fencing of height of 600 mm confirming to IS:298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25mm X 6mm GI flat stretcher bar at end posts, accessories etc. all complete. (Pre-cast RCC post shall be separately under item 213a)	RM	360	0.002639770
2010	Supply, fabrication and installing in position and testing <b>MS Gates</b> out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	3	0.000663830
<b>2100</b>	<b>WATER SUPPLY</b>			
	<b>Water supply work including men, material, equipment etc. all complete as per customer &amp; contract specification and drawing and directed by engineer-in-charge.</b>			
2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck <b>bib cocks</b> including sockets, union, nuts etc all complete - 15mm nominal bore.	EACH	2	0.000004180
2102	Providing and fixing in position heavy duty brass <b>stop cock</b> of approved quality including all specials etc all complete - 15mm nominal bore.	EACH	2	0.000003370
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality including all specials etc all complete for following sizes:			
a	25mm nominal bore.	EACH	5	0.000014360
b	50mm nominal bore.	EACH	5	0.000033000
2104	Providing and fixing medium class galvanised mild steel conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:			
a	15 mm nominal bore.	RM	10	0.000015060
b	20 mm nominal bore.	RM	21	0.000033740
c	25 mm nominal bore.	RM	105	0.000192800
d	50 mm nominal bore.	RM	105	0.000249580
2105	Providing and fixing medium class galvanised mild steel conforming to IS:1239 pipes shall complete for external work with GI sockets, unions, elbows, tees, nipples etc. including trenching & refilling, anti-corrosive paint etc. all complete for following sizes:			
a	15 mm nominal bore.	RM	10	0.000012140
b	20 mm nominal bore.	RM	21	0.000027680
c	25 mm nominal bore.	RM	210	0.000324430
d	50 mm nominal bore.	RM	155	0.000325860
2106	Providing and fixing (1200mm x 900mm x 5.5mm min) thk <b>float glass mirror</b> with bevelled edges from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws at nominal height of 1.45m etc. all complete as per specifications.	EACH	2	0.000013680
2109	Providing and fixing stainless steel <b>towel rods</b> 600mm x 20mm .	EACH	2	0.000003470
2111	Providing and fixing Stainless steel <b>Liquid soap holder</b> cum dispenser.	EACH	2	0.000002240
2112	Providing and fixing Stainless Steel <b>paper holder</b> .	EACH	2	0.000003230



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**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
2114	Providing & fixing in position overhead polythylene (IS:12701) <b>water tank</b> of required capacity . Virgin HDPE granules of approved grade, suitable for drinking water including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete. piping shall be paid separately .(Note: <b>The rate arrived against this item shall be divided by 500 to work out Rate/Lit. Bidder has to provide and fix as per ST No. 2114 the PVC water storage tank of desired capacity from 500lit. to 5000 lit. capacity in the multiple of 500 lit. The rate for such tank shall be worked out by multiplying capacity of tank with Rate/Lit arrived as above).</b>			
a	500 litres capacity	EACH	2	0.000024570
2116	Providing and fixing Stainless Steel hand drier OF approved make .	EACH	2	0.000072260
2117	Providing and fixing C.P brass tap of approved make .	EACH	2	0.000004180
<b>2200</b>	<b>SANITARY WORKS</b>			
	<b>Sanitary work including all labour, material, equipment etc. at any level as per specification, drawings and as directed by engineer-in-charge.</b> <b>Note:- All complete with all related accessories, fittings and fixtures as per customer &amp; contract specification and drawing and directed by engineer-in-charge.</b>			
2201	Supply and fixing of counter top type Oval shape <b>Wash Basins</b> to be fixed on concrete platform finished with one piece 18mm thick polished granite stone to IS : 2556 part 4 of specified size .Each wash basin shall be provided with 15mm dia pillar cock of approved make, rubber plug with CP brass chain, 32mm CP waste fitting of standard pattern with 32mm dia G.I pipe, CP Brass bottle trap, CP brass 15mm dia stop cock etc. the top of rim of the wash basin shall be fixed at 800mm above finished floor level, unless otherwise specified. .All complete with all related accessories, fittings and fixtures as per customer & contract specification and drawing and directed by engineer - in - charge.			
a	<b>Size - 550mm x 480mm</b>	EACH	2	0.000061630
2204	Providing and fixing glazed vitreous china <b>European type water closet</b> conforming to IS:2556 part-11 with siphon, open front solid plastic seat and plastic cover, low level manually operated 10 liter Vitreous china flushing system conforming to IS:774 with valve less fittings, necessary C.P connections etc. all complete as per customer specifications			
a	Floor mounted	EACH	1	0.000017450
b	Wall mounted	EACH	1	0.000021740
2205	Providing and fixing <b>glazed vitreous Indian type Orissa pattern</b> (580mm x 440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rest, including flushing valve of appropriate capacity and type with all valves, fittings, bends, necessary C.P connections etc. all complete with all related accessories, fittings and fixtures as per customer & contract specification and drawing and directed by engineer-in-charge.	EACH	2	0.000040520
2206	Providing and fixing glazed vitreous china bowl type <b>lipped urinals</b> of size 430mm x 260mm x 380mm with photo voltaic control flushing system as per IS:2556 ( part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary vitreous china partitions slabs of size 1000mm x 600mm x 100mm conforming to IS:2566 (part 6 / sec.1) shall be used all complete with all related accessories, fittings and fixtures as per customer & contract specification and drawing and directed by engineer-in-charge.			
b	Wall mounted	EACH	2	0.000090180
2207	Providing and fixing <b>sand cast iron pipes</b> fittings and accessories INCLUDING BENDS conforming to IS:1729 and IS:3989 respectively for all sanitary works. Pipes shall be coated with bitumenous paint, also M.S holder bats / clamps, cutting and making good the walls and floors, jointing, testing etc. all complete as per customer specifications.			
a	75mm dia pipes	RM	50	0.000173880
b	110mm dia pipes	RM	210	0.000969530
c	150mm dia pipes	RM	50	0.000271710
2208	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including jointing, testing of joints etc all complete for following.			

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ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
a	200mm dia	RM	50	0.000187080
b	300mm dia	RM	25	0.000126160
c	450mm dia	RM	25	0.000163800
d	600mm dia	RM	25	0.000246070
2219	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. as per specifications for following diameters:			
a	150mm	RM	25	0.000061290
b	200mm	RM	50	0.000134890
c	300mm	RM	25	0.000091930
d	450mm	RM	25	0.000137940
e	500mm	RM	25	0.000155010
f	600mm	RM	25	0.000186010
2211	Providing and fixing <b>C.I Manhole heavy duty cover</b> of size 600mm x 450mm including frame etc. all complete.	EACH	4	0.000133830
2214	Providing and fixing square mouth minimum 65cm S.W <b>Gully trap</b> grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300mm x 300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg including all hardwares etc all complete as per specifications.			
a	100mm x 100mm P or S Type.	EACH	2	0.000018380
c	150mm x 150mm P or S Type.	EACH	2	0.000019140
2215	Providing and fixing <b>C.I. floor traps with C.P jalli</b> all complete.(100mm)	EACH	2	0.000010000
<b>2300</b>	<b>STRUCTURAL STEEL</b>			
	<b>Structural steel works including all labour, material (BHEL supplied materials), equipments, transportation, handling etc. at any level as per specification, drawings and as directed by engineer-in-charge.</b>			
2301	Supply, Fabrication and erection of structural steel with mild steel rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161 / IS:1239, chequered plate conforming to IS:3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, kick plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings etc. connection design & preparation of fabrication drgs, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (minimum preheat and interpass temperature of 20° C for welding over 20 mm and up to 40 mm & 66° C for welding over 40 mm and up to 63 mm & 110° C for thickness over 63 mm & use of low hydrogen / radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. <b>Note: Raw material shall be supplied &amp; paid in ST No. S 2301 of Schedule-4-SUPPLY.</b>			
a)	Fabrication	MT	220	0.013064020
b)	Erection, alignment, welding	MT	220	0.007034470
2302	Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface (Sa 2 1/2 ) and applying epoxy based zinc phosphate primer in coats of minimum 25 micron (DFT) at shop and 25 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete.	MT	220	0.003465130

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**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
2303	Extra over ST NO. 2301 for providing and application of two coats of primer consisting of chemical resistant epoxy resin and hardener (Minimum 1Kg of primer mix shall be consumed for priming of 4 to 5 m <sup>2</sup> area of surface) instead of primer coat of red oxide zinc-chromate, including touch up painting etc. all complete.	MT	2	0.000001100
2304	Extra over ST No. 2301 for providing and applying two coats of synthetic enamel paint with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 110 microns including protection and cleaning, scaffolding etc. all complete.	MT	2	0.000019020
2305	Extra over ST No. 2301 for Providing and applying two coats of epoxy based colour finish paint with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 110 microns including protection and cleaning, scaffolding etc. all complete.	MT	2	0.000021680
2306	Providing, laying and clamping of crane rails over the crane girder at all elevations as per IS 3443 including all fixtures, clamps, testings etc. all complete as per drawing and specification.	MT	2	0.000668440
2307	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel (having minimum galvanisation of 610 g/sqm) conforming to IS:2062 in flooring, platforms, drain and trench covers, walk- ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	MT	15	0.004793910
2312	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	10	0.000278080
2320	Supply, fabrication and fixing of <b>MS pipe hand railing</b> of 32 mm dia (Medium Grade) including transportation, loading/unloading, painting etc. <b>all complete as per customer Specifications .</b>	KG	785	0.000208640
2321	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	85	0.001747470
2322	Conducting ultrasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	11	0.000033290
2323	Conducting ultrasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	SQM	21	0.000029540
2324	Conducting magnetic particle test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	11	0.000023970
2325	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	185	0.000423740
2326	Painting of steel surfaces embedded in Concrete			
a)	For the portion of steel surfaces embedded in Concrete, the surface shall be prepared by manual Cleaning and provided with Primer Coat of Chlorinated Rubber based Zinc Phosphate Primer of minimum 50 micron Dry Film Thickness (DFT)	MT	70	0.000263680
b)	All threaded and other surfaces of foundation bolts and its materials , insulation pins, Anchor channels, Sleeves etc shall be coated with temporary rust preventive fluid and during execution of Civil works, the dried film of coating shall be removed using organic solvents.	MT	21	0.000089890
2327	Painting of steel surfaces (other than those embedded in concrete including steel doors, rolling shutters, windows, in all indoor & outdoor structures			

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ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
a)	Primer coat shall consist of 2 coats of red-oxide zinc-chromate primer (minimum 25 micron Dry Film Thickness – DFT each). Intermediate (Under) coat (minimum 60 micron DFT) shall be of synthetic enamel paint of approved shade and colour as per accepted standards. Top / Finish coat (minimum 50 micron DFT) shall be of synthetic enamel paint of approved shade and colour with glossy finish as per accepted standards. Colour and shade of the coat shall be as approved by the Employer.	MT	155	0.003946970
<b>2500</b>	<b>PILING WORKS</b>			
2501	Mobilisation of hydraulic rotary piling rigs and accessories capable of pile boring / drilling in all types of strata / installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete as per specification.50% payment shall be paid against mobilisation and 50% against demobilisation (after completing the piling work)	Each	1	0.002888030
2502	Mobilisation of conventional DMC / RMC / TMR piling rigs and accessories capable of pile boring / drilling in all types of strata / installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete.50% payment shall be paid against mobilisation and 50% against demobilisation (after completing the piling work).	Each	8	0.003006070
2503	Installation of Bored cast-in-situ RCC vertical pile as per IS:2911 (Part 1 Sec 2) with diameter and length as specified (length to be measured from pile cut-off level to the bottom of pile) using cement concrete grade M25 conforming to IS:456 with 20 mm nominal size stone aggregates with a minimum cement content of 400Kg per cum of concrete using cement as per specification including providing all materials (but excluding cost of reinforcement steel which shall be supplied as per ST No. S 402 of Schedule - 3 - SUPPLY), bending & fixing of reinforcement for which measurement / payment shall be made separately under item no. 401, 402), boring / drilling in all types of soil, ash, rock etc. providing bentonite slurry and /or casing for stabilization of pile bore, flushing of pile bore shall be ensured by airlift technique, cleaning, providing plasticizer wherever required, etc <b>including empty boring from ground level to pile cut-off level</b> etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following. <b>(Note :- Cement content considered in this item is @ 400 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately)</b>			
d	Pile with 600 mm diameter and 20 m length below cut off level	each	670	0.125886140
i	Add / Deduct for using Extra / Less cement in the items of design mix over and above the specified cement content therein.	quintal	105	0.000140900
2504	Extra over ST. No. 2503 for pile length more than the specified length of 20m below cut off level for the following.			
c	For 600 mm diameter pile	Rm	5670	0.061586040
2505	Rebate on ST.No.2503 for pile length less than the specified length of 20m below cut off level for the following.			
c	For 600 mm diameter pile	Rm	-55	-0.000557980
2506	Extra over ST.No.2503 for boring / drilling in rock for a length not exceeding 4 times the diameter of pile, cleaning the pile hole, concreting etc all complete for the following.			
c	For 600 mm diameter pile	Rm	105	0.007513230
2507	Extra over ST.No.2503 for boring / drilling in rock for a length other than for pile socketing of pile, cleaning the pile hole, concreting etc all complete for the following.			
c	For 600 mm diameter pile	Rm	105	0.007513230
2508	Conducting initial load test up to a maximum test load of 3 times the safe load capacity on single pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, all arrangements of loading, unloading, test equipments / accessories, jacks, recording of results, labour, submission of test report but excluding the cost of installation of pile (installation of pile shall be paid separately) etc all complete as per specification, drawing and as directed by engineer in-charge for the following.			
a	For vertical compression test by cyclic load method as per			
ii	600 mm diameter pile	Each	2	0.000755600

**VOLUME-III  
PRICE SCHEDULE, REV-1**

**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC,  
Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
b	For lateral load test			
ii	600 mm diameter pile	Each	2	0.000401610
c	For tension/uplift test			
ii	600 mm diameter pile	Each	2	0.000401610
2509	Conducting routine load test upto 1.5 times the allowable pile capacity on single job pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, providing all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report etc but excluding the cost of installation of job pile complete as per specification, drawing and as directed by the engineer-in-charge for the following.			
a	For vertical compression test by direct load methods			
ii	For 600 mm diameter pile	each	3	0.000516600
b	For lateral load test			
ii	For 600 mm diameter pile	each	3	0.000481930
2510	Carrying out <b>low strain pile integrity test</b> on 600mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile all complete as per specification and as directed by the engineer-in-charge.	Each	670	0.006553280
<b>2600</b>	<b>OTHER MISCELLANEOUS ITEMS</b>			
2601	Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15 cm deep and disposal of rubbish, lead upto 50 m and lift upto 1.5 m. i) All kinds of soil.	sqm	50	0.000002370
2602	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1 m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	sqm.	40	0.000001900
2603	Clearing grass and removal of the rubbish upto a distance of 50 m outside the periphery of the area cleared.	sqm.	105	0.000004980
2604	Felling trees of the girth (measured at a height of 1 m above ground level) including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material. i) Beyond 30 cm girth upto and incl. 60 cm girth ii) Beyond 60 cm girth upto and incl. 120 cm girth iii) Beyond 120 cm girth upto and incl. 240 cm girth iv) Above 240 cm girth	each each each each	2 2 2 2	0.000002470 0.000011090 0.000051600 0.000051600
2606	Applying ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanized iron/steel works.	sqm	10	0.000026250
2704 (a)	Providing, supplying and fixing anchor bolt with injection adhesive (chemical grouting) of HILTI (RE500) / or equivalent as approved by the Engineer for fixing in wet / Dry conditions of 30 dia. and 505 long. The installation and the setting instructions should be strictly followed as per the manufacturer's recommendations. The rate shall include making required drilling hole, all labour, scaffolding and other incidentals necessary to complete the work as per the drawing and manufacturer's recommendations.	NO.	2	0.000008310
2704 (c)	Providing, supplying and fixing dowel bar with injection adhesive (chemical grouting) of HILTI (RE500) / or equivalent as approved by the Engineer for fixing in wet/Dry conditions of 20 dia and 400 long. The installation and the setting instructions should be strictly followed as per the manufacturer's recommendations. The rate shall include making required drilling hole, all labour, scaffolding and other incidentals necessary to complete the work as per the drawing and manufacturer's recommendations.	NO.	2	0.000005540
2705	Dismantling roofing including ridges, hips, valleys and gutters etc., and stacking the material within 50 metres lead of a G.S. Sheet b Asbestos sheet	sqm sqm	11 11	0.000018640 0.000018640
2706	Dismantling aluminium / Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of unserviceable surplus material and stacking of serviceable material with in 50 meters lead as directed by Engineer-in-charge	sqm	50	0.000084730

**VOLUME-III  
PRICE SCHEDULE, REV-1**

**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC,  
Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-3 - SERVICE**

<b>ST. NO</b>	<b>DESCRIPTION OF ITEM</b>	<b>UNIT</b>	<b>QTY</b>	<b>WEIGHTAGE</b>
2707	Dismantling G.I. pipes (external work) including excavation and refilling trenches after taking out the pipes, manually / by mechanical means including stacking of pipes within 50 metres lead as per direction of Engineer-in-charge			
a	15 mm to 40 mm nominal bore	RM	11	0.000018640
b	Above 40 mm nominal bore	RM	11	0.000024230
	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead			
a	Of area 3 sq. metres and below	each	11	0.000018640
b	Of area beyond 3 sq. metres	each	11	0.000027960
	<b>TOTAL SCH-3 - SERVICE</b>			<b>0.659701820</b>

**VOLUME-III  
PRICE SCHEDULE, REV-1**

**Civil, structural and architectural works for retrofitting of ESP for R&M 4X210 MW (U#1,2,3&4)  
Kahalgaoon STPP, NTPC, Bhagalpur, Bihar.**

**TENDER NO - PSER:SCT:KGN-C1892:18**

**SCH-4 - SUPPLY**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
S 401	Supplying <b>mild steel reinforcements</b> conforming to grade 1 of IS:432 part 1 from approved vendors of customer with test certificate, contract specifications & drawings. <b>Note: Payment shall be restricted to quantity consumed as per ST 401 &amp; 406 of Schedule-2-SERVICE</b>	MT	7	0.001077060
S 402	Supplying <b>High yield deformed bar of IS: 1786 (Fe. 500)</b> with minimum 14.5 percent elongation from approved vendors of customer with test certificate, contract specifications & drawings. <b>Note: Payment shall be restricted to quantity consumed as per ST 402 of Schedule-2-SERVICE</b>	MT	1770	0.281941200
S 703	Supply of <b>mild steel embedments</b> , BOLTS assembly, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including cost of all labour, materials and equipment, transportation, loading, unloading, handling, painting, welding, bolting, riveting, cutting, drilling, scaffolding, setting etc. all complete as per customer contract specifications & drawings.. (Raw material to be procured from approved vendors of customer with test certificate). <b>Note: Payment shall be restricted to quantity consumed as per ST 703 of Schedule-2-SERVICE</b>	MT	119	0.025296750
S 2301	Supplying <b>structural steel conforming to IS:2062, pipes conforming to IS:1161 / IS:1239, chequered plate conforming to IS:3502</b> from approved vendors of customer with test certificate, contract specifications & drawings <b>Note: Payment shall be restricted to quantity consumed as per ST 2301 of Schedule-2-SERVICE)</b>			
a)	M S Plates Up to 12 mm thick: IS-2062, Grade Designation E-250, Grade BR, Killed, Impact Test at Room Temperature.	MT	30	0.004107620
b)	M S Plates beyond 12 mm thick Up to 40 mm thick: IS-2062, Grade Designation E-250, Grade BR, Killed, Impact Test at Room Temperature & Normalised Rolled.	MT	50	0.006846030
c)	M S Plates beyond 40 mm thick: IS-2062, Grade Designation E-250, Grade BR, Killed, Impact Test at Room Temperature, Vacuum degassed, Furnace Normalised 100% Ultrasonically tested as per ASTM A578 level B-S2	MT	10	0.001369210
d)	Rolled Sections (Beam, Angle, Channels): IS-2062, Grade Designation E-250, Grade BR, Semi Killed / Killed	MT	120	0.018301270
e)	Chequered Plate as per IS-3502, Grade Designation E-250, Grade BR, Semi Killed.	MT	10	0.001359040
<b>TOTAL SCH-4 - SUPPLY</b>				<b>0.340298180</b>