

BHARAT SANCHAR NIGAM LIMITED
(A Government of India Enterprise)

TENDER DOCUMENT

Name of work:

“Modifications and Internal Works at 3rd Floor, Block A-1, Toshali Bhawan, Bhubaneswar for ORERA” .

NIT No: - 72/2018-19/BCD/E.P/BBSR

Total E.C.- Rs 1,39,08,464/-
(Civil part - Rs 1,12,27,215.00/-)
(Electrical part- Rs 26,81,249/-)

E.M.D.- Rs 2,78,170/-

Completion period: 4 (Four) Months

**O/o CHIEF ENGINEER (CIVIL)
BSNL CIVIL ODISHA ZONE
BHUBANESWAR**

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PART – A
INFORMATION AND INSTRUCTIONS TO BIDDERS FOR e-TENDERING

The Executive Engineer(Civil), BSNL Civil Division-I, Bhubaneswar invites item rate e-tenders on behalf of Odisha Real Estate Regulatory Authority, Bhubaneswar from approved and eligible contractors of BSNL (Civil Wing) and non-BSNL registered contractors of appropriate class of Public Works Organizations like CPWD, DOP, MES, Railways and State PWD (R&B) of Odisha for the following work:

- | Sl.No. | Description | Details |
|--------|---|---|
| i. | NIT No. 72/2018-19/BCD/E.P/BBSR | |
| | Name of Work: Modifications and Internal Works at 3rd Floor, Block A-1, Toshali Bhawan, Bhubaneswar for ORERA | |
| | Estimated Cost Rs 1,39,08,464/-
[Rs 1,12,27,215.00/- (Civil part)+Rs 26,81,249/- (Electrical part)] | |
| ii. | Earnest Money (In Rs.) | : Rs 2,78,170/- |
| iii. | Period of Completion | : 4(Four) months |
| iv. | Last date and time of online submission of tender: | 15.00 hours on 01.04.2019. |
| v. | Time and date of online opening of Documents: | 15.30 hours on 01.04.2019. |
| vi. | Time and date of opening of Online Financial Bids : | 15.30 hours on 02.04.2019 |
| vii. | Period during which hard copies of EMD, Registration Certificates, opening Undertaking and other Documents to be submitted to Division office by only the lowest Tenderer. | To be submitted during office hours within a week from the date of of Financial Bid. In case the last day happens to be closed holiday, these Documents shall be submitted on the next working day. |
| 1. | The intending bidder must read the terms and conditions of Tender document carefully. He should submit his bid if he considers himself eligible and he is in possession of all the certificates / documents required. | |
| 2. | Information and Instructions for bidders for e-tendering posted on website shall form part of bid document. | |
| 3. | The bid document consisting of NIT, plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from http://www.tenderwizard.com/BSNL or www.odisha.bsnl.co.in or | |

eprocure.gov.in free of cost. Any corrigendum(s) will be uploaded in these three web sites and no press publicity will be given for the corrigendum(s). The tenderers are requested to verify the corrigendum(s), if any before submitting the online bid.

4. But the bid can be submitted ONLY through <http://www.tenderwizard.com/BSNL> after depositing e-tender Processing Fee in favour of ITI Limited and uploading the mandatory scanned documents as specified. The scanned copy of Demand Draft or Pay order or Banker's Cheque or Deposit at call Receipt or Fixed Deposit Receipts or Bank Guarantee of any Scheduled Bank towards EMD in favour of **Accounts Officer (A&P), O/o CGM, BSNL, Bhubaneswar** is also to be uploaded.
5. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.
6. The intending bidder must have valid class-III digital signature to submit the bid. After submission of the bid online the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
7. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
8. Contractor can upload documents in the form of JPG format, PDF format and any other format as permissible by the e-tendering portal.
9. Contractor must ensure to quote rate of each item. The column meant for quoting rate in figures appears in dark yellow colour and the moment rate is entered, it turns sky blue.
In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0".
Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0" (ZERO).
10. If the contractor is found ineligible after opening of bids, his bid shall become invalid and e-Tender Processing Fee shall not be refunded.
11. For the Eligibility Documents uploaded online, if any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the contractor the bid shall become invalid and e-Tender Processing Fee shall not be refunded.
12. Copy of Enlistment Order and certificate of work experience and other eligibility documents as specified in the Notice Inviting Tender shall be scanned and uploaded to the e-tendering website within the period of tender submission. However, certified copy of all the scanned and uploaded documents as specified shall have to be submitted by the lowest bidder along with physical EMD (of the scanned copy of EMD) uploaded within ONE WEEK physically in the office of tender opening authority.

List of eligibility Documents to be scanned and uploaded within the period of bid submission:

- a) Certificate of registration / enlistment order
- b) Treasury Challan/Demand Draft/Pay order or Banker`s Cheque /Deposit at Call Receipt/FDR/ Bank Guarantee of any Scheduled Bank against EMD.
- c) Certificate of GST registration
- d) Certificates of Work Experience (for non BSNL registered contractors).
- e) If the bidder is a firm in partnership/ company, then the hard copies of **Form "A" and partnership deed in case of partnership firms /memorandum of articles of association and power of attorney or authorization to the person who signs the tender in case of companies.**
- f) **An undertaking that "The Physical EMD shall be deposited by me/us with the EE calling the bid in case I/we become the lowest bidder within ONE WEEK of the opening of financial bid otherwise BSNL may reject the bid and also take action to withdraw my/our enlistment/debar me/us from tendering in BSNL."**

Note:- The tenderers are requested not to upload any other certificates or documents. Only the required experience certificates are to be uploaded.

DECLARATIONS TO BE GIVEN BY THE TENDERERS

It is to certify that

- a) I /We have gone through BSNL W-8 amended up to correction Slip No.6 as available on website www.odisha.bsnl.co.in or in the office of Executive Engineer(c) and I/We agree with the terms and conditions of it and understood that it will form part of the agreement.

**Date: -
Tenderer**

Signature of the

- b) "I,S/o Shri resident of hereby certify that none of my relative(s) as defined in para 15 of BSNL W-6 is/are employed in BSNL Civil Zone, Odisha. In case at any stage, it is found that the information given by me is false/incorrect, BSNL shall have the absolute right to take any action as deemed fit without any prior intimation to me".

NOTE: - (To be certified by all the partners in case of partnership firms, by all the directors in case of companies).

**Date: -
Tenderer**

Signature of the

1. Other partners 2. Sri _____ S/o Sri _____ Signature:
3. Sri _____ S/o Sri _____ Signature:
4. Sri _____ S/o Sri _____ Signature:

- c) **"The Physical EMD shall be deposited by me/us with the EE calling the bid in case I/we become the lowest bidder within ONE WEEK of the opening of financial bid, otherwise BSNL may reject the bid and also take action to withdraw my/our enlistment/debar me/us from tendering in BSNL."**

Signature of the Tenderer

**BHARAT SANCHAR NIGAM LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)**

NOTICE INVITING e-TENDER

The Executive Engineer (Civil), BSNL [Civil Division-I, Bhubaneswar](#) invites Item rate e-tenders on behalf of [Odisha Real Estate Regulatory Authority](#), Bhubaneswar from approved and eligible contractors of BSNL (Civil Wing) and non-BSNL registered contractors of appropriate class of Public Works Organizations like CPWD, DOP, MES, Railways and State PWD (R&B) of Odisha are also eligible to participate in tender for the following work of : **[Modifications and Internal works at 3rd Floor, Block A-1, Toshali Bhawan, Bhubaneswar for ORERA](#)** The enlistment of the contractors should be valid on the last date of submission of bids. In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.

The intending bidder eligible to submit bid has to scan and upload the following documents within the period of bid submission:

- a) Certificate of registration / enlistment order
- b) Treasury Challan/Demand Draft/Pay order or Banker`s Cheque /Deposit at Call Receipt/FDR/ Bank Guarantee of any Scheduled Bank against EMD.
- c) Certificate of GST registration.
- d) Certificates of Work Experience (for non BSNL registered contractors).
- e) If the bidder is a firm in partnership/ company, then the hard copies of **Form "A" and partnership deed in case of partnership firms /memorandum of articles of association and power of attorney or authorization to the person who signs the tender in case of companies.**
- f) **An undertaking that "The Physical EMD shall be deposited by me/us with the EE calling the bid in case I/we become the lowest bidder within ONE WEEK of the opening of financial bid otherwise BSNL may reject the bid and also take action to withdraw my/our enlistment/debar me/us from tendering in BSNL."**

Note:- The tenderers are requested not to upload any other certificates or documents. Also only the required experience certificates are to be uploaded.

1.1 The work is estimated to cost **Rs 1,39,08,464/-**(Part A: [Major component-Civil Portion: Rs 1,12,27,215.00/-](#) + Part B: [Minor component - Electrical Portion: Rs 26,81,249/-](#)). This estimate, however, is given merely as a rough guide.

1.2 Intending bidder is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent

authority, of having satisfactorily completed similar works of magnitude specified below:

1.2.1 Criteria of eligibility for submission of bid document for non-BSNL registered contractors of appropriate class of Public Works Organizations like CPWD, DOP, MES, Railways and State PWD (R&B) of Odisha who are also eligible to participate:

1.2.1.1 for works up to Rs.7 lakhs : ----NIL----

1.2.1.2 for works above Rs 7 lakhs and up to Rs. 5 Cr:

The applicant should have completed works as per details below during the last seven years ending last day of the month previous to the one in which the tenders are invited.

- a) Three similar completed works each costing not less than the amount equal to **40% of estimated cost.**
or
- b) Two similar completed works each costing not less than the amount equal to **50% of estimated cost.**
or
- a) One similar completed works costing not less than the amount equal to **80% of estimated cost.**

Similar work means **‘Buildings or Internal works like partitions, flooring, wall paneling, false ceiling’** . The value of executed works shall be brought to current costing level by enhancing the actual value of executed work at simple rate of 7% per annum; calculated from the date of completion to last date of submission of tenders and shall be rounded off to the nearest hundred rupees. **Above works should have been carried out in Central Govt/ Central PSUs/ Central Govt Organisations.** The experience certificate, given by an officer not below the rank of Executive Engineer, shall indicate clearly the nature of the work and the satisfactory completion of the work along with value of work done and actual date of completion and shall be in original / attested. Certificates indicating annual turnover or different works done under a rate contract /annual contract shall not be considered as one work. **Certificates without satisfactory completion and/ or actual date of completion will be considered as invalid.**

- 2. Agreement shall be drawn with the successful tenderer on prescribed Form No.BSNL W-7/8 amended up to correction slip no.6, which is available on BSNL website : www.odisha.bsnl.co.in or in the office of the **Executive Engineer (Civil), BSNL Civil Division-I, Bhubaneswar.** Tenderer shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
- 3. The time allowed for carrying out the work will be **04 (Four) months** and shall be reckoned from **10th day** after the date of issue of letter of acceptance of the tender or from the first day of the handing over of the site whichever is later, in accordance with phasing, if any, indicated in the tender document.

4. The site for the work is available.

(i) The architectural drawings are available.

5. The bid document consisting of NIT, plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from [http:// www.tenderwizard.com/BSNL](http://www.tenderwizard.com/BSNL) or eprocure.gov.in and the NIT & General conditions of contract upto Correction Slip No.6 can be seen from BSNL website www.odisha.bsnl.co.in or in the **office of the Executive Engineer (Civil), BSNL Civil Division-I, Bhubaneswar.**
6. After submission of the bid ONLY through [http:// www.tenderwizard.com/BSNL](http://www.tenderwizard.com/BSNL) the contractor can re-submit revised bid any number of times but before last date and time of submission of bid as notified.
7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last date and time of submission of bid as notified.
8. **Earnest Money in the form of Treasury Challan or Demand Draft or Pay order or Banker's Cheque or Deposit at Call Receipt or Fixed Deposit Receipt drawn in favour of Accounts Officer (A&P), O/o CGM, BSNL, Bhubaneswar shall be scanned and uploaded to the e-Tendering website within the period of bid submission.**

A part of earnest money is acceptable in the form of bank guarantee also. When amount of earnest money is more than Rs. 5 lakhs, part of the earnest money is acceptable in the form of Bank Guarantee also. In such case, minimum 50% of earnest money (but not less than Rs. 5 lakh) or Rs. 25 lakh, whichever is less, will have to be deposited in the shape prescribed above. And balance **may be deposited** in shape of Bank Guarantee of any scheduled bank **having validity for six months or more from the last date of receipt of bids. The EMD has to be scanned and uploaded to the e-Tendering website by the intending bidders within the period of bid submission.**

The physical EMD (of the scanned copy of EMD) uploaded shall be deposited by the lowest bidder within ONE WEEK after opening of financial bid failing which the bid shall be rejected and enlistment of the agency shall be withdrawn by the enlisting authority. The agency shall be debarred from tendering in BSNL.

The following undertaking in this regard shall also be uploaded by the intending bidders:-

“The Physical EMD shall be deposited by me/us with the EE calling the bid in case I/we become the lowest bidder within a week of the opening of financial bid otherwise Organization may reject the bid and also take action to withdraw my/our enlistment/debar me/us from tendering in BSNL.”

Interested contractor who wish to participate in the bid has also to make following payments within the period of bid submission:

e-tender Processing Fee: e-Tender Processing Fee amounting to Rs. 4720.00 is to be paid through online to the account of M/s ITI Limited through their e-gateway by credit/debit card, internet banking or RGTS/NEFT facility. E-Tender processing fee paid through Demand draft shall not be accepted.

The intending bidder has to fill all the details of Demand Draft or Pay order or Banker's Cheque or Deposit at call Receipt or Fixed Deposit Receipts and Bank Guarantee (bankers name, amount, number and date) against payments for EMD in the drop down menu of the e-tendering portal.

Copy of Enlistment Order and certificate of work experience and other documents as specified in the notice shall be scanned and uploaded to the e-Tendering website within the period of bid submission. **However, SELF certified copy of all the scanned and uploaded documents as specified in notice shall have to be submitted by the lowest bidder along with physical EMD within ONE WEEK physically in the office of tender opening authority.**

Online bid documents submitted by intending bidders shall be opened only of those bidders, **who has deposited e-Tender Processing Fee with M/s ITI Limited and Earnest Money Deposit and other documents scanned and uploaded are found in order.**

The bid submitted shall be opened at **15.30 Hrs on 01.04.2019** and financial bid shall be opened at **15.30 Hrs on 02.04.2019.**

9. The bid submitted shall become invalid and e-Tender processing fee shall not be refunded if:
 - (i) The bidder is found ineligible.
 - (ii) The bidder does not upload all the documents (including GST registration) as stipulated in the bid document **including the undertaking about deposition of physical EMD of the scanned copy of EMD uploaded.**
 - (iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted **physically by the lowest bidder** in the office of bid opening authority.
 - (iv) In case the eligibility credentials are not found genuine at any stage i.e. before award of work or during execution of the work or after completion of the work, the contractor will be debarred from tendering in BSNL for three years including any other action under the contract or existing law
 - (v) **The lowest bidder does not deposit physical EMD within a week of opening of bid.**
10. In case of works having estimated cost below Rs. 15,00,000/-, the successful tenderer shall be required to execute an agreement with the Engineer-in-charge in the proforma annexed to the tender document, within 15 days of the issue of letter of award by the BSNL. In the event of failure on the part of the successful tenderer to sign the agreement, the earnest money will be forfeited and tender

cancelled. In case of works of estimated to cost Rs.15,00,000/- and above, the successful tenderer, upon issue of letter of acceptance of Tender, shall be required to furnish Performance Guarantee @ 5% of the tendered value in the form of irrevocable Bank Guarantee of requisite amount to the Engineer-in-charge in the Proforma annexed to the tender document, within 7 days of the issue of letter of ACCEPTANCE of Tender by EE. In the event of failure on the part of the successful tenderer to furnish the Bank Guarantee within 7 days, including the extended period if any, the earnest money deposited by the contractor shall be forfeited automatically without any notice to the contractor, and tender will be cancelled.

11. The description of the work is as follows:

Laying flooring, partitions, construction of Six nos attached Toilets with superior sanitary ware , Renovation of existing common Toilets , wall panelling, false ceiling, flush door shutters, conference table, conference system and display system , furniture, electrical works etc. at 3rd Floor, Block A-1 ,Toshali Bhawan ,Bhubaneswar for ORERA.

Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidder shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

12. The competent authority does not bind himself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.
13. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
14. The competent authority on behalf of BSNL reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.

15. The company or firm or any other person shall not be permitted to tender for works in BSNL Civil Zone in which his near relative (s) (directly recruited or on deputation in BSNL) is/are posted in any capacity either non-executive or executive employee. Near relative (s) for this purpose is/are defined as:

- (i) Member of Hindu Undivided family (HUF).
- (ii) They are Husband and Wife.
- (iii) The one is related to other in the manner as father, mother, son(s) & Son's wife (daughter-in-law), Daughter(s), Daughter's husband (son-in-law), brother(s), brother's wife, sister(s), sister's husband (brother-in-law).

The contractor shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relative to any executive employee/ Gazetted officer in the BSNL or Department of Telecom or in the Ministry of Communications.

All the intending tenderers will have to give a certificate that none of his/her such near relative(s) as defined above is/are working in the concerned BSNL Civil Zone where he is going to apply for tender/work. The format of the certificate is as under:

"I, _____ s/o Shri _____ Resident of _____ hereby certify that none of my relative (s) as defined above is/are employed in concerned BSNL Civil Zone. In case at any stage, it is found that the information given by me is false/incorrect, BSNL shall have the absolute right to take any action as deemed fit without any prior intimation to me".

The certificate in case of Proprietorship Firm shall be given by the proprietor, for Partnership Firm certificate shall be given by all partners and in case of Limited Company, by all Directors of the company. However, Government of India / Financial Institutions nominees and independent non-official part-time Directors appointed by Govt. of India or the Governor of the State are excluded from the purview of submission of this certificate while submitting tenders by Limited Companies.

Any breach of these conditions by the Company or Firm or any other person, the tender/work will be cancelled and Earnest Money/ Security Deposit/Performance guarantee will be forfeited at any stage, whenever it is so noticed. BSNL will not pay any damages to the company or Firm or the concerned person but damages arising on account of such cancellation to be borne by the contractor. The Company or Firm or the person will also be debarred for further participation in the tender in the concerned BSNL Civil Zone. Further, any breach of this condition by the tenderer would also render him liable to be removed from the approved list of contractors or BSNL. If however the contractor is registered in any other Department he shall also be debarred from tendering in BSNL for any breach of this condition.

16. No Engineer of Gazetted rank or other Gazetted Officer employed in engineering or administrative duties in an Engineering Department of the

Government of India/State Government or PSU's is allowed to work as a contractor for a period of two years after his retirement from Govt. service, without previous permission of the Govt. of India or BSNL in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Govt. of India/State Government or PSU's as aforesaid before submission of the tender or engagement in the contractor's service.

17. The tender for the work shall remain open for acceptance for a period of **60(Sixty) days** from the date of opening of the tenders. If any tenderer withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or, makes any modifications in the terms and conditions of the tender which are not acceptable to the BSNL, then the BSNL shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid.
18. This Notice Inviting Tender (BSNL W-6) shall form a part of the Contract Document. In accordance with clause 1 of the contract, the letter of acceptance shall be issued first in favour of the successful Tenderer/Contractor. After submission of the performance guarantee, the letter of award shall be issued. The contract shall be deemed to have come into effect on issue of letter of acceptance of the tender. On issue of letter of award, the successful Tenderer/Contractor shall, within 15 days from such date, formally sign the agreement consisting of: -
 - a) The Notice Inviting Tender, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - b) Standard BSNL W-7/8 updated upto correction slip no-6 as on BSNL website www.odisha.bsnl.co.in
 - c) Agreement signed on non-judicial stamp paper as per Performa annexed to the tender document.
19. Payment to the contractors shall be *made by the BSNL* through e-payment system like ECS & EFT as detailed below:
 - (a) In cities/areas where ECS/EFT facility is provided by Banks, the tenderer must have Account in such ECS/EFT facility providing Banks and that Bank A/c No shall be quoted in the tender by the tenderer
 - (b) The cost of ECS/EFT will be borne by BSNL in all cases where the payment to contractor is made in a local Branch i.e. tenderer is having bank account in the same place from where the payment is made by BSNL unit.
 - (c) In case payment is made to outside branch i.e. tenderer is having bank account not in the same place from where the payment is made by BSNL unit, the crediting cost will have to be borne by the tenderer only.
 - (d) The payments to contractors will compulsorily be made through ECS/EFT in respect of all contracts where the value of the contract is more than Rs. 10 lakhs.

20. *The bills shall be submitted by the contractor in Computerized Measurement Books(CMB) as per procedure laid down in Clause 6A of BSNL W-8 which will form part of the agreement. The bills shall be submitted by the contractor by 25th of every month.*
21. First running account bill shall be paid only after
 - (a) signing of the Agreement/Contract by both the parties, and
 - (b) Progress chart has been prepared as required under Clause 5 and approved by the competent authority and
 - (c) After obtaining labour licence, EPF Registration, ESIC Registration, whatever applicable in this three for this contract or the contractor.
22. General conditions of contract for works amended upto Correction Slip No. 6 in BHARAT SANCHAR NIGAM LIMITED are available on BSNL website www.odisha.bsnl.co.in as well as in the office of the Executive Engineer (C), BSNL Civil Division-I, Bhubaneswar.
23. For e-Tendering of this tender BSNL has engaged e-portal maintained by M/s ITI, New Delhi. The agency intending to participate in tendering process shall have to register with ITI, New Delhi.
24. The intending bidder can get registered with ITI, New Delhi. For details kindly visit website <http://www.tenderwizard.com/BSNL> or contact Shri SANJIB MOHAPATRA mobile no 9937488749 or 7377708585.
25. If any terms and conditions under General Rules and Directions, (which can be seen in general conditions of contract available in BSNL website www.odisha.bsnl.co.in) is in contravention to terms and conditions as above, the terms and conditions as above shall prevail.

26.0 FOR COMPOSITE TENDERS

26.1.1 The Executive Engineer in charge of the major component will call tenders for the composite work. The cost of the tender document and earnest Money will be fixed with respect to the combined estimated cost put to tender for the composite tender.

26.1.2 The tender document will include following three components:

Part A: BSNL W-6, BSNL W- 7/8, standard General Conditions of Contract for BSNL as applicable with all amendments/modifications upto date.

Part B: Pro forma for Schedule A to F for major component of work, Special conditions, Additional conditions (General / Civil works), particular specifications, list of recommended makes of Materials for civil works, schedule of quantities etc.

Part C: Pro forma for Schedule A to F for minor component of the work. (CE /SE / EE in charge of major component shall also be competent authority under clause 2 and clause 5 as mentioned in Schedule A to F for minor components), General / specific conditions, specifications for electrical

works, list of recommended makes of materials for electrical works, schedule of quantities etc..

- 26.1.3 The tenderer must associate with himself, agencies of the appropriate class eligible to tender for electrical sub head, meeting the eligibility criteria as mentioned in Part C. *In case the main contractor himself meets the required eligibility criteria he shall be allowed to execute the electrical work after due verification etc. The main contractor shall give detailed execution programme of the work in which he shall indicate the time/stage of work when the agency for the electrical work will be deployed by him.*
- 26.1.4 The eligible tenderers shall quote rates for all items of major component as well as for all items of minor components of work. The lowest tenderer would be decided based on the total amount quoted in respect of both CIVIL and ELECTRICAL Schedules in the tender documents. It will be obligatory on the part of the tenderer to sign the tender document for all the components (The schedule of quantities, conditions and special conditions etc.)
- 26.1.5 After acceptance of the tender by competent authority, the EE in charge of major component of the work shall issue letter of award on behalf of BSNL. After the work is awarded, the main contractor will have to enter into one agreement with EE in charge of major component and has also to sign two or more copies of agreement depending upon number of EEs in charge of minor components. One such signed set of agreement shall be handed over to EE in charge of minor component. EE of major component will operate Part-A and Part-B of the agreement. EE-in-charge of minor component(s) shall operate Part-C along with Part A of the agreement.
- 26.1.6 Entire work under the scope of composite tender including major and minor components shall be executed under one agreement.
- 26.1.7 Security Deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works. The Earnest Money will become part of the security deposit of the major component of work.
- 26.1.8 The main contractor has to associate agency(s) for minor component(s) conforming to eligibility criteria as defined in the tender document and has to submit detail of such agency(s) to Engineer-in-charge of minor component(s) within prescribed time. Name of the agency(s) to be associated shall be approved by Engineer-in-charge of minor component(s). If the main contractor fails to associate agency for execution of electrical work within the said period or furnishes incomplete details or furnishes details of ineligible agencies the entire scope of electrical work shall be withdrawn from the tender and the same shall be got executed by the Engineer-in-charge at the risk and cost of the main contractor.

- 26.1.9 In case the main contractor intends to change any of the above agency/ agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge of minor component. The new agency/ agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-charge of minor component(s) is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.
- 26.1.10 The main contractor has to enter in to agreement with contractor(s) associated by him for execution of minor component(s). Copy of such agreement shall be submitted to EE in charge of each minor component as well as to EE in charge of major component. In case of change of associate contractor, the main contractor has to enter into an agreement with the new contractor associated by him.
- 26.1.11 Running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer-in-charge of the discipline of minor component directly to the main contractor.
In case main contractor fails to make the payment to the contractor associated by him within 15 days of receipt of each running account payment then on the written complaint of the contractor associated for such minor component, EE in charge of minor component shall serve the show cause to the main contractor and after considering the reply of the same he may make the payment directly to the contractor associated for minor component as per the terms and conditions of the agreement drawn between main contractor and associate contractor fixed by him, if reply of main contractor either not received or found unsatisfactory. Such payment made to the associate contractor shall be recovered by EE of major or minor component from the next RA/final bill due to main contractor as the case may be.
- 26.1.11A The composite work shall be treated as complete when all the components of the work are complete. The completion certificate of the composite work shall be recorded by Engineer-in-charge of major component after record of completion certificate of all other components.
- 26.1.11B Final bill of whole work shall be finalized and paid by the EE of major component. Engineer(s) in charge of minor component(s) will prepare and pass the final bill for their component of the work and pass on the same to the EE of major component for including in the final bill for composite contract.

Signature and Name of **Executive Engineer (Civil)**
BSNL Civil Division-I
Bhubaneswar
For & on behalf
[Odisha Real Estate Regulatory Authority, Bhubaneswar](#)

BHARAT SANCHAR NIGAM LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

STATE: ODISHA

CIRCLE: BHUBANESWAR

ZONE: ODISHA

DIVISION: BHUBANESWAR-I

SUB-DIVISION: BHUBANESWAR

Percentage Rate Tender / Item Rate Tender & Contract for Works:

- A Tender for the work of: **Modifications and Internal works at 3rd Floor, Block A-1, Toshali Bhawan, Bhubaneswar for ORERA**
- (i) To be submitted by **15.00 hours on 01.04.2019**.
- (ii) To be opened in presence of tenderer who may be present at **15.30 hours on 01.04..2019** in office of Executive Engineer (Civil), BSNL Civil Division-I, Bhubaneswar and financial bid shall be opened at **15.30 Hrs on 02.04.2019** .

TENDER

I/ We have read and examined notice inviting tender, schedule, A, B, C, D, E & F. specifications applicable, Drawings & Design, General Rules and Directions, Conditions of Contract, Clauses of Contract, Special conditions, Schedule of Rate & other documents forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and Rules referred to in the Conditions of Contract and all other contents in the tender document for the work.

I/ We hereby tender for the execution of the work specified for the Bharat Sanchar Nigam Limited within the time specified in schedule 'F', viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of the contract and with such materials as are provided for, by and in respect in accordance with, such conditions so far as applicable.

I/ We agree to keep the tender open for **60 (Sixty) days** from the due date of submission thereof and not to make any modifications in its terms and conditions. If I/we withdraw my/our tender before the said period or issue of letter of acceptance, whichever is earlier, or, makes any modifications in the terms and conditions of the tender which are not acceptable to the BSNL, then the BSNL shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid.

A sum of Rs _____ (Rupees _____) only has been deposited in prescribed manner as earnest money.

If I/We fail to commence the work specified, I/We agree that the said Bharat Sanchar Nigam Limited shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely otherwise the said earnest

money shall be retained by competent authority on behalf of the Bharat Sanchar Nigam Limited towards Security Deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and carry out such deviations as may be ordered, up to maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.

I/We agree that, in case of works of estimated cost exceeding Rs.15,00,000/-, to deposit an amount equal to 5% of Tendered value of the work as performance guarantee in the form of bond of any Scheduled Bank of India in accordance with the proforma prescribed or in the form of Fixed Deposit Receipt etc. within 7 days of the issue of letter of acceptance of Tender by the EE. I/We am/are aware that in the event of failure on my/our part to furnish the Bank Guarantee within 7 days, the earnest money will be forfeited and tender cancelled.

I/ We hereby intimate that for receiving payments I/we have an account in _____ Bank with account No. _____ where the ECS/EFT facility of e-payment is available.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information derived there-from to any person other than a person to whom I/We am/are authorised to communicate the same or use the information in any manner prejudicial to the safety of the State.

I/We agree that should I/We fail to commence the work specified in the above memorandum, an amount equal to the amount of the earnest money mentioned in the form of invitation of tender and the PERFORMANCE GUARANTEE shall be absolutely forfeited to the Bharat Sanchar Nigam Limited and the same may at the option of the competent authority on behalf of the Bharat Sanchar Nigam Limited be recovered without prejudice to any right or remedy available in law out of the deposit /Guarantee in so far as the same may extend in terms of the said bond and in the event of deficiency out of any other money due to me/us under this contract or otherwise.

The information in respect of works in hand is as per proforma enclosed.

"I/we agree that this contract is subject to jurisdiction of Court at **Bhubaneswar** only." (Where the NIT/Tender has been issued)

Dated.....

Witness:

Address:

Occupation:

()

Signature of Contractor

Postal Address: -

A C C E P T A N C E

The above tender (as modified by you (Contractor) and as provided in the letters mentioned hereunder) is accepted by me for and on behalf of **Odisha Real Estate Regulatory Authority, Bhubaneswar**

for a sum of Rs _____
(Rupees _____
)

The letters referred to below shall form part of this Contract Agreement:-

- (a) _____
- (b) _____

For & on behalf of the
Odisha Real Estate Regulatory Authority, Bhubaneswar.

Signature _____

Dated.....

Name and designation

PART – B (FOR CIVIL WORK COMPONENT)

PROFORMA OF SCHEDULES

(Operative Schedules to be supplied separately to each of the intending tenderer)

SCHEDULE “A”

Schedule of Quantities - ENCLOSED

SCHEDULE “B”

Schedule of Materials to be issued to the contractor

S. No.	Description of Item	Quantity	Rates in figures & words at which the materials will be charged from the contractor	Place of issue
1	2	3	4	5
NIL				

SCHEDULE “C”

Tools and Plants to be hired to the contractor

S. No.	Description of Item	Hire charges per day	Place of issue
1	2	3	4
DELETED			

SCHEDULE “D”

Extra schedule for specific requirements/documents for the work, if any.

1. List of Preferred makes for various items of work
2. Additional Conditions of contract.
3. Additional Conditions(General)
4. Conditions for other Taxes and Royalties.

SCHEDULE “E”

Schedule of component of Materials, Labour etc. for escalation.

CLAUSE 10

Component of Materials expressed as percent of Total Value of Work	“X”	75%
Component of Labour expressed as percent of Total Value of Work	“Y”	25%
Component of POL expressed as percent of Total Value of Work	“Z”	0%

SCHEDULE “F” (For Civil Part)
(Reference to General Conditions of Contract)

Name of Work: - “Modifications and Internal works at 3rd Floor, Block A-1, Toshali Bhawan, Bhubaneswar for ORERA.”

Estimated cost of Work: **Rs . 1,12,27,215.00 (Civil Part)**

Earnest Money **Rs 2,78,170.00 (Rupees Two lakh Seventy eight thousand One hundred seventy only)**

Performance Guarantee

(5 % of the tendered value in the form of Bank Guarantee from Scheduled Bank in respect of works with estimated cost put to tender exceeding Rs.15 Lakhs)

Rs_____***_____(
Rupees_____***_____)

(It shall be deposited within 7 days from the date of issue of letter of acceptance by the EE (C), which can also be extended to a specified period as per the discretion of the NIT approving authority).

Security Deposit

(5 % of the tendered value of civil part in the form of Bank Guarantee from Scheduled Bank in respect of works)

Rs_____(
(Rupees_____)

Officer inviting tender

**Executive Engineer (Civil),
BSNL Civil Division-I, Bhubaneswar.**

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clause 12.2 & 12.3

50%

Definitions

See below

2(v) Engineer-in charge

**Executive Engineer (Civil),
BSNL Civil Division-I, Bhubaneswar.**

2(viii) Accepting Authority

**CHIEF ENGINEER(C),
BSNL CIVIL ODISHA ZONE,
BHUBANESWAR.**

2(x) Percentage on cost of materials and labour to cover all overheads and profit

15 %

2(xi) Standard Schedule of Rates

**Central Public Works Department
Delhi Schedule of rates - 2016 with
up to date correction slips.**

9(ii) Standard BSNL Contract Form

BSNL W 7/8 form as amended upto and including correction slip No.6

Clause 2

Authority for fixing compensation under Clause 2---

CHIEF ENGINEER(C),
BSNL CIVIL ODISHA ZONE,
BHUBANESWAR.

Clause 2 A

Whether Clause 2A shall be applicable

NO

Clause 3 A

Whether Clause 3A shall be applicable

NO

Clause 5

i) Time allowed for execution of work.

4 (Four) Months

ii) Authority to give fair and reasonable extension of time for completion of work.

Chief Engineer (C)
BSNL Civil Odisha Zone
Bhubaneswar

Clause 6 A

Whether Clause 6 A shall be applicable

YES

Clause 7

Gross value of work to be done together with net payment / adjustment of advances for materials collected, if any, since the last such payment for being eligible to interim payment.

Contract Amount of Civil part
2xCompletion period in months.

Clause 10A

Reinforcement steel to be used in the work shall have to be procured as below :

TMT bars of 500 D OR 550 D
Produced by SAIL,
TISCO,RINL, JSPL,JSW Steel

Clause 10 C

Not applicable

Clause 10 CA

not applicable

Clause 10 D

Not applicable

Clause 11

Specification to be followed for execution of work.

CPWD Specifications Volume I & II 2009 with up to date correction slips as on the date of opening of the tender.

Clause 12

12.2 & 12.3 Limit for value of any item

50% (fifty percent)

Clause 16

Competent authority for deciding reduced rates.

Chief Engineer © /
Superintending Engineer (C),
BSNL Civil Circle,
Bhubaneswar.

Clause 36(i)

Requirement of Technical Staff and rate of recovery in case of non-compliance shall be as per the following table:

Value of Work	Sl.No	Minimum qualification of Technical Representative	Discipline	Designation (Principal Technical/ Technical representative)	Minimum Experience in years	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)	
							figures	words
For Agreement amount upto Rs 150 lakhs	1	Graduate Engineer OR Diploma Engineer	Civil	Principal Technical representative	2 years for Graduate Engineer / 5 years for Diploma Engineer	1	Rs 15,000/-	Rs Fifteen Thousand only
	2	Graduate Engineer OR Diploma Engineer					Rs 15,000/-	Rs Fifteen Thousand only
For Agreement amount between Rs 150 lakhs to Rs 500 lakhs	1	Graduate Engineer	Civil	Principal Technical representative	5 years	1	Rs 25,000/-	Rs Twenty Five Thousand only
	2	Graduate Engineer OR Diploma Engineer					Rs 15,000/-	Rs Fifteen Thousand only

Clause 37(i)

Extent of **GST** payable by **Contractor** for Building and Construction works

GST of 12% Applicable. Any change in the rate of GST while making payment to the contractors will be adjusted accordingly.

Clause 42

- i)
- (a) Schedule / statement for determining theoretical quantities of cement on the basis of Delhi Schedule of Rates printed by CPWD. Central Public Works Department, Delhi Schedule of rates 2016 for Delhi with upto date correction lips
- ii) **Variation permissible on theoretical quantities**
- a) Cement for works with estimated costs put to tender
- i) not more than Rs. 5 lakhs 3 % minus
- ii) more than 5 lakhs 2 % minus
- b) Steel reinforcement and structural steel sections for each diameter, section and category. 2 % minus

Star prices to be considered

Sl. No	Material	Star Price (Rate in Figures and Words)
1	For Cement	Rs. 6,400/- (Rupees Six thousand
2	For Reinforcement Steel conforming to BIS 1786 - TMT bars 500 D	Rs.57, 300/-(Rupees Fifty Seven thousand three hundred) only. /M.T

The rate for recovery under clause 42 shall be same as the Star Price.

SCHEDULE -D (for Civil work)**LIST OF PREFERRED MAKES FOR VARIOUS ITEMS OF WORK**

The tenderer has to provide items specified as under or equivalent with the approval the Engineer-in-Charge for corresponding item of work.

MATERIAL	PREFERRED MAKE
Water Proofing Compound	Fosroc, Pidilite, Impermo, Sika, Accoproof, CICO
Admixtures in concrete	Fosroc, Sika, Pidilite, Roff
Grouting compound	Latticrete, Balandura, Fosroc
Epoxy grouts	Saint Gobin, Latticrete, Balandura, FOSROC
Non Metallic hardener compound	Fosroc, STP, Pidilite, CICO, FERROUS
Expoxy, Grouting Mortar	MBT, SIKA, STP, ENDURA, Dubond, Kerakoll, Don
CRCA frames	TATA, SAIL
Dash/Anchoring Fasteners	HILTI/Fischer, BOSCH
Nuts/Bolts & Screws	GKW / Atul
Flush door shutters	Century, Greenply, Archid , Mayur Alishan
Hardware fittings	DORMA,EARL BIHAR,HETTICH,LAXMI,DOORSET,OZONE,EVERITE
Locks and Handles	Dorset, Godrej, Europa, Ozone, Everite, HETTICH, DORMA
Drawer multilock	KEYMAN/Earl Behari
Cylindrical lock	SECUR, DORSET, GODREJ
Mortice latch & lock	Godrej, Sheel
MS Tubes	Jindal,Tata,SAIL
Stainless steel sections	Jindal, Salem
Glue	Fevicol,Vamicol,Pidilite,Dunlop

DNIT

CP fittings & accessories	Parko,Kingston,Eso,Plumber,Crab tree,Jaguar,ROCA , Kerovit
Screws	Nettlefold/,GKW Ltd
Hydraulic door closer	Hardwyn, Dormia, Ozone, Yale, Everite, Godrej, Doorset
Welding Electrodes	Advani, ESAB India
Fire check wood doors	Godrej, Global, Radient, Navair
Tinted film	Garware, Meditech, 3M
Privacy film	3M
PVC door shutter	Rajshri,Sintex,Duroplast
UPVC windows (with 10 yrs manufacters warranty)	Fenesta, Komerling, Veka, Reheau, Aluplast , Duroplast
UPVC windows/doors hardware (with minimum 2 yrs. warranty)	Rotto, Dorest, Kinlong, DNV, PEGO
Clear Glass/Reflective Glass	Saint Gobain, Modiguard, Asahi, Modifloat, Indor Asia
Patch fittings	DORMA,GEZE,OZONE
Silicon sealant	DOW Corning, GE, FERROUS
wooden flooring	square foot , KRONO, PERRO, HARO, BERRY, ARMSTRONG,
PVC sheet flooring/Antistatic	LG, Armstong, Jindal, Wonderfloor
Paver block	Aeon,Hicon,Shan Fly Ash,Malu,Prathi,STAR Sai,Nitco,Gico,Ultra,EUROCON,UNISTONE
Ceramic tiles	,Kajaria, NITCO, Somany, Orient Bell, Oasis
Vitrified tiles/Polished Porcelain	,Kajaria,NITCO,Somany,Naveen,RAK,Simpolo
PVC Pipes and Fittings	Astral, Supreme, Finolex, Prince, Skipper, Ashirwad,Truebore
UPVC Pipes/fittings	Finolex, Supreme, Astral, SFMC

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Insulation above false ceiling	Armaflex, Superior, Eurobatex
Square perforated metal false ceiling	Conwed, Unimet, TRAC
Acoustical felt treatment	Soundtex
Exposed grid false ceiling	ARMSTRONG, NITTOBO, AMF, CELOTEX
Gypsum Board accessories	India Gypsum Ltd.
Calcium silicate Board false ceiling	Aerolite, Hylux, Armstrong, India Gypsum, Daikin, Decosmic
PVC water tank	Sintex (with ISI mark embossing only)
Mineral fibre false ceiling	Armstrong, AMF, USG, Saint Gobin
Blinds	Vista, Mac, Armstrong, Hunter Douglas
Furniture hardware	Unique, HATTICH, EBCO, Earl Behari
Aluminium sections	Hindalco, Jindal, Indal
Aluminium fittings	Everite, OXFORD, Argent, NLCO, Allans
Floor springs	Dorma, Ozone, Hardwyn, Yale, Everite, Godrej
Pre-laminated or plain particle board	Ecoboard, Asish, Novapan, Merino, Green, Century, Archid, Nepal Board
Aluminium composite panel (ACP)	Aludecor, Alponic, Alcobond, Alcopanel, Durabuilt, Alstrong
Polyvinyl Butyl film	Dupont, Trossifol, Trussof
Workstation and Modular furniture	Godrej, BPERGO, WIPRO, Herman, Durain, Miller, Featherlite
Plywood/Block Board	Green Ply, CENTURY, ALISHAN
Prelaminated MDF Board	Century, green ply
HDF laminated boards	Armstrong, BVG, EGO floors, Square foot, Action Tera
Plain MDF Board	NUWOOD, Asis, Century
LAMINATES	Greenlam, Decolam, Merinolam, Century

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Precast chequered cement concrete tiles	NITCO,Ultra,Aeons, Hicon,Gico,Unistone,Star
Access flooring system (false floor)	Uitile,Donn
Perforated panels (false floor)	Uitile,Donn
Rodent repellent	MASER
Writing boards	Alkon,Whitemark,Writemark
Artificial leather	National leather Cloth Mfg Co., Bhor
Fabric Protection	Scotchguard of Birla 3M
Foam of chairs, Sofa	MM Foam, U FOAM
Fire retardant fabric	Trevira CS fabrics(Rajasthan Spinning & Weaving Mills Ltd.)
Ply Veneers	Green, Century
Polyrethan Sealant	Fosroc, Fesrons, Pidilite, MBT
Polythelene Board	Supreme, RV plast, Uriplast
Enamel Paints	Johnson & Nicholson,Asian,Royal touch ,Berger,ICI,Nerolac
Acrylic Distemper/Plastic Emulsion Paints	Asian Paints, ICI, Berger
Steel Primer	ICI, Asian Paints, Berger, Shalimar
Exterior paints	Snowcem India, Asian, ICI
Epoxy paint	Nerolac/Asian
Fire retardant paint	Firetard
Wood preservative	Bison by British paints, Woodguard,Termiseal
White cement	Birla White,JK White
Polyurethane Paint	MRF, ASIAN, Dulux, Bayev
Melamine Polish	Asian, Berger, ICI

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Wax Polish	Reckitt & Colman
PVC gratings	Prince, Prayag.
SW Pipes/Gully Traps	Perfect, Burn, Anand, RK, Hind, SKF, Crystal
CI Covers and frames	SKF, NECO, RIF, BC, NEER, BIC, KK, HEPCO, KAJACO
SFRC Manhole covers	KK, SK., ADVENT
Stainless Steel Sink (Out of Salem Steel only)	Diamond, Nirali, Neekanth, Jayana, Prestige
Vitreous China Sanitary ware/Porcealin	Parryware, Cera, Hindware, Nycer, Kerovit
Plastic seat cover of W.C. (ISI mark only)	Commander, Hindware, Admiral
CPVC pipes and fittings	Ashrivad, Flowguard, Astral, Fusion
G. I. Pipes	Jindal (Hissar), Tata, Zenith, I.T.C., GST
G. I. Fittings	Unik, Zenith, HB
Gun metal valves	Leader, ZOLOTO, DRP
Float Valve	Viking, Prayag, Watertech
PPR Pipes and fittings	SFMC, Fusion, Supreme, Aashrivad
Gun Metal valves	Rolto, Leader, Sant, Caste
Water meters	Aquamet, Capstan, Kranti, Prima
CI valves	Zolto, Kirloskar, SANT, Kartar, Castle

ADDITIONAL CONDITIONS OF CONTRACT

The following “Additional conditions” shall be added to the standard conditions to take into account the special requirement of the work.

1. The intending tenderers shall note that the work is to be completed within the stipulated period.
2. The tenderers shall take into consideration the Drawings and Specifications and quote the rates accordingly. The quoted rates shall be inclusive of all charges such as Insurance, transportation, taxes fixed by the Central/State Government etc. Nothing extra shall be payable over the quoted rates.
3. In case of any discrepancy in the item given in the schedule of quantities appended with the tender and Architectural drawings relating to the relevant item, the contractor shall obtain clarifications in writing from the Engineer-in-Charge before execution.
4. The contractor shall take instructions from the Engineer-in-Charge for stacking of materials in any place. No excavated earth or building materials shall be stacked on areas where other buildings, roads, services of compound walls are to be constructed.
5. The surplus excavated earth which is beyond the requirement of the Government work may be allowed to be disposed off by the contractor on his own or to sell the surplus earth to private parties at his discretion, but nothing extra shall be paid for carriage of disposal of surplus earth, if the same is not required for any other Government work. The approval of the Engineer-in-Charge in writing is required to be obtained for the above.
6. The structural drawings for the work shall be issued in stages taking into consideration the approved programme as well as the actual progress.
7. The manufactured materials used on the work shall have ISI mark. In case of materials for which no manufacture has been licensed to manufacture, the materials with ISI marking, the material shall conform to the provision of the CPWD specifications. In the case of non-ISI marked materials, tests shall be conducted to ensure that they conform to the specifications or codes mentioned above. BIS marked materials may also be got tested if felt necessary by the Engineer-in-Charge.
9. All materials for which testing is mandatory before being allowed for incorporation in the work shall be purchased well in advance of their actual requirement in the work at site, so as to afford enough availability of time for getting the material tested and obtaining the approval of the Engineer-in-Charge.
9. Other agencies doing works related with this project will also simultaneously execute the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such necessary holes, openings etc. for laying / burying in the work of pipes, cables, conduits, clamps, boxes and hooks for fan clamps etc. as may be required for other agencies, conduits for electrical wiring / cables will be laid in a way that they leave enough space for concreting and do not adversely affect the structural members. Nothing extra over the agreement rates shall be paid for the same.
10. Royalty, if any, at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, shingle, sand and bajri etc. collected by him for

- the execution of the work direct to the Revenue authority or authorized agent of the State Government concerned or Central Government.
11. The rates quoted shall include all taxes, royalty, seignior age charges that are applicable from time to time as per statutory rules of State / Central Government.
 12. The contractor shall make his own arrangements for obtaining electric / water connections, if required, and make necessary payments directly to the Department concerned.
 13. The work shall be carried out in a manner complying in all respects with the requirements of relevant byelaws of the Municipal Committee / Municipal Corporation / Development Authority / Improvement Trust under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-Charge and nothing extra shall be paid on this account.
 14. The contractor shall provide at his own cost suitable weighing and measuring arrangements at site for checking the weight / dimensions as may be necessary for execution of the work.
 15. No compensation / payment shall be payable to the contractor for any damage caused by rains, snow fall, lightning, wind, storm, floods tornadoes, earthquakes or other natural calamities during execution of work. He will make good all such damages at his own cost and no claim on this account will be entertained.
 16. Some restrictions may be imposed for regulating the construction/work activities, storage of materials, entry and movement of the personal/workers for security reasons by the competent security in-charge or by the Engineer-in-Charge or his representative and in such case the contractor shall be bound to follow all such restriction/instructions and nothing extra shall be payable on this account.
 17. All cement bags and all other similar perishable items shall be stored by the contractor in a separate go-down which shall be exclusively constructed by the contractor for this purpose at his own cost as per general guidelines given in the “ Typical Sketch for :-
Cement Godown” under clause 3.2.1.4 of the Specifications. The dimensions given in the said sketch are only indicative and the contractor shall be bound to construct the storage godown of sufficient size so as to properly store the appropriate quantity of cement required for consumption for not less than ONE MONTH. Such go-down shall have weather proof roof and walls. The go-down shall be provided with a single door with arrangement for locking it simultaneously with two locks. The contractor shall be fully responsible for the safe custody of all the materials even if the materials are kept and stored under double lock system. The account of daily receipts and issues of the cement bags shall be maintained in the said register which shall be signed daily by the contractor or by his authorized agent in token of correctness of the entries.
 18. The contractor shall also be bound to observe and follow all the provisions of “The Building and other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996” and “The Building and other Construction Workers Welfare Cess Act 1996” and all the rules framed there-under. Nothing extra on this account shall be paid to the contractor.

19. Any cement slurry added over a base surface or for continuation of concreting for better bond is added to have been built in the item unless otherwise specified and nothing extra shall be payable or extra cement considered with consumption on this account. Rates of all items in which use of cement is involved shall be inclusive of curing.
20. Unless otherwise specified in the Schedule of quantities of items, the rate for all items of the work shall be inclusive of pumping out or bailing out water encountered from any sources such as rain, sub-soil water, flood or any other causes whatsoever. The foundation pits, trenches etc. shall be kept free from water while the works below ground level are in progress. Nothing extra on this account shall be payable to the contractor.
21. Unless otherwise provided in the schedule of quantities of item of work, the rates tendered by the contractor shall be for all heights, lifts and leads and depth of the building and nothing extra shall be payable to the contractor on this account.
22. Portland Pozzolona Cement (flyash blended) conforming to IS: 1489(Part 1) shall be used in the work. The certificate from PPC manufacturer indicating the percentage of flyash shall be submitted to the Engineer-in-charge before using the cement in the work. Hence, the tenderers may quote their rates for the items requiring cement considering the rate of PPC.

ADDITIONAL CONDITIONS (GENERAL)

(Para 3.1 to Para 3.2.6 (in pages 102 to pages 104) under Additional conditions in BSNL booklet on General conditions of contract for building works may be treated as deleted)

1.0 CEMENT

- 1.1 The contractor shall procure Portland Pozzalona Cement (conforming to IS:1489-Part 1) as required in the work, from reputed manufacturers of cement having a production capacity of one million tonnes or more per annum such as ACC, Ultratech, ZUARI, Birla and Cement Corporation of India, Gujarat Ambuja etc., as approved by the Ministry of Industry , Government of India and holding license to use ISI certification mark for their product. The tenderers may also submit a list of names of cement manufacturers which they propose to use in the work. The tender accepting authority reserves right to accept or reject name(s) of cement manufacturer(s) which the tenderer proposes to use in the work. No change in the tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufacturers, given by the tenderer, fully or partially. Supply of cement shall be taken in 50 kg bags bearing manufacturer's name and ISI marking. Samples from cement arranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of relevant BIS codes. In case test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so.
- 1.2 The cement shall be brought at site in bulk supply of approximately 10 tonnes or as decided by the Engineer-in-Charge.
- 1.3 The cement godown of the capacity to store a minimum of 200 bags of cement shall be constructed by the contractor at site of work for which no extra payment shall be made. Double lock provision shall be made to the door of cement godown. The keys of one lock shall remain with Engineer-in-Charge or his authorized representative and keys of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge or his authorized representatives.
- 1.4 The cement shall be got tested by the Engineer-in-Charge and shall be used on the work only after satisfactory test results have been received. The contractor shall supply free of charge the cement required for testing including its transportation cost to testing laboratories. The frequency and details of the tests shall be decided by the Engineer- in-Charge depending on the quantum of supply in each batch. The cost of tests shall be borne by the contractor / Department in the manner indicated below:
- (a) By contractor, if results show that the cement does not conform to the relevant BIS codes.

- (b) By Department, if results show that the cement conforms to relevant BIS codes.
- 1.5 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by the conditions laid therein. In case the cement consumption is less than theoretical consumption including permissible variation, recovery at rate so prescribed shall be made. In case of excess consumption no adjustment shall be made.
 - 1.6 Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-charge.
 - 1.7 Damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-charge. If he does not do so within 3 days of receipt of such notice, the Engineer-in-charge shall get it removed at the cost of the contractor.
 - 1.8 The cement bags shall be stacked on proper floors consisting of two layers of dry bricks laid on well consolidated earth at a level of at least one foot above ground. The stacks shall be in rows of 2 and 10 bags high with minimum of 0.6m clear. Bags should be placed horizontally continuous in each line. Actual size / shape of go down shall be as per site requirement and nothing extra shall be paid on this account. The decision of Engineer-in-charge regarding capacity shall be final.
 - 1.9 Cement register for the cement shall be maintained at site. The account of daily receipts and issues of cement shall be maintained in the register in the proforma prescribed and signed daily by contractor or his authorized agent.
 - 1.10 A Certificate from the manufacturer indicating the percentage of Fly ash in each batch of cement shall be obtained and submitted to the Engineer-in-charge for his approval when PPC is proposed to be used in work. PPC shall be permitted only after prior approval of Engineer-in-charge.

2.0 STEEL

- 2.1 The contractor shall procure TMT bars of Fe 500D or 550D grade from SAIL, TISCO or RINL or JSPL or JSW Steel . The TMT bars procured shall conform to manufacturer's specifications. The specifications of TMT bars procured shall meet the provisions of IS 1786: 2008 pertaining to Fe 500D / 550D grade of steel.
- 2.2 The contractor shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.
- 2.3 Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in relevant BIS codes. In case the test results

indicate that the steel arranged by the contractor does not conform to the specifications as defined under para 2.1 above, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week's time of written orders from the Engineer-in-charge to do so.

2.4 The steel reinforcement bars shall be brought to the site in bulk supply as decided by the Engineer-in-Charge.

2.5 The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

2.6 For checking nominal mass, tensile strength, bend test, re-bend test, etc., specimen of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified below:-

Size of bar	For consignment below 100 tonnes	For consignment over 100 Tonnes
Under 10mm dia	One sample for each 25 tonnes or part thereof	One sample for each 40 tonnes or part thereof
10 mm to 16mm dia	One sample for each 35 tonnes or part thereof	One sample for each 45 tonnes or part thereof
Over 16 mm dia	One sample for each 45tonnes or part thereof	One sample for each 50 tonnes or part thereof

2.7 The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor / Department in the manner indicated below:

- a) By the contractor, if the results show that the steel does not conform to relevant BIS codes.
- b) By the Department, if the results show that the steel conforms to relevant BIS codes.

2.8 The actual issue and consumption of steel on work shall be regulated and proper accounts shall be maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations, recovery at the rate so prescribed shall be made. In case of excess consumption, no adjustment needs to be made.

2.9 The steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-Charge.

2.10 The contractor shall furnish to BSNL all the purchase invoices for cement and Steel for every consignment.

3.0 INSPECTION OF SITE

The Contractors are advised to inspect and examine the site and its surroundings and satisfy themselves with the nature of site, the means of access to the site, the constraints of space for stacking material / machinery, labour etc. constraints put by local regulations, if any, weather conditions at site, general ground / subsoil conditions etc. or any other circumstances which may affect or influence their tenders. The site is available for work. The contractor shall, immediately on issue of letter of acceptance of tender, make arrangements for starting the work.

4.0 The Contractor shall, if required by him, before submission of the tender, inspect the drawings in the Office of the Engineer-in-Charge. The Department shall not bear any responsibility for the lack of knowledge and also the consequences, thereof to the Contractor. The information and data shown in the drawings and mentioned in the tender documents have been furnished, in good faith, for general information and guidance only. The Engineer-in-Charge, in no case, shall be held responsible for the accuracy thereof and / or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor. No claim, whatsoever, shall be entertained from the Contractor, if the data or information furnished in tender document is different or in-correct otherwise, or actual working drawings are at variance with the drawings available for inspection or attached to the tender documents. It is presumed that the Contractor shall satisfy himself for all possible contingencies, incidental charges, wastages, bottlenecks etc. likely during execution of work and acts of coordination, which may be required between different agencies. Nothing extra shall be payable on this account.

5.0 The nomenclature of the items given in the schedule of quantities gives in general the work content but is not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out, all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and / or described in the specifications, provided that the same can be reasonably inferred there from.

6.0 Before tendering for the work, the contractor shall visit the site and assess the manner in which he is able to arrange the facilities required for work. The contractor will not be permitted to erect labour huts in CPRI site. He shall make his own arrangements for stores, field office etc. Material go-down, site office etc required for the work and constructed by him should be dismantled and removed from the site soon after completion of work. The Engineer-in-Charge shall in no way be responsible for any delay on this account and no claim, whatsoever, on this account shall be entertained. Nothing extra shall be payable on this account.

7.0 All ancillary and incidental facilities required for execution of work like, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp required to be made for working at the basement level, temporary structure

for plants and machineries, water storage tanks, telephone, etc. required for execution of the work, liaison and pursuing for obtaining various No Objection Certificates, completion certificates from local bodies etc., protection works, barricading, testing facilities / laboratory at site of work, facilities for all field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in-Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities unless otherwise specified. Nothing extra shall be payable on this account.

8.0 SUBMISSIONS AFTER AWARD OF WORK

The Contractor shall submit the following details after award of work:

- a. List of Equipments proposed to be deployed for this work is to be mandatorily provided and deployed by the contractor.
- b. Site organization chart with Bio-data of Site Engineer and Key Personnel proposed to be deployed at site.
- c. The details of shuttering material proposed to be used to complete the entire R.C.C/ structural steel work commensurate with overall stipulated period for completion of work.
- d. The contractor shall prepare and submit a tentative integrated Bar Chart (for Civil and E & M services) clearly indicating the various activities, in a manner to complete the entire work covered under this tender within the stipulated period and as per milestones.

9.0 The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye-laws laid down by any statutory bodies shall be adhered to, by the contractor, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities. The water charges (for municipal water connection as well as tanker water) shall be borne by the contractor. Also, if the contractor obtains water connection for the drinking purposes from the municipal authorities or any other statutory body, the consequent sewerage charges shall be borne by the contractor. He shall protect and indemnify BSNL and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts.

10.0 Royalty at the prevalent rates shall be paid by the Contractor or the RMC supplier as per the terms of supply between them on all materials such as boulders, metals, sand and bajri etc. collected by him for the execution of the work, directly to the revenue authority of the state government concerned. Nothing extra shall be payable on this account.

11.0 The Contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify BSNL from any and all damages and claims that may arise on any account. The

contractor shall indemnify BSNL against all claims in respect of patent rights, royalties, design, trademarks of name or other protected rights, damages to adjacent buildings, roads or members of public, in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising from such claims and shall indemnify BSNL in all respects from such actions, costs and expenses. Nothing extra shall be payable on this account.

12.0 SIGN BOARDS

The Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in-Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, client / owner, etc. Nothing extra shall be payable on this account.

13.0 FACILITIES FOR SITE OFFICE

The Contractor shall provide, construct and maintain at all times during execution and till the completion of work, a temporary site office with adequate electric light fittings, fans, electric/ power points, switches etc for use of the Engineer- in-Charge and his authorized representatives. Such office shall be provided with suitable partitions, doors, windows, locking arrangement and water and electricity facility. The entire site office and its surroundings shall be maintained in a neat and clean condition by the Contractor for the entire duration of the construction. The premises / facilities provided by the contractor shall be demolished/ dismantled / disconnected and material carted away by him at his own cost after the completion of work or as directed by Engineer-in-Charge. The rates quoted by the Contractor shall be inclusive of providing and maintaining such facilities and nothing extra shall be payable on this account.

14.0 SPECIALIZED AGENCIES:

14.1 The tenderer shall submit list of Specialized Agencies for the specified items of the Civil work for executing the work and furnish the name of Specialized Agencies for each of the various works.

14.2 The Contractor shall obtain prior approval from the Engineer-in-charge before placing order for any specific material or engaging any specialized agencies. The Contractor shall make a detailed submittal with catalogues and highlighted proposed specifications. A list of works executed by the specialized agency, is to be furnished to the Engineer-in-charge, for seeking prior approval. The specialized agency should have successfully completed at least one work of similar nature.

14.3 Save in exceptional circumstances, the main contractor shall not change the specialized agency. However, if the change is warranted, he may do so with the approval of Engineer-in-Charge. This shall however be without

any change in the accepted rates of the contract agreement and without any cost implications to the Department.

15.0 PROTECTIVE / SAFETY MEASURES

Necessary protective and safety equipment shall be provided to the Site Engineer, workers & Supervisory staff by the Contractor at his own cost and used at site.

16.0 The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot so as to achieve early completion. The agency may deploy adequate equipment, machinery and labour as required for the completion of the entire work within the stipulated period specified. Adequate number/sets of equipment in working condition, along with adequate stand-by arrangements, shall be deployed during entire construction period. It shall be ensured by the Contractor that all the equipment, Tools & Plants, machineries etc provided by him are maintained in proper working conditions at all times during the progress of the work and till the completion of the work. Further, all the constructional tools, plants, equipment and machineries provided by the Contractor, on site of work or his work shop for this work, shall be exclusively intended for use in the construction of this work and they shall not be shifted / removed from site without the permission of the Engineer-in-Charge.

17.0 Use of Personal protective Equipment and safety devices relevant to site activities shall be arranged by the contractor or as directed by Engineer-in-Charge and the cost on this account shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts

The stacking of materials on the access points should be avoided so as to facilitate the movement of the workmen. Proper illumination in the access area will be also ensured. Suitable platforms are to be provided before allowing any workmen to work at height. The openings are to be strictly avoided in the working platforms to avoid fall of person & materials from Heights. All scaffolds must be satisfying specified standards and it should be checked before erection of the same at site. Throwing the scaffold materials from height is to be avoided.

Safety nets shall be used to arrest the falling of the construction material and debris. The size of the safety net shall be as per site requirement. Any opening, hole or gap on floors, grating or walking / working surface, where person, tools or materials can be subject to potential fall, shall be appropriately covered and / or guarded. Covers when applied shall be of substantial strength. Where scaffold planks are used as cover, they must be properly held together to act as one cover assembly. Guard rails shall be made of solid materials (i.e. scaffold tubing) and shall be capable to sustain load without failure.

Multilevel working at same places (i.e. work within shafts, floor edges) one above the other shall not be permitted. Proper protection with safety nets & PPE shall be provided prior to allowing some critical multilevel working. The erection jobs shall be performed only under the supervision of competent

personnel. The transport of construction material/ debris to/from work site shall be done during lean hours of the day and necessary supervision shall be ensured to prevent any untoward instances. The area of erection shall be cordoned off and Danger signage's shall be displayed. Nothing extra shall be paid for the above and the cost on this account shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. The work shall be so planned so as to provide temporary approach for vehicular movement to the occupants of the building at all times. If required, a diversion shall be provided for access to the building.

18.0 DISPLAY PERMISSIONS

The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc under various labour laws and other regulations applicable to the works, at his site office.

19.0 REMOVAL OF CONSTRUCTION DEBRIS ETC. FROM SITE

The Contractor shall not stack building material / construction debris / muck on the land or road of the local development authority or on the land owned by the client, as the case may be. So the muck, rubbish etc. shall be removed periodically as directed by the Engineer-in- Charge, from the site of work to the approved dumping grounds as per the local byelaws and regulations of the concerned authorities and all necessary permissions in this regard from the local bodies shall be obtained by the Contractor. Nothing extra shall be payable on this account unless otherwise specified. In case, the Contractor is found stacking the building material / debris as stated above, the Contractor shall be liable to pay the stacking charges / penalty as may be levied by the local body or any other authority and also to face penal action as per the rules, regulations and bye-laws of such body or authority. The Engineer –in-Charge shall be at liberty to recover, such sums due but not paid to the concerned authorities on the above counts, from any sums due to the Contractor including amount of the Security Deposit and performance guarantee in respect of this contract agreement.

20.0 TOOLS AND PLANTS

No tools and plants including any special T&P etc. shall be supplied by the Department and the Contractor shall have to make his own arrangements at his own cost. No claim of hindrance (or any other claim) shall be entertained on this account

21.0 COORDINATION WITH OTHER AGENCIES

The Contractor shall conduct his work so as not to interfere with or hinder the progress of the work being performed by other Contractors or by the Engineer-in-Charge. As far as possible, he shall arrange his work and place, so as not to interfere with the operations of other Contractors or shall arrange his work with that of the others, in an acceptable and coordinated manner and shall perform it in proper sequence.

22.0 FACILITIES BY THE CONTRACTOR TO THE OTHER CONTRACTORS / AGENCIES

The Contractor shall cooperate with and provide the facilities to other agencies working at site for smooth execution of the work. The Contractor shall :

- a. Properly co-ordinate their work with the work of other Contractors.
- b. Provide control lines and benchmarks to other Contractors.
- c. Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
- d. Adjust work schedule and site activities in consultation with the Engineer-in-Charge and other Contractors to suit the overall schedule completion.
- e. Resolve the disputes with other Contractor amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator. The contractor shall indemnify the Department against any claim(s) arising out of such disputes.

23.0 The site of work shall be always kept clean due to constraints of space and to avoid any nuisance to the users of buildings in the adjacent plots. The Contractor shall take all care to prevent any water- logging at site. The wastewater, slush etc. shall not be allowed to be collected at site. It may be directly pumped into nearby drains with prior approval of the concerned authorities. For discharge into public drainage system, necessary permission shall be obtained from relevant authorities after paying the necessary charges, if any, directly to the authorities. The work shall be carried out in such a way that the area is kept clean and tidy. All the fees/charges in this regard shall be borne by the Contractor. Nothing extra shall be payable on this account.

24.0 PREVENTION OF NUISANCE AND POLLUTION

The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. The Contractor shall use such methodology and equipment for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Engineer in Charge any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor. Further, the Contractor shall take all precautions to prevent any pollution of streams and waterways. All waste or superfluous

materials shall be carted away by the Contractor, entirely to the satisfaction of the Engineer-in-Charge. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants/ users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Contractors are advised to visit site and get first hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

25.0 SCAFFOLDING

Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed, by the Contractor. It shall be suitably braced for stability, with all the accessories, gangways, etc. with adjustable suitable working platforms to access the areas with ease for working and inspection. It shall be designed to take all incidental loads. It should cater to the safety features for workmen. It shall be ensured that no damage is caused to any structure due to the scaffolding. Charges for Double scaffolding shall be payable under relevant agreement item.

26.0 The Contractor shall maintain all the work in good condition till the completion of entire work. The Contractor shall be responsible for and shall make good, all damages and repairs, rendered necessary due to fire, rain, traffic, floods or any other causes. The Engineer-in-Charge shall not be responsible for any claims for injuries to person/workmen or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the Contractor or of any other of his representatives, in his employment during the execution of the work. The compensation, if any, shall be paid directly to the Department / authority / persons concerned, by the Contractor at his own cost.

27.0 For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, notwithstanding the fact that the Contractor may have to pay extra amounts for any reason, to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.

28.0 In case of flooding of site on account of rain or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained notwithstanding any other provisions elsewhere in the contract agreement. Also, the Contractor shall make good, at his own cost, the damages caused, if any.

29.0 The Contractor shall make all necessary arrangements for protecting from rains, the work already executed and for carrying out the further work, during monsoon including providing and fixing temporary shelters,

protections etc. Nothing extra shall be payable on this account.

30.0 SECURITY & TRAFFIC ARRANGEMENTS

In event of any restriction being imposed by the Department, traffic or any other statutory authority having control over the project, on the working or movement of labour, materials, etc., the Contractor shall strictly follow all such restrictions or instructions issued regarding the same and nothing extra shall be payable to the Contractor on account of such restrictions or instructions.

31.0 STORAGE OF MATERIAL AT SITE

No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules/instructions issued by the relevant authorities and as per the direction of Engineer-in-Charge in this regard. Also all precautions and safety measures shall be taken by the Contractor for safe handling of the P.O.L products stored at site. All consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.

32.0 NO WAIVING OF LEGAL RIGHTS AND POWERS

The Engineer-in-Charge shall not be precluded or stopped from taking any measurements, and framing of estimates or detaining any certificates made either before or after the completion and acceptance of the work and payment, from showing the true amount and character of the works performed and materials furnished by the Contractor and from showing that any such measurements, estimates or certificates untrue or incorrectly made and that Engineer-in-Charge shall not be precluded or stopped from recovering from the Contractor such damages as it may be sustained by reasons of his failure to comply with the terms and conditions of the contract.

33.0 FINAL TESTING OF THE INSTALLATION

The Contractor shall demonstrate trouble free functioning of all the Civil and E & M installations and services. The Engineer-in-Charge or his authorized representatives shall carry out final inspection of the various Civil and E & M services and installations. Any defect(s) noticed during demonstration shall be rectified by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge. Nothing extra shall be payable on this account.

34.0 No claim for idle establishment & labour, machinery & equipments, tools & plants and the like, for any reason whatsoever, shall be admissible during the execution of work as well as after its completion.

35.0 PLUMBING WORK.

The contractor shall employ the specialized agency for executing of plumbing work with the prior approval of Engineer – in – Charge.

36.0 COMPUTERIZED MEASUREMENTS AND BILLING

- a) The measurements shall be recorded and entered in computerised format in the first instance by the contractor, and a hard copy shall be submitted to the BSNL.
- b) These measurements shall be got checked by the Junior Telecom Officer / Sub Divisional Engineer/Executive Engineer. The contractor shall incorporate all such changes or corrections, as may be done during these checks, to their draft computerised measurements, and submit to the BSNL the corrected computerized measurements in the form of a book, duly hard bound in red colour, and with its pages duly numbered.
- c) The Computerised Measurement Book shall be allotted a serial number by BSNL.
- d) The Computerized Measurement Book given by the contractor, duly bound, with its pages duly numbered, shall have no cutting or overwriting.
- e) In case of any error, the Computerised Measurement Book shall be cancelled, and the contractor shall resubmit a fresh Computerized Measurement Book. This should be done before the corresponding computerised bill is submitted to the BSNL for payment.
- f) The contractor shall submit as many copies of Computerised Measurement Books as may be required for the purpose of reference and record in the various offices of the BSNL.
- g) Nothing extra shall be paid on the above account.

CONDITIONS FOR OTHER TAXES AND ROYALTIES

1. **The rates offered should be inclusive of GST liable to be paid by contractors (either directly payable by them or through BSNL). GST rate is mentioned under clause 37(i) in the schedule F. Any increase in the rate of GST while making payment of bills will be compensated to the contractor. Any decrease in the rate of GST while making payment of bills will be recovered from the bills of contractor. Contribution towards EPF, ESIC and all other taxes as applicable. Insurance, loading, unloading, transportation etc should be included on the quoted rates. The rate shall be firm & final.**
2. **Income Tax and surcharges** over Income Tax etc. at the rates fixed by the Ministry of Finance. Government of India shall be deducted from all the running and final bills of the contractor. Should there be any increase in rate of Income Tax and surcharge during execution of the contract, the same shall be payable by the contractor
3. **Cost for the welfare of construction workers shall also be deducted from the bills of the contractors.**
4. **Royalty** shall have to be paid by the contractor on all materials such as stone, bricks, boulders, metal, shingle, bajri, stone aggregate, coarse sand and fine sand etc. or any other materials used for the execution of the work direct to the Revenue Authority of the District/ State Govt. concerned.

SCHEDULE -A (for Civil work)

SCHEDULE OF QUANTITIES					
Name of the work: Modifications and Internal Works at 3rd Floor,Block A-1 ,Toshali Bhawan ,Bhubaneswar for ORERA .					
Sl. No.	Description of Item	Quantity	Unit	Rate (Rs)	Amount(Rs)
	Sub-Head : Dismantling and Demolishing				
1	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.				
a)	Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	10.00	One Cubic Metre		
2	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge..				
a)	In cement mortar	21.00	One Cubic Metre		
3	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	12.00	Each		
4	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
a)	For thickness of tiles 10 mm to 25 mm	450.00	One Square Metre		
5	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	173.00	One Square Metre		
6	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.	53.00	One Square Metre		
7	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	50.00	One Cubic Metre		
8	Lifting of demolished and unserviceable materials from the 3rd floor to the ground dumping place by head load all complete as directed by he E-I-C.	40.00	One Cubic Metre		
	Sub-Head : Concrete Work				

9	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor, etc., up to floor five level, excluding the cost of centering, shuttering and finishing :				
a)	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	3.00	One Cubic Metre		
b)	1:5:10 (1 cement : 5 coarse sand(zone-III) : 10 graded stone aggregate 40 mm nominal size).	2.00	One Cubic Metre		
Sub-Head : Reinforced Cement Concrete					
10	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	3.00	One Cubic Metre		
11	Centering and shuttering including strutting, propping etc. and removal of form for all heights:				
a)	Lintels, beams, plinth beams, girders, bressumers and cantilevers. with water proof ply 12mm thick.	50.00	One Square Metre		
12	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
a)	Thermo-Mechanically Treated bars of grade Fe-500 D or more.	200.00	One Kilogram		
Sub-Head : Brick Work					
13	Providing and laying autoclaved aerated cement blocks masonry with 100mm thick AAC blocks in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand) The rate includes providing and placing in position 2 Nos. 6 mm dia M.S. bars at every third course of masonry work.	26.00	One Cubic Metre		
Sub-Head : Marble & Granite Work					
14	Providing and fixing 18mm thick gang saw cut mirror polished premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills , facias and similar locations of required size, approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.				
a)	Granite of any colour and shade				
(i)	Area of slab upto 0.50 sqm	2.00	One Square Metre		
(ii)	Area of slab over 0.50 sqm.	2.00	One Square Metre		

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15	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in marble/Granite / stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	3.00	Each		
16	Stone tile (polished) work for wall lining/skirting over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete.				
a)	8mm thick.				
(ii)	Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	16.00	One Square Metre		
Sub-Head : Wood and P.V.C. Work					
17	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia. & length (hold fast lugs or dash fastener shall be paid for separately).				
a)	Second class teak wood	0.24	One Cubic Metre		
18	Providing and fixing ISI marked flush door shutters conforming to IS: 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters :				
a)	30 mm thick including satin finished brass butt hinges with necessary screws.	33.00	One Square Metre		
19	Providing and fixing bright finished brass antique tower bolts (barrel type) with necessary screws etc. complete :				
a)	150x10 mm	51.00	Each		
20	Providing and fixing bright finished brass antique handles with screws etc. complete :				
a)	125 mm	11.00	Each		
21	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm) with double speed adjustment with necessary accessories and screws etc. complete.	20.00	Each		
22	Providing and fixing bright finished brass 100 mm mortice latch and lock of Godrej make or equivalent ISI marked with six levers and a pair of anodised (anodic coating not less than grade AC 10 as per IS : 1868) aluminium lever handles of approved quality with necessary screws etc., complete.	10.00	Each		

23	Providing and fixing partition upto ceiling height consisting of G.I. frame and required board/ply, including providing and fixing of frame work made of special section power pressed/ roll form G.I. sheet with zinc coating of 120 gms/sqm (both side inclusive), consisting of floor and ceiling channel 50mm wide having equal flanges of 32 mm and 0.50 mm thick, fixed to the floor and ceiling at the spacing of 610 mm centre to centre with dash fastener of 12.5 mm dia meter 50 mm length or suitable anchor fastener or metal screws with nylon plugs and the studs 48 mm wide having one flange of 34 mm and other flange 36 mm and 0.50 mm thick fixed vertically within flanges of floor and ceiling channel and placed at a spacing of 610 mm centre to centre by 6 mm dia bolts and nuts, including fixing of studs along both ends of partition fixed flush to wall with suitable anchor fastener or metal screws with nylon plugs at spacing of 450 mm centre to centre, and fixing of boards/ ply to both side of frame work by 25 mm long dry wall screws on studs, floor and ceiling channels at the spacing of 300 mm centre to centre.....(Contd. To Page-49)				
	The boards/ ply are to be fixed to the frame work with joints staggered to avoid through cracks, M.S. fixing channel of 99 mm width (0.9 mm thick having two flanges of 9.5 mm each) to be provided at the horizontal joints of two boards, fixed to the studs using metal to metal flat head screws, including jointing and finishing to a flush finish , angle beads at corners (25 mm x 25 mm x 0.5 mm), as per manufacture's specification and direction of engineer in charge all complete.				
a)	75 mm overall thickness partition with 9 mm thick double skin BWP ply exterior grade conforming to IS:710.	88.00	One Square Metre		
24	Providing and fixing factory made P.V.C. door frame of size 125x40 mm made out of rigid foam sheets of 40mm thickness mitred at corners with stainless steel screws . The door frame to be fixed to the wall using S.S. screws of 65/100 mm size, complete as per manufacturer's specification and direction of Engineer-in-Charge.	25.00	One Metre		
25	Providing and fixing factory made panel PVC door shutter of 30mm thick made out of rigid foam sheets of 30mm thickness fixed to the door frame with stainless steel hinges of size 100 mm etc complete as per direction of Engineer-in-charge of approved make and manufacture.	8.00	One Square Metre		
26	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt / suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.				
a)	1.0 mm thick.	680.00	One Square Metre		

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27	Providing and fixing frame work for partitions/ wall lining etc. made of 50x25x2mm or equivalent hollow MS tube, placed along the walls, ceiling and floor in a grid pattern with spacing @ 60 cm or more centre to centre both ways (vertically & horizontally) or at required spacing near opening, with necessary welding at junctions and fixing the frame to wall/ ceiling/ floors with steel dash fasteners of 8 mm dia, 75 mm long bolt, including making provision for opening for doors, windows, electrical conduits, switch boards etc., including providing with two coats of approved steel primer etc. complete, all as per direction of Engineer-in-charge.	2000.00	One Kilogram		
28	Providing and fixing in wall lining and/or false ceiling BWP ply board exterior grade conforming to IS: 710 , with necessary fixing arrangement, glue and screws etc. complete.				
a)	9 mm thick ply.	610.00	One Square Metre		
29	Providing and fixing bright finished brass antique flange tower bolts of Godrej/Sunil or equivalent with necessary brass screws etc.				
a)	300 mm (Code-8582) or equivalent	11.00	Each		
b)	250 mm (Code-8581) or equivalent	6.00	Each		
c)	200 mm (Code-8581) or equivalent	34.00	Each		
30	Providing and fixing bright finished brass antique aldrip of approved manufacturer with necessary brass screws etc.				
a)	300x16 mm	12.00	Each		
31	Providing and fixing polished brass (antique)handles of approved brand and manufacturer with necessary brass screws etc.				
a)	200 mm CTC (Centre to centre)	11.00	Each		
32	Providing and fixing polished brass basic door stopper of Godrej or equivalent with necessary brass screws etc.				
a)	90 mm (Code-8723)	16.00	Each		
33	Providing and fixing plywood/ particle board/ block board etc of approved brand and manufacturer to frame, backing or studding in tables/ conference tables, counters, shelves, racks, cup boards, drawers, lining, panelling, work stations, furnitures and similar works with necessary screws, nails etc complete as per direction of Engineer-in-charge. (Frame, backing or studding to be measured separately)				
a)	BWP type exterior grade marine ply wood conforming to IS: 710				
(i)	9 mm thick	40.00	One Square Metre		
(ii)	19 mm thick	50.00	One Square Metre		
(iii)	25 mm thick	40.00	One Square Metre		
b)	25mm waterproof block board of approved brand including all necessary GI cleat angles, nails, screws etc in order to construct raised flooring.	24.00	One Square Metre		
34	Providing & Fixing 4 mm thick exotic, natural decorative veneer ply conforming to IS: 1328 with reverse side of adhesive bonding quality including cost of adhesive of approved quality complete as per direction of Engineer-in-charge.				

a)	"Sapele Pommele" of Green Decowood or equivalent	70.00	One Square Metre		
b)	"White Beach" of Green Decowood or equivalent	130.00	One Square Metre		
35	Polishing on wood work/ veneer ply wood with "Woodtech PU Clear" of Asian paints of Emporio series or equivalent using two coats of PU sealer of Asian paint as base coat and two coats of PU clear (matt/ glossy finish) as top coat, applying with spray machine, sand papering as required, mixing, thinning all complete as per manufacturer's specifications/ guide lines and as per direction of Engineer-in-charge. (For New Work)	220.00	One Square Metre		
36	Providing and fixing channelled wood work perforation pattern (G-21 or equivalent) wall panelling of Armstrong or equivalent with perforated panels of thickness 15mm made of high density particle board substrate with a laminated facing of shades in combination of Maple & Siam wood or any other approved shade/ species and finish and a melamine balancing layer on the reverse side. The boards shall have a special perforation pattern where the visible surface has a "Helmholtz fluted perforation of 2mm width and 14mm visible panel/ 4mm width and 28mm visible panel each. The panel shall provide a minimum sag resistance of RH90 and a fire rating class of 1 as per part-7 of BS 476. The edges of the panel shall be tongued and grooved to receive special clips for installation. The back of the perforated panel shall have sound absorbing non-woven acoustical fleece. The panels shall be mounted on special aluminium splines using clips(GTPT003) of Armstrong or equivalent. The sub-frame work shall be made of aluminium extruded keel for border & inside (GTPT001 & GTPT002) spaced at 600mm centre to centre bothways. In addition to the aluminium frame work, sal wood batten 50x50mm backing shall also be provided wherever required.	73.00	One Square Metre		
	Top of the channels shall be covered with suitable moulding. The rate includes cost of all the above operations including all materials and labour including making necessary cut-outs for switch boards, light fittings, including scaffoldings for all heights, at all floors etc all complete as per Architectural drawings, manufacturer's specification and direction of Engineer-in-charge. The measurement for payment shall be taken for the clear exposed area only. No deduction will be made for openings/ dissimilar ends up to 0.40 sqm and nothing extra will be paid for making such openings.				
37	Providing and fixing Horizontal Roller type blinds of reputed brands like Vista/ Marvel/ Mac or equivalent make in windows including cost of all labours, materials and fixing charges all complete as per direction of Engineer-in-charge.				
i)	Roller Screen fabric of Classic series of Vista make or FB/ RT series of Marvel make or equivalent including head rail.	80.00	One Square Metre		
ii)	Vista sheer dimout blinds of Radiant shade or equivalent including cassette	28.00	One Square Metre		
iii)	Vista sheer dimout blinds of Horizon shade or equivalent including cassette.	7.00	One Square Metre		
Sub-Head : Aluminium Work					

38	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass/ stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :				
a)	For fixed portion				
(i)	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	100.00	One Kilogram		
(ii)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	51.00	One Kilogram		
b)	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately).				
(i)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	20.00	One Kilogram		
39	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):				
a)	With float glass panes of 4.0 mm thickness	14.00	One Square Metre		
b)	With float glass panes of 5.50 mm thickness	21.00	One Square Metre		
40	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg., for doors, including cost of cutting floors ,embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.				
a)	With stainless steel cover plate minimum 1.25 mm thickness.	10.00	Each		
41	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete.				
a)	Upto 5mm depth and 5 mm width	27.00	One Running Metre		

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42	Providing and fixing anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868. Minimum anodic coating of grade AC 8) sub frame work for lining,panelling windows and ventilators with extruded built up standard tubular sections of approved make conforming to IS: 733 and IS: 1285, fixed with dash fastener of required dia and size (Dash fastener to be paid for separately).	1000.00	One Kilogram		
43	Providing and fixing 12 mm thick frameless toughened glass door shutter/ partitions of approved brand and manufacture like Saint Gobain/Asahi etc., including providing and fixing top & bottom pivot, CP patch fittings & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Patch fittings, Door handle, lock packages and stopper to be paid separately).	53.00	One Square Metre		
44	Supplying at site stainless steel patch fittings of XLC quality of Dorma or equivalent:				
a)	Glass door package with lock XL-C 4001 polished chrome finish, top & bottom patchfittings of Dorma or equivalent, heavy duty floor spring)	4.00	Each		
b)	Patch fitting for over panel & sidelight XL-C 4003A polished chrome finish of Dorma or equivalent.	8.00	Each		
c)	Central connector XL-C 4006A polished chrome finish	20.00	Each		
45	Providing and fixing stainless steel satin finish D-type pull handle XL-C 3002A of Dorma or equivalent with stainless screws etc complete as per direction of Engineer-in-charge.				
a)	Size 300 (CTC) x 22 mm	2.00	Each		
b)	C.P. tubular handle 450X32mm of Dorma or equivalent.	4.00	Each		
46	Providing and making decorative etching of approved pattern in glass panels or providing etch films on glass including carriage, scaffolding etc all complete as per direction of Engineer-in-charge.	30.00	One Square Metre		
Sub-Head : Steel Work					
47	Providing and fixing carbon steel galvanised (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm ²), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame, concrete/ masonry, etc. as per direction of Engineer-in-charge.				
a)	10 x120 mm	100.00	Each		
48	Steel work welded in built up sections/framed work,including cutting,hoisting,fixing in position and applying a priming coatof approved steel primer using structural steel etc.as required.				
a)	In gratings,frames,guardbar,ladder,railing,brackets,gates and similar works.	400.00	One Kilogram		
Sub-Head : Flooring					

49	Providing and laying in position 12 mm minimum thick Engineered Hardwood Flooring of Squarefoot or Equivalent having smart lock tongue and groove joints for seamless and long lasting joint. The board comprises of three layers, top Layer is of genuine hardwood surface finished with seven course of UV curved formaldehyde free lacquer, the middle layer is of pine or spruce ribs laid transversely and the third layer is stabilizing bottom layer. The planks are to be laid over a levelled floor surface spread with polythene sheet for arresting dampness if any, and 3mm thick foam sheet as a leveller. Adhesives may also be used in the joints of the board as per site requirement all complete including all accessories, edge strips and profiles etc.				
a)	12mm thick Engineered Teak Plank 910 of Square Foot make or equivalent.	54.00	One Square Metre		
b)	12mm thick Engineered Oak Plank 1200 of Square Foot make or equivalent.	60.00	One Square Metre		
c)	8mm thick laminated wood planks of Square Foot make (RIO setries) or equivalent.	60.00	One Square Metre		
50	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours & patterns, shades except burgundy, bottle green, black of size 300X600mm or any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete	180.00	One Square Metre		
51	Providing and fixing 1st quality rectified slip shield vitrified tiles conforming to IS:15622 (thickness to be specified by the manufacturer), of approved make, in all colours & patterns, shades of size 300X600mm or more as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete	60.00	One Square Metre		
52	Providing and laying rectified slip-shield vitrified floor tiles 300x300 mm or more (thickness to be specified by the manufacturer) of 1st quality of approved make in all colours, shades, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand) by providing 3mm spacers and jointing with epoxy grout of matching pigments etc., complete. (Payments for grouting of joints to be paid separately)	40.00	One Square Metre		
53	Providing and laying rectified slip-shield vitrified floor tiles 300x600 mm or more (thickness to be specified by the manufacturer) of 1st quality of approved make in all colours, shades, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand) and jointing with epoxy grout of matching pigments etc., complete.	13.00	One Square Metre		
54	Providing and laying vitrified floor tiles in different sizes (thickness of minimum 9mm) with water absorption less than 0.08%and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1				

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	cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete.				
a)	Size of Tile 600x600 mm double charged.	60.00	One Square Metre		
b)	Size of Tile 600x1200 mm double charged.	430.00	One Square Metre		
c)	Size of tile 200X1200mm of Kajaria/RAK/Simpolo Wood art series or equivalent	45.00	One Square Metre		
55	Deduct for not using 20 mm thick cement mortar 1:4 (1 cement : 4coarse sand) bedding in laying of floor tiles and jointing with grey cement slurry @ 3.3kg/sqm	150.00	One Square Metre		
56	Fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness.	150.00	One Square Metre		
57	Grouting the joints of flooring tiles having joints of 3 mm width, using epoxy grout mix of 0.70 kg of organic coated filler of desired shade(0.10 kg of hardener and 0.20 kg of resin per kg), including filling/grouting and finishing complete as per direction of Engineer-in-charge.				
a)	Size of Tile 300x300 mm and more	15.00	One Square Metre		
Sub-Head : Roofing					
58	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37 mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50 mm long with 6 mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the rate of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. ...(Contd. To Page-55)				
	wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm or both sides of joint and two coats of primer suitable for board, all as per manufacture's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the				

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	Engineer in Charge but excluding the cost of painting with :				
a)	12.5 mm thick tapered edge gypsum moisture resistant board.	200.00	One Square Metre		
59	Providing and fixing, at junction of wall and ceiling or at similar locations, decorative cornice of approved pattern made of plaster of paris with necessary screws, adhesives including jointing and fixing to a flush finish with recommended filler, jointing tapes, finishers, scaffolding complete as per directions of Engineer-in-charge.	60.00	One Running Metre		
	Sub-Head : Finishing				
60	12 mm cement plaster of mix :				
a)	1:6 (1 cement: 6 coarse sand)	225.00	One Square Metre		
61	15 mm cement plaster on rough side of single or half brick wall of mix :				
a)	1:6 (1 cement: 6 coarse sand)	225.00	One Square Metre		
62	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	400.00	One Square Metre		
63	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre. of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.				
a)	Two coats.	600.00	One Square Metre		
64	Painting with synthetic enamel paint, having VOC (Volatile Organic Compound) content less than 150 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.				
a)	Two coats.	104.00	One Square Metre		
65	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content.				
a)	With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre.	150.00	One Square Metre		
	Sub-Head : Sanitary Installations				

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66	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous china flushing cistern & C.P. flush bend with fittings & C.I. brackets, 40 mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :				
a)	W.C. pan with ISI marked white solid plastic seat and lid	5.00	Each		
67	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
a)	Flexible pipe				
(i)	32 mm dia	14.00	Each		
68	Providing and fixing toilet paper holder :				
a)	C.P. brass	5.00	Each		
69	Cutting chases in brick masonry walls for following diameter sand cast iron/ centrifugally cast (spun) iron pipes and making good the same with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 12.5 mm nominal size), including necessary plaster and pointing in cement mortar 1:4 (1 cement : 4 coarse sand) :				
a)	100 mm dia.	5.00	One Running Metre		
70	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern with dual flush fitting, of flushing capacity 3 litre/6 litre (adjustable to 4 litre/8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete.	6.00	Each		
71	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC SWR pipes conforming to IS : 13592 Type A including jointing with seal ring conforming to IS :5382 and with glues as specified.				
a)	Single tee with door				
(i)	110x110x110 mm	12.00	Each		
(ii)	110x110x75 mm	4.00	Each		
b)	Plain Bend 87.5°				
(i)	75 mm	4.00	Each		
(ii)	110 mm	4.00	Each		
c)	Door Bend 87.5°				
(i)	75 mm	4.00	Each		
(ii)	110 mm	8.00	Each		
d)	Nahani trap				
(i)	110x75 mm	10.00	Each		
e)	P-trap (spigot & socket ended)				
i)	110x110 mm	10.00	Each		
f)	Terminal guard				
(i)	110 mm	10.00	Each		
g)	Single tee without door				
(i)	75x75x75 mm	2.00	Each		
(ii)	110x110x110 mm	4.00	Each		

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72	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50mm hardwood plugs, screwed with M.S. screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.				
a)	75 mm	10.00	Each		
b)	110 mm	50.00	Each		
73	Providing and fixing CP brass double coat hook (heavy type) ACN-1161N of Jaquar or equivalent with CP brass screws etc complete as per direction of Engineer-in-charge.	10.00	Each		
74	Providing and fixing white vitreous china urinal "Bana" of ROCA or equivalent of size 464x620 mm (top inlet) including necessary outlet, spreaders with unions and waste fittings ALD-705/ 705L130/ 709/ 709L130 of Jaquar or equivalent (all in CP brass) fixed with omega rock bolt screws etc all complete as per directions of Engineer-in-charge.	3.00	Each		
75	Providing and fixing wash basin "Mohave" of ROCA or equivalent (fixing with Omega rock bolt screws or equivalent) of size 750x430 mm, single 15 mm CP brass long neck pillar cock CQT-23021 of Jaquar or equivalent with aerator, 32 mm CP brass waste coupling full thread with 80/ 130 mm height ALD-705/ 709/ 705L130/ 709L130 of Jaquar or equivalent all complete as per direction of Engineer-in-charge.	6.00	Each		
76	Providing and fixing wash basin "Giralda" of ROCA or equivalent (fixing with Omega rock bolt screws or equivalent) of size 590x460 mm, single 15 mm CP brass long neck pillar cock CQT-23021 of Jaquar or equivalent with aerator, 32 mm CP brass waste coupling full thread with 80/ 130 mm height ALD-705/ 709/ 705L130/ 709L130 of Jaquar or equivalent all complete as per direction of Engineer-in-charge.	5.00	Each		
77	Providing and fixing on wall face unplasticised Rigid PVC SWR pipes conforming to IS : 13592 , including jointing with seal ring conforming to IS : 5382 and with specified adhesive (i) Single socketed pipes.				
a)	75 mm diameter	20.00	One Metre		
b)	110 mm diameter	150.00	One Metre		
78	Providing and fixing 300 mm long CP brass towel rail ACN-1101N of Jaquar or equivalent including fixing with stainless steel screws/ expandable fasteners etc complete as per direction of Engineer-in-charge.	10.00	Each		
79	Providing and fixing CP brass soap dispenser with mettalic bottle ACN-1137N of Jaquar or equivalent including fixing with stainless steel screws/ expandable fasteners etc complete as per direction of Engineer-in-charge.	8.00	Each		
80	Providing and fixing CP brass bottle trap ALD-769L of Jaquar or equivalent with all fittings etc complete as per direction of Engineer-in-charge.				
a)	250x190 mm	6.00	Each		
81	Providing and fixing mirror of superior glass (of approved quality) of required shape of thickness 6mm along with 9 mm thick hard board (marine ply) backing including necessary stainless/ CP brass screws etc complete.	8.00	One Square Metre		

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82	Providing & fixing 12 mm thick rigid acrylic sheet of approved quality and colour, edges finished , of size 75 X 50 cm fixed in urinal partition with stainless steel brackets of Dorma or equivalent complete as per the direction of Engineer-in-Charge.	3.00	Each		
Sub-Head : Water Supply					
83	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. : Internal work - Exposed on wall				
a)	40 mm nominal outer dia. Pipes.	50.00	One Running Metre		
b)	50 mm nominal outer dia. Pipes.	20.00	One Running Metre		
84	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. :Concealed work, including cutting chases and making good the walls etc.				
a)	20 mm nominal outer dia .Pipes.	50.00	One Running Metre		
b)	25 mm nominal outer dia .Pipes.	50.00	One Running Metre		
85	Providing and fixing uplasticised PVC connection pipe with brass unions :				
a)	45 cm length				
(i)	15 mm nominal bore	14.00	Each		
86	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.				
a)	15 mm nominal bore.	6.00	Each		
87	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 a) 15 mm nominal bore				
a)	15mm nominal bore	11.00	Each		
88	Providing and fixing premium quality CP brass bib cock with aerator of Jaguar or equivalent make as per direction of Engineer in charge.				
a)	15 mm nominal bore.	14.00	Each		
89	Providing and fixing CPVC unions including cutting the pipe etc complete (new work) as per direction of Engineer-in-charge.				
a)	25 mm diameter	4.00	Each		
b)	40 mm diameter	4.00	Each		
c)	50 mm diameter	2.00	Each		
90	Providing and fixing CPVC ball valve in CPVC pipe line etc complete.				
a)	40 mm nominal bore	2.00	Each		

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b)	50 mm nominal bore	1.00	Each		
91	Providing and fixing CP brass 2-way bib cock CQT-23041 of Jaquar or equivalent all complete as per direction of Engineer-in-charge.				
a)	15 mm nominal bore	11.00	Each		
92	Providing fixing health faucet (ABS chrome plated) ALD-577 of Jaquar or equivalent with 8 mm diameter, 1.0 metre long flexible tube and wall hook with NRV (back flow preventer) including necessary CP brass screws etc complete as per direction of Engineer-in-charge.				
a)	15 mm nominal bore	11.00	Each		
	Sub-Head : Structural Glazing and ACP Panel				
93	Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance > 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 &7)in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised @80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'.				
	The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-sections used in false ceiling support system shall be pre- painted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the Engineer-in-charge.				
a)	With 16 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.55 to 0.6)	520.00	One Square Metre		
b)	With 20 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.7)	31.00	One Square Metre		
	Sub-Head : Conference System - Audio				
94	Supply of Analogue Conference Chairman Unit with long goose neck Microphone along with all accessories & cables with key features of Chairman priority switch, Microphone On/OFF or request to speak button, LED indicator, head phone connectivity with volume controller etc as per specifications attached. The system should be free from mobile & RF interference. : Make & Model - CMC5100 of M/s Ahuja or its equivalent of Bosch/Studio Master	1.00	Each		

DNIT

95	Supply of Analogue Conference Delegate Unit with long goose neck Microphone along with all accessories and cables with key features of Microphone On/OFF or request to speak button, LED indicator, head phone connectivity with volume controller etc as per specifications attached. The system should be free from mobile & RF interference. : Make & Model - CMD5200 of M/s Ahuja or its equivalent of Bosch/Studio Master	13.00	Each		
96	Supply of Analogue Conference Controller (Central Amplifier) with recorder & feedback suppressor along with all accessories, power and signal cables etc. with capacity for provision of power and control up to 50 units and built in monitor speaker etc. as per specifications. Make & Model :-CMA5400 of M/s Ahuja or its equivalent of Bosch/ Studio Master	1.00	Each		
97	Supply of 160 watts Digital PA Amplifier with built in Digital Player/Recorder having 5 x Mic & 2 Aux. inputs suitable for AC & 24V DC operation along with all accessories & cables etc. as required as per specifications. Make & Model- SSA 160 EM of M/s Ahuja or its equivalent of Bosch/Studio Master	1.00	Each		
98	Supplying of 30W 2 way PA Ceiling speaker with good speech intelligibility and back ground music reproduction, robust, solid MDF (Medium Density Fiber board) enclosures etc. as per specifications. Make & Model- CSD-6303T of M/s Ahuja or its equivalent of Bosch/Studio Master	6.00	Each		
99	Supplying of PA VHF Wireless Microphones (02nos) with Transmitter & Receiver unit along with all accessories suitable for operation on AC 220-240V etc. as per specifications. Make & Model- AWM-520V2 of M/s Ahuja or its equivalent of Bosch/ Studio Master	1.00	Each Set		
100	Installation Testing & Commissioning of the audio conferencing system including installation of conference chairman & delegate units, fixing of ceiling speakers in false ceiling by making suitable cut outs if required, laying of cables, drilling holes in walls/beams if required, interconnection of of the complete system, testing and ommissioning etc. complete as required.	1.00	Each		
	Sub-Head : Display System				
101	Suppling & installing of one no. Sony make 4K HDR OLED Android TV of A8F series of 65inch (164 cm)	1.00	Each		
102	Suppling & installing of one no. Sony make 4K HDR OLED Android TV of A8F series of 55inch (139 cm)	2.00	Each		
103	Supply & fixing of high Fidelity HDMI splitter of low loss high gain system compatible to Sony Bravia TVs for HD TV display complete (1 in 4 out)	1.00	Each		
104	Supply & fixing /terminating of high Fidelity HDMI cable for 3 nos TV display complete as reqd.	45.00	One Running Metre		
105	Supply & fixing of VGA to HDMI converter adapter for VGA to HDMI conversion with the required connection complete.	1.00	Each		
	Sub-Head : FURNITURE				
106	Providing and placing in position PREMIUM EXECUTIVE TABLE along with Extension Return Unit on left side & mobile pedestal unit of required configuration and of specified size and finish. The table shall be made up of MDF board finished with VENEER and Polyurthene Coating. The units and its componenets shall be assembled properly at the desired location in 5th floor of Building. The product shall bear one year warranty from the company.				

DNIT

a)	Premium Executive Table of size: 3600mm(W) X 1080mm(D) X 750mm(H) . The main table top shall be of 90mm thickness with required shape and size such as " ARRIVE " Main Desk of M/s Godrej make of approved quality. Mobile pedestal of size 480W x 600 H x 640D mm.) Extension Return Unit of Size : 1900 W X 480 D X 550 H	1.00	Each		
107	Supplying at site chairs of approved model of Godrej make including carriage and assembling at site all complete as per direction of Engineer-in-charge .				
a)	Leoma mid back with head rest	1.00	Each		
b)	Kareena high back	3.00	Each		
c)	Kareena mid back	20.00	Each		
d)	Kareena Visitor	10.00	Each		
108	Providing and fixing PVC ABS finish wire/ cable manager of diameter up to 60 mm for neat arrangement of wires on table tops complete as per direction of Engineer-in-charge.	25.00	Each		
109	Providing and fixing lipping/ moulded beading or taj beading fixed with wooden adhesive of approved quality and screws/ nails on the edges of the ply wood/ board as per direction of Engineer-in-charge.				
a)	2nd class teak wood				
(i)	55x20 mm	20.00	One Running Metre		
(ii)	47x20 mm	10.00	One Running Metre		
(iii)	20x6 mm	10.00	One Running Metre		
(iv)	25x20 mm	10.00	One Running Metre		
	Sub-Head : Water proofing				
110	Grading roof for water proofing treatment with				
a)	Cement concrete 1:2:4 (1 cement : 2 coarse sand :4 graded stone aggregate 20 mm nominal size) cum	2.00	One Cubic Metre		
b)	Cement mortar 1:4 (1cement : 4 coarse sand) cum	4.00	One Cubic Metre		

**Executive Engineer (Civil),
BSNL Civil Division-I, Bhubaneswar**

PART – C (ELECTRICAL WORK COMPONENT)

PROFORMA OF SCHEDULES

(Operative Schedules to be supplied separately to each of the intending tenderer)

SCHEDULE “A”

Schedule of Quantities: Appended

SCHEDULE “B”

Schedule of Materials to be issued to the contractor

S. No.	Description of Item	Quantity	Rates in figures & words at which the materials will be charged from the contractor	Place of issue
1	2	3	4	5
NIL				

SCHEDULE “C”

Tools and Plants to be hired to the contractor

S. No.	Description of Item	Hire charges per day	Place of issue
1	2	3	4
NIL			

SCHEDULE “D”

Extra schedule for specific requirements/documents for the work If any.

1. Eligibility conditions for Electrical sub-head in respect of composite works (Civil & Electrical)
2. List of approved makes for Electrical works.
3. Specifications for E.I. & Fans.
4. M.V. / L.T. Panel specification.
5. Cable laying.
6. General specification.
7. Standards.
8. General Conditions.

SCHEDULE “E”

Schedule of component of Materials, Labour etc. for escalation.

NIL

SCHEDULE “F”

(Reference to General Conditions of Contract)

Name of Work: **Modifications and Internal works at 3rd Floor, Block A-1, Toshali Bhawan, Bhubaneswar for ORERA.” - Electrical part -**

Estimated cost of Work : **Rs 2681249/- (Electrical part)**

Earnest Money **Not applicable**

Performance Guarantee

(5 % of the tendered value in the form of Bank Guarantee from Scheduled Bank in respect of works with estimated cost put to tender exceeding Rs. 15 Lakhs)

Not applicable

Security Deposit

(5 % of the tendered value of the Electrical part in the form of Bank Guarantee from Scheduled Bank)

Rs _____
(Rupees _____)

Officer inviting tender

Executive Engineer (Civil),
BSNL Civil Division-I, Bhubaneswar

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clause 12.2 & 12.3

50%

Definitions

See below

2(v) Engineer-in charge

Executive Engineer (Elect.), BSNL
Electrical Division, Bhubaneswar

2(viii) Accepting Authority

**CHIEF ENGINEER (CIVIL),
BSNL Civil Odisha Zone,
Bhubaneswar.**

2(x) Percentage on cost of materials and labour to cover all overheads and profit

15 %

2(xi) Standard Schedule of Rates

Market rates.

9(ii) Standard BSNL Contract Form

BSNL W 7/8 form as modified upto and including correction slip No.6.

Clause 2

Authority for fixing compensation under Clause 2

**Chief Engineer (Civil),
BSNL Civil Odisha Zone,
Bhubaneswar.**

Clause 2 A

Whether Clause 2A shall be applicable NO

Clause 3 A

Whether Clause 3A shall be applicable NO

Clause 5

i) Time allowed for execution of work. To be completed along with Civil works

ii) Authority to give fair and reasonable extension of time for completion of work. Chief Engineer (Civil),
BSNL Civil Odisha Zone,
Bhubaneswar.

Clause 6 A

Whether Clause 6A shall be applicable YES

Clause 7

Gross value of work to be done together with net payment / adjustment of advances for materials collected, if any, since the last such payment for being eligible to interim payment.

Contract Amount of Electrical part
2xCompletion period in months.

Clause 10 C, 10 CA and 10 D

Not applicable

Clause 11

Specification to be followed for execution of work.

CPWD–Electrical Specifications
2009 including up to date
Correction slips

Clause 12

12.2& 12.3

Limit for value of any item

50%(fifty percent)

Clause 16

Competent authority for deciding reduced rates.

Superintending Engineer(Elect.),
BSNL Electrical Circle,
Bhubaneswar.

Clause 36(i)

Requirement of Technical Staff :

Work with Estimated Cost put to Tender
more than Rs. 2 lakhs but less than
Rs 5 lakhs

Recognised Diploma Holder

Work with Estimated Cost put to Tender
more than Rs 5 lakhs

Graduate or Recognised
Diploma Holder with 3 years
experience

Rate of recovery in case of non-compliance:

Work with Estimated Cost put to Tender
more than Rs. 2 lakhs but less than Rs 5 lakhs Rs. 2000/- per month

Work with Estimated Cost put to Tender
more than Rs 5 lakhs Rs. 4000/- per month

Clause 37(i)

Extent of **GST** payable by
Contractor for Building and
Construction works

**GST 12% Applicable ,Any Increase/decrease in the
rate of GST while making payments to contractors
will be adjusted accordingly**

**ELIGIBILITY CONDITIONS FOR ELECTRICAL SUB-HEAD IN RESPECT OF
COMPOSITE WORKS (CIVIL & ELECTRICAL)**

The following eligibility conditions for electrical sub head shall form part of the NIT for composite works for engaging electrical contractor by the civil contractor.

- 1 BSNL enlisted contractors of **Class-I** & above in Electrical category.
OR
2. The contractor satisfying the following conditions:
 - 2.1. The contractor enlisted in CPWD, MES and Railways in respective class as per their tendering limits.
AND
Average annual turnover during the last three years, ending 31st March of the previous financial year, should be at least **30% of estimated cost of Electrical part**
AND
Experience of having successfully completed similar works in Central Government/State Government /Central Govt. Autonomous Body/Central Govt. Public Sector Undertaking during last 7 years ending last day of the month previous to the one in which NIT applications are invited, should be either of the following :-
 - i. Three similar successfully completed works costing not less than the amount equal to **40% of estimated cost of Electrical part.**
OR
 - ii. Two similar successfully completed works costing not less than the amount equal to **60% of estimated cost of Electrical part**
OR
 - iii. One similar successfully completed works costing not less than the amount equal to **80% of estimated cost of Electrical part**

SCHEDULE-D (for Electrical Works)

LIST OF APPROVED MAKES OF BSNL ELECTRICAL WING

S. NO.	Item	Makes
1	Engine	Ashok Leyland/ Cummins/Cater pillar/KOEL/Volvo penta / Mahindra & Mahindra (up to 40 KVA)/ Escorts (up to 30 KVA) / Eicher (up to 20 KVA)
2	Alternator (Brushless)	Crompton Greaves (AL Series) / KEC/ Leroy Somer/Stamford / Jyoti Ltd.
3	Battery (Lead Acid / Mntc. Free)	Amara Raja / AMCO / Farukawa / Hitachi / Exide / Prestolite / Standard
4	HV Switchgear (Vacuum Circuit Breaker / SF6)	Biecco Lawrie / Crompton / Kirloskar / MEI / Jyoti Ltd
5	Transformer (Oil filled / Dry type	ABB /Schneider Electric / Andrew Yule / Bharat Bijlee / Crompton / EMCO / Kirloskar / Siemens
	a)Above 400 KVA	
	b)Up to 400 KVA	In Addition to above makes, Uttam / Automatic Electric Gear (AEG)/ Patson / Rajasthan Transformer and Switchgear
6	Air Circuit Breaker	L&T / Schneider Electric / Siemens
7	MCCB(Ics=Icu)	L&T / Schneider Electric / Siemens
8	SDF units	L&T / Schneider Electric / Siemens / HPL / Havells
9	Power Contactors	L&T / Schneider Electric / Siemens/ Lakshmi (LECS)
10	Change Over Switch	HPL / Havells/ H-H Elcon
11	Intelligent APFC Relay	L&T /EPCOS (Siemens)/ Schneider Electric /Neptune Ducati / Syntron / ABB
12	Bus Bar Trunking / Sandwiched Bus Duct	Moeller/L&T / Schneider Electric / ABB / Legrand / Zeta
13	Power Capacitors (MPP/APP)	L&T /EPCOS (Siemens) / ABB/Crompton/ Schneider Electric /Neptune Ducati
14	Digital / KWHr meter	Schneider Electric/ AE/ Digitron / IMP / Meco / Rishabh / Universal / HPL/ L&T / ABB
15	Cold Shrink HT/LT Cable Joint	Denson / 3M(M-Seal) / Raychem
16	Rubber Matting	ISI mark
17	MCB / Isolator / ELCB / RCCB / Distribution Board	Crompton / Havells / Indokopp / MDS / Legrand / L&T / Schneider Electric / Siemens / Standard / C&S / ABB / HPL
18	MS / PVC Conduit	ISI mark
19	Cable Tray	MEM / Bharti / Ratan / Slotco / Profab
20	HT/LT Cables	ISI mark
21	PVC insulated copper conductor wire	ISI mark
22	Centrifugal Pump	Amrut / BE / Beacon / Batliboi / Crompton / Jyoti / Kirloskar / KSB / Mather & Platt / Wasp / Grundfos
23	Submersible Pump	Crompton/ Amrut / BE / Calama / Kirloskar / KSB
24	Motors	ABB / Bharat Bijlee / Crompton Greaves // Schneider Electric / HBB / KEC / Siemens / Jyoti Ltd.
25	Fresh Air Fans	GE / Khaitan / Almonard / Crompton

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26	Starter	ABB / BCH/ Schneider Electric / L&T/ Siemens
27	Single Phase Preventer	L&T/ Minilec /Siemens /Zero trip
28	GI/MS Pipe	ATC/ATL/BST/GSI/ITC/ITS/IIA/JST/Jindal/TTA/Tata/Zenith
29	Foot Valve	ISI mark
30	Gate Valve	Advance / Audco / Johnson Controls / Zoloto / Annapurna / Fountain / Kirloskar / Leader / Sant / Trishul
31	Compressors	Carrier / Emerson Copeland / York / Danfoss(for chillers only)
32	Resin Bonded Glass Wool	Fibre Glass / Pilkington / Up Twiga
33	Expanded Polystyrene	BASF(India)Ltd
34	Gauge	Feibig / H.Guru / Pricol
35	Controls	FLICA / Honeywell / Indfoss /Penn-Danfoss / Ranco / Ranutrol / Sporland
36	Fine Filter	Anfiltra Effluent / ARW / Athlete / Airtake / Dyna / Kirloskar / Puromatic / Purafill / Purolator / Tenacity
37	GI Sheet	HSU Jindal / National / Nippon Denro / Sail / Tata
38	Heat Detector	Appollo / Chemtron / Edward / Fenwal / Hochiki / Nitton / System Sensor / Wormald / Honeywell Essar / Notifier
39	Ionization Detector	Appollo / Cerebrus / Edward / Fenwal / Hochiki / Nitton / System Sensor / Wormald
40	Photo Electric Smoke Detector	Appollo / Cerebrus / Edward / Fenwal / Hochiki / Nitton / Wormald
41	Fire Panel (Microprocessor based)	Agni Instruments / Agni Devices / Aruna Agenices / Carmel Sensor / Ravel Elect. / Honeywell Essar / Notifier / Navin Systems
42	Sprinkler / Hose Reel & Hose Pipe	ISI mark
43	Fire Extinguisher	ISI mark
44	Lift	OTIS, Kone, Mitsubishi, Schindler, Johnson

Note :

1. In case of External/AMC works, the list of approved makes may be modified as per client's requirement.
2. The accessories such as CT / PT / measuring instrument / relays provided by approved make in respect of Transformer / HT Panel / DG / AC Package Units as supplied by approved manufacturer along with the equipments are also acceptable in addition.
3. Any additional makes can be approved by concerned PCEs/Sr CEs/CEs(Elect) for the work under his jurisdiction.

SPECIFICATIONS FOR E.I. & FANS.

1. The work shall be done as per current C.P.W.D. specifications –1994 for electrical works and Indian Electricity Rules as amended from time to time.
2. The work shall be supervised by a qualified Engineer as provided in C.P.W.D. Manual.
3. The layout of the work will be given by the Engineer-in-charge or his duly authorized representative at site of work.
4. The following wiring shall be done on separate circuits.
 - i. Power plug wiring.
 - ii. Light & fan point wiring.
 - iii. Emergency light point wiring to be fed from battery.
 - iv. Fire detectors.
5. The earthing sets shall be provided in the presence of the Engineer-in-charge or his authorized representatives.
6. The tenderer should submit the sealed samples of materials to be used on work along with the tender .The samples of the successful tenderer will be retained by the Engineer-in-charge while the samples of other will be returned after the tender is decided Unapproved materials ,if used on the work shall have to be removed immediately at the cost and risk of the contractor.
7. The contractor will have to submit the following tests at his cost and intimate test results before final bills are paid. Nothing extra will be paid to him on this account.
 - i. Earth test.
 - ii. Polarity test.
 - iii. Insulation test.
 - iv. Earth continuity test of the conduit pipes.
8. Any damage done to the building by the contractor during the execution of work shall have to be made good at his own cost and risk. If he does not do it himself within a reasonable time determined by the Executive Engineer (E) then the same will be done at his risk by the department after giving notice to him.
9. At the time of laying conduit pipe in the slab/wall in recess the contractor will keep fish wire of 14 SWG wire throughout conduit pipe and will have to take special care so that the conduit is not passed through air-conditioning ducts, grills, columns, beams etc. If any such necessity of foreseen special written permission of Executive Engineer (E) will be obtained before such work is carried out. In case of failure the contractor will not be paid on this account. The successful tenderer should recess the conduit in the sails before they are plastered and in collaboration with the building progress of the work .Any damage done will have to be made good at the cost of the contractor .The conduit pipe should be mechanically and electrically continuous.
10. All M.S. boxes for switches plugs and regulators etc. should be provided with 3mm. thick synthetic phenolic bounded laminated sheet columns.
11. The various circuits wiring at various places shall be kept minimum by taking the runs on walls where crossing of columns is not necessary. This has to be decided before the casting of slab so that unnecessary length of conduits are not laid therein.
12. All the main distribution boards panel, sub-main board and sub-distribution boards and their complete fittings shall be sign written clearly indicating the number of distribution board the type of load it is serving the number of circuits contained in the type of load it is serving and thenumber of circuits contained. In the distribution box. Details of the recess fed from the particular distribution box shall be pasted in a tabular form on the resource of the cover of distribution box.

13. Underground cables of 1 KV grade should be subjected to pressure, insulation tests before and after laying the same cost of all repairs and replacements and all extra work of removal and relaying will have to be made good by the contractor at his own cost & risk.
14. The contractor shall have to use metal clad switches and metal clad distribution of specified categories as given below unless otherwise specified.
15. Termination of all connections on main board and sub-main distribution board will be done by crimping and nothing extra will be paid on this account.
16. Inter connections on the main board and sub-main boards will be done by solid copper conductor with PVC sheathing/copper conductor cable.
17. All instruments shall be arranged by the contractor.
18. Unless otherwise specified Bakelite sheet shall be plain white colour without any pattern .Also “Anchor” or similar superior make piano switches shall be used. Both sheet as well as piano switches shall be approved by the Engineer-in-charge before execution.
19. (i) All cable having more than one strand should invariably crimped with dowells lugs/ferrules of appropriate size crimping tool is to be arranged by the contractor at no extra cost .In case contractor fails to bring crimping tools department may supply crimping tool subject to availability at an extra cost of Rs. 100/- per day per instrument. Responsibility on account of delay shall rest entirely with the contractor.
(ii) If any conduit is already laid/M.S. box is fixed in the slab/wall of the bldg. its recovery will be governed by the formula as per DSR 94 + contract abatement on the related sub-Head.
20. The piano switches for fans and light plugs shall be I.S.I. marked type/approved switches only.
21. When a boards are connected to a voltage ,higher than 250 volt all the terminals of leads of the apparatus mounted on shall be marked and the following colours to indicate the different poles or phases to which the apparatus for different terminals may have been connected.

AC .	D . C .
Three phases -	
Three wire systems –	
Red, Blue, Yellow	
1 outer wires : Red & Blue.	
Neutral :- Black	
22. "BSNL reserves the right to get material inspected any components thereof by the manufacturer/ their authorized representative, whose report as regards to the genuineness of component shall be final and binding. In case any component upon such inspection is found to be duplicate/spurious, double the cost of such component based on price list (without any discount whatsoever) effective on date of aforesaid inspection shall be recoverable.
In case the contractor agrees to replace the components so found spurious/duplicate at his cost, within 15 days of the said report compensation of Rs.1,000/- per component found spurious/duplicate shall be levied against the contractor. Besides the above the BSNL reserves the right to take disciplinary action against the contractor.

Cable Laying:-

1. Underground cables of 1.1 KV grade should be subjected to pressure, insulation tests before and after laying the same cost of all repairs and replacements and all extra work of removal and relaying will have to be made good by the contractor at his own cost & risk.
2. The contractor shall have to use metal clad switches and metal clad distribution of specified categories as given below unless otherwise specified.
3. Termination of all connections on main board and sub-main distribution board will be done by crimping and nothing extra will be paid on this account.
4. Inter connections on the main board and sub-main boards will be done by solid copper conductor with PVC sheathing/copper conductor cable.
5. All instruments shall be arranged by the contractor.
- 6 (i) All cable having more than one strand should invariably crimped with lugs/ferrules of appropriate size crimping tool is to be arranged by the contractor at no extra cost .In case contractor fails to bring crimping tools department may supply crimping tool subject to availability at an extra cost of Rs. 100/- per day per instrument. Responsibility on account of delay shall rest entirely with the contractor.
7. "BSNL reserves the right to get material inspected any components thereof by the manufacturer/ their authorized representative, whose report as regards to the genuineness of component shall be final and binding. In case any component upon such inspection is found to be duplicate/spurious, double the cost of such component based on price list (without any discount whatsoever) effective on date of aforesaid inspection shall be recoverable. In case the contractor agrees to replace the components so found spurious/duplicate at his cost, within 15 days of the said report compensation of Rs.1,000/- per component found spurious / duplicate shall be levied against the contractor. Besides the above the BSNL reserves the right to take disciplinary action against the contractor.
8. Size of wire cable used for interconnection should not be less than as follows

S.No	Switches.	Alu.Condr. Size Sq	Copper cond. Size Sq.mr	Remarks
1	5	1.5	1.5	
2	10	4	4	
3	16	10	6	
4	20	16	10	
5	32	23	16	
6	63	70	25	
7	100	185	70	
8	200	300	120	
9	320	300	240	

The make specified in the item only should be supplied. However, if the same make is not available the other equivalent make will be accepted subject to corresponding deduction as per current list price. The decision of Engineer-in-charge shall be final about the equivalent make as well as the cost. However, no additional rate shall be paid, if the list price of the equivalent make is more than specified make.

TECHNICAL SPECIFICATION- FOR EARTHING

1.1 EARTHING: The installation shall generally conform to IS 3043 - Indian Standard Code of Practice for Earthing as amended upto date

1.2 APPLICATION OF EARTHING FOR INTERNAL E.I.:

- a) Every sub main will have earth continuity conductor to run along with sub main wiring. In case 3 phase sub main wiring two numbers of earth continuity conductors shall be used.
- b) Every circuit will have its earth continuity conductor to run along with circuit wiring. In case 3 phase circuitwiring two numbers of earth continuity conductors shall be used.
- c) Looping of earth is allowed only in case of point wiring.
- d) When 2/3 power outlets are looped to one circuit, earth looping of these outlets is permissible.

1.3 EARTH ELECTRODES:

Following materials and their sizes mentioned in the table are generally used for earth electrodes:

MATERIALS USED FOR EARTH ELECTRODES

Type of Electrodes	Material	Size
Pipe	G.I. Medium class	40mm dia, 4.5mtrs long (without any joint)
Plate	G. I.	60cm X 60cm X 6 mm thick
	Copper	60cm X 60cm X 3mm thick
Strip	G. I.	100 sqmm Section
	Copper	40 sqmm Section
Conductor	Copper	4mm dia (8 SWG)

Note: Galvanizations of G.I. items shall confirms to Class-IV of IS 4736:1986.

1.4 Earthing conductor and sizes:

- a) The earthing conductor (From electrode to main earth terminal / earth bus) shall be of the same material as of the electrode.
- b) The size of earthing conductors shall not be less than followings:
 - i) 4mm dia (8SWG) Copper wire
 - ii) 25mmX4mm G.I. Strip
 - iii) 20mmX3mm Copper Strip

1.5 Earth continuity / Loop earthing conductor and sizes:

The materials and sizes of protective conductors shall be as per followings:

Size of Phase Conductor	Size of protective conductor of same material as of phase conductor
Up to 4 sqmm	Same size as phase conductor
Above 4 sqmm and up to 16 sqmm	Same size as phase conductor
Above 16sqmm and up to 35 sqmm	16 sqmm
Above 35sqmm	Half of the size of Phase conductor

1.6 Location of Earth Electrode:

- a) Normally an earth electrode shall not be located closer than 1.5mtrs from any building. Care shall be taken during excavation of earth pit that does not affect the foundation of building. In such cases electrodes may be located further away from building as per the direction of Engineer In Charge.
- b) The location of earth electrodes such that, the soil has a reasonable chance of remaining moist as far as possible.
- c) Entrances, pavements and roadways shall be avoided for locating earth electrodes.

1.7 INSTALLATION:

- 1.7.1 **Electrodes** : Plate electrodes shall be buried in ground with its face vertical and its top not less than 3.0mtrs below ground level. (As shown in figure below)
- 1.7.2 When more than one electrode (Plate/Pipe) is to be installed, a separation of not less than 2.0 mtrs shall be maintained between two adjacent electrodes.

1.7.3 Watering Arrangements:

- a) In case of plate earth electrode, a watering pipe of 20mm dia medium class shall be provided and attached to the electrode. A funnel with wire mesh shall be provided at the top of watering pipe for watering the pit.
- b) The watering funnel arrangement shall be enclosed in a masonry enclosure of size not less than 30cmX30cmX30cm.
- c) A Cast iron / MS frame with MS cover , 6mm thick, and having locking arrangements shall be suitable embedded in the masonry enclosure.

1.7.4 Earthing conductor (Main Earth Lead):

- a) In case of plate electrode, the earthing conductor shall be securely terminated on to the plate with two bolts, nuts, check nuts and washers.
- b) The earthing conductor from the electrode up to the building shall be protected from mechanical injury by a medium class 40mm dia medium class GI pipe (In case of plate earthing and strip earthingconductor). The protection pipe in ground shall be buried below 30cm (which will be extended to 60cm in road crossings and pavements) and the portion within building shall be recessed in wall /floors to adequate depth in co ordination with building in charge.

- c) The earthing conductor shall be securely connected to the earth stud/earth bar provided on the switch board by bolt, nut and washer in case of strip conductor.
- d) In case of Sub-Stations and Alternators, the terminations shall be made on the earthing terminal of the neutral point of the equipment and /or the earth bus as the case may be.

1.7.5 Earth Resistance:

- a) The earth resistance at each electrode shall be measured. No earth electrode shall have a greater ohmic resistance than 5 ohm as measured by an approved earth testing apparatus. In rocky soil the resistance may be up to 8 ohms.

1.7.6 Markings:

- a) Earth barts/terminals at all switch boards shall be marked permanently either “E” or



- b) Main Earthing terminal shall be marked “ SAFETY EARTH – DONOT DISCONNECT”.

SPECIFICATION FOR MCB DB AND M.V./ L.T PANEL

4.1 Specifications of MCBDBs

A general practice only prewired MCBDBs shall be used on account of the superior technical features compared to conventional DBs unless otherwise specified. The MCBDBs shall have following features.

- (i) The MCBDBs shall conforms to IS 8623- 1 & 2 and IEC 61439- 1 & 2.
- (ii) Surface /Recessed type with integral loose wire box for pre-wired MCBDBs.
- (iii) Phase/Neutral/Earth terminal blocks for termination of incoming and outgoing wires.
- (iv) Din channel for mounting MCBs /Isolators/Blanking plates.
- (v) Copper bus bar.
- (vi) Earthing terminals for proper eathing of MCBDBs.
- (vii) Wiring from MCBs to Phase terminal block.
- (viii) Terminal block should be suitable for termination of conductor/cable of required size , but minimum rated cross section of the terminal blocks should be 6 sqmm.
- (ix) Terminal blocks shall be made of flame retardant polyimide materials.
- (x) Colour terminal blocks and FRLS wires for easy identification of RYB phases, neutral and earth.
- (xi) Detachable plates with knockout holes shall be provided at the top and bottom of the board. Complete board shall be factory fabricated and ready for installation at site.
- (xii) The box and cover shall be fabricated from 1.6sqmm sheet steel, proper pre-treated, phosphatized with powder coated finish.
- (xiii) Where specified the MCBDB shall be double door construction provided with hinged cover in the front with high quality gasket to ensure well protected against external foreign bodies and liquid.

4.2 Specifications of MV/LT Cubicle Panels:

- (i) Cubicle panel shall be floor mounted (on a base frame) totally enclosed and extensible type. The general construction shall conform to IS: 8623/ 93. The design shall include all provisions for safety of operating and maintenance personnel. Degree of IP protection shall be IP-42 for indoor application and IP-54 for outdoors, unless otherwise specified.

- (ii) The panel shall be compartmentalized type having space and arrangement for incoming cable/bus ducting, incoming switchgear/switchgears, bus coupler, insulated and properly supported compartmentalized bus bars, outgoing compartmentalized switchgear, bus bar supports, joint shrouds, cable alleys of suitable size for cabling routing, support and terminations, inter-connection between bus bars and switchgear with auxiliary bus bars/ insulated conductors/strips etc. Also the panel will be provided with necessary instrumentation like CTs, PTs, Ammeters, voltmeters, phase indicating lamps, other required instruments, wiring, fuses etc.
- (iii) It shall be fabricated out of CRCA not less than 2.0 mm thick for load bearing members and 1.6mm for doors of LT panels. The framework may be Angle Iron/Channel/Bolted type construction. General constructions shall employ the principle of compartmentalization and segregation of each circuit. Unless otherwise approved, incomer and bus section panels shall be separate and independent and shall not be mixed with sections required for feeders. Each section of the rear accessible type board shall have hinged access door at the rear. Operating handle of the highest unit shall be at a height not more than 1.7 mt. Overall height of the board shall not exceed 2.3 meter.
- (iv) **Arrangement for incoming/outgoing cable termination:**
Cable entries shall be provided either from the rear or from the front through cable alleys of suitable size. Removable gland plate to be provided for each cable entry. Cable support arrangement to be provided inside cable alley so that cables are neatly arranged and fixed. From each outgoing switch, insulated strip/conductor of suitable size to be provided up to suitable terminal block, which will receive incoming/outgoing cable termination. It is desirable that cables are not terminated directly to switchgear, but terminated through proper terminal blocks.
- (v) **Specification of Cable Terminal Block:**
Terminal block of reputed make shall be used. The housing material shall be polyamide having unbreakable and fire-retardant characteristic. All the metal parts shall be made up of copper alloy including the screws. Mounting shall be 'Din' or 'G-rail' type. Screws shall be self captive type. No protection cover is required, and the block should be touch proof.
- (vi) **Earthing:**
2 Nos. 20x3 mm copper strip for LT panel up to 400 Amp. capacity or 2Nos. 20x5 mm copper strip for LT panel of higher capacity shall be fixed all around the panel connected to 2 Nos. earth bus copper strips connected to incoming earth conductors. (Typical Cubicle Panel is explained in Fig.8)
- (vii) **Commissioning:**
(a) After erection, the LT panel will be commissioned after:
(b) Tightening of all nuts and bolts.
(c) Closing any left out holes to ensure the entire panel is insect proof.
(d) Megger testing
(e) Earth testing.
- (viii) **Bus bars**

(a) Rating:

Bus bars shall be made of wrought aluminium or aluminium, alloy, or electric grade copper, conforming to relevant Indian Standard, as specified. The ratings of the bus bars shall be 100A, 200A, 300A, 400A, 500A, 600A, or 800A as specified.

(b) Current density:

Bus bars shall be of sufficient cross-section so that a current density of 130A/sq.cm (800A/sq.inch) is not exceeded at nominal current rating for aluminium bus bars, and 160A/sq.cm (1000A / sq.inch) for copper bus bars. The minimum sizes of sections of bus bars are given in Table VI..

(c) Cross Section of bus bars:

The cross section of the neutral bus bar shall be the same as that of the phase bus bar for bus bars of capacities upto 200A; for higher capacities, the neutral bus bar must not be less than half the cross-section of that of the phase bus bar.

(d) Insulation:

Each bus bar shall be suitably insulated with PVC sleeves/tapes. The insulation of the rising mains shall be capable of withstanding the voltage of 660V of A.C.

(e) Bus bar supports

Bus bar support insulators shall be class F insulators made of nonhygroscopic, non-combustible, track resistant and high strength FRP/ SMC/ DMC material, and shall be of suitable size and spacing to with-stand the dynamic stresses due to short circuit currents. The spacing between two insulators should be provided by the manufacturers according to the design approved by CPRI for their bus bar supports.

(f) Bus bar Clearances:

(i) The minimum clearance to be maintained for enclosed indoor air insulated bus bars for medium voltage applications shall be as follows:

<u>Between</u>	<u>Min. Clearances</u>
Phase to earth :	26mm
Phase to phase :	32mm.

Note: For strip connection from bus bars to switchgear, the above clearances don't apply.

- (ii) Bus bar joints shall be thoroughly cleaned and a suitable oxidizing grease shall be applied before making the joint.
- (iii) High tensile bolts, plain and spring washers shall be provided to ensure good contact at the joints.
- (iv) The overlap of the bus bars at the joints shall be not less than the area of the cross section of the bus bars.

(g) Bus Bar Marking:

Bus bars and main connections shall be marked by color or letter as per following:
Three phase- Red, Yellow, Blue (R,Y,B), Neutral- Black, Earth connections- Green.

(h) INTERCONNECTION AND CONTROL WIRING:

Switch board shall be completely factory wired ready for connecting to the equipment. Power connection of the circuits shall be done by Aluminum flats or by adequate size of PVC

insulated standard copper wires. All control wiring with PVC insulated copper conductor of 1.5 sqmm. and shall be fitted with identification ferrule at each end and not more than two connections shall be made at any one terminal. The wires shall be arranged and supported in such a manner that there shall be no strain on the terminators.

(i) TERMINAL ARRANGEMENTS:

The terminals shall be of adequate current rating and size to suit individual feeder requirements. For connections above 63 amps rating cable lugs shall be used. These cable lugs shall be mounted in such a manner so as to facility easy cable connections. Terminals shall be mounted in the cable compartment. Tap-off connections at the bus-bars shall not have wire connections. For switches above 63A rating solid bus link shall be provided from outgoing terminal of switch up to cable alley duly insulated with heat shrinkable sleeves. Direct connection by means of cables on outgoing shall not be permitted

(j) . INDICATION INSTRUMENTS:

The indicating instructions shall be of an approved make conforming to relevant IS. This arrangement of the instruments shall be logical. The size of the instruments shall be as specified.

(k) . EARTHING BUS-BARS:

The earth bus-bars shall be of G.I. and of adequate size as per B.I.S. specification.

(l) . PAINTING :

All steel work shall undergoing, process of de-greasing pickling in acid, cold-rinsing, phosphatising, passivating and then be sprayed with a high corrosion resistant primer. The primer should be baked in an oven. The finishing treatment shall be by application of powder coating with two coats of approved colour.

(m) GENERAL SPECIFICATION FOR PANEL

1. The ACB/MCCB/SFU etc, shall be fitted on the panel through G.I. hexagonal nut and bolts, self tapping screws/round headed bolts shall not permitted. Enough clearance on all sides as per manufacturer's recommendation are to be provided while mounting the switches. Horizontal/Vertical/or any other type of switch mounting shall be strictly as per practice recommended by the switch manufacturer. Only anodized nut bolts and washers shall be used in current circuits.
2. The panel shall be fully assembled and tested for dispatch from factory. Local assembly of components at site are not permitted.
3. The type and routine test certificate of complete panel, and individual test certificate of relays/ACB' s/ MCCB' s are to be furnished along with supply of the panel.

STANDARDS

The design, manufacture and testing of various equipments covered by this specification shall comply with the latest issue of following IS standards:-

- a. IS 4237 : General requirements for switchgear and control gear for voltage not exceeding 1000 volts.
- b. IS 4047 : Specification for hereby duty air break switch bus and composite units for air break switches and fuses for voltage not exceeding 1000 volts.
- c. IS 2208 : Specification for HRC fuses cartridge fuse links up to 650 volts.
- d. IS 2705 : Specification for current transformer.
(Part-I to IV)
- e. IS 1248 ; Specification for direct action electrical indicating instruments.
- f. IS 2516 : (Part-I/Section-I) specification for alternating current circuit breakers.
- g. IS 375 : Switch gear bus-bar, main connections and auxiliary wiring, making and arrangements for.
- h. IS 3231 : Electrical Relays for power system protection.
- i. IS 5082 : Wrought aluminum and aluminum alloy bars rods, tubes and section for electrical purposes.

DNIT

SCHEDULE-A (For Electrical Work)

Name of Work:- Modifications and Internal Works at 3rd Floor, Block A-1, Toshali Bhawan, Bhubaneswar for ORERA.

SI No	Description of Items	Quantity	Unit	Rate	Amount
	Sub-Head-I(wiring)	-			
1	Wiring for light point/fan point/exhaust fan/Call bell point with 1.5 Sq.mm. FRLS PVC insulated copper conductor single core cable in surface/recessed medium class PVC conduit,with modular switch, Modular plate ,suitable size G.I. box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc as required. (Group-C)	166	Point	Point	
2	Wiring for power plug with following size FRLS PVC insulated copper conductor single core cable in surface/recessed medium class PVC conduit as required.				
	a) 2 x 4 Sq.mm.with 1 No. 4 sqmm. FRLS PVC insulated copper cond. Single core cable for loop earthing.	450	Mtr.	Mtr.	
	b) 4 x 4 Sq.mm.with 2 No. 4 sqmm. FRLS PVC insulated copper cond. Single core cable for loop earthing.	350	Mtr.	Mtr.	
3	Wiring for circuit /submain alongwith earth wire with the following sizes FRLS PVC insulated copper conductor single core cable in surface/recessed medium class PVC conduit as required.				
	a) 2 x 1.5 Sq.mm.+1 x 1.5 Sq.mm. earth wire	500	Mtr.	Mtr.	
	b) 2 x 6 Sq.mm.+1 x 6 Sq.mm. earth wire	300	Mtr.	Mtr.	
	c) 2 x 10 Sq.mm.+1 x 6 Sq.mm. earth wire	200	Mtr.	Mtr.	
	d) 4 x 10 Sq.mm.+1 x 6 Sq.mm. earth wire	150	Mtr.	Mtr.	
4	Supplying and fixing the following sizes of medium class PVC conduit along with accessories in surface/recess including painting in case of surface conduit or cutting the wall and making good the same in case of recessed conduit as required				
	a) 20mm	300	Mtr.	Mtr.	
	b) 25mm	200	Mtr.	Mtr.	
	c) 32mm	120	Mtr.	Mtr.	
5	supplying & drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/recessed steel/PVC conduit as required.				
	i) 3 x 1.5Sq.mm	300	Mtr	Mtr	
	ii) 6 x 1.5Sq.mm	250	Mtr	Mtr	
6	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc. as required. (For light plugs to be used in non residential buildings).	25	nos	Each	

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7	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	30	nos	Each		
8	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc as required.					
	(a) 01 or 2 Module (75mmX75mm)	30	nos	Each		
	(b) 03 Module (100mmX75mm)	15	nos	Each		
	(c) 04 Module (125mmX75mm)	12	nos	Each		
	(d) 06 Module (200mmX75mm)	20	nos	Each		
	(e) 08 Module (125mmX125mm)	18	nos	Each		
	(f) 12 Module (200mmX150mm)	30	nos	Each		
9	Supplying and fixing following modular switch/socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.					
	a) 5/6 amps switch	25	nos	Each		
	b) 3 pin 5/6 amp socket outlet	35	nos	Each		
	c) 15/16 amps switch	46	nos	Each		
	d) 6 pin 15/16 amp socket outlet	46	nos	Each		
	(e) Bell push	4	nos	Each		
	(f) Telephone Socket Outlet	32	nos	Each		
	(g) RJ 45 socket outlet	32	nos	Each		
	(h)TV antenna socket outlet	4	nos	Each		
10	Supplying and drawing following pair 0.5 sq mm FR PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required.					
	(a) 2 Pair	200	mtrs.	Mtr		
	(b) 4 Pair	100	mtrs.	Mtr		
11	Supplying and drawing of UTP 4 pair CAT 6 LAN Cable in the existing surface/ recessed Steel/ PVC conduit as required.					
	a) 1 run of cable	200	mtrs.	Mtr		
	b) 2 run of cable	100	mtrs.	Mtr		
	c) 3 run of cable	100	mtrs.	Mtr		
12	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	18	nos	Each		
	Sub-Head-II(fan & fittings)					
13	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable, including providing and fixing phenolic laminated sheet cover on the fan box etc. as required.	7	nos	Each		

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14	Supplying and fixing extra conduit down rod of 10 cm length G.I. pipe 15 mm dia, heavy gauge including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)	21	nos	Each		
15	S/F of PVC batten/ angle holder including connection etc. as required	4	No	Each		
16	Supplying & fixing following modular type special luminaires including making connection etc as reqd.					
	a) Recess type LED 595x595mm flat panel of 34 W 5700K diffused lighting . (Make Havells Model Pluto 2x2, LHEEBP7CUL1W034 or equivalent Philips/ Bajaj model)	56	Nos	Each		
	b) surface type LED 595x595mm flat panel of 34 W 5700K diffused lighting . (make havells Model Pluto 2x2 Panel, LHEWEIP7IL1W034 or equivalent Philips/ Bajaj model)	10	Nos	Each		
	c) 140mm round 15 W LED down lightrer(5700K) with integrated driver etc as reqd. (Make Havells,Philips or Bajaj)	47	Nos	Each		
	d) Supply & Fixing of Surface mounted LED downlighter with durable polycarbonate housing using Al. heat sink & high brightness LED with diffuser to give glare free light, with removable driver, 15W LED 5700K, (Make- Havells of model - LS15WLED857S/ Phillips/ Crompton Greaves) - For stair case	7	nos	Each		
	e) Recess type LED 1'x1' flat panel of 15 W 5700K diffused lighting . (Make Havells Model Pluto 1x1, PLUTO1x1PLR15WLED857 or equivalent Philips/ Bajaj model)	17	Nos	Each		
	f) wall/Ceiling mounted 18W LED type batton (1213mm) with polycarbonate housing and polycarbonate diffuser & integrated electronic driver etc as reqd. (havells,or equivalent Philips/ Bajaj model)	6	Nos	Each		
17	S/F of 400mm, sweep, superior quality Wall mounting fan with minimum air delivery of 95 CMM at 2300 RPM, swing mechanism and speed regulator, connection, testing etc. complete as required. (Make-USHA Helix pro high speed or equivalent)	35	no.	Each		
18	Supplying of 250mm sweep 3 blade polycarbonate Exhaust Fan with protective bird guard louvers, heavy duty, robust construction etc. as required.(Make-USHA/Almonard/Havells/Crompton greaves)	5	nos	Each		
19	Supplying and fixing two module stepped type modular type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	7	nos	Each		
20	Supplying of 1400mm 3 blade ceiling fan suitable for operation on 230 volts 50Hz AC supply etc. as required.(Usha-NEWZEN/Equivalent model of M/s Havells/Crompton Greaves/Bajaj).	7	nos	Each		

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21	Supplying and fixing of following size MS angle/MS flat/GI sheet including cutting, welding, fabricating to required shapes and sizes, painting with two coats of primer and synthetic enamel paint, fixing on wall/floor, grouting, minor civil works etc. complete as required. (a) 35mmX35mmX5mm M.S. Angle	32	mtrs	Mtr		
	(b) 35mmX5mm MS Flat	15	mtrs	Mtr		
	(c) 16 SWG MS sheet	1	sqmtr	Sqmtr		
22	Providing laying and fixing following dia G.I. pipe (Medium class) in ground complete with GI fittings including trenching (75cm deep) and refilling etc as required. (a) 50 mm dia	8	Mtrs	Mtr		
23	S/F of MCB protected Socket outlet 4 module with metal box comprising of 01no. 25Amps socket and 01no. 25Amps Plug and 01no. 25Amps "C" series SPMCB for Split AC units i/c connection, testing etc. as required. (Make- Legrand /Havells/HPL/Standard)	20	nos	Each		
	SUB HEAD III (Main Panel & DB)					
24	S.I.T.C of floor/Wall mounted,powder coated LT cubicle main panel made up of 16 swg M.S. sheet,dust & vermin proof switch for operated on 3 phase 415 volt, 4 wire AC supply system,consisting of various switchgears as mentioned below along with indicating lamps,complete with all interconnections made with PVC insulated multi stand flexible copper cond. / al. bars i/c sockets,connectors of suitable rating,providing rubber gaskets sign writing as per specification complete as reqd.					
	Details of swithgears					
	Incoming					
	a) 4P, 250 amp. MCCB, confirming to IS/IEC60947, with relay range 200-250A and Icu=100% Ics (L&T make model DN1-250D Range- 1 no.)					
	b) 4pole, 250 amp. AC23A, On load, Change over switch, of FR3 size (Make:-L&T, Model FR3-CO3-250A): 1No					
	OUTGOING					
	a) 4P, 125 amp. MCCB, confirming to IS/IEC60947, with relay range 100-125A and Icu=100% Ics (L&T make model DN0-125D Range- 2 no.)					
	a) 4P, 100 amp. MCCB, confirming to IS/IEC60947, with relay range 50-63A and Icu=100% Ics (L&T make model DU100H- Range- 4 no.)					
	d) 400 amp. 4 strip 900 mm Al.Bus bar mounted on special type insulators with transparent sheet on front - 1 set.					
	e) Cable alley of suitable size with stud connector of suitable current rating.					
	f) Metering panel consisting with 1 No backlit LCD display muti parameter meter of HPL make Emfis vifpe model complete with accessories and interconnection, etc. as reqd. //ALL OF THE ABOVE COMPRIESES 1 SET//	1	Job	Each		

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25	Supplying, installing, testing and commissioning of following capacity 3 Pole and neutral MCCB in existing plug In/ tap off box for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply complete etc. as required					
	a) 4 pole 100 amps with relay range of 80-100 Amps with breaking capacity of 30 KA (Ics=100% Icu)	2	No	Each		
26	S/F following way, surface / recess mounting, Vertical type 415V TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200A, tinned copper busbar, common neutral link ,earth bar,din bar, for mounting MCBs (but without MCB and incomer) as required.					
	i) 8 way (4+24), Double door	2	No	Each		
27	S/F following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper busbar, neutral busbar ,earth bar,din bar, interconnections and power painted including earthing etc. as required. (But without MCB/RCCB/Isolator)					
	i) 4 way (4+12), Double door	2	No	Each		
28	Supplying & fixing of 5A-32A rating,240/415 V, 10KA 'C' curve, MCB suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
	i) Single pole	44	No	Each		
	ii) Triple pole	6	No	Each		
	iii) double pole	4	No	Each		
29	Supplying and fixing following rating, four pole, 415 volts, Isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
	i) 63 amp	3	No	Each		
	ii) 100 amp	1	No	Each		
30	S/F following way, single pole and neutral, sheet steel, MCB distribution board , 240 V, on surface/ recess, complete with tinned copper busbar, neutral busbar ,earth bar,din bar, interconnections and power painted including earthing etc. as required(But without MCB/RCCB/Isolator)					
	a) 12 way Double Door	4	No	Each		
31	Providing and fixing 12mm thick ISI marked rubber mat for panel operation complete as required.	8	mtr	Mtr		
32	Supplying & fixing of single pole blanking plate in the existing MCB DB complete etc. as required.	12	No	Each		
	Sub-Head-IV (Earthing and loop earthing)					
33	Earthing with GI earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/coke and salt as required.	4	sets	Set		
34	Providing and fixing 25 mm X 5 mm GI strip in 40 mm dia GI pipe from earth electrode including connection with GI nut, bolt, spring, washer excavation and re-filling etc. as required	35	mtr	Mtr		

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35	Providing and fixing 25 mm X 5 mm GI strip on surface or in recess for connection etc. as required.	40	mtrs	Mtr		
36	Providing and fixing 6 SWG GI wire on surface or in recess for loop earthing alongwith existing surface/ recessedconduit/ sub maon wiring/ cable as required.	220	mtrs	Mtr		
37	Providing and fixing earth bus of 50 mm X 5 mm copper strip on surface for connections etc as required.	0.5	mts	Mtr		
Sub-Head-V (cables and accessories)						
38	Supplying of following size stranded Aluminium conductor PVC insulated and PVC/XLPE sheated & armoured power cable of 1.1 KV grade as required. (Finolex/Universal/Polycab, with ISI)					
	a) 3.5 core 35 sq mm	100	mts	Mtr		
	b) 3.5 core 50 sq mm	100	mts	Mtr		
	c) 3.5 core 150sq mm	80	mts	Mtr		
39	Laying of one no. PVC insulated and PVC sheated/XLPE power cable of 1.1 KV grade of following size on wall surface as required.					
	a) Upto 35 Sq. mm. (clamped with 1 mm thick shaddle).	90	mts	Mtr.		
	b) above 35 sq mm and Upto 95 Sq. mm. (clamped with 25 X 3 mm MS flat clamp).	90	mts	Mtr.		
	c) Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	60	mts	Mtr.		
40	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.					
	a) Upto 35 Sq. mm.	5	mts	Mtr.		
	b) Above 35 sq. mm and upto 95 sq. mm	5	mts	Mtr.		
	c) above 95 sq mm and Upto 185 Sq. mm.	10	mts	Mtr.		
41	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.					
	a) Upto 35 Sq. mm.	5	mts	Mtr.		
	b) Above 35 sq. mm and upto 95 sq. mm	5	mts	Mtr.		
	c) above 95 sq mm and Upto 185 Sq. mm.	10	mts	Mtr.		
42	Supplying and making indoor end termination with brass compression gland and aluminium lugs for following size of PVC insulated and sheathed/XLPE aluminium conductor cable of 1.1 KV grade as required.					
	a) 3.5 core, 35 Sq. mm (28mm)	6	nos.	Each		
	b) 3.5 core, 50 Sq. mm (32mm)	6	nos.	Each		
	c) 3.5 core, 150 Sq. mm (50mm)	4	nos.	Each		
Sub-Head-VI(SITC of EPABX system & LAN switch)						
43	SITC of Digital EPABX supporting 4 BSNL and 32 line intercom extension complete with instalation testing and commissioning etc as reqd. (Make NEC model SL 1000 4/32 DIGITAL KTS EPABX or similar superior)	1	no	each		
44	SITC of electronic push button type Telephone /intercom instrument including connection and 1.5 mtr flexible connector chord complete as reqd. (Make BEETEL model B-17 DIGITAL PUSH BUTTON TELEPHONE)	30	no	each		

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45	SITC of 28 port Gigabit managed switch including software etc complete with instalation testing and commissioning etc as reqd. (Make CISCO model SG 350-28-K9-EU or equivelent)	1	no	each		
46	SITC of 8 port Gigabit unmanaged switch including software etc complete with instalation testing and commissioning etc as reqd. (Make CISCO model SG 110D08NA or equivelent)	1	no	each		
47	Providing end termination of CAT 6 UTP cable with RJ45 jack termination complete as required.	32	no	each		
48	Supplying and Fixing 1.5 mtr long CAT6 copper patch chord with RJ45 Jack termination etc complete as required.	32	no	each		
49	SITC of 900VA pure sine wave inverter for power back up suitable for 12V DC supply input and output of 230V (+)(-) 6% complete with battery connection cable, connector etc complete asreqd. (Microtek make 900VA pure sinewave or similar superior.)	1	no	each		
50	S/F of lead acid storage battery of 12V and minimum 120AH with initial charging etc as reqd. (Exide make 12V inverter Battery 1300 or similar superior.)	1	no	each		
51	SITC of lightning protector/ surge arrestor to surpress voltage fluctuation suitable for etc complete as reqd.	1	no	each		
52	Supply and laying of 10 pair PVC cable of make Finolex etc. as required.	81	mtr	mtr		
53	Supplying and fixing of 50 pair MDF box of make krone etc. as required.	1	job	job		
54	S/F of battery trolley type stand made of PVC along with floor mounted wheels etc. as required.	1	job	job		
Sub-Head-VII (10KVA Invertor and battery Bank)						
55	Suppling and fixing of 10KVA, with input voltage DC 192V (tolerance range160-233V+/- 1 Volt), input voltage AC 180V-265V, output voltage UPS mode 220+/- 10%, Online, pure sine wave UPS, (Excluding Battery Bank), suitable for SMF/ VRLA battery, with fully automatic microprocessor controller, housed in a suitable powder coated housing, with sufficient built-in cooling fan arrangement and backlit LCD annunciation panel, complete as reqd. (make Microtek, luminous or similar/superior)	2	No	Each		
56	Suppling and fixing of 12V, 100AH, Sealed Maintenance free Battery, Complele with interconnection made up of 10 Sq mm PVC insulated copper conductor cable with proper end temination etc complte as reqd.(Battery should be atleast 18 month warrenty)(make Amaron, Exide or similar/superior)	32	No	Each		

**Executive Engineer(C)
BSNL Civil Division-I
Bhubaneswar**