

**BHARAT SANCHAR NIGAM LIMITED**  
(A Government of India Enterprise)

**TENDER DOCUMENT**

**Name of work:**

**Construction of DFO (KL) office Building including services at ATHMALLIK**

Total E.C.- **Rs 1,29,85,560/-**  
(Civil part - Rs **1,17,82,971**)  
(Electrical part- Rs **12,02,589**)

E.M.D.- Rs **2,59,715/-**

Completion period: **10 (Ten) Months**

**BSNL CIVIL DIVISION  
SAMBALPUR**

**I N D E X**

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

The Executive Engineer(Civil), BSNL Civil Division, Sambalpur invites item rate e-tenders on behalf of **PCCF, KENDU LEAVES, ODISHA** 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. 210-29-18-01 Dated 22.09.2018

Name of Work: **Construction of DFO (KL) office Building including services at ATHMALLIK**

ii. Estimated Cost **Rs 1,29,85,560/-**  
**[Rs 1,17,82,971 (Civil part)+Rs 12,02,589(Electrical part)]**

iii. Earnest Money (In Rs.) : **Rs 2,59,715/-**

iv. Period of Completion : **10 (Ten) months**

v. Last date and time of online submission of tender: 15.00 hours on 04.10.2018

vi. Time and date of online opening of Documents: 15.30 hours on the above date

vii. Time and date of opening of Online Financial Bids : 15.30 hours on 05.10.2018

viii. Period during which hard copies of EMD, Registration Certificates, 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 opening 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.orissa.bsnl.co.in](http://www.orissa.bsnl.co.in) free of cost. Any corrigendum(s) will be uploaded in these two 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 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.orissa.bsnl.co.in](http://www.orissa.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: -**

**Signature of the Tenderer**

- 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: -**

**Signature of the Tenderer**

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**

- d) **I have or will arrange in advance the following:**  
(i) Weigh batching for RCC design mix at site  
(ii) Steel centering and shuttering or plywood shuttering (with steel spans/props) for an area of **250 sqm** or more. In case of failure on my part to provide these at atleast one week in advance of their requirement during execution of work, I hereby agree that BSNL shall forfeit my EMD, Performance Guarantee and security deposit already recovered to BSNL and also terminate the contract. Also, I agree that I shall have no claim whatsoever on the forfeiture of above and termination of contract.

**Signature of the Tenderer**

**BHARAT SANCHAR NIGAM LIMITED  
(A GOVERNMENT OF INDIA ENTERPRISE)****NOTICE INVITING e-TENDER**

The Executive Engineer (Civil), BSNL Civil Division, Sambalpur invites Item rate e-tenders on behalf of **PCCF, KENDU LEAVES, ODISHA** 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 : **Construction of DFO (KL) office Building including services at ATHMALLIK**

1. 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:**

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

- d) Certificate of registration / enlistment order
- e) Treasury Challan/Demand Draft/Pay order or Banker`s Cheque /Deposit at Call Receipt/FDR/ Bank Guarantee of any Scheduled Bank against EMD.
- f) 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 1,29,85,560/-**(Part A: Major component-Civil Portion: **Rs 1,17,82,971** + Part B: Minor component - Electrical Portion: **Rs12,02,589**). 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 'Building work with RCC framed structure'. 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.*

**Note: The intending tenderer shall have or arrange in advance the following:**

- (i) Weigh batching for RCC design mix at site
- (ii) Steel centering and shuttering or plywood shuttering (with steel spans/props) for an area of **250 sqm** or more. In case of failure on his part to provide these at least one week in advance of their requirement during execution of work, the EMD, Performance Guarantee and security deposit already recovered by BSNL will be forfeited and the agreement will be terminated without any notice.



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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.orissa.bsnl.co.in](http://www.orissa.bsnl.co.in) or in the office of the **Executive Engineer (Civil)**. 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 **10 (Ten) months** and shall be reckoned from **10<sup>th</sup> 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 and structural drawings shall be made available in phased manner, as per requirement of the same as per approved programme of completion submitted by the contractor after award of work.**
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) and the NIT & General conditions of contract upto Correction Slip No.6 can be seen from BSNL website [www.orissa.bsnl.co.in](http://www.orissa.bsnl.co.in) or in the office of the **Executive Engineer (Civil)**.
  6. After submission of the bid 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/- 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 04.10.2018 and financial bid shall be opened at 15.30 Hrs on 05.10.2018 .

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:**

**It is G+2 RCC framed structure with fly ash brick masonry, Vitrified tile flooring, wood works, steel works, false ceiling, water supply, sanitary installations, drainage works, CC road works, internal electric installations and other services as mentioned in the schedule of items.**

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 on behalf of BSNL 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.orissa.bsnl.co.in](http://www.orissa.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 25<sup>th</sup> of every month.*
21. First running account bill shall be paid only after
- signing of the Agreement/Contract by both the parties, and
  - Progress chart has been prepared as required under Clause 5 and approved by the competent authority and
  - 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.orissa.bsnl.co.in](http://www.orissa.bsnl.co.in) as well as in the office of the Executive Engineer.
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.orissa.bsnl.co.in](http://www.orissa.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)**

**For & on behalf of  
PCCF, Kendu Leaves, Odisha.**

**BSNL W – 7/8**

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



# NIT

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STATE: ODISHA

CIRCLE: **SAMBALPUR**

ZONE: ODISHA

DIVISION: **SAMBALPUR**

SUB-DIVISION: **RAIRAKHOL**

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

(A) Tender for the work of: **Construction of DFO (KL) office Building including services at ATHMALLIK**

- (i) To be submitted by 15.00 hours on 04.10.2018 (date)
- (ii) To be opened in presence of tenderer who may be present at 15.30 hours on 04.10.2018 in office of Executive Engineer (Civil) and financial bid shall be opened at 15.30 Hrs on 05.10.2018 .

## **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, upto maximum of the percentage mentioned in

# NIT

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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 **Sambalpur** 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**

# NIT

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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 PCCF , Kendu Leaves, Odisha 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  
**PCCF, Kendu Leaves, Odisha.**

Signature\_\_\_\_\_

Dated.....

Name and designation

# NIT

## 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%

# NIT

## SCHEDULE "F"

(Reference to General Conditions of Contract)

**Name of Work: - "Construction of DFO (KL) office Building including services at ATHMALLIK"**

Estimated cost of Work: **Rs 1,17,82,971 (Civil Part)**

Earnest Money **Rs 2,59,715 (Rupees Two lakh Fifty Nine thousand Seven hundred fifteen 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, Sambalpur.

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

2(v) Engineer-in charge

### See below

Executive Engineer (Civil),  
BSNL Civil Division, Sambalpur.

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.

# NIT

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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. 10 (Ten) 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,  
JSPL,JSW Steel

## Clause 10 C

Not applicable

## Clause 10 CA

Applicable- For reinforcement the Index of Mild Steel- long products will be considered.

## Clause 10 D

Not applicable

# NIT

**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.

**Superintending Engineer (C),  
BSNL Civil Circle, Sambalpur.**

**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
<b>For Agreement amount upto Rs 150 lakhs</b>	1	Graduate Engineer <b>OR</b> Diploma Engineer	Civil	Principal Technical representative	2 years for Graduate Engineer / 5 years for Diploma Engineer	1	Rs 15,000/-	Rs Fifteen Thousand only
<b>For Agreement amount between Rs 150 lakhs to Rs 500 lakhs</b>	1	Graduate Engineer	Civil	Principal Technical representative	5 years	1	Rs 25,000/-	Rs Twenty Five Thousand only
	2	Graduate Engineer <b>OR</b> Diploma Engineer	Civil	Technical representative	2 years for Graduate Engineer / 5 years for Diploma Engineer	1	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 slips
- 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.6,400.00 per M.T.
2	For Reinforcement Steel conforming to BIS 1786 - TMT bars 500 D	Rs.57,300.00 per 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.

S.NO.	MATERIAL	PREFERRED MAKE
1	Water Proofing Compound	Fosroc, Pidilite, Impermo, Sika, Accoproof, CICO
2	PVC Pipes and Fittings	Astral, Supreme, Finolex, Prince, Ashirwad, Truebore
3	Acrylic Distemper/Plastic Emulsion Paints	Asian Paints, ICI, Berger
4	Steel Primer	ICI, Asian Paints, Berger, Shalimar
5	Dash/Anchoring Fasteners	HILTI/Fischer
6	Nuts/Bolts & Screws	GKW/Atul
7	Stainless Steel Sink(Out of salem Steel only)	Diamond, Nirali, Neelkanth, Jayana, Prestige
8	Float Valve	Viking, Prayag, Watertech
9	Admixtures in concrete	Fosroc, Sika Pidilite, Roff
10	Vitreous China Sanitary ware/Porcealin	Parryware, Cera, Hindware, Nycer
11	Plastic seat cover of W.C.(ISI mark only)	Commander, Hindware, Admiral
12	G. I. Pipes	Jindal (Hissar), Tata, Zenith, I.T.C., GST
13	G. I. Fittings	Unik, Zenith, HB
14	Gun metal valves	Leader, ZOLOTO,DRP
15	Gully traps	Perfect, Hind or Crystal
16	Clear Glass/Reflective Glass	Saint Gobain, Modiguard, Asahi, Modifloat, Indor Asia
17	Grouting compound	Latticrete, Balendura, Fosroc
18	Aluminium sections	Hindalco, Jindal, Indal
19	Aluminium fiffings	Everite, OXFORD, Argent, NLCO, Allans
20	Floor springs	Dorma, Ozone, Hardwyn, Yale, Everite, Godrej

## NIT

21	Exterior paints	Snowcem India, Asian, ICI
22	Pre-laminated particle board	Ecoboard, Asis, Novapan
23	Aluminium composite panel (ACP)	Aludecor, Alponic, Alcobond, Alcopanel, Durabuilt, Alstrong
24	Polyvinyl Butyl film	Dupont, Trossifoil, Trussorf
25	PVC sheet flooring/Antistatic	LG, Armstong, Jindal, Wonderfloor
26	Silicon sealant	DOW Corning, GE
27	Epoxy grouts	Saint Gobin, Latticrete, Balendura, FOSROC
28	Flush door shutters	Kitply/Sitapur/Anandwood/Century/Greenply/Mayur/National
29	Hardware fittings	EARL BIHAR/HETTICH/LAXMI
30	Cupboard Locks	Dorset, Godrej, Europa, Ebco
31	Drawer multilock	KEYMAN/Earl Behari, Ebco
32	Cylindrical lock	SECUR, DORSET, GODREJ, Ebco
33	Mortice latch & lock	Godrej, Sheel
34	Plyboard	National/Duro/Green Ply/Kitply, CENTURY, Alishan
35	Prelaminated MDF Board	Asis, Century
36	Plain MDF Board	NUWOOD, Asis, Century
37	LAMINATES	Greenlam/Formica/Decolam/Merinolam/Heritage
38	Enamel Paints	Johnson & Nicholson/Asian/Royal touch Berger/ICI
39	Paver block	Aeons/Hicon/Shan Fly Ash/Malu/Prathi Sai/Nitco/Gico/Ultra/Star
40	MS Tubes	Jindal/Tata/SAIL
41	Precast chequered cement concrete tiles	NITCO/Ultra/Aeons/Hicon/Gico/Star
42	CPVC pipes	Ashrivad, Flowguard, Astral, Supreme
43	Stainless steel sections	Jindal
44	Glue	Fevicol/Vemicol
45	Ceramic tiles	Bell/Kajaria/NITCO/ORIENT/Somany
46	CP fittings & accessories	Parko/Kingston/Esco/Plumber/Crab tree
47	Insulation above false ceiling	Armaflex/Superior/Eurobatex
48	Square perforated metal false ceiling	Conwed/Unimet/TRAC
49	Providing Acoustical felt treatment	Soundtex
50	Exposed grid false ceiling	ARMSTRONG/NITTOBO/AMF/CELOTEX
51	Gypsum Board	India Gypsum Ltd.

## NIT

	accessories	
52	Epoxy paint	Nerolac/Asian
53	Access flooring system (false floor)	Uitile/Donn
54	Perforated panels (false floor)	Uitile/Donn
55	Rodent repellent	MASER
56	Tinted film	Garware, Meditech, 3M
57	Privacy film	3M
58	Writing boards	Alkon/Whitemark/Writemark
59	Artificial leather	National leather Cloth Mfg Co., Bhore
60	Fire retardant paint	Firetard
61	Screws	Nettlefold/ GKW Ltd
62	Fabric Protection	Scotchguard of Birla 3M
63	Foam of chairs, Sofa	MM Foam/ U FOAM
64	Vitrified tiles/Polished Porcelain	Bell/Kajaria/NITCO/EURO/Somany/Orient/ Naveen
65	Wood preservative	Bison by British paints/ Woodguard/Termiseal
66	Marine plywood	Kenwood/ Kitply/ National/Greenply/Sharon/Alishan
67	Commercial plywood	Guna/Kenwood/Galaxy/Century
68	Plain particle board	Novopan/Nepalboard/Ecoboard
69	Fire retardant fabric	Trevira CS fabrics(Rajasthan Spinning & Weaving Mills Ltd.)
70	PVC water tank	Sintex(with ISI mark embosing only)
71	PVC door shutter	Rajshri/Sintex
72	White cement	Birla White/JK White
73	PVC gratings	Prince/Prayag.
74	Hydraulic door closer	Hardwyn, Dormia, Ozone, Yale, Everite/Godrej
75	Welding Electrodes	Advani, ESAB India
76	UPVC windows (with 10 years manufacturers warranty)	Fenesta, Kommerlink, Veka, Reheau, Duroplast

**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)**

<b>SCHEDULE OF QUANTITY</b>					
<b>Name of Work: Construction of DFO (KL) office Building including services at ATHMALLIK.</b>					
<b>SL No</b>	<b>Description of item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount</b>
<b>SUB HEAD-EARTH WORK</b>					
<b>1</b>	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m, as directed by Engineer-in-Charge.				
<b>a</b>	All kinds of soil	<b>360.00</b>	Cum		
<b>2</b>	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50 m and lift up to 1.5m, as directed by Engineer-in-Charge.				
<b>a</b>	Ordinary rock	<b>10.00</b>	Cum		
<b>3</b>	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
<b>a</b>	All kinds of soil.	<b>39.00</b>	Cum		
<b>4</b>	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :				
<b>a</b>	All kinds of soil				
<b>i</b>	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	<b>20.00</b>	mtr		
<b>5</b>	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.	<b>220.00</b>	Cum		
<b>6</b>	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials.				
<b>i</b>	All kinds of soil.	<b>100.00</b>	Cum		
<b>7</b>	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	<b>400.00</b>	Cum		

<b>8</b>	Supplying and filling non cohesive soils , gravel, moorum, or quarry dust (other than sand, clay & black cotton soil) in open areas and the like in layers of not more than 20 cm including watering, ramming, consolidating and dressing complete. (Deduction for voids will be made as per specification.)	<b>450.00</b>	Cum		
<b>SUB HEAD-CONCRETE WORK</b>					
<b>9</b>	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
<b>a</b>	1:2:4 (1 cement : 2 coarse sand(zone-III) : 4 graded stone aggregate 20 mm nominal size)	<b>2.00</b>	Cum		
<b>b</b>	1:5:10 (1 cement : 5 coarse sand(zone-III) : 10 graded stone aggregate 40 mm nominal size)	<b>64.00</b>	Cum		
<b>10</b>	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 :				
<b>a</b>	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	<b>2.00</b>	Cum		
<b>11</b>	Centering and shuttering including strutting, propping etc. and removal of form work for :				
<b>a</b>	Retaining walls, return walls, walls (any thickness) including attached pilasters, buttresses, plinth and string courses fillets, kerbs and steps etc..	<b>20.00</b>	Sqm		
<b>12</b>	Providing and laying cement concrete in kerbs, steps and the like at or near ground level excluding the cost of centering, shuttering and finishing.				
<b>a</b>	1:1½:3 (1 Cement : 1½ coarse sand(Zone III) : 3 graded stone aggregate 20 mm nominal size).	<b>4.00</b>	Cum		
<b>13</b>	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand(Zone III) : 4 graded stone aggregate 20mm nominal size).	<b>30.00</b>	Sqm		
<b>14</b>	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.	<b>100.00</b>	units		
<b>15</b>	Applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with apiece of cloth lightly soaked in kerosene oil.	<b>30.00</b>	Sqm		
<b>16</b>	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation leveling and dressing and finishing the top smooth.	<b>30.00</b>	Sqm		

<b>17</b>	Extra for addition of synthetic Polyester triangular fiber of length 12mm, effective diameter 10-40 microns and specific gravity of 1.34 to 1.40 in cement concrete/ RCC/ Flooring/ water retaining structures by using 125gms of synthetic Polyester triangular fiber for 50 Kg cement used as per directions of Engineer-in-Charge.	<b>200.00</b>	units		
<b>SUB HEAD -REINFORCEC CEMENT CONCRETE</b>					
<b>18</b>	Centering and shuttering including strutting, propping etc. and removal of form for all heights:				
<b>a</b>	Foundations, footings, bases of columns, etc. for mass concrete.	<b>120.00</b>	Sqm		
<b>b</b>	Walls (any thickness) including attached pilasters, butterses, plinth and string courses etc.	<b>248.00</b>	Sqm		
<b>c</b>	Suspended floors, roofs, landings, balconies and access platform.	<b>550.00</b>	Sqm		
<b>d</b>	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	<b>590.00</b>	Sqm		
<b>e</b>	Columns, Pillars, Piers, Abutments, Posts and Struts.	<b>250.00</b>	Sqm		
<b>f</b>	Stairs, (excluding landings) except spiral-staircases.	<b>50.00</b>	Sqm		
<b>g</b>	Vertical and horizontal fins individually or forming box louvers band, facias and eaves boards.	<b>25.00</b>	Sqm		
<b>h</b>	Edges of slabs and breaks in floors and walls.				
<b>(i)</b>	Under 20 cm wide	<b>25.00</b>	mtr		
<b>i</b>	Weather shade, Chajjas, corbels etc., including edges.	<b>30.00</b>	Sqm		
<b>19</b>	Providing, hoisting and fixing above plinth level up to floor five level precast reinforced cement concrete work in string courses, bands, copings, bed plates, anchor blocks, plain window sills and the like, including the cost of required centering, shuttering but , excluding cost of reinforcement, with1:1.5:3 (1 cement: 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20mmnominal size).	<b>2.00</b>	Cum		
<b>20</b>	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to plinth level.				
<b>a</b>	Thermo-Mechanically Treated bars of grade Fe-500 D or more.	<b>8000.00</b>	Kg		
<b>21</b>	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
<b>a</b>	Thermo-Mechanically Treated bars of grade Fe-500 D or more.	<b>19000.00</b>	Kg		
<b>22</b>	Smooth finishing of the exposed surface of R.C.C. work with 6 mm thick cement mortar 1:3 (1 Cement : 3 fine sand)	<b>1180.00</b>	Sqm		
<b>23</b>	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	<b>116.00</b>	mtr		

<b>24</b>	Providing and laying in position machine batched and machine mixed design mix M-30 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including placing / pumping of concrete to site of laying but , excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note :- Cement content considered in this item is @390 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately)				
<b>a</b>	All works up to plinth level.	<b>80.00</b>	Cum		
<b>b</b>	All works above plinth level up to floor V level.	<b>180.00</b>	Cum		
<b>25</b>	Add for using extra cement in the items of design mix over and above the specified cement content therein. (In case of less cement, the same rate will be deducted)	<b>80.00</b>	Qtl		
<b>SUB HEAD -BRICK WORK</b>					
<b>26</b>	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 5.0 in foundation and plinth in:				
<b>a</b>	Cement mortar 1:4 (1 cement : 4 coarse sand)	<b>10.00</b>	Cum		
<b>a</b>	Cement mortar 1:6 (1 cement : 6 coarse sand)	<b>43.00</b>	Cum		
<b>27</b>	Brick work with non modular fly ash bricks conforming to IS:12894, class designation 7.5 average compressive strength in super structure above plinth level up to floor V level in :				
<b>a</b>	Cement mortar 1:6 (1 cement : 6 Coarse sand)	<b>110.00</b>	Cum		
<b>28</b>	Half brick masonry with non modular fly ash bricks of class designation 7.5, conforming to IS : 12894, in super structure above plinth and upto floor V level.				
<b>a</b>	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	<b>440.00</b>	Sqm		
<b>29</b>	Extra for providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry.	<b>440.00</b>	Sqm		
<b>Marble and Granite Work</b>					
<b>30</b>	Providing and fixing 18mm thick gang saw cut mirror polished premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills , facias, treads and risers of staircase with single piece granite slab 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. i) Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.				
<b>a</b>	Area of slab upto 0.50 sqm	<b>69.00</b>	Sqm		
<b>b</b>	Area of slab over 0.50 sqm.	<b>26.00</b>	Sqm		



<b>31</b>	Providing edge moulding to 18mm thick marble stone counters, Vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.				
<b>a</b>	Granite work.	<b>140.00</b>	metre		
<b>32</b>	Stone tile (polished) work in 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.				
<b>a</b>	8mm thick.				
<b>b</b>	Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	<b>26.00</b>	Sqm		
<b>33</b>	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.	<b>2.00</b>	<b>Nos</b>		
<b>34</b>	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab over 20 mm average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand), laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.				
<b>a</b>	Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	<b>66.00</b>	Sqm		
<b>35</b>	Providing & fixing 25mm wide chemical resistant, UV resistant and water proof anti-slip self adhesive tape of approved brand and manufacture and of desired shade in the polished granite surface f the stair case treads as per the direction of the Engineer-in-Charge.	<b>120.00</b>	mtr		
<b>WOOD &amp; PVC WORK</b>					
<b>36</b>	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 :				
<b>a</b>	30 mm thick including ISI marked Stainless Steel butt hinges with necessary screws.	<b>30.00</b>	Sqm		
<b>37</b>	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.				
<b>a</b>	Fixed to openings /wooden frames with rawl plugs screws etc.	<b>1400.00</b>	Kg		
<b>38</b>	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.	<b>6.00</b>	No.		



<b>39</b>	Providing and fixing bright finished brass hasp and staple (safety type) with necessary screws etc. complete:				
<b>a</b>	150 mm	<b>8.00</b>	No.		
<b>40</b>	Providing and fixing bright finished brass tower bolts (barrel type) with necessary screws etc. complete :				
<b>a</b>	250x10 mm	<b>30.00</b>	No.		
<b>b</b>	200x10 mm	<b>20.00</b>	No.		
<b>41</b>	Providing and fixing bright finished brass handles with screws etc. complete :				
<b>a</b>	125 mm	<b>32.00</b>	No.		
<b>b</b>	100 mm	<b>32.00</b>	No.		
<b>42</b>	Providing and fixing bright finished brass hanging type floor door stopper with necessary screws, etc. complete.	<b>16.00</b>	No.		
<b>43</b>	Providing and fixing PTMT door catcher of length 72 mm and dia. of 42 mm with suitable washers weighing not less than 33 gms	<b>16.00</b>	No.		
<b>44</b>	Providing and fixing magnetic catcher of approved quality in cupboard / ward robe shutters, including fixing with necessary screws etc. complete.				
<b>a</b>	Triple strip vertical type	<b>16.00</b>	No.		
<b>45</b>	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.				
<b>a</b>	1.0 mm thick.	<b>90.00</b>	Sqm		
<b>46</b>	Providing and Fixing, factory made, PVC door frame made of PVC extruded sections of size 75mm x 53 mm, having wall thickness 2.0mm (± 0.2mm). Both verticals sides of the frame reinforced with PVC profile of cross section size 28mm x 30mm x 2 mm thickness (± 0.2 mm) and 75 mm x 200 mm long, including reinforcing both ends of the top frame with PVC profile. PVC Door Frame and PVC reinforcement profile to be mitred cut jointed and fusion welded together, including providing and fixing 3 nos. of 125mm long stainless steel hinges to frame, fixing the frame with jamb with required nos. & sizes of anchor dash fastener, all complete as per manufacturer's specification and direction of engineer-in-charge.	<b>45.00</b>	mtr		

<b>47</b>	<p>Providing and fixing 37 mm thick factory made PVC Door shutter, styles and rails made of PVC hollow extruded printed and laminated section having overall dimension 115mm x 37mm with wall thickness 2 mm (<math>\pm 0.2</math>mm) with inbuilt beading on one side, the styles and rails mitred cut and joint at corners by inserting 2 nos. PVC profile reinforcement of size 75 mm x 200 mm long with cross section size of 28mm x 30mm having wall thickness 2 mm (<math>\pm 0.2</math>mm). Styles, rails and reinforcements to be fusion welded together. Only hinge side vertical style to be reinforced with PVC profile reinforcement in full length. Printed and laminated PVC lock rail of size 110mm x 37mm with wall thickness 2 mm (<math>\pm 0.2</math>mm) to be welded horizontally with the vertical styles after inserting PVC profile reinforcement as in styles and rails, providing with PVC snap fit beading, panels of 100 x 20 mm printed &amp; laminated and inserting 2 nos 6mm dia bright steel rod horizontally with both side threaded and tightened with check nuts and washers complete, all as per manufacturer's specification and direction of Engineer in charge.</p>	<b>13.00</b>	Sqm		
<b>48</b>	<p>Providing and fixing factory made uPVC white colour casement/casement cum fixed glazed windows comprising of uPVC multi-chambered frame, sash and mullion (where ever required) extruded profiles duly reinforced with 1.60 <math>\pm</math> 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape &amp; size according to uPVC profile), uPVC extruded glazing beads of appropriate dimension, EPDM gasket, stainless steel (SS 304 grade) friction hinges, zinc alloy (white powder coated) casement handles, G.I fasteners 100 x 8 mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame &amp; sash shall be mitred cut and fusion welded at all corners, mullion (if required) shall be also fusion welded including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing &amp; direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid separately). Note: For uPVC frame, sash and mullion extruded profiles minus 5% tolerance in dimension i.e. in depth &amp; width of profile shall be acceptable.</p>				
<b>a</b>	<p>Casement window single panel with S.S. Friction hinges (300 x 19 x 1.9 mm), made of (small series) frame 47 x 50 mm &amp; sash 47 x 68 mm both having wall thickness of 1.9 <math>\pm</math> 0.2 mm and single glass pane glazing bead of appropriate dimension. (Area of window upto 0.75 sqm.)</p>	<b>3.00</b>	sqm		

<b>49</b>	<p>Providing and fixing factory made uPVC white colour sliding glazed window upto 1.50m in height dimension comprising of uPVC multi-chambered frame with in built roller track and sash extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape &amp; size according to uPVC profile), appropriate dimension of uPVC extruded glazing beads and uPVC extruded interlocks, EPDM gasket, wool pile, zinc alloy (white powder coated) touch locks with hook , zinc alloy body with single nylon rollers( weight bearing capacity to be 40 kg), G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame &amp; sash shall be mitred cut and fusion welded at all corners including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing &amp; direction of Engineer-in-Charge. (Single / double glass panes, wire mesh and silicon sealant shall be paid separately). Note: For uPVC frame, and sash extruded profiles minus 5% tolerance in dimension i.e. in depth &amp; width of profile shall be acceptable.</p>				
<b>a</b>	Two track two panels sliding window made of (small series) frame 52 x 44 mm & sash 32 x 60 mm both having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension. (Area of window upto 1.75 sqm)	<b>40.00</b>	sqm		
<b>b</b>	Two track two panels sliding window made of (big series) frame 67 x 50 mm & sash 46 x 62 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension . (Area of window above 1.75 sqm upto 2.50sqm).	<b>37.00</b>	sqm		

<b>50</b>	<p>Providing and fixing factory made uPVC white colour casement/casement cum fixed glazed door comprising of uPVC multi-chambered frame, sash and mullion (where ever required) extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape &amp; size according to uPVC profile), uPVC extruded glazing beads of appropriate dimension, EPDM gasket, zinc alloy (white powder coated) 3D hinges and one handle on each side of panels along with zinc plated mild steel multi point locking having transmission gear, cylinder with keeps and one side key, G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame &amp; sash shall be mitred cut and fusion welded at all corners, mullion (if required) shall be also fusion welded including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing &amp; direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid separately). Note: For uPVC frame, sash and mullion extruded profiles minus 5% tolerance in dimension i.e. in depth &amp; width of profile shall be acceptable.</p>				
<b>a</b>	<p>Casement door with 3D hinges made of (big series) frame 67 x 64 mm &amp; sash 67 x 110 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead/double glazing bead of appropriate dimension. (Area of door upto 2.00 sqm).</p>	<b>5.00</b>	sqm		
<b>51</b>	<p>Providing and fixing factory made uPVC white colour fixed glazed Door comprising of uPVC multi-chambered frame and mullion (where ever required) extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape &amp; size according to uPVC profile), uPVC extruded glazing beads of appropriate dimension, EPDM gasket, G.I fasteners 100 x 8 mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame shall be mitred cut and fusion welded at all corners, mullion (if required) shall be also fusion welded including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing &amp; direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid separately). Note: For uPVC frame, sash and mullion extruded profiles minus 5% tolerance in dimension i.e. in depth &amp; width of profile shall be acceptable.</p>				
<b>a</b>	<p>Fixed glazing made of (big series) frame 67 x 64 mm &amp; mullion 67 x 80 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead of appropriate dimension. (Area of glazing above 2.5 Sqm.)</p>	<b>10.00</b>	sqm		

<b>52</b>	Providing and fixing 19mm thick boiling waterproof plywood of National, Green or equivalent grade of approved brand and manufacturer in cup boards ,drawers, shutters or of similar works i/c cost of nails,screws,adhesive etc complete as per direction of E.I.C.	<b>40.00</b>	sqm		
<b>53</b>	Providing and fixing bright finihed brass sliding door bolts of approved brand and manufacture with nuts and screws etc. complete as per direction of Engineer-in-Charge:				
<b>a</b>	300 X 16 mm	<b>18.00</b>	each		
<b>STEEL WORK</b>					
<b>54</b>	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from CRCA sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including S.S butt hinges 2.5mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge:				
<b>a</b>	Profile B				
<b>i</b>	Fixing with adjustable lugs with split end tail to each jamb.	<b>36.00</b>	mtr		
<b>b</b>	Profile C				
<b>i</b>	Fixing with adjustable lugs with split end tail to each jamb.	<b>62.00</b>	mtr		
<b>55</b>	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp, of internal dia 140mm, 73mm height, top lid of 1.5mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3mm dia. round headed screws, one lock at the corners. Clamp shall be made of 12mm dia M.S. bar bent to shape as per standard drawing.	<b>12.00</b>	No.		
<b>56</b>	Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
<b>a</b>	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	<b>300.00</b>	Kg		
<b>57</b>	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 <sup>2</sup> ), 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.				
<b>a</b>	10 x160 mm	<b>24.00</b>	No.		

<b>58</b>	Providing and fixing stainless steel ( Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge.( for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.)	<b>500.00</b>	Kg		
<b>FLOORING</b>					
<b>59</b>	Providing and fixing 1st quality digitally printed ceramic glazed wall tiles of size 300mm x 450mm or more conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of 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	<b>140.00</b>	sqm		
<b>60</b>	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) 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 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete.				
<b>a</b>	Size of Tile 600x600 mm in all rooms (Double charged high glossy finished)	<b>350.00</b>	Sqm		
<b>61</b>	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300mm or more (thickness to be specified by the manufacturer), of 1stquality conforming to IS : 15622, of approved make, in colours White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4(1 Cement: 4 Coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.	<b>60.00</b>	Sqm		
<b>62</b>	Providing and laying textured industrial tile of size 300x300x12 mm having water absorption less than 0.5% and conforming to IS: 4457:2007 of approved make in all colours and shades in outdoor floors such as footpath, court yard, parking areas, multi modals location etc., laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge.	<b>90.00</b>	Sqm		
<b>ROOFING</b>					

<b>63</b>	<p>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 &gt; 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 &amp;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 gsm ) 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 &amp; 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.</p>				
<b>a</b>	With 16 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.55 to 0.6)	<b>68.00</b>	Sqm		
<b>64</b>	<p>Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross "T" of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main'T' at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross 'T' of length 600 mm and size 24 x28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to from grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size(24x24X3000 mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm centre to centre with 25 mm long dry wall screws @ 230 mm interval and laying 15 mm thick densified edges calicum silicate ceiling tiles of approved texture in the grid, including, cutting/ making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required. Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods with galvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main 'T', bottom exposed with 24 mm of all Tsections shall be pre-painted with polyster baked paint, for all heights, as per specifications, drawings and as directed by Engineer-in-Charge.</p>				



i	Note: Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/ opening (cut outs) having area less than 0.30 sqm. The calcium silicate ceiling tile shall have NRC value 0.50 (Minium), light reflection > 85%, non-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity < 0.043 w/mK.	45.00	sqm		
65	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i)Single socketed pipes.				
a	110 mm diameter	70.00	Mtr		
66	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A including jointing with seal ring conforming to IS :5382 leaving 10 mm gap for thermal expansion.				
a	Bend 87.5°				
i	110 mm bend	12.00	No.		
67	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	110 mm	80.00	No.		
<b>FINISHING</b>					
68	12 mm cement plaster of mix :				
a	1:6 (1 cement: 6 coarse sand)	950.00	Sqm		
69	15 mm cement plaster on rough side of single or half brick wall of mix :	.			
a	1:6 (1 cement: 6 coarse sand)	700.00	Sqm		
70	12 mm cement plaster finished with a floating coat of neat cement of mix :				
a	1:4 (1 cement: 4 fine sand)	45.00	Sqm		
71	Neat cement punning	45.00	Sqm		
72	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.	1700.00	Sqm		
73	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade				
a	New work (Two or more coats applied @ 1.43 ltr/ 10 sqm. over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm).	900.00	Sqm		
74	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.				
a	On steel work	30.00	Sqm		



<b>75</b>	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.				
<b>a</b>	Two coats.	<b>1700.00</b>	Sqm		
<b>76</b>	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade:				
<b>a</b>	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture.	<b>120.00</b>	Sqm		
<b>77</b>	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.	<b>1600.00</b>	Sqm		
<b>ROAD WORK</b>					
<b>78</b>	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and tamping complete.	<b>30.00</b>	Cum		
<b>79</b>	Providing and fixing in position pre-moulded joint filler in expansion joints.	<b>500.00</b>	Per cm depth per cm width per m length		
<b>SANITARY INSTALLATION</b>					
<b>80</b>	Providing and fixing water closet squatting pan (Indian type W.C. pan ) with 100 mm PVC P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required				
<b>a</b>	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	<b>2.00</b>	<b>No.</b>		
<b>81</b>	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 :				
<b>a</b>	W.C. pan with ISI marked white solid plastic seat and lid	<b>6.00</b>	No.		
<b>82</b>	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:				
<b>a</b>	White Vitreous China Flat back wash basin size 550x400 mm with single 15 mm C.P. brass pillar tap.	<b>9.00</b>	No.		

<b>83</b>	Providing and fixing white vitreous china flat back half stall urinal of size 580x380x350 mm with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS : 2556 and cutting and making good the walls and floors wherever required:	<b>4.00</b>	No.		
<b>84</b>	Providing and fixing mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete. (Area of glass not less than 1.00 sqm)	<b>2.00</b>	Sqm		
<b>85</b>	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
<b>a</b>	Flexible pipe				
<b>i</b>	32 mm dia	<b>8.00</b>	No.		
<b>86</b>	Providing and fixing PTMT Bottle Trap for Wash basin and sink.				
<b>a</b>	Bottle trap 38 mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 263 gms	<b>9.00</b>	No.		
<b>87</b>	Providing and fixing glass shelf of approved quality supported on CP brass frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	<b>5.00</b>	each		
<b>88</b>	P/F C.P towel rail of make Plaza , Hifi or equivalent complete with brackets fixed to wooden cleats with C.P.brass screws etc. all complete as per direction of E.I.C.				
<b>a</b>	600 x 20 mm size.	<b>6.00</b>	Nos		
<b>89</b>	P/F Soap dish of approved brand and manufacture fixed to wooden cleats with C.P. brass screws all complete as per the directions of the Engineer-in-charge.	<b>6.00</b>	Nos		
<b>90</b>	Providing and fixing SWR PVC Soil, Waste and Vent pipes of SKIPPER, SUPREME, ASHIRVAD or equivalent make conforming to <b>IS:13592 (Type-B)</b> including jointing with seal ring conforming to IS:5382 or solvent cement as per site condition including testing of joints etc. complete as per direction of Engineer-in-Charge.				
<b>a</b>	110mm nominal out side diameter	<b>60.00</b>	mtr		
<b>b</b>	75mm nominal out side diameter	<b>30.00</b>	mtr		
<b>91</b>	Providing and fixing unplasticised rigid PVC injection moulded, fittings / Accessories conforming to <b>IS:14735</b> including jointing with seal ring conforming to <b>IS:5382</b> or with solvent cement and rubber lubricant including testing of joints etc. complete as per direction of Engineer-in-Charge.				
<b>a</b>	Plain bend 110mm	<b>18.00</b>	Nos		
<b>b</b>	Door bend 110mm	<b>9.00</b>	Nos		
<b>c</b>	Single Tee 110mm	<b>12.00</b>	Nos		
<b>d</b>	Single Tee Door 110mm	<b>12.00</b>	Nos		
<b>e</b>	Single "Y" Door 110mm	<b>1.00</b>	Nos		

<b>f</b>	Double "Tee" Door :110mm	<b>1.00</b>	Nos		
<b>g</b>	Double "Y" Door :110mm	<b>1.00</b>	Nos		
<b>h</b>	Multi floor Trap: 110mm	<b>12.00</b>	Nos		
<b>i</b>	Vent Cowl: 110mm	<b>6.00</b>	Nos		
<b>j</b>	Nahani Trap: 110mm	<b>6.00</b>	Nos		
<b>k</b>	P Trap / S Trap: 110mm x 110mm	<b>8.00</b>	Nos		
<b>a</b>	<b>WATER SUPPLY</b>				
<b>92</b>	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				
<b>a</b>	25 mm nominal outer dia .Pipes.	<b>15.00</b>	metre		
<b>b</b>	32 mm nominal outer dia. Pipes.	<b>15.00</b>	metre		
<b>c</b>	40 mm nominal outer dia. Pipes.	<b>30.00</b>	metre		
<b>93</b>	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.				
<b>a</b>	20 mm nominal outer dia .Pipes.	<b>44.00</b>	metre		
<b>b</b>	25 mm nominal outer dia .Pipes.	<b>50.00</b>	metre		
<b>94</b>	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings. This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge : External work				
<b>a</b>	50 mm nominal outer dia. Pipes.	<b>40.00</b>	metre		
<b>95</b>	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	<b>2500.00</b>	Litre		
<b>96</b>	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
<b>a</b>	15 mm nominal bore	<b>15.00</b>	No.		
<b>97</b>	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.				
<b>a</b>	15 mm nominal bore.	<b>8.00</b>	No.		
<b>98</b>	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				
<b>a</b>	15mm nominal bore	<b>10.00</b>	No.		

<b>99</b>	Providing and fixing unplasticised P.V.C. connection pipe with PTMT Nuts, collar and bush of approved quality and colour.				
<b>a</b>	15 mm nominal bore with 45 cm length.	<b>15.00</b>	No.		
<b>100</b>	P/F handle type bronze ball valve with screwed end of DRP, Zoloto, Tap or equivalent manufacturer:				
<b>a</b>	25 mm dia nominal bore.	<b>4.00</b>	Nos		
<b>b</b>	32 mm dia nominal bore.	<b>4.00</b>	Nos		
<b>c</b>	40 mm dia nominal bore.	<b>2.00</b>	Nos		
<b>d</b>	50 mm dia nominal bore.	<b>1.00</b>	Nos		
<b>101</b>	Providing and fixing Health Faucets with flexible tube upto 1.00 metre long of Parryware (Cardiff-T9941A1) or equivalent approved quality and make, as approved by Engineer - in - charge.	<b>6.00</b>	Nos		
<b>102</b>	Providing and fixing C.P. brass Two-Way bib cock of Parryware (G1434A1) or equivalent approved quality and make, as approved by Engineer - in - charge.				
<b>a</b>	15 mm nominal bore.	<b>6.00</b>	Nos		
<b>103</b>	Providing and fixing C.P. brass shower rose of Parryware (T9934A1) or equivalent approved quality and make, as approved by Engineer - in - charge.	<b>3.00</b>	Nos		
<b>DRAINAGE</b>					
<b>104</b>	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design:				
<b>a</b>	160 mm diameter PVC pipe	<b>15.00</b>	mtr		
<b>105</b>	Constructing brick masonry manhole in cement mortar 1:4 ( 1 cement : 4 coarse sand ) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :				
<b>a</b>	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
<b>i</b>	With common burnt clay F.P.S. (non modular) bricks of class designation 5.0	<b>4.00</b>	No.		
<b>106</b>	Extra for depth for manholes				
<b>a</b>	Size 90x80 cm				
<b>i</b>	With common burnt clay F.P.S. (non modular) bricks of class designation 5.0	<b>1.00</b>	mtr		
<b>107</b>	Providing M.S. foot rests including fixing in manholes with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) as per standard design :				
<b>i</b>	With 20 mm diameter round bar	<b>10.00</b>	No.		

<b>108</b>	Making soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with bricks and S.W. drain pipe 100 mm diameter, 1.8 m long complete as per standard design.				
<b>a</b>	With common burnt clay F.P.S. (non modular) bricks of class designation 5.0	<b>1.00</b>	No.		
<b>109</b>	Providing, laying and jointing unplasticised rigid PVC pipes conforming to <b>IS: 13592 (Type-B) for under ground sewerage lines</b> including jointing with uPVC solvent cement including testing of joints etc. complete as per direction of Engineer-in-Charge:				
<b>a</b>	110mm nominal out side diameter	<b>5.00</b>	mtr		
<b>b</b>	160mm nominal out side diameter	<b>20.00</b>	mtr		
<b>a</b>	<b>ALUMINIUM WORK</b>				
<b>110</b>	Providing and fixing glazing in uPVC casement / sliding window / ventilator shutters and partitions etc. with EPDM / TPV gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of uPVC glazing bead shall be paid in basic item):				
<b>a</b>	Coloured tinted toughened float glass 6mm thick substrate with reflective soft coating on face # 2, having properties as visible Light transmittance (VLT) of 18 to 35%, Light reflection internal 8 to 15%, light reflection external 10 to 25 %, shading coefficient (0.25- 0.35) and U value of 3.0 to 4.0 W/m <sup>2</sup> degree K etc. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	<b>60.00</b>	Sqm		
<b>b</b>	With clear float glass toughened panes of 8 mm thickness	<b>13.00</b>	sqm		
<b>a</b>	<b>WATER PROOFING</b>				
<b>111</b>	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of:				
<b>i</b>	Ist course of applying cement slurry @ 4.4 kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface.				
<b>ii</b>	IIInd course of 20 mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface.				
<b>iii</b>	IIIrd course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of area.				
<b>iv</b>	IVth course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/ sqm).	<b>15.00</b>	Sqm		
<b>112</b>	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations:				
<b>a</b>	Applying a slurry coat of neat cement using 2.75 kg/sqm. of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls up to 300 mm height including cleaning the surface before treatment.				

<b>b</b>	Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand ) admixed with waterproofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs				
<b>c</b>	After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge.				
<b>d</b>	Finishing the surface with 20 mm thick joint less cement mortar of mix1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep.				
<b>e</b>	The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge :				
<b>i</b>	With average thickness of 120mm and minimum thickness at khurra as 65 mm.	<b>246.00</b>	Sqm		
<b>Sub-Head : RAIN WATER HARVESTING &amp; TUBEWELLS</b>					
<b>113</b>	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	<b>5.00</b>	Cum		
<b>114</b>	Supplying, filling, spreading & leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	<b>2.00</b>	Cum		
<b>115</b>	Supplying, filling, spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads& lifts, all complete as per direction of Engineer -in-charge.	<b>2.00</b>	Cum		

Executive Engineer (Civil),  
BSNL Civil Division, Sambalpur

**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:** **Construction of DFO (KL) office Building at ATHMALLIK-Electrical part -**

**Estimated cost of Work** : **Rs 12,09,636 (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, Sambalpur

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, Sambalpur

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.

Chief Engineer (Elect.)  
OR  
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-II & 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 31<sup>st</sup> 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**

<b>S. NO.</b>	<b>Item</b>	<b>Makes</b>
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
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.

**SPECIFICATIONS OF 1.5 TR INVERTER TYPE SPLIT AC UNITS****GENERAL:**

The scope of work includes Supplying, Installation, testing and commissioning of 1.5 TR inverter type, minimum 3-Star rated with copper Evaporator and condenser coil, wall mounting split AC units operating on 230 V 50 Hz AC supply, filled with R 410A refrigerant gas as per specifications including transportation to various sites as per work order issued, fixing of indoor and outdoor units, suitable support arrangements, laying of copper refrigerant pipes, and electrical wiring including gas charging , making thermal insulation with readymade poly foam tube , making opening in the wall and making good the damages, leak testing, giving electrical connection etc complete for testing and commissioning of units.

Technology	:	Variable speed compressor motor
Cooling capacity 1391(part 2)	:	Not less than 5100 watts as per IS
Minimum Room Air Flow	:	min 600CFM
Energy Efficiency as per ISEER	:	3.5 to 3.99 W/W
BEE Star Rating Compressor	:	Minimum 3 Star Rated (BEE approved) Rotary / Dual Rotary
Refrigerant	:	R 410A
Coil material	:	All Copper

**1 CONSTRUCTION****1.1 General**

- 1.1.1 The air conditioner and its parts shall be constructed with the strength and rigidity adequate for normal conditions of handling, transport and usage.
- 1.1.2 There shall be no sharp edges or comers liable to cause injury under normal conditions of use and all moving parts which constitute accident hazards shall be effectively guarded.
- 1.1.3 Parts which require periodic servicing shall be readily accessible

**1.2 Material**

- 1.2.1 Materials used in the construction of cabinet, front panel etc. shall comply with the corresponding Indian Standards wherever applicable except where such requirements are modified.
- 1.2.2 The material shall be free from defects which are liable to cause undue deterioration or failure.
- 1.2.3 Under normal conditions of use and maintenance, the materials used shall not shrink, deteriorate, warp or cause mould or odours and shall be resistant to attack of vermin and destructive pests.



3. The pipe length between Indoor unit and outdoor unit shall be 5 m when laid horizontally.

4.2 Maximum Operating Test conditions

The maximum operating tests shall be conducted under the conditions specified below:

Room air temperature:

a) Dry bulb 35°C

b) Wet bulb 24°C

Outside air temperature:

a) Dry bulb 46°C

b) Wet bulb 27°C

Test voltage 90% & 110% of nameplate rating

Test frequency Rated frequency

- 5 Air conditioners shall be capable of performing the functions as cooling, dehumidifying, air Circulating and filtering. The Air conditioners shall be provided with adjustable step less type electronic thermostat.
- 6 Outdoor unit of the air conditioners shall be fitted with discharge cooled type rotary compressor operating on Refrigerant non-CFC refrigerant R-410A with suitably rated variable speed motor. It shall be equipped with overload protection and shall be mounted on resilient mountings for quiet operation. The Rotary compressor shall be of Matsushita /Hitachi/ Toshiba/ Carrier/ Emerson/ LG /Tecumseh/Danfoss make and shall be covered by manufacturers test certificate and Type Test Certificate according to JIS or ASHRAE.
- 7 Remote cordless control with LCD/LED Display shall be provided with one On/Off timer, selecting Fan speed (three speeds) and setting up of temperature. Display shall be provided on indoor unit or on handset or on both.
- 8 Air conditioners shall be provided with standard refrigerant Cu pipe of minimum 3 mtrs length along with electrical wire and drainage pipe.
- 9 Type Test Certificate for two samples of each type /model of Air conditioners from any NABL/ILAC Accredited laboratory shall be submitted by the firm. The type test results shall include capacity test at standard rating test conditions and maximum operating test as specified in IS: 1391(Part-2)- 1992.
- 10 **Servicing:** Free servicing shall be provided for 15 months from the date of supply or 12 months from the date of installation of air conditioner whichever is earlier. Firm is also required to send service engineer at least 3 times during the warranty period.

- 11 **Manufacturer's Guarantee:** The manufacturer shall give a guarantee for the soundness of construction and performance of the air conditioner and shall be responsible for putting right any manufacturing defects free of charge for a period of 15 months from the date of supply or 12 months from the date of installation of air conditioner,
- 12 **Installation :** The installation charges shall include the following work:-
- i) Mounting/Fitting indoor and outdoor units at the respective locations.
  - ii) Laying refrigerant piping of required length and connecting both the units after drilling hole/holes in the wall, if required.
  - iii) Leak testing of the entire system.
  - iv) Charging Refrigerant gas in the unit.
  - v) Suitable electric wiring between indoors and outdoors units of required length up to switch at location of indoor unit. Switches/ Sockets /Plugs are not included in the scope of supply.
- 13 **Inspection :**
1. The firm should offer prototype testing before dispatch from factory. However the department reserves the right to waive off the inspection.
  2. Quality inspection certificate / Routine test certificate of the Inverter Split AC units shall be submitted at the time supply.

#### **OTHER TECHNICAL SPECIFICATIONS**

1. The works shall be done as per current CPWD specifications for Electrical works as amended from time to time & Indian Electricity Rules as amended up to date.
2. The work shall be supervised by a qualified Engineer
3. The layout of the work will be given by Engineer-in-charge or his duly authorized representative at site of work.
4. All materials to be used on this work by the contactors shall be got approved from the Engineer in – charge before installation at site.
5. Any damages done to the building by the contractors during the execution of works shall have to be made good at his cost & risk. If he does not do himself within a reasonable time determined by the Executive Engineer (E), then the same will be got done at his risk & cost departmentally after giving notice to him.
6. The agency should recess the conduit in the walls before they are plastered and in co-ordination with building work in progress. Any damage done will have to make good at the cost of the contractor. The conduit pipe should be mechanically and electrically continuous.
7. Bad workmanship will not be accepted and defects shall be rectified at contractor's cost to the satisfaction of the Engineer-in-charge. The progress of electrical works is to be coordinated in accordance with the buildings works and no claim for idle labour will be entertained by the department.
8. All the debris of the electrical works should be removed and the site should be cleared by the contractors immediately after the occurring of debris, similarly any rejected materials should be immediately cleared-off from the site by the contractor.

9. Cement for this bonafide work is to be arranged by the contractors himself and nothing extra will be paid on this account.
10. The contractor or his authorized representative is bound to sign the site order book as and when required by the Engineer – in – charge and to comply with the remarks therein.
11. The contractor shall make his own arrangement at his own cost for electrical / general tools and plants required for the work.
12. The entire installation shall be at the risk & responsibility of the contractor until these are tested and handed over to the department. However if there is any delay from the department side, the installation may be taken over in parts but the decision on the same shall rests with Engineer – in – charge which shall be binding on the contractor.
13. Notwithstanding the schedule of quantities, all items of interrelated works considered necessary to make the installation complete and operative are deemed to be included, shall be provided by the contractor at no extra cost.
14. The connections & inter-connections shall be done by the contractor wherever required for energization of the installation and nothing extra shall be paid on this account.
15. In case some items/ part of the items have already been executed, the successful tenderer shall have to bear the cost of the same for completing the work. The recovery for such items/part of the items shall be made at the rates tendered by the contractor for the particular item if existing in the agreement. If the item does not exist in the agreement, then the recovery rate shall be schedule rates for the items plus/minus enhancement under clause 12 of the agreement.
16. Acceptable make of the materials shall be as per latest issue of product directory circulated in BSNL, however a list of approved make is attached.
17. The contractor shall have to obtain prior approval from Engineer – in – charge before placing order for any specific materials. The Engineer – in – charge may approve any of the makers of brands out of the above list.

<b>TECHNICAL SPECIFICATION DATA SHEET FOR INVERTER SPLIT AIR CONDITIONERS</b>			
<b>Name of Agency</b>			
<b>Sl.no.</b>	<b>Description of item</b>	<b>Details of Specifications</b>	<b>Remarks if any</b>
1	Name of the AC Manufacturer		
2	Model of Inverter Split AC		
3	Nominal cooling capacity in Watts		
4	Type of Compressor		
5	ISEER		
6	BEE Star Rating		
7	Type of Refrigerant		

8	Air Flow in CFM		
9	Overall Dimensions of Room Unit(Wall Mounted) LxWxH(mm)		
10	Overall Dimensions of Outdoor Unit LxWxH(mm)		
11	Name of the Compressor Manufacturer		
12	Model of Compressor		
13	Rating of Compressor Motor		
14	Guarantee period of AC unit		
15	Guarantee period of compressor		
16	Max. Current drawn		
17	Fan motor details (Outdoor unit)		
18	Air Delivery of Condenser Fan at Full Speed at Rated Voltage M <sup>3</sup> /hr		
19	Tube Material of condenser coil, OD & Thickness		
20	Tube Material , OD & thickness of Evaporator coil		
21	Details of Fan Propeller/Blower		
22	Type of control		
23	Type of Filters		
24	Any other additional features		
25	Are manufacturer's catalogue / manual provided		

**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 confirm 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 suitably 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 coordination 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-Station 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 conform 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 earthing 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.

## SPECIFICATIONS FOR AC CONTROLLER

### 5.1 Default Operation:

- a. Low temperature setting 24.0°C, High temp setting 30.0°C, sequence time 2hrs, check time 7mins.
- b. After switch on the controller it gives a time delay of 2min & then check room temperature if the temperature between : 24.0°C to 30.0 °C then it switch on AC1, if the temperature remains in this range, then after 2 hrs, it switch off AC1 & switch on AC2 automatically & this process continues cyclically.
- c. If room temperature goes above 30.0 °C, then the controller switched on 2<sup>nd</sup> AC after 7min & check the room temperature at every 7 mins interval, if the temperature come down to the range of 24.0°C to 30.0 °C , then, controller switch off the ACs in FIFO system.

**If the temperature does not come down to this range, then, both the ACs remains on till the temperature come down to this range.**

#### **When temperature goes below 24.0°C:**

Controller switch off both ACs one by one with a time interval of 7 minutes .

### 5.2 Salient Features:

- (1) Controls two nos of Split /Room air conditioners.
- (2) Separate Phase Supply for each A/C.
- (3) 16x2 Liquid crystal display to display status & settings.
- (4) Accurate Temperature sensing by precise temperature sensor.
- (5) Time delay restarting facility for Compressor protection.
- (6) Voltage protections for each compressor.
- (7) Separate alarm relay contacts for Room High temperature
- (8) Various set points are settable through keypad.
- (9) Password Protection.
- (10) Auto/manual switch for dual mode operation
- (11) Default temperature setting: 24.0°C to 30.0 °C.

### 5.3 Technical Specifications:

- 1) Controller Supply Voltage: (175-250 V AC, 50 Hz)
- 2) Contact Rating: 30 A at 230 V AC for Compressor Live Outputs & 5 A at 250 V AC for Alarm & Potential Free Outputs (NO/NC).
- 3) Temperature Sensor: Thermistor Sensor NTC 10K@25°C

- 4) Temperature Sensing Range: 0.0°C to 100.0 °C.
- 5) Resolution: 0.1°C for temperature.
- 6) Keys: 4 key keypad for settings.
- 7) Menu Key : To enter into FUNCTION SET Mode/To view the next set point.
- 8) Up Arrow Key: To increment the set point.
- 8) Down Arrow Key: To decrement the set point.
- 10) ENTER Key: To come out of FUNCTION SET mode/To enter into menu/To accept the password.
- 11) Mounting: Wall mounting.

## **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.



**SCHEDULE -A (for Electrical work)**

**Name of Work: Construction of DFO (KL) office Building including services at ATHMALLIK.**

SI No	Description of Items	Quantity	Unit	Rate	Amount
	<b>Sub-Head-I(Wiring)</b>	-			
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.				
	a) Group c	138.00	Point		
2	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc as required.	6.00	Point		
3	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.	240.00	Mtr.		
	b) 4 x 4 Sq.mm. with 2 No. 4 sqmm. FRLS PVC insulated copper cond. Single core cable for loop earthing.	120.00	Mtr.		
4	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	320.00	Mtr.		
	b) 2 x 6 Sq.mm.+1 x 6 Sq.mm. earth wire	80.00	Mtr.		
	c) 2 x 10 Sq.mm.+1 x 6 Sq.mm. earth wire	100.00	Mtr.		
	d) 4 x 10 Sq.mm.+2 x 6 Sq.mm. earth wire	80.00	Mtr.		
5	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	100.00	Mtr.		
	b) 25mm	110.00	Mtr.		

	c) 32mm	120.00	Mtr.		
6	Supplying & drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/PVC conduit as required.				
	a) 3 x 1.5Sq.mm	120.00	Mtr		
	b) 6 x 1.5Sq.mm	125.00	Mtr		
7	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).	18.00	Each		
8	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.	24.00	Each		
9	Supplying and fixing following size/ modules, GI box along with modular base & cover plate for modular switches in recess etc as required.				
	(a) 01 or 2 Module (75mmX75mm)	10.00	Each		
	(b) 03 Module (100mmX75mm)	2.00	Each		
	(c) 04 Module (125mmX75mm)	6.00	Each		
	(d) 06 Module (200mmX75mm)	20.00	Each		
	(e) 08 Module (125mmX125mm)	20.00	Each		
	(f) 12 Module (200mmX150mm)	40.00	Each		
10	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	120.00	Each		
	b) 3 pin 5/6 amp socket outlet	120.00	Each		
	c) 15/16 amps switch	50.00	Each		
	d) 6 pin 15/16 amp socket outlet	50.00	Each		
11	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	28.00	Each		
	<b>Sub-Head-II(Fan &amp; Fittings)</b>				
12	ITC of pre-wired, fluorescent fitting/compact fluorescent fitting/ LED fittings of all types, complete with all accessories and tube etc. directly on ceiling/wall, including connection with 1.5 sq mm FRLS PVC insulated, copper conductor ,single core cable and earthing etc.as required.	10.00	Each		

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.	24.00	Each		
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)	72.00	Each		
15	S/F of PVC batten/ angle holder including connection etc. as required	5.00	Each		
16	Supplying & fixing following modular type special luminaries 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)	20.00	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)	12.00	Each		
	c) surface type LED 1200x300mm flat panel of 34 W 5700K diffused lighting . ( make havells Model Pluto 1200x300 Panel, LHEWEIP7IK1W034 or equivalent Philips/ Bajaj model)	8.00	Each		
	d) 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)	8.00	Each		
	e) 140mm round 15 W LED recess type down lightrer(5700K) with integrated driver etc as reqd. (Make Havells,Philips or Bajaj)	14.00	Each		
	f) 140mm round Surface type 15 W LED down lightrer(5700K) with integrated driver etc as reqd. (Make Havells,Philips or Bajaj)	22.00	Each		
	g) surface type LED 300x300mm flat panel of 15 W 5700K diffused lighting . ( make havells Model Pluto 1x1 Panel, equivalent Philips/ Bajaj model)	12.00	Each		
17	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.	24.00	Each		
18	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).	24.00	Each		

19	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	4.00	Mtr		
	(b) 35mmX5mm MS Flat	4.00	Mtr		
	(c) 16 SWG MS sheet	1.00	Sqmtr		
20	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	5.00	Mtr		
21	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)	9.00	Each		
22	Supply and Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.				
	a) 300 mm sweep	7.00	Each		
23	S/F of 400mm sweep superior quality Wall mounting fan with swing mechanism and speed regulator, connection, testing etc. complete as required. (Make-Havells- Platina Bajaj-media/ Crompton Greaves-High Flo)	11.00	Each		
	<b>SUB HEAD III (Main Panel &amp; DB)</b>				
24	S.I.T.C of floor/ Wall mounted, powder coated L.T 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 200A Busbar, 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.	1.00	Each		
	<b>Details of switch gears</b>				
	<b>Incoming</b>				
	a) 100A 4P TPN SDFU Conforms to IEC 60947-3, IS/IEC 60947-3 (L&T FN SDFU Range)-1No				
	<b>OUTGOING</b>				
	a) 63A 4P TPN SDFU with bolted type HRC Fuse Conforms to IEC 60947-3, IS/IEC 60947-3 (L&T FN SDFU Range)-1No				

	b) 32A 4P TPN SDFU with bolted type HRC Fuse Conforms to IEC 60947-3, IS/IEC 60947-3 (L&T FN SDFU Range)-4No				
	c) Cable alley/ cable end box of suitable size with stud connector of suitable current rating.				
	d) Metering panel consisting with 1 No backlit LCD display multi parameter meter of HPL make Emfis vifpe model complete with LED type indicator and controlling switch and fuse i/c accessories and interconnection, etc. as reqd. //ALL OF THE ABOVE COMPRIESES 1 SET//				
25	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)				
	a) 4 way (4+12), Double door	3.00	Each		
26	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.				
	a) Single pole	24.00	Each		
	b) Single pole & neutral	1.00	Each		
27	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	2.00	Each		
28	Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	a) 40 amp	2.00	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.				
	a) 63 amp	2.00	Each		
	b) 100 amp	1.00	Each		
30	Supplying & fixing of single pole blanking plate in the existing MCB DB complete etc. as required.	2.00	Each		
	<b>Sub-Head-IV (Earthing and loop earthing)</b>				

31	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.	2.00	Set		
32	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	20.00	Mtr		
33	Providing and fixing 25 mm X 5 mm GI strip on surface or in recess for connection etc. as required.	10.00	Mtr		
34	Providing and fixing 6 SWG GI wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ sub main wiring/ cable as required.	115.00	Mtr		
35	Providing and fixing earth bus of 50 mm X 5 mm copper strip on surface for connections etc as required.	0.50	Mtr		
<b>Sub-Head-V (Cables and Accessories)</b>					
36	Supplying of following size stranded Aluminium conductor PVC insulated and PVC/XLPE sheathed & armoured power cable of 1.1 KV grade as required. (Finolex/Universal/Polycab, with ISI)				
	a) 3.5 core 35 sq mm	65.00	Mtr		
	b) 3.5 core 25 sq mm	60.00	Mtr		
37	Laying of one no. PVC insulated and PVC sheathed/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)	75.00	Mtr.		
38	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.	5.00	Mtr.		
39	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.	5.00	Mtr.		
40	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size directly in ground including excavation, sand cushioning, protective covering and refilling the trench etc as reqd.				
	a) Upto 35 Sq. mm.	40.00	Mtr.		

41	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, 25 Sq. mm (28mm)	6.00	Each		
	b) 3.5 core, 35 Sq. mm (28mm)	4.00	Each		
	<b>Sub-Head-VI (SITC of Split AC)</b>				
42	SITC of wall mounted 1.5 TR capacity split type Air conditioning unit with five star rating approved by BEE, consisting of wall mounted indoor unit and condenser unit with nominal cooling capacity of minimum 5100W including standard installation kit (Refrigerant pipe with insulation & chord wire of 5 mtrs length) suitable for operation on 230 volts, single phase, 50 Hz AC supply with scroll/rotary compressor suitable for R410A refrigerant, cordless remote controller, auto air swing louvers etc. including mounting indoor unit on wall, installation of condensing units on existing outdoor support structure on the terrace/ sunshade/appropriate place as per site requirements etc. as required. Model accompanied by technical details of unit shall be offered by the firm (Make: Blue star/Voltas/Daikin/Hitachi/LG/Carrier/ Panasonic).	4.00	Each		
43	Supplying and laying of copper refrigerant piping (liquid & gas) as per the recommendations of the manufacturer of suitable size and gauge with all accessories such as bends, elbows, unions etc., brazing/soldering, clamping/binding with suitable tie knots on existing tray/channel, providing insulation with suitable material as per latest industry standard etc. for following type AC units as required.				
	a) 1/4" (22SWG) copper refrigerant pipe	10.00	mtr		
44	Providing and fixing suitable size PVC cover for protection of copper pipes etc i/c bends, tee etc all complete as required.	10.00	mtr		
45	Supplying and laying of 20 mm dia rigid PVC pipe as drain pipe including all accessories such as bends, elbows, flexible connections etc. as required.	10.00	mtr		
46	Supplying and laying of PVC insulated PVC sheathed armoured flexible copper conductor cable of following size for making connection from indoor unit to outdoor unit etc complete as required.				
	a) 2.5 Sqmm, 4 core	10.00	mtr		



## NIT

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47	Providing & fixing of outdoor unit mounting arrangement made out of MS bracket duly powder coated including grouting fastener bolt, minor civil work, if any, for 1.5 TR/2.0 TR type AC unit etc complete as required.	4.00	Each		
48	Supplying and charging of (R410A) refrigerant in the existing system after vaccumisation, leak testing and pressure testing etc complete as required.	2.00	Each		

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BSNL Civil Division, Sambalpur