

O/o Executive Engineer (E),
BSNL Electrical Division
3rd Floor, Door Sanchar Bhawan
Unit-IX, Janpath, Bhubaneswar - 751022
Phone – (0674) -2544902, FAX- 2540617
Email – eeebsnlbbsr@gmail.com



भारत संचार निगम लिमिटेड
(भारत सरकार का उपक्रम)
BHARAT SANCHAR NIGAM LIMITED
(A Govt. of India Enterprise)



e- Tender Document

NIT No- 218/BSNL/BSR/2018-19

Name of Work:- Providing Electro-Mechanical installations/services and Safety & Security works for Infrastructure works of IAF sites under NFS Project at Air Force Station KORAPUT for PACKAGE -II (Refurbishment work). S.H: Providing Internal wirings & fittings, MCBDBs, MCBs & Cables, MV Distribution panel, Electrical & Jack earthings, Surge Protection Devices and SITC of Split AC unit)

Regd. Office : Bharat Sanchar Bhavan, Harish Chandra Mathur Lane, Janpath, New Delhi-110 001
Website: www.bsnl.co.in

BHARAT SANCHAR NIGAM LIMITED**(A GOVT OF INDIA ENTERPRISE)**O/o Executive Engineer (E), BSNL Electrical Division, Bhubaneswar**NIT NO- 218 /BSNL/BSR/2018-19**

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This NIT contains 170 pages

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

O/o Executive Engineer (E), BSNL Electrical Division

3rd Floor, Door Sanchar Bhawan, Unit- IX, Bhubaneswar – 751022Phone – (0674) -2544902, FAX- 2540617, Email- eebsnlbbsr@gmail.com**NOTICE INVITING e-TENDER**

The Executive Engineer (Elect.), BSNL Electrical Division, 3rd Floor, Door Sanchar Bhawan, Unit- IX, Bhubaneswar – 751022 (Phone – (0674) -2544902, FAX- 2540617) on behalf of Bharat Sanchar Nigam Limited, invites online item rate e-tenders in Two Bid system from eligible contractors for the work as details given below:

1.1. GENERAL DETAILS

1	NIT No.	218 /BSNL/BSR/2018-19
2	Name of work	Providing Electro-Mechanical installations/services and Safety & Security works for Infrastructure works of IAF sites under NFS Project at Air Force Station KORAPUT for PACKAGE -II (Refurbishment work). S.H: Providing Internal wirings & fittings, MCBDBs, MCBs & Cables, MV Distribution panel, Electrical & Jack earthings, Surge Protection Devices and SITC of Split AC unit)
3	Estimated cost of the work Inclusive of all taxes (including GST)	₹ 7,95,569/-
4	Completion period	02 months
5	Earnest Money Deposit (EMD) - @2% of estimated Cost	₹ 15,911/-
6	Mode of submission of EMD	DD/FDR/TDR/BG of a Nationalized/Scheduled Bank in favour of "Accounts Officer (Cash), BSNL, O/o the GMTD, Bhubaneswar." OR e-payment as per instruction of Para: (1.7) below
7	Tender Cost (Non Refundable)	₹ 500/- + GST @18% = ₹ 590/- **
8	Mode of submission of Tender Cost	Through E-payment mode (NEFT/RTGS/E-Transfer) only directly to BSNL account as per instruction of Para: (1.7) below.
9	Tender processing fees including taxes (Non Refundable)	₹ 590/- (in favour of M/s. ITI Limited through on-line payment, Debit / Credit card)
10	Availability of tender Documents for free view only	www.odisha.bsnl.co.in/tender
11	Availability of Tender for free view downloading and online submission.	The links of website www.tenderwizard.com /BSNL
12	Date of availability of tender documents in Tender wizard portal for downloading	From Date: 05.02.2019
13	Last date and time of closing of online submission of tenders along with all requisite documents and e-payment transaction receipt of Tender cost.	Date: 14.02.2019 (up to 17:00 Hrs.)
14	Date and time of online opening of technical bid.	On or after 11.00 hrs dtd. 15.02.2019
15	Date and time for online opening of financial bids	Date: 16.02.2019 at 15.30 hrs
16	Date of submission of Original EMD and hard copies of other requisite documents as per para 3.15 below.	To be submitted by L-1 tenderer only, within one week after the opening date of Financial bid.
17	Competent authority inviting tender	Executive Engineer (E), BSNL Electrical Division, 3 rd Floor, Door Sanchar Bhawan, Unit- IX, Bhubaneswar – 751022 Phone – (0674) -2544902, FAX- 2540617, Email- eebsnlbbsr@gmail.com

**** TENDER COST SHALL BE PAID THROUGH E-PAYMENT MODE ONLY.**

Note: In case the last date of submission / opening of tender is declared to be a holiday, last date of submission / opening of tender will get shifted automatically to next working day at the same scheduled time. Any change in tender submission/ opening date due to any other unavoidable reasons will be notified through the BSNL web site and/ or e-Tender Portal and/or newspapers.

- 1.2. The Tender document can be downloaded from the website: **www.tenderwizard.com/BSNL** and to be submitted in e-tendering portal only.
- 1.3. BSNL has decided to use the process of e-tendering for inviting this tender and thus the physical copy of the tender would not be sold.
- 1.4. Intending tenderer are requested to register themselves with M/s. ITI Limited through the website **www.tenderwizard.com/BSNL** for obtaining user-id, Digital Signature etc., by paying Vendor registration fee and processing fee for participating in the above mentioned tender.
- 1.5. Amendments, if any, to the tender document will be notified in the above website as and when such amendments are made. It is the sole responsibility of the tenderer who have downloaded the tender document from the website to keep themselves abreast of such amendments before submitting the tender document.
- 1.6. In case at any stage, it is found that any addition / deletion / correction or tempering has been made in the downloaded tender documents, the tender shall be treated as non-responsive and shall be rejected. BSNL shall have the absolute right to take any action as deemed fit, without any prior intimation to the firms.
- 1.7. **The cost of EMD can also be paid through online Banking / RTGS / NEFT as per the following details. The Tender cost should be submitted through e-payment mode only.**

Name of the Bank and Branch	UNION BANK OF INDIA, BHUBANEWAR
Accounts Name	A.O(Cash), BSNL, O/o GMTD Bhubaneswar
Account Number	380801010035275
IFC Code	UBIN0538086
Address of the Bank	Ashok Nagar Branch, Bhubaneswar-751009, Odisha
MICR Code	751026002
Contact No	Tel.No.0674-2541969

The scanned copies of the E-Payment receipt towards Tender cost (mandatory for e-payment) and EMD (if paid through e-payment mode) are to be uploaded in the e-Tendering Portal along with other requisite documents.

2.0 ELIGIBILITY CRITERIA

2.1 BSNL enlisted contractors of Class-III & above in Electrical category.

OR

2.2. The contractor enlisted in CPWD, MES and Railways in respective class as per their tendering limits.

AND

2.3 Average annual turnover during the last three years, ending 31st March of the previous financial year, should be at least Rs.2,38,671/-

AND

2.4 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 Rs.3,18,228/-

OR

ii. Two similar successfully completed works costing not less than the amount equal to Rs.4,77,341/-

OR

iii. One similar successfully completed works costing not less than the amount equal to Rs.6,36,455/-

- Note:**
- 1. The firm shall have to possess a valid Electrical license of appropriate voltage issued by any State Govt.**
 - 2. Testimonials of satisfactory completion of works should be obtained from an officer not below the rank of Executive Engineer.**
 - 3. Similar works is defined as: Providing EI & Fans, Earthings & ITC of Split AC units etc.**

3.0. INFORMATION & GENERAL INSTRUCTIONS FOR TENDERER:

3.1 Prospective tenderer or General public can see and download free of cost PDF format of the tender documents from website: www.tenderwizard.com/BSNL.

To participate in the tender, prospective tenderer are requested to download the excel formats, after login in the Home page of the website www.tenderwizard.com/BSNL with **User ID/Password/Class III Digital Signature Certificate.**

3.2 Prospective Tenderer has to fill Excel Documents and upload the same without renaming it. The tenderer has also to down load and upload the PDF file of Techno commercial bid in the e-tendering portal along with other requisite documents without making any alternations, additions & deletions etc. Please refer Help Manual for Tender submission or contact ITI Helpdesk.

3.3 The Intending tenderer must read the terms and conditions of Notice Inviting Tender, eligibility criteria, Specifications, General, Commercial, Special conditions of the tender and clauses of contract carefully. He should only submit his tender if he considers himself eligible and he is in possession of all the supporting documents required.

- 3.4 Information and instructions for tenderer posted on website shall form part of tender document.
- 3.5 The intending tenderers should get themselves registered with M/s ITI Limited, as per instructions on web site. The intending tenderers who need digital signature should also contact **M/s ITI Limited** well in advance for issue of digital signature. **Help desk of M/s ITI: Sh. Biswajit Kar, Mob No- 9438724476, Tender Wizard Office no- 011-49424365, Email- twhelpdesk691@gmail.com**
- 3.6 After registration, the intending tenderer has to make a request for the particular tender for which he has to pay processing fee through e-payment link available on portal by VISA/Master enabled Credit/Debit cards/PNB net banking facility.
- 3.7 The tender document consisting of 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 compiled with and other necessary documents can be seen and downloaded from website-www.tenderwizard.com/BSNL or <https://eprocure.gov.in/cppp/> or www.orissa.bsnl.co.in free of cost.
- 3.8 The lowest tenderer only shall have to submit the original EMD and mandatory documents such as e-payment details of Tender cost, credentials, EPF & ESI registration certificates, CA certificate towards turn over, PAN & BSNL Enlistment letter / work completion certificate, GST registration and valid electrical license of appropriate voltage issued by any State Governments of India and other requisite documents as per para 3.15, within one week after opening of price bid.
- 3.9 Those Contractors not registered on website mentioned above are required to get registered beforehand.
- 3.10 The intending tenderer must have class-III digital signature to submit the tender.
- 3.11 On opening date, the contractor can login and see the tender opening process. After opening of tenders he will receive the competitor tender sheets.
- 3.12 Contractor can upload the documents as per para 3.15 in the form of JPG format and PDF format and any other format as permissible by the e-tendering portal
- 3.13 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 tenderer, rate of such item shall be treated as "0" (ZERO).
- 3.14 It is essential to upload all the mandatory documents. If some document is not applicable /available the status shall be printed on a paper and same shall be uploaded. Uploading of any blank/irrelevant documents in connection to mandatory documents will lead to rejection of the offer.

3.15 LIST OF MANDATORY SELF ATTESTED DOCUMENTS TO BE SCANNED AND UPLOADED IN THE e-TENDERING PORTAL ON LINE WITHIN PERIOD OF TENDER SUBMISSION.

Sl.No	Description of Documents
1.	E-payment documents/Transaction slips, towards online payment of tender cost.
2.	Demand Draft/FDR/TDR/BG of any Nationalized/scheduled bank in favour of "Accounts Officer (Cash), BSNL, O/o the GMTD, BHUBANESWAR" towards EMD.
3.	Turn Over Certificate of the firm from Chartered Accountant for last 03 years.
4.	Documentary proof of satisfying eligibility conditions against point 2.1 to 2.4 of the "Eligibility Criteria" of the NIT , as follows.
a)	Valid BSNL Enlistment memorandum issued by appropriate authority of BSNL Electrical wing as per their class. OR
b)	Work Completion Certificate for similar works.
5.	PAN card issued by Income Tax Department, Govt. of India.
6.	Valid GST Registration Certificate issued by statutory authority.
7.	Valid Employees Provident Fund (EPF) & ESI Registrations Certificate.
8.	"Undertaking for deposition of physical EMD and other requisite documents as per Annexure – IV
9.	Certificate for "No near relatives are working in BSNL" as per Annexure – V
10.	Information about the Tenderer as per Annexure – VI
11.	Declaration by Contractor for EW-6 & EW-8 as per Annexure – VII
12.	Under taking regarding EPF & ESI as per Annexure – VIII
13.	Self attested copies of "FORM-A" and partnership deed / Memorandum of Articles of Association, If the tenderer is a firm in partnership / Limited company or Corporation,.
14.	Valid Electrical License of appropriate voltage issued by any State Government of India

Note: 1. THE TECHNO COMMERCIAL BID SHALL ALSO BE UPLOADED IN THE E-TENDERING PORTAL AFTER GOING THROUGH THE DETAIL OF THE NIT, so that, It will be presumed that, the tenderer have understood the terms, conditions and clauses of the tender.

4. Bidder should very carefully upload the scanned copies of requisite documents underlined under clause 3.15. Doubt if any, may be got clarified before the closing date of bid submission. Due diligence should be made by the bidder in complying with the uploading of scanned copies. Non compliance will entail rejection of technical bids.

3.16 SUBMISSION EMD AND HARD COPIES OF SELF ATTESTED MANDATORY DOCUMENTS BY THE LOWEST BIDDER (S) :-

The Physical EMD along with self attested copies of other requisite documents as mentioned above should be deposited by the L1 bidder only within a week after the opening date of Financial bid to The Executive Engineer (E), BSNL Electrical Division Bhubaneswar, failing which the bid shall be rejected and approval of the agency may be cancelled by approving authority and the agency will be debarred from tendering in BSNL.

An undertaking in this regard that, “The Physical EMD along with self attested copies other requisite documents shall be deposited by me /us with the E E (E), calling the tender, in case I/we become the lowest bidder (s), within a week after the date of opening of financial bid , otherwise, department may reject the tender and also take action to cancel my/our approval/ debar me /us from tendering in BSNL” shall also be uploaded by the intending bidders in Annexure-IV.

The original EMD and self attested copies of other requisite documents shall be submitted as per the following manner.

- a) The original financial instrument like Demand Draft/FDR/BG/CDR against EMD and e-payment proof of Tender cost and Self attested copies of the valid credentials, registration certificates, declarations, under takings etc. and other requisite documents as mentioned above (Sl. no. 1 to 14) and Techno Commercial Bid documents shall be submitted by the L1 bidder only with due mention of name of work, date of opening of tenders, name of the tenderer and should be submitted in the office of the Executive Engineer (E), BSNL Electrical Division, **Bhubaneswar** within one week of opening date of Price bids.
- b) If the tenderer is a firm in partnership / Limited company or Corporation, then the hard copies of “FORM-A” and partnership deed / Memorandum of Articles of Association and power of attorney / Authorisation to the person who signs the tender in case of companies etc. shall also be submitted along with hard copies of **other documents** as above.

The tenderers may be asked to produce the original documents for verification before the tender opening committee (TOC). If the tenderer fails to submit the same, then they shall be disqualified and their price bids will not be opened.

IMPORTANT NOTES:

1. All the documents shall be self-attested before up loading online and hard copies shall be submitted in off line by the lowest bidder only within one week of opening of price bids. However the tenderer shall produce the original documents before the tender opening committee on demand, otherwise, their tenders are liable to be rejected without any further intimation. In case of any document as mentioned above (3.15) is not uploaded/unable to produce by the tenderer before the TOC on demand, then they will be disqualified and their price bids will not be opened. The decision of the Tender accepting authority in this regard will be final and binding.
2. The tenderer shall upload scanned copy of original documents in JPG or PDF format. The submission of documents is deemed as undertaking by tenderer that all the documents are true and genuine. If it is found, at any time during tendering or execution of work, that the information/documents submitted by the tenderer are in variance/forged/bogus, they shall be legally held responsible for the same. Their offer shall summarily be rejected or termination of contract, if awarded, forfeiting of the EMD, performance guarantees, security deposit, if any. The tenderer/contractor shall be blacklisted /debarred for further works in BSNL for a period of three years.

Executive Engineer (E)
BSNL Electrical Division, Bhubaneswar

No- Plg-04/BSNL-EDB/18/ 900

Date: 04.02.2019

Copy to-

- 1) Chief Engineer (E), BSNL Electrical Odisha Zone, BBSR for kind information.
- 2-3) E.E (E), BSNL Electrical Division, Cuttack/Sambalpur.
- 4) The A.O (Cash) , BSNL , O/o the GMTD, Bhubaneswar.
- 5) Notice Board/BSNL Web site/Tender Wizard web site.

Executive Engineer (E)

Bharat Sanchar Nigam Limited

(A Government of India Enterprise)

Electrical Wing

Zone : Bhubaneswar

Division : Bhubaneswar

Circle : Bhubaneswar

NIT No. : 218/BSNL/BSR/2018-19**NOTICE INVITING e -TENDERS**

(As per Tendering procedure in BSNL revised up to date)

Item rate e-Tenders are hereby invited on behalf of BSNL for the work of: **Providing Electro-Mechanical installations/services and Safety & Security works for Infrastructure works of IAF sites under NFS Project at Air Force Station KORAPUT for PACKAGE -II (Refurbishment work). S.H: Providing Internal wirings & fittings, MCBDBs, MCBs & Cables, MV Distribution panel, Electrical & Jack earthings, Surge Protection Devices and SITC of Split AC unit)**

Estimated cost: ₹ 7,95,569/-

01. The intending tenderer eligible to submit tender has to scan and upload the documents as per table 3.15. All the copies of documents are to be self-attested and uploaded in the e-tendering portal within the stipulated date and time.
03. Intending tenderer is eligible to submit tender provided he has definite proof to the satisfaction of competent authority of having the eligibility criteria as given above.
04. Detailed tender documents of tender consisting of the detailed plans, complete specifications, the schedule of quantities of the various classes of works to be done and the set of conditions of contract to be complied with by the persons whose tender may be accepted is available in downloadable form at the website www.tenderwizard.com/BSNL or <https://eprocure.gov.in/cppp/> or www.orissa.bsnl.co.in free of cost.
05. The time allowed for carrying out the work will be 02 months and shall be reckoned as stipulated in the letter of acceptance / award letter.
06. The intending tenderer has to fill all the details such as Banker's name, Demand Draft/Fixed Deposit Receipt/Pay Order/Banker's Cheque/Bank Guarantee number, amount and date etc.
 - (i) Earnest Money amounting to ₹ **15,911/-** in the form of demand draft / FDR / BG /CDR/TDR of a nationalized/scheduled bank guaranteed by the Reserve Bank of India, drawn in favour of Accounts Officer (Cash), BSNL O/o the G.M.T.D , Bhubaneswar, payable at Bhubaneswar' The Validity period of EMD is 120 days, from the date of opening of tender as stipulated above. However EMD in shape of DD with validity of three months is also acceptable.
 - (ii) **Tender cost amounting to ₹ 590/- must be paid through E-payment mode only such as RTGS/NEFT/e-transfer etc as per instruction of Para: (1.7) above.**

- (iii) E-tender processing fee @ 0.05% of Estimated cost put to tender (subject to Minimum ₹ 500/- and maximum of ₹ 4500/-) plus applicable taxes is to be paid through online on e-payment link available on portal by VISA/Master enabled Credit/Debit cards/PNB net banking facility to the account of M/s ITI Ltd. as mentioned in the portal.
07. Online tender documents submitted by intending tenderer shall be opened only of those tenderer, whose uploaded scan copies of documents in respect of online payment of tender cost, Earnest money Deposit and other requisite documents are found in order. ***The time & date of opening of uploaded scanned documents & online Technical bid is on or after 11.00 hours date. 15.02.2019 and financial bid is at 15.30 hrs on date. 16.02.2019.***
08. The Tender will be submitted in two parts –
Part- 1:- TECHNICAL AND COMMERCIAL BID
Part-2:- PRICE BID
- a)** The technical and commercial bid will be opened first at the first instance and evaluated by the Committee. At the second stage financial bids of only the technically and commercially qualified bidders will be opened for further evaluation and ranking before awarding the contract.
- b)** The technical and commercial bid shall be evaluated by the tender evaluation committee and if necessary clarifications/confirmation, for deviations (if any) shall be taken from the eligible bidders so as to evaluate their bids as per terms and conditions of the tender documents to decide the technically & commercially responsive / non responsive bidder.
- c)** The bidders shall not be at any stage allowed to revise/modify the price bid after the opening of technical and commercial bid.
- In case holiday is declared on the opening day the tenders will be opened on the next working day.
09. The tender submitted shall become invalid and cost of tender and e-tendering processing fees shall not be refunded if-
- (i) The tenderer is found ineligible.
- (ii) The tenderer does not upload all the documents as stipulated in the tender document.
- (iii) Any discrepancy in the documents uploaded, is noticed by tender opening authority
10. The submission of eligibility documents for the online tenders should be scrutinized carefully as practice of submission of hard copies of all mandatory documents have been withdrawn.
11. 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.

12. After submission of online tender, the contractor can resubmit revised tender any number of times but before last time and date of submission of tender as notified. While submitting the revised tender, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rates of all the items).
13. **Public Online Tender Opening Event (TOE)**
E-tender offers a unique facility for “Public Onlline Tender Opening Event (TOE)”. Tender Opening officers as well as authorized representatives of bidders can attend the Public Online Tender Opening Event (TOE) from the comfort of their offices. For this purpose, representatives of bidders (i.e. supplier organization) duly authorized are requested to carry a Laptop and Wireless connectivity to Internet.
- 14.0. **Earnest Money**
- 14.1 The amount of earnest money to be deposited with each tender is 2% of the estimated cost put to the tender subject to a maximum of ₹ 2crores. Earnest money will be acceptable in the form of CDR/FDR/DD/BG. Bank guarantee (BG) is acceptable as EMD if amount exceeds ₹ 20,000/-
- 14.2 The validity period of the Earnest Money Deposit is kept 30 days beyond the tender validity e.g. 90 +30 = 120 days, the tender validity period is 90 days.
- 14.3. **Extension of Validity**
In case, where the letter of award of work cannot be placed within the validity period of the tender, the BSNL can request all tenderers to extend the validity of their respective tenders and the Earnest Money deposit by a reasonable period. In such cases, extension of validity of Earnest Money deposit by 30 days beyond the extended validity date of tender should also be asked for. While BSNL can make the request for extension, the tenderer is free to either extend the validity or refuse the request to extend the Validity.
- 14.4 . **Release of Earnest Money deposit**
The Earnest Money deposit of the lowest bidder (s) shall be released on submitting of their performance bank guarantee after award of works. Where the BSNL requests the tenderer to extend the validity of the tender beyond the stipulated period given in the tender documents, and the tenderer refuses to extend the validity of his tender, the Earnest Money deposit of such tenderers is returned forthwith.
- 14.5. Exemption from payment of earnest money and security deposit by any other unit/ department shall not hold good for BSNL.
- 15.(i) **Performance Guarantee**
The contractor is required to furnish performance guarantee for an amount equal to 5% of the contract value in the form of bank guarantee / CDR / FDR / DD (of a nationalized / Scheduled Bank in a standard format) in favour of **Accounts officer (Cash) , BSNL, O/o the GMTD, Bhubaneswar** within two weeks from the date of issue of award letter. The validity period of the performance security in the form of performance bank guarantee shall be one year from the date of actual completion of works and the same shall be released only after completion of 12 months free maintenance / warranty period.

(ii) **Security Deposit** :

In addition to performance guarantee stated above, a sum @ 10% of the gross amount of the bill shall be deducted from each running bill of the contractor till the sum be deducted with the sum already deposited as earnest money, will amount to security deposit of 5% of the Tendered value of the work.

16. The acceptance of a tender will rest with the Chief Engineer (E)/Superintending Engineer (E), who does not bind himself to accept the lowest tender or any other tender and reserves to himself the Authority to reject lowest or all the tenders received without assigning any reason. All tenders in which any of the prescribed conditions are not fulfilled or incomplete in any respect are liable to be rejected. Tenders with any condition including that of conditional rebates shall be rejected forthwith summarily.
17. Canvassing in connection with tender is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable for rejection.
18. The competent authority on behalf of BSNL reserves with himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rates quoted.
19. (i) The tenderer should give a certificate that none of his/her relative is employed in BSNL units. In case of proprietorship firm, certificate will be given by the proprietor and for partnership firm certificate will be given by all the Directors of the Company.

(ii) Near relatives of all BSNL employees either directly recruited or on deputation are prohibited from participation in tenders and execution of works in the different units of BSNL. The near relatives for this purpose are defined as:
 - a. Members of a Hindu Undivided family
 - b. They are husband and wife
 - c. The one is related to the 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)
- (iii) The company or firm or any other person is not permitted to tender for works in BSNL Unit in which his near relative(s) is (are) posted. The unit is defined as SSA / Circle / Chief Engineer / Chief Archt./ Corporate office for non-executive employees and all SSA in a circle including circle office / Chief Eng./ Chief Archt./ Corporate office for executive employees (including those called as Gazetted officers at present). The tenderer should give a certificate that none of his/her such near relative is working in the units as defined above where he is going to apply for tender / work, for proprietorship, partnership firms and limited company certificate shall be given by the authorized signatory of the firm. Any breach of these conditions by the company or firm or any other person, the tender/work will be cancelled and earnest money/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. The company or firm or the person will also be debarred for further participation in the concerned unit.

The format of the certificate to be given is “I
 son of
 Sh.....Resident of
 hereby certify that none of
 my relative (s) as defined in the tender document is/are employed in BSNL unit as per
 details given in tender document. 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”.

(Seal of the Firm)

(Signature of Contractor)

20. No employee in BSNL/ Govt. of India is allowed to work as a contractor for a period of two years of his retirement from service without the prior permission. The contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission as aforesaid before submission of tender and engagement in the contractor’s service.
21. The tenders for the work shall remain open for acceptance for a period of 90 days from the date of opening of the tenders.

 If any tenderer withdraws his tender before the said period or makes any modification in the terms and conditions of the tender which is not acceptable to the BSNL shall, without prejudice to any other right of remedy be at liberty to forfeit 50% (fifty percent only) of the said earnest money absolutely.
22. The contractor should read the tender documents carefully before submitting the online tender.
23. Before e-tendering the Contractor shall inspect the site and fully acquaint himself about the condition with regard to accessibility of site and site nature and the extend of grounds, working conditions, including stocking of materials, installation of T&P etc. and condition affecting accommodation and movement of labour etc. required for the satisfactory execution of the contract. No claim whatsoever on such account shall be entertained by the BSNL in any circumstances.
24. Agreement shall be drawn with the successful tenderer on prescribed form. Tenderer shall quote his rates as per various terms and conditions of the said form, which will form part of the agreement.
25. The successful tenderer/contractor on acceptance of his tender by the Accepting authority should sign every page of downloaded tender as available in the website with stamp (seal) of his firm/organization.
26. This down loaded and signed tender consisting of Notice Inviting e-Tender (BSNL EW-6) shall form part of the contract document. The successful tenderer/contractor shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:

- a) The Notice Inviting e-Tender, all the documents including additional conditions, specifications and drawings, if any is forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
- b) Standard form (BSNL EW-8).
27. General conditions of contract for works in BHARAT SANCHAR NIGAM LIMITED are available on BSNL website [website-www.tenderwizard.com/BSNL](http://www.tenderwizard.com/BSNL) or <https://eprocure.gov.in/cppp/> or www.orissa.bsnl.co.in .
28. For e-tendering of this tender BSNL has engaged e-portal maintained by M/s ITI Ltd, New Delhi. The agency intending to participate in tendering process shall have to register with ITI Ltd, New Dewlhi. For details kindly visit website <http://www.tenderwizard.com/BSNL> or contact **Shri Biswajit Kar, Mob No- 9438724476.**

CONDITION OF BANK GUARANTEE FOR EMD IF IT IS MORE THAN RS.20,000/-

- The BG shall be from a schedule bank or a Nationalized Bank guaranteed by Reserve Bank of India, in enclosed Performa for the prescribed value mentioned in NIT.
- The Bank guarantee shall remain in force for 30 days after the period, for which the tenders are valid.
- The B.G shall be furnished with requisite stamp duty as per Indian Stamps Act 1899 with latest amendments..
- The BG may be got extended if required.
- If the firm belongs to other state and stamp duty is lower in that state then it will require to be stamped with the excess amount so that total stamp duty is not less in accordance with the requirement of Odisha State. If the BG is not in prescribed pro forma duly stamped with the requirement of Odisha state, tender shall not be opened.

Note: All the required details such as Name of work etc. for which BG is produced must to be filled in the BG itself.

CONTRACTOR

EXECUTIVE ENGINEER (E)

MODEL FORM OF BANK GUARANTEE

BANK GUARANTEE BOND FOR EMD FOR AIR CONDITIONING, DIESEL ENGINE ALTERNATOR, LIFTS AND SUB STATION WORKS WHEREVER THE AMOUNT OF EMD IS MORE THAN RS. 20,000/-.

Whereas _____(hereinafter called "The Contractor(s)") has submitted its Tender dated _____ for _____(Name of work) _____ KNOW ALL MEN by these Presents that WE _____ OF _____ having our registered office at _____(hereinafter called "The Bank") are bound unto **ACCOUNTS OFFICER (CASH), O/O GMTD, BSNL** (hereinafter called " The Purchaser ") in the sum of _____for which payment will and truly to be made of the said Purchaser, the Bank binds itself, its successors and assigns by these presents.

THE CONDITIONS of the obligation are:

1. If the Contractor(s) withdraws its Tender during the period of Tender validity specified on the Tender Form : or
2. If the Contractor(s) having been notified of the acceptance of its Tender by the Purchaser during the period of Tender validity.
 - (a) Fails or refuses to execute the Contract.
 - (b) Fails or refuses to furnish Security Deposit in accordance with the conditions of Tender document.

WE undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand, the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force as specified in the Tender Document up to and including Thirty (30) days after the period of the Tender validity, and any demand in respect thereof should reach the Bank not later than the specified date/dates.

Signature of the Bank Authority

Signature of the Witness

Name of Witness

Address of Witness

PERFORMANCE SECURITY GURANTEE BOND

1. In consideration of the CMD, BSNL (hereinafter called 'BSNL') having agreed to exempt _____ (hereinafter called 'the said contractor(s)') from the demand under the terms and conditions of an agreement/Advance Purchase Order No. _____ dated: _____ made between _____ and _____ for the supply of _____ (hereinafter called "the said agreement"), of security deposit for the due fulfillment by the said contractor (s) of the terms and conditions contained in the said Agreement, on production of the bank guarantee for _____ we, (name of the bank) _____ (hereinafter refer to as "the bank") at the request of _____ (contractor(s)) do hereby undertake to pay to the BSNL an amount not exceeding against any loss or damage caused to or suffered or would be caused to or suffered by BSNL by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.

2. We (name of the bank) _____ do hereby undertake to pay the amounts due and payable under this guarantee without any demure, merely on a demand from the BSNL by reason of breach by the said contractor(s)' of any of the terms or conditions contained in the said Agreement or by reason of the contractors(s)' failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee where the decision of BSNL in these counts shall be final and binding on the bank. However, our liability under this guarantee shall be restricted to an amount not exceeding _____.

3. We undertake to pay to the BSNL any money so demanded notwithstanding any dispute or disputes raised by the contractor(s)/supplier(s) in any suit or proceeding pending before any court or tribunal relating thereto our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be valid discharge of our liability for payment there under and the contractor(s)/supplier(s) shall have no claim against us for making such payment.

4. We (name of the bank) _____ further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the BSNL under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till _____ (office/Department) BSNL certifies that the terms and conditions of the said Agreement have been fully or properly carried out by the said contractor(s) and accordingly discharges this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the expiry of ONE YEAR after actual completion of work.

5. We (name of the bank) _____ further agree with the BSNL that the BSNL shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the BSNL against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act or omission on the part of the BSNL or any indulgence by the BSNL to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s)/supplier(s).
7. We (name of the bank) _____ lastly undertake not to revoke this guarantee during its currency except with the previous consent of the BSNL in writing.

Dated the _____ day of _____

for _____ (Indicate the name of the Bank)

PROFORMA OF AGREEMENT

ANNEXURE - III

(Rs.100/-Stamp paper agreement copy)

The agreement shall be signed by both the parties [EE (E)] concerned and the contractor] on Non judicial stamp paper of appropriate value which shall be purchased by the agency. The proforma of agreement to be prepared on Non judicial stamp paper is given below:

CONTRACT AGREEMENT FOR THE WORK OF

.....Dated.....M/s.....

..(refer to note) in the town of herein after called the contractor (which term shall unless excluded by or repugnant to be subject or context include its successor and permitted assigns) of the one part and the Bharat Sanchar Nigam Limited herein after called the BSNL (which term shall unless excluded by or repugnant to the subject or context include its successors and assigns) of the other part.

WHEREAS

A. The BSNL is desirous that the should be executed as mentioned enumerated referred to in the tender including Press Notices Inviting tender, General Conditions of the Contract, Special conditions of the contract, Specifications, Drawing Plan, Time Schedule of completion of jobs, Schedule of quantities and Rates, Agreed variations, other documents, has called for tender.

B. The contractor has inspected the site and surrounding of the work specified in the tender documents and has satisfied himself by carefully examination before submitting his tender as to the nature of surface, strata, soil, sub-soil and grounds, the form and nature of the site and local conditions, the quantities, nature and magnitude of the work, the availability of labour and material necessary for the execution of work, the means of access to site, the supply of power and water there to and the accommodation he may require and has made local and independent enquires and obtained complete information as to the matters and things referred to or implied in the tender documents or having any connection therewith, and has considered the nature and extent of all the probable and possible contingencies, and generally all matters incidental thereto and ancillary thereof affecting the execution and completion of the work and which might have influenced him in making his tender.

C. The tender documents including the BSNL's Press Notices inviting Tender, General Conditions of contract, Schedule of quantities and rates, General obligation specification Drawings, plan, time, schedule for completion of work, letter of acceptance of tender and any statement of agreed variations with its enclosures copies of which are hereto annexed form part of this contract through separately set out herein and are included in the expression contract wherever herein used.

AND WHEREAS The BSNL accepted the tender of M/s.....

.....vide letter No.....at the rates stated in the schedule of quantities for the works and accepted by the BSNL (herein after called the schedule of Rates) upon the terms and subject to the conditions of the contract

NOW THIS AGREEMENT WITNESSETH & IT IS HERERBY AGREED AND DECLARED AS FOLLOWS.

1. In consideration of payment to be made into the contract for the work to be executed him, the contractor hereby convenient with the BSNL that the contractor shall and will duly provide, execute, complete and maintain the said work and shall do and perform all other acts and things on the contract mentioned or described or which are to be implied and three form or may be reasonably necessary of the completion of the said works and the said times and in the manner and subject to the terms and conditions or stipulations mentioned the contract, AND
2. In considerations of the due provision execution, completion and maintenance of the said work, the BSNL does hereby agree with the contractor that the BSNL will pay to contractor the respective amounts for the work actually done by him and approved by the BSNL at the schedule or Rates and such other sum payable to the contractor under provision the contract, such payment to be made at such time in such manner as prescribed for in the contract.
3. It specifically and distinctly under stood and agreed between the BSNL and the contractor that the contractor shall have no right, title or interest in the site made available by the BSNL for execution of the works or in the buildings, structures or works executed or the said site by the contractor or in the goods, articles, materials, etc., brought on the said site (unless the same specifically belongs to the contractor) and the contractor shall not have or deemed to have any lien whatsoever for unpaid bills will not be entitled to assume or retain possession or control of the site or structures and the BSNL shall have an absolute unfettered right to take full possession of site or structures and the BSNL shall have an absolute unfettered right to take full possession of site and to remove the contractor, their servants, agents and materials belonging to the contractor and lying on the site.

In witness whereof the parties here-into set their respective hands and seal in the day and the year first above written.

Signed and delivered for and on
Behalf of BSNL
(BHARAT SANCHAR NIGAM LIMITED)
Date :
Place:

Signed and delivered for and on
Behalf of Contractor
M/s.
Date:
Place:

IN PRESENCE OF TWO WITNESSES

Signature:

Signature :

Name:

Name:

ANNEXURE-IV

UNDERTAKING FOR SUBMISSION OF EMD & OTHER MANDATORY DOCUMENTS IN PHYSICAL FORMS AT THE OFFICE OF THE EXECUTIVE ENGINEER (E), BSNL, ELECTRICAL DIVISION, BHUBANESWAR AFTER OPENING OF FINANCIAL BID.

1	NIT No.	218 /BSNL/BSR/2018-19
2	Name of work:	Providing Electro-Mechanical installations/services and Safety & Security works for Infrastructure works of IAF sites under NFS Project at Air Force Station KORAPUT for PACKAGE -II (Refurbishment work). S.H: Providing Internal wirings & fittings, MCBDBs, MCBs & Cables, MV Distribution panel, Electrical & Jack earthings, Surge Protection Devices and SITC of Split AC unit)
3	Name of the Agency:	
<p>I /we hereby undertake that, the physical EMD along with self attested copies of all mandatory documents as specified in clause- 3.15 of "Notice Inviting e- Tender" shall be submitted by me/us with the Executive Engineer (E), BSNL Electrical Division, Bhubaneswar, in case I/we become the L1 bidder within a week of the opening of financial bid, otherwise BSNL may reject the bid and also take action to cancel my/our approval /debar me/us from tendering in BSNL.</p>		

(Signature of Agency)
Seal of Agency

Signature of the Witness

Name of Witness

Address of Witness

BHARAT SANCHAR NIGAM LIMITED

(A Government of India Enterprise)

ZONE – BHUBANESWAR
BRANCH : ELECTRICAL WING

DIVISION – BHUBANESWAR

Tender for the work of : Providing Electro-Mechanical installations/services and Safety & Security works for Infrastructure works of IAF sites under NFS Project at Air Force Station KORAPUT for PACKAGE -II (Refurbishment work). S.H: Providing Internal wirings & fittings, MCBDBs, MCBs & Cables, MV Distribution panel, Electrical & Jack earthings, Surge Protection Devices and SITC of Split AC unit)

TENDER

1. I/we have read and examined the notice inviting tender, schedule, specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, special conditions, Schedule of Rates and other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.
2. I/ We hereby tender for the execution of the work specified for BSNL within the time specified, schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions and other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.
3. I/We agree to keep the tender open for ninety (90) days from the due date of submission thereof and not to make any modifications in its terms and conditions.
4. A sum of ₹ **15,911/-** is hereby forwarded in the form of Deposit at call receipt / FDR / Bank guarantee of a Nationalized/Scheduled Bank as earnest money. If I /We fail to commence the work specified I/We agree that the said BSNL shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely and the same may at the option of the competent authority on behalf of BSNL be recovered without prejudice to any other right or remedy available in law out of the deposit 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.
5. Should this tender be accepted, I/We agree to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered up to maximum of percentage mentioned in clause 12.3 of the tender form and those in excess of that limit at rates to be determined in accordance with provisions contained in clauses 12.2.
6. I / We agree to furnish to BSNL Deposit at call receipt /FDR/ Bank guarantee of a Nationalised/Scheduled Bank for an amount equal to 5% of the contact value in a standard format within two weeks from the date of issue of award letter. I/We agree to keep the performance bank guarantee valid for one year from the date of actual completion of work.
7. 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 to whom I/We am/are authorised to communicate the same or use the information in any manner prejudicial to the safety or interest of BSNL.

Signature of Witness
(required in the case of
contractor's thumb impression
is given by the contractor in place
of signature)
(Name & Postal address)

(Signature of contractor)
Seal of Contractor

Occupation of Witness

Date:

ACCEPTANCE

NIT No.	218 /BSNL/BSR/2018-19
Name of work:	Providing Electro-Mechanical installations/services and Safety & Security works for Infrastructure works of IAF sites under NFS Project at Air Force Station KORAPUT for PACKAGE -II (Refurbishment work). S.H: Providing Internal wirings & fittings, MCBDBs, MCBs & Cables, MV Distribution panel, Electrical & Jack earthings, Surge Protection Devices and SITC of Split AC unit)
Name of the Agency:	

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of BSNL for a sum of Rs. _____ (Rupees _____)

The letters referred to below shall form part of this contract Agreement.

- a)
- b)

Dated:.....

For & on behalf of BSNL
Signature

Designation

GENERAL RULES AND DIRECTIONS

1. All works proposed for execution by contract will be notified in a form of invitation to tender displayed on Notice Board in select BSNL offices and signed by the officer inviting tender or by publication in News papers/internet (designated web page) as the case may be.
2. This form will state the work to be carried out, as well as the date for submitting and opening tenders and the time allowed for carrying out the work, also the amount of earnest money to be deposited with the tender, and the amount of performance guarantee to be deposited by the successful tenderer(s). Copies of the specifications, designs and drawings and any other documents required in connection with the work signed for the purpose of identification by the Officer inviting tender shall also be open for inspection by the contractor at the office of Officer inviting tender during office hours.
3. Receipts for payments made on account of work when executed by a firm, must also be signed by authorised signatory.
4. Any person who submits a tender shall fill up the downloaded price schedule stating at what rate he is willing to undertake each item of the work. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, including conditional rebates, will be summarily rejected. However, tenders with unconditional rebate will be acceptable. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender online for each.
5. The rates(s) must be quoted in decimal coinage. Amounts must be quoted in full rupees by ignoring fifty paise and considering more than fifty paise as rupee one.
6. The Officer inviting tender or his duly authorised assistant will open tenders in the presence of any intending contractors who may be present at the time, and will enter the amounts of the several tenders in a Comparative Statement in a suitable form. In the event of a tender being accepted, a receipt for the earnest money forwarded therewith shall thereupon be given to the contractor who shall thereupon for the purpose of identification sign copies of the specifications and other documents mentioned in Rule 1. In the event of a tender being rejected, the earnest money forwarded with such unaccepted tender shall thereupon be returned to the contractor remitting the same, without any interest.
7. The officer inviting tenders shall have the right of rejecting all or any of the tenders and will not be bound to accept the lowest or any other tender.
8. The tenderers shall sign a declaration under the officials Secret Act, 1923, for maintaining secrecy of the tender documents, drawings or other records connected with the work given to them. The unsuccessful tenderers shall return all the drawings if any given to them.
9. Rates quoted by the Contractor in the tender both in figures and words (In case of offline tenders & only figures in case of online tenders) shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. However, if a discrepancy is found, the rates which correspond with the amount worked out by the contractor shall unless otherwise proved be taken as correct. If the amount of an item is not worked out by the contractor or it does not correspond with the rates written in either in figures or in words, then the rates quoted by the contractor in words shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally, but the amount is not worked out correctly, the rates quoted by the contractor will unless otherwise proved be taken as correct and not the amount.

10. **Performance Guarantee:**
- The contractor is required to furnish performance guarantee for an amount equal to 5% of the contract value in the form of bank guarantee / CDR / FDR / DD (of a nationalized / Scheduled Bank in a standard format) in favour of **Accounts officer (Cash) , BSNL, O/o the GMTD, Bhubaneswar** within two weeks from the date of issue of award letter. The validity period of the performance security in the form of performance bank guarantee shall be one year from the date of actual completion of works and the same shall be released only after completion of 12 months free maintenance / warranty period.
11. **Security Deposit:** In addition to performance guarantee stated above, a sum @ 10% of the gross amount of the bill shall be deducted from each running bill of the contractor till the sum be deducted with the sum already deposited as earnest money, will amount to security deposit of 5% of the Tendered value of the work.
12. All rates shall be quoted on the tender form. The amount for each item should be worked out and requisite totals given. Special care should be taken to write the rates in figures as well as in words (incase of off line tenders) and the amount in figures only, in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the word 'Rs.' should be written before the figure of rupees and word 'P' after the decimal figures, e.g. 'Rs. 2.15 P' and in case of words, the word, 'Rupees' should precede and the word 'Paise' should be written at the end. Unless the rate is in whole rupees and followed by the word 'only' it should invariably be up to two decimal places. While quoting the rate in schedule of quantities, the word 'only' should be written closely following the amount and it should not be written in the next line.
13. **Taxes & Duties :** All the taxes and duties will be as per the applicable GST. Agency should quote rates inclusive of GST and all levies and duties including packing, forwarding, freight and insurance etc. Firm shall have to submit GST Tax Invoice while claiming bills.
14. ***Evaluation of Tenders:-The evaluation and comparison of responsive tenders shall be done on the basis of quoted amount inclusive of all and inclusive of GST.***
- 14.a. However, if any further tax or levy is imposed by statute, after the last date for the receipt of tender and the contractor thereupon necessarily and properly pays such taxes/ levies, the contractor shall be reimbursed the amount so paid, provided such payment, if any, is not, in the opinion of the Chief Engineer (E) / Superintending Engineer (E) (whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor.
- b. The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of BSNL and further shall furnish such other information/ document as the Engineer-in-Charge may require from time to time.
- c. The Contractor shall, within a period of 30 days of imposition of any such further tax or levy, give a written notice thereof to the Engineer-in-charge that the same is given pursuant to this condition, together with all necessary information relating thereto.
15. In case of variation of any statutory taxes within the stipulated date of completion of individual agreement, the same shall be paid or recovered as per the actual against documentary proof for major equipments/ materials. However, beyond this period BSNL will take advantage of any duty reduction but will not pay extra on account of duty increase.

16. BSNL shall deduct income tax, TDS on GST, labour welfare cess and other statutory deductions from payments due to the firm as per rules of the Central/State Government. The Accounts Officer of the concerned Division shall issue certificates for such deductions to the firm.
17. The tender for the work shall not be witnessed by a contractor or contractors who himself/themselves has/have tendered or who may and has/have tendered for the same work. Failure to observe this condition would render, tenders of the contractors tendering, as well as witnessing the tender, liable to summary rejection.
18. Other agencies will also simultaneously execute the works like horticulture, external services, fire detection and alarm system, false ceiling, false flooring and other civil works, installation of exchange equipment and other building works for the same project along with this work. The contractor shall offer necessary co-operation for the same.
19. ***Some restrictions may be imposed by the security staff etc. on the working and/or movement of labour, material etc. The contractor shall be bound to follow all such restrictions / instructions and nothing extra shall be payable on this account.***
20. The contractor shall comply with the provisions of the Apprentices Act 1961, and the rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the contract and the Engineer-in-charge may in his discretion, without prejudice to any other right or remedy available in law, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.
21. No engineer of gazetted rank or executive of BSNL employed in engineering or administrative duties in an engineering department of the Govt. of India/BSNL is allowed to work as a contractor for a period of two years of his retirement from government service without the previous permission of Govt. of India/BSNL. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of Govt. of India as foresaid, before submission of the tender or engagement of the contractor's service as the case may be.
22. Near relatives of all BSNL employees either directly recruited or on deputation are prohibited from participation in tenders and execution of works in the different units of BSNL. The near relatives for this purpose are defined as:
 - 22.1 Members of a Hindu Undivided family
 - 22.2 They are husband and wife
- 22.2. The one is related to the 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)
23. The company or firm or any other person is not permitted to tender for works in BSNL Unit in which his near relative(s) is (are) posted. The unit is defined as SSA/Circle/Chief Engineer/Chief Archt./Corporate office for non executive employees and all SSA in a circle including circle office/Chief Eng./Chief Archt./Corporate office for executive employees (including those called as Gazetted officers at present). The tenderer should give a certificate that none of his/her such near relative is working in the units as defined above where he is going to apply for tender / work, for proprietorship, partnership firms and limited company certificate shall be given by the authorized signatory of the firm. Any breach of these conditions by the company or firm or any other person, the tender/work will be cancelled and earnest money/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. The company or firm or the person will also be debarred for further participation in the concerned unit.

The format of the certificate to be given is “I.....
.....son of Sh..... Resident
of..... hereby certify that none of my relative (s) as
defined in the tender document is/are employed in BSNL unit as per details given in tender
document. 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”.

(Seal of the Firm)

(Signature of Contractor)

CONDITIONS OF CONTRACT

1. Definitions: The 'Contract' means the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of BSNL and the contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Engineer-in-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.
2. In the contract the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them :-
 - i) The expression "works" or "work" shall, unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.
 - ii) The 'site' shall mean the land/building/or other places on, into or through which work is to be executed under the contract or any alternate land, building, path or street which may be allotted or used for the purpose of carrying out the contract.
 - iii) The 'Contractor' shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.
 - iv) BSNL means the Bharat Sanchar Nigam Ltd. having its corporate office at Harish Chandra Mathur Lane, Janpath, New Delhi-110001 and its successors.
 - v) The 'Engineer-in-charge' means the Engineer officer who shall supervise and be in-charge of the work and who shall sign the contract on behalf of BSNL as mentioned in Schedule 'F' hereunder.
 - vi) Accepting Authority shall mean the authority mentioned in Schedule 'F'
 - vii) 'Excepted Risk' are risks due to riots (other than those on account of contractor's employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion, revolution, insurrection, military or usurped power, any acts of Government, damages from Aircraft, Acts of God, such as earthquake, lightning and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the accepting authority or causes solely due to use or occupation by BSNL of the part of the works in respect of which a certificate of completion has been issued or a cause solely due to BSNL's faulty design of works.
 - viii) Schedule(s) referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard Schedule of Rates of the Government mentioned in Schedule 'F' hereunder, with the amendments thereto issued up to the date of receipt of the tender.
 - ix) Tendered value means the value of the entire work as stipulated in the letter of award.

- x) Market rate shall be the rate as decided by the Engineer-in-Charge on the basis of the cost of materials and labour at the site where the work is to be executed plus the percentage mentioned in Schedule 'F' to cover, all overheads and profits.
3. Scope and Performance : Where the context so requires, words imparting the singular only also include the plural and vice versa. Any reference to masculine gender shall whenever required include feminine gender and vice versa.
4. The contractor shall be furnished, free of cost, one certified copy of the contract documents except standard specifications, schedule of rates and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract.
5. Works to be carried out : The work to be carried out under the Contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The descriptions given in the schedule of quantities shall, unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labours necessary in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognised principles.
6. Sufficiency of Tender : The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the contract and all matters and things necessary for the proper completion and maintenance of the works.
7. Discrepancies & adjustments of Error : The several documents forming the contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to General Conditions.
- 7.1 In the case of discrepancy between the schedule of quantities, the specifications and/or the drawings, the following order of preference shall be observed :-
- i) Description of Schedule of Quantities
 - ii) Particular Specification and Special condition, if any
 - iii) Drawings
 - iv) BSNL/C.P.W.D. Specifications
 - v) Indian Standard Specifications of B.I.S
- 7.2 If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor.
- 7.3 Any error in description, quantity or rate in Schedule of Quantities or any omission there from shall not vitiate the Contract or release the contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract.

8. In case of NIT for individual work there will be no split up of work and the entire quantity will be awarded to the lowest tenderer, if the firm has quoted as per terms and conditions of the NIT.
09. Signing of Contract: The successful tenderer/contractor, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the date of award of work, sign the contract consisting of the notice inviting tender, all the documents including drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
- 10.. The agreement to be signed on non-judicial stamp paper and the cost to be decided as per the prevailing local bye-laws or zonal head of the circle.

CONTRACTOR**EXECUTIVE ENGINEER (E)**

PROFORMA OF SCHEDULES**(Operative Schedules to be supplied separately to each intending tenderer)****SCHEDULE 'A'**

Schedule of quantities: As per Price Bid

SCHEDULE 'B'

Schedule of materials to be issued to the contractor.

Sr. No.	Description of item	Quantity	Rates in figures and words at which the material will be charged to the contractor	Place of Issue
1	2	3	4	5
1	Nil		Nil	NA

SCHEDULE 'C'

Tools and plants to be hired to the contractor

Sr. No.	Description of item	Hire charges per day	Place of Issue
1	2	3	4
NIL			

SCHEDULE 'D'

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

- I. Scope for works & Specifications- : Appended from page – 33-90
- II. General Conditions & Commercial/General & Special conditions of contract:- Appended from page- **91-96**
- III. Copy of Memo no. 5-1-12-EW/94 dt. 26/9/1996, Model form of Bank Guarantee): Appended from page -**16**

SCHEDULE 'E'

Schedule of component of Cement, Steel, other materials, Labour etc. for price escalation.

		NIL		}	NA
CLAUSE 10 CC	Component of Cement expressed as per cent of total value of work	Xc	_____ %		
	Component of Steel expressed as per cent of total value of work	Xs	_____ %		
	Component of civil(except cement and steel) / Electrical construction Materials expressed as per cent of total value of work	Xm	_____ %		

SCHEDULE 'F' Reference to General Conditions of contract.	
Name of work:	Providing Electro-Mechanical installations/services and Safety & Security works for Infrastructure works of IAF sites under NFS Project at Air Force Station KORAPUT for PACKAGE -II (Refurbishment work). S.H: Providing Internal wirings & fittings, MCBDBs, MCBs & Cables, MV Distribution panel, Electrical & Jack earthings, Surge Protection Devices and SITC of Split AC unit)
Estimated cost of work:	₹ 7,95,569/-
i) Earnest money :	₹ 15,911/-
ii) Performance Guarantee :	5% of tendered value of work.
iii) Security Deposit :	5 % of the tendered value of the work.
GENERAL RULES and DIRECTIONS:	Officer inviting tender: EE (E), BSNL Electrical Division, BHUBANESWAR Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with clauses 12.2 and 12.3.
Definitions:	See below
2(v) Engineer-in-Charge	Executive Engineer (E), BSNL Electrical Division. Bhubaneswar
2(viii) Accepting Authority	C.E. (E) / S E (E), BSNL Electrical Odisha Zone, BBSR
2(x) Percentage on cost of materials and labour to cover all overheads and profits.	10%
2(xi) Standard Schedule of Rates	Current market rates
2(xii) Department	BSNL
9(ii) Standard CPWD contract Form	BSNL EW Form 8 as modified and corrected up to date.
Clause 1 i) Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance, in days ii) Maximum allowable extension beyond the period provided in I) above in days	4 to 14 Days 15 days
Clause 2 Authority for fixing compensation under Clause 2.	C.E. (E) / SE (E)
Clause 5 Number of days from the date of issue of letter of acceptance for reckoning date of start Milestone(s) as per table given below :-	0 to 10 days
Clause 7 Gross work to be done together with net payment/ adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment.	As applicable
Clause 10CC	Clause 10CC not applicable for this contract
Clause 11- Specifications to be followed for execution of work	Specifications appended with Schedule of work
Clause 12 12. 2 & 12.3 Deviation Limit beyond which clauses 12.2 and 12.3 shall apply	Normally 25% and in exceptional cases 50%
Clause 25: Competent authority for conciliation/ Arbitration:	As per up to date amendments of Arbitration & conciliation act 1996
Clause 16 Competent Authority for deciding reduced rates.	Chief Engineer (E) /Superintending Engineer (E)

CONTRACTOR

EXECUTIVE ENGINEER (E)

SCHEDULE OF WORK

Name of work: Providing Electro-Mechanical installations/services and Safety & Security works for Infrastructure works of IAF sites under NFS Project at Air Force Station KORAPUT for PACKAGE -II (Refurbishment work). S.H: Providing Internal wirings & fittings, MCBDBs, MCBs & Cables, MV Distribution panel, Electrical & Jack earthings, Surge Protection Devices and SITC of Split AC unit)

NIT No: 218 / BSNL/BSR/2018-19

Name of Agency:

Sr. No.	Description of Item	Quantity	Rate inclusive of GST (₹)	Unit	Amount inclusive of GST (₹)
	Sub Head- I : Internal wiring & Fittings				
1.	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with 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.				
	a) Group C .	15 points		Point	
2.	Wiring for circuit/sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor single core cable in surface/recessed steel conduit as required.				
	a) 2 x 1.5 sq.mm + 1 x 1.5 sq.mm earth wire. (For light & UPS circuit wiring)	35 mtrs		Mtr	
	b) 4X1.5 sq. mm + 2 X 1.5 sq. mm earth wire (For light & UPS circuit wiring)	15 mtrs		Mtr	
3.	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.	4 nos		Each	
4.	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.	4 nos		Each	

5.	Wiring for light/ power plug with 2X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit along with 1 No 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	50 mtrs		Mtr	
6.	Wiring for light/ power plug with 4X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit along with 2 nos 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	12 mtrs		Mtr	
7.	Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.				
	a) 4X 10 sq. mm + 2 X 6 sq. mm earth wire	20 mtrs		Mtr	
8.	Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed PVC conduit as required.				
	a) 4X 10 sq. mm + 2 X 6 sq. mm earth wire	15 mtrs		Mtr	
9.	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required. (For switch & Socket on switch board & UPS ckt)				
	a) 5/6 amps switch	4 nos		Each	
	b) 3 pin 5/6 amp socket outlet	4 nos		Each	
10.	Supplying and fixing of following sizes of steel 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	75 mtrs		Mtr	
	b) 25 mm	50 mtrs		Mtr	
11.	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
	a)100 mm width X 50 mm depth X 1.6 mm thickness	12 mtrs		Mtr	
	b) 150 mm width X 50 mm depth X 1.6 mm thickness	23 mtrs		Mtr	

12.	Supplying of Ultra modern recess mounting luminaries suitable for Armstrong/grid/POP ceiling complete with electronic driver & high brightness SMD LEDs. Lamp type- 34W LED 5700K Diffused, suitable for operation on 140 volts to 270 volts AC, 50 HZ supply, Fixture size 595x595 mm. Ceiling cutout 580x580 mm i/c fixing on false ceiling, connection, testing etc. complete as required. (Havells model- PLUTONEO2X2PLR34WLED857S/Equivalent model of Phillips/ Crompton/Osram/WIPRO)	9 nos		Each	
13.	Supplying and fixing of Bulk head fitting made of die cast aluminium housing & frosted glass suitable for accommodating a 10 watt LED lamp, i/c supply and fixing of 10 watt LED lamp (E27 cap), connection, testing etc. as required . (Phillips/Bajaj/Havells/Crompton)	2 nos		Each	
14.	Supplying of 15 watt, 230 volts, 50 HZ highly efficient LED down lighter luminaries, recessed mounting type with efficacy not less than 100 lm/W, IP 44 rating i/c fixing the same on false ceiling by making suitable size openings, connection, testing etc. as required. (Make-Havells model: ENDURANEODLR15WLED840S/Equivalent model of Phillips/Bajaj/Crompton)	4 nos		Each	
15.	Supplying and Fixing of 90 watt LED street light luminaries made up of pressure die cast housing with toughened glass and individual high power LEDs with secondary optics, IP 66 protection and impact resistance of IK07 for effective thermal management, sturdiness & excellent corrosion resistance, cable gland for maintaining ingress protection, tempered protective toughened glass, thermal, shock and impact-resistant, fixed to the housing with SS screws, built-in potted electronic LED driver with lower THD along with 50mm dia GI pipe bracket (1.5 mtr long) etc. complete as required. (Havells model: NDURACITYLINERNEOSL90WLED757SASYBOT G / Equivalent model of Phillips/Crompton)	1 no		Each	
16.	Supplying & fixing Pole mounted side hinged type junction box of size 140mm x 140mm x 95mm (HXWXD), fire retardant – Class FV-0 as per IS:11731 Part-II or V-0 as per UL-94 for unction box/cut-out box/fuse box for single phase/2 core low wattage FTL/CFL based lighting system for pedestrian/pathway illumination. (make Sintex model: GS-JB-1616-T/SS make)	1 no		Each	

UN-PRICED SCHEDULE

Total of Sub Head- I (Internal wiring & Fittings)					
Sub Head- II : MCBDB, MCB & Cables					
1.	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required as per IEC 61439-3. (But without MCB/RCCB/Isolator) (Make: Legrand/L & T/ Schneider/ Siemens / ABB)				
	a) 4 way (4 + 12), Double door (For Light & Power ckts)	1 no		Each	
2.	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required as per IEC 61439-3. (But without MCB/RCCB/Isolator) (Make: Legrand/L & T/ Schneider/ Siemens / ABB)				
	a) 2+ 4 way Double Door. (For UPS ckts)	1 no		Each	
3.	Supplying and fixing Four pole sheet steel enclosures on surface/ recess along with 32 amps 415 volts "C" curve FP MCB complete with connections, testing and commissioning etc. as required. (For Precision AC). (Make: Legrand/L & T/ Schneider/ Siemens / ABB)	2 nos		Each	
4.	Supplying and fixing DP sheet steel enclosure on surface/ recess along with 25/32amps 240 volts "C" curve SPN MCB complete with connections, testing and commissioning etc. as required. (For SAC). (Make: Legrand/L & T/ Schneider/ Siemens / ABB)	1 no		Each	
5.	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, 10 KA miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. (Make: Legrand/L & T/ Schneider/ Siemens / ABB)				
	a) Single pole	16 nos		Each	
6.	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current up to 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required. (Make: Legrand/L & T/ Schneider/ Siemens / ABB)				

	a) 40 amps	1 no		Each	
7.	Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB), having a sensitivity current up to 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required. (Make: Legrand/L & T/ Schneider/ Siemens / ABB)				
	a) 25 amps	1 no		Each	
8.	Supplying of stranded conductor, XLPE Insulated, cores laid up, PVC tape/Extruded Inner sheathed (A2XFY) aluminium conductor armoured power cable of 1.1 KV grade of following sizes etc. complete as required as per IS 7098 (part-I) 1988. (Polycab/Finolex/Sterlite/Havells)				
	a) 4 core 25 sq. mm	20 mtrs		Mtr	
	b) 3 .5 core 70 sq. mm	150 mtrs		Mtr	
9.	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
	a) Above 35 sq. mm and up to 95 sq. mm	60 mtrs		Mtr	
10.	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation and refilling the trench etc as required, but excluding sand cushioning and protective covering.				
	a) Above 35 sq. mm and up to 95 sq. mm	60 mtrs		Mtr	
11.	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) Up to 35 sqmm	3 mtrs		Mtr	
	b) Above 35 sq. mm and up to 95 sq. mm	5 mtrs		Mtr	
12.	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) Up to 35 sqmm	2 mtrs		Mtr	

	b) Above 35 sq. mm and up to 95 sq. mm	5 mtrs		Mtr	
13.	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
	a) Up to 35 sqmm (clamped with 1mm thick saddle)	15 mtrs		Mtr	
	b) Above 35 sq. mm and up to 95 sq. mm (clamped with 25x3mm MS flat clamp)	5 mtrs		Mtr	
14.	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required.				
	b) 4 X 25 sq. mm (28mm)	4 nos		Each	
	a) 3½ X 70 sq. mm (38mm)	4 nos		Each	
15.	Supplying and making end termination with brass compression gland and copper lugs for following size of PVC insulated and PVC sheathed / XLPE copper conductor cable of 1.1 kV grade as required.				
	a) 4 Core 10 sqmm Copper cable	4 nos		Each	
	b) 4 Core 16 sqmm Copper cable	2 nos		Each	
16.	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ sub main wiring/ cable as required	75 mtrs		Mtr	
17.	Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ sub main wiring/ cable as required.	20 mtrs		Mtr	
18.	Supplying and laying of following sizes medium class GI pipe (ISI) along with accessories i.e bands, elbow, sockets etc. directly in ground i/c excavation and refilling or on surface with clamps for protection of cable etc. as required.				
	a) 50mm dia	8 mtrs		Mtr	
19.	Supplying and fixing Cable End Boxes (IP 43) suitable for following triple pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with testing and commissioning etc. For 4 way, Double door TPN MCBDB.	2 nos		Each	
20.	S/Drawing of 4X10 sqmm FRLS PVC Insulated PVC sheathed copper conductor cable in existing PVC /Steel conduit i/c connection etc. as reqd. (For Precision AC incoming)	10 mtrs		Mtr	

21.	S/Drawing of 4X16 sqmm FRLS PVC Insulated PVC sheathed copper conductor cable in existing PVC /Steel conduit i/c connection etc. as reqd.(For Power plant input)	10 mtrs		Mtr	
22.	Supply and Fixing of 40mm dia M class PVC conduit along with accessories on surface/recess etc. as required.	20 mtrs		Mtr	
Total For Sub-Head-II (MCBDB, MCB & Cables)					
Sub Head- III : M V Panel & Miscellaneous					
1.	Supply, installation, testing and commissioning of Cubical type floor mounted M.V. distribution panel made out of 2mm CRCA Sheet for Doors, side and rear panels, tops, internal elements & 2.5mm for load bearing members comprising of the following switch gears, Bus bars, Current Transformers, meters, indicators and control fuses etc. suitable for operation on 415 volts, 50 Hz AC supply with detachable gland plates at top & bottom for incoming and outgoing cable entries, lifting hooks, ventilation louvers at both sides, cable alley, 4 pole stud connectors of suitable ratings, suitable size base channel of MS Channel /Angle iron i/c interconnections with suitable size copper/Aluminium strip/ multi strand PVC insulated FRLS flexible copper conductor cable , powder painting after seven tank process treatment, sign writing with suitable engraved white on black nameplates, providing GI earth studs at both bottom sides of the panel & interconnection with 20mmX3mm copper strips running along the perimeter of the panel as per the approved drawing and direction of the Engineer in charge etc. complete as required.	1 job		Job	
	INCOMING - 4 pole MCCB having release range of 100 - 125Amps, Breaking Capacity Icu at 415V AC, 50Hz:- 25KA (Ics=100 % Icu) with inbuilt adjustable thermal overload protection , SC setting= 6-10XIn, with extended rotary handle, spreader terminals, trip alarm contact (1- C/O) & auxiliary contact (1-C/O), Shunt & UV releases, Panel door mounted key lock (Type-DN1- 250C of M/s L&T /Equivalent model and ratings of Siemens / Schnieder) - 02 nos				
	OUTGOING - a) 3 pole MCCB having release range of 32 - 40 Amps, Breaking Capacity Icu at 415V AC, 50Hz:- 25KA (Ics=100 % Icu) with inbuilt adjustable thermal overload protection , SC setting= 6-10XIn, with extended rotary handle (Type-DN0- 100C of M/s L&T /Equivalent model and ratings of Siemens,/ Schnieder) - 03 nos				

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	b) 3 pole MCCB having release range of 25-32 Amps, Breaking Capacity Icu at 415V AC, 50Hz- : 25KA (Ics=100 % Icu) with inbuilt adjustable thermal overload protection , SC setting= 6-10XIn, with extended rotary handle (Type-DN0- 100C of M/s L&T /Equivalent model and ratings of Siemens/ Schnieder) - 02 nos				
	c) 3 pole MCCB having release range of 20-25 Amps, Breaking Capacity Icu at 415V AC, 50Hz- : 25KA (Ics=100 % Icu) with inbuilt adjustable thermal overload protection , SC setting= 6-10XIn, with extended rotary handle (Type-DN0- 100C of M/s L&T /Equivalent model and ratings of Siemens/ Schnieder) - 03 nos				
	d) 125 Amps 415 volts DIN type HRC fuse link with base - 03 nos + Neutral link-01no - 01 set				
	e) Blank chamber -1no. for installation of Surge protection Device				
	METERING & INDICATORS -				
	a) 96 X 96 mm flush type 3 Ph, 4-wire, LED type , class-0.5 with RS 485, Multi Function meter having measuring and displaying features- V,A,F,PF, KW, KVA, old energy, Run hrs, site selectable KWH/KVA, input voltage measurement-50 -550 volts VAC (P-P), CT secondary selectable (1A/5A), CT/PT site programmable etc. (Model- MFM 4405 LED of M/s L&T / HPL Socomec / Equivalent) - 01 no.				
	b) Metering CT - 200/5 A, 10 VA (Round Type) (L&T/AE/Kappa) - 03 nos				
	c) 22.5 mm dia LED type R-Y-B indication lamp (M/s. L&T make/Resabh/Vaishno) - 11 nos				
	d) Control HRC Fuses- 01 set				
	BUS BARS- 300 amps, 4-strip aluminium bus bars with at least 3 nos. epoxy resin bonded insulating supports per strip, PVC colour coated sleeve with brass nuts and bolts, washers, 3mm thick transparent sheet in front, drilling holes etc. as required - 01 Set.				
	Important Notes:				
	1). Incomer MCCBs are to be electrically and mechanically interlocked so that, only one MCCB is to be operated at a time.				
	2). All Control wiring should be done with 2.5sqmm FRLS PVC insulated copper conductor cable.				
	3). Interconnections for switchgears ratings 100 Amps and above should be made with suitable size copper / aluminium strips.				

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	4). All the hinged doors should be openable up to 1500 and should be properly earthed. All the incoming and outgoing cables should be numbered by ferrules.				
	5). Panel should be IP42 degree of protection and drawing should be got approved from the Engineer in charge.				
	6) MCCBs should be comply with the requirements of IEC 60947/IS 13947:1993)				
2.	Supplying and laying of ISI mark minimum 12mm thick rubber matting suitable for providing near electrical panel conforming to IS 5424:1969	2 sqmtr		Sqmtr	
3.	Supplying & fixing shock treatment chart printed in at least three languages i.e. Hindi, English and Odia fitted in wooden frame and glass at front side and hard board at backside as required.	1 no		Each	
4.	Supplying & fixing a set of GI buckets with round bottom, each set comprising 3 nos. bucket of 9 liters capacity, including providing and fixing suitable bracket with hooks for holding the buckets, painting with red paint and lettering `FIRE' on each bucket etc complete as reqd.	1 set		Set	
Total of Sub Head- III-(M V Panel & Miscellaneous)					
Sub Head - IV - Electrical & Jack Earthing System					
1.	Providing Chemical Earthing by using copper pipe of 50 mm dia, 1.8 mm wall thickness & 2.0 meter long Earth Electrode unit consist of 32 x10 mm copper terminal taken out from electrode unit with 2 nos 12 mm dia holes, 2 sets of tinned nut bolts, plain washer, spring washer & inner space of pipe filled with high conductive material of Eco friendly hygroscopic conductive compound in 150 mm dia, 2.5 meter deep bore in ground complete with masonry enclosure of size 18"x18"x18" deep with 6 mm thick M S chequered cover plate having locking arrangement, 50 mm dia G I watering pipe up to 1.0 mtr depth with funnel etc as reqd. (M/s ELTECH/M/s ASHLOK/M/s Potential/M/s Connect Earth make)	2 sets		Set	
2.	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connections with brass nut, bolt, spring washer, excavation and re-filling etc. as required.	12 mtrs		Mtr	

3.	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	30 mtrs		Mtr	
4.	Providing and fixing earth bus of 50 mm X 5 mm copper strip on epoxy/porcelain insulator and existing 40mm x 40mm x 5mm equal angle on surface of wall for connections etc. as required.	1 mtr		Mtr	
5.	Supplying and fixing 5 mm dia. braided tinned copper conductor wire for jack earthing with 18 SWG thick, 20 mm wide copper clamp and brass nut bolt, washer only on false floor jack including removing and refixing the false floor plate etc. as reqd.	115 mtrs		Mtr	
Total of Sub Head- IV - (Electrical & Jack Earthing System)					
Sub Head - V - Surge Protection Devices (SPD)					
1.	FOR STAGE-I PROTECTION:- Supplying of Class-B, type-I, 3pole + NPE combination Surge Protection Device (SPD) with IP66 Polycarbonate transparent enclosure confirming to IEC-62305 and 60364-5-53 with latest amendments for use in TT configuration. The SPD should have arresting capacity ≥ 25 KA, 10/350 μ s between neutral and three phases (L-N) and ≥ 100 KA, 10/350 μ s between Neutral and protective earth (N-PE), Protection level < 1.5 kV, response time: ≤ 100 nano seconds, Line follow current quenching : 25 KA Ipeak , Un-240 volts (L-N), Uc-255 volts (L-N), encapsulated, non-extinguishing spark gap type with SPD status indication for both the states as per IEC norms, including fixing the same in the main incomer power line , connection with suitable size PVC insulated Copper conductor cable between bus bar to SPD and with nearby earth bus etc. as required. (Make- OBO Bettermann, model MCD 50 B-3+NPE /Equivalent model of JMV/Phonix/Dehn/Schnieder)	1 set		Set	
2.	FOR STATE-II PROTECTION:- Supplying of Class-C - Type-II, 3pole + NPE combination Surge Protection Device (SPD) with IP66 enclosure ,confirming to IEC-62305 and 60364-5-53 with latest amendments for protection against low voltage surges to be provided at the power plant (supply) level. The SPD should have arresting capacity: ≥ 10 KA, 8/20 μ s between neutral and three phases (L-N) and ≥ 20 KA, 8/20 μ s between Neutral and protective earth (N-PE), Protection level < 1.3 kV, maximum continuous voltage rating: 320				

	volts and response time: <25 nanoseconds , encapsulated, MOV type with SPD status indication for both the states as per IEC norms, including fixing the same in the Power plant panel supply line, connection with suitable size PVC insulated Copper conductor cable etc. as required. (Make- OBO Bettermann, model V-20 C/3+NPE /320V OR Equivalent model of MV/Phonix/Dehn/Schnieder)	1 set		Set	
	Important Notes for item no. 1 and 2 above:				
	1. The two stages must be tested to work in tandem and in coordination to give protection against lightening and surge.				
	2. Test Certificates for both the stages shall be enclosed.				
	3. Failure of stage -II protective Device must create and extend both visual and audio alarms.				
	4. Potential free contacts shall be there for extension of signals for remote monitoring.				
	Total of Sub Head- V - (Surge Protection Devices)				
	Sub Head - VI - SITC of Split AC unit.				
1.	Supplying of BEE approved 3 Star rated Inverter /Dual Inverter type split Air Conditioning unit having nominal cooling capacity not less than 5100 watts with copper Evaporator and Condenser coil and Rotary/ Dual rotary Compressor suitable for operation on single phase 230 V \pm 10%, 50 Hz AC supply as per IS 1391 (part-2) and ISO 16358, minimum room air flow of 700 cub.mtr/hr and minimum Indian Seasonal Energy Efficient Ratio (ISEER) of 3.50, filled with R 410 A refrigerant gas with standard lengths of copper refrigerant pipes, foam insulation, drain pipe and cable etc. complete as per scope, specifications, terms and conditions attached as required. (Make of Inverter Split AC : BEE approved reputed manufacturers meeting the desired specifications as per NIT)	1 no		Each	
2.	Installation , testing , & commissioning of 1.5 TR Inverter Split A.C. Unit , mounting / Fixing of indoor & outdoor unit ,fixing of refrigerant piping with expanded polythene foam insulation, laying of cable for interconnections and laying drain pipe of standard length which is supply along with AC unit, minor civil work i/c making holes on wall for laying refrigerant	1 job		Job	

	pipe lines, control cable and drain pipes and closing the extra openings with cement sand, making good the damages etc. as reqd.(Extra length of Refrigerant piping & cable shall be paid extra)				
3.	Providing and fixing of suitable size L- shaped powder coated MS bracket (2 nos. per set) for fixing of the outdoor unit of the split A/C units and fixing on wall with anchor bolts, drilling holes etc. complete as reqd.	1 set		Set	
4.	Providing & laying of additional refrigerant copper pipe for suction & discharge line (size not less than 1/4" & 1/2" dia) or as recommended by the manufacturer along with expanded polythene foam insulation i/c cutting ,brazing /making joint etc as reqd. The measurement shall be taken on linear basis for one circuit which includes suction & discharge line & foam insulation.	5 mtrs		Mtr	
5.	Supplying & laying of of 3 core 2.5 sqmm PVC insulated & sheathed copper cable for electrical connection of indoor and outdoor units of ACs etc as reqd. (Finolex/L&T/Polycab/Havells)	5 mtrs			
6.	Providing and laying of additional drain pipe of size 20mm dia PVC braided/ solid (M class-ISI) along with all accessories and fixing on surface of wall with PVC saddles (if required) suitable for drainage of condensate water etc. as reqd.	5 mtrs		Mtr	
7.	Providing of additional R410A / R407 refrigerant gas (if required) and charging into the Inverter AC unit etc. as reqd.	1 kg		KG	
8.	S/F of 50mmX50mm size single compartment PVC ducting (both bottom and top) on wall for covering the refrigerant pipes, electrical cable & drain pipe etc. complete as required.	10 mtrs		Mtr	
Total of Sub Head- VI - (Split AC units)					
ABSTRACT OF COSTS					
Total for Sub Head- I : Internal wiring & Fittings					
Total For Sub-Head-II (MCBDB, MCB & Cables)					
Total of Sub Head- III-(M V Panel & Miscellaneous)					
Total of Sub Head- IV - (Electrical & Jack Earthing System)					
Total of Sub Head- V - (Surge Protection Devices)					
Total of Sub Head- VI - (Split AC units)					
G. TOTAL:-					

Executive Engineer (E)

Contractor

LIST OF APPROVED MAKES OF BSNL ELECTRICAL WING

S. No.	Item	Makes
1	Engine	Ashok Leyland /Cummins/ Cater pillar / KOEL / Volvo Penta/Mahindra & Mahindra (up to 200 KVA) /Escorts (up to 30 KVA)/ Eicher (up to 35 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/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/Yokins
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 /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 / Zerotrip
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 Filters	Aniflra Effluent / ARW /Athlete/ Airtake/ Dyna / Kirsloskar/ 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 /System Sensor
41	Fire Panel (Microprocessor based)	Agni Instruments /Agni Devices/Aruna Agencies / 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, Thyssenkrupp Elevator(India)

NOTE:

1. In case of External / PMC 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 may be approved by concerned PCEs/Sr CEs/CEs(Elect) for the work under his jurisdiction as already accorded vide letter no. 3-2-5/EW/VEP-1/2007 dated.05-07-2007.

CONTRACTOR

EXECUTIVE ENGINEER (E)

GENERAL SPECIFICATIONS

- 1. Drawings:**
 - i. The work shall be carried out in accordance with drawings enclosed in the tender with modifications thereof from time to time etc. as approved by the Engineer In Charge.
 - ii. All circuits shall be indicated and numbered in the wiring diagram and the points shall be given the same number as the circuits to which they are electrically connected.

- 2. Conformity to IE Act, IE Rules and Standards:**

All Electrical works shall be carried out in accordance with the provision of IE Act 2003 and IE Rules' 1956 amended up to date.

- 3. General Requirement of Components:**
 - i. **Quality of Materials:** All materials and equipments supplied by the Contractor shall be new. They shall be of such design, size and materials as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site.
 - ii. **Inspection of Materials:** Materials and equipments to be used in the work shall be inspected by the departmental officers at site/manufacturer's premises / factory/workshop etc. For fabricated equipments, the drawings shall be got approved by the Engineer In Charge before fabrication at workshop. Materials test certificate shall be submitted by the Contractor.

- 4. Ratings of Components:**
 - i. All components in a wiring installation shall be appropriate ratings of voltage, current and frequency as required at respective sections of electrical installations in which they are used.
 - ii. All conductors, switches and accessories shall be such size as to be capable of carrying minimum current which will normally flow through them, without their respective ratings being exceeded.

- 5. Conformity to Standards:**

All components shall conform to relevant Indian Standards specifications. Materials with ISI certification marked shall be preferred.

- 6. Workmanship:**

Good workmanship is an essential requirement to be complied with. The entire work of manufacture, fabrication, assembly and installation shall conform to sound Engineering Practice.

- 7. Use of quality materials:** Only quality materials of reputed makes as specified in the tender will be used in works.

- 8. Fabrication in reputed workshop:**

Switch boards and Lt panels shall be fabricated in a factory / workshop having modern facilities like quality fabrication, seven tank process, powder/epoxy paint plant, proper testing facilities, manned by qualified technical personnel.

- 9. Testing:**

All tests prescribed in general specifications to be done before, during and after installation shall be carried out and test results shall be submitted to the Engineer In Charge in prescribed proforma forming part of the completion certificate.

10. Commissioning on completion of work:

After the work is completed, it shall be ensured that, the installations tested and commissioned. The Contractor shall be co-ordinate with supply authority/Electrical inspectorate/Sub-Station Agency for getting the MV installation work inspected before energisation of the installation and no extra charges will be paid in this regard if not specified otherwise.

11. Completion plan and completion certificate:

- i. For all works, completion Certificate in prescribed proforma shall be submitted to the Engineer In Charge.
- ii. Completion plan shall indicate:
 - General layout of Building.
 - Location of main switch and distribution boards indicating the circuit numbers controlled by them.
 - Position of all points and their controls.
 - Types of Fittings/ Fans/ plug points etc.
 - Name of work, Contract no. name of BSNL Electrical Division/Sub-Division and Agency etc.

12. Guarantee :

The installation will be handed over to the department after necessary testing and commissioning. The installation will be guaranteed against any defective design and workmanship. Similarly, the materials supplied by the contractor will be guaranteed against any manufacturing defects, inferior quality. The guarantee period will be for a period of 12 months from the date of handing over to the department. Installations/Equipments or components thereof shall be replaced/rectified/repared to the satisfaction of Engineer in Charge. However, the warranty period of the Compressor of Inverter Split units and overall warranty period of AC units will be covered as per Manufacturer's warranty policy.

13. 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.
14. The work shall be supervised by a qualified Engineer.
15. The layout of the work will be given by Engineer-in-charge or his duly authorized representative at site of work.
16. All materials to be used on this work by the contactors shall be got approved from the Engineer in – charge before installation at site.
17. 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.
18. 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.
19. 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.
20. 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.

21. Cement for this bonafide work is to be arranged by the contractors himself and nothing extra will be paid on this account.
22. 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.
23. The contractor shall make his own arrangement at his own cost for electrical / general tools and plants required for the work.
24. The entire installation shall be at the risk & responsibility of the contractor until these are tested and handed over to the user 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 rest with Engineer – in – charge which shall be binding on the contractor. In case of any damage to the existing equipment or property of HAL/IAF authority reported, the cost shall be recovered from the firm.
25. 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.
26. 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.
27. 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.
28. Acceptable make of the materials shall be as per the schedule of works. Where makes of materials are not available in the schedule of works, the materials should be supplied as per the latest product directory circulated in BSNL which is attached in the NIT document.
29. 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.
30. ***The site is located in the campus of M/s Hindustan Aeronautics Limited (HAL), Sunabeda (Koraput District), (under Ministry of Defence). Due to security reasons, there will be restrictions in working hours and entry/exit of staff, material, tools and tackles etc. The Firm has to apply and obtain necessary Gate pass/permissions from M/s HAL / IAF authorities and the work has to be carried out as per their permitted working hours/procedures. BSNL will also coordinate with M/s HAL/IAF in obtaining the above permissions. Further, the work should be carried out in such a way that it will not cause inconvenience and hindrance to the working of HAL/IAF equipment/personnel on duty.***

CONTRACTOR

EXECUTIVE ENGINEER (E)

SPECIFICATIONS FOR E.I. WORK

SECTION – 1

TECHNICAL SPECIFICATIONS FOR CONDUIT WIRING

- 1.1 For all industrial premises, conduit system of wiring shall be provided. In case of commercial and domestic premise, conduit system of wiring shall be provided wherever specified.
- 1.2 **Point Wiring:**
- 1.2.1 Point wiring shall include all works necessary for complete wiring of a switch circuit of any length from the tapping point on the distribution circuit to the following through the switch.
- a) Ceiling rose or connector (in the case of ceiling/exhaust fan point).
 - b) Ceiling rose (in the case of pendant except stiff pendant point).
 - c) Back plate (in the case of stiff pendants and fittings with down rods)
 - d) Socket and Outlets (in the case of socket outlets points)
 - e) Lamp Holder (in the case of wall brackets, batten points, bulk head and similar fittings).
 - f) Call Bell/ Buzzer (in this case the works Via the switch shall be red as “ Via ceiling rose , socket outlet or bell push where no ceiling rose/socket outlets is provided”).
- 1.2.2 The following shall be deemed to be included in the point wiring.
- a) Switch.
 - b) Ceiling rose or connector as required
 - c) Any special and suitable M. S. box for neatly housing the connector and covering the fan hook in case of fan point.
 - d) Bushed conduit or porcelain where cable pas through walls, floors etc.
 - e) Earth wire from the distribution boards to all current carrying apparatus through switch boards, M. S. Boxes etc.
 - f) All metal blocks, boards, modular base and covers and G.I. Boxes, sunk or surface mounted including those required for mounting fan regulators but excluding those for fixing the switch distribution boards.
 - g) All fixing accessories such as clips, nails, screws, phil plug, rawl plug etc. as required.
 - h) Connection to ceiling rose, connector socket outlets, Lamp holders, switch, fan regulator etc.
 - i) Looping in the same switch board and inter connections between points on the same circuit.
- 1.2.3 All points in the distribution system shall be measured under point wiring irrespective of length of circuit from the distribution board.
- 1.2.4 In case of point with more than one light point controlled by the same switch, the complete items shall be considered as separate point and the rate shall be quoted accordingly.
- 1.2.5 A light point controlled by 2 Nos. of control switches shall be measured as one point from the switch to either side of the appliance viz. total of two points.

- 1.2.6 In case of call bell/buzzer point where a single call bell/buzzer is controlled from more than one place with a ceiling rose and bell push, ceiling rose where socket outlets is not provided, the length of point shall be from the call bell/buzzer to the closest bell push. The additional bell-push and wiring on the same point shall be separately quoted for.
- 1.2.7 **Sub-Main wiring**
- 1.2.8 The sub-main wiring shall mean the length of wiring from main building panel board/distribution switch board to another main/distribution switch board, measured along the run of wiring. Such wiring shall be measured on linear basis.
- 1.3 **System of Wiring:**
- 1.3.1 The wiring shall be carried out as per the system specified in the tender Schedule. Power wiring shall be kept separate and distinct from lighting and fan wiring. All conductors shall run as far as possible along the walls and ceiling so as to be easily accessible and capable of being thoroughly inspected. In all types of wiring due consideration shall be given for neatness, good appearance and safety.
- 1.3.2 The balancing of circuits in 3 wires on poly phase installation shall be arranged to the satisfaction of Engineer-in-charge. In large/important rooms light fans and socket outlet points shall be distributed over more than one circuit as directed by the Engineer-in-charge.
- 1.4 **Flexible Cable:**
- 1.4.1 Conductor of flexible cable shall be of copper. The minimum permissible size of conductor for flexible cable shall be 1.5 mm^2 . Unless the flexible cables and conduits are protected by armoured PVC sheaths, these shall not be used in workshops and other places where they are liable to mechanical damage.
- 1.4.1 Three core flexible cables shall be used for connecting single phase appliance.
- 1.5 **Rating of lamps, fans etc. :**
- 1.5.1 For the purposes of connected load calculations, incandescent installations for residential and non residential building shall be rated at 100 W
- 1.5.2 Table fans shall be rated at 50/60W. Exhaust fans shall be rated according to their capacity.
- 1.5.3 5 Amp socket outlet point and 15 Amp socket outlet point shall be rated at 100W and 1000W respectively, unless the actual values of loads are known or specified.
- 1.6 **Joints and loop back :**
- 2.6.1.1 Unless otherwise specified, the wiring shall be done in the 'Looping system'. Phase or light conductor shall be looped at the switch board and for neutral wire/earth wire, looping at the 1st point shall be done in the switch box and subsequent points will be made from point outlets. No joints shall be permitted anywhere except switch box or point outlets.

1.6.2 Wherever wires are to be connected together, mechanical connector of adequate ratings shall be made use of. Under no circumstances twisted joints shall be allowed.

1.7 **Control at point of entry of supply.**

1.7.1 There shall be a linked main switch gear with fuse/MCCB/MCB/Isolator on each light conductor of the supply mains at the points of entry. The wiring throughout the installation shall be such that there is no break in the neutral wire except in the form of linked switch gear.

1.7.2 The neutral shall be distinctly marked.

1.7.3 The main switch gear shall be situated as near as practical to the termination of service line and shall be easily accessible without the use of any external aid.

1.7.4 On the main switch gear, where the conductors include earth conductor of a 2 wire system or on earthed neutral conductor of a multi wire system or a conductor which is to be connected thereto, the permanent indication shall be provided to identify the earthed neutral conductor (Rule 32 (i) of Indian Electricity Rules 1956 refers).

1.8 **Switch Boards:**

1.8.1 Modular type switch boards with GI box, modular base plate and cover shall be mounted on wall, columns etc. by suitable mechanical means so as to ensure firm mechanical supports.

1.8.2 Hinged type boards shall consist of a box made of sheet metal clad, switch gear, distribution boards etc.

1.8.3 Hinged metal boards shall consist of a box made of sheet metal of 6 SWG gauge thick and shall be provided with hinged cover to enable board to be swung open for the examination of the wiring at the back. The joint shall be substantially welded.

1.8.4 All wires passing through metal boards shall be bushed.

1.8.5 No apparatus shall project beyond any edge of the panel. No fuse body shall be mounted within 2.5 cms of any edge of the panel.

1.8.6 Fixed type metal boards shall be provided for large switch boards where number of switch gears and/or higher capacity metal clad switch gears are to be mounted.

1.8.7 Fixed type metal boards shall consist of an angle or channel iron frame fixed on the wall or on the floor and supported on the wall at the top. There shall be a clear distance of one meter in front of the switch board. The working distance of one meter behind the switch board is preferable.

1.8.8 The detailed design and drawings for metal boards and angle iron frame work including the disposition of the various mounting, which shall be systematically and neatly arranged for arriving at the overall dimensions shall be prepared and submitted before hand for approval of the Engineer-in-charge.

1.8.9 In case of convenience power outlets in industrial premises of 15/30Amps the boxes shall be made out of sheet metal 16 gauge and of size 300 x 250 mm. The socket outlet shall be of Reyrolle type two pin and earth. A 30 Amps switch, double pole metal clad shall be provided for the socket outlet. For the socket outlets, protective cover with connecting chain shall also be provided.

1.8.10 In case of commercial and residential buildings or wherever specifically indicated power outlets with flush type 15 Amps socket outlet and 15 Amps control switch shall be provided.

1.9 Marking of Apparatus:

1.9.1 When a board is connected to voltage higher than 250 volts, all the terminals or leads of the apparatus mounted on it shall be marked in the following colours to indicate the different poles or phase to which apparatus or its different terminals may have been connected.

Alternating Current

Three phases-Red, Blue, yellow,
Neutral - Black
Earth – Green /Yellow

Direct Current

Three Wire System 2 outer wires
Neutral – Black
Earth – Green /Yellow

1.9.2 Where a board has more than one switch gear, each such switch gear shall be marked to indicate which section of the installation it controls. The main switchgear shall also be suitably marked. Where there is more than one switch board in the building, each such switch board shall be marked to indicate which section of the installation and building it controls.

1.9.3 All marking required under this rule shall be clear and permanent.

1.9.4 In the cable boxes for all the switchgears, the size and number of cables connected to it shall be suitably marked.

1.9.5 All distribution boards shall be marked 'lighting' or 'power' & essential lighting / power as the case may be and also marked with the pressure and number of phases of the supply. Each distribution board shall be provided with a circuit list giving details of each circuit which it controls and the current rating of the circuit and size of the fuse element.

1.9.6 Capacity of Circuits:

1.9.7 Lights and fans may be wired on a common circuit. Such circuit shall not have more than a total of 10 points of light, fan and socket outlets or a load of 800 watts, whichever is less.

1.9.8 The power circuits shall be designed with one outlet per circuit unless otherwise specified, for non-residential building only one outlet per circuit and for residential building as a) Not more than 02nos 16A outlets, b) not more than 03nos per circuit for 06Amps outlets and c) not more than 01no. 16A and 02nos 6A outlets.

Load more than 1kW shall be controlled by suitably rated MCB.

1.10 Type and size of Conduit:

1.10.1 Conduit pipe used in wiring system shall be of 16 gauge for sizes up to 32 mm and 14 gauge for sizes above 32 mm. Conduit pipes shall be solid drawn or formed by electric resistance welding (ERW) finished with galvanized or stove enameled surface. All conduit accessories shall be of thread type. Pin grip type or clamp grip type accessories shall not be used. The maximum number of PVC insulated 250 volts grade aluminium conductor cable that can be drawn in one conduit of various sizes is given in Table I and the number of cables per conduit shall not exceed this. Steel conduit of size less than 19 mm in diameter shall not be used.

1.11 **Bunching of cables:**

1.11.1 Cables carrying direct current may be bunched whatever their polarity, but cable carrying alternating current, if installed in metal conduit shall always be bunched so that the outgoing and return cables are drawn into the same conduit.

1.12 **Conduit Joints:**

1.12.1 Conduit pipes shall be jointed by means of screwed – screwed accessories only. In long distance straight run of conduit, inspection type completes at reasonable intervals shall be provided. In the latter case the bare threaded portion shall be treated with anti-corrosive preservative. Threads on conduit pipe in all cases shall be between 13 mm to 19 mm long sufficient to accommodate pipes to full threaded portion of couplers or accessories. Cut ends of conduit pipes shall have no sharp edges nor any burrs left to avoid damage to the insulation or conductors while pulling them through such pipes. After laying of the conduit the bare threaded portion shall be treated with two coats anti-corrosive preservative.

1.13 **Protection of conduit against rust:**

1.13.1 All the conduit pipes including accessories shall be given 2 coats of duco paint of white colour or any other colour if specified so as to avoid damage to conduit due to rust. It will be ensured that no bare threaded portion of conduit is allowed to be energized unless they are treated with anti corrosive preservative and painted.

1.13.2 Conduit shall be laid at a minimum distance of 100 mm from the pipes of other non electrical device.

1.14 **Fixing of Conduit:**

1.14.1 Conduit run on surface shall be supported on M.S. Spacers 3 mm thick, painted with 2 coats of anticorrosive primer, which in turn are properly screwed to the wall or ceiling. Rawl plugs or phil plug shall be used for fixing the spacers. Conduit pipes shall be fixed on the spacers using G. I. saddles of suitable size and heavy gauge (SWG). Saddles shall be at intervals of not more than 1 mtr, but on either side of couplers or bends or similar fittings, saddles shall be fixed at a distance of 30cm from centre of such fittings. Conduit shall be neatly run parallel or at right angle to the walls of the buildings.

1.14.2 Saddles for surface conduit wiring on wall shall not be less than 0.55 mm (24 gauge) for conduit up to 25 mm diameter and not less than 20 gauge for larger diameter. The corresponding widths shall be 19mm and 25mm.

1.14.3 Where conduit pipes are not to be laid along the trusses, steel joints etc., the same shall be secured by means of ordinary clips or girder clips as approved by the Engineer-in-charge. Where is not possible to drill holes in the truss members suitable clamps with bolts and nuts shall be used. The width and the thickness of the ordinary clips or girder clips and clamps shall be approved by the Engineer-in-charge.

1.15 **Bends in Conduit:**

1.15.1 All necessary bends in the system including diversion shall be done by bending pipes or by inserting suitable solid or inspection type normal bends, elbows or similar fittings, or by fixing cast iron inspection boxes whichever is most suitable. Conduit fittings shall be avoided as far as possible on conduit system exposed to weather. Where necessary solid type fittings shall be used. Radius of bends in conduit pipes shall not be less than 7.5 cm.

1.16 **Outlets:**

1.16.1 The switch or regulator boxes shall be made of metal on all sides.

1.16.2 In case of M.S. Cover for the front side of the switch boards, all the four edges of these cover shall be folded inside for a depth of atleast 4 mm.

1.16.3 Clear depth of the box shall not be less than 60 mm and this shall be increased suitable to accommodate mounting of fans regulator in flush pattern.

1.16.4 Only a portion of the M.S. Boxes shall be sunk in the wall, the other portion being projected out for suitable entry of conduit pipes into the box.

1.16.5 Control switches shall be connected in the phase conductors only and shall be 'ON' when knob is down. Switches shall be fixed in sheet steel boxed with cover plates as specified. Chromium plated brass screws shall be used for fixing of switches.

1.16.6 Power Point wiring shall be distinctly separated for light Point wiring. Conduits not less than 25 mm and wires not less than 6 sq. mm aluminium or equivalent copper shall be used for power wiring.

1.17 **Flexible steel conduit:**

1.17.1 Flexible conduit shall be used only where absolutely unavoidable. Flexible conduits shall be formed from the continuous length spiral anti locked strip steel with fused zinc coating on both sides. The conduit shall be terminated in brass adapters.

1.17.2 All unused conduit entries shall be blocked off in an approved manner and where conduits are terminated in adapter boxes, all removable box covers shall be firmly secured to provide complete. enclosures.

1.18 **Recessed conduit wiring system:**

1.18.1 Recessed conduit wiring system shall comply with all the requirements of surface conduit wiring and in addition shall also comply with following requirements.

1.18.2 **Making of chase**

The chase in the wall shall be neatly made and of ample dimensions to permit the flexing of conduit pipe in an approved manner. In case of building under construction, conduit shall be buried in the wall before plastering and shall be finished neatly after erection of conduit. In case of exposed brick masonry work, special care shall be taken to fix the

conduit and accessories in position along with the building work. In case of new construction the scope of work under the electrical contractor shall be responsible for providing chase in the wall, fixing up the conduits and finishing of the wall complete. However, final painting after plastering will be carried out by the agency.

1.18.3 Fixing of conduit in case:

The conduit pipe shall be fixed by means of staples or by means of saddles not more than 60 cm apart. Fixing of standard bends or elbows shall be avoided as far as possible and all curves maintained by bending conduit pipe itself with long radius which will permit easy drawing of conductors. All threaded joints of conduit pipes shall be treated with approved 'preservative compound' to ensure protection against rust.

1.18.4 Inspection boxes:

Suitable inspection boxes to the barest minimum requirements shall be provided to permit periodical inspection to facilitate replacement of wires, if necessary. These shall be mounted flush with the suitable ventilating holes shall be provided in the inspection box covers.

1.18.5 Types of accessories to be used:

All outlets such as switches, wall sockets etc. may be either flush mounting type or surface mounting type as specified. The outlet box shall be efficiently earthed with conduit by an approved means of earth attachment.

To facilitate drawing of wire in the conduit G.I. fish wire of 10 SWG shall be provided along with laying of recessed conduit.

2.10 Wires:

- 2.10.1 All wires shall be PVC insulated multi core copper conductor FRLS and PVC insulated as specified and shall be any 660 volts grade.
- 2.10.2 For points and circuit wiring the minimum sizes of copper conductor cable shall be as follows:
 - For Light point wiring – 1.5sqmm
 - For Power point wiring – 4.0 sqmm
- 2.10.3 All wiring termination shall be with crimped lugs except in case of termination on piano type switches and piano type sockets outlets.
- 2.10.4 Conduits buried in concrete structure shall be put in position and securely fastened to the reinforcement and got approved by the Engineer-in-charge before the concrete is poured. Proper care shall be taken to ensure that the conduits are neither dislocated nor chocked at the time of pouring the concrete. Suitable fish wires shall be drawn in all conduits before they are embedded.
- 2.10.5 No conduit shall be buried in concrete or plastered unless the work has been inspected and inspected and approved by the Engineer-in- charge.

Table – I
MAXIMUM PERMISSIBLE NUMBER OF PVC INSULATED 650V/1100V
ALUMINIUM/COPPER CONDUCTOR CABLE CONFORMING TO IS694:1990

Nominal cross sectional area of conductor in sqmm	CONDUIT SIZE AND NO. OF CONDUCTORS PERMISSIBLE FOR DRAWING											
	20mm		25mm		32mm		38mm		51mm		51mm	
	S	B	S	B	S	B	S	B	S	B	S	B
1.5	5	4	10	8	18	12	-	-	-	-	-	-
2.5	5	3	8	6	12	10	-	-	-	-	-	-
4	3	2	6	5	10	8	-	-	-	-	-	-
6	2	-	5	4	8	7	-	-	-	-	-	-
10	2	-	4	3	6	5	8	6	-	-	-	-
16	-	-	2	2	3	3	6	5	10	7	12	8
25	-	-	-	-	3	2	5	3	8	6	9	7
35	-	-	-	-	-	-	3	2	6	5	8	6
50	-	-	-	-	-	-	-	-	5	3	6	5
70	-	-	-	-	-	-	-	-	4	3	5	4

1. The above table shows the maximum capacity of conduits for a simultaneous drawing in cables.
2. The column headed by "S" apply to runs of conduits which have distance not exceeding 4.25mtrs between draw in boxes and which do not deflect from the straight by an angle of more than 15 degrees. The column headed by "B" apply to runs of conduit which deflect from the straight by an angle of more than 15 degrees.
3. Conduit sizes are nominal external diameters.

TABLE-2
GIRDER CLIPS OR CLAMPS

SIZE OF CONDUIT	WIDTH	THICKNESS
20mm	19mm	0.9mm (20 SWG)
25mm	19mm	0.9mm (20 SWG)
32mm	25mm	1.2 mm (18 SWG)

SECTION – 2

TECHNICAL SPECIFICATIONS FOR CABLE LAYING

2.1 TYPES OF CABLES

2.1.1 The cables for applications for low and medium voltage (upto and including 1.1KV) supply shall be one of the following: -

- (i) PVC insulated and PVC sheathed, conforming to IS:1554 (Part-1)- 1988
- (ii) Cross linked polyethylene insulated, PVC sheathed (XLPE), conforming to IS: 7098 (Part-1)- 1988.

2.1.2 The cables for applications for high voltage (above 1.1KV but up to and including 11KV supply) supply shall be one of the following: -

- (i) PVC insulated and PVC sheathed, conforming to IS:1554 (Part-2)- 1988.
- (ii) Paper insulated, lead sheathed (PILCA) conforming to IS:692-1973
- (iii) Cross linked polyethylene (XLPE) insulated, PVC sheathed conforming to IS:7098 (Part-2)- 1985.

2.1.3 The cables shall be with solid or stranded aluminium conductors, as specified. Copper conductors may be used, only in special applications, where use of aluminium conductors is not technically acceptable.

2.2 SELECTION OF CABLE SIZES

2.2.1 The cable sizes shall be selected by considering the voltage drop in the case of MV (distribution) cables and Current carrying capacity in the case of HV (feeder) cables. Due consideration should be given for the Prospective short circuit current and the period of its flow, especially in the case of HV cables.

2.2.2 While deciding upon the cable sizes, derating factors for the type of cable and depth of laying, grouping, ambient temperature, ground temperature, and soil resistivity shall be taken into account.

2.2.3 Guidance for the selection of cables shall be served from relevant Indian Standards such as IS:3961 (Part-1)-1967 for paper insulated lead sheathed cables, IS: 3961 (Part-2)-1967 for PVC insulated and PVC sheathed heavy duty cables, IS: 5819- 1970 for recommended short circuit ratings of high voltage PVC cables, IS: 1255-1983 on code of practice for installation and maintenance of power cables up to and including 33KV rating etc.

2.3 INSTALLATION

2.3.1 General

- (i) Cables with kinks, straightened kinks or any other apparent defects like defective armouring etc. shall not be installed.
- (ii) Cables shall not be bent sharp to a small radius either while handing or in installation. The minimum safe bending radius for PVC/XLPE (MV) cables shall be 12 times the overall diameter of the cable. At joints and terminations, the bending radius of individual cores of a multi core cable of any type shall not be less than 15 times its overall diameter.
- (iii) The ends of lead sheathed cables shall be sealed with solder immediately after cutting the cables. In case of PVC cables, suitable sealing compound/tape shall be used for this purpose, if likely exposed to rain in transit storage. Suitable heat shrinkable caps may also be used for the purpose.

2.3.2 Route Before the cable laying work is undertaken, the route of the cable shall be decided by the Engineer-in-Charge considering the following.

- (i) While the shortest practicable route should be preferred, the cable route shall generally follow fixed developments such as roads, foot paths etc. with proper offsets so that future maintenance, identification etc. are rendered easy. Cross country run merely to shorten the route length shall not be adopted.
- (ii) Cable route shall be planned away from drains and near the property, especially in the case of LV/MV cables, subject to any special local requirements that may have to be necessarily complied with.
- (iii) As far as possible, the alignment of the cable route shall be decided after taking into consideration the present and likely future requirements of other services including cables enroute, possibility of widening of roads/lanes etc.
- (iv) Corrosive soils, ground surrounding sewage effluent etc. shall be avoided for the routes.
- (v) **Route of cables of different voltages.**
 - (a) Whenever cables are laid along well demarcated or established roads, the LV/MV cables shall be laid farther from the kerb line than HV cables.
 - (b) Cables of different voltages, and also power and control cables shall be kept in different trenches with adequate separation. Where available space is restricted such that this requirement cannot be met, LV/MV cables shall be laid above HV cables.
 - (c) Where cables cross one another, the cable of higher voltage shall be laid at a lower level than the cable of lower voltage.

2.6.3 Proximity to communication cables Power and communication cables shall as far as possible cross each other at right angles. The horizontal and vertical clearances between them shall not be less than 60cm.

2.6.4 Railway crossing Cables under railway tracks shall be laid in spun reinforced concrete, or cast iron or steel pipes at such depths as may be specified by the railway authorities, but not less than 1m, measured from the bottom of the sleepers to the top of the pipe. Inside railway station limits, pipes shall be laid up to the point of the railway station limits, pipes shall be laid up to a minimum distance of 3m from the center of the nearest track on either side.

2.6.5 Way Leave Way leave for the cable route shall be obtained as necessary, from the appropriate authorities, such as, Municipal authorities, Department of telecommunication, Gas Works, Railways, Civil Aviation authorities, Owners of properties etc. In case of private property, Section 12/51 of the Indian Electricity Act shall be complied with.

2.6.6 Methods of laying

The cables shall be laid direct in ground, pipe, closed or open ducts, cable trays or on surface of wall etc. The method(s) of laying required shall be specified in the tender schedule of work.

2.6.7 Laying direct in ground

2.6.7.1 General

This method shall be adopted where the cable route is through open ground, along roads/lanes, etc. and where no frequent excavations are likely to be encountered and where re-excavation is easily possible without affecting other services.

2.6.7.2 Trenching

(i) Width of trench: The width of the trench shall first be determined on the following basis.

- (a) The minimum width of the trench for laying a single cable shall be 35cm
- (b) Where more than one cable is to be laid in the same trench in horizontal formation, the width of the trench shall be increased such that the inter-axial spacing between the cables, except where otherwise specified, shall be at least 20cm.
- (c) There shall be a clearance of at least 15cm between axis of the end cables and the sides of the trench.

(ii) Depth of trench

The depth of the trench shall be determined on the following basis: -

- (a) Where the cables are laid in a single tier formation, the total depth of trench shall not be less than 75cm for cables up to 1.1KV and 1.2m for cables above 1.1KV.
- (b) When more than one tier of cables is unavoidable and vertical formation of laying is adopted, the depth of the trench in (ii) a above shall be increased by 30cm for each additional tier to be formed.
- (c) Where no sand cushioning and protective covering are provided for the cables, the depth of the trench shall be increased by 25cm.

(iii) Excavation of trenches

- (a) The trenches shall be excavated in reasonably straight lines. Wherever there is a change in the direction, a suitable curvature shall be adopted complying with the requirements.
- (b) Where gradients and changes in depth are unavoidable, these shall be gradual.
- (c) The bottom of the trench shall be level and free from stones, brick bats etc.
- (d) The excavation should be done by suitable means-manual or mechanical. The excavated soil shall be stacked firmly by the side of the trench such that it may not fall back into the trench.
- (e) Adequate precautions should be taken not to damage any existing cable(s), pipes or any other such installations in the route during excavation. Wherever tricked, tiles or protective covers or bare cables are encountered, further excavation shall not be carried out without the approval of the Engineer-in-Charge.
- (f) Existing property, if any, exposed during trenching shall be temporarily supported adequately as directed by the Engineer-in-Charge. The trenching in such cases shall be done in short lengths, necessary pipes laid for passing cables therein and the trench refilled.
- (g) If there is any danger of a trench collapsing or endangering adjacent structures, the sides may be left in place when back filling the trench.
- (h) Excavation through lawns shall be done in consultation with the Department concerned.

2.6.7.3 Laying of cable in trench

(i) Sand cushioning

- (a) The trench shall then be provided with a layer of clean, dry sand cushion of not less than 8cm in depth, before laying the cables therein.
- (b) However, sand cushioning as per (a) above need not be provided for MV cables, where there is no possibility of any mechanical damage to the cables due to heavy or shock loading on the soil above. Such stretches shall be clearly specified in the tender documents.
- (c) Sand cushioning as per (a) above shall however be invariably provided in the case of HV cables.

(ii) Testing before laying :

All the time of issue of cables for laying, the cables shall be tested for continuity and insulation resistance.

(iii) Testing before covering:

The cables shall be tested for continuity of cores and insulation resistance and the cable length shall be measured, before closing the trench. The cable end shall be sealed /covered.

(iv) Sand covering :

Cables laid in trenches in a single tier formation shall have a covering of dry sand of not less than 17cm above the base cushion of sand before the protective cover is laid. In the case of vertical multi-tier formation, after the first cable has been laid, a sand cushion of 30cm shall be provided over the base cushion before the second tier is laid. If additional tiers are formed, each of the subsequent tiers also shall have a sand cushion of 30cm as stated above. Cables in the top most tiers shall have final sand covering not less than 17cm before the protective cover is laid. Sand covering as per (a) and (b) above need not be provided for MV cables where a decision is taken by the Engineer-in-Charge, but the inter tier spacing should be maintained as in (b) above with soft soil instead of sand between tiers and for covering. Sand cushioning as per (a) and (b) above shall however be invariably provided in the case of HV cables.

(v) Extra loop cable:

(a) At the time of original installation, approximately 3m of surplus cable shall be left on each terminal end of the cable and on each side of the underground joints. The surplus cable shall be left in the form of a loop. Where there are long runs of cables such loose cable may be left at suitable intervals as specified by the Engineer-in-Charge.

(a) Where it may not be practically possible to provide separation between cables when forming loops of a number of cables as in the case of cables emanating from a substation, measurement shall be made only to the extent of actual volume of excavation, sand filling etc. and paid for accordingly.

(vi) Mechanical protection over the covering:

(a) Mechanical protection to cables shall be laid over the covering in accordance with (b) and (c) below to provide warning to future excavators of the presence of the cable and also to protect the cable against accidental mechanical damage by pick-axe blows etc.

(b) Unless otherwise specified, the cables shall be protected by second class brick of nominal size 22cmX11.4cmX7 cm or locally available size, placed on top of the sand (or, soil as the case may be). The bricks shall be placed breadth-wise for the full length of the cable. Where more than one cable is to be laid in the same trench, this protective covering shall cover all the cables and project at least 5cm over the sides of the end cables.

(c) Where bricks are not easily available, or are comparatively costly, there is no objection to use locally available material such as tiles or slates or stone/cement concrete slabs. Where such an alternative is acceptable, the same shall be got approved from the Engineer In charge before execution.

(d) Protective covering as per (b) and (c) above need not be provided only for MV cables, in exceptional cases where there is normally no possibility of subsequent excavation. Such cases shall be as per specified Tender specifications.

(e) The protective covering as per (b) and (c) above shall, however invariably be provided in the case of HV cables.

2.6.7.4 Back filling:

- (i) The trenches shall be then back-filled with excavated earth, free from stones or other sharp ended debris and shall be rammed and watered, if necessary in successive layers not exceeding 30cm depth.
- (ii) Unless otherwise specified, a crown of earth not less than 50mm and not exceeding 100mm in the center and tapering towards the sides of the trench shall be left to allow for subsidence. The crown of the earth however, should not exceed 10 cms so as not to be a hazard to vehicular traffic.
- (iii) The temporary re-statements of roadways should be inspected at regular intervals, particularly during wet weather and settlements should be made good by further filling as may be required.
- (iv) After the subsidence has ceased, trenches cut through roadways or other paved areas shall be restored to the same density and materials as the surrounding area and –re-paved in accordance with the relevant building specifications to the satisfaction of the Engineer-in-Charge.
- (v) Where road beams or lawns have been cut out of necessity, or kerb stones displaced, the same shall be repaired and made good, except for turfing /asphalting, to the satisfaction of the Engineer-in-Charge and all the surplus earth or rock shall be removed to places as specified.

2.6.7.5 Laying of single core cables:

- (i) Three single core cables forming one three phase circuit shall normally be laid in close trefoil formation and shall be bound together at intervals of approximately 1m.
- (ii) The relative position of the three cables shall be changed at each joint at the time of original installation, complete transposition being effected in every three consecutive cable lengths.

2.6.7.6 Route markers :

- (i) Location Route markers shall be provided along the runs of cables at locations approved by the Engineer-in-Charge and generally at intervals not exceeding 100m. Markers shall also be provided to identity change in the direction of the cable route and at locations of underground joints.
- (ii) (a) Plate type marker Route markers shall be made out of 100mm X 5mm GI/ aluminium plate welded / bolted on 35mm X 35mm X 6mm angle iron, 60cm long. Such plate markers shall be mounted parallel to and at about 0.5m away from the edge of the trench.
(b) CC marker Alternatively, cement concrete 1:2:4 (1 cement:2 coarse sand: 4 graded stone aggregate of 20mm in size) as shown in figure 2 shall be laid flat and centered over the cable. The concrete markers, unless otherwise instructed by the Engineer-in-Charge, shall project over the surrounding surface so as to make the cable route easily identifiable.
- (c) Inscription The words 'BSNL-MV/HV CABLE' as the case may be, shall be inscribed on the marker.

2.6.8 Laying in pipes / closed ducts:

1.6.8.1 In locations such as road crossing, entry in to buildings, paved areas etc. cables shall be laid in pipes or closed ducts. Metallic pipe shall be used as protection pipe for cables fixed on poles of overhead lines.

1.6.8.2 (i) Stone ware pipes, GI, CI or spun reinforced concrete pipes shall be used for cables in general; however only GI pipe shall be used as protection pipe on poles.

- (ii) The size of the pipe shall not be less than 4cm in diameter for a single cable and not less than 15cm for more than one cable.
- (iii) Where steel pipes are employed for protection of single core cable feeding AC load, the pipe should be large enough to contain both cables in the case of single phase system and all cables in the case of poly phase system.
- (iv) Pipes for MV and HV cables shall be independent ones.

1.6.8.3 (i) In the case of new construction, pipes as required (including for anticipated future requirements) shall be laid along with the civil works and jointed according to the NBC/BSNL Building Specifications.

- (ii) Pipes shall be continuous and clear of debris or concrete before cables are drawn. Sharp edges if any, at ends shall be smoothed to prevent damage to cable sheathing.
- (iii) These pipes shall be laid directly in ground without any special bed except for SW pipe which shall be laid over 10cm thick cement concrete 1:5:10 (1 cement:5 coarse sand:10 graded stone aggregate of 40mm nominal size) bed. No sand cushioning or tiles need be used in such situations.

2.6.8.4 Road crossings:

- (i) The top surface of pipes shall be at a minimum depth of 1m from the pavement level when laid under roads, pavements etc.
- (ii) The pipes shall be laid preferably askew to reduce the angle of bend as the cable enters and leaves the crossing. This is particularly important for HV cables.
- (iii) When pipes are laid cutting an existing road, care shall be taken so that the soil filled up after laying the pipes is rammed well in layers with watering as required to ensure proper compaction. A crown of earth not exceeding 10cm should be left at the top.
- (iv) The temporary re-instatements of roadways should be inspected at regular intervals, particularly after a rain, and any settlement should be made good by further filling as may be required.
- (v) After the subsidence has ceased, the top of the filled up trenches in roadways or other paved areas shall be restored to the same density and material as the surrounding area in accordance with the relevant NBC/BSNL Building Specifications to the satisfaction of the Engineer-in-Charge.

2.6.8.5 Manholes shall be provided to facilitate feeding/drawing in of cables with sufficient working space for the purpose. They shall be covered by suitable manhole covers. Sizes and other details shall be indicated in the Schedule of work.

2.6.8.6 Cable entry into the building Pipes for cable entries to the building shall slope downwards from the building. The pipes at the building end shall be suitably sealed to avoid entry of water, after the cables are laid.

2.6.8.7 Cable-grip / draw-wires, winches etc. may be employed for drawing cables through pipes / closed ducts.

2.6.8.8 Measurement for drawing/ laying cables in pipes/ closed duct shall be on the basis of the actual length of the pipe / duct for each run of the cable, irrespective of the length of cable drawn through.

2.6.9 Laying in open ducts:

2.6.9.1 Open ducts with suitable removable covers (RCC slabs or chequered plates) are generally provided in sub-stations, switch rooms, plant rooms, workshops etc. for taking the cables. The cable ducts should be of suitable dimensions for the number of cables involved.

2.6.9.2 (i) Laying of cables with different voltage ratings in the same duct shall be avoided. Where it is inescapable to take HV & MV cables same trench, they shall be laid with a barrier between them or alternatively, one of the two (HV & MV) cables may be taken through pipe(s). (ii) Splices or joints of any type shall not be permitted inside the ducts.

2.6.9.3 (i) The cables shall be laid directly in the duct such that unnecessary crossing of cables is avoided.

(ii) Where specified, cables may be fixed with clamps on the walls of the duct or taken in hooks/brackets/troughs in ducts.

2.6.9.4 Where specified, ducts may be filled with dry sand after the cables are laid and covered as above, or finished with cement plaster, specially in high voltage applications.

2.6.10 Laying on surface

2.6.10.1 This method may be adopted in places like switch rooms, workshops, tunnels, rising (distribution) mains in buildings etc. This may also be necessitated in the works of additions and/or alterations to the existing installation, where other methods of laying may not be feasible.

2.6.10.2 Cables may be laid in surface by any of the following methods as specified:

- (a) Directly clamped by saddles or clamps,
- (b) Supported on cradles,
- (c) Laid on troughs/trays, duly clamped.

2.6.10.3 (i) The saddles and clamps used for fixing the cables on surface shall comply with the requirements of specifications.

(ii) Saddles shall be secured with screws to suitable approved plugs. Clamps shall be secured with nuts on to the bolts, grouted in the supporting structure in an approved manner.

(iii) In the case of single core cables, the clamps shall be of non-magnetic material. A suitable non-corrosive packing shall be used for clamping un armoured cables to prevent damage to the cable sheath.

(iv) Cables shall be fixed neatly without undue sag or kinks.

2.6.10.4 The arrangement of laying the cables in cradles is permitted only in the case of cables of 1.1KV grade of size exceeding 120sq.mm. In such cases, the cables may be suspended on MS flat cradles of size 50mmX5mm which in turn shall be fixed on the wall by bolts grouted into the wall in an approved manner at a spacing of not less than 60cm.

2.6.10.5 All MS components used in fixing the cables shall be either galvanized or given a coat of red oxide primer and finished with 2 coats of approved paint.

2.6.11 Laying on cable tray :

2.6.11.1 This method may be adopted in places like indoor substations, air-conditioning plant rooms, generator rooms etc. or where long horizontal runs of cables are required within the building and where it is not convenient to carry the cable in open ducts. This method is preferred where heavy sized cables or a number of cables are required to be laid. The cable trays may be either of perforated sheet type or of ladder type.

2.6.11.2 Perforated type cable tray

- (i) The cable tray shall be fabricated out of slotted/perforated MS sheets as channel sections, single or double bended. The channel sections shall be supplied in convenient lengths and assembled at site to the desired lengths. These may be galvanized or painted as specified. Alternatively, where specified, the cable tray may be fabricated by two angle irons of 50mmX50mmX6mm as two longitudinal members, with cross bracings between them by 50mmX5mm flats welded/bolted to the angles at 1 m spacing. 2mm thick MS perforated sheet shall be suitably welded/bolted to the base as well as on the two sides.
- (ii) The jointing between the sections shall be made with coupler plates of the same material and thickness as the channel section. Two coupler plates, each of minimum 200mm length, shall be bolted on each of the two sides of the channel section with 8mm dia round headed bolts, nuts and washers. In order to maintain proper earth continuity bond, the paint on the contact surfaces between the coupler plates and cable tray shall be scraped and removed before the installation.
- (iii) The width of the cable tray shall be chosen so as to accommodate all the cables in one tier, plus 30 to 50% additional width for future expansion. This additional width shall be minimum 100mm. The overall width of one cable tray shall be limited to 800mm.
- (iv) Factory fabricated bends, reducers, tee/cross junctions, etc. shall be provided as per good engineering practice. The radius of bends, junctions etc. shall not be less than the minimum permissible radius of bending of the largest size of cable to be carried by the cable tray.
- (v) The cable tray shall be suspended from the ceiling slab with the help of 10mm dia MS rounds or 25mmX5mm flats at specified spacing . Flat type suspenders may be used for channels up to 450mm width bolted to cable trays. Round suspenders shall be threaded and bolted to the cable trays or to independent support angles 50mmX50mmX5mm at the bottom end as specified. These shall be grouted to the ceiling slab at the other end through an effective means, as approved by the Engineer-in-Charge, to take the weight of the cable tray with the cables.
- (vi) The entire tray (except in the case of galvanized type) and the suspenders shall be painted with two coats of red oxide primer paint after removing the dirt and rust, and finished with two coats of spray paint of approved make synthetic enamel paint.
- (vii) The cable tray shall be bonded to the earth Terminal of the switch bonds at both ends.
- (viii) The cable trays shall be measured on unit length basis, along the center line of the cable tray, including bends, reducers, tees, cross joints, etc. and paid for accordingly.

2.6.11.3 Ladder type cable tray

- (i) The ladder type of cable tray shall be fabricated of double bended channel section longitudinal members with single bended channel section rungs of cross members welded to the base of the longitudinal members at a center to center spacing of 250cm.
- (ii) Alternatively, where specified, ladder type cable trays may be fabricated out of 50mmX50mmX6mm (minimum) angle iron for longitudinal members, and 30mmX6mm flat for rungs.

2.6.12 Cable identification tags: Whenever more than one cable is laid / run side by side, marker tags as approved, inscribed with cable identification details shall be permanently attached to all the cables in the manholes / pull pits / joint pits / entry points in buildings / open ducts etc. These shall also be attached to cables laid direct in ground at specified intervals, before the trenches are backfilled.

2.7 JOINTING

2.7.1 Location

- (i) Before laying a cable, proper locations for the proposed cable joints, if any, shall be decided, so that when the cable is actually laid, the joints are made in the most suitable places. As far as possible, water logged locations, carriage ways, pavements, proximity to telephone cables, gas or water mains, inaccessible places, ducts, pipes, racks etc. shall be avoided for locating the cable joints.
- (ii) Joints shall be staggered by 2m to 3m when joints are to be done for two or more cables laid together in the same trench.

2.7.2 Joints pits

- (i) Joint pits shall be of sufficient dimensions as to allow easy and comfortable working. The sides of the pit shall be well protected from loose earth falling into it. It shall also be covered by a tarpaulin to prevent dust and other foreign matter being blown on the exposed joints and jointing materials.
- (ii) Sufficient ventilation shall be provided during jointing operation in order to disperse fumes given out by fluxing.

2.7.3 Safety precaution :

- (i) A caution board indicating "CAUTION – CABLE JOINTING WORK IN PROGRESS" shall be displayed to warn the public and traffic where necessary.
- (ii) Before jointing is commenced, all safety precautions like isolation, discharging, earthing, display of caution board on the controlling switchgear etc. shall be taken to ensure that the cable would not be inadvertently charged from live supply. Metallic armour and external metallic bonding shall be connected to earth. Where "Permit to work" system is in vogue, safety procedures prescribed shall be complied with.

2.7.4 Jointing materials:

- (i) Jointing materials and accessories like conductor ferrules, solder, flux, insulating and protective tapes, filling compound, jointing boxes, heat shrinking joint kit etc. of right quality and correct sizes, conforming to relevant Indian Standards, wherever they exist, shall be used.

(ii) The design of the joint box and the composition of the filing compound shall be such as to provide an effective sealing against entry of moisture in addition to affording proper electrical characteristic to joints.

(iii) Where special type of splicing connector kits or epoxy resin spliced joints or heat shrinkable jointing kits are specified, materials approved for such application shall be used. Storing as well as jointing instructions of the manufacturer of such materials shall be strictly followed.

2.7.5 Jointer Jointing work shall be carried out by a licensed/ experienced (where there is no licensing system for jointers) cable jointer.

2.7.6 Cable work with joints

- (i) About 3m long surplus cable shall be left on each side of joints.
- (ii) Insulation resistance of cables to be jointed shall be tested. Unless the insulation resistance values are satisfactory, jointing shall not be done.
- (iii) Cores of the cables must be properly identified before jointing.
- (iv) Where cable is to be jointed with the existing cable, the sequence should be so arranged as to avoid crossing of cores while jointing.
- (v) Whenever the aluminium conductor is exposed to outside atmosphere, a highly tenacious oxide film is formed which makes the soldering of aluminium conductor difficult. This oxide film should be removed by using appropriate type of flux.
- (vi) The clamps for the armour shall be clean and tight.

2.7.7 Jointing procedure: While it would be necessary to follow strictly the instructions for jointing furnished by the manufacturers of cables and joint kits, a brief on the jointing procedures is given for general guidance in Appendix F.

2.8 TESTING

2.8.1 Testing before laying All cables, before laying, shall be tested with a 500V megger for cables of 1.1KV grade, or with a 2500/5000V megger for cables of higher voltage. The cable cores shall be tested for continuity, absence of cross phasing, insulation resistance from conductors to earth / armour and between conductors.

2.8.2 Testing before backfilling All cables shall be subjected to the above mentioned tests, before covering the cables by protective covers and back filling and also before taking up any jointing operation.

2.8.3 Testing after laying

- (i) After laying and jointing, the cable shall be subjected to a 15 minutes pressure test. The test pressure shall be as given in Table VI. DC pressure testing may normally be preferred to AC pressure testing.
- (ii) In the absence of facilities for pressure testing as above, it is sufficient to test for one minute with 1000V megger for cables of 1.1KV grade and with 2500/5000V megger for cables of higher voltages.

SECTION – 3.0

TECHNICAL SPECIFICATION - FOR EARTHING

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

3.2 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 circuit wiring 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.

3.3 MAINTENANCE FREE TREATED EARTH PIT

The bidder shall have to do the entire work of earth pits required for electrical & jack earthing and for the pits at the corners of earth mat.

3.3.1 STANDARDS

The product and the equipment covered by this specification shall, unless otherwise specified be in line with the requirement of any of the latest applicable standards and will apply in order of priority as listed below:- a) Indian Standards b) IEEE 80 c) ANSI (American National Standards) d) BS (British Standards)

3.3.2 EARTH PITS

All the Earth Pit shall be with special Ground electrodes supplied by Reputed Manufacturer. These special electrodes are provided with Ground enhancement material.

3.3.3 EARTHING PRODUCT COMPONENT SPECS –

- The Earthing System should be based on use of Copper flat in copper pipe (for corrosion resistance) and Ground Enhancement Material (to reduce Soil Resistivity).
- It should be capable of providing any ohmic value as specified by the client, by inter-connection of ground rods to form a Grid.
- The system shall be totally maintenance free and require no periodic or scheduled maintenance for a period of at least 30 years.
- There shall be no requirement to add water or any other chemical any time after initial installation. - The system shall provide constant low ohmic value for entire life cycle without any consideration for moisture or temperature conditions
- The manufacturer shall be a company of international repute engaged in the field of Facility Electrical Protection work.

3.3.4. ELECTRODE:

- The Flat-In-Pipe electrode shall have a nominal (actual) outer dia of 50 mm & 1.8 mm thickness (Min.) and length of 2 M (Min.). It shall be capable of handling 40 KA 1-Sec Short time current shall have a molecular bonding of 250 micron of copper as per international standards.

- In case of Flat-In-Pipe, the portion between pipes shall be filled with the conductive material.
- Type test report (tested at NABL accredited laboratory) shall be submitted satisfying minimum STC of 25 KA-1Sec for 66 KV S/S and for above class, STC shall be 40 KA-1 Sec.
- Test report (tested at NABL accredited laboratory) of cu-coating shall be submitted satisfying our requirement of 250 micron coating international standards.

3.3.5 GROUND ENHANCEMENT MATERIAL / BACK FILL / GROUNDING COMPOUND

- Ground Enhancement Material/ Backfill / Grounding compound shall be permanent and maintenance free. (No re- charging with salts or any other chemicals) and shall maintain its earth resistance with time.
- Ground Enhancement Material/ Backfill / Grounding compound shall confirm IEEE 80-2000 Clause No.14.5 (d). Ground Enhancement Material/ Backfill / Grounding compound in its set form shall have a resistivity of not more than 0.12 ohm-m.
- Ground Enhancement Material / Backfill / Grounding compound shall comply the requirements and all applicable tests as per part-7 of IEC 62561. The same shall be tested at NABL accredited laboratory and reports are to be verified at site.
- Resistivity test using soil box
- Leaching test -- Sulfur determination
- Corrosion test
- It must set up firmly and not dissolve or decompose or otherwise pollute the soil or the local water table.
- It shall be suitable for use in dry form or slurry form
- The Ground Enhancement Material/ Backfill / Grounding compound shall not depend on the continuous presence of water to maintain its conductivity.
- The material shall be carbon based conductive concrete and shall not contain bentonite in any form.
- Same shall be applicable for conductive material used for filling in case of P-I-P and Flat-In-Pipe type earth electrodes.

3.3.6 CLAMP

Each Earth Rod/Pipe/PIP must be provided with a suitable Cu plated clamp OR exothermic welding of Cu plated plate to facilitate Interconnection of rods and connection to Equipment Earth Bar using appropriate copper coated MS strip.

3.4 GUARANTEE

The product shall be guaranteed for trouble free operation for a period of 30 years from date of commission or arrival at site whichever is later. Any defect discovered during this period shall be rectified free of charge.

The pits shall be drawn with the help of a boring machine, an auger or any other means as required by site conditions and nature of ground strata which shall be in the scope of supplier.

3.5 Technical specification of components required for Chemical Earthing:

Sl. No.	Component	SPECIFICATION REQUIRED
1	Earth Electrode (Copper Strip in Copper pipe)	Sealed maintenance free chemical filled Earth electrode having 32mm X 10mm Copper flat in 50mm dia copper pipe of 2 mtrs long having minimum wall thickness 1.8mm and 12mm dia 2 sets of holes and 2nos tinned copper nuts and bolts with washers.
2.	Earth Conductor (Copper Strip)	25mm X5mm Copper Strip in 40mm dia GI pipe in below ground and 25mmX5mm Copper strip on surface/in recess: For interconnecting the earthing pit and up-to the point where the equipment will be installed. All accessories & fitting are to be provided for covering the earthing strips with insulating material when it passes through underground or by the side of built-up walls.
3	Backfill Materials	<p>The backfill material used in chemical earthing systems for soil treatment shall be highly conductive and should be certified as non- polluting and safe for use in ground. The compound will be filled for minimum 150mm dia for a minimum depth of 2.5mtrs. (Approximate quantity 30 to 35 Kgs)</p> <p>The ground conductivity enhancing backfill Material shall be a compound</p> <ul style="list-style-type: none"> • having a low resistance • having a highly conductive nature independent of moisture / salt for conduction • having Non-corrosive, non-hazardous properties • shall not leach into ground • compatible with copper grounding system • having corrosion inhibitor to mitigate corrosion of copper <p>A certificate from a NABL accredited laboratory or a Laboratory accredited as per ISO 17025:2005, has to be submitted containing the value of Resistivity with the Bid.</p> <p>The successful bidder has to submit the same certificate against the material which will be actually used</p>
4	Watering pipe	50mm dia GI watering pipe of minimum 1mtrs depth from ground level with funnel and wire mesh.
5.	Masonry enclosure	A concrete box of size 450mmX450mmX450mm with smooth cement plaster finish shall be provided on the top of pit with 6mm thick MS chequered plate having locking arrangements.

3.6 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

3.7 Location of Earth Electrode:

- 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.
- The location of earth electrodes such that, the soil has a reasonable chance of remaining moist as far as possible.
- Entrances, pavements and roadways shall be avoided for locating earth electrodes.

3.8 Earth Resistance:

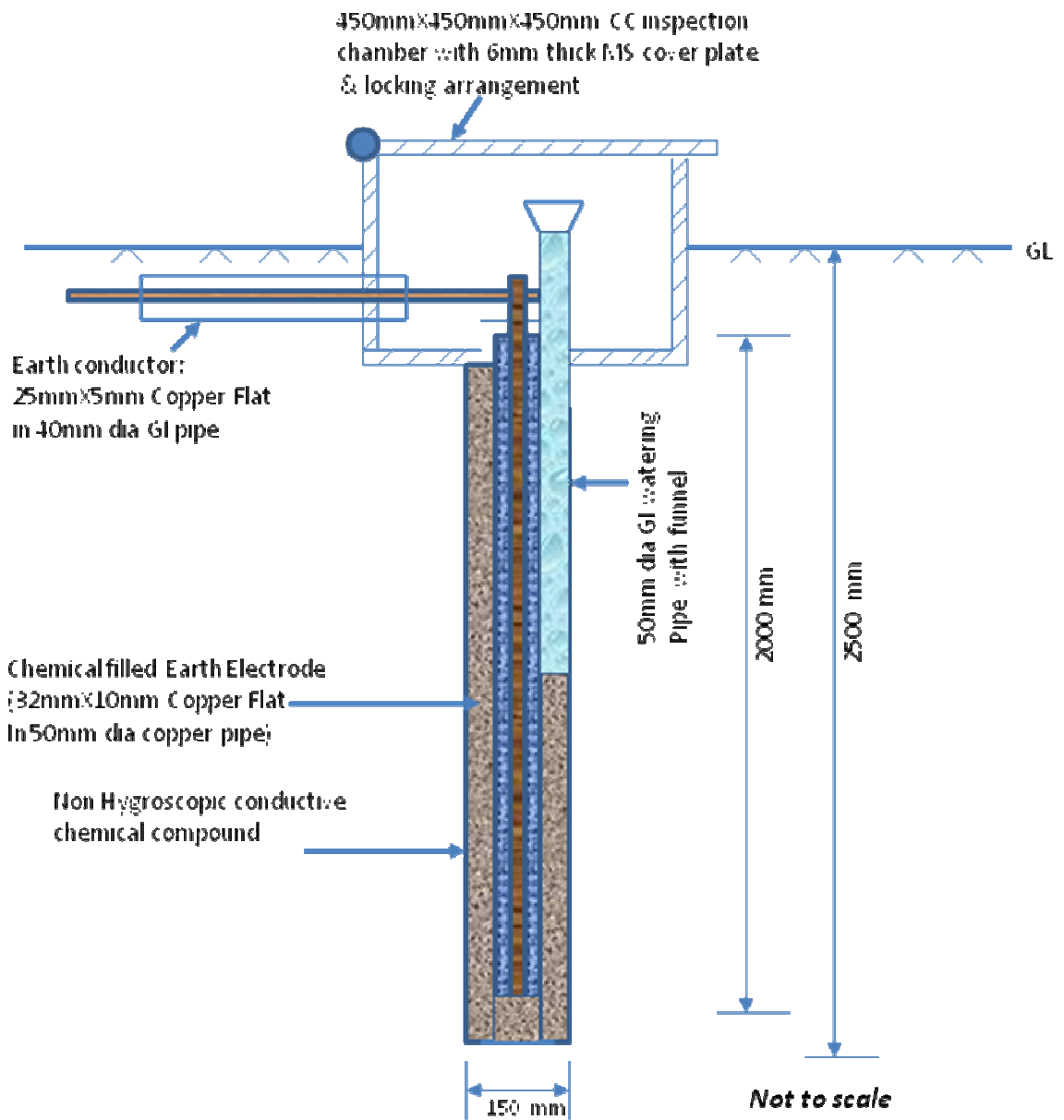
- The earth resistance at each electrode shall be measured. No earth electrode shall have a greater ohmic resistance than 5 ohm as measured by an approved earth testing apparatus. In rocky soil the resistance may be up to 8 ohms.

3.9 Markings:

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



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



SCHEMATIC DIAGRAM OF CHEMICAL EARTHING

SECTION – 4.0

SPECIFICATION FOR MCBDB 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 withstand 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.

(v) 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:

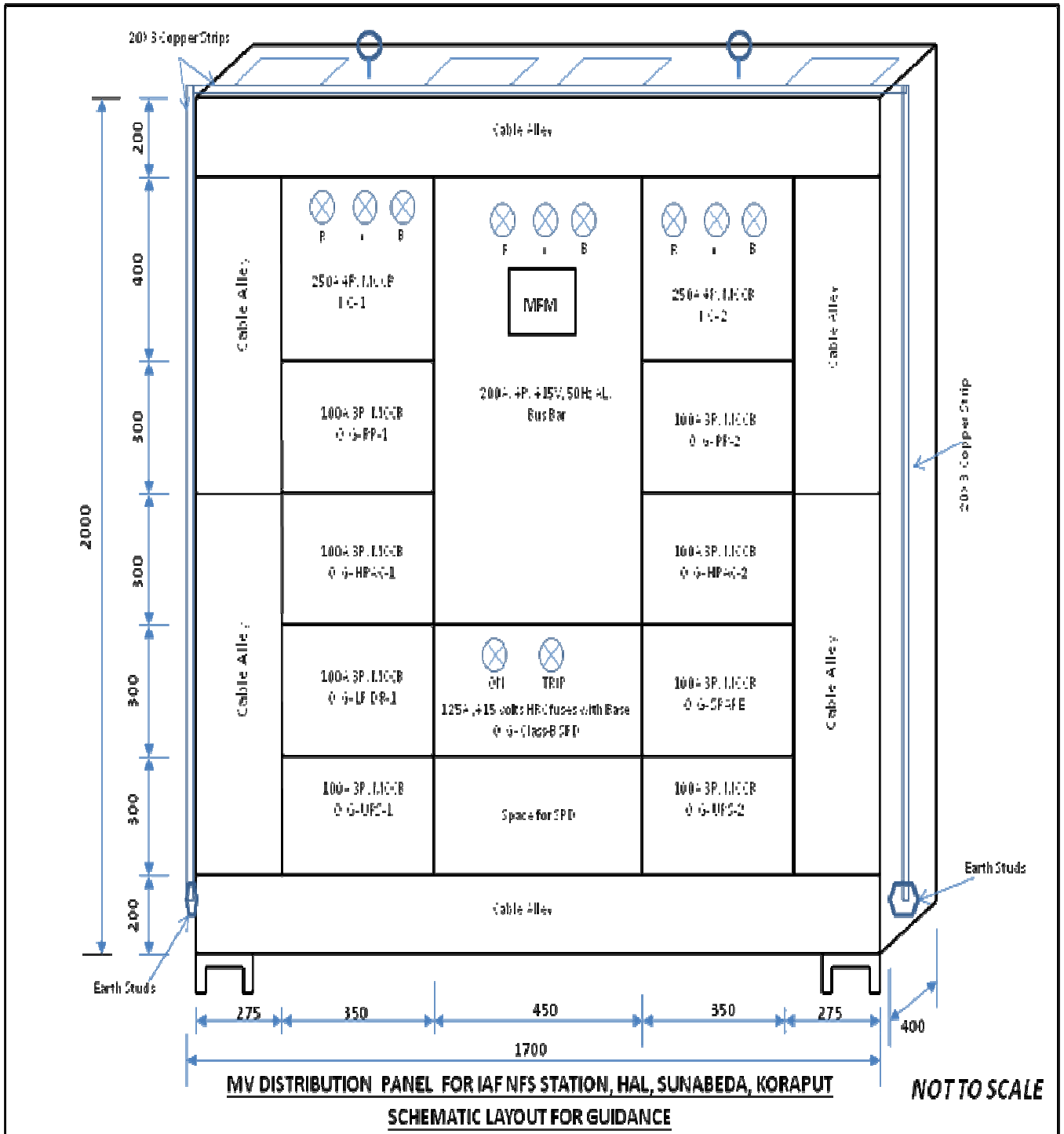
The earth bus-bars shall be of G.I. and of adequate size as per B.I.S. specification.

(l) . PAINTING :

All steel work shall undergo, 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.



SECTION – 5.0
SPECIFICATIONS FOR SURGE PROTECTIVE DEVICES

- 5.1.1. The Surge Protection devices shall comprise of Encapsulated spark gap type coordinated lightning and surge protection.
- 5.1.2. The coordinated stage-I & Stage –II protective device must be KEMA or VDE Certified.
- 5.1.3 Protection shall be designed in TT configuration.

5.2. STAGE –I PROTECTION:

This protection against LEMP and high surges will be provided at main distribution panel. It should be compliant with IEC-62305 and 60364-5-53 having the specifications as per following currents.

- 5.2.1. Between Neutral and Three phase: $\geq I_{imp}: 25 \text{ KA}, 10/350 \mu\text{s}$ for each phase.
- 5.2.2. Between Neutral and Protective Earth: $\geq 100 \text{ KA}, 10/350 \mu\text{s}$
- 5.2.3. I_{imp} : Value of Lightning Impulse Current: $10/350 \mu\text{s}$
- 5.2.4. Short Circuit Current Extinguishing value without back up fuse as per IEC guide lines 10 KA rms .
- 5.2.5. Rated voltage of stage-I arrester: not less than 255 volts.
- 5.2.6. Arrester between Line and Neutral should with stand voltage up to 320 volts for duration specified.
- 5.2.7. SPD Status indication as per IEC norms shall be provided for both the indications.
- 5.2.8. Protective protection for stage –I $\leq 2.5\text{K}$ and for coordinated stage-I & II $\leq 1.5\text{KV}$.

5.3. STAGE –II PROTECTION:

This protection against low voltage surges will be provided at the power plant (supply) level. It will be equipped with thermal disconnection and potential free contacts for arrester connected between live and neutral and earth. Protection shall comply with IEC-62305 and 60364-5-53 for the following values of current.

- 5.3.1. Between Neutral and Three phase: $\geq 10 \text{ KA}, 8/20 \mu\text{s}$ for each phase.
- 5.3.2. Between Neutral and Protective Earth: $I_n \geq 20 \text{ KA}, 8/20 \mu\text{s}$
- 5.3.3. I_n : Value of nominal discharge of current: $8/20 \mu\text{s}$
- 5.3.4. Voltage ratings of MOV: greater than 320 volts
- 5.3.5. SPD Status indication as per IEC norms shall be provided for both the indications.

5.4. RESPONSE TIME:

- (i) **Stage –I protection devices:** ≤ 100 nanoseconds
- (ii) Stage-II protection devices: ≤ 25 nanoseconds

5.5. COORDINATION BETWEEN TWO STAGES:

The two stages must be tested to work in tandem and in co-ordination to give protection against lightning and surge and also ensure voltage protection level up to 1.5 KV is ensured for entire site. The test certification carried out by testing agency in the same lab for both the stages as per IEC 61643 and 62305-4 must be enclosed. Stage-I and Stage-II SPDs must be from the same manufacturer and housed in enclosure supplied by the manufacturer.

5.6. SIZE OF CONDUCTORS:

- (i) Stage –I protection: > 6 sqmm
- (ii) Stage –II protection: > 3 sqmm

- 5.7..1 Components supplied must be of industrial grade from reputed manufacturer.
- 5.7.2. Fuses and circuit breakers shall be provided for protection against failure of control/sensing circuit.
- 5.7.3. The components must be certified by recognized national /international institution approved by test agency.
- 5.7.4. The component cables and wires must be fire retardant.
- 5.7.5. The manufacturer/OEM must be ISO 9001: 2008 certified.

SECTION – 6.0
TECHNICAL SPECIFICATIONS FOR INVERTER SPLIT AC

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.

SPECIFICATIONS OF 1.5 TR INVERTER TYPE SPLIT AC UNITS

Technology	:	Variable speed compressor motor
Cooling capacity	:	≥ 5100 watts as per IS 1391(part 2)
Minimum Room Air Flow	:	700 m3 /hr
Energy Efficiency as per ISEER	:	3.5 to 3.99
BEE Star Rating	:	Minimum 3 Star Rated (BEE approved in 2018)
Compressor	:	Rotary
Refrigerant	:	R 410A
Evaporator and Condenser coil material	:	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.
- 1.2.4 Sealing and insulating material shall not lose their essential properties such as adhesion, moisture and heat resistance.
- 1.2.5 Internal and external finishes shall be capable of being cleaned effectively without undue deterioration and shall be such as to afford protection against climatic action in all seasons under normal use. All metal parts which are exposed to moisture or ambient conditions shall be corrosion resistant or adequately protected against corrosion.

2 Refrigerant Circuit

- 2.1 The refrigerant pipes and fittings shall be of approved quality and shall withstand normal working pressure of air conditioners and should conform to IS 10773:1983 or equivalent national standard / international standard.
- 2.2 The refrigerant used shall be chemically pure, free from moisture or any other chemical contamination.

3 Electrical Ratings

- 3.1 Ratings in watts for split air conditioners shall be based on standard voltage which shall be 230 V, single phase, 50 Hz, the units, however, shall be capable of working at any voltage within ± 10 percent of the of the standard voltage.

4 Rating and Test Conditions

- 4.1 Capacity rating test conditions

The split air conditioner shall have nameplate rating determined by tests conducted at the standard rating conditions specified below:

Room air temperature:

- a) Dry bulb 27°C
- b) Wet bulb 19°C

Outside air temperature:

- a) Dry bulb 35°C
- b) Wet bulb 30°C

Test voltage Rated voltage

Test frequency Rated frequency

NOTES

1. If rated frequency is not available, the capacity measured shall be corrected by a correction factor depending upon frequency actually measured during the testing.
2. Percentage drop in frequency shall be applied as percentage drop in voltage for power consumption.
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 rest 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.

CONTRACTOR

EXECUTIVE ENGINEER (E)

SECTION – 7.0
TESTING OF ELECTRICAL INSTALLATIONS

6.1 General

On completion of an installation the following tests shall be carried out:-

1. Insulation Resistance Test.
2. Polarity Test.
3. Earth continuity Test.
4. Earth Electrode Resistance Test.

6.1. Insulation Resistance:

- (i) The insulation resistance shall be measured by applying between earth and the whole system of conductors of any section thereof with all fuses in place and all switches closed, and except in earthed concentric wiring all lamps in position or both poles of the installation otherwise electrically connected together, a direct current pressure of not less than twice the working pressure provided that it need not exceed 500 volts for medium voltage circuits. Where the supply is derived from the three wire D.C. or a poly phase A.C. system, the neutral pole of which is connected to earth either direct or through added resistance, the working pressure shall be deemed to be that which is maintained between the phase conductor and the neutral.
- (ii) The insulation resistance shall also be measured between all conductors connected to one pole or phase conductor of the supply and all the conductors connected to the neutral or to the other pole or phase conductors of the supply with all lamps in position and switches in 'off' position and its value shall not be less than that specified in sub-Clause (iii)
- (iii) The Insulation resistance in Mega ohms measured as above shall not be less than 12.5 Mega ohms for wiring with PVC insulated cable subject to a minimum of 1 Mega Ohm.
- (iv) Where an entire installation is being tested, a lower value than that given by the formula, subject to a minimum of 1 Meg Ohm is acceptable.
- (v) A preliminary and similar test may be made before/lamps etc are installed , and in this event the insulation resistance to earth should be not less than 25 mega ohms for wirings with PVC insulated cable subject to a minimum of 2 mega ohms.
- (vi) The term "outlet" includes every point along with every switch except that a switch combined with a socket outlet, appliance or lighting fitting is regarded as one outlet.
- (vii) Control rheostats, heating and power appliances and electric signs may, if required, be disconnected from the circuit during the test, but in that event the insulation resistance between the case or frame work, and all live parts of each rheostat, appliance and sign, shall be not less than that specified in the relevant India Standard Specification or where there is no such specification shall be not less than one mega ohm.

6.2 Polarity test of switch:

- (i) In a two wire installation a test shall be made to verify that all switches in every circuit have been fitted in the same conductor throughout and such conductor shall be labeled or marked for connection to phase conductor or to the non earthed conductor of the supply.
- (ii) In a three wire or a four wire installation a test shall be made to verify that every non linked single pole switch is fitted in a conductor which is labeled or marked for connection to one of the phase conductor of the supply.
- (iii) The installation shall be connected to the supply for testing. The terminals of all switches shall be tested by a test lamp, one lead of which is connected to the earth. Glowing of test lamp to its full brilliance, when the switch is in "ON" position irrespective of appliance in position or not, shall indicate that the switch is connected to the right polarity.

6.3 Testing of earth continuity path :

The earth continuity conductor including metal conduits and metallic envelopes of cables in all cases shall be tested for electric continuity and the electrical resistance of the same along with the earthing lead but excluding any added resistance or earth leakage circuit breaker measured from the connection with the earth electrode to any point in the earth continuity conductor in the completed installation shall not exceed one ohm.

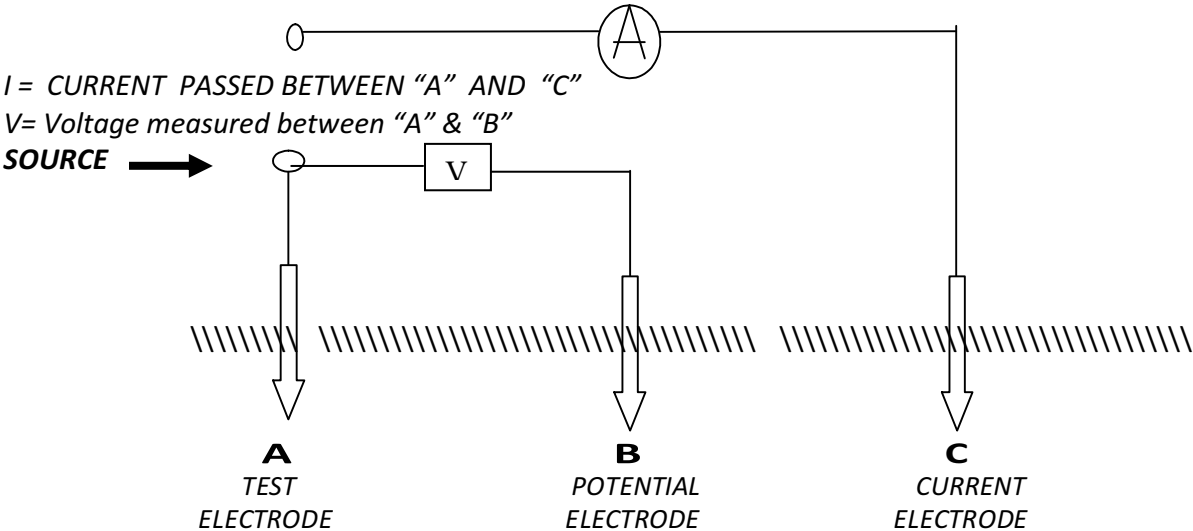
6.4 Measurement of earth electrode resistance :

Two auxiliary earth electrodes besides the test electrode are placed at suitable distance from the tests electrode (see figure). A measured current is passed between the electrode 'A' to be tested and an auxiliary current electrode 'C' and the potential difference between the electrode 'A' and auxiliary potential electrode 'B' is measured.

The resistance of the test electrode 'A' is then given by

$$R = V/I$$

- Where,
- R - Resistance of the test electrode in ohms.
 - V - Reading of the voltmeter in volts.
 - I - Reading of the ammeter in amps.



- 6.5** (a) Stray currents flowing in the soil may produce serious errors in measurement of earth resistance. To eliminate this, hand driven generator is used.
- (b) If the frequency of the supply of hand driven generator coincides with the frequency of stray current there will be wandering of instrument pointer. An increase or decrease of generator speed will cause this to disappear.
- (c) At the time of test, the test electrode shall be separated from the earthing system.
- (d) The auxiliary electrodes shall be of 13 mm diameter mild steel rod driven up to 1 m into the ground.
- (e) All the three electrodes shall be so placed that they will be independent of the resistance area of each other.
- (f) If the test electrode is in the form of rod, pipe or plate, the auxiliary current electrode "C" shall be placed at least 30m away from it and the auxiliary potential electrode 'B' shall be placed mid way between them.
- (g) Unless three consecutive readings of test electrode resistance agree the test shall be repeated by increasing the distance between electrodes A and C upto 50 m and each time placing the electrode 'B' midway between them.
- (h) On these principles "Megger Earth Tester" containing a direct reading ohm meter, a hand driven generator and auxiliary electrodes are manufactured for direct reading on earth resistance of electrodes.
- (i) On completion of an electric installation (or an extension to an installation) a certificate shall be furnished by the contractor countersigned by the certified supervisor under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as given in Appendix 'A', in addition to the test certificate required by the local Electric Supply Authorities.

6.6 Test Certificate :

On completion of an electrical installation (or an extension to an installation), a certificate shall furnished by the contractor countersigned by the certified supervisor under whose direct supervision the installation was carried out. This certificate shall be in a prescribed proforma as annexed below.

FORM OF COMPLETION CERTIFICATE

I/We certify that the installation detailed below has been installed by me/us and tested and that to the best of my/our knowledge and belief, it complies with Indian Electricity Rules, 1956, as well as IS:732 – Code of practice of Electrical wiring Installations (system voltage not exceeding 650 volts)

Electrical Installation at _____

Voltage & system of supply _____

1. Particulars of Works :

(a) Internal Electrical Installation

	No.	Total Load	Type or system of wiring
(i)	Light point		
(ii)	Fan point		
(iii)	Plug point		
	(a) 3 pin 5 amp		
	(b) 3 pin 15 amp		

(b) Others

	Description	HP / KW	Type of starting
(a)	Motors		
	(i)		
	(ii)		
	(iii)		

(b) Other plants :

(c) If the work involves installation of over headline and/ or under ground cable.

- [a] (i) Type & description of overhead line
- (ii) Total length and No. of spans
- (iii) No. of street light and its description.

- [b] (i) Total length of underground cable & its size.
- (ii) No. of joints
 - End joint
 - T joint
 - St. through Joint :

Earthing :

- (i) Description of earthing electrode
- (ii) No. of earth electrodes.
- (iii) Size of main earth lead.

Test Results :

(a) Insulation Resistance

(i) Insulation resistance of the whole system of conductors to earth Megohms

(ii) Insulation resistance between the phase Conductor & neutral -

Between phase R and neutral Megohms

Between phase Y and neutral Megohms

Between phase B and neutral Megohms

(iii) Insulation resistance between the phase Conductors in case of poly phase supply

Between phase R and phase Y Megohms

Between phase Y and phase B Megohms

Between phase B and phase R Megohms

(b). Polarity Test

Polarity of linked single pole branch switches

(c). Earth Continuity Test:

Maximum resistance between any point in the earth continuity conductor including metal conduits and main earthing lead Ohms

(d). Earth Electrode Resistance:

Resistance of each earth electrode:

- (i) ohms
- (ii) ohms
- (iii) ohms
- (iv) Ohms

(e). Lightning protective system:

Resistance of whole of the lightning protective system to earth before any bonding is effected with earth electrode and metal in/on the structure ohms

**Signature of the Contractor
with seal and license no.**

**Signature of the Supervisor
with seal and license no.**

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.

CONTRACTOR

EXECUTIVE ENGINEER (E)

GENERAL CONDITIONS

The firm shall read carefully the following conditions and shall quote accordingly confirming all the points in their offer. Modification in tender conditions will not be permitted at any stage of Tender / agreement formation/execution of work.

1. INCREASE/DECREASE OF TENDER QUANTITY

- a) The quantities as per schedule of work are subject to deviation up to 25 % (twenty five percent) of the quantity of goods and services specified in the schedule of items without any change in the unit price or other terms and conditions as applicable at the time of award of contract .
- b) In exceptional situation where the requirement is of an emergent nature and it is necessary to ensure continued supplies from the existing vendors, the department (BSNL) reserves the right to place repeat order up to 50% of the quantities of goods and services contained in the running tender/ contract within currency of contract at the same accepted rates and terms and conditions of the contract.

2. CURTAILMENT OF QUANTITY

BSNL reserves the right to enforce curtailment in the assigned quantum of work for any contractor/Firm on the grounds of defaults/delay in regard to execution of the individual work assigned

3. PROGRAMME FOR EXECUTION

The firm shall prepare and submit a detailed programme within a week of issue of award letter in consultation with Engineer in Charge and execute the work within the time frame as per agreement conditions.

4. STORES AND SAFETY

The contractor from his own sources shall arrange all the stores and materials required for the satisfactory completion of the work at work site. Lockable space for storing the materials may be provided by BSNL on request from the contractor/Firm. However, safe custody of material stored at site will be the responsibility of the contractor/Firm.

5. PACKING, FORWARDING AND STORING AT SITE

Before dispatch to site, the equipment / components / materials shall be properly packed with polythene sheet and wooden planks for protection and avoiding transit damages and damage against storage in open area at transporters premises or at work site.

6. COORDINATION AT SITE

At the site of work as more than one agency may be working, full cooperation shall be extended to other agencies during progress of work.

7. GUARANTEE AND DEFECT LIABILITY

The guarantee shall be valid for 12 months after successful commissioning of the unit or 15 months from the date of supply whichever is earlier. The contractor shall guarantee that all equipments shall be free from any defect due to the defective material and / or bad workmanship and also the equipments shall work satisfactorily with performance and efficiencies not less than the guaranteed values. The security deposit will be released only after the guarantee period is over. Any part of equipment found defective during this period shall be

replaced free of cost by the contractor. The service of the contractor's personnel, if required during this period shall be made available free of cost to the BSNL. The contractor shall depute his representative within 24 hours of notification of the defect by the BSNL. A joint report shall be prepared by the representative of BSNL and the firm regarding nature of defects and remedial action required. Time schedule for such action shall also be finalized. In case the Contractor/Firm fails to depute his representative within 24 hours of notification of the defect or fails to cause remedial action within reasonable time as decided during joint inspection, the BSNL may proceed to do so at the contractor's/Firm's risk and expenses and without prejudice to any other right.

8. NOT COVERED UNDER GUARANTEE

- i) Consequential losses and damages.
- ii) Parts subject to normal wear and tear such as electrical contacts.
- iii) Failure of parts due to corrosive atmosphere.

9. DATE OF COMPLETION

The date of physically completed of work and successful testing and commissioning is the Date of completion of the work.

10. TEST CERTIFICATES

The firm shall submit Manufacturer's/Authorized dealers test certificates/bill invoices of all major components/equipment/materials etc. along with supply of the materials.

11. CURRENCY OF CONTRACT:

The contract shall remain in force for a period of twelve calendar months and shall be reckoned from the date of signing of agreement. The time allowed for completion of work is 01 month.

12. SIGNING OF CONTRACT:

- i). The successful tenderer /contractor, on acceptance of his tender by the Accepting Authority, shall sign the contract within 15 days consisting of the notice inviting tender, all documents including drawings, if any, forming the tender as issued at the time of invitation of tender & acceptance thereof together with any correspondence leading thereto.
- ii). The agreement to be signed on non-judicial stamp paper and the cost to be decided as per the prevailing local bye-laws or zonal head of the circle.

CONTRACTOR

EXECUTIVE ENGINEER (E)

COMMERCIAL GENERAL

1. EARNEST MONEY

Firm has option to deposit Earnest Money in the form of CDR / FDR / DD or bank guarantee of a scheduled Bank or Nationalized Bank / State Bank guaranteed by Reserve Bank of India/ through e-payment etc. as per the attached format and manner (Annexure-I). If the firm fails to start or withdraws from agreement, then as per relevant clause of the agreement, EMD shall be forfeited from EMD available with the agreement or from any money due to the firm by the department under this contract or on any other account. Validity period of earnest money deposit shall be 30 days beyond the tender validity i.e (90+30) = 120 days.

2. BID PRICES, TAXES AND DUTIES

The bidder shall give the total composite price inclusive of material, labour , Packing, Forwarding, Freight and Insurance etc. except Goods and Services Tax. Any other taxes or levies if found applicable also shall be included in the unit price. The Goods and Services tax as applicable by Central and State Govt. only shall be payable as per actual, wherever applicable on production of proof of payment / relevant invoices / documents. The liability to pay all taxes, levies etc. as per relevant Central and State Govt. statutory by-laws shall be of contractor and BSNL will not entertain any claim whatsoever in this respect.

3. EVALUATION OF BIDS

The evaluation and comparison of responsive bids shall be done based on total amount quoted for all items of the schedule of work offered inclusive of GST, Packing, Forwarding, Freight and Insurance charges etc.

4. PERFORMANCE GUARANTEE:

The contractor is required to furnish performance guarantee for an amount equal to 5% of the contract value of items in the form of Bank Guarantee (of a Nationalized / Scheduled Bank in a standard format) / CDR / FDR / DD within two weeks from the date of issue of award letter. ***The performance guarantee shall be submitted to the Executive Engineer (E), BSNL, Electrical Division, Bhubaneswar in the name of Accounts officer (Cash), BSNL, of the O/o the GMTD, Bhubaneswar and shall be valid for a period of 1 year after the date of actual completion of work. (Minimum period = RC period 1 year + Observation period 1 year = 2 years)***

In case the time for completion of works gets extended, the contractor shall get the validity of PG extended to cover such extended time for completion of work.

5. SECURITY DEPOSIT:

A sum @ 10% of the gross amount of the bill shall be deducted from each running bill of the contractor till the sum will amount to security deposit of 10% (i/c 5% PG) of the Tendered value of the individual agreement of the work. This Security Deposit shall be released after an observation period of 12 months after the date of completion of work.

6. PAYMENT TERMS:-

- a). Payment shall be made after satisfactory completion of work. However the Contractor can claim Running Accounts bills as per contract conditions after successful part completion of works. In this matter the decision of Engineer In charge will be final & binding.
- b). In cases where shortages / damages are intimated to the supplier in writing, the balance Payment shall be released only after the cases are settled in accordance with the provision of the agreement.
- c). No payment will be made for goods rejected at the site on testing. Payment, if made for such items shall be recovered from subsequent bills or other bills.

7. TAX DEDUCTED AT SOURCE:

Nothing contained herein in the agreement shall prevent BSNL from deducting tax at source if required under GST Act and GST regulations, any law or any regulation.

8. E-WAY BILL:

It shall be the responsibility of Contractor/Firm to obtain e-way bill in case of movement of goods exceeding limit as prescribed under the GST Act. The Contractor/Firm would indemnify BSNL in case of any non-compliance or default or due to lack of diligence on the part of the Contractor/Firm to comply with the e-waybill requirement. **NO CONCESSIONAL FORMS WILL BE ISSUED BY BSNL.**

- 9. Rates quoted by the Contractor/Firm shall be firm and valid for the currency of contract. No cost escalation shall be permitted during the currency of contract including extended period if any.**

CONTRACTOR

EXECUTIVE ENGINEER (E)

**COMPUTERISED MEASUREMENT BOOKS (CMB'S) AND BILLS TO BE
SUBMITTED BY THE CONTRACTOR/FIRM**

- 1. Application and format of the computerised MB:** A bound volume of computerised measurements to be furnished by the contractor, duly machine numbered for the pages, and with an MB number given by the Division Office. The pages of these Measurement Books shall be of A-4 size. All these Measurement Books belonging to a Division shall be serially numbered, and a record of these Computerised Measurement Books shall be maintained in a separate Register in Form CPWA 92. The same format as in existing Measurement Books shall be used for the Computerised Measurement Books. The measurements shall be carried forward from the previous recorded measurements as per the existing procedure.

- 2. Mode Of Measurements:** 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 Department. These measurements shall then be 100% checked by JTO (E). If JTO (E) is not available, S D E (E) shall perform 100% check of the measurements. The contractor shall incorporate all such changes or corrections, as may be done during these checks, to his draft computerised measurements, and submit to the department the corrected computerized measurements in the form of a book, duly hard bound in red colour on the lines of the conventional Measurement Books and with its pages machine numbered. The SDE (E) and the Executive Engineer (E) shall test check these computerised measurements as per the existing instructions. This book shall be treated as a Computerised Measurement Book. JTO (E), SDE (E) and EE (E) shall record the necessary certificates for their checks and test checks as per the existing procedure in this Computerised Measurement Book. The Computerised Measurement Book shall be allotted a serial number as per the Register of Computerised Measurement Books.

- 3. Cutting or over-writing in the computerised MB not allowed:** The Computerized Measurement Book given by the contractor, duly bound, with its pages machine numbered, shall have no cutting or over-writing. It is the responsibility of JTO (E) or SDE (E) as the case may be to ensure that the checks and test checks done by them in the initial draft measurements are correctly incorporated in the Computerized Measurement Book before they record their certificates. In case of any error, the Computerised Measurement Book shall be cancelled, and the contractor shall re-submit a fresh Computerized Measurement Book. This should be done before the corresponding computerised bill is submitted to the Division for payment. The contractor shall submit Computerised Measurement Books in triplicate for the purpose of reference and record in the various offices of the department.

- 4. Computerised Bill to be submitted by the contractor:** The contractor shall submit his running and final bills in a computerised form in the same format as the existing conventional bills, with all the pages machine numbered, and hard bound, and with all the entries made as per the existing procedure. The contractor shall submit the computerized bills in triplicate as may be required for the purpose of reference and record in the various offices of the department. The bill shall be carried forward from the previous running account bill and these computerised bills shall be processed by the various offices for payment.

SPECIAL CONDITIONS OF CONTRACT

1). EMPLOYEES PROVIDENT FUND

The contractor shall comply/fulfill the provisions of the EPF and Misc. Provisions Act.- 1952 and Employees Provident Fund Scheme-1952 as amended up to date irrespective of labours / employees engaged by them for performing this work. Any consequences arising due to non-complying of the provisions as specified above shall be the sole responsibility of the firm.

2). INSPECTION AND TESTING OF INSTALLATION

After physical completion of installation the entire system shall be tested by the firm in accordance with the functional requirements in presence of Engineer-in-Charge or his representative. Results obtained shall be recorded and submitted to the department in the prescribed form as per IE Rules.

3). TERMINATION OF CONTRACT ON DEATH OF CONTRACTOR :

Without prejudice of any of the rights or remedies under this contract, if the contractor dies, the Engineer in charge on behalf of the BSNL shall have the option of terminating the contract without compensation to the contractor.

4). INDULGING OF CONTRACTOR IN CRIMINAL/ANTISOCIAL ACTIVITIES AND CASES UNDER INVESTIGATION / CHARGE SHEETED BY CBI OR ANY OTHER GOVERNMENT AGENCIES ETC. :

If the CBI/Independent External Monitor (IEM) / Income Tax /Sales Tax/ Central Excise/ Custom Departments recommend such a course – Action will be taken as per the directions of CBI or concerned department.

CONTRACTOR

EXECUTIVE ENGINEER (E)

ANNEXURE-V

“NO RELATIVE WORKING IN BSNL” CERTIFICATE

I _____ S/o _____

R/o _____

here by certify that none of my relative(s) as defined below is/are employed in BSNL unit as per details given in the tender document. In case at any stage, it is found that the information given by me is false/ incorrect, BSNL shall have absolute right to take any action as deemed fit/without any prior intimation to me.

(i) Near relatives of all BSNL employees either directly recruited or on deputation are prohibited from participation in tenders and execution of works in the different units of BSNL. The near relatives for this purpose are defined as :

- a. Members of a Hindu Undivided family
- b. They are husband and wife
- c. The one is related to the 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)

(i) The company or firm or any other person is not permitted to tender for works in BSNL Unit in which his near relative(s) is (are) posted. The unit is defined as SSA / Circle / Chief Engineer / Chief Archt./ Corporate office for non-executive employees and all SSA in a circle including circle office / Chief Eng./ Chief Archt./ Corporate office for executive employees (including those called as Gazetted officers at present). The tenderer should give a certificate that none of his/her such near relative is working in the units as defined above where he is going to apply for tender / work, for proprietorship, partnership firms and limited company certificate shall be given by the authorized signatory of the firm. Any breach of these conditions by the company or firm or any other person, the tender/work will be cancelled and earnest money/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. The company or firm or the person will also be debarred for further participation in the concerned unit.

(Signature of the contractor with seal)
Signature of contractor/authorized representative
With seal of the firm

ANNEXURE-VI

INFORMATION ABOUT THE TENDERER
(To be furnished by the firm in Physical form offline)

1. Name of Tenderer Company:	
2. Registered Address of the Tenderer Company:	1. ----- -----
3. Contact Phone No. with STD Code:	Office: ----- FAX: ----- Resi: ----- Mobile: -----
4. E-Mail address:	
5. Bank Account Details of Tenderer: a) Name of the Bank: b) Branch Name: c) Branch Address: d) Current Account No.	a)----- b) ----- c)----- d) -----
6. Service Tax Registration No.	
7. ESI registration No	
8. EPF registration No	
9. GST Registration No.	
10. Type of Company: *(Tick the one that is Applicable) *(Please attach attested copy of document of registration/ incorporation of the Company with the competent authority as required by business laws)	<input type="checkbox"/> Private. <input type="checkbox"/> Individual Proprietorship. <input type="checkbox"/> Partnership. <input type="checkbox"/> Private Limited. Co. <input type="checkbox"/> Public Limited Co.

9. Name and Address of Proprietor/Partners/Directors of the Company:

S.No.	Name	Address	Nationality
i).			
ii).			
iii).			
iv).			

10. List of Prominent Customers with periods of service –in support of fulfilling of eligibility criterion: (Please attach extra sheets if needed)

Signature of the authorized signatory -----

Name in block letters -----

(Company Seal)

ANNEXURE-VII

Declaration by Contractor for EW-6, EW-8

(To be furnished by the firm in Physical form offline)

I / We do hereby undertake to have gone through the terms & conditions / clauses of all the tender documents including Form **EW-06, EW-08** being adopted by the BHARAT SANCHAR NIGAM LIMITED (Electrical Wing) & agree to abide by the same.

In case of failure to comply as above, our offer will stand withdrawn and our tender documents would not be opened by the tender opening officer. The decision of tender opening officer in this regard shall be final & binding on me.

**Signature of contractor/authorized representative
With seal of the firm**

ANNEXURE-VIII

UNDERTAKING - REGARDING EPF & ESI
(To be furnished by the firm in Physical form offline)

"I,..... Son of.

.....Resident of

hereby give an undertaking that,

* I/ We have registered as per the EPF and ESI and Miscellaneous provisions Act, 1952 and our registration no is _____ . We undertake to keep it valid during the currency of contract.

Any consequence arising due to non-complying of EPF & ESI Act provision shall be sole liability of the undersigned contractor. 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".

* Strike out whichever is not applicable

(Seal of the firm) (Dated Signature of Contractor)

CLAUSES OF CONTRACT

CLAUSE - 1

Performance Guarantee

1.1 i) The contractor is required to furnish performance guarantee for an amount equal to 5% of the contract value in the form of bank guarantee / CDR/FDR/DD (of a nationalized / Scheduled Bank in a standard format) within two weeks from the date of issue of award letter. The validity period of the performance security in the form of performance bank guarantee shall be one year from the date of actual completion of work. Compensation or the other sums of money payable by the contractor under the terms of this contract may be deducted from or paid by the sale of a sufficient part of his performance guarantee or from the interest arising therefrom, or from any sums which may be due to or may become due to the contractor by BSNL on any account whatsoever and in the event of his performance guarantee being reduced by reason of any such deductions or sale as aforesaid, the contractor shall within 10 days make good in cash or guarantee bonds or fixed deposit receipt tendered by the state bank of India or by scheduled banks executed in favour of BSNL.

ii) The Performance Guarantee shall be initially valid up to the stipulated date of completion plus one year beyond that. In case the time for completion of works gets enlarged, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time for completion of work.

iii) The Engineer -in -charge shall not make a claim under the performance guarantee except for amounts to which BSNL is entitled under the contract (not withstanding and or without prejudice to any other provisions in the contract agreement in the event of:

- a) Failure by the contractor to extend the validity of the Performance guarantee as described herein above, in which event the engineer-in-charge may claim the full amount of the Performance Guarantee.
- b) Failure by the contractor to pay BSNL any amount due, either as agreed by the contractor or determined under clauses/conditions of the agreement, within 30 days of the service of notice to this effect by engineer-in-charge.

iv) In the event of the contract being determined or rescinded under provision of any of the Clause/Condition of the agreement, the Performance guarantee shall stand forfeited in full and shall be at the disposal of the BSNL.

1.2 In case a fixed deposit receipt of any bank is furnished by the contractor to the BSNL as part of the Performance guarantee and the Bank is unable to make payment against the fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the BSNL to make good the deficit.

CLAUSE 1A

Recovery of Security Deposit

The person/persons whose tender(s) may be accepted (hereinafter called contractor shall permit Government/BSNL at the time of making any payment to him for work done under the contract to deduct a sum at the rate of 10% of the gross amount of each running bill till the sum along with the sum already deposited as earnest money, will amount to security deposit of 5% of the tendered value. This will be released after an observation period of 12 months after the date of Completion of work along with Performance Guarantee.

CLAUSE 2 2.1 Compensation for Delay

If the contractor fails to maintain the required progress in terms of clause 5 or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to BSNL on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated

below or such smaller amount as decided by the Superintending Engineer (whose decision in this regard shall be final and binding).

- | | | | |
|-----|-----------------|---|---------------------------------|
| i) | First ten weeks | - | 0.5% of contract value per week |
| ii) | Next ten weeks | - | 0.7% of contract value per week |

- 2.2 Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 12% of the tendered value of work. The amount of compensation may be adjusted or set-off against any sum payable to the contractor under this or any other contract with BSNL.
- 2.3 For the purpose of grant of extension of time, air conditioning, Engine Alternator, Fire detection work is deemed to have been completed after successful completion of the initial acceptance testing by T&D Circle and as per BSNL standards. For Sub Station, the date of clearance from electrical inspector and for wet riser system date of clearance from concerned Fire authority is taken as deemed date of completion. For lift the date of completion shall be taken as the date of clearance from the lift inspector.

CLAUSE 3

**When
Contract
can be
Determined**

- 3.0 Subject to other provisions contained in this clause the engineer-in-charge may without prejudice to his right against the contractor in respect of any delay, or inferior workmanship or otherwise to any claims for damage in respect of any breaches of the contract and without prejudice to any rights or remedies under any of the provisions of this contract or otherwise and whether the date for completion has or has not elapsed by notice in writing absolutely determine the contract in any of the following cases
- (i) If the contractor having been given by the engineer-in charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in any inefficient or otherwise improper or un-workman like manner shall omit to comply with the requirements of such notice for a period of seven days thereafter.
 - (ii) If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.
 - (iii) If the contractor has, without reasonable cause suspended the execution of the work or has failed to proceed with the work with due diligence so that in the opinion of the engineer-in-charge(which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the Engineer-in-Charge.
 - (iv) If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge.

(v) If the contractor persistently neglects to carry out his obligations under the contract and/or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge.

(vi) If the contractor commits any acts mentioned in clause 21 hereof.

When the contractor has made himself liable for action under any of the cases aforesaid, the engineer-in charge on behalf of the BSNL shall have powers.

- a) To determine or rescind the contract as aforesaid(of which termination or rescission notice in writing to the contractor under the hand of the engineer-in-charge shall be conclusive evidence) upon such determination or rescission the full performance guarantee and security deposit of the contractor shall be liable to be forfeited and shall be absolutely at the disposal of BSNL. If any portion of the performance guarantee and security deposit has not been paid or received it would be called for and forfeited.
- b) To employ labour paid by BSNL and to supply materials to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of the materials(of the amount of which cost and price certified by the engineer in charge shall be final and conclusive against the contractor) and crediting him with the value of the work done in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of this contract. The certificate of divisional officer as to the value of the work done shall be final and conclusive against the contractor provided always that action under the sub clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by BSNL are less than the amount payable to the contractor at his agreement rates, the difference should not be paid to the contractor.
- c) After giving notice to the contractor to measure up the work of the contractor and to take such whole or the balance or part thereof as shall be unexecuted out of his hands and to give it to another contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him(of the amount of which excess the certificate in writing of the engineer-in-charge shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by BSNL under this contract or on any other account whatsoever or from his performance guarantee or the proceeds of sales thereof or a sufficient part thereof as the case may be. If the expenses incurred by BSNL are less than the amount payable to the contractor at his agreement rates, the differences shall not be paid to the contractor.

The contractor whose contract is determined or rescinded as above shall not be allowed to participate in the tendering process for the balance work.

In the event of any one or more of the above courses being adopted by the engineer-in-charge the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the

work or the performance of contract and in case action is taken under any of the provisions aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the engineering-in-charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

Provided further that if any of the recoveries to be made, while taking action as per (b) and/or (c) above, are in excess of the performance guarantee and security deposit forfeited, these shall be limited to the amount by which the excess cost incurred by BSNL exceeds the performance guarantee and security deposit so forfeited.

CLAUSE 4

Contractor shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the engineer-in-charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires, after giving a notice in writing to the contractor take possession of (or at the sole discretion of the engineer-in-charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the engineer-in-charge) all or any tools, plant materials and stores, in or upon the works, or the site thereof, belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work or any part thereof, paying or allowing for the same in account at the contract rates or in the case of these not being applicable at current market rate to be certified by the engineer-in-charge, whose certificate thereof shall be final and binding on the contractor, Engineer in charge by notice in writing may order the contractor or his clerk of the works, foreman or other authorised agent to remove such tools, plant, materials or stores from the premises (within a time to be specified in such notice) and in the event of the contractor failing to comply with any such requisition, the engineer-in-charge may remove them at the contractor's expenses or sell them by auction or private sale on account of the contractor and at his risk in all respects and the certificate of the engineer-in-charge as to the expenses of any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

CLAUSE 5

The time allowed for carrying out the work as entered in the tender as per Schedule 'F' or the extended time shall be strictly observed by the contractor and shall be the essence of the contract on the part of the contractor and shall be reckoned from the tenth day after the date on which the order to commence the work is issued to the contractor. If the contractor commits default in commencing the execution of the work as aforesaid, BSNL shall, without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money and the performance guarantee absolutely.

5.1 To ensure good progress during the execution of the work, the contractor shall be bound in all cases in which the time allowed for any work exceeds, one month (save for special jobs) to complete 1/8th of the whole of work before 1/4 th of the whole time allowed under the contract has elapsed; 3/8 th of the work before 1/2 of such time has elapsed, and 3/4th of the work, before 3/4 th of such time has elapsed. For special jobs, if a time schedule has been submitted by the contractor and the same has been accepted by the engineer-in-charge, the contractor shall comply with the said time schedule.

- 5.2 If the work(s) be delayed by:-
- i) force majeure, or
 - ii) abnormally bad weather, or
 - iii) serious loss or damage by fire, or
 - iv) civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
 - v) Delay on the part of other contractors or tradesmen engaged by Engineer-in-charge in executing work not forming part of the contract or
 - vi) Non-availability of stores, which are the responsibility of BSNL to supply.
 - vii) Any other cause which, in the absolute discretion of the authority mentioned in Schedule' is beyond contractor's control.

Then upon the happening of any such event causing delay, the contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

- 5.3 Request for extension of time, to be eligible for consideration, shall be made by the contractor in writing within 30 days of the happening of the event causing delay. The contractor may also, if practicable, indicate in such a request the period for which extension is desired. Non application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in-charge and this shall be binding on the contractor.

CLAUSE 6

- Measurements of Work Done
- 6.1 All measurement of all items having financial value shall be entered in Measurement Book so that a complete record is obtained of all works performed under the contract.
 - 6.2 All Measurements shall be taken jointly by the Engineer-in-charge or his authorised representative and by the contractor or his authorised representative from time to time during the progress of the work and such measurements shall be signed and dated by the Engineer-in-charge and the contractor or their representatives in token of their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.
 - 6.3 If for any reason the contractor or his authorised representative is not available and the work of recording measurements is suspended by the Engineer-in-charge or his representative, the Engineer-in-charge and the BSNL shall not entertain any claim from contractor for any loss or damages on this account. If the contractor or his authorised representative does not remain present at the time of such measurements after the contractor or his authorised representative has been given a notice in writing three(3)

days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-charge or his representative shall be deemed to be accepted by the contractor.

- 6.4 The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for recording measurements.
- 6.5 Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any items no such standard is available then a mutually agreed method shall be followed.
- 6.6 The contractor shall give not less than seven days notice in writing to the engineer-in-charge or his authorised subordinate in-charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond the reach of measurement any work without the consent in writing of the engineer-in-charge or his authorised subordinate in-charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurement without such notice having been given or the engineer-in-charge's consent being obtained the same shall be uncovered at the contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.
- 6.7 Engineer-in-charge or his authorised representative may cause either themselves or through another officer of BSNL to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements.
- 6.8 It is also a term of this contract that recording of measurements of any item of work in the measurement book and/or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

CLAUSE 7

payment shall be made for a work estimated to cost rupees Twenty thousand or less till after the whole of the work shall have been completed and certificate of completion given. But in the case of a work estimated to cost more than Rs. Twenty thousand interim or running account bills shall be submitted by the contractor for the work executed on the basis of recorded measurements. The contractor shall not be entitled to be paid any interim payment if the gross work done since the last payment is less than Rs. Twenty thousand.

Payment on Intermediate Certificate to be regarded as Advances

- 7.2 Interim payment on account of amount admissible shall be made by the Engineer-in-charge certifying the sum to which the contractor is considered entitled by way of interim payment at such rates as decided by the Engineer-in-charge. The amount admissible shall be paid by 20 th working day after the day of presentation of the bill by the contractor to the Engineer-in-charge or his Sub Divisional Engineer.

- 7.3 Payment to the contractors for Air Conditioning, Engine Alternator, Sub Station, Lifts, fire detection, fire fighting and other specialised items, during progress of work, will be regulated as below :-
- a) 80% of prorata of the approved price breakup of contract value on receipt of equipment at site and after satisfactory physical inspection.
 - b) 10% of prorata of the approved price breakup of contract value after successful installation of equipment.
 - c) 5% of the approved contract value after successful completion of Initial acceptance testing.
 - d) 5% of the approved contract value after successful completion of the final acceptance testing.
 - e) For the works where A/T is not applicable e.g. for substation, lift, fire fighting etc. 5% of the approved contract value shall be released after clearance by Electrical inspector/ lift inspector/ Fire officer respectively.
- 7.4 All such intermediate payments shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or re-erected or be considered as an admission of the due performance of the contract or any part thereof in any respect or the accruing of any claim nor shall it conclude, determine or affect in any way the powers of the engineer-in-charge under these conditions or any of them as to the final settlement and adjustment of the accounts or otherwise or in any other way vary or affect the contract.
- 7.5 Pending consideration of extension of date of completion interim payments shall continue to be made as herein provided, without prejudice to the right of BSNL to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority.

CLAUSE 8

- 8.1 Within ten days of the completion of the work, the contractor shall give notice of such completion to the engineer-in-charge and within thirty days of the receipt of such notice the engineer-in-charge shall inspect the work and if there is no defect in the work shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects(a) to be rectified by the contractor and/or(b) for which payment will be made at reduced rates, shall be issued but no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials and rubbish and dirt etc. from the site. if the contractor shall fail to comply with the requirements of this clause as to removal of scaffolding, surplus materials and rubbish etc. the engineer-in-charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc. and dispose of the same as he thinks fit and clean of such dirt as aforesaid and the

contractor shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realised by the sale thereof.

- 8.2 The contractor shall submit completion plan as required vide CPWD general specifications for Electrical works(part 1 - Internal) 1994 and (part II - External) 1995 /BSNL specifications as applicable within thirty days of the completion of the work.
- 8.3 In case, the contractor fails to submit the completion plan as aforesaid he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs.15,000/- (Rs. Fifteen thousand only) as may be fixed by the Superintending Engineer concerned and in this respect the decision of the Superintending Engineer shall be final and binding on the contractor.

CLAUSE 9

Payment of Final Bill

- 9.1 The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-charge whichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payment of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in-charge, will, as far as possible be made within the period specified here in under, the period being reckoned from the date of receipt of the bill by the Engineer-in-charge or his authorised Sub Divisional Engineer, complete with account of materials issued by BSNL and dismantled materials.

- i) If the Tendered value of work is up to Rs. 5 lakhs : 3 months
 ii) If the Tendered value of work exceeds Rs. 5 lakhs : 6 months

Payment of Contractor's Bill to Banks

- 9.2 Payments due to the contractor, may if so desired by him, be made to his bank instead of direct to him provided that the contractor furnishes to the engineer-in-charge (i) an authorization in the form of a legally valid documents such as a power of attorney conferring authority on the bank to receive payments and (ii) his own acceptance of the correctness of the amount made out as being due to him by BSNL or his signature on the bill or other claim preferred against BSNL before settlement by the engineer-in-charge of the account or claim by the payment to the bank. While the receipt given by such bank shall constitute a full and sufficient discharge for the payment, the contractor shall whenever possible present his bills duly receipted and discharge through his bank. Nothing herein contained shall operate to create in favour of the bank any rights or equities vis-à-vis BSNL.

CLAUSE 10

Materials to i) be provided by the Contractor

- Materials which BSNL will supply are shown in the Schedule of work / Schedule B. It also stipulates the quantum, place of issue and rate(s) to be charged in respect thereof. The contractor shall be bound to procure them from Engineer-in-charge.
- ii) As soon as the work is awarded, the contractor shall finalise the programme for the completion of work as per clause 5 of this contract and shall give his estimates of materials required on the basis of drawings/or schedule of quantities of the work. The

Contractor shall give in writing his requirement to the Engineer-in-charge which shall be issued to him keeping in view the progress of work as assessed by the Engineer-in-charge.

- iii) The contractor shall see that only the required quantities of materials are got issued. Any such material remaining unused and in perfectly good condition at the time of completion or determination of the contract shall be returned to the Engineer-in-charge at the stores from which it was issued or at a place directed by him by a notice in writing. The contractor shall not be entitled for loading, transporting, unloading and stacking of such unused material except for the extra transportation, if any involved, beyond the original place of issue.
- iv) The contractor shall bear the cost of getting the material issued, loading, transporting to site, unloading, storing under cover as required, assembling and joining the several parts together as necessary.
- v) All stores/materials so supplied to the contractor or procured with the assistance of BSNL shall remain the absolute property of BSNL and the contractor shall be the trustee of the stores/materials, and the said stores/materials shall not be removed/disposed off from the site of the work on any account and shall be at all times open to inspection by the Engineer-in-charge or his authorised agent.
- vi) In the event of breach of the aforesaid condition, the contractor shall in addition to throwing himself open to account for contravention of the terms of the licences or permit and/or for criminal breach of trust, be liable to BSNL for all advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach. Provided that the contractor shall in no case be entitled to any compensation or damages on account of any delay in supply or non-supply thereof all or any such materials and stores provided further that the contractor shall be bound to execute the entire work if the materials are supplied by BSNL within the original scheduled time for completion of the work plus 50% thereof or schedule time plus 6 months whichever is more if the time of completion of work exceeds 12 months but if a part of the materials only has been supplied within the aforesaid period then the contractor shall be bound to do so much of the work as may be possible with the materials and stores supplied in the aforesaid period. For the completion of the rest of the work, the contractor shall be entitled to such extension of time as may be determined by the Engineer-in-charge whose decision in this regard shall be final and binding on the contractor.

CLAUSE 10A

The contractor shall, at his own expense, provide all materials, required for the works other than those which are stipulated to be supplied by BSNL.

- i) The contractor, shall at his own expense and without delay, supply to the Engineer-in-charge samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the contractor shall be in conformity with the specifications laid down or referred to in the contract. The contractor shall, if requested by the Engineer-in-charge furnish proof, to the satisfaction of the Engineer-in-charge that the materials so comply. The Engineer-in-charge shall within thirty days of supply of samples or within such further period as he may require intimate to the contractor in writing whether samples are approved by him or not. If samples are not

approved, the contractor shall forthwith arrange to supply to the Engineer-in-charge for his approval fresh samples complying with the specifications laid down in the contract. When materials are required to be tested in accordance with specifications, approval of the Engineer-in-charge shall be issued after the test results are received.

ii) The contractor shall at his risk and cost submit the samples of materials to be tested or analysed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by the Engineer-in-charge. The contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.

iii) The Engineer-in-charge or his authorised representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility and every assistance in obtaining the right to such access.

i) The Engineer-in-charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default the Engineer-in-charge shall be at liberty to employ at the expense of the contractor other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The engineer-in-charge shall also have full powers to require other proper materials to be substituted thereof and in case of default the engineer-in-charge may cause the same to be supplied and all costs which may attend such removal and substitution are to be borne by the contractor.

CLAUSE 10B

The contractor(s) shall make his/their own arrangements for water/electricity required for internal/external electrification work and nothing extra will be paid for the same. In respect of specialized works like DG Set, Air conditioning, Fire Detection etc. water/electricity supply shall be made available by BSNL free of cost for erection/testing.

CLAUSE 10 C

In respect of Contracts with stipulated time period of completion being less than 18 (Eighteen) months, if after submission of the tender the wages of labour increases as a direct result of the coming into force of any fresh law, or statutory rule or order and such increase exceeds ten per cent of the wages prevailing at the time of the last stipulated date for receipt of the tenders including extensions if any for the work, and the contractor thereupon necessarily and properly pays in respect of labour engaged on the execution of the work such increased wages, then the amount of the contract shall accordingly be varied. Provided always that any increase so payable is not, in the opinion of the Superintending Engineer (whose decision shall be final and binding on the contractor) attributable to any delay in the execution of the contract within the control of the contractor.

Provided, however, no reimbursement shall be made if the increase is not more than 10% of the said wages, and if so, the reimbursement shall be made only on the excess over 10% and provided further that any such increase shall not be payable if such increase has become operative after the contract or extended date of completion of the work in question.

If after submission of the tender, the wages of labour is decreased as a direct result of the coming into force of any fresh law or statutory rules or order and such decrease exceeds ten per cent of the wages prevailing at the time of receipt of the tender for the work, the BSNL shall in respect of labour engaged on the execution of the work after date of coming into force of such law statutory rule or order be entitled to deduct from the dues of the contractor such amount as shall be equivalent to the difference between the wages as prevailed at the time of the last stipulated date for receipt of tenders including extensions if any for the work minus ten per cent thereof and the wages of labour on the coming into force of such law, statutory rule or order.

The contractor shall, for the purpose of this condition, keep such books of account and other documents as are necessary to show the amount of any increase claimed or reduction available and shall allow inspection of the same by a duly authorized representative of the BSNL, and further shall, at the request of the Engineer-in-Charge may require any documents so kept and such other information as the Engineer-in-Charge may require

The contractor shall, within a reasonable time of his becoming aware of any alteration in the wages of labour, give notice thereof to the Engineer-in-Charge stating that the same is given pursuant to this condition together with all information relating thereto which he may be in position to supply

CLAUSE 10 CC

10CC.1 If the prices of materials (not being materials supplied or services rendered at fixed prices by BSNL in accordance with clause 10 A thereof) and/or wages of labour required for execution of the work increase, the contractor shall be compensated for such increase as per provisions detailed below and the amount of the contract shall accordingly be varied, subject to the condition that such compensation for escalation in prices shall be available only for the work done during the stipulated period of the contract including such period for which the contract is validity extended under the provisions of clause 5 of the contract without any action under Clause 2 .However, for the work done during the justified period extended as above ,the compensation as detailed below will be limited to prices wages prevailing at the time of stipulated date of completion or as prevailing for the period under consideration , whichever is less. No such compensation shall be payable for a work for which the stipulated period of completion is 18 months or less. Such compensation for escalation in the prices of materials and labour when due, shall be worked out based on the following provisions :

A) For Lift Work:

In respect of works relating to supply and installation of lifts/escalators price variation clause as per IEEMA shall be applicable.

B) For work other than lift:

- i) The base date for working out such escalation shall be the last date of receipt of tenders including extension, if any.
- ii) The cost of work on which escalation will be payable shall be reckoned as below :-
 - a) Gross value of work done upto this quarter : (A)

- b) Gross value of work done upto the last quarter : (B)
- c) Gross value of work done since previous quarter (A-B): (C)
- d) Extra items paid as per Clause 12 & 12A based on : (D)
Prevailing market rate during this quarter
- e) Cost of work (W) for which escalation is applicable
 $W = 0.85 M$ [Where $M = (C - D)$]
- iii) The components of materials and labour in working out such percentages are given below and shall be binding on the contractor.
- | | |
|--------------------------------------------------------------|----------------------------------------|
| For AC, DG, S/Strn., F.D., F.F.
& other specialized works | For internal/external Electrical Works |
| A) material 85% percent | A) material 75% percent |
| B) labour 15% percent | B) labour 25% percent |
- iv) The compensation for escalation for materials shall be worked out as per the formula given below:-
- $$VM = W \times \frac{XM}{100} \times \frac{MI - MI_o}{MI_o}$$
- VM - Variation in material cost i.e. Increase or decrease in the amount in rupees to be paid or recovered.
- W- Cost of work done worked out as indicated in sub para (ii) above
- XM - Component of materials expressed as percent of the total value of work
- MI- All India whole sale index for all commodities for the period under consideration as published by the Economic Advisor to Government of India, Ministry of Industry and Commerce.
- MI o - All India whole sale price index for all commodities valid on the last stipulated date of receipt of tender including extension if any, as published by the Economic Advisor to Government of India, Ministry of Industry and Commerce.
- v) The following principles shall be followed while working out indices mentioned in sub-para (iv) above.
- a) The compensation for escalation shall be worked out at quarterly intervals and shall be with respect to the cost or work done as per bills paid during the three calendar months of the said quarter. The first such payment shall be made at the end of three months after the month (excluding) in which the tender was accepted and thereafter at three months interval. At the time of completion of the work, the last period for payment might become less than three months, depending on the actual date of completion .
- b) The index(MI) Relevant to any quarter for which such compensation is paid shall be the arithmetical average of the indexes relevant to the three calendar months. If the period up to date of completion after the quarter covered by the last such installment of payment is less than three months, the index MI shall be the average of the indices for the month falling within that period .
- vi) The compensation for escalation for labour shall be worked out as per the formula given below:-

$$VL = W \times \frac{Y}{100} \times \frac{LI - Llo}{Llo}$$

- VL - Variation in labour cost i.e. Increase or decrease in the amount in rupees to be paid or recovered.
- W - Value of work done, worked out as indicated in sub para (ii) above
- Y - Component of labour expressed as percentage of the total value of work
- Llo - Minimum daily wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as on the last stipulated date of receipt of tender including extension, if any.
- LI - Minimum wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as applicable on the last day of the quarter previous to one under consideration.

- vii) The following principles will be followed while working out the compensation as per sub para (vi) above.
- a) The minimum wage of an unskilled male mazdoor mentioned in sub para (vi) above shall be the higher of the following two figures, namely those notified by government of india, ministry of labour and those notified by the local administration both relevant to the place of work and the period of reckoning .
 - b) The escalation for labour also shall be paid at the same quarterly intervals when escalation due to increase in the cost of materials is paid under this clause. If such revision of minimum wages takes place during any such quarterly intervals, the escalation compensation shall be payable at revised rates only for work done in subsequent quarters.
 - c) Irrespective of variations in minimum wages of any category of labour, for the purpose of this clause, the variation in the rates for an unskilled adult male mazdoor alone shall form the basis for working out the escalation compensation payable on the labour component.
- viii) In the event the price of materials and/or wages of labour required for execution of the work decrease/s, there shall be downward adjustment of the cost of work so that such price of materials and/or wages of labour shall be deductible from the cost of work under this contract and in this regard formula herein before stated under this clause 10(cc) shall mutatis mutandis apply, provided that.
- a) No such adjustment for the decrease in the price of materials and/ or wages of labour afore-mentioned would be made in case of contracts in which the stipulated period of completion of the work is eighteen months or less.
 - b) The engineer-in-charge shall otherwise be entitled to lay down the procedures by which the provision of this sub-clause shall be implemented from time to time and the decision of the engineer-in-charge in this behalf shall be final and binding on the contractor.

- ix) ~~Provided always that the provision of the preceding clause 10 (C) shall not be applicable for contracts where provisions of this clause are applicable but in cases where provision of this clause are not applicable, the provisions of clause 10(C) will become applicable.~~

CLAUSE 10D

The contractor shall treat all materials obtained during dismantling of an installation, excavation of the site for a work etc. as BSNL's property and such materials shall be disposed of to the best advantage of BSNL according to the instructions in writing issued by the engineer-in-charge.

CLAUSE 11

Work to be executed in accordance with specifications, drawings, orders, etc. 11.1 The contractor shall execute the whole and every part of the work in the most substantial and workman like manner and both as regards materials and otherwise in every respect be in strict accordance with the specifications. The contractor shall also confirm exactly fully in and faithfully to the designs, drawings and instructions in writing in respect of the work signed by the engineer-in-charge. The contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of installation.

11.2 In the case of any class of work for which there is no such specification as referred to Clause 11.1, such work shall be carried out in accordance with the Bureau of Indian Standards specification, in case there is no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturer's specifications. In case there are no such specifications as required above the work shall be carried out in all respect in accordance with the instructions and requirements of the Engineer-in-charge.

11.3 There are no such specifications as required above the work shall be carried out in all respect in accordance with the instructions and requirements of the Engineer-in-charge.

CLAUSE 12

12.1 The engineer-in-charge shall have power

- Deviations, Variations Extent and Pricing
- i) To make any alterations in, omissions from, additions to or substitutions for the original specifications, drawings, designs and instructions, that may appear to him to be necessary or advisable during the progress of the work and
 - ii) To omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the work in accordance with any instructions given to him in writing signed by the engineer-in-charge, and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the work, shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work except as hereafter provided.

The time for the completion of work shall, in the event of any deviations resulting in additional cost over the tendered value of sum being ordered, be extended, if requested by the contractor, as follows:

- i) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus.
- ii) 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-charge.

12. 2 Rates for such altered, additional or substituted work shall be determined by the Engineer- in-charge as follows:-

- i) If the rates for the additional, altered or substituted item of work is specified in the schedule of quantity, the contractor shall carry out the altered, additional or substituted item at the same rate.
- ii) If the rate for any additional altered or substituted item of work is not specified in the schedule of quantities, the rate for that item shall be derived from the rate for the nearest similar item specified therein.
- iii) If the rate for altered, additional or substituted item of work cannot be determined in the manner specified in sub paras (i) and (ii) above, then such item of works shall be carried out at the rate entered in the CPWD schedule of Rates as mentioned in the Schedule 'F' minus/plus the percentage by which the tendered amount of the work actually awarded is higher or lower than the corresponding estimated amount of the work actually awarded.
- iv) If the rates for the altered additional or substituted item of work can not determined in the manner specified in the sub-clauses (i) to (iii) above, then the rates for such item of work shall be derived from the Schedule of Rates specified in sub para above (iii) minus/plus the percentage mentioned in that sub para. Provided always that if rates(s) for part(s) of the item(s) are not available in the schedule of rates specified above, rate for part(s) of such item(s) shall be determined on the basis of the market rate(s) prevailing during the fortnight following the date of the order plus ten percent for profit and overhead.
- v) If the rates for the altered, additional or substituted item of work can not be determined in the manner specified in sub-paras (i) to (iv) above, the contractor shall within 15 days of the date of receipt of order to carry out the said work, inform the engineer-in-charge of the rate which he proposes to claim for such item of work, supported by analysis of rate claimed and the Engineer-in-charge shall within three months thereafter, after giving due consideration to the rate claimed by the contractor, determine the rate or rates on the basis of prevailing market rates. In the event of contractor failing to inform the Engineer-in-charge within the stipulated period of time, the rate which he proposes to claim, the rate for such item shall be determined by the Engineer-in-charge on the basis of market rate(s).

- vi) Provided further that in case where the original item is substituted, the substituted item shall be deemed to have replaced the original item in the contract itself to that extent and above provisions pertaining to the deviations shall apply with respect to such substituted item and not the original item.

12.3 Increase/ Decrease of tendered quantity

- a) BSNL will have the right to increase or decrease up to 25% of the quantity of goods and services specified in the schedule of items without any change in the unit price or other terms and conditions at the time of award of contract. In exceptional and unavoidable cases BSNL can increase the quantity of goods and services beyond 25 % of the tendered quantity without any change in tendered and accepted unit price and also other terms and conditions as applicable at the time of award of contract.

CLAUSE 13

- 13.1 If at any time after acceptance of the tender BSNL shall decide to abandon or reduce the scope of the works for any reason whatsoever and hence not require the whole or any part of the works to be carried out, the Engineer-in-charge shall give notice in writing to that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.
- 13.2 The contractor shall be paid at contract rates full amount for works executed at site and in addition, a reasonable amount as certified by the Engineer-in-charge for the items hereunder mentioned which could not be utilised on the work to the full extent in view of the foreclosures.
- i) Reasonable compensation for transfer of T&P and staff from site to contractor's permanent stores or to his other works, whichever is less. If T&P/staff are not transported to either of the said places, no cost of transportation shall be payable.
- ii) BSNL shall have the option to take over contractor's materials or any part thereof either brought to site or to which the contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work) provided, however BSNL shall be bound to take over the materials or such portions thereof as the contractor does not desire to retain. For materials taken over or to be taken over by BSNL cost of such materials as detailed by Engineer-in-charge shall be paid. The cost shall, however, take into account purchase price, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the contractor.
- 13.3 The contractor shall, if required by the Engineer-in-charge, furnish to him books of account, wage books and other relevant documents and evidences as may be necessary to enable him to certify the reasonable amount payable under this condition.
- 13.4 The reasonable amount of item(s) on 13.2 (i) above shall not be in excess of 2% of the cost of the work remaining incomplete on the date of closure, i.e. total stipulated cost of

the work as per accepted tender less the cost of work actually executed under the contract and less the cost of contractor's materials at site taken over by BSNL as per item 13.2 (ii) above. Provided always that against any payments due to the contractor on this account or otherwise, the Engineer-in-charge shall be entitled to recover or be credited with any outstanding balances due from the contractor for advance paid in respect of any work and materials and any other sums which at the date of termination were recoverable by BSNL from the contractor under the terms of the contract.

CLAUSE 14

- Suspension of work 14.1 If contractor :
- i) at any time makes default in proceeding with the works or any part of the work with the due diligence and continues to do so after a notice in writing of 7 days from the Engineer-in-charge; or
 - ii) commits default to complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-charge; or
 - iii) fails to complete the works or items of work with individual dates of completion, on or before the date(s) of completion, and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-charge; or
 - iv) Shall offer or give or agree to give to any person in BSNL service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract for BSNL or
 - v) Shall enter into a contract with BSNL in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Accepting Authority/Engineer-in-charge; or
 - vi) Shall obtain a contract with BSNL as a result of wrong tendering or other non-bonafide methods of competitive tendering; or
 - vii) being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors; or
 - viii) being a company, shall pass a resolution or the court shall make an order for the winding up of the company, or a receiver or manager on behalf of the debenture holders or otherwise shall be appointed or circumstances shall arise which entitle the court or debenture holders to appoint a receiver or manager; or
 - ix) Shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days or

- x) Assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Accepting Authority.

The Accepting Authority may, without prejudice to any other right or remedy which shall have accrued or shall accrue hereafter to BSNL by a notice in writing to cancel the contract as a whole or only such items of work in default from the contract.

- 14.2 The Engineer-in-charge shall on such cancellation by the Accepting Authority have powers to:
- (a) take possession of the site and any materials, equipment, implements, stores etc. thereon and/or
 - (b) carry out the incomplete work by any means at the risk and cost of the contractor.
- 14.3 On cancellation of the contract in full or in part, the Engineer-in-charge shall determine what amount, if any, is recoverable from the contractor for completion of the works or part of the works or in case the works or in case the works or part of the works is not to be completed, the loss or damage suffered by BSNL. In determining the amount, credit shall be given to the contractor for the value of the work executed by him up to the time of cancellation, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor.
- 14.4 Any excess expenditure incurred or to be incurred by BSNL in completing the works or part of the works or the excess loss or damages suffered or may be suffered by BSNL as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to BSNL in law be recovered from any moneys due to the contractor on any account, and if such money are not sufficient the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.
- 14.5 If the contractor shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-in-charge shall have the right to sell any or all of the contractors' unused materials, plant, implements etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the contractor under the contract and if thereafter there be any balance outstanding from the contractor, it shall be recovered in accordance with the provisions of the contract.
- 14.6 Any sums in excess of the amount due to BSNL and unsold materials, tools and plant etc. shall be returned to the contractor, provided always that if cost or anticipated cost of completion by BSNL of the works or part of the works is less than the amount which the contractor would have been paid had he completed the works or part of the works, such benefit shall not accrue to the contractor.

CLAUSE 15

- 15.1 i) The contractor shall, on receipt of the order in writing of the Engineer-in-charge (whose decision shall be final and binding on the contractor) suspend the

Inspection and
supervision of
work

CONTRACTOR

progress of the works or any part thereof for such time and in such manner as the Engineer-in-charge may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of the following reasons.

- a) on account of any default on the part of the contractor or
- b) for proper execution of the works or part thereof for reasons other than the default of the contractor; or
- c) for safety of the works or part thereof.

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-charge.

- ii) If the suspension is ordered for reasons (b) and (c) in sub para (i) above.
 - a) The contractor shall be entitled to an extension of time equal to the period of every such suspension plus 25% of completion time specified in the contract.
 - b) If the total period of all such suspensions in respect of the work exceeds thirty days, the contractor shall, in addition, be entitled to such compensation as the Engineer-in-charge may consider reasonable in respect of salaries and/or wages paid by the contractor to his employees and labour at site, remaining idle during the period of suspension, adding thereto 2% to cover indirect expenses of the contractor. Provided the contractor submits his claim supported by details to the Engineer-in-charge within fifteen days of the expiry of the period of 30 days.
 - c) If the works or part thereof is suspended on the orders of the Engineer-in-charge for more than three months at a time, except when suspension is ordered for reason 15.1 i) (a) in sub para above, the contractor may after receipt of such order serve a written notice on the Engineer-in-charge requiring permission within fifteen days from receipt by the Engineer-in-charge of the said notice, to proceed with the work or part thereof in regard to which progress has been suspended and if such permission is not granted within that time, the contractor, if he intends to treat the suspension, where it affects only a part of the works as an omission of such part by BSNL or where it affects whole of the works, as an abandonment of the works by BSNL, shall within ten days of expiry of such period of 15 days give notice in writing of his intention to the Engineer-in-charge. In the event of the contractor treating the suspension as an abandonment of the contract by BSNL, he shall have no claim to payment of any compensation on account of any profit or advantage which he might have derived from the execution of the work in full but which he could not derive in consequence of the abandonment. He shall, however, be entitled to such compensation, as the Engineer-in-charge may consider reasonable, in respect of salaries and/or wages paid by him to his employees and labour at site, remaining idle in consequence adding to the total thereof 2% to cover indirect expenses of the contractor provided the contractor submits his claim supported by details to the Engineer-in-charge within 30 days of the expiry of the period of three months.

- 15.2 Provided further that the contractor shall not be entitled to claim any compensation from BSNL for the loss suffered by him on account of delay by BSNL in the supply of materials in schedule of work where such delay is covered by difficulties relating to the availability of trucks, force majeure including non-allotment of such materials by controlling authorities, acts of God, acts of enemies of the state/country or any reasonable cause beyond the control of BSNL.

CLAUSE 16

- Rectification of defects
- 16.1 All work under or in course of execution or executed in pursuance of the contract shall at all time be open and accessible to the inspection and supervision of the Engineer-in-charge, his authorised subordinates in charge of the work and all the superior officers, officer of the Vigilance Cell of BSNL and of the Chief Technical Examiner's office (CVC) and the contractor shall at all times during the usual working hours, and at all other times at which reasonable notice of the intention of the engineer-in-charge or his authorised subordinate to visit the works, shall have been given to the contractor, either himself be present to receive order and instructions, or have a responsible agent duly accredited in writing present for that purpose. Orders given to the contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.
- 16.2 If it shall appear to the Engineer-in-charge or his authorised subordinates in charge of the work or to the Chief Engineer-in-charge/Vigilance Cell or his subordinate officers or to the Chief Technical Examiner or his subordinate officers, that any work has been executed with unsound, imperfect or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract the contractor shall on demand in writing which shall be made within six months of the completion of the work from the Engineer-in-charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of his failing to do so within a period specified by the Engineer-in-charge in the demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under clause 2 of the contract (for non-completion of the work in time) for this default.
- 16.3 In such case the Engineer-in-charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the competent authority (Superintending Engineer) may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the equipment or he may reject the work outright without any payment and/or get it another connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of the Engineer-in-charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

CLAUSE 17

- Contractor liable for damages, defects during maintenance period
- CONTRACTOR
- If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building road, road kerb, fence

enclosure, water pipe, cable drains, electric or telephone post or wires, trees, grass or grassland, or cultivated ground contiguous to the premises on which the work or any part of its is being executed or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within twelve months after a certificate final or otherwise of its completion shall have been given by the engineer-in-charge as aforesaid arising out of defective or improper materials or workmanship the contractor shall upon a receipt of a notice in writing on that behalf make the same good at his own expense, or in default, the engineer-in-charge may cause the same to be made good by other workmen and deduct the expense from any sums that may be due, or at any time thereafter may become due to the contractor, or from performance guarantee and security deposit or the proceeds of sale thereof or of a sufficient portion thereof. The performance guarantee and security deposit of the contractor shall not be refunded before the expiry of twelve months after the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later.

CLAUSE 18

Contractor
to supply
Tools and
Plants etc.

The contractor shall provide at his own cost all materials (except such special materials if any, as may in accordance with the contract be supplied from the engineer-in-charge's stores), Plant, tools, appliances, implements, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specification or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of engineer-in-charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor, shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting in the measurements or examination at any time and from time to time of the work of materials. Falling his so doing the same may be provided by the engineer-in-charge at the expenses of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and or from his performance guarantee or the proceeds of sale thereof, or of a sufficient portions thereof.

CLAUSE 18 A

In every case in which by virtue of the provisions of section 12, subsection (i) of the workmen's compensation act, 1923. BSNL is obliged to pay compensation to a workmen employed by the contractor, in execution of the works. BSNL will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of the BSNL under section 12, sub-section (ii) of the said act, BSNL shall be at liberty to recover such amount or any part thereof by deduction from the performance guarantee or from any sum due by BSNL to the contractor whether under this contract or otherwise. BSNL shall not be bound to contest any claim made against it under section 12, sub-section (i) of the said act, except on the written request of the contractor and upon his giving to BSNL full security for all costs for which BSNL might become liable in consequence of contesting such claim.

CLAUSE 18 B

Ensuring
Payment &
Amenities to
Workers, if
Contractor
Fails

In every case in which by virtue of the provisions of the "The Building & Other Construction Workers(Regulation of Employment & Condition of Service) Act 1996", The The Building & Other Construction Workers (Regulation of Employment & Condition of Service) Rules 1998, AND, Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, amended from time to time, BSNL is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19H or under the Contractor's Labour Regulations, or under the Rules framed by the Government / BSNL from time to time for the protection of health and sanitary arrangements for workers employed by the Contractor, BSNL will recover from the contractor the amount of wages so paid or the amount of expenditure so incurred ; and without prejudice to the rights of the BSNL under relevant provisions of above mentioned Acts, BSNL shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by the BSNL to the contractor whether under this contract or otherwise BSNL shall not be bound to contest any claim made against it under the relevant provisions of above mentioned Acts, except on the written request of the contractor and upon his giving to the BSNL full security for all costs for which BSNL might become liable in contesting such claim.

CLAUSE 19

Labour
Laws to be
Complied
by the
Contractor

The contractor shall comply with the provisions of the "The Building & Other Construction Workers(Regulation of Employment & Condition of Service) Act 1996" and the "The Building and Other Construction Workers Welfare Cess Act 1996" amended from time to time and rules framed there-under. The contractor shall comply with the provisions of the "The Building & Other Construction Workers (Regulation of Employment & Condition of Service) Rules 1998" and the "The Building and Other Construction Workers Welfare Cess Rules 1998", amended from time to time. The BSNL at the time of making any payment to the contractor for work done and measured under the contract shall deduct such sum at the rate, as prescribed in the The Building and Other Construction Workers Welfare Cess Rules as applicable to the State in which the work is situated, of gross value of the work done from each running bill and final bill. Such deduction will be transferred to the State Workers Welfare Board by the Engineer-in-Charge as per the rules. The Engineer-in-charge, as Principal Employer, shall continue to monitor the rigorous implementation of the act/rules during the currency of the contract.

The contractor shall register himself under The Building & Other Construction Workers (Regulation of Employment & Condition of Service) Act 1996" & The Building & Other Construction Workers (Regulation of Employment & Condition of Service) Rules 1998, and, the "The Building and Other Construction Workers Welfare Cess Act 1996" and the "The Building and Other Construction Workers Welfare Cess Rules 1998", and shall also obtain a valid Licence under the Contract Labour (R&A) Act 1970, and the Contract Labour (Regulation and Abolition) Central Rules 1971, as amended from time to time, before the commencement of the work and continue to have these validated until the completion of the work.

Any failure to fulfill the above requirements shall attract the penal provisions of this contract arising out of the resultant of non-execution of the work.

CLAUSE 19 A

No labour below the age of eighteen years shall be employed on the work.

CLAUSE 19 B

Payment of wages:

Payment of wages

- i) The contractor shall pay to labour employed by him either directly or through sub-contractors, wages not less than fair wages as defined in the contractor's Labour Regulation or as per the provisions of The Building & Other Construction Workers (Regulation of Employment & Condition of Service) Act 1996", The Building & Other Construction Workers (Regulation of Employment & Condition of Service) Rules 1998, AND, contract labour (Regulation and Abolition) Act 1970, and the contract labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.
- ii) The contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him.
- iii) In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with the contractor's Labour Regulations made by the Government / BSNL from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorised made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of The Building & Other Construction Workers(Regulation of Employment & Condition of Service) Act 1996", The Building & Other Construction Workers (Regulation of Employment & Condition of Service) Rules 1998, AND, contract labour(Regulation & Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.
- iv)
 - a)The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the Regulations.
 - b) Under the provisions of Minimum Wages (Central) Rules, 1950, the contractor is bound to allow to the labours directly or indirectly employed in the works one day rest for six days continuous work and pay wages at the same rate as for duty. In the event of default the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled

thereto from any money due to the contractor by the Engineer-in-Charge concerned.

In the case of Union Territory of Delhi, however, as the all inclusive minimum daily wages fixed under Notification of the Delhi Administration No.F.12 (162) MWO/DAB/43884-91, dated 31.12.1979 as amended from time to time are inclusive of wages for the weekly day of rest, the question of extra payment for weekly holiday would not arise.

- v) The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act 1938, workmen's compensation Act, 1923, industrial disputes Act, 1947, Maternity benefits act, 1961, and the contractor's labour (Regulation and Abolition) Act, 1970, The Building & Other Construction Workers (Regulation of Employment & Condition of Service) Act 1996 or the modifications thereof or any other laws relating thereto and the rules made there-under from time to time.
- vi) The contractor shall indemnify and keep indemnified BSNL against payments to be made under and for the observance of the Laws aforesaid and the contractor's Labour Regulations without prejudice to his right to claim indemnity from his sub-contractors.
- vii) The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.
- viii) Whatever is the minimum wage for the time being, or if the wage payable is higher than such wage, such wage shall be paid by the contractor to the Workmen directly without the intervention of Jamadar and that Jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen as and by way of commission or otherwise.
- viii) The contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the Jamadar from the wage of workmen.

CLAUSE 19 C

- (1) In respect of of all labour directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall, at his own expense, arrange for the safety provisions as per Model Safety Code framed from time to time and shall, at his own expense, provide for all facilities in connection therewith. The contractor shall ensure that at the construction site of The Building or other construction work, adequate safety measures are taken to protect The Building workers against any accident etc. The adequate safety measures in conformity with the provisions of Part III of The Building and Other Construction Workers (Regulation of Employment and condition of service) Central Rules 1998 should be provided in addition to the safety measures laid down in Model Safety Code. In case of any discrepancy, the safety measures as per Part III of the Building and Other Construction Workers (Regulation of

Employment and condition of service) Central Rules 1998 shall supersede other provisions.

- (2) In case the contractor fails to make arrangements and provide necessary facilities as aforesaid he shall be liable to pay a penalty of Rs.200/- for each default and in addition the Engineer-in-Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

CLAUSE 19 D

The contractor shall submit by the 4th and 19th of every month, to the Engineer-in-Charge a true statement showing in respect of the second half of the preceding month and the first half of the current month respectively:-

- (1) the number of labourers employed by him on the work,
- (2) their working hours,
- (3) the wages paid to them,
- (4) the accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of the damages and injury caused by them, and,
- (5) the number of female workers who have been allowed maternity benefit according to Clause 19 F and the amount paid to them.

Failing which the contractor shall be liable to pay to BSNL a sum not exceeding Rs.200/- for each default or materially incorrect statement. The decision of the Engineer-in-Charge shall be final in deducting from any bill due to the contractor the amount levied as fine and be binding on the Contractor.

CLAUSE 19 E

In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with all the provisions of various statutes/enactments and rules there under framed by the Central/State Governments, and rules framed by BSNL from time to time for the protection of health and sanitary arrangements for the workers employed by the BSNL/ Deptt.of Telecommunications and its contractors. Notwithstanding the above provisions, the contractor shall be liable for levy of any penalty in case he fails to meet the requirements of The Building and Other Construction Workers (Regulation of Employment and Condition of Service) Act, 1996 and The Building and Other Construction Workers (Regulation of Employment and Condition of Service) Central Rules 1998 and Contract Labour (Regulation and Abolition) Act, 1970 and Contract Labour (Regulation and Abolition) Central Rules, 1971, Industrial Disputes Act, 1947 or any other Labour laws relating thereof and rules made there under from time to time

CLAUSE 19 F

Leave and pay during leave shall be regulated as follows:-

1. Leave:

- (i) in the case of delivery-maternity leave not exceeding 8 weeks, 4 weeks, up to and including the day of delivery and 4 weeks following that day,
 - (ii) in case of miscarriage-up to 3 weeks from the date of miscarriage.
2. Pay:
- (i) in case of delivery- leave pay during maternity leave will be at the rate of the women's average daily earnings, calculated on total wages earned on the days when full time work was done during the period of three months immediately preceding the date on which she gives notice that she expects to be confined or at the rate of Rupee one only a day whichever is greater.
 - (ii) in the case of miscarriage - leave pay at the rate of average daily earning calculated on the total wages earned on the days when full time work was done during a period of three months immediately preceding the date of such miscarriage.
3. Conditions for the grant of Maternity Leave:
No maternity leave benefit shall be admissible to a woman unless she has been employed for a total period of not less than six months immediately preceding the date on which she proceeds on leave,
4. The contractor shall maintain a register of Maternity (Benefit) in the prescribed form as shown in Appendix-I and II, and the same shall be kept at the place of work.

CLAUSE 19 G

In the event of the contractor(s) committing a default or breach of any of the provisions of the Contractor's Labour Regulation and Model Rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulation and Rules which is materially incorrect, he/they shall, without prejudice to any other liability, pay to the BSNL a sum not exceeding Rs.200/- for every default, breach or furnishing, making, submitting , filing such materially incorrect statements and in the event of the contractor (s) defaulting continuously in this respect, the penalty may be enhanced to Rs.200/- per day for each day of default subject to a maximum of 5 percent of the tendered value of the Work. The decision of the Engineer-in-Charge shall be final and binding on the parties.

Should it appear to the Engineer-in-Charge that the contractor(s) is/ are not properly observing and complying with the provisions of the Contractor's Labour Regulations and Model Rules and the provisions of The Building & Other Construction Workers(Regulation of Employment & Condition of Service) Act 1996", The Building & Other Construction Workers (Regulation of Employment & Condition of Service) Rules 1998, AND, Contract labour (Regulation and Abolition) Act, 1970, and the Contract Labour (R&A) Central Rules 1971, for the protection of health and sanitary arrangements for the work-people employed by the contractor(s)(hereinafter referred as "the said Rules") the Engineer-in-Charge shall have power to give notice in writing to the contractor(s) requiring that the said Rules to be complied with and the amenities prescribed therein be provided

to the work-people within a reasonable time to be specified in the notice. If the contractor(s) shall fail within the period specified in the notice to comply with and/or observe the said Rules and to provide the amenities to the workpeople as aforesaid, the Engineer-in-Charge shall have the power to provide the amenities herein before mentioned at the cost of the contractor(s). The contractor(s) shall erect, make and maintain at his/their own expense and to approved standards all necessary huts and sanitary arrangements required for his/their work-people on the site in connection with the execution of the works, and if the same shall not have been erected or constructed, according to approved Standards, the Engineer-in-Charge shall have power to give notice in writing to the contractor(s) requiring that the said huts and sanitary arrangements be re-modeled and/ or reconstructed according to approved standards, and if the contractor(s) shall fail to remodel or reconstruct such huts and sanitary arrangements according to approved standards within the period specified in the notice, the Engineer-in-Charge shall have the power to remodel or reconstruct such huts and sanitary arrangements according to approved standards at the cost of the contractor(s).

CLAUSE 19 H

The contractor(s) shall at his/their own cost provide his /their labour with a sufficient number of huts (hereinafter referred to as the camp) of the following specifications on a suitable plot of land to be approved by the Engineer-in-Charge.

- i)
 - a) The minimum height of each hut at the eaves level shall be 2.10m (7 ft.) and floor area to be provided will be at the rate of 2.7 Sq.ms. (30 Sq.Ft.) for each member of the workers family staying with the labourers.
 - b) The contractor(s) shall in addition construct suitable cooking places having a minimum area of 1.80m X 1.50m(6'X5') adjacent to the hut for each family.
 - c) The contractor(s) shall also construct temporary latrines and urinals for the use of the labourers each on the scale of not less than four per each one hundred of the total strength, separate latrines and urinals being provided for women.
 - d) The contractor(s) shall construct sufficient number of bathing and washing places, one unit for every 25 persons residing in the camp. These bathing and washing places shall be suitably screened.
- ii)
 - a) All the huts shall have walls of sun-dried or burnt-bricks laid in mud mortar or other suitable local materials as may be approved by the Engineer-in-Charge. In case of sun-dried bricks, the walls should be plastered with mud gobi on both sides. The floor may be kutcha but plastered with mud gobi and shall be at least 15 cm (6") above the surrounding ground. The roofs shall be laid with thatch or any other materials as may be approved by the Engineer-in-Charge and the contractor shall ensure that through out the period of their occupation the roofs remain watertight.
 - b) The contractor(s) shall provide each hut with proper ventilation.

- c) All doors, windows, and ventilators shall be provided with suitable leaves for security purposes.
- d) There shall be kept an open space of at least 7.2m(8yds.) between the rows of huts which may be reduced to 6m(20ft.) according to the availability of site with the approval of the Engineer-in-Charge. Back to back construction will be allowed.
- iii) Water Supply- The contractor(s) shall provide adequate supply of water for the use of labourers. The provisions shall not be less than two gallons of pure and wholesome water per head per day for drinking purposes and three gallons of clean water per head per day for bathing and washing purpose. Where piped water supply is available, supply shall be at stand posts and where the supply is from wells or river, tanks, which may be of metal or masonry, shall be provided. The contractor(s) shall also at his/their own cost make arrangements for laying pipe lines for water supply to his/their labour camp from the existing mains wherever available, and shall pay all fees and charges therefor.
- iv) The site selected for the camp shall be high ground, removed from jungle.
- v) Disposal of Excreta- The contractor(s) shall make necessary arrangements for the disposal of excreta from the latrines by trenching or incineration, which shall be according to the requirements laid down by the Local Health Authorities. If trenching or incineration is not allowed the contractor(s) shall make arrangements for the removal of the excreta through the Municipal Committee/Authority and inform it about the number of labourers employed so that arrangements may be made by such Committee/authority for removal of the excreta. All charges on this account shall be borne by the contractor and paid direct by him to the Municipality/authority. The contractor shall provide one sweeper for every eight seats in case of dry system.
- vi) Drainage:- The contractor(s) shall provide efficient arrangements for draining away swage water so as to keep the camp neat and tidy.
- vii) The Contractor(s) shall make necessary arrangements for keeping the camp area sufficiently lighted to avoid accidents to the workers.
- viii) Sanitation:- The contractor(s) shall make arrangements for conservancy and sanitation in the labour camps according to the rules of the Local Public Health and Medical Authorities.

CLAUSE 19 I

The Engineer-in-Charge may require the contractor to dismiss or remove from the site of the work any person or persons in the contractor's employment upon the work who may be incompetent or misconducts himself and the contractor shall forthwith comply with such requirements.

CLAUSE 19 J

It shall be the responsibility of the contractor to see that the building under construction is not occupied by anybody unauthorised during construction, and is handed over to the Engineer-in-Charge with vacant possession of complete building. If such building though completed is occupied illegally, then the Engineer-in-Charge shall have the option to refuse to accept the said building/buildings in that position. Any delay in acceptance on this account will be treated as the delay in completion and for such delay a levy up to 5% of the tendered value of work may be imposed by the Superintending Engineer whose decision shall be final both with regard to the justification and quantum and be binding on the contractor.

However, the Superintending Engineer, through a notice, may require the contractor to remove the illegal occupation any time on or before construction and delivery.

CLAUSE 19 K

Employees
Provident Fund
Scheme to be
Complied by the
Contractor

Employees Provident Fund Scheme to be Complied by the Contractor :

The contractor shall comply with the provision of the Employees Provident Fund Scheme 1952 as under the Employees Provident Funds and Miscellaneous Provisions Act 1952, amended from time to time. The contractor shall get himself registered and get the allocation of Registration Code No. from the competent authority as per provisions of the above scheme. The contractor shall indemnify and keep indemnified BSNL against payment to be made under and for the observance of the above scheme. The Executive Engineer (Engineer-in-Charge) as Principal Employer shall continue to monitor the rigorous implementation of the act/ rules during the currency of the contract.

CLAUSE 20

Minimum
wages Act
to be
Complied

The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, The Building & Other Construction Workers (Regulation of Employment & Condition of Service) Act 1996 and Contract Labour (Regulation and Abolition) Act, 1970, amended from time to time and rules framed there-under and other labour laws affecting contract labour that may be brought into force from time to time.

CLAUSE 21

Work not to
be sublet,
Action in
case of
Insolvency

The contract as a whole or part thereof shall not be assigned or sublet or transferred either directly or indirectly whether by creating agent on the basis of General Power of Attorney or in any other manner or given on general power of attorney without the written approval of the Engineer-in-Charge. If the contractor assign or sublet (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be

subletting) or give on general power of attorney or transferred either directly or indirectly whether by creating agent on the basis of General Power of Attorney or in any other manner, his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, , consideration of any kind as an inducement or be given, promised or offered by the contractor, or any of his servants or agent to any public officer or person in the employment of BSNL in any way relating to his office or employment or if any such officer or person shall become in any way directly or indirectly interested in the contractor, or if the contractor shall obtain a contract with the BSNL as a result of wrong tendering or by non bonafide methods, of competitive tendering; or if the contractor enters into a contract with BSNL in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to Accepting Authority/ Engineer-in-Charge; or if the contractor being a company, shall pass a resolution or the court shall make an order for the winding up of the company, or a receiver or manager on behalf of the debenture holders or otherwise shall be appointed or circumstances shall arise which entitle the court or shareholders debenture holders to appoint a receiver or managers, Engineer-in-Charge on behalf of the Bharat Sanchar Nigam Limited shall have powers to adopt the courses specified in Clause 3 hereof in the interest of BSNL and in the event of any courses being adopted the consequences specified in the said Clause 3 shall ensue.

CLAUSE 22

All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to use of BSNL without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

CLAUSE 23

Changes in Firm's Constitution to be intimated

Where the contractor is a partnership firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu Undivided Family (HUF) business concern, such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where-under the partnership firm would have the right to carry out the works hereby undertaken by the contractor. If previous approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of Clause 21 hereof and the same action may be taken, and the same consequences shall ensue as provided in the said Clause 21.

CLAUSE 24

All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Engineer-in-Charge who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.

CLAUSE 25

Settlement
of
Disputes &
Arbitration

Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, designs, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter:-

- (i) If the contractor considers that he is entitled to any extra payment or compensation in respect of the works over and above the amounts admitted as payable by the BSNL or in case the contractor wants to dispute the validity of any deductions or recoveries made or proposed to be made from the contract, the contractor shall forthwith give notice in writing of his claim, in this behalf to the Engineer-in-Charge within 30 days from the date of disallowance thereof for which the contractor claims such additional payment or compensation or disputes the validity of any deduction or recovery. The said notice shall give full particulars of the claim, grounds on which it is based and detailed calculations of the amount claimed and the contractor shall not be entitled to raise any claim nor shall the BSNL be in any way liable in respect of any claim by the contractor unless notice of such claim shall have been given by the contractor to the Engineer-in-Charge in the manner and within the time as aforesaid. The contractor shall be deemed to have waived and extinguished all his rights in respect of any claims not notified to the Engineer-in-Charge in writing in the manner and within the time aforesaid.
- (ii) The Engineer-in-Charge shall give his decision in writing on the claims notified by the contractor within 30 days of the receipt of the notice thereof. If the contractor is not satisfied with the decision of the Engineer-in-Charge, the contractor may within 15 days of the receipt of the decision of the Engineer-in-Charge submit his claims to the conciliating authority named in Schedule 'F' for conciliation along with all details and copies of correspondence exchanged between him and the Engineer-in-Charge.
- (iii) The party initiating conciliation shall send to the other party a written invitation to conciliate. Conciliation proceedings shall commence when the other party accepts in writing the invitation to conciliate. If the other party rejects the invitation, or does not reply within thirty days from the date of invitation, there will be no conciliation proceedings.
- (iv) When it appears to the Conciliator that there exists element of a settlement which may be acceptable to the parties, he shall formulate the terms of a possible settlement and submit them to parties for their observation after receiving the observations of the parties. He may reformulate the terms of a possible settlement in the light of such observations. If the parties reach agreement on settlement of the dispute, they may draw up and sign a written settlement agreement. Parties may request the Conciliator to draw up or assist them in drawing up the settlement agreement. Such settlement

agreement shall have the same status and effect as if it were an arbitral award on agreed terms on the substance of the dispute rendered by an arbitral tribunal under section 30 of Arbitration and Conciliation Act, 1996. If a settlement does not appear possible, the Conciliator, after consultation with the parties will give a written declaration that further efforts at Conciliation are no longer justified and the conciliation proceedings are terminated.

- (v) When conciliation proceedings have become infructuous or have been terminated, the party, which initiated the Conciliation shall, within a period of 30 days of termination thereof shall give a notice, in the form prescribed by the BSNL, to the Chief Engineer, Bharat Sanchar Nigam Limited in-charge of the work or if there be no Chief Engineer, to the Administrative Head of the Bharat Sanchar Nigam Limited for appointment of an arbitrator to adjudicate the notified claims failing which the claims of the contractor shall be deemed to have been considered absolutely barred and waived.
- (vi) Except where the decisions have become final, binding and conclusive in terms of the contract, all disputes arising out of the notified claims of the contractor as aforesaid and all claims of the BSNL shall be referred for adjudication through the arbitration by the sole arbitrator appointed by the Chief Engineer, Bharat Sanchar Nigam Limited in-charge of the work or if there be no Chief Engineer, the Administrative Head of the Bharat Sanchar Nigam Limited. It will also be no objection to any such appointment that the arbitrator so appointed is a BSNL Employee and that he had to deal with the matters to which the Contract relates in the course of his duties as BSNL Employee. If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever, another sole arbitrator shall be appointed in the manner aforesaid by the said Chief Engineer. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each dispute along with the notice for appointment of arbitrator.

It is also a term of this contract that no person other than a person appointed by such Chief Engineer, Bharat Sanchar Nigam Limited or the administrative head of the Bharat Sanchar Nigam Limited as aforesaid should act as arbitrator and if for any reasons that is not possible, the matter shall not be referred to arbitration at all.

The conciliation and arbitration shall be conducted in accordance with the provisions of the Arbitration & Conciliation Act 1996 or any statutory modification or re-enactment thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceeding under this clause.

It is also a term of this contract that the arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each disputes and claim referred to him. The arbitrator shall give reasons for the award for each dispute referred to him.

It is also a term of the contract that if any fees are payable to the arbitrator these shall be paid equally by both the parties.

It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties calling them to submit their statement of claims and counter-statement of claims. The venue of the arbitration shall be such place as may be fixed by the arbitrator in his sole discretion. The fees, if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any, of the arbitrator) shall be in the discretion of the arbitrator who may direct to any, by whom and in what manner, such costs or any part thereof, shall be paid and fix or settle the amount of costs to be so paid.

CLAUSE 26

Contractor to indemnify BSNL against patent Rights

The Contractor shall fully indemnify and keep indemnified the Bharat Sanchar Nigam Limited against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against BSNL in respect of any such matters as aforesaid, the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise therefrom, provided that the contractor shall not be liable to indemnify Bharat Sanchar Nigam Limited if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Engineer-in-Charge in this behalf.

CLAUSE 27

When the estimate on which a tender is made includes lump sum in respect of parts of the work, the contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this contract for such items, or if the part of the work in question is not, in the opinion of the Engineer-in-charge payable of measurement, the Engineer-in-charge may at his discretion pay the lump sum amount entered in the estimate, and the certificate in writing of the Engineer-in-Charge shall be final and conclusive against the contractor with regard to any sum or sums payable to him under the provisions of the clause .

CLAUSE 28

Action where no specifications are specified

In case of any class of work for which there are no such specifications as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standards specifications. In case there is no such specification in Bureau of Indian Standards, the work shall be carried out as per manufacturer's specifications. In case no such manufacturer's specification is

available then as per district specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-Charge.

CLAUSE 29

Withholding
and lien in
respect of sum
due from the
contractor

- i) Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, the Engineer-in-Charge or the Government shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purposes aforesaid, the Engineer-in-Charge or the Government shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have lien over the same pending finalisation or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the Engineer-in-Charge or BSNL shall be entitled to withhold and have a lien to retain such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with the Engineer-in-Charge of BSNL or any contracting person through the Engineer-in-Charge pending finalisation of adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or BSNL will be kept withheld or retained as such, by the Engineer-in-Charge, till the claim arising out of or under the contract is determined by the arbitrator (if the contract is governed by the arbitration clause) or by the competent court, as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or BSNL shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company as the case may be, whether in his individual capacity or otherwise.

- ii) BSNL shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc., to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for BSNL to recover the same from him in the manner prescribed in sub-clause (i) of this clause or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by BSNL to the contractor, without any interest thereon whatsoever.

Provided that BSNL shall not be entitled to recover any sum overpaid, nor the contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the Superintending Engineer or Executive Engineer on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by the Superintending Engineer or the Executive Engineer.

CLAUSE 29 A

Lien in respect of claims in other contracts

Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or the Government or any other contracting person or persons or through Engineer-in-Charge against any claim of the Engineer-in-Charge of Government or such other person or persons in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer-in-Charge or of the Government or with such other person or persons.

It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge or the Government will be kept withheld or retained as such by the Engineer-in-Charge or the Government or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the arbitration clause or by the competent court, as the case may be and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

CLAUSE 30

- 30.1 The contractor shall provide all necessary superintendence during execution of the work and as long thereafter as may be necessary for proper fulfilling of the obligations under the contract.
- 30.2 The contractor shall immediately after receiving letter of acceptance of the tender and before commencement of the work, intimate in writing to the Engineer-in-Charge the name, qualification, experience, age, address and other particulars along with certificates, of the principal technical representative to be in charge of the work. Such qualifications and experience shall not be lower than specified as under:-
- | | | |
|-----|---------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| i) | Work with estimated cost put to tender more than Rs. 2 lakh but less than Rs. 5 lakh. | Recognised Diploma holder |
| ii) | Work with estimated cost put to tender more than Rs. 5 lakh | Graduate or recognised Diploma holder with three years experience. |

30.3 The Engineer-in-Charge shall within 15 days of receipt of such communication intimate in writing his approval or otherwise of such a representative to the contractor. Any such approval may at any time be withdrawn and in case of such withdrawal the contractor shall appoint another such representative according to the provisions of this clause. Decision of the tender accepting authority shall be final and binding on the contractor in this respect. Such a principal technical representative shall be appointed by the contractor soon after receipt of the approval from Engineer-in-Charge and shall be available at site within fifteen days of start of work.

30.4 If the contractor (or any partner in case of firm/company) who himself has such qualifications, it will not be necessary for the said contractor to appoint such a principal technical representative but the contractor shall designate and appoint a responsible agent to represent him and to be present at the work whenever the contractor is not in a position to be so present. All the provisions applicable to the principal technical representative under the clause will also be applicable in such a case to contractor or his responsible agent. The principal technical representative and/or the contractor shall on receiving reasonable notice from the Engineer-in-charge or his designated representative(s) in charge of the work in writing or in person or otherwise, present himself to the Engineer-in-charge and/or at the site of work, as required, to take instructions. Instructions given to the principal technical representative or the responsible agent shall be deemed to have the same force as if these have been given to the contractor. The principal technical representative and/or the contractor or his responsible authorised agent shall be actually available at site at least two working days every week, these days shall be determined in consultation with the Engineer-in-Charge as well as during important stages of execution of work, during recording of measurements of work and whenever so required by the Engineer-in-Charge by a notice as aforesaid and shall also note down instructions conveyed by the Engineer-in-Charge or his designated representative in the site order book and shall affix his signature in token of noting down the instructions and in token of acceptance of measurements. There shall be no objection if the representative/agent looks after more than one work and not more than three works in the same station provided these details are disclosed to the Engineer-in-Charge and he shall be satisfied that the provisions and the purpose of this clause are fulfilled satisfactory.

30.5 If the Engineer-in-Charge, whose decision in this respect is final and binding on the contractor, is convinced that no such technical representative or agent is effectively appointed or is effectively attending or fulfilling the provision of this clause, a recovery shall be effected from the contractor as specified below :-

- i) Rs. 4000/- per month for works costing above 5 lakhs
- ii) Rs.2000/- per month for works costing between 2 lakhs and 5 lakhs

30.6 The decision of the Engineer-in-charge as recorded in the site book and measurement recorded in measurement books shall be final and binding on the contractor. Further if the contractor fails to appoint a suitable technical representative or responsible agent and if such appointed persons are not effectively present or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the work until such date as a suitable agent is appointed and the contractor shall be held responsible for the delay so caused to the work. The contractor shall submit a certificate of employment of the technical representative/responsible

agent along with every on account bill/final bill and shall produce evidence if at any time so required by the Engineer-in-Charge.

- 30.7 The contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff as are competent to give proper supervision to the work.
- 30.8 The contractor shall provide and employ skilled, semi-skilled and unskilled labour as is necessary for proper and timely execution of the work.
- 30.9 The Engineer-in-Charge shall be at liberty to object to and require the contractor to remove from the works any person who in his opinion misconducts himself, or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by the Engineer-in-Charge to be undesirable. Such person shall not be employed again at works site without the written permission of the Engineer-in-Charge and the persons so removed shall be replaced as soon as possible by competent substitutes.

CLAUSE 31

- 31.1 The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk

Compensation
During warlike
situations

of the contractor until, the work has been delivered to the Engineer-in-Charge and a certificate from him to that effect obtained. In the event of the work or any materials property brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operations, activities covered by "excepted risk", the contractor shall, when ordered in writing by the Engineer-in-Charge, remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable materials and for the reconstruction of all works ordered by the Engineer-in-Charge such payments being in addition to compensation up to the value of the work, originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for the compensation shall be assessed by the Engineer-in-Charge up to Rs.5000/- and by the Superintending Engineer concerned for a higher amount. The contractor shall be paid for the damage/destruction suffered and for restoring the material at the rates based on the analysis of rates tendered for in accordance with the provisions of the contract. The certificate of the Engineer-in-Charge regarding the quality and quantity of materials and the purpose of which they were collected shall be final and binding on all parties to this contract.

- 31.2 Provided always that no compensation shall be payable for any loss in activities covered by "excepted risk" (a) unless the contractor had taken all such precautions against air raid as are deemed necessary by the A.R.P. Officers or the Engineer-in-Charge, (b) for any materials etc not on the site of the work or for any tools and plant, machinery, scaffolding temporary buildings and other things not intended for the work.
- 31.3 In the event of the contractor having to carry out reconstruction as aforesaid he shall be allowed such extension of time for its completion as is considered reasonable by the Engineer-in-Charge.

CLAUSE 32

All electrical works shall be carried out in accordance with the provisions of Indian Electricity Act, 1910 and Indian Electricity Rule 1956 amended up to date. List of Rules of particular importance to building installations is given in Appendix B & C of latest CPWD General Specifications for Electrical Works (external and internal).

CLAUSE 33

Release of Security Deposit after labour clearance

Security Deposit of the work shall not be refunded till the contractor produces a clearance certificate from the Labour Officer. As soon as the work is virtually complete, the contractor shall apply for the clearance certificate to the Labour Officer under intimation to the Engineer-in-Charge. The Engineer-in-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, on record till after 3 months after the completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Security Deposit will be released if otherwise due.

CLAUSE 34

Insurance

Without limiting the Contractor's obligations and responsibilities stated elsewhere in the Contract, the contractor shall at his own cost arrange, secure and maintain insurance in the joint names of the BSNL and the contractor with any of the subsidiary of the General Insurance Corporation of India in such a manner that the BSNL and the contractor are covered for all time during the period of contract i.e. the time period allowed for completion of work, extended period and the defect liability period. The insurance shall be effected in accordance with terms approved by the BSNL and the contractor shall submit the insurance policies to the Engineer-In-Charge within one week of signing of the agreement along with the receipt of premium. The contractor shall timely pay and submit the receipts of payment of premiums for extensions of policies, if any. The insurance shall cover the following: -

- a) Contractor's All Risks Insurance

The contractor shall insure the work for a sum equivalent to the Contract value or such additional sums as specified and the interests of the BSNL against ALL RISKS claims, proceedings, loss or damages, costs, charges and expenses from whatsoever cause arising out of or in consequence of the execution and maintenance of the work for which the contractor is responsible under the contract

- b) Workman Compensation & Employers Liability Insurance.

This insurance shall be effected for all the contractor's employees engaged in the performance of the contract. The BSNL shall not be liable in respect of any damages or compensation payable at law in respect of or in consequence of any accident or injury to any workman or any other person in the employment of the contractor and the contractor shall indemnify and keep indemnified the BSNL against all such damages and

compensation and against all claims, demands, proceedings, costs, charges and expenses, whatsoever in respect or in relation thereof.

c) Third Party Insurance.

The contractor shall be responsible for making good to the satisfaction of the Engineer-in-Charge any loss or any damage to all structures and properties belonging to the BSNL or being executed or procured or being procured by the BSNL or of the other agencies within the premises of all work of the BSNL if such loss or damage is due to fault and or the negligence or willful acts or omissions of the contractor, his employees, agents, representatives.

The contractor shall take sufficient care in moving his plants, equipments and materials from one place to another so that they do not cause any damage to any person or to the property of the BSNL or any third party including overhead and underground cables and in the event of any damage resulting to the property of the BSNL or to a third party during the movement of the aforesaid plant, equipment or materials, the cost of such damages including eventual loss of production, operation or services in any plant or establishment as estimated by the BSNL or ascertained or demanded by the third party, shall be borne by the contractor.

Before commencing the execution of the work, the contractor, shall insure and indemnify and keep the BSNL harmless of all claims, against the contractor's liability for any materials or physical damage, loss or injury which may occur to any property, including that of the BSNL or to any person including any employee of BSNL, or arising out of the execution of the work or in the carrying out of the contract, otherwise than due to the matters referred to in the provision to (a) above. Such insurance shall be effected for an amount sufficient to cover such risks. The terms shall include a provision whereby, in the event of any claim in respect of which the contractor, would be entitled to receive indemnify under the policy being brought or made against the BSNL, the insurer willfully indemnify BSNL against such claims and any costs, charges and expenses in respect thereof.

d) The contractor shall also at times indemnify the BSNL against all claims, damages or compensation under the provisions of Payment or Wages Act, 1936, Minimum Wages Act, 1948, Employer's Liability Act, 1938, the Workman's Compensation Act, 1947, Industrial Disputes Act, 1947 and Maternity Benefit Act, 1961, or any modification thereof or any other law relating thereof and rules made there under from time to time.

e) Contractor shall also at his own cost carry and maintain any and all other insurance(s) which he may be required to take out under any law or regulation from time to time. He shall also carry and maintain any other insurance, which may be required by the Engineer-in-Charge.

34.1 The Contractor shall prove to the Engineer-in-Charge from time to time he has taken out all the insurance policies referred to above and has paid the necessary premiums for keeping the policies alive till expiry of the defects liability period.

34.2 The aforesaid insurance policies shall provide that they shall not be cancelled till the Engineer-in-Charge has agreed for cancellation.

34.3 Remedy on the contractor's failure to insure

If the contractor shall fail to effect and keep in force the insurance referred to above or any other insurance which he/they may be required to effect under the terms of the contract then and in any such case Engineer-in-Charge may without being bound to, effect and keep in force any such insurance and pay such premium or premiums, as may be necessary for that purpose and from time to time deduct the amount so paid by the Engineer-in-Charge from any moneys due or which may become due to the contractor or recover the same as a debt due from the contractor.

BSNL SAFETY CODE

1. Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When ladder is used, an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and handhold shall be provided on the ladder and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ to 1($\frac{1}{4}$ horizontal and 1 vertical) .
2. Scaffolding of staging more than 3.6 m (12 ft.) above ground or floor ,swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly attached or bolted ,braced and otherwise secured at least 90 cm (3 ft.) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends there of with only such opening as may be necessary for the delivery of materials .such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
3. Working platforms ,gangways and stairways should be so constructed that they should not sag unduly or unequally and if the height of the platform or the gangway or the stairway is more than 3.6m (12ft) above ground level or floor level ,they should be closely boarded ,should have adequate width and should be suitably fastened as described in (2) above.
4. Every opening in the floor of a building or in a working platforms shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90 cm.
5. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m (30ft) in length while the width between side rails in rung ladder shall in no case be less than 29 cm (11 $\frac{1}{2}$ ") for ladder up to and including 3m (10 ft) in length. For longer ladders, this width should be increased at least $\frac{1}{4}$ " for each additional 30 cm (1 foot) of length. Uniform step spacing of not more than 30 cm shall be kept . Adequate precautions shall be taken to prevent danger from electrical equipment . No materials or any of the sites or work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from the accident and shall be bound to bear the expenses of defence of every suit ,action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or which may ,with the consent of the contractor, be paid to compensate any claim by any such person.
6. Excavation and Trenching-All trenches 1.2m (4 ft) or more in depth ,shall at all times be supplied with at least one ladder for each 30m (100 ft) in length or fraction thereof. Ladder shall extend from bottom of the trench to at least 90 cm (3 ft) above the surface of the ground .The side of the trenches which are 1.5 m(5 ft) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m (5 ft) of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

7. Before any rewiring work is commenced and also during the progress of the work, no electric cable or apparatus which is liable to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.
8. Those engaged in welding works shall be provided with welder's protective eye- shields.
9. The contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precaution should be taken.
 - a) No paint containing lead or lead products shall be used except in the form of paste or ready made paint.
 - b) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scraped.
 - c) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.
 - d) Instructions with regard to special hygienic precautions to be taken in the painting trade shall be distributed to working painters.
10. Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions :-
 - i)
 - a) These shall be of good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and in good working order.
 - b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.
 - ii) Every crane driver or hoisting appliance operator, shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding winch or give signals to operator.
 - iii) In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load each safe working load and the condition under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
 - iv) In case of departmental machines, the safe working load shall be notified by the Electrical Engineer-in-charge. As regards contractor's machines the contractors shall notify the safe working load of the machine to the Engineer-in-Charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer concerned.

11. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum risk of accidental descent of the load. Adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials which are good conductors of electricity.
12. All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.
13. These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.
14. To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the Labour Officer or Engineer-in-Charge of the department or their representatives.
15. Notwithstanding the above clauses from (1) to (15) there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India.
16. At every work place, First Aid Box shall be provided and maintained so as to be easily accessible during the working hours.

NOTE:

In case of difference or ambiguity in Hindi and English Version, the English version will prevail

MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS FOR
WORKERS EMPLOYED BY
BHARAT SANCHAR NIGAM LIMITED OR ITS CONTRACTORS

1. APPLICATION

These rules shall apply to all buildings and construction works in charge of the Bharat Sanchar

Nigam Limited in which twenty or more workers are ordinarily employed or are proposed to be employed in any day during the period during which the contract work is in progress.

2. DEFINITION

Work place means a place where twenty or more workers are ordinarily employed in connection

with construction work, on any day during the period, during which the contract work is in progress.

3. FIRST-AID FACILITIES

i) At every work place there shall be provided and maintained, so as to be easily accessible during working hours, first aid boxes at the rate of not less than one box for 150-contract labour or part thereof ordinarily employed.

ii) The first-aid box shall be distinctly marked with a red cross on white back ground and shall contain the following equipment: -

a) For work places in which the number of contract labour employed does not exceed 50- Each first-aid box shall contain the following equipment: -

1. 6 small sterilised dressings.
2. 3 medium size sterilised dressings.
3. 3 large size sterilised dressings.
4. 3 large sterilised burn dressings.
5. 1 (30 ml.) bottle containing a two percent alcoholic solution of iodine
6. 1 (30ml) bottle containing salvolatile having the dose and mode of administration indicated on the label.
7. 1 snakebite lancet.
8. 1 (30gms.) bottle of potassium permanganate crystals.
9. 1 pair scissors.
10. 1 copy of the first-aid leaflet issued by the Director General, Factory Advice Service and Labour Institute, Government of India.
11. 1 Bottle containing 100 tablets (each of 5 gms.) of aspirin.
12. Ointment for burns.
13. A bottle of suitable surgical antiseptic solution

a) For workplaces in which the number of contract labour exceeds 50- Each first-aid- box shall contain the following equipment.

1. 12 small sterilised dressing.
2. 6 medium size sterilised dressings.
3. 6 large size sterilised dressings.
4. 6 large size sterilised burn dressings.
5. 6 (15-gms.) packets sterilised cotton wool.
6. 1 (60 ml.) bottle containing two percent alcoholic solution iodine.
7. 1 (60-ml.) bottle containing salvolite latile having the dose and mode of administration indicated on the label.
8. 1 roll of adhesive plaster.
9. 1 snake bite lancet.
10. 1 (30 gms.) bottle of potassium permanganate crystals.
11. 1 pair of scissors.
12. 1 copy of the first-aid leaflet issued by the Director General Factory Advice Service and Labour Institute/ Government of India.
13. A bottle containing 100 tablets (each of 5 gms.) of aspirin.
14. Ointment for burns.
15. A bottle of suitable surgical antiseptic solution.

- iii) Adequate arrangements shall be made for immediate recoument of the equipment when necessary.
- iv) Nothing except the prescribed contents shall be kept in the First-aid box.
- v) The first-aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours at the work place.
- vi) A person in charge of the first-aid box shall be a person trained in First-Aid treatment, at the work places where the number of contract labour employed is 150 or more.
- vii) In work places where the number of contract labour employed is 500 or more and hospital facilities are not available within easy distance from the works, First-aid posts shall be established and run by a trained compounder. The compounder shall be on duty and shall be available at all hours when the workers are at work.
- viii) Where work places are situated in places, which are not towns or cities, a suitable motor transport shall be kept readily available to carry injured person or person suddenly taken ill to the nearest hospital.

4. DRINKING WATER

- i) In every work place, there shall be provided and maintained, at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.
- ii) Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.
- iii) Every water supply or storage shall be at a distance of not less than 50 feet from any latrine drain or other source of pollution. Where water has to be drawn from an existing well, which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it or for drinking. All such wells shall be entirely closed in and be provided with a trap door, which shall be dust and waterproof.
- iv) A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

5. WASHING FACILITIES

- i) In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of contract labour employed therein.
- ii) Separate and adequate cleaning facilities shall be provided for the use of male and female workers.
- iii) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

6. LATRINES AND URINALS

- i) Latrines shall be provided in every work place on the following scale namely:-
 - a) Where female are employed there shall be at least one latrine for every 25 females.
 - b) Where males are employed, there shall be at least one latrine for every 25 males.

Provided that where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females as the case may be up to the first 100, and one for every 50 thereafter.

- ii) Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.
- iii) Construction of latrines: The inside walls shall be constructed of masonry or some suitable heat-resisting nonabsorbent materials and shall be cement washed inside and outside at least once a year. Latrines shall not be of a standard lower than bore-hole system.
- iv) a) Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers "For Men only" or "For Women only" as the case may be.
b) The notice shall also bear the figure of a man or a woman, as the case may be.
- v) There shall be at least one urinal for up to 50 number of male workers and one for up to 50 number of female workers employed at a time, provided that where the number of male or female workers, as the case may be, exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females, up to the first 500 and one for every 100 or part thereafter.
- vi) a) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.
b) Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of the Public Health Authorities.
- vii) Water shall be provided by means of tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.
- viii) Disposal of excreta: - Unless otherwise arranged for by the local sanitary authority, arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternately excreta may be disposed off by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm. layer of waste or refuse and then covering it with a layer of earth for a fortnight (When it will turn to manure).
- ix) The contractor shall at his own expense, carry out all instructions issued to him by the Engineer-in-Charge to effect proper disposal of night soil and other conservancy work in respect of the contractor's workmen or employees on the site. The contractor shall be responsible for payment of any charges, which may be levied by Municipal or Cantonment Authority for execution of such on his behalf.

PROVISION OF SHELTER DURING REST

At every place there shall be provided, free of cost, four suitable sheds, two for meals and the other two for rest separately for the use of men and women labour. The height of each shelter shall not be less than 3 metres (10 ft.) from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sq. m. (6 sq. ft.) per head.

Provided that the Engineer-in-Charge may permit subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

8. CRECHES

- i) At every work place, at which 20 or more women worker are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One room shall be used as a playroom for the children and the other as their bedroom. The rooms shall be constructed with specifications as per clause 19 H (ii) a, b & c.
- ii) The rooms shall be provided with suitable and sufficient openings for light and ventilation.
There shall be adequate provision of sweepers to keep the places clean.
- iii) The contractor shall supply adequate number of toys and games in the playroom and sufficient number of cots and beddings in the bedroom.
- iv) The contractor shall provide one ayah to look after the children in the crèche when the number of women workers does not exceed 50 and two when the number of women workers exceeds 50.
- v) The use of the rooms earmarked as crèches shall be restricted to children, their attendants and mothers of the children.

9. CANTEENS

- i) In every work place where the work regarding the employment of contract labour is likely to continue for six months and where in contract labour numbering one hundred or more are ordinarily employed, an adequate canteen shall be provided by the contractor for the use of such contract labour.
- ii) The contractor shall maintain the canteen in an efficient manner.
- iii) The canteen shall consist of at least a dining hall, kitchen, storeroom, pantry and washing places, separately for workers and utensils.
- iv) The canteen shall be sufficiently lighted at all times when any person has access to it.
- v) The floor shall be made of smooth and impervious materials and inside walls shall be lime-washed or colour washed at least once in each year. Provided that the inside walls of the kitchen shall be lime-washed every 4 months.
- vi) The premises of the canteen shall be maintained in a clean and sanitary condition.
- vii) Wastewater shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.
- viii) Suitable arrangements shall be made for the collection and disposal of garbage.
- ix) The dining hall shall accommodate at a time 30 percent of the contract labour working at a time.

- x) The floor area of the dining hall, excluding the area occupied by the service counter and any furniture, except tables and chairs, shall not be less than one square metre (10 sft.) per diner to be accommodated as prescribed in sub-Rule 9.
- xi) a) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number.
 - b) Washing places for women shall be separate and screened to secure privacy.
- xii) Sufficient tables' stools, chair or benches shall be available for the number of diners to be accommodated as prescribed in sub-Rule 9.
- xiii) a)
 - 1. There shall be provided and maintained, sufficient utensils, crockery, furniture and any other equipment's, necessary for the efficient running of the canteen.
 - 2. The furniture utensils and other equipment shall be maintained in a clean and hygienic condition.
 b)
 - 1. Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.
 - 2. A service counter, if provided, shall have top of smooth and impervious material.
 - 3. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment's.
- xiv) The foodstuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.
- xv) The charges for foodstuffs, beverages and any other items served in the canteen shall be based on 'No profit, No loss' and shall be conspicuously displayed in the canteen.
- xvi) In arriving at the price of food stuffs, and other articles served in the canteen, the following items shall not be taken into consideration as expenditure namely: -
 - a) The rent of land and building.
 - b) The depreciation and maintenance charge for the building and equipment's provided for the canteen.
 - c) The cost of purchase, repairs and replacement of equipment's including furniture, crockery, cutlery and utensils.
 - d) The water charges and other charges incurred for lighting and ventilation.
 - e) The interest and amounts spent on the provision and maintenance of equipment's provided for the canteen.
- xvii) Registered accountants and auditors shall audit the accounts pertaining to the canteen once every 12 months.

1. ANTI-MALARIAL PRECAUTIONS

The contractor shall at his own expense, conform to all anti-malarial instructions given to him by the Engineer-in-Charge including the filling-up of any borrow pits which may have been dug by him.

CONTRACTOR

11. The contractor shall ensure that at the construction site of The Building or other construction work, adequate safety measures are taken to protect The Building workers against any accident etc. The adequate safety measures in conformity with the provisions of Part III of The Building and Other Construction Workers (Regulation of Employment and condition of service) Central Rules 1998 should be provided in addition to the safety measures laid down hereunder: In case of any discrepancy, the safety measures as per Part III of The Building and Other Construction Workers (Regulation of Employment and condition of service) Central Rules 1998 shall supersede.
12. Notwithstanding the provisions made above, the contractor shall be liable for levy of any penalty in case he fails to meet the requirements of The Building and Other Construction Workers (Regulation of Employment and condition of service) Act, 1996 and The Building and Other Construction Workers (Regulation of Employment and condition of service) Central Rules 1998.
13. The above rules shall be incorporated in the contracts and in notices inviting tenders and shall form an integral part of the contracts.
14. **AMENDMENTS**
Government/ BSNL may, from time to time, add to or amend these rules and issue directions it may consider necessary for the purpose of removing any difficulty, which may arise in the administration thereof.

CONTRACTOR'S LABOUR REGULATIONS

1. SHORT TITLE

These regulations may be called the Contractors Labour Regulations.

2. DEFINITIONS

- i) Workman means, any person employed by BSNL or its contractor directly or indirectly, through a subcontractor, with or without the knowledge of the BSNL, to do any skilled, semiskilled or unskilled, manual, supervisory, technical or clerical work, for hire or reward, whether the terms of employment are expressed or implied, but does not include any person: -
- a) Who is employed mainly in a managerial or administrative capacity; or,
 - b) Who, being employed in a supervisory capacity draws wages exceeding five hundred rupees per mensem or exercises either by the nature of the duties attached to the office or by reason of powers vested in him, functions mainly of managerial nature; or,
- Who is an out worker, that is to say, person to whom any article or materials are given out by or on behalf of the principal employers to be made up cleaned, washed, altered, ornamental finished, repaired adopted or otherwise processed for sale for the purpose of the trade or business of the principal employers and the process is to be carried out either in the home of the out worker or in same other premises, not being premises under the control and management of the principal employer.
- c) Fair Wages means wages whether for time or piecework fixed and notified under the provision of the Minimum Wages Act from time to time.
- iii) Contractors shall include every person who undertakes to produce a given result other than a mere supply of goods or articles of manufacture through contract labour or who supplies contract labour for any work and includes a subcontractor.
- iv) Wages shall have the same meaning as defined in the Payment of Wages Act.
3. i) Normally working hours of an adult employee should not exceed 9 hours a day and in case of child 4 ½ hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.
- ii) When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week he shall be paid over time for the extra hours put in by him at double the ordinary rate of wages. Children shall not be made to work extra hours.
- iii) a) Every worker shall be given a weekly holiday normally on a Sunday, in accordance with the provisions of Minimum Wages (Central) Rules 1960, as amended from time to time, irrespective of whether such worker is governed by the Minimum Wages Act or not.
- b) Where the minimum wages prescribed by the Government, under the Minimum Wages Act, are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages, at the rate applicable to the next preceding day, provided he has worked under the same contractor for a continuous period of not less than 6 days.
- c) Where a contractor is permitted by the Engineer-in-Charge to allow a worker to work on a normal weekly holiday, he shall grant a substituted holiday to him for the whole day, on one of the five days, immediately before or after the normal weekly holiday, and pay wages to such worker for the work performed on the normal weekly holiday at the overtime rate.

4. DISPLAY OF NOTICE REGARDING WAGES ETC.

The contractor shall, before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain, in a clear and legible condition in conspicuous places on the work, notices in English and in local Indian languages spoken by the majority of the workers, giving the minimum rates of the wages fixed under Minimum Wages Act, the actual wages being paid, the hours of work for which such wage are earned, wages periods, dates of payments of wages and other relevant information as per Appendix 'III'.

5. PAYMENT OF WAGES.

- i) The contractor shall fix wage periods in respect of which wages shall be payable.
- ii) No wage period shall exceed one month.
- iii) The wages of every person employed as contract labour in an establishment or by a contractor, where less than one thousand such persons are employed, shall be paid before the expiry of seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.
- iv) Where the employment of any worker is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.
- v) All payment of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.
- vi) Wages due to every worker shall be paid to him direct or to other person authorised by him in this behalf.
- vii) All wages shall be paid in current coin or currency or in both.
- viii) Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.
- ix) A notice showing the wages period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the contractor to the Engineer-in-Charge under acknowledgement.
- x) It shall be the duty of the contractor to ensure the disbursement of wages in presence of the Junior Engineer or any other authorised representative of the Engineer-in-Charge who will be required to be present at the place and time of the disbursement of wages by the contractor to workmen.
- xi) The contractor shall obtain from the Junior Engineer or any other authorised representative of the Engineer-in-Charge, as the case may be, a certificate under his signature at the end of the entries in the "Register of Wages" or the "Wage-cum-Muster Roll", as the case may be, in the following form: -

"Certified that the amount shown in the column No.....has been paid to the workman concerned in my presence on.....at....."

6. FINES AND DEDUCTIONS WHICH MAY BE MADE FROM WAGES

- (i) The wages of a worker shall be paid to him without any deduction of any kind except the following: -
 - (a) Fines
 - (b) Deductions for absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.
 - (c) Deductions for damage to or loss of goods expressly entrusted to the employed person for custody, or for loss of money or any other deductions which he is required to account, where such damage or loss is directly attributable to his neglect or default.

- (d) Deduction for recovery of advances or for adjustment of overpayment of wages, advances granted shall be entered in a register.
- (e) Any other deduction, which the Central Government may from time to time, allows.
- (ii) No fines should be imposed on any worker save in respect of such acts and omissions on his part as have been approved of by the Chief Labour Commissioner.

Note:- An approved list of Acts and Omission for which fines can be imposed is enclosed at Appendix- X.
- (iii) No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.
- (i) The total amount of fine, which may be imposed, in any one-wage period, on a worker, shall not exceed an amount equal to three paise in a rupee of the total wages, payable to him in respect of that wage period.
- (ii) No fine imposed on any worker shall be recovered from him by instalment, or after the expiry of sixty days from the date on which it was imposed.
- (iii) Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

7. LABOUR RECORDS

- (i) The contractor shall maintain a Register of Persons employed on work on contract in Form XIII of the CL (R&A) Central Rules 1971 (Appendix IV)
- (ii) The contractor shall maintain a Muster Roll register in respect of all workmen employed by him on the work under Contract in Form XVI of the CL (R&A) Rules 1971 (Appendix V)
- (iii) The contractor shall maintain a Wage Register in respect of all workmen employed by him on the work under contract in Form XVII of the CL (R&A) Rules 1971 (Appendix VI)
- (iv) Register of accident - The contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:
 - a) Full Particulars of the labourers who met with accident.
 - b) Rate of wages.
 - c) sex
 - d) Age
 - e) Nature of accident and cause of accident
 - f) Time and date of accident
 - g) Date and time when admitted in hospital
 - h) Date of discharge from the hospital
 - i) Period of treatment and result of treatment
 - j) Percentage of loss of earning capacity and disability as assessed by Medical Officer.
 - k) Claim required to be paid under Workmen's Compensation Act.
 - l) Date of payment of compensation
 - m) Amount paid with details of the person to whom the same was paid
 - n) Authority by whom the compensation was assessed
 - o) Remarks.
- v) The contractor shall maintain a Register of Fines in the Form XII of the CL (R&A) Rules 1971 (Appendix XI) The contractor shall display in a good condition and in a conspicuous place of work the approved list of acts and omission for which fines can be imposed (Appendix X)
- v) The contractor shall maintain a Register of deductions for damage or loss in Form XX of the CL (R&A) Rules 1971 (Appendix XII).

- vii) The contractor shall maintain a Register of Advances in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIII).
- i) The contractor shall maintain a Register of Overtime in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIV).

8. ATTENDANCE CARD-CUM WAGE SLIP

- i) The contractor shall issue an Attendance card cum wage slip to each workman employed by him in the specimen format (Appendix-VII).
- ii) The card shall be valid for each wage period.
- iii) The contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.
- iv) The card shall remain in possession of the worker during the wage period under reference.
- v) The contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.
- vi) The contractor shall obtain the signature or thumb impression of the worker on the wage slip at the time of disbursement of wages and retain the card with him.

9. EMPLOYMENT CARD

The contractor shall issue an Employment Card in the Form XIV of CL (R&A) Central Rules 1971 to each worker within three days of the employment of the worker (Appendix-VIII).

10. SERVICE CERTIFICATE

On termination of employment for any reason whatsoever the contractor shall issue to the workman whose services have been terminated, a Service Certificate in the Form XV of the CL (R&A) Central Rules 1971 (Appendix-IX).

11. PRESERVATION OF LABOUR RECORDS

All records required to be maintained under Regulations Nos. 6 & 7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by the Engineer-in-Charge or Labour Officer or any other officers authorised by the Ministry of Communication in this behalf.

12. POWER OF LABOUR OFFICER TO MAKE INVESTIGATIONS OR ENQUIRY

The labour officer or any person authorised by the Central Government on their behalf shall have power to make enquiries with a view to ascertaining and enforcing due and proper observance of Fair Wage Clauses and provisions of these Regulations. He shall investigate into any complaint regarding the default made by the contractor or subcontractor in regard to such provision.

13. REPORT OF LABOUR OFFICER

The Labour Officer or other persons authorised as aforesaid shall submit a report of result of his investigation or enquiry to the Executive Engineer concerned indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the contractor's bill be made and the wages and other dues be paid to the labourers concerned. In case an appeal is made by the contractor under Clause 13 of these regulations, actual payment to labourers will be made by the Executive Engineer after the Superintending Engineer has given his decision on such appeal.

- i) The Executive Engineer shall arrange payments to the labour concerned within 45 days from the receipt of the report from the Labour Officer or the Superintending Engineer as the case may be.

14. APPEAL AGAINST THE DECISION OF LABOUR OFFICER

Any person aggrieved by the decision and recommendations of the Labour Officer or other person so authorised may appeal against such decision to the Superintending Engineer concerned within 30 days from the date of decision, forwarding simultaneously a copy of his appeal to the Executive Engineer concerned but subject to such appeal, the decision of the officer shall be final and binding upon the contractor.

15. PROHIBITION REGARDING REPRESENTATION THROUGH LAWYER

- i) A workman shall be entitled to be represented in any investigation or inquiry under these regulations by:-
 - a) An officer of a registered trade union of which he is a member.
 - b) An officer of a federation of trade unions to which the trade union referred to in Clause (a) is affiliated.
 - c) Where the employer is not a member of any registered trade union, by an officer of a registered trade union, connected with the industry in which the worker is employed or by any other workman employed in the industry in which the worker is employed.
- ii) An employer shall be entitled to be represented in any investigation or inquiry under these regulations by:-
 - a) An officer of an association of employers of which he is a member.
 - b) An officer of a federation of associations of employers to which association referred to in Clause (a) is affiliated.
 - c) Where the employer is not a member of any association of employers, by an officer of association of employer connected with the industry, in which the employer is engaged or by any other employer, engaged in the industry in which the employer is engaged.
- iii) No party shall be entitled to be represented by a legal practitioner in any investigation inquiry under these regulations.

16. INSPECTION OF BOOKS AND SLIPS

The contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour Officer or any other person, authorised by the Central Government on his behalf.

17. SUBMISSION OF RETURNS

The contractor shall submit periodical returns as may be specified from time to time.

18. AMENDMENTS

The Central Government/ BSNL may from time to time add to or amend the regulations and on any question as to the application/interpretation or effect of those regulations the decision of the Superintending Engineer concerned shall be final.

REGISTER OF MATERNITY BENEFITS (Clause 19F)

Name and address of the contractor _____

Name and Location of the work _____

Name of the Employee	Father's / husband's name	Nature of Employment	Period of actual confinement	Date on which notice of given
1	2	3	4	5

Date on which maternity leave commenced and ended				
Date of Delivery / Miscarriage	In case of delivery		In case of miscarriage	
	Commenced	Ended	Commenced	Ended
6	7	8	9	10

Leave pay paid to the employee				Remark
In case of delivery		In case of miscarriage		
Rate of leave pay	Amount paid	Rate of leave pay	Amount paid	
11	12	13	14	15

**SPECIMEN FORM OF THE REGISTER, REGARDING
MATERNITY BENEFIT ADMISSIBLE TO THE CONTRACTOR'S LABOUR IN
DEPARTMENT OF TELECOM/ BSNL.**

Name and address of the contractor _____

Name and location of the work _____

1. Name of the woman and her husband's name.
2. Designation
3. Date of appointment.
4. Date with months and years in which she is employed.
5. Date of discharge / dismissal, if any.
6. Date of production of certificates in respect of pregnancy.
7. Date on which the woman informs about the expected delivery.
8. Date of delivery / miscarriage / death.
9. Date of production of certificates in respect of delivery / miscarriage.
10. Date with the amount of maternity/ death benefit paid in advance of expected delivery.
11. Date with amount of subsequent payment of maternity benefit.
12. Name of the person nominated by the woman to receive the payment of the maternity benefit after her death.
13. If the woman dies, the date of death, the name of the person to whom maternity benefit amount was paid, the month thereof and the date of payment.
14. Signature of the contractor for authenticating entries in the register.
15. Remarks column for the use of inspecting officer.

LABOUR BOARD

Name of work: _____

Name of Contractor: _____

Address of Contractor: _____

Name and address of BSNL Division: _____

Name of BSNL Labour Officer : _____

Address of BSNL Labour Officer: _____

Name of Labour Enforcement Officer: _____

Address of Labour Enforcement Officer: _____

Sl.No	Category	Minimum wage Fixed	Actual wage paid	Number Present	Remarks

Weekly holiday _____

Wage period _____

Date of payment of Wages _____

Working hours _____

Rest interval _____

Form-XIII (See Rule 75)

Register of Workmen Employed by contractor

Name and address of contractor _____

Name and address of establishment under which contract is carried
on _____

Nature and location of Work _____

Name and address of Principal Employer _____

Sl. No.	Name and Surname of workman	Age and sex	Father's / husband's name	Nature of employment / Designation	Permanent home address of the workman (Village and tehsil, taluka and District)	Local address	Date of commencement of employment	Signature or thumb impression of workman	Date of termination of employment	Reason for termination	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

Appendix 'V'

Form-XVI (See Rule 78(2)(a))

Muster Roll

Name and address of the contractor _____

Name and address of establishment under which contract is carried
on _____

Nature and location of work _____

Name and address of Principal Employer _____

For the month of fortnight _____

Sl.No.	Name of workman	Sex	Father's / Husband's name	Dates					Remark
				5					
1	2	3	4	1	2	3	4	5	6

Form -XVII (See Rule 78(2)(a))

Register of Wages

Name and address of the contractor _____

Name and address of establishment under which
contract is carried on _____

Nature and location of work _____

Name and address of Principal Employer _____

Wages period _____ Monthly/fortnightly

Sl.No.	Name of workman	Serial No.in the register of workman	Designation Nature of work done	No. of days worked	Units of work done	Daily rate of wages/piece rate	Basic Wages
1	2	3	4	5	6	7	8

Dearness allowances	Overtime	Other cash payments(Indicate nature)	Total	Deductions if any, (indicate nature)	Net amount paid	Signature or thumb impression of the workman	Initial of contractor or his representative
9	10	11	12	13	14	15	16

Appendix 'VII'
(Observe)

Wage Card No. _____

Wage Card

Name and address of the contractor _____ Date of issue _____

Name and location of work _____ Designation _____

Name of Workman _____ Month/fortnight _____

Rate of Wages _____

	DATE																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Morning																																
Evening																																
Initial																																

Rate _____

Amount _____

Received from _____ the sum of Rs. _____ on account of my wages.

Signature

Form-XIX
(See rule 78(2)(b))

Wages Slip

Name and address of the contractor _____

Name and Father's/Husband's name of workman _____

Nature and location of work _____

For the Week/Fortnight/Month ending _____

1. No. of days worked _____
2. No. of units worked in case of piece rate workers _____
3. Rate of daily wages/piece rate _____
4. Amount of overtime wages _____
5. Gross wages payable _____
6. Deduction, if any _____
7. Net amount of wages paid _____

Initials of the Contractors or his representative

Form-XIV
(See rule 76)

Employment Card

Name and address of the contractor _____

Name and address of establishment under which contract is carried
on _____

Nature of work and location of work _____

Name and address of Principal Employer _____

1. Name of Workman _____
2. SI No. in the register of workman employed _____
3. Nature of employment/designation _____
4. Wage rate (with particulars of unit in case of piece work) _____
5. Wages period _____
6. Tenure of employment _____
7. Remarks _____

Signature of contractor

Form-XV (See Rule 77)

Service Certificate

Name and address of the contractor _____

Nature and location of work _____

Name and Address of workman _____

Age or date of birth _____

Identification marks _____

Father's/Husband's name _____

Name and address of establishment in/under which contract is carried
on _____

Name and address of Principal Employer _____

Sl.No.	Total period for which employed		Nature of work done	Rate of wages (With particulars of unit in case of piece work)	Remark
	From	To			
1	2	3	4	5	6

Signature

LIST OF ACTS AND OMISSIONS FOR WHICH FINES CAN BE IMPOSED

In accordance with rule 7 (v) of the DOT Contractors Labour Regulations to be displayed prominently at the site of work both in English and local Language.

1. Wilful insubordination or disobedience, whether along or in combination with other.
2. Theft fraud or dishonestly in connection with the contractors beside a business or property of DOT.
3. Taking or giving bribes or any illegal gratifications.
4. Habitual late attendance.
5. Drunkenness fighting, riotous or disorderly or indifferent behaviour.
6. Habitual negligence.
7. Smoking near or around the area where combustible or other materials are locked.
8. Habitual indiscipline.
9. Causing damage to work in the progress or to property of the DOT or of the contractor.
10. Sleeping on duty.
11. Malingering or showing down work.
12. Giving of false information regarding name and father's name etc.
13. Habitual loss of wage cards supplied by the employers.
14. Unauthorized use of employer's property of manufacturing or making of unauthorized articles at the work place.
15. Bad workmanship in construction and maintenance by skilled workers which is not approved by the Department and for which the contractors are compelled to undertake rectification.
16. Making false complaints and/or misleading statements.
17. Engaging on trade within the premises of the establishment.
18. Any unauthorized divulgence of business affairs of the employees.
19. Collection or canvassing for the collection of any money within the premises of an establishment unless authorized by the employer.
20. Holding meeting inside the premises without previous sanction of the employers.
21. Threatening or intimidating any workman or employer during the working hours within the premises.

Form-XII (See Rule 78(2)(d))

Register of Fines

Name and address of the contractors _____

Name and address of establishment under which contract is carried on _____

Nature and location of work _____

Name and address of Principal Employer _____

Sl. No.	Name of workman	Father's / husband's name	Designation / nature of employment	Act / Omission for which fine imposed	Date of offence
1	2	3	4	5	6

Whether workman showed cause against fine	Name of person in whose presence employee's explanation was heard	Wage period and wages payable	Amount of fine imposed	Date on which fine realized	Remarks
7	8	9	10	11	12

Form-XX(See Rule 78(2)(d))

Register of Deduction for Damage or Loss

Name and address of the contractors_____

Name and address of establishment under which contract is carried
on_____

Nature and location of work_____

Name and address of Principal Employer_____

Sl. No.	Name of workman	Father's / husband's name	Designation / nature of employment	Particulars of damage or loss	Date of damage or loss
1	2	3	4	5	6

Whether workman showed cause against fine	Name of person in whose presence employee's explanation was heard	Amount of deduction imposed	No. of instalments	Date of recovery		Remarks
				First instalment	Last instalment	
7	8	9	10	11	12	13

**Form-XXII (See Rule 78(2)(d))
Register of Advances**

Name and address of the contractors _____

Name and address of establishment under which contract is carried on _____

Nature and location of work _____

Name and address of Principal Employer _____

Sl. No.	Name of workman	Father's/Husband's name	Designation nature of employment	Wage period and wages payable	Date and Amount of Advance given	Purpose(s) for which Advance made	Number of Installments by which advance to be repaid	Date and amount of each installments repaid	Date on which last Installments was repaid	Remarks
1	2	3	4	5	6	7	8	9	10	11

**Form-XXIII (See Rule 78(2)(e))
Register of Overtime**

Name and address of the contractors _____

Name and address of establishment under which contract is carried on _____

Nature and location of work _____

Name and address of Principal Employer _____

Sl. No.	Name of workman	Father's/husband's name	Sex	Designation /nature of employment	Date on which Overtime worked	Total overtime worked or production incase	Normal rate of wages	Overtime rate of wages	Overtime earnings	Rate on which overtime wages paid	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

--- END OF TENDER DOCUMENT ---

CONTRACTOR

EXECUTIVE ENGINEER (E)