

**BHARAT SANCHAR NIGAM LIMITED
TELECOM DISTRICT RAIPUR**

BID DOCUMENT

**TENDER FOR TRENCHING (HDD&OT), PLB PIPE
LAYING , OF CABLE PULLING AND OTHER
ASSOCIATED WORKS FOR GPON (FTTH) IN
RAIPUR CITY AREA UNDER GMTD
RAIPUR(ZONE-I&II)**

NIT NO. **W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/ZONE I&II /2012-13/5**
DATE **17 -05-2012.**

**OFFICE OF THE GENERAL MANAGER TELECOM DISTRICT
RAIPUR CHHATTISGARH 492001.**

BHARAT SANCHAR NIGAM LIMITED

TOTAL NO. OF PAGES : 93

FORM NO. _____

Cost of tender form Each Section/ZONE Rs.580/-(Rs. Five Hundred sixty only.)

To,

DD no. _____

Bank. _____

Date _____

SDE (Tender)
O/o GMTD Raipur.

**TENDER FOR TRENCHING (HDD&OT), PLB PIPE LAYING, OF
CABLE PULLING AND OTHER ASSOCIATED WORKS FOR GPON
(FTTH) IN RAIPUR CITY AREA UNDER GMTD RAIPUR
(ZONE-I & II)**

BHARAT SANCHAR NIGAM LIMITED
(A GOVT. OF INDIA ENTERPRISES)
OFFICE OF THE GENERAL MANAGER TELECOM DISTRICT,
RAIPUR
TABLE OF CONTENTS

SECTION	CONTENT	PAGE NO.
QUALIFYING BID DOCUMENT		
I.	NOTICE INVITING TENDER	4-5
II.	BID FORM	6
III.	TENDER'S PROFILE	7
IV.	INSTRUCTION OF BIDDERS	8-16
V.	GENERAL (COMMERCIAL) CONDITION OF THE CONTRACT	17-32
VI.	SPECIAL CONDITION OF THE CONTRACT	33-40
VII.	OPTICAL FIBRE CABLE CONSTRUCTION SPECIFICATION	41-62
VIII.	SAFETY PRECAUTIONS	63-69
IX.	FORMAT OF AGREEMENT	70-71
X.	LETTER OF AUTHORIZATION FOR ATTENDING BID OPENING	72
XI.	PART – A MATERIAL SECURITY BOND FORM	73
	PART – B DECLARATION	74
	PART – C WORK ORDER	75
	PART – D APPLICATION FOR GRANT OF LICENSE	76
	PART – E CHECK LIST TENDER ALONG WITH QUALIFYING BID	77
FINANCIAL BID DOCUMENT		
XII.	FINANCIAL BID FOR OFC TRENCHING WORKS (ANNEXURE –A)	78-82
XIII.	Labour Register (Under contract labour (R&A) act 1970	83-93



BHARAT SANCHAR NIGAM LIMITED
(Govt. of India Enterprises)
OFFICE OF THE GENERAL MANAGER TELECOM DISTRICT RAIPUR

NOTICE INVITING TENDER

NIT NO. W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II 2012-13/5 , DATE 17-05-2012

Properly sealed tenders (Packing PVC tape/Sealing wax) are invited for and on behalf of BSNL by the GMTD RAIPUR from the eligible contractors for the following works:

1. **Name & Description of the Work : TRENCHING (HDD&OT),PLB PIPE LAYING,OF CABLE PULLING AND OTHER ASSOCIATED WORKS FOR GPON IN RAIPUR CITY AREA UNDER GMTD RAIPUR (Zone I & II)**
2. **Details of the OFC Works:**

Section/ Zone	Area of Section	Length of Section	Cost of Tender Rs.	EMD In Rs.	Experienc e required in single section	Total Time
Zone- 1	SDOP City	1.375 KM (Trench) + 5.125 KM HDD/Road crossing	1852000	37,040	2 km.	1 Year
Zone-2	SDOP Civil Line	.500 KM (Trench) + 4.600 KM HDD/Road crossing	1603000	32,060	2 km	
Total			3455000	69100	4 km	

3. Eligibility of Contractor: The contractor should submit the following documents /certificates:

3.1 Experience certificate: Contractors who have successfully completed at least one similar works of U/G /OFC Cable Laying and associated works in BSNL/DOT /MNTL, Central/State Govt./ PSU/ Pvt. Organization/ other TELECOM NETWORKS in any one financial year or in last three financial years i.e., 2008-09, 2009-10 & 2010-2011. For KM mentioned in NIT, separate for each zone .

3.2 The experience certificate issued by not below the rank of D.G.M. or same level officer in respect of works undertaken in BSNL/DOT/MTNL/Central/State Govt./ PSU. For works undertaken in Pvt. Organization/ other TELECOM NETWORKS experience issued by not below the rank of circle project head/ Circle technical head should be enclosed thereof.

3.3 The bidders who are presently working in Raipur SSA should get satisfactory performance certificate for existing works, which are in progress along with store utilization certificate by not below the rank of D.G.M.

3.4 THE TENDERER WHO HAVE AWARDED THE WORKS DURING LAST THREE FINANCIAL YEARS BUT NOT COMPLETED THE WORKS EVEN AFTER ISSUANCE OF DIFFERENT NOTICES AND CONCERN CONTRACTOR EVEN NOT SUBMITTED THE REPLY SATISFACTORILY SHALL BE TREATED AS INELIGIBLE.

- 4 The bidder should submit the EPF& ESI registration copy as per the provisions of EPF & ESI Misc. Provisions Act. 1952 & Employees' Provident Fund Scheme 1952 and ESI Registration.

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

- 5 PAN based Service Tax registration No. (Attested copy)
 - 6 **SOLVENCY CERTIFICATE FROM THE BANKER OF THE TENDERER FOR RS. 2 LACS TO BE SUBMITTED. THE SOLVENCY CERTIFICATE SHALL NOT BE OLDER THAN THE DATE OF ISSUE OF NIT**
 - 7 **COST OF BID DOCUMENT FOR EACH SECTION/ZONE: RS. 580/- (RS. FIVE HUNDRED EIGHTY ONLY) (I.E. FOR ALL SECTION/ZONE RS. 1160/-)**
 - 8 . For each Zone separate bid & financial bid as mandatory in separate envelop.
 - 9 Tender document may be purchased by paying cost of bid document in cash or D/D issued by any nationalized bank/scheduled bank, drawn in favour of Accounts officer (Cash) BSNL, O/o GMTD Raipur.
 10. Tender document containing detailed description of work & terms & conditions can be had from SDE (Tender/Plg), O/o GM TD Raipur between 11.00 hrs to 16.00 hrs from **17 -05-2012 to 07 -06-2012** (on all working days).
 11. Bid Security is to be paid in the form of Crossed Demand Draft issued by any nationalized bank/scheduled bank, drawn in favour of **Accounts Officer (Cash) BSNL, % GMTD Raipur** payable at RAIPUR.
- 12.1 TIME AND LAST DATE OF SUBMISSION OF BID: UP TO 13:30 HOURS ON 08 - 06-2012.**
12.2 TIME & DATE OF BID OPENING : At 15:00 HOURS ON 08- 06-2012.

The GMTD Raipur reserves the right to reject any or all tenders without assigning any reason what so ever.

The GMTD Raipur reserves the right to award contract One or More Contractor.

Note:

(i) If Tender document downloaded from Internet / website the tenderer/bidder should enclose a DD of Rs. 580/-as cost to the tender document for each section/Zone drawn in favour of Accounts Officer (cash) BSNL O/o GMTD Raipur.

(ii)The bidders have to submit separate tender form along with cost of tender form for each section.

(iii) Tenders without EMD will be rejected. No exemption Cost of Tender Documents and EMD under NSIC is permitted.

**A.G.M. (N/W & Plg)
O/o GMTD RAIPUR**

**SECTION II
BID FORM**

From:

.....
.....

To,

The AGM(NW&Planning)
O/o GMTD BSNL,Raipur.

Sub: TRENCHING (HDD&OT),PLB PIPE LAYING,OF CABLE PULLING AND OTHER ASSOCIATED WORKS FOR GPON IN RAIPUR CITY AREA UNDER GMTD RAIPUR (Zone I& II)

With reference to your tender Notice No. : **No. W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone-I&II /2012-13/5 DATE 17 - 05-2012** calling for tender on the above subject. I have read & understood the tender document thoroughly & agree to all the terms & conditions. I / We hereby offer my / our bid as per documents submitted & conditions as mentioned in the tender document and the rates specified in the schedule enclosed.

Should this tender be accepted either fully or in parts, I / We hereby agree to abide by and fulfill all the terms and conditions of the contract hereafter as applicable, or in default thereof forfeit to and pay to the BSNL, Raipur or his successors in office, the sum of money mentioned in the said conditions without prejudice.

The sum of **Rs.-/- (In words rupees**
..... only) is deposited by DD. towards Earnest money and DD receipt No. dated Bank Name..... is enclosed. I / We also agree to pay Security Deposit as and when called for within 10 days.

If, I / We fail to carry out the work according to the specification given in the schedule, the entire money (Earnest and security deposit) may be forfeited without prejudice to any other right or remedies of the BSNL, Raipur or his successors in the office.

Yours faithfully

Place

Date

Signature

Full Address

Witness

Name

Address

Signature of the bidder with seal

SECTION III
TENDERER'S PROFILE

Passport size
photograph of the
tenderer/authoris
ed signatory

General:

- 1. Name of the tenderer / firm _____
- 2. Name of the person submitting the tender whose Photograph is affixed
Shri/Smt. _____

(In case of Proprietary/ Partnership firms, the tender has to be signed by Proprietor / Partner only, as the case may be)

- 3. Address of the firm

- 4. Telegraphic Address with email ID (if any)

- 5. Tel. No. (With STD code) (O) _____ (Fax) _____ [R] _____

6. Registration & incorporation particulars of the firm:

- i) Proprietorship
- ii) Partnership
- iii) Private Limited
- iv) Public Limited

(Please attach attested copies of documents of registration/ incorporation of your firm with the competent authority as required by business law)

- 7. Name of Proprietor/Partners/Directors _____

- 9. Tenderer's bank, its address and his current account number _____

- 10. Permanent Income Tax number, Income Tax circle _____

(Please attach a copy of latest Income Tax return)

- 11. Service Tax Registration number

12. Infrastructural capabilities:

- a. Capacity of trenching per day (in meters) _____
- b. Capacity of PLB pipe laying per day (in meters) _____
- c. Capacity of pulling of cable through PLB pipe per day (in Meters) _____
- d. Capacity of engaging labourers per day _____
- e. Particulars of vehicles available with the tenderer:

Type of Vehicle (s)	Registration number
---------------------	---------------------

- f. Particulars of other machines possessed by the contractor which can help in trenching, PLB pipe laying and of cable pulling;

13. Details of Technical and supervisory Staff:

14. Registration with EPF authorities: - EPF Code No.....

15. Registration with ESI authorities: - ESI Code No.....

16. Registration with Valid Labour License authorities: - No.....

I/We hereby declare that the information furnished above is true and correct.

Place:

Date:

Signature of tenderer / Authorised signatory

Name of the tenderer

Section IV
Instructions to Bidders

A. INTRODUCTION:

1. DEFINITIONS

- a. BSNL means Bharat Sanchar Nigam Limited and its successors.
- b. CMD: The CMD means CHIEF MANAGING DIRECTOR of BSNL and his successors.
- c. Department: The Department means the Department of Telecommunications / Department of Telecom Services or any other Department under the Ministry of Communications, which invites the tender on behalf of the President of India. All references of:
Chief General Manager
Principal General Manager
General Manager
Deputy General Manager / Area Manager / Director / Telecom Distt. Manager
Divisional Engineer
Sub Divisional Engineer
Junior Telecom Officer
Chief Accounts Officer
Accounts Officer
Assistant Accounts Officer
Including other officer in the Department, whatever designations assigned to them from time to time, who may be the in-charge of direction, supervision, testing, acceptance and maintenance including their successor(s) in the office appearing in various clauses shall be taken to mean the Department of Telecommunications under the Ministry of communications, Government of India.
- d. The SSA Head means the Head of SSA: GMTD RAIPUR and his successors.
- e. The jurisdiction of The SSA Head: the jurisdiction of GMTD RAIPUR means RAIPUR SSA which coincides geographically with Revenue Districts of RAIPUR, DHAMTARI AND MAHASAMUND.
- f. Representative of GMTD RAIPUR: Representative of GMTD RAIPUR means officer and staff for the time being in RAIPUR SSA deputed by the GMTD RAIPUR for inspecting or supervising the work or testing etc.
- g. Engineer-in-charge: The Engineer-in-charge means the Engineering Officer nominated by the DTS to supervise the work, under the contract,
- h. Site Engineer: Site Engineer shall mean an SDE of the BSNL Raipur who may be placed by the GMTD RAIPUR, (RAIPUR SSA) as in-charge of the work at site at any particular period of time.
- i. A/T Unit: A/T Unit shall be mean Acceptance and Testing unit of the BSNL.
- j. A/T Officer: An officer authorised by GMTD RAIPUR to conduct A/T.
- k. Contract: The term contract means, the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of the BSNL and the contractor, together with the documents refer read 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. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them. 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 means the works by or by virtue of the

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

- l. **Contractor:** The contractor shall mean the individual, firm or company, enlisted with BSNL in accordance with procedure for enlistment of contractor, 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.
- m. **Work:** The expression "work" shall unless there be something either in the subject or context repugnant to such construction be construed and taken to mean the work by or by virtue of the contract contracted to be executed whether temporary or permanent and whether original altered, substituted or additional.
- n. **Schedule(s):** Schedule(s) referred to in these conditions shall mean the relevant schedule(s) or the standard schedule of rates mentioned in the document.
- o. **Site:** The site shall mean the land / or other places on, into or through which work is to be executed under the contract or any adjacent land, path or street through which, the work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.
- p. **Normal time or stipulated time:** Normal time or stipulated time means time specified in the work order to complete the work.
- q. **Extension of Time:** Extension of Time means the time granted by the BSNL to complete the work beyond the normal time or stipulated time.
- r. **Date of Commencement of work:** Date of commencement of work means the date of actual commencement of work or 7th day from the date of issue of work order, whichever is earlier.
- s. **Due date of completion:** Due date of completion shall be the date by which the work shall be completed at site including clearance of site.
- t. **Duration of completion of work:** The duration of completion of work or completion time shall be time specified in the work order plus extension of time granted, if any.
- u. **Excepted risk:** Excepted risk or risks due to war (whether declared or not), invasion, act of foreign enemies, hostilities, civil war, rebellion, revolution, insurrection, military or usurped power, any damages from aircraft, acts of God, such as earthquake, lightning and unprecedented floods and other causes over which the contractor has no control and the same having been accepted as such by the Accepting Authority or causes solely due to use or occupation by the BSNL of the part of the work, in respect of which a certificate of completion has been issued.

2. ELIGIBILITY OF BIDDERS

The invitation of bids is open to all registered contractors as per their eligibility mentioned in NIT of this tender document & all other documents as per Clause 7

B. THE BID DOCUMENTS

3. BID DOCUMENTS

3.1 The construction work to be carried out, goods required, bidding procedures and contract terms are prescribed in the Bid Documents. The Bid Documents include:

3.1.1 Qualifying Bid:

Signature of the bidder with seal

- 3.1.1.1 NIT
- 3.1.1.2 Bid Form
- 3.1.1.3 Tenderer's Profile
- 3.1.1.4 Instructions to Bidders.
- 3.1.1.5 General (commercial) Conditions of the contract.
- 3.1.1.6 Special Conditions of Contract.
- 3.1.1.7 O F Cable Construction Specifications
- 3.1.1.8 Safety Precautions
- 3.1.1.9 Format of Agreement
- 3.1.1.10 Letter of Authorization for Attending Bid Opening.
- 3.1.1.11 Material Security Bond Form
- 3.1.1.12 Declaration
- 3.1.1.13 Work Order
- 3.1.1.14 Application for Grant of License
- 3.1.1.15 List of Documents to be submitted along with the Qualifying bid.

3.1.2 Financial Bid

3.1.2.1 FINANCIAL BID FOR OFC TRENCHING WORKS

3.1.2.2 ANNEXURE – A - FINANCIAL BID FOR OFC TRENCHING WORKS

3.1.2.3. ANNEXURE – B SCHEDULE OF RATES FOR OTHER THAN TRENCHING WORKS

- 3.2. The Bidder is expected to examine all instructions, forms, terms and specification in the bid documents. Failure to furnish all information required as per the Bid Documents or submission of bids not substantially responsive to the Bid Documents in every respect will be at the bidder's risk and shall result in rejection of the bid.

- 4. QUERIES ON BID DOCUMENTS:**A prospective bidder, requiring any clarification of the Bid Document shall notify the A.G.M. (N/W & Plg) in writing or by fax at the A.G.M. (N/W & Plg) mailing address indicated in the invitation for Bids. The A.G.M.(N/W & Plg) shall respond in writing to any request for clarification of the Bid Documents, which it receives not later than 7 days prior to the date for the opening of the bids. Copies of the query (without identifying the source) and the clarifications by the A.G.M.(N/W & Plg) shall be sent to all the prospective bidders who have purchased the bid documents and all such clarifications issued by the A.G.M. (N/W&Plg) will form part of the bid document. The same will also be made available over internet in tender section.

5. AMENDMENT OF BID DOCUMENTS

- 5.1 At any time, prior to the date for submission of bids, the A.G.M. (N/W & Plg) may, for reason whether suo motto or in response to a clarification requested by a prospective Bidder, modify the bid documents by amendments.
- 5.2 The amendments shall be notified in writing or by FAX to all prospective bidders on the address intimated at the time of purchase of bid document and also over Chhattisgarh circle website from the A.G.M. (N/W & Plg) and these amendments will be binding on them.
- 5.3 IN ORDER TO AFFORD PROSPECTIVE BIDDERS REASONABLE TIME TO TAKE THE AMENDMENTS INTO ACCOUNT IN PREPARING THEIR BIDS, THE A.G.M. (N/W & Plg) MAY, AT ITS DISCRETION, EXTEND THE DEADLINE FOR THE SUBMISSION / OPENING OF BIDS SUITABLY.

C PREPARATION OF BIDS

Signature of the bidder with seal

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

6. Cost of Bidding: The bidder shall bear all costs associated with the preparation and submission of the bid. The RAIPUR SSA, will in no case, be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

7. **DOCUMENTS ESTABLISHING BIDDER'S ELIGIBILITY AND QUALIFICATIONS :**

The bidder shall furnish, as part of his bid documents establishing the bidder's eligibility the following documents: Any bid not accompanying the below mentioned documents / deposits will be liable to be rejected

01	Bid Security in accordance with the tender document.
02	Tender document(s), in original, duly filled in and signed by tenderer or his authorized representative along with seal on each page. All corrections and overwriting must be initialed with date by the tenderer or his authorized representative.
03	Bid Form, duly filled ,
04	Tender profile, duly filled
05	Registration of firm/company.
06	Proprietor ship / Partnership / Private Limited / Public Limited company.
07	Partnership deed document, incase of partnership firms.
08	NOC from other partners, in case of partnership firm.
09	Authority letter to sign the tender if Limited Company.
10	Service tax registration certificate (PAN based)
11	PAN no. & Latest Income-tax Return filed copy
12	ESI registraci3n N o
13	EPF registraci3n No
14	Valid Registrarian with Central Labour Comisionar under Contract Labour Act 1970 (R&A) Or Undertaking to get it before commencement of work.
15	Declaration regarding compliance of the EPF Act. 1952 along with the ESI Scheme .
16	Original "Power of Attorney" in case person other than the bidder has signed the tender documents
17	Near relative certificate as affidavit in non judicial Stamp paper of ` 10/- issued specifically for this NIT.
18	Experience certificate of UG/ OFC laying and associated works as mentioned in as per NIT (Section wise)
19	List of qualified experienced personnel, who are working for the tenderer, who will be deployed for the work
20	Solvency Certificate from the banker is to be submitted as per NIT by the bidder.The solvency certificate shall not be older than the date of issue of NIT.

8. **BID SECURITY; EARNEST MONEY DEPOSIT (EMD)**

8.1 The bidder shall furnish, as part of his bid, a bid security (EMD) as mentioned in the NIT. No interest shall be paid by the SSA Raipur on the bid security for any period, what so ever.

8.2 The bid security is required to protect the SSA Raipur against the risk of bidders conduct, which would warrant the security's forfeiture, pursuant to Para 8.7.

8.3 Bid Security shall be paid in the form of Crossed Demand Draft issued by any nationalized bank/a scheduled bank, drawn in favour of Accounts officer (Cash) BSNL, O/o GMTD Raipur payable at RAIPUR.

8.4 A bid not secured in accordance with Para 8.1 and Para 8.3, It shall be rejected being non-responsive.

8.5 The bid security of the unsuccessful bidder will be refunded as promptly as possible as but not later than 30 days after the expiry of the period of bid validity prescribed by the BSNL.

8.6 The successful bidder's bid security will compulsorily be converted to part Performance security deposit in accordance with clause (ii) section V.

8.7 **The bid security shall be forfeited;**

8.7.1 If a bidder withdraws his bid during the period of bid validity specified in the bid document or

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

- 8.7.2 If the bidder makes any modifications in the terms and conditions of the tender before acceptance of the tender, which are not acceptable to the SSA Raipur or
- 8.7.3 In case of a successful bidder, if the bidder fails to sign the agreement.
- 8.8.1 IN CASE OF A SUCCESSFUL BIDDER, IF THE BIDDER FAILS TO SIGN THE AGREEMENT WITHIN 10 DAYS THE BIDDER CAN BE DONE BLACKLISTED.**

9. BID PRICES:

- 9.1 PRICES SHALL BE QUOTED BY THE BIDDER FOR OFC WORKS AS PER SECTION – XII. THE BIDDER SHALL GIVE THE TOTAL A COMPOSITE PRICE INCLUSIVE OF ALL TAXES AND LEVIES (EXCLUSIVE OF SERVICE TAX) CASE OF WORKS TO BE EXECUTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRANSPORTING THE MATERIALS TO BE SUPPLIED BY SSA RAIPUR FROM TELECOM STORE OR OTHERWISE TO EXECUTE THE WORK UNDER THE CONTRACT, TO SITE AT HIS/THEIR OWN COST. AND THERE FORE NO SEPARATE CHARGES ARE PAYABLE ON THIS ACCOUNT. THE OFFER SHALL BE FIRM IN INDIAN RUPEES.
- 9.2 Price quoted by the bidder shall remain fixed during the entire period of contract and shall not be subjected to variation on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.
- 9.3 Discount, if any, offered by the bidders shall not be considered unless they are specifically indicated in the schedule of rates (financial Bid). Bidders desiring to offer discount shall therefore modify their offers suitably while quoting and shall quote clearly net price taking all such factors like Discount, free supply, etc. into account.

10. PERIOD OF VALIDITY OF BIDS:

- 10.1 Bid shall remain valid for 180 day from date of opening of the bid (Qualifying Bid). A BID VALID FOR A SHORTER PERIOD SHALL BE REJECTED BY THE RAIPUR SSA AS NON-RESPONSIVE.
- 10.2 The RAIPUR SSA reserves the right to request the lowest 3 bidders as per read out list on the opening day to extend the bid validity for a period of further 120 days and the bidder has to necessarily extend the bid validity. Refusal to extend the bid validity will result in forfeiture of the bid security. A bidder accepting the request and extending the bid validity will not be permitted to modify his bid.

11. SIGNING OF BID:

- 11.1 The bidder shall submit, as a part of his bid, the bid documents (in original) duly signed on each and every page, establishing the conformity of his bid to the bid documents of all the works to be executed by the bidder under the contract.
(Note: The tenderer is advised to keep a photocopy (at his own cost) of the bid documents for his own reference.)
- 11.2 The bid shall contain no erasures or overwriting except as necessary to correct errors made by the bidder in which case such corrections shall be signed with date by the person or persons signing the bid.

D. SUBMISSION OF BIDS

12. Method of preparation of bid:

- 12.1 Bid for each tender should be submitted in three envelopes placed inside a main rover. These envelopes should contain the following;

Envelope	Marked on the Cover	Contents of Envelope
First	Bid Security	Containing Bid security as per clause 8.
Second	Qualifying Bid	Containing documents & duly filled bid document
Third	Financial Bid	Rates duly quoted by the tenderer in the prescribed Format.

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

On all these envelopes the name of the firm and whether "Bid Security" OR "Qualifying Bid" OR "Financial Bid" must be, clearly mentioned and should be properly sealed (with sealing wax, Packing PVC tape). These envelopes are to be placed inside an outer envelope and properly sealed (with sealing wax/Packing PVC tape). The tenders which are not submitted in above mentioned manner shall be summarily rejected.

- 12.2 All envelopes (3 inner & one outer) must bear the following;

TRENCHING (HDD&OT), PLB PIPE LAYING, OF CABLE PULLING AND OTHER ASSOCIATED WORKS FOR GPON IN RAIPUR CITY AREA UNDER GMTD RAIPUR

SECTION /Zone No. ___ (Section/ZONE No. and Name of Section is to be mentioned)

- 12.3 The tenderer will be bound by all terms and conditions & specifications as detailed in the tender documents.

- 12.4 Any tender with conditions other than those specified in the *tender* document is liable to be summarily rejected. No modification by the contractor in any of the conditions will be permitted after the tender is opened.

13. **SUBMISSION OF BIDS:**

- 13.1 Tenders should be dropped in person in the tender box placed in the office of A.G.M. (N/W & Plg) Office of GMTD RAIPUR, before the closing date & time of tender, as mentioned in the NIT. The tenderer is to ensure the delivery of the bids at the correct address. The BSNL Raipur shall not be held responsible for delivery of bid to the wrong address. The slit of the tender box will be sealed immediately after the specified time for receipt of tender. Any tender presented in person after the sealing of box will not be received by GMTD Raipur or by any of the subordinates or will not be allowed to be deposited in the tender box.

- 13.2 Postponement of Tender opening: Whenever it is considered necessary to postpone the opening date of tenders, quick decision must be taken and communicated to the tenderers who have purchased the tender documents and shall be at least one day before the original date of opening. The reasons the postponing tender shall be recorded in writing. Such notice of extension of date or opening shall also be put-up on the notice board also published in the newspapers.

- 13.3 The BSNL Headquarters, New Delhi, if subsequently, declares date fixed for opening of bids as holiday, the revised schedule will be notified. However, in absence of such notification, the-bids will be opened on next working day, time and venue remaining unaltered.

14. **LATE BIDS:**

Tenders will not be received after the specified time of closing of the tender and the same shall be rejected and returned unopened to the bidder. It is the sole responsibility of the tenderer that he should ensure timely submission of tender.

15. **MODIFICATIONS AND WITHDRAWAL OF BIDS:-**

- 15.1 The bidder may modify or withdraw his bid after submission and before opening, provided that the intimation is deposited by the bidder in a properly sealed envelope (With Wax/Packing PVC tape) in the tender box, before the scheduled time & date for closing of tender.
- 15.2 No bid shall be modified subsequent to the deadline for submission of bids.

E BID OPENING AND EVALUATION:

16. OPENING OF BIDS:

- 16.1 The TOC shall open the bids in the presence of bidders or his authorized representatives, who choose to attend, on due date and time. The bidder's representatives, who are present, shall sign an attendance register. The bidder shall submit authority letter to this effect before they are allowed to participate in the bid opening.
- 16.2.1 A maximum of two (2) representatives for any bidder shall be authorized and permitted to attend the bid opening.
- 16.3 The Bids shall be opened in the following manner:
 - 16.3.1 The bid opening committee shall count the number of bids and assign serial numbers to the bids. For example, if 10 tenders have been received the bids shall be numbered as 1 of 10, 2 of 10 etc. All the members shall initial on the outer envelopes of all the bids with date.
 - 16.3.2 The envelopes containing the tender offer and not properly sealed, as required shall not be opened and shall be rejected outright closing the cover by gum will not be treated as sealed cover. The reasons for not opening such tender offers shall be recorded on the face of the envelope and all the members of bid opening committee shall initial with date.
 - 16.3.3 First the outer envelope containing the three envelopes shall be opened. The bid opening committee shall initial on all three envelopes with date.
 - 16.3.4 Among these three envelopes, the envelope marked "BID SECURITY" shall be opened first and examined.
 - 16.3.5 The bidders who have submitted proper bid security as per tender document, their "QUALIFYING BID" shall be opened and papers/documents submitted by the bidder shall be examined and recorded by the TOC. After opening the qualifying bid, all the documents contained therein shall be serially numbered and signed by the bid opening committee members.
- 16.4 The Financial Bid shall be opened in the following manner:
 - 16.4.1 The envelope marked "Financial Bid," will be opened only for qualified tenders in "Qualifying bid".
 - 16.4.2 The Date of opening of Financial Bid will be intimated to the qualified Bidders in due course of time.
 - 16.4.3 After opening the "Financial Bid" the bidder's name, bid prices, modifications, bid withdrawals and such other details, the TOC, at its discretion, may consider appropriate; will be announced at the opening.
 - 16.4.4 In case there is discrepancy in figures and words in the quote, the same shall be announced in the bid opening, but the quote in words shall prevail.

17 CLARIFICATION OF BIDS:

To assist in examination, evaluation and comparison of bids, the TEC may, at its discretion ask the bidder for clarification of its bid. The request for its clarification and its response shall be in writing. However, no post bid clarification at the initiative of the bidder shall be entertained.

18. PRELIMINARY EVALUATION:

- 18.1 TEC shall evaluate the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and whether the bids are generally in order.
- 18.2 If there is discrepancy between words and figures, the amount in words shall prevail. If the Contractor does not accept the correction of the errors, his bid shall be rejected.

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

- 18.3 Prior to the detailed evaluation, pursuant to clause 22, the TEC will determine the substantial responsiveness of each bid to the bid document. For purpose of these clauses a substantially responsive bid is one which conforms to all the terms and conditions of the bid documents without deviations. The TEC's determination of bids' responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
- 18.4 A bid, determined as substantially non responsive will be rejected by the TEC and shall not subsequent to the bid opening be made responsive by the bidder by correction of the non-conformity.
- 18.5 The TEC may waive any minor infirmity or non-conformity or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of the bidder.

19. EVALUATION AND COMPARISON OF SUBSTANTIALLY RESPONSIVE BIDS:

- 19.1 The TEC shall evaluate in detail and compare the bids previously determined to be substantially responsive pursuant to clause 18.
- 19.2 The evaluation and comparison of responsive bids made on composite price of all items in financial bid excluding service tax and excluding optional items (if any).

20. CONTACTING THE COMMITTEE MEMBERS:

- 20.1. Subject to cause 17 no bidder shall try to influence the Committee on any matter relating to its bid, from the time of bid opening till the time the contract awarded.
- 20.2 Any effort by the bidder to modify his bid or influence the Committee in the bid evaluation or the comparison award decisions shall result in the rejection of the bid.

21 AWARD OF CONTRACT:

- 21.1. The GM TD Raipur shall consider award of contract only to those eligible bidders whose offers have been found technically, commercially and financially acceptable.
- 21.2 The work against the tender is for one year's requirement and the terms and conditions of this tender shall be operative for a period of one year from the date of signing of agreement between the A.G.M. (N/W & Plg) and the contractor. The agreement can be further extended for another one year on existing terms and conditions with mutual consent.

22 GMTD Raipur is RIGHT TO VARY QUANTUM O F WORK:

The GM TD Raipur, at the time of award of work under the contract, reserves the right to decrease or increase the work by up to 25 % of the total quantum of work / Tender cost specified in the schedule of requirements without any change in the rates or other terms and conditions and period for another one year.

Contractor or tenderer should not execute any work order beyond the amount as mentioned in FAT or subsequent modifications if any. Contractor will intimate to GMTD Raipur in writing when 80% of the amount is exhausted along with all required document and pending bills.

23 GMTD Raipur is RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS:

The GMTD Raipur reserves the right to accept or reject any bid and to annul the bidding
Signature of the bidder with seal

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

process and reject all bids, at any time prior to award of contract without assigning any reason what-so ever and without thereby incurring any liability to the affected bidder or bidders on the grounds for the Raipur SSA 's action.

24. ISSUE OF LETTER OF INTENT:

- 24.1 The issue of letter of intent shall constitute the intention of the SSA Raipur to enter in to the contract with the bidder. Letter of intent will be the issued as offer to the successful bidder.
- 24.2 The bidder shall within 10 days of issue of letter of intent, give his acceptance along with material security in conformity with cause 5.(i) section-V, provided with the bid documents.

25. SIGNING OF AGREEMENT:

- 25.1 The signing of agreement shall constitute the award of contract on the bidder. The agreement with the successful bidder shall be signed by the A.G.M. (N/W & Plg)), BSNL RAIPUR within a week, of submission of material security as per cause 24.2 above.
- 25.2 As soon as the tender is approved by the competent authority, the Bid Security deposited by the successful bidder shall be compulsorily converted in to the Performance security deposit, which will be held by the SSA Raipur till the completion of warranty period.

26. ANNULMENT OF AWARD:

Failure of the successful bidder to comply with the requirement of clause 24 & 25 shall constitute sufficient ground for the annulment of the award and forfeiture of the bid security, in which event; the GMTD Raipur may make the award to any other bidder at the discretion of the GM TD Raipur or call for new bids.

GENERAL (COMMERCIAL) CONDITIONS OF THE CONTRACT

1. APPLICATION:

The General conditions shall apply in contracts made by the RAIPUR SSA for the execution of O F Cable Construction works.

2. STANDARDS:

The works to be executed under the contract shall conform to the standards prescribed in the optical fiber cable construction practices.

3. PRICES:

- 3.1 Prices charged by the Contractor for the works performed under the Contract shall not be higher from the prices quoted by the Contractor in his Bid.
- 3.2 Price once fixed will remain valid for the period of contract. Increase and decrease of taxes/duties will not affect the price during this period.

4. SUBCONTRACTS:

The contractor shall not assign, sub contract or subject the whole or any part of the works covered by the contract, under any circumstances.

5. SECURITY

(i) Material Security:

- a. **CONTRACTORS HAVE TO PAY MATERIAL SECURITY SUBJECT TO A MINIMUM OF Rs 50,000/- OR 10% OF THE TOTAL TENDER VALUE WITHIN 10 (TEN) DAYS ON RECEIPT OF Provisional ACCEPTANCE LETTER** ISSUED FROM THIS OFFICE. MATERIAL SECURITY DEPOSIT IS TO BE REMITTED BY SUCCESSFUL TENDERER WHEN REQUIRED TO DO SO in the form of Bank Guarantee (valid up to and including six months after the period of the contract) from a scheduled bank and in the material security bond form provided in the bid document, section – XI – Part -A. Material Security can also be submitted in the form of crossed Demand Draft drawn in favour of Accounts officer (Cash) BSNL, O/o GMTD RAIPUR issued by a schedule bank and payable at RAIPUR. The Material Security will be a non interest bearing deposit, for any period what so ever.
- b. The contractor at any point of time will not be issued stores costing more than material security. If due to any reason more stores has to be issued to the contractor, then the material security will be suitably enhanced. In this regard the decision of the GMTD Raipur shall be final and binding.
- c. The proceeds of the material security shall be payable to the SSA Raipur as a compensation for any loss resulting from the contractor's failure to handle properly the material issued to him under the contract.
- d. **The Material security shall be released / refunded within a fortnight from the date of the payment of the last final bill of the work under the contract: or final settlement of material account whichever is later on production of "no dues certificate" from "Engineer -in-charge".**
- e. **Material security may also be transferred to new routes if old route is completed (In Raipur SSA) and all material issued has been consumed by bidder certificate is to be given by DE (OFC) (if applicable)**

(ii) **Performance Security**

- a. The contractor shall permit the SSA Raipur, at the time of making any payment to him for works done under the contract, to deduct such sum in addition to the sum already deposited as security deposit (due to conversion of bid security), an amount to the tune of **8 % of running** bills / final bill.
- b. The proceeds of the performance security shall be payable to the SSA Raipur as compensation for any loss resulting from the contractor's failure to complete its obligations under the contract. .
- c. The performance security deposit shall be refunded after expiry of warranty period of last work executed provided there are no recoveries to be made arising out of poor quality of work, incomplete work and/or violation of any terms and conditions of the contract as Stipulated in the bid document.
- d. No interest will be paid to the contractor on the security deposit.
- e. If at any time the bill is more than the estimated cost, Performance Security of 10% will be deducted from the excess amount.

6. ISSUE OF WORK ORDERS AND TIME UNIT :

- 6.1 The work order shall be issued so as to include all items of works. The idea behind issuing work orders in this way is to ensure that the network becomes ready. The contractor shall organize the work in such a way so as to deliver meaningful output of requisite quality within shortest possible time.
- 6.2 **The work orders shall be issued by the DGM or SDE/DE after prior approval of DGM, after examining the technical and planning details of the works to be executed.**
- 6.3 If due to any reason partial work order is to be issued then the same shall be issued with the approval of GMTD Raipur.
- 6.4 The Engineer in charge shall mention the time limit to execute the work order after seeing the quantum of work and store availability position.
- 6.5 The GMTD Raipur reserves the right to cancel or modify the scope of work stipulated to be carried out against the work order in the event of change of plan necessitated on account of technical reasons or in the opinion of work order issuing authority, if the contractor is not executing the work at the required rate.

7. EXTENSION OF THE TIME:

7.1 General

- 7.1.1 In each work order, the work order issuing authority shall specify the time allowed for completion of work consistent with the magnitude and urgency of work. The time allowed for carrying out the work is to be strictly observed by the contractor and shall be reckoned from seventh day from the date of issue of work order.
- 7.1.2 In as much as "the time being deemed to be the essence of contract", throughout the stipulated period of contract, the work is to be proceeded with all due diligence on the part of the contractor.

- 7.2 Application for Extension-of the Time and Sanction of Extension of Time (EOT):
- 7.2.1 There may be some hindrances, other than covered under force majeure, while execution of work and in such cases the contractor shall apply in writing to the engineer -in-charge for extension of time (EOT), on account of which he desires such extension within three days of occurrence of hindrance. The Engineer -in-charge shall forward the request to the DGM (CFA)/DGM(CM) Raipur with his detailed -report and photocopy of the hindrance register, in the prescribed Form within three days of receipt of request from the contractor. The competent authority is empowered to grant extension of time for completion of work on certain conditions. He shall exercise such powers, if the following conditions are satisfied.
- 7.2.1.1 The application contains the ground(s), which hindered the contractor in execution of Work.
- 7.2.1.2 The Engineer-in-charge is of the opinion that the grounds shown for extension of time are reasonable.
- 7.2.2 The competent authority shall consider the request keeping all the facts and circumstances in view and shall grant extension of time, if in his opinion, there are reasonable and sufficient grounds for granting such extension and the reasons for delay are not ascribable to the contractor.
- 7.2.3 The competent authority may also grant extension of time for completion of work in cases where reasons for delay are ascribable the contractor, but such extension of time shall be with LD charges as per cause dealing with penalty for delays in execution of works. The extension of time with LD charges shall be issued under the signature of DGM (CFA) Raipur, Officer competent to grant the extension of time.
- 7.2.4 The competent authority shall grant EOT with time period for completion of work expressly mentioned. The sanction of the competent Authority of EOT shall be issued under the signature of the Engineer-in-charge.
- 7.2.5 If the competent authority is of the opinion that the grounds shown by the contractors are not reasonable and sufficient and declines to grant the extension of time, the contractor cannot challenge the soundness of the opinion by reference to arbitration. The decision of the competent authority on period of extension of time or refusal for extension of time shall be final and binding on the contractor.
- 7.3 Grant of Extension of Time without Applications: There are, at times, practical difficulties like non-availability of materials, delay in providing permissions/right of way etc. reasons of which are ascribable to the DE (OFC)/office incharge. In such cases, the Engineer-in-- charge with the approval of competent authority to sanction EOT, may issue extension of time without waiting for contractor to make an application for EOT. Entry of hindrances shall be made in the Hindrance Register. The DE (OFC) /office incharge will, however, not be liable to the contractor for any losses or damages, costs, charges, or expenses that the contractor may in any way sustain/suffer due to delay in making the above available.
8. **MEASUREMENT. INSPECTION. TESTING AND ACCEPTANCE TESTING: PROCEDURE FOR MEASUREMENTS :**
- 8.1 **Measurement Book:** The measurement book is the basis of all accounts of quantities

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

of work and supplies. The payments to the contractors for the work done are made on the basis of measurements recorded in the measurement book. These books are very important accounts records and therefore, they should be maintained very carefully and accurately, as these may have to be produced as evidence in a court of law, if and when required. The measurement books are to be maintained by the officer in -charge of the work or his immediate engineering subordinate not below the rank of Junior Telecom Officer.

- 8.1.1 All the measurement should be neatly taken down in measurement book issued for the purpose.
- 8.1.2 All the measurement books in the SSA Raipur should be serially numbered. A register shall be maintained in the form showing the serial number of each book, officer to whom it is issued, Work order no, and date, date of issue, date of its return to the A.G.M. (N/W & Plg).
- 8.1.3 The pages of the measurement book shall be machine-numbered and entries shall be recorded continuously and no blank pages left or page torn out. Any pages left blank inadvertently shall be cancelled by diagonal lines, the cancellation being attested and dated.
- 8.1.4 The entry shall be made in ink. No entry shall be erased. If a mistake is made, it should be corrected by crossing out the incorrect words or figures and inserting the corrections, the corrections thus made shall be initialed & dated by the officer concerned.
- 8.1.5 When the officer holding the measurement book is transferred, he shall handover the measurement book issued to him to his successor and the same should be shown as received back from him and be issued to the relieving officer. The transfer shall also be recorded in the measurement book after the last entry in these books under dated signature of the relieving officer and the relieved officer.
- 8.2 **Recording of measurements:** Each set of measurements to be recorded shall commence with the entries stating.
 - i) Full name of work
 - ii) Estimate number
 - iii) Name of O F Cable route
 - iv) Name of JTO and SDE in-charge of work
 - v) Name of contractor
 - vi) Work order number and date
 - vii) Date of commencement of work
 - viii) Date of completion of work
 - ix) Date of recording of measurements
 - x) Reference to previous measurements
 - xi) Number and date of agreement
- 8.2.1 Responsibility of taking and recording measurements: The measurements of various items of work shall be taken and recorded in the measurement book issued with each work order. The measurement shall be taken and recorded by an officer not below the rank of Junior Telecom Officer, supervising the work. The Junior Telecom Officer/Sub Divisional Engineer, directly responsible for supervision of work, shall be responsible for accuracy of 100 % of measurements. The Sub Divisional Engineer where Junior Telecom Officer is supervising officer shall be responsible for conducting test check of 50 % of measurements. The Divisional Engineer shall be responsible for conducting test check of 10 % of measurements.
- 8.2.2 Method of recording of nomenclature of items: Complete nomenclature of items, as given
Signature of the bidder with seal

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

in the agreement need not be reproduced in the measurement book for recording the measurements but corresponding Item Code as provided, shall be used.

- 8.2.3 Method of measurements: The measurements of the work shall be done for activity-wise as and when the item of work is ready for measurement. The methods of measurement of various items are enumerated as under:

Measurement of depth of trenches

The cable routes of one work order shall be divided into a number of segments each of maximum 200 meters length bounded by identifiable landmarks at both the ends of the segments. If landmarks are not available, length of segment may be maintained at 200 meters. The measurement of depth shall be recorded at each point of measurement (POM) in the measurement book in meters in the multiples of 5 cms. For example 97 cms will be recorded as 95 cms and 103 cms as 105 cms. The points of measurements shall be at a distance of 10 meters starting from 0 (Zero) Meter. For example, if the length of segment is 175 meters, the POMs shall be at 0M, 10M, 20M, 30M, 40M, 50M, 60M, 70M, 80M, 90M, 100M, 110M, 120M, 130M, 140M, 150M, 160M & 170M. The last POM shall be at 175th M to be recorded against Residual POM.

The efforts required to excavate trenches is not proportionate especially with reference to depth. Therefore, normally the workers tend to dig shallow trenches. As standard depth of the trench is important for future life and protection of cables, this tendency has to be discouraged. In order to encourage the contractor to achieve best possible depth in the face of site constraints, the following scale of payment shall be applied for digging trenches of lesser depths, subject to condition that relaxation has been granted by the competent authority for lesser depths.

Depth of trench 165 Cms.

Depth between	Reduction in rate
<165 Cms. To 150 Cms.	5 %
<150 Cms. To 130 Cms.	12.5 % of approved rates.
<130 Cms. To 105 Cms.	25 % of approved rates.
Below 105 Cms.	40 % of approved rates.

If the area is predominantly rocky or full of hindrances or there is difficulty in getting permissions from PWD or local agencies involved resulting in difficulty to achieve full depth for full section/route, it is suggested to call for tenders (if applicable) for curtailed depth of 140/120 Cms. of trench. The rate reduction schedule for such trenches is given below:

Depth of trench 140 Cms.

Depth between	Reduction in rate
<165 cms to \geq 125 cms	5 %
<125 cms to \geq 105 cms	15 % of approved rates.
Below 105 cms	40 % of approved rates.

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

Depth of trench 120 Cms.

Depth between	Reduction in rate
<120 cms to \geq 105 cms	5 %
Below 105 cms	40 % of approved rates.

The payment for sub normal depth will be calculated as per equations given below:

$$P = (100-ROR) \times \frac{RA \times D}{ND}$$

P = Payment for one meter.

ROR = Reduction in rate in % as applicable as per tables given above

RA = Approved rate of trenching per meter

D = Actual depth achieved in cms

ND = Nominal depth of trench 165/140/120 cms. for which tender has been floated.

Measurement of Lengths and protection

The measurement of length of trenches is on running meter basis, irrespective of type of soil/starts encountered while digging.

The type of protection provided (item code-wise) in segment shall be recorded in the measurement book in the sheet provided for this purpose.

- Measurement of length of cable. The length of cables laid in trenches, though pipes and through ducts shall be measured by use of Rodo Meter. The length should be cross-verified with the marking of lengths on the cables. The lengths shall be recorded in sheet provided in the measurement book.
- Measurement of other items. The measurement/numerical details of other items shall be recorded in the sheets provided for respective items viz.
 - Digging of joint pit and preparation of joint chamber along with its type i.e. Brick chamber of Pre Cast RCC type.
 - Fixing, Painting and sign writing of route/joint indicators.
 - Termination of Cable in equipment room and no. of joints.

8.2.4 The contractor shall sign all the measurements recorded in the measurement book. This will be considered as an acceptance by the contractor, of measurements recorded in the MB. In case contractor fails to attend at the measurements or fails to countersign or to record the difference within a week, then in case of any such events the measurements taken by Engineer-in-charge or by his/her subordinate as the case may be shall be final and binding on the contractor and the contractor shall have no right to dispute the same.

8.2.5 The DE (OFC/CMTX) before passing the bill for sections covered by each set of measurement may carry out test check by re-opening trench at as many locations as necessary and as specified in document 'procedures for optical fibre cable construction' and bills will be passed only when he is personally satisfied of the correctness of entries in the "Measurement Book" and also when he is satisfied of other aspects of the work as per the terms of the contract.

The contractor shall provide the necessary assistance of labour for re-opening of trench for test check by the Divisional Engineer. Separate payment shall not be made to the

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

contractor for excavation of such test checks, however such test pits shall not be more than 10 % of the cable laying work.

8.2.6 Measurement of the work of cable pulling through pipe/duct will be taken equal to the total length of the cable pulled through pipe/duct.

8.3 Inspection, and Quality Control:

8.3.1 The Quality of Works: The importance of quality of OF Cable Construction works cannot be over-emphasized.

8.3.2 It is imperative that the contractor(s) is/are fully conversant with the construction practices and shall be fully equipped to carry out the work in accordance with the specifications. The contractors are expected and bound to ensure quality in construction works in accordance with specifications laid down. The contractor shall engage adequate and experienced supervisors to ensure that works are carried out as per specifications and with due diligence and in a professional manner. The contractors shall satisfy himself/themselves that the work conforms to the quality specifications before offering the same to A/T Wing for Acceptance and Testing.

8.3.3 In addition to Acceptance Testing being carried out by A/T Wing and supervision by Construction Officers, all works at all times shall be open to inspection of the BSNL Raipur. The contractors shall be bound, if called upon to do so, to offer the works for inspection without any extra payment.

8.3.4 Site Order Book: The site order book is one of the primary records to be maintained by the JTO/SDO supervising the work during the course of execution of works. The noting made by officers as well as contractors will form as basis for operation of many contractual causes. The contractor shall remove all the defects pointed out by the BSNL Raipur in the Site order book. The site order book is to be maintained in the prescribed format. The contractor or their authorized representatives shall also be at liberty to note their difficulties etc. in these books. The site order books shall invariably be consulted at the time of making final payments to the contractor.

8.3.5 An assessment of extent of interest shown by the contractors in executing the works with requisite quality shall be recorded and used in evaluating the Contractors Performance Rating (CPR).

8.4 Testing and Acceptance Testing:

8.4.1 The work shall be deemed to have been completed only after the same has been accepted by the A.T. Officer. The contractor shall make test pits at the locations desired by A. T. Officer for conducting test checks without any extra payment. The contractor shall restore the pits after test measurements to its original shape. The contractor shall be responsible to provide test/measurement tools and testers for conducting various tests.

8.4.2. **SCOPE OF ACCEPTANCE AND TESTING:** The purpose of acceptance and testing is to verify integrity of measurement and quality of work done. The A.T. Officer shall not be responsible for recording of measurements for the purpose of billing and contractual obligations. However, if the measurements taken by A.T. Officer are found to be lesser than the measurements recorded by the officer responsible for recording the measurements, the measurement taken by A. T. Officer shall prevail without prejudice to any punitive action against the contractor as per provisions of the contract and the officer recording the measurements. The contractor shall be obligated to remove defects/deficiencies pointed out by the A. T. Officer without any additional cost to the BSNL Raipur.

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

8.4.3 Offering the work for acceptance and testing: The Sub Divisional Engineer responsible for construction, after having satisfied himself of completion of work ready for A.T, shall offer the Work to A.T. Officer for conducting Acceptance and Testing.

8.4.4 The contractor shall provide labour, if demanded by the AT officer for digging of test pits and other necessary infrastructure for carrying out the AT work. No extra payment will be made for the digging of test pit.

9. WARRANTY:

9.1 The contractor shall warrant that the material supplied for the work shall be new and free from all defects and faults in material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standards for materials of the type ordered and shall perform in full conformity with the specifications and drawings. The contractor shall be responsible for any defects that may develop under the conditions provided by the contract and under proper use, arising from faulty materials, design or workmanship such as corrosion of the equipment, inadequate quantity of materials etc. and shall remedy such defects at his own cost when called upon to do so by the BSNL staff who shall state in writing in what respect the stores are faulty.

9.2 If it becomes necessary for the contractor to replace or renew any defective portion /portions of the material under this clause, the provisions of the clause shall apply to the portion / portions material so replaced or renewed or until the end of the above mentioned period of twelve months, whichever may be later. If any defect is not remedied within a reasonable time, as prescribed by the BSNL Staff, the BSNL Staff may proceed to do the work at the contractor's risk and costs, but without prejudice to any other rights which the BSNL staff may have against the contractor in respect of such defects.

9.3 Replacement under warranty clause shall be made by the contractor free of all charges at site including freight, insurance, cost of works and other incidental charges.

10. AUDIT AND TECHNICAL EXAMINATION:

10.1 BSNL shall have the right to cause an audit and technical examination of the work 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 overpaid in respect of any work done by contractor under the contract or any work claimed by him 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 clause with the heading payment of bills (same chapter), 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.

10.2 Provided that BSNL shall be entitled to recover any sum overpaid, nor the contractor shall be entitled to payment of any sum paid short where such payment have been agreed upon between the Divisional Engineer or his subordinate officer on one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by the DE (OFC/CMTX) or his subordinate officer.

10.3 Any sum of money due and payable to the contractor including security deposit returnable to him under this contract may be appropriate by the BSNL for the payment of a sum of money arising out or under any other contract made by the contractor with the BSNL.

11. PAYMENT TERMS:

11.1 Procedure for Preparation and settlement of bills:

Signature of the bidder with seal

- 11.1.1. PROCEDURE FOR PREPARATION, PROCESSING AND PAYMENT OF RUNNING BILLS: THE CONTRACTOR SHALL PREPARE THE RUNNING BILLS IN TRIPPLICATE ENSURING EXECUTION OF PART WORK IN IT COMPLETENESS AS ENVISAGED ABOVE, CORRECTNESS OF RATES AND QUANTUM OF WORK AND SUBMIT THE BILLS TO S.D.E. IN -CHARGE OF WORK. THE BILLS SHALL BE SUBMITTED IN THE OFFICE OF A.G.M. (N/W & Plg) AFTER COUNTERSIGNED BY DE(OFC/CMTX). THE BILLS SHALL BE PREPARED ACCURATELY AND AS PER MEASUREMENTS RECORDED IN MEASUREMENT BOOK OF ALL THE ITEMS INVOLVED IN THE WORK. THE SDE/JTO IN- CHARGE SHALL RECORD THE CERTIFICATE ON THE RUNNING BILL THAT THE SITE ORDER BOOKS HAVE BEEN CONSULTED BEFORE SIGNING THE RUNNING BILLS. THIS WOULD ENABLE THE S.D.E/JTO. TO ENSURE WHETHER THE DEFECTS POINTED DURING EXECUTION HAVE BEEN RECTIFIED OR NOT. THE S.D.E/JTO. IN-CHARGE OF WORK SHALL SCRUTINIZE THE BILLS AND ACCORD NECESSARY CERTIFICATES AND SUBMIT THE RUNNING BILLS WITH THE DOCUMENTS AS MENTIONED BELOW TO THE DIVISIONAL ENGINEER, IN - CHARGE OF WORK AFTER COUNTERSIGN OF DE (OFC/CMTX).
.FIRST COPY OF BILL(MENTIONING SERVICE TAX REGISTRATION NO. ON INVOICE) WITH FIRST COPIES' OF MEASUREMENT SHEETS OF MEASUREMENT BOOK. (PAYABLE COPY).Original M.B. is to be furnished along with first copy of bill.
.SECOND COPY OF BILL(MENTIONING SERVICE TAX REGISTRATION NO. ON INVOICE) WITH SECOND COPIES OF MEASUREMENT SHEETS OF MEASUREMENT BOOK.(NOT FOR PAYMENT).THIRD COPY OF THE BILL (MENTIONING SERVICE TAX REGISTRATION NO. ON INVOICE) WITH PHOTOCOPIES OF MEASUREMENT SHEET. (NOT FOR PAYMENT). COPIES OF AUTHENTICATED DOCUMENTS OF PAYMENTS OF EPF CONTRIBUTION PAID FOR THE LAST MONTH SHOULD BE ATTACHED ALONG WITH THE CURRENT MONTH BILL . 50% PAYMENT OF ENTIRE ROUTE ON COMPLETION PLB PIPE LAYING, & AFTER COMPLETION OF DEPTH A/T .100% PAYMENT WILL BE MADE ON COMPLETION OF DEPTH A/T & FIBER A/T.
- 11.1.2 THE JTO/SDE IN-CHARGE SHALL EXERCISE THE PRESCRIBED CHECKS ON THE BILLS AND ACCORD NECESSARY CERTIFICATES ON THE BILLS. THE DIVISIONAL ENGINEER SHALL RETAIN THE THIRD COPY IN RECORD AND RECORD IT IN THE ESTIMATE FILE MAINTAINED IN HIS OFFICE AND SEND FIRST AND SECOND COPIES WITH ALL' DOCUMENTS TO WORKS SECTION OF PLANNING CELL FOR PROCESSING OF BILLS AND RELEASE OF PAYMENT.
- 11.1.3 THE WORK SECTION SHALL PROCESS THE BILLS IN THE ESTIMATE FILE OF THE CONCERNED WORK AND SCRUTINIZE THE BILLS VIS-A-VIS WORK ORDER ISSUED; SANCTIONED PROVISIONS IN THE ESTIMATE ETC. THE BILL SHALL BE PASSED, AFTER NECESSARY SCRUTINY BY WORKS SECTION, BY THE OFFICER COMPETENT TO PASS THE BILL. AGAINST ANY RUNNING BILL, PAYMENT TO THE EXTENT OF ONLY 90% SHALL BE MADE WHICH SHALL BE TREATED AS AN ADVANCE TO THE **CONTRACTOR. 8% OF THE BILL** AMOUNT TOWARDS PERFORMANCE SECURITY DEPOSIT . STATUTORY TAXES (INCOME TAX ETC.) APPLICABLE TO CONTRACT SHALL BE DEDUCTED AT THE TIME OF PAYMENT FROM EACH RUNNING BILL. ACCOUNT PAYEE CHEQUE FOR THE NET AMOUNT OF THE BILL WILL BE ISSUED ONLY AFTER THE CONTRACTOR GIVES A STAMPED RECEIPT FOR THE AMOUNT, IF THE BILLS ARE NOT PRE- RECEIPTED. DETAILS OF PAYMENT OF ALL THE BILLS SHALL BE ENTERED INTO CONTRACT'S LEDGER BY WORK SECTION.
- 11.1.4 PROCEDURE FOR PREPARATION, PROCESSING AND PAYMENT OF FINAL BILL: THE CONTRACTOR SHALL PREPARE THE FINAL BILL IN TRIPPLICATE OF ALL THE WORKS AND SUBMIT THE SAME TO S.D.E. /JTO IN CHARGE OF WORK WITHIN 30 DAYS OF COMPLETION OF WORK AND PAYMENT SHALL BE MADE WITHIN THREE MONTHS IF THE AMOUNT OF THE CONTRACT IS UP TO RS TWO LACS AND IN SIX MONTHS IF THE SAME EXCEED RS. TWO LACS. THE FINAL BILL SHALL BE PREPARED ALL THE MEASUREMENTS OF ALL ITEMS INVOLVED IN EXECUTION OF LAYING WORK DETAILS. THE CONTRACTOR SHALL PREPARE

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

THE FINAL BILL CONTAINING THE FOLLOWING DETAILS.

THE FINAL BILL SHOULD BE PREPARED FOR ALL THE QUANTITIES AS PER MEASUREMENTS AT THE APPROVED RATES WITH THE FOLLOWING DOCUMENTS:

- . ADJUSTMENT OF AMOUNT PAID AGAINST RUNNING BILLS
- . ADJUSTMENT OF PERFORMANCE SECURITY DEPOSIT AND STATUTORY TAXES ALREADY RECOVERED.
- .STORE RECONCILIATION STATEMENT FURNISHING ACCOUNT OF STORES RECEIVED AGAINST THE WORK ORDER AND RETURNED TO THE DESIGNATED STORE AS SURPLUS WITH REQUISITE VERIFICATIONS FROM STORE IN - CHARGE/S.D.E. IN-CHARGE OF WORK.
- . LETTERS OF GRANT OF E.O.T(S) IF WORK COULD NOT BE COMPLETED WITHIN STIPULATED TIME.
- . SIX SETS OF BOUND DOCUMENTATION.
- . FINAL BILL WILL BE ACCEPTED BY DE (OFC/CMTX) OFFICE ONLY AFTER COMPLETION OF DEPTH A/T & FIBER A/T.
- . NO FINAL BILL IS PAID, IF ANY PORTION OF WORK IS INCOMPLETE DUE TO ANY REASON OF THAT SECTION.

11.1.5 THE S.D.E/JTO IN-CHARGE OF WORK SHALL SCRUTINIZE THE FINAL BILL AGAINST THE WORKS ENTRUSTED AND ACCORD NECESSARY CERTIFICATES STATING THAT THE WORK HAS BEEN EXECUTED SATISFACTORILY IN ACCORDANCE WITH SPECIFICATIONS AND TERMS AND CONDITIONS OF THE CONTRACT. THE S.D.E. SHALL VERIFY THE QUANTITIES OF ITEMS OF WORK WITH REFERENCE TO MEASUREMENTS RECORDED IN THE MEASUREMENT BOOK. THE S.D.E. IN-CHARGE OF WORK SHALL SUBMIT THE FINAL BILLS, ALONG WITH OTHER DOCUMENTS MENTIONED ABOVE, WITH THE DOCUMENTS AS MENTIONED HERE UNDER TO THE DIVISIONAL ENGINEER, IN -CHARGE OF WORK.

- * Bill prepared by the contractor.
- * Measurement Book.
- * The site order Book.
- * The hindrance register.
- * Details of recoveries/penalties for delays, damages to BSNL Raipur/Third party properties as per provisions of the contract. In case no recovery is to be made, NIL report needs to be submitted.
- * Statement list showing name of labours engaged , Salary paid EPF/ESI deducted. (Attested Copy)
- * Copies of authenticated documents of payments of EPF/ESI contribution paid for the last month along with list showing name of labour & amount of EPF deducted should be attached along with the current month bill.(Attested Copies)
- * Service tax will be paid in first bill only. After submission of copies of authenticated documents of payments of service tax paid for the last claim should be attached along with the next bill otherwise service tax in next bill will not be paid.(Attested Copy)

11.1.6 The Divisional Engineer shall exercise the prescribed checks on the bills and accord necessary certificates on the bills. The Divisional Engineer shall retain the third copy of the bill along with photocopies of other documents not available in his estimate file and send first and second copies of the bill, measurement book and other documents submitted by S. D.E. along with the bills as above to Works Section of the Planning Cell for processing and final payments.

11.1.7 The work section of A.G.M.(N/W & Plg) shall process the bills in the estimate file of the concerned work and scrutinize the bills vis-a-vis work order issued, sanctioned provisions in the estimate etc. The Works Section shall scrutinize the bill who recovers all the liabilities of the contractor and statutory taxes besides 10% payments against security deposit. The bill shall be passed, after necessary scrutiny by Works Section, by the *officer* competent to pass the final bill.

11.2. (i). **The tenderer will observe necessary formalities as per the provision of the labour act & the following points may be implemented and attach self attested copy along with bill.**

(a) The payment of workers by the contractor is to be carried out as per rate approved by the Central Govt. from time to time in the presence of the controlling officer or his authorized representative and he should sign in the register to this effect

(b) The tenderer has to maintain the mandatory labour registers (Under contract labour (R&A) Act 1970)

i) Register of Workmen Employed by Contractor in form XIII, Page no 83

(ii) Employment Card in form XIV Page no 84

(iii) Muster roll register in form XVI, Page no 85

(iv) Register of wages in form XVII Page no 86

(v) Register of wages Cum muster roll in form XVIII Page no 87

(vi) Wage slip in form XIX Page no 88

(vii) Register of deduction for damage Or loss in form XX Page no 89

(viii) Register of fines in form XXI Page no 90

(ix) Register of advance in form XXII Page no 91

(x) Register of OT in form XXIII Page no 92

(xi) Register of accidents Page no 93

c) The workers engaged by the contractors must be covered under ESI and EPF scheme by the contractor himself as per rules.

(d) The contractor will issue employment cards of engaged workers.

(e) The contractors will have to supply the details as asked as per RTI act as and when required.

12 Procedure for Payment for sub standard works:

12.1 The contractors are required to execute all works satisfactorily and in accordance with the specifications. If certain items of work are executed with unsound, imperfect or unskilled workmanship or with materials of any inferior description or that any materials or articles provided by him for execution of work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract (referred to as substandard work hereinafter), the Divisional Engineer in-charge shall make a demand in writing specifying the work, materials or articles about which there is a complaint.

12.2 Timely action by Construction Officers: Timely reporting and action, to a great extent, can prevent occurrence of sub standard work, which will be difficult or impossible to rectify later on. It is incumbent on the part of Construction Officers to point out the defects in work in time during progress of the work. The Junior Telecom Officer/Sub Divisional Engineer responsible for execution and supervision of work shall without any loss of time submit a report of occurrence of any sub standard work to the Divisional Engineer in -charge besides making an entry in the site order book. A notice in respect of defective work shall be given to the contractor by Divisional Engineer In charge in writing during the progress of work asking the contractor to rectify/replace/remove the sub standard item of work and also definite time period within which such rectification/removal/replacement has to be done. After expiry of the notice period, If there contractor falls to rectify/replace/remove the sub standard items, the defects shall be. Got rectified/replaced/removed BSNL all or through some other agency at the risk and cost of the contractor.

12.2.1 Non-reporting of the sub standard work In time on the part of Construction *Officer* (s) shall not in any way entitle the contractor to claim that t he defects were not pointed out during execution and as such the contractor cannot be absolved *of* the responsibility for sub standard work and associated liabilities.

12.2.2 Authority and Procedure to accept sub standard work and payment thereof: There ma y be

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

certain items of work pointed out as sub standard which may be difficult to rectify and in the opinion of the DGM (CFA), the items in question will not materially deteriorate the quality of service provided by the construction, GM TD Raipur shall appoint committee to work out the reduced rates payable to the contractor for such sub standard work. The committee shall constitute one Divisional Engineer other than the one who is directly in -charge of O F Cable Construction involving sub standard items of work, as "chairman and one S.D.E. and an Accounts Officer as members. The, committee shall take into account the approximate cost of material/work pointed out as sub standard' and recommend the rates payable for sub standard work which shall not exceed 60% of the approved rates of the item in question.

12.2.3 Record of sub standard work: The items adjudged, as sub standard shall be entered into the measurement book with red ink.

13 PENALTY CLAUSE:

13.1 Delays in the contractor's performance:

13.1.1 The time allowed for completion of the work as entered in the tender shall be strictly adhered by the contractor and shall be deemed to be the most important aspect of the contract on the part of the contractor and shall be reckoned from Seventh day from issue of work order by the BSNL. The work shall, throughout the stipulated period of contract, be proceeded with all due diligence to achieve the desired progress uniformly, and the contractor shall pay as penalty an amount equal to 1.0 (one) percent of the amount (minimum Rs One thousand per week) of the incomplete work for every one week of delay in completion of work, subject to a maximum of 10 (ten) percent of the cost of the work awarded.

13.1.2 On any date the penalty payable as above, reaches 10 (ten) percent of the estimated cost of the work, the contractor should proceed with the work further only on getting a written instructions from the Divisional Engineer that, he is allowed to proceed further with the work. It will be In the discretion of the Divisional Engineer to allow the contractor to continue with the work on the basis of any written agreement reached between the contractor and the Divisional Engineer one of the conditions of such agreement may be a stipulation for the contractor to agree for realization of penalty for delay at a higher rate as may be agreed between the Divisional Engineer and contractor.

13.1.3 Penalty for delay in completion of the work shall be recoverable from the bills of the contractor and/or by adjustment from the security deposit or from the bills of any other contract. However, adjustment from security deposit will be made only when the contract has been terminated or at the time of final settlement of bills on completion of work.

In case of slow progress of the work in a section which have been awarded to a particular contractor, and the public interest does not permit extension of time limit for completion of the work, the GMTD Raipur will have the full right to order that the scope of the contractor may be restricted to such fraction of the whole of the work and get the balance executed at the risk and cost of the contractor. The details are given in Rescission of the contract clause of the bid document. All such payments shall be recovered from the contractor's pending bills or security deposit.

13.1.4 The GMTD Raipur reserves the right of cancel the contract and forfeit the security deposit If the contractor falls to commence the work within 7 days after issue of the work order.

13.2 Penalty for cutting/damaging the old cable:

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

- 13.2.1 Penalty for cutting/damaging the existing cables of BSNL and the existing underground facilities of third parties:
- 13.2.2 During excavation of trench almost care is to be taken by the contractor so that the existing underground cables are not damaged or cut. IN -case any damage/cut is done to the existing cables, a penalty as per the schedule given below will be charged from the contractor or the amount will be deducted from his running bills:

Sl no	Size of cable to be replaced in Pairs	Damage Charges as prescribed in circular date 06-10-2003. (Fixed Cost in Rupees)	Cost of additional copper Cable for each slab of 10 meter (Variable cost in rupees per slab of cable of length 10 meter)
1	5	7,500	4,500
2	10	7,500	5,000
3	20	7,500	5,000
4	50	10,000	5,500
5	100	10,000	6,000
6	200	20,000	7,000
7	400	20,000	11,000
8	800	40,000	13,000
8	1200	75,000	17,000
10	OF Cable	Per Cut /Each Damage	1,50,000

Besides the above penalty, the contractor shall carry out such repairs for restoration of the damaged cable free of charge. The cost of jointing kit shall also be borne by the contractor. If contractor fails to repair the damage, the cost of repair (including cost of labour + jointing kit) shall be recovered from the contractor.

- 13.2.3 Contractor shall either pay to third parties all expenditure incurred for restoring services which are damaged by Contractor while carrying out the work or the same amount will be deducted from his bills. Such expenditure shall be intimated to Contractor either by Engineer -in-charge or concerned third parties in writing. The amount deducted by the Contractor from his bill shall be paid to concerned third parties by A.G.M.or Accounts Officer.
- 13.2.4 Engineer-in-charge at his absolute discretion shall reserve the right to reject any bill submitted by the Contractor prior to making payment by him to third parties for the damages caused or to deduct same amount from his bill.
- 13.3 Penalty to damage stores/materials Supplied by the department while laying:
- 13.3.1 The contractor while taking delivery of materials supplied by the BSNL at the designated place shall thoroughly inspect all items before taking them over. In case of execution of the work, if any material is found damaged/working unsatisfactorily, then a penalty equivalent to the cost of material + 10 % as penalty shall be recovered from the contractor's payments/securities.
- 13.3.2 However, contractor will not be penalized for any defect in workmanship of the materials, which shall be taken up separately with the supplier of the stores.

14 Rescission/Termination of contract

14.1 Circumstances for rescission of contract:

Under the following conditions the competent authority may rescind the contract:

- (a) If the contractor commits breach of any item of terms and conditions of the contract.
- (b) If the contractor suspends or abandons the execution of work and the engineer in charge of the work comes to conclusion t hat work could not be completed by due date for completion or the contractor had already failed to complete the work by that date.

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

- (c) If the contractor: -had been given by the officer -in-charge of work a notice in writing to rectify/replace any defective work and he/she fails to comply with the requirement within The specified period.
- 14.2 Upon rescission of the contract, the security deposit of the contractor shall be liable to be forfeited and shall be absolutely at the disposal of the BSNL as under:
- 14.2.1 Measurement of Works executed since the date of last measurement and up to the date of rescission of contract shall be taken in the presence of the contractor or his authorized representative .who shall sign the same in the MB. If the contractor or his authorized representative do not turn up for joint measurement, the measurement shall be taken by the officer authorized for this purpose after expiry of due date given for joint measurement. The measurement taken by the officer so authorized shall be final and no further request for joint measurement shall be entertained.
- 14.2.2 The unused material (Supplied by the BSNL) available at site shall be transported back by the BSNL to the Telecom Store at the risk and cost of the contractor. If any such material is found damaged/lost then the penalty shall also be recovered from the contractor as per conditions in tender documents, *ibid*
- 14.2.3 The un-executed work shall be got executed through the qualified bidder from amongst the bidders, who participated in the bidding process, by giving them offers in their order of ranking (L2, L3---) at their quoted rates. If the work was awarded on single' tender basis then the BSNL shall get' the unexecuted work completed through any other contractor approved UNDER SSA RAIPUR at the approved rates of that particular section or to execute the work BSNL only, as is convenient or expedient to the BSNL at the risk and cost of the contractor.

In such an event no compensation shall be payable by the BSNL to the contractor toward any inconvenience/loss that he may be subjected to as a result or' such an action by the BSNL. In this regard the decision of GMTD Raipur shall be final and binding. In all these cases, 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 shall be borne, and paid by the original contractor and shall be deducted from any money due to him by: the BSNL under the contract or any other account whatsoever anywhere in the BSNL or from a security deposit.

- 14.2.4 The certificate of the Divisional Engineer in -charge of work as to the value of work done shall be final and conclusive against the contractor, provided always that action shall only be taken after giving notice in Writing to the contractor.
- 15 Termination for Insolvency:
- 15.1 The BSNL may at any time terminate the Contract by giving written notice to the Contractor, without compensation to Contractor, if the Contractor becomes bankrupt or otherwise insolvent as declared by the competent court provided that such termination will not prejudice or affect any right or action or remedy which has accrued or will accrue thereafter to the BSNL.

15.2 Optional Termination by BSNL (Other than due default of the Contractor):

- 15.2.1 The BSNL may, at any time, at its option cancel and terminate this contract by written notice to the contractor, in which event the contractor shall be entitled to payment for the

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

work done up to the time of such cancellation and a reasonable compensation in accordance with the contract: prices for any additional expenses already incurred for balance work exclusive of purchases and/or whole of material, machinery and other equipment for use In or in respect of the work.

- 15.2.2 In the event of the termination of the contract, the contractor shall forthwith clear the site of all the contractor's materials, machinery and equipment's and hand over possession of the work / operations concerned to the BSNL or as the BSNL may direct.
- 15.2.3 The BSNL may, at its option, cancel or omit the execution of one or more items of work under this contract and may part of such items without any compensation whatsoever to the contractor.
- 15.3 Issuance of Notice:
- 15.3.1 The Divisional Engineer in-charge of work shall issue show cause notice giving details of lapses, violation of terms and conditions of the contract, wrongful delays or suspension of work or slow progress to the contractor directing the contractor to take corrective action. A definite time schedule for corrective action shall be mentioned in the show cause notice. If the contractor fails to take corrective action within the stipulated time frame, the Divisional Engineer in -charge shall submit a draft of final notice along with a detailed report to the competent authority who had accepted the contract.
- 15.3.2 The final notice for rescission of contract to the contractor shall expressly state the precise date and time from which the rescission would become effective. The following safeguards shall be taken while issuing the final notice:
- a) During the period of service of notice and its effectiveness, the contractor should not be allowed to remove from the site any material/ equipment belonging to the BSNL.
 - b) The contractor shall give in writing the tools and plants he would like to take away/remove from the site. Such of the materials as belong to him and which may not be required for future execution of balance work may be allowed by the Divisional Engineer in-charge of work to be removed with proper records.
 - c) No new construction beneficial to the contractor shall be allowed.
 - d) Adequate BSNL security arrangement in replacement of the contractor watch and ward shall be made forthwith. Expenses on this account are recoverable from the security deposit or any amount due to the contractor.

16 INDEMNITIES:

- 16.1 The contractor shall at all times hold the BSNL harmless and indemnify from against all action, suits, proceedings, works , cost, damages, charges claims and demands of every nature and descriptions, brought or procured against the BSNL, Its *officers* and employees and forthwith upon demand and without protest or demur to pay to the BSNL any and all losses and damages and cost (Inclusive between attorney and client) and all costs incurred in endorsing this or any other indemnity or security which the BSNL may now or at any time have relative to the work or the contractors obligation or in protecting or endorsing its right in any suit on other legal proceeding, charges and expense and liabilities resulting from or incidental or in connection with injury, damages of the contractor or damage to property resulting from or arising out of or in any way connected with or incidental to the operations caused by the contract documents. In addition the contractor shall reimburse the BSNL or pay to the BSNL forthwith on demand without protest or demur all cost, charges and expenses and losses and damages otherwise

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

incurred by it in consequences of any claim, damages and actions which may be brought against the BSNL arising out of or incidental to or in connection with the operation covered by the contractor.

- 16.2 The contractor shall at his own cost at the BSNL's request defend any suit or other proceeding asserting a claim covered by this indemnity, but shall not settle, compound or compromise any suit or other finding without first consulting the BSNL.

SECTION VI

SPECIAL CONDITIONS OF CONTRACT

1. GENERAL:

- 1.1 The work shall be accepted only after prescribed checks carried out by BSNL Officers, designated by the BSNL, as per prescribed schedule and work/material passing the test successfully.
- 1.2 The BSNL reserves the right to disqualify such bidders who have a record of not meeting contractual obligations against earlier contracts entered into with the BSNL.
- 1.3 The BSNL reserves the right to black list a bidder for a suitable period in case he fails to honour his bid without sufficient grounds.
- 1.4 The BSNL reserves the right to counter offer price(s) against price(s) quoted by any bidder.
- 1.5 Any clarification issued by BSNL, in response to query raised by prospective bidders shall form an integral part of bid documents and it may amount to amendment of relevant clauses of the bid documents.
- 1.6 Tender will be evaluated as a single package of all the items given in the price schedule.
- 1.7 All work to be executed under the contract shall be executed under the direction and subject to the approval in all respects of by the *Divisional Engineer or Site Engineer In - charge of work site* who shall be entitled to direct at what point or points and what manner they are to be commenced, and from the time to time carried on.
- 1.8 The work in each section may be split up between two or more contractors or accept any tender in part and not entirely if considered expedient by the GM TD Raipur.
- 1.9 If the contractor shall desire an extension of time for completion of the work on the grounds of unavoidable hindrance in execution of work or on any other *ground he shall apply in writing to the Divisional Engineer within 3 days of the date of hindrance* on account of which he desires such extension as aforesaid. In this regard the decision of the GM TD Raipur shall be final.
- 1.10 If at any time after the commencement of the work, the BSNL may feel that execution of whole or part of work, as specified in the tender is not required to be carried out, then the BSNL shall give notice in writing of the fact to the contractor who shall have no claim. to any payment of compensation whatsoever on account of any profit or advantage which he might have derived in consequence of the full amount of the work not having been carried out neither shall he have any claim for compensation by reason of any alterations having been made in the original specifications, drawings, designs and instructions which shall instructions any curtailment of the work as originally contemplated.
- 1.11 Whenever any claims against the contract or for the payment of a sum of money arises out of or under the contract, the BSNL shall be entitled to recover such sum by appropriating in part or whole the security deposit of the contractor, and to sell any BSNL promissory notes etc, forming the whole or part of such security or running Final bill pending against any contract with the BSNL In the event of the security being insufficient or if no security has been taken from the contractor , then the balance or the total sum recoverable as the case may be, shall be deducted from any sum then due or which at any

time there after may become due to the contractor under this or any other contract with BSNL. Should this sum be not sufficient to cover the full amount recoverable the contract or shall pay to B SNL on demand the balance remaining due.

- 1.12 No official of Gazetted rank or other Gazetted officer employed in Engineering or administrative duties in an Engineering BSNL or any other BSNL of the BSNL of India is allowed to work as a contractor for a period of two years after his retirement from BSNL service without the previous permission of BSNL of India. 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 hadn't obtained the permission of BSNL of India as aforesaid before submission of the engagement In the contractor's service as the case may be.
- 1.13 In the event of the contractor being, adjusted insolvent or going voluntarily into liquidation of having received order or other order under insolvency act made against him or in the case of company, of the passing of any resolution, or making of any order for winding up whether voluntarily or otherwise, or in the event of the contractor failing to comply with any of the conditions herein specified. The A.G.M. (N/W & Plg) shall have the power to terminate the contract without any notice.
- 1.14 Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the GMTD Raipur on behalf of the BSNL can terminate the contract without compensation to the contractor. However GMTD Raipur at his discretion may permit contractor's heirs to perform the duties or engagements of the contractor under the contract, in case of his death. In this regard the decision of GMTD Raipur shall be the final.
- 1.15 In the event of the contractor, winding up his Company on account of transfer or merger of his company with any other, the contractor shall make it one of the terms and Stipulations of the contract for the transfer of his properties and business, that such other person or company, shall continue to perform the duties or engagement of the contractor under this contract and be subject to his liabilities there under.
- 1.16 Interpretation of the contract document:
 - 1.16.1 The representative of the A.G.M. (N/W & Plg) and the contractor shall in so far as possible by mutual consultation, by to decide upon the meaning and intent of the contract document. In -case of disagreement the matter shall be referred to GM TD Raipur whose decision shall be final. Any change in the contract: documents shall be set forth in writing by the representative of the parties hereto. It shall be the contractor's responsibility to thoroughly familiarize all of his supervisory personnel with the contents of all the contract documents.
- 1.17 Notification:
 - 1.17.1 The contractor shall give in writing to the proper person or authority with a copy to the Divisional Engineer such notification as may be mandatory or necessary in connection with the commencement, suspension, resumption, performance and I or completion of the contracted work . All notice shall be given sufficiently in advance of the proposed operation to permit proper co -relation of activities and the contractor shall keep all proper persons or authorities involved and advised of the progress of operations throughout the performance of the work and/or with such other Information and or supporting figure and data as may from time to time as directed or required.

- 1.18 Shut down on account of weather conditions: The contractor shall not be entitled to any compensation whatsoever by reason of suspension of the whole or any part of the work made necessary by the BSNL or deemed advisable on account of bad weather conditions or other force majeure conditions.
2. EASEMENTS. PERMITS. LICENCES AND OTHER FACILITIES :
- 2.1 The contractor shall obtain/provide at his own cost all easements, permits and license necessary to do its work except for the following which shall be provided by the Representative of the DE (OFC)/Office Incharge ;
(A) "Right of User" easements and permits.
(B) Railway and Highway crossing permits including bridge.
(C) Canal/ stream crossing permits.
- 2.2 The contractor shall be fully responsible for angling and obtaining all necessary easements, permits and licenses, for moving all construction equipment, tools, supplied materials and men across Railways and Highways, across public or private road as well as premises of any public utility within the right of user and for bearing all costs that may be incurred in respect of the same.
- 2.3 The contractor is to confine his operation to the provided construction "Right of User" unless it has made other arrangement with the particular property owners and or tenants such other arrangements shall be entirely at the responsibility of the contractor as to cost and arrangement as also bream and claim and shall be entitled with a copy to the Divisional Engineer.
- 2.4 The contractor will not be entitled to extra compensation for hardship and Increase in cost by the cable trench being routed adjacent to or across other pipeline, Highways, Railways, telephones or poser poles and wires or guy wires, embankments, cliffs, streams or other obstacles Whim may physically or otherwise in any manner, restrict or limit the use of the construction "Right of User. Some construction and such contingency shall be deemed to have been providing for in the rates.
- 2.5 At location where the OPTICAL FIBRE cable trench Is routed across o r along railways or roads the contractor shall without extra cost provide and. maintain such detours and road controls as are required by the railways or BSNL or local agencies having jurisdiction.
- 2.6 If the BSNL is not able to provide above mentioned permits etc. In time then the extension of time limit shall be provided as per EOT clause given in tender document
- 3.0 QUALITY OF WORK:
- 3.1 The BSNL shall be the final judge of the quality of the work and the satisfaction of the BSNL in respect thereof set forth in the contract documents. Laxity or failure to enforce compliance with the contract documents by the BSNL and or its representative shall not manifest a change or intent of waiver, the Intention being that, notwithstanding the same, the contractor shall be and remain responsible for complete and proper compliance with the contract documents and the specification there in. The representative of DE (OFC) has the right to prohibit the use of men and any tools, materials and equipment which in his o pinion do not produce work or performance meet the requirement of the contract documents.

4. TAXES AND DUTIES:

- 4.1. Contractor shall pay all rates, levies, fees royalties, taxes and duties payable or arising from out of, by virtue of or in connection with and /or incidental to the contract or any of the obligations of the parties in terms of the contractor documents and / or in respect of the works or operations or any part thereof to be performed by the contractor and. the contractor shall indemnify and keep indemnified the BSNL from and against the same or any default by the contractor in the payment thereof.

5. PROTECTION OF LIFE AND PROPERTY AND EXISTING FACILITIES:

- 5.1 The contractor is fully responsible for taking all possible safety precaution during preparation for and actual performance of the works and for keeping the construction site in a reasonable safe condition. The contractor shall protect all life and property from damage or losses resulting from his construction operations and shall minimize t he disturbance and inconvenience to the public.

6. LABOUR WELFARE MEASURES AND WORKMAN COMPENSATION:

- 6.1 Obtaining Licence before commencement of work: The contractor shall obtain a valid labour license under the Contract labour (R&A) Act 1970 and the Contract: Labour (Regulation and Abolition) Central Rules 1971, before commencement of the work, and continue to have a valid license until the completion of work. The contractor shall also abide by the provisions of the child Labour (Prohibition and Regulation) Act 1986. Any failure to fulfill this requirement shall attract the penal provisions of this contact arising out of the resultant non-execution of work. .

6.2 Contractors Labour Regulations:

6.2.1 Working Hours

- 6.2.1.1 Normally working hours of an employee should not exceed 9 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.
- 6.2.1.2 When a 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.
- 6.2.1.3 Every worker shall be 'given a weekly holiday normally on a Sunday, in accordance with the previsions 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.
- 6.2.1.4 Where the minimum wages prescribed by the BSNL, 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.
- 6.2.1.5 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 a t the overtime rate.

- 6.2.2 Display Of Notice Regarding Wages Etc. 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 wages are earned, wages periods, dates of payments of wages and other relevant information.

6.2.3 Payment of Wages.

6.2.3.1 The contractor shall fix wage periods in respect of which wages shall be payable.

6.2.3.2 No wage period shall exceed one month.

6.2.3.3 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.

6.2.3.4 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.

6.2.3.5 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.

6.2.3.6 Wages due to every worker shall be paid to him direct or to other person authorised by him in this behalf.

6.2.3.7 All wages shall be paid in current coin or currency or in both.

6.2.3.8 Wages shall be paid without any deduction of any kind except those specified by the - Central BSNL by general or special order in this behalf or permissible under the Payment of wages Act 1956.

6.2.3.9 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.

6.2.3.10 It shall be the duty of the contractor to ensure the disbursement of wages in presence of the site Engineer or any other authorized 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.

6.2.3.11 The contractor shall obtain from the site 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 ."

6.2.4 Fines and deductions which may be made from wages

6.2.4.1 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 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 BSNL may from time to time, allows.

6.2.4.2 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 Labour Commissioner.

6.2.4.3 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.

6.2.4.4 Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

6.2.5 Labour records

6.2.5.1 The contractor shall maintain Register of Persons employed on work on contract in From XIII of the contract Labour (R&A) Central Rules 1971.

6.2.5.2 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 a. (R&A) Rules 1971.

6.2.5.3 The contractor shall maintain a Wage Register in respect of all workmen employed by him on the work under contract in From XVII of the CL (R&A) Rules 1971.

6.2.5.4 Register of accidents -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

6.2.5.5 The contractor shall maintain a Register of Fines in the Form XXI of the a. (R&A) Rules 1971 The contractor shall display in a good condition and in a conspicuous place of work the approved list of acts and emission for which fines can be imposed.

6.2.5.6 The contractor shall maintain a Register of deductions for damage or loss in Form XX of the (R&A) Rules 1971.

6.2.5.7 The contractor shall maintain a Register of Advances in Form XXII of the (R&A) Rules 1971.

6.2.5.8 The contractor shall maintain a Register of Overtime in Form XXIII of the (R&A) Rules 1971.

6.2.6 Attendance card-cum wage slip in Form XIX

- 6.2.6.1 The contractor shall issue an Attendance card cum wage slip to each workman employed by him.
- 6.2.6.2 The card shall be valid for each wage period,
- 6.2.6.3 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.
- 6.2.6.4 The card shall remain in possession of the Worker during the wage period under reference.
- 6.2.6.5 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.
- 6.2.6.6 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.
- 6.2.7 Employment card
The contractor shall issue an Employment Card in the Form XIV of a. (R&A) Central Rules 1971 to each worker within three days of the employment of the worker.
- 6.2.8 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 a. (R&A) Central Rules 1971.
- 6.2.9 Preservation of labour records
The Labour records and records of fines and deductions 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 authorized by the Ministry of Communication in this behalf.
- 6.3 Power of labour officer to make investigations or inquiry
The labour officer or any person authorized by the Central BSNL on their behalf shall have power to make inquiries with a view to ascertaining and enforcing due and proper observance of Fair Wage Causes and provisions of these Regulations. He shall investigate into any complaint regarding the default made by the contractor in regard to such provision.
- 6.4 Report of Investigating officer and action there on
The Labour Officer or other persons authorized as aforesaid shall submit a report of result of his investigation or inquiry to the Engineer in -charge 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. The Engineer in -charge shall arrange payments to the labour concerned within 45 days from the receipt of the report from the Labour Officer or the authorized officer as the case may be.
- 6.5 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, authorized by the Central BSNL on his behalf.
- 6.6 Submission of Returns The contractor shall submit periodical returns as may be specified from time to time.
- 6.7. Amendments: The Central 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.

7. INSURANCE:

7.1. Without limiting any *of* his other obligations or liabilities, the contractor shall, at his own expense, take and keep comprehensive insurance including third party risk for the

plant, machinery, men, materials etc. brought to the site and for all the work during the execution. The contractor shall also take out workmen's compensations insurance as required by law and under take to indemnify and keep indemnified the BSNL from and against all manner of claims and demands and losses and damages and cost (including between attorney and client) charges and expenses that *may* arise in regard the same or that the BSNL may suffer or incur with respect to end / or incidental to the same. The contractor shall have to furnish originals and / or attested copies as required by the BSNL of the policies of insurance taken within 15 (fifteen) days of being called upon to do so together with all premium receipts and other papers related thereto which the BSNL may require.

8. COMPLIANCE WITH LAWS AND REGULATION:

- 8.1 During the performance of the works the contractor shall at his own cost and initiative fully comply with all applicable laws of the land and with any and all applicable by-laws rules, regulations and orders and any other provisions having the force of law made or promulgated or deemed to be made or promulgated by the BSNL, BSNL agency or BSNL , municipal board, BSNL of other regulatory or Authorized body or persons and shall provide all certificates of compliance therewith as may be required by such applicable law. By -laws, Rules, Regulations, orders and / or provisions. The contractor shall assume full responsibility for the payment of all contributions and pay roll taxes, as to its employees, servants or agents engaged in the performance of the work specified in the contractor documents. If the contractor shall require any assignee or sub -contractor to sham any portion of the work to be performed hereunder may be assigned, sub -leased or subcontracted to comply with the provisions of the clause and in this connection the contractor agrees as to undertake to save and hold the BSNL harmless and indemnified from and against any/all penalties, actions, suits, losses and damages, claims and demands and costs (inclusive between attorney and client) charges and expenses whatsoever arising out or occasioned, indirectly or directly , by failure of the contractor or any assignee or sub -contractor to make full and proper compliance with the said by -laws , Rules, Regulations, Laws and Order and provisions as aforesaid.
9. **TOOLS AND TENTS** The contractor shall provide at his own cost all tools, tents appliances, implements etc. required for proper execution of works. 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, counting, weighing and assisting the measurements for examination at any time and from time to time. The contractor shall be responsible to make all arrangements, at his own cost for de watering of trenches/ducts and de -gasification of the ducts before carrying out the work. The contractor shall also be responsible to make arrangements, at his own cost, for water required for carrying of works at sites including curing of CC/RCC works. Failing his so doing the same may be provided by the Engineer-in-charge at the expense of the contractor and the expenses shall be deducted from any money due to the contractor under this contract or otherwise.

SECTION VII

OPTICAL FIBER CABLE CONSTRUCTION SPECIFICATIONS

OPTICAL FIBRE CABLE CONSTRUCTION PRACTICES

The guidelines in the form of Engineering Instructions (E.I.s) on Construction Practices of Optical Fiber Cables are issued by T & D wing of the Department, from time to time. However, the present practices are summarized here under, from the point of view of describing scope of work under various items of work. The document will need revision as and when practices undergo any revision.

The Optical Fiber Cable is planned considering the following objectives of the scheme.

- i) Minimum possible route length vis -à-vis route having maximum number of towns with potential telecom growth.
- ii) Linking of small exchanges of main road by leading in O.F.C. vis -à-vis routing the main cable itself via such exchanges.

After deciding above-mentioned issues, a detailed measurement of lengths of cable route along with details of rail/road crossings, culverts, causeways, etc. may record in the detailed survey register. The probable locations of joints, terminations and generators may also be decided and marked on the route map. On the basis of survey, general permission from road and all concerned authorities for laying the Optical fiber Cable along the decided routes and permission for rail/road crossings will have to be obtained. Generally, O.F.C. is laid straight as far as possible along the road near the boundaries, away from the burrow pits. The O.F.C. is laid along the roads at minimum distance of 15 meters from the centerline of the road or in accordance with the permission from the concerned road authorities in view of their road-widening plan. As the O.F.C. is laid after obtaining due permission from all the concerned authorities to avoid any change/shifting at a later stage and also disruption of services/revenue loss.

In special cases, where it may be necessary to avoid burrow pits or low lying areas, the cable may be run underneath the shoulders at a distance of 0.6 meter from the outer edge of the road embankment provided the same is located at least 4.5 meters away from center line of road and 1.2 meters below the road surface.

The Optical Fiber Cable is laid through HDPE pipes/PLB Blowing/Preinstalled rope type pipe buried at a nominal depth of 165 Cms. The steps involved in OF Cable construction are as under:

1. THE WORK INVOLVES:

- a) Excavation of trench up to nominal depth of 165 cms according to Construction Specifications along National / State Highways/other roads and also in city limits as mentioned in the notice inviting tender.
- b) Laying of HDPE Pipe/PLB Blowing Type/Pre -installed ropes, and drawing of nylon rope through the same as per Construction Specification.

FOR PLB PIPES BLOWING PRACTICE:

To lay the pipe place jack stand along the sides of trench and mount the coil with the help of a strong iron shaft passing through the collapsible reel. Drive the reel slowly to avoid over spinning of reel while pulling. Unrolled pipe can be laid to the trench by placing the workers after

Signature of the bidder with seal

every 15 to 20 meters. The arrangement for horizontal Jack and associated other accessories shall be arranged by contractor at his cost.

- c) Laying of GI and/or RCC pipes as additional protection for the HDPE Pipe/PLB Blowing Type/Pre-installed ropes at rail/ road crossings built -up area/ city limits, on culverts, bridges and also stretches where depth of the trench is less than 120 cms as per construction specifications or as per the instructions of Site -In-Charge wherever required.
- d) Chambering or concreting according to construction specification, wherever required.
- e) Reinstatement of the excavated trench according to Construction specifications.
- f) Fixing of MS clamps for suspending GI pipes / GI troughs at culverts, bridges and/or chambering or concreting for GI pipes or troughs wherever necessary.
- g) Fixing of route indicators as per construction specification.
- h) Preparing of A/T pits, and to close them after the A/T is over without any extra payment.
- i) Horizontal boring to avoid road cutting

Note: The HDPE Pipe/PLB Blowing Type/Pre -installed ropes can be of 75 mm dia and 50 mm dia with collar jointing arrangement or spigot, GI pipe shall mean 100 mm dia & 75 mm dia or any other size provided by the BSNL with coupling arrangement, I troughs shall mean 76 x 76 mm; RCC pipe shall mean class NP2 up to 100 mm dia with collar or spigot and socket jointing arrangement.

2. DEPTH AND SIZE OF THE TRENCH:

- a) Depth and size of trench mentioned in this clause are Standardized measurement and applicable to normal site condition where surface is generally uniform. Site Engineer shall be the authority to decide the depth of trench.
- b) The depth of the trench from top of the surface shall not be less than 165 cms unless otherwise permitted. The width of the trench shall be sufficient to lay requisite number of HDPE/ GI/ RCC pipes and also concreting wherever required.
- c) When trenches are excavated in slopes, uneven ground, inclined portion, the lower edge shall be treated as top surface of land and depth of trench measured accordingly.
- d) In a certain locations, such as uneven ground, hilly areas and all other places due to any reason whatsoever it can be ordered to excavate beyond standard depth of 165 cms. to keep the bed of the trench as smooth as possible. Near the culverts, both ends of the culverts shall be excavated more than 165 cms. in depth to keep the gradient less than 15 degrees with horizontal.
- e) If excavation is not possible to the minimum depth of 165 cms, as detailed in sub clauses above, full fact shall be brought to the notice of the Engineer -in-charge in writing giving details of location & reason for not able to excavate that particular portion. Approval may be granted by Divisional Engineer in writing under certain genuine circumstances only. The decision of Divisional Engineer shall be final and binding on contractor.

3. TRENCHING:

- a) Trenching shall as far as possible be kept ahead of laying of pipes. Contractor shall exercise due care that soil from trenching intended to be loose for back filling is not mixed with loose debris. While trenching, Contractor should not cause damage to any underground installations belonging to others agencies and any damage caused should be made good at his own cost and expense.
- b) The Contractor should provide sufficient width in the trench at all such places, where it is likely to cave in due to soil conditions without any extra payment.
- c) A minimum free clearance of 15 cm. should be maintained above or below any existing underground installations. No extra payment will be made towards this.
- d) In order to prevent damage to HDPE Pipe/PLB Blowing Type/Pre -installed rope over a period of time, due to the growth of trees, roots, bushes, etc., the contractor shall cut them if encountered in the path of alignment of trench without any additional charges.
- e) In large borrow pits, excavation shall be done not less than 165 cms. in depth and both sides of borrow pit shall be excavated more than 165 cms in depth to keep gradient of bed less than 15 degree with horizontal.
- f) If not possible as stated in sub clause above, alignment of trench shall be changed to avoid borrow pit completely.

4. TRENCHING NEAR CULVERTS/BRIDGES AND CAUSEWAYS

- a) The HDPE Pipe/PLB Blowing Type/Pre -installed ropes shall be laid below the bed at the depth not less than 165 cms protected by G.I. Pipes and bricks or concrete chamber as decided by Dy. General Manager (Rural)/AM (Rural) O/o GMTD Raipur.
- b) Both ends of culverts shall be excavated more than 165cms in depth to keep the gradient not less than 15 degree with horizon. The bed of trench should be as smooth as possible.

5. LOCATION AND AUGMENTATION OF THE TRENCH:

- a) In city areas the trench will normally follow the foot path of the road except where it may have to come to the edge of the carriage way when cutting across road with specific permissions from the authorities responsible for maintenance of that road Outside the City limits trench will normally follow the boundary of the roadside land. However, where the road side land is full of borrow pits or aforesation or when the cable has to cross culverts, bridges or streams, the trench may be closer to the road edge or in some cases, over the embankment or shoulder of the road.
- b) The alignment of the trench will be decided by a responsible BSNL officer, not below the rank of a Junior Telecom Officer. While marking the alignment only the centerline will be marked, and the Contractor shall set out all other work to ensure that, the excavated trench is as straight as possible. Contractor shall remove all bushes, undergrowth, stumps, rocks and other obstacles to facilitate marking the centerline without any extra charges.

- 6. DEWATERING:** The Contractor shall be responsible for all necessary arrangements to remove or pump out water from trench. The Contractor should survey the soil condition encountering the section and make his own assessment about dewatering arrangements that may be necessary. No extra payment shall be admissible for this and the tendered rate may take care of this aspect.

7. METHOD OF EXCAVATION:

- a) In city limits as well as in built up area, the Contractor shall resort to use of manual labour only to ensure no damage is caused to any underground or surface installations belonging to other public utility services and / or private parties.
- b) However, along the High ways and cross country there shall be no objection to the Contractor resorting to mechanical means of excavation, provided that no underground installation existing in the path of excavation if any, are damaged.
- c) There shall be no objection to resort to horizontal boring to bore a hole of required size and HDPE Pipe/PLB Blowing Type/Pre -installed rope pushed through it at road crossing or rail crossing or small hillocks etc.

8. **LINE-UP:** The line up of the trench must be such that HDPE Pipe/PLB Blowing Type/Pre -installed rope(s) shall be laid in a straight line except at locations where it has to necessarily take a bend because of change in the alignment or gradient of the trench, subject to the restrictions mentioned elsewhere.

9. LAYING OF H.D.P.E. PIPES/PLB HDPE PIPE:

- a) After trench is excavated to the specified depth the bottom of the trench has to be cleared of all stones or pieces of rock & leveled up properly. A layer of ordinary soil of not less than 5 cm. is to be used for leveling the trench to ensure that cable when laid will follow a straight alignment.
- b) When trenches are excavated up to specified depth, properly dressed and leveled, joint measurement of trench shall be taken by representative of Contractor and Site Engineer. Measurement shall be recorded in measurement book with their signature. Trenches for which measurements are recorded in measurement book shall be considered as approved trenches.
- c) **HDPE Pipe/PLB Blowing Type/Pre -installed ropes/RCC/GI pipes shall be laid only in approved trenches. The contractor shall exercise due care to ensure that the HDPE Pipe/PLB Blowing Type/Pre-installed rope is not subjected to any damage or strain.**
- d) The HDPE Pipe/PLB Blowing Type/Pre -installed ropes shall be laid in 150/100 mm dia RCC spun pipes, at road crossings and through G.I. Pipes on culverts and bridges and also in exceptional cases where the depth of the trench is less than 165 cms. as specified by the concerned Engineer -In-Charge.
- e) Water present in the trench at the time of laying the HDPE Pipe/PLB Blowing Type/Pre-installed ropes shall be pumped out by the contractor before lowering in the pipes to ensure that no mud or water gets into the pipes.
- f) At road crossings, two or more extra HDPE Pipe/PLB Blowing Type/Pre -installed ropes shall be laid as per direction of Site Engineer.
- g) The HDPE Pipe shall be joined by coupler/socket at both ends, Nylon or P.P. rope shall be drawn through HDPE Pipe properly at time of laying pipes.
- h) In cross country routes, where depth of trench is less than 1.20m, HDPE Pipe/PLB Blowing Type/Pre-installed ropes should be laid within GI/RCC pipes. Alternatively, HDPE Pipe/PLB Blowing Type/Pre -installed ropes may be encased in reinforced concrete casing of dimensions 275mm x 275mm. In built up areas, where the depth of trench is not less than 165 cms HDPE Pipe/PLB Blowing

Type/Pre -installed ropes should be laid within GI/RCC pipes. In case of trench depth being less than 165 cms, the HDPE Pipe/PLB Blowing Type/Pre-installed ropes may be encased in reinforced concrete casing of dimensions 275 mm x 275 mm with the permission of the concerned Dy. General Manager (Rural)/AM (Rural).

- i) In case of nullahs, which are dry for nine months in a year, the HDPE Pipe/PLB Blowing Type/Pre-installed ropes shall be laid within the RCC pipe laid at a minimum depth of 165 cms. The RCC pipes shall be extended 2 mtrs. beyond the bed of nullah on either side.
- j) Notwithstanding anything contained in clauses k(i) to (v) and 10(a), the site Engineer may admit in any specific case that the HDPE Pipe/PLB Blowing Type/Pre -installed ropes may be encased in reinforced concrete casing only.
- k) The following construction practices are applicable in general:
 - i) Wherever GI pipes are used, rubber bushes shall be used at the two ends of the GI pipes to protect the damages of HDPE Pipe/PLB Blowing Type/Pre - installed ropes.
 - ii) Wherever RCC pipes are used, two ends must be properly sealed to bar entry of rodents.
 - iii) On road crossings, the HDPE Pipe/P LB Blowing Type/Pre-installed ropes shall be laid a depth 165 cms. encased with RCC pipe. The RCC pipes shall be extended 3 meters on either side of the road.
 - iv) On Rail bridges and crossings, the HDPE Pipe/PLB Blowing Type/Pre - installed ropes shall be encased in suitable cast iron/RC pipes as prescribed by the Railway Authorities.
 - v) Unloading of PLB HDPE Coil from truck should be done with help of Wooden / Metallic planks and coil can also be dropped from floor of truck on sand or soft soil bed.
- vl) For PLB Pipes blowing practice to lay the pipe, place jack stand along the side of trench and mount the coil with the help of strong iron shaft passing through the collapsible reel. Drive the reel slowly to avoid over spinning of reel while pulling, unrolled pipe can be laid to the trench by placing worker after every 15 -20 meter. The arrangement for horizontal Jack and associated other accessories should be arranged by contractor at his cost.

10. BACK FILLING AND DRESSING THE TRENCH:

- a) Provided that the HDPE Pipe/PLB Blowing Type/Pre -installed ropes have been properly laid in the trench at the specified depth, the back filling operation shall follow as closely as practicable. The back filling operation shall be performed in such a manner as to provide firm support under & above the pipes and avoid bend or deformation of the HDPE Pipe/PLB Blowing Type/Pre -installed ropes when the HDPE Pipe/PLB Blowing Type/Pre-installed ropes get loaded with the back filled earth. In locations where the back filling is not done properly by the contractor or done unevenly it shall be redressed and back filled properly by the BSNL at Contractor's expense. No debris shall be allowed in the back fill at any time.

- b) At locations where the back filled material contains hard clods, rock fragments and other materials which may cause injury to HDPE Pipe/PLB Blowing Type/Pre - installed rope & where excavated or rock fragments are intended to refill the trench in whole or in part, the trench should be initially filled, with a layer of ordinary soil or de-rocked loose earth of not less than 10 cms above pipes, without any extra cost.
- c) Back filling on public, private roads, railway crossings, and foot paths in city areas shall be performed immediately after laying the HDPE Pipe/PLB Blowing Type/Preinstalled ropes. Back filling at such locations shall be thoroughly rammed, so as to ensure original condition & made safe to traffic. All excess soil/ material left out on road/footpath/railway crossing shall be removed without any extra cost. However, along the high ways and cross country, the dug up material left out should be kept as heap above the trench while refilling.
- d) In city limits, no part of the trench should be kept open for more than 50 meters length at any time and in all places where excavation has been done, no part of the trench should be kept open over-night to prevent any mishap or accident in darkness.
- e) **SPECIFICATION FOR CONSTRUCTION OF RETAINING WALL:**
"Random rubble masonry with hard stone in foundation and plinth including leveling up with cement concrete 1:6:12 (1 cement, 6 Coarse Sand, 12 Graded stone aggregate 20 mm nominal size) at plinth level with cement mortar 1:6 (1 cement, 6 coarse sand)."

11. STORES:

- (a) HDPE/GI/RCC pipes and other materials shall be collected by the Contractor from the store dumps of the BSNL conveniently located over the route. The Contractors expected to make his own arrangements for transporting the materials from the supply point/ store, without any additional payment. The basic rate quoted for the purpose of Bid should, therefore, take care of all expenses incidental to loading, transportation, unloading and distribution at site, of all materials.
- (b) After completing trenching, HDPE/PLB/GI/ RCC Pipe laying and refilling of section.
 - i) For HDPE Pipe in 200 meters section rope is to be replaced by new one.
 - ii) For pre-installed rope type :-The rope is to be replaced in coil length
 - iii) PLB Pipe (blowing type) entire length of section allotted to the contractor should be checked by passing the mandrel of suitable size from one end of section to other end by blowing the air with the help of compressor of suitable capacity. It is the responsibility of the contractor to arrange the compressor and other necessary accessories at his cost.

12. LAYING PROTECTION PIPES ON BRIDGES AND CULVERTS:

- a) The work involves laying of HDPE pipes /PLB Blowing Type/Pre -installed ropes through GI Pipes of not more than 4" dia or GI Troughs of size 4" x 4" laid on the Bridges/Culverts.

- b) In bridges/Culverts, where pro per ducts are already provided, the HDPE Pipe/PLB Blowing Type/Pre-installed ropes will be laid through the ducts.
- c) Normally in the Bridges/Culverts, where there are no ducts and where the cushion on the top of the Arch is 0.5m or more thick the G.I. Pipe/ G.I. Trough carrying HDPE Pipe/PLB Blowing Type/Pre-installed rope & Cable may be burred on the top of the Arch adjourning the parapet wall, by digging close to the wheel guards.
- d) Where the thickness of the Arch is less than 0.5m, the pipes must be buried under the wheel guard masonry and the wheel guard rebuilt.
- e) If any of the above methods is not possible, the G.I. Pipe/G.I. Troughs must be clamped outside the parapet wall with the clamps supplied by the BSNL. If necessary, the pipes may be taken through the parapet wall at the ends where the wall diverges away from the road.
- f) In cases where the methods explained in clause c & d above are not possible, the G.I. Pipes/G.I. Troughs can be fixed on the top of the road kerb close to the inside face of the parapet wall by means of clamps, supplied, using rawal plugs & wood screws or small diameter bolts, without damaging concrete & limiting external diameter of the bolts to 7.5 mm. The permission for carrying out this work will be obtained from the Road Authorities.
- g) Methods cited in clauses above should be carried out under close supervision of the Road authorities and restoration of any damages to the structures in any of the methods adopted should be done to the entire satisfaction of the road authorities.
- h) When HDPE Pipe/PLB Blowing Type/Pre -installed ropes are laid on bridges/culverts as per clause c to f above, except when pipes are clamped outside of the bridge, cement concreting shall be provided over the protection pipes/troughs.

12.1. SPECIFICATIONS FOR RCC MATERIAL SPECIFICATION & DRAWINGS

The pipes shall be with reinforcement and shall be of specified class (conforming to IS 458). All pipes shall be true to shape, straight perfectly sound and free from cracks and flaws. The external and internal surface of the pipes shall be smooth and hard. The pipes shall be free from defects resulting from imperfect grading of the aggregate mixing or molding.

Concrete used for the manufacture of reinforced concrete pipes and collars shall not be lesser than 1:2:4 (1 Cement: 2 Course sand : 4 Grade stone aggregate). The maximum size of aggregate should not exceed 1/3 of the thickness of the pipe or 20mm whichever is smaller. The reinforcement in the RCC pipes shall extend throughout the length of the pipe. The circumferential and longitudinal reinforcements shall be adequate to withstand the specified hydrostatic pressure and further bonding stresses due to the weight of the water running full across a span equal to the length of pipe + 3 times of its weight.

- 12.2 All RCC items supplied by the bidder should sample checked from Circle AT officer to the tune of 1 in 1000 or at least one Item should be got checked for quantity less than 1000. (if applicable)

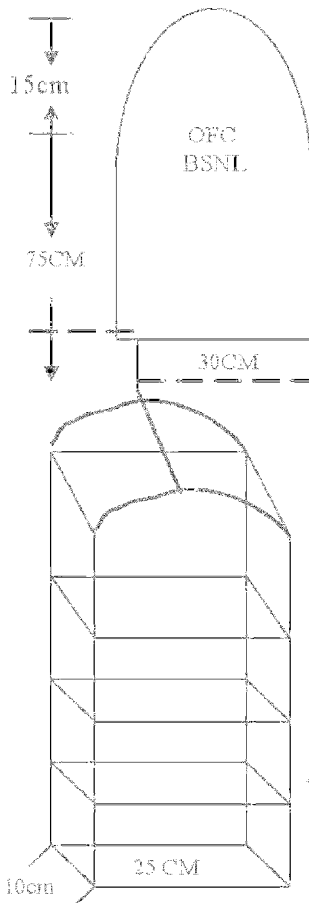
CONCRETE PIPES:

Class	Description	Test Pressure (Hydrostatic)	Conditions where normally used.
NP2	Reinforced concrete light irrigation Duty, non pressure pipes. light traffic.	0.7 Kg / cm ² (7 Meter head)	for drainage and use, for culverts carrying

--- Dimensional requirements of concrete pipes (closure 21.2, 3.2 Class NP2 – reinforced generation light duty, non pressure

-PIPES

Internal dia of Pipes nominal in mm.	Wall thickness in mm	Collar Dimensions.	
		Min. Thickness	Min. Length
100	25	25 mm	150 mm



RCC ROUTE INDICATORS

SPECIFICATIONS

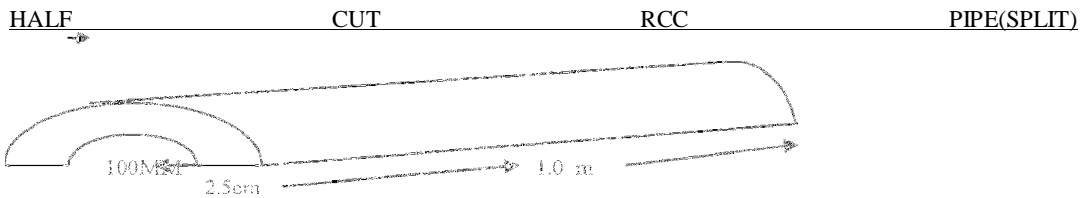
1. Reinforcement should be of 6mm Ms rod
2. 1:2:4 Cement Concrete
3. Ballast used should be of 6mm size
4. Dimensions should conform to enclosed drawings
5. Plastering to be done to give a neat look
6. Surface should be suitable for painting
7. Strength should conform to the civil engineering spec
8. 1 Cm depth for engraving of words OFC BSNL to be neatly done.
9. RCC Indicators should not break even dropped from 3 Ft. height on test

RCC PIPE
(FULL ROUND) CLASS NP2

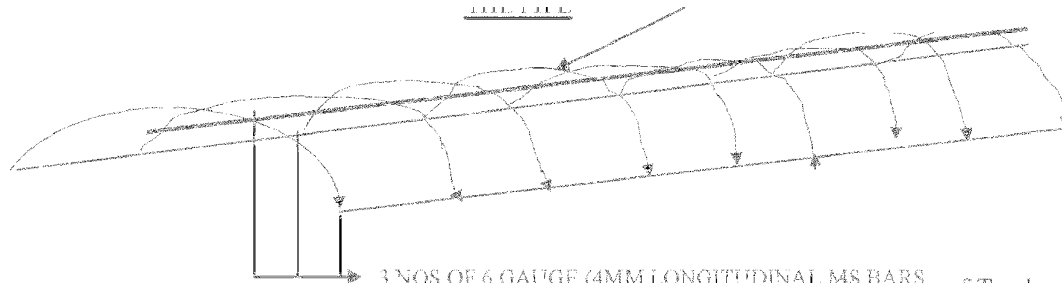
PIPES

Internal dia of Pipes nominal in mm.	Wall thickness in mm	Collar Dimensions.	
		Min. Thickness	Min. Length
100	25mm	25 mm	150 mm

Spiral reinforcement throughout the length of the pipe by using 18 segment 4MM hard drawn steel wire



18 NOS OF SEMICIRCULAR REINFORCEMENT BY USING
12 GAUGE (2.4MM HARD DRAWN STEEL WIRE PLACED
EQUIDISTANTELY THROUGHOUT THE LENGTH OF
THE PIPE



3 NOS OF 6 GAUGE (4MM LONGITUDINAL BARS MUTUALLY SEPARATED BY 90
degree

13. SPECIFICATIONS FOR CONCRETING:

- a) The nominal dimension of concreting is of 275 mm x 275 mm. section. However depending on the actual situation, this cross section may be varied to ensure uniformity with any existing structure / base, on which the GI pipes/ GI troughs are placed, as demanded by the road authorities. The work should be carried out at the rates applicable for nominal cross section.
- b) The concreting surface should be thoroughly cleaned and leveled before concreting. Necessary wire mesh of adequate size shall be provided as reinforcement for the concrete.
- c) At both the ends of the Bridges/Culverts, where the GI Pipes/Troughs slope down and get buried, the concreting should be carried out to ensure that no portion of the GI Pipe/Trough is exposed and further down as required by the site in charge to protect the Pipe/Trough from any possible damage externally caused.
- d) Any damages caused to the existing structure such as Foot -Path or base of the Parapet or Kerb wall on which GI Pipes/Troughs are placed should be repaired and original condition restored to the satisfaction of Road Authorities.
- e) Where white wash/ colour wash exists on the Bridges/Culverts, the same should also be carried out on the concreted portion to ensure uniformity.
- f) Cement Concrete Mixture used should be of 1:2:4 Composition i.e. 1 Cement: 2 Coarse Sand, 4 graded Coarse Stone aggregate of 20 mm. nominal size.

- g) Smooth finishing of exposed surface should be done with a mixture of 1:3: i.e. 1 Cement: 3 Fine Sand.
 - h) Portions where cement concreting have been done shall be cured with sufficient amount of water for reasonable time to harden the surface.
14. JOINT CHAMBER The joint chamber is provided at every joint normally at a distance of 2 Kms to keep the O.F.C. joint well protected and also to keep extra length of cable which may be required in the event of faults at a later date. The joint chambers are made at site using bricks and mortar or are of pre -cast RCC type.

14.1 Construction of brick chamber at site:

For constructing brick chamber, first a pit of size 2m x 2m x 1.8m depth is required to be dug. Then, base of the chamber is made using concrete mix of 1:5:10 (1: cement, 5: coarse sand, 10: graded stone aggregate 40mm nominal size) of size of 1.7 m x 1.7 m x 0.15 m (thickness). Walls of brick chamber having internal dimensions of 1.2 m x 1.2 m x 1 m (H) should be constructed on this base having wall thickness of 9” using cement mortar mix of 1:5 (1: cement, 5: fine sand). The bricks to be used for this purpose should be of size 9”x4.5”x3”, best quality available and should have smooth rectangular shape with sharp corners and shall be uniform in colour and emit clear ringing should when struck.

The joint chamber should be so constructed that HDPE pipe/PLB Blowing Type/Pre-installed ropes ends remain protruding minimum 5 cms inside the chamber on completion of plastering. The HDPE pipes should be embedded in wall in such a way so that, the bottom brick should support the pipe and upper brick should be provided in a manner that HDPE pipe remains free from the weight of the construction. The joint chamber should be plastered on all internal surfaces and top edges with cement mortar of 1:3 (1: cement, 3: coarse sand), 12mm thick finished with a floating coat of complete cement as per standard. Pre -cast RCC slab with two handles to facilitate easy lifting, of size 0.7 m x 1.4 m and of thickness of 5 cm having one handle for each half in center and word ‘OFC’ engraved on it are to be used to cover the joint chamber.

Two numbers of such slabs are required for one joint chamber. This pre-cast slab should be made of cement concrete mix of 1:2:4 (1: cement, 2: coarse sand, 4: stone aggregate 6mm nominal size) reinforced with steel wire fabric 75 x 25 mm mesh of weight not less than 7.75 Kg per sq. meter. The joint chamber is filled with clean sand before closing. Lastly, back filling of joint chamber pit with excavated soil is carried out.

14.2 Pre cast RCC chamber

For fixing pre cast RCC chamber, first a pit of size 2 m x 2 m x 1.8 m depth is required to be dug. Pre cast RCC chamber consists of three parts (i) round base plate in two half of 140 cm dia and 5 cm thickness (ii) full round RCC joint chamber with dia of 120 cm and height of 100 cm and thickness of 5 cm (iii) round top cover will be in two halves with dia of 140 cm and thickness of 5 cm having one handle for each half in centre and word ‘BSNL OFC’ engraved on it.. After, fixing the pre cast RCC joint chamber, the joint chamber is filled with clean sand before closing. Lastly, back filling of joint chamber pit with excavated soil is carried out.

15. **ROUTE/JOINT INDICATOR**

The route/ joint indicators are co-located with each manhole/joint chamber. In addition route indicators are also to be placed where route changes direction like road crossings etc. The route indicators are painted yellow and the same are placed at 2 ft. away from the center of the trench towards jungle side. The joint indicators are placed at OFC joints and placed 1 ft. away from wall of the joint chamber facing jungle side and are painted red. The engraved word 'BSNL OFC' should be painted in white, on route as well as joint indicators. Numbering of route indicators/joint indicators should also be done in white paint. The numbering scheme for route indicators will be joint No./Route Indicator No. for that joint. For example, 2/6 marking on a route indicator means 6th route indicator after 2nd joint. Additional joints on account of faults at a later date should be given

number of preceding joint with suffix A, B, C, D. For example sign writing 2A on a joint indicator means, additional joint between joint No.2 and 3. The numbering of existing route/joint indicator should not be disturbed on account of additional joints. Enamel paints of reputed brands should be used for painting and sign writing of route as well joint indicators.

16. WETTING:

Wherever the soil is hard due to dry weather conditions, if watering is to be done for wetting the soil to make it loose, the same shall be done by the contractor. No extra payment shall be admissible for this.

17. BLASTING:

For excavation in hard rock, where blasting operations are considered necessary, the contractor shall obtain approval of the Engineer -In-Charge in writing for resorting to blasting operation.

The contractor shall obtain license from the competent authority for undertaking blasting work as well as for obtaining and storing the explosive as per the Explosive Act, 1884 as amended up to date and the explosive Rules, 1983. The contractor shall purchase the explosives fuses, detonators, etc. only from a licensed dealer. Transportation and storage of explosive at site shall conform to the aforesaid Explosive Act and Explosive Rules. The contractor shall be responsible for the safe custody and proper accounting of the explosive materials. Fuses and detonators shall be stored separately and away from the explosives. The Engineer -in-Charge or his authorized representative shall have the right to check the contractor's store and account of explosives. The contractor shall provide necessary facilities for this.

The contractor shall be responsible for any damage arising out of accident to workmen, public or property due to storage, transportation and use of explosive during blasting operation. Blasting operations shall be carried out under the supervision of a responsible authorised agent of the contractor (referred subsequently as agent only), during specified hours as approved in writing by the Engineer-in-Charge. The agent shall be conversant with the rules of blasting.

All procedures and safety precautions for the use of explosives drilling and loading of explosives before and after shot firing and disposal of explosives shall be taken by the contractor as detailed in IS: 4081 safety code for blasting and related drilling operation.

18. CABLE PULLING AND JOINTING/SPLICING:

18.1 CABLE PULLING:

Manholes marked during HDPE pipe/PLB Blowing Type/Pre -installed ropes laying of approx. size of 3m length x 1.0m width x 1.65m depth shall be excavated for pulling the cables. There may be situations where additional manholes are required to be excavated for some reasons, to facilitate smooth pulling of cable. Excavation of additional manholes will be carried out, without any extra cost. De-watering of the manholes, if required, will be carried out without any extra cost. De watering/De-gasification of the ducts, if required, will be carried out without any extra cost. The existing 6mm PP rope shall be replaced by with PP rope of 8mm dia between the two consecutive manholes. This is to ensure that the HDPE pipes/PLB Blowing Type/Pre

-installed ropes are cleaned for pulling the cable without exerting undue tension on the OF cable. While cleaning, excessive pressure should not be put which may result in breaking of P.P. rope and thus required opening of additional manholes. However, in case the cleaning rope gets stuck up during pulling, the location of clogging of HDPE Pipe/PLB Blowing Type/Pre -installed ropes should be measured and located accurately.

The trench at that location should be opened and the HDPE Pipe /PLB Blowing Type/Pre-installed ropes should be cleaned properly or if not possible it should be changed by a clean new HDPE Pipe /PLB Blowing Type/ Pre-installed ropes to facilitate easy cable pulling at a later stage without any breakage. If clogging of HDPE Pipe/PLB Blowing Type/Pre installed ropes is in the location where the pipes are protected either by RCC Pipe /PLB Blowing Type/Pre-installed ropes or by concreting and the protection is broken for cleaning/changing the HDPE Pipe, the protection thus removed should be brought back to normal by the contractor without any extra cost. However, HDPE Pipes/PLB Blowing Type/Pre -installed ropes, RCC Pipes required for this purpose will be supplied by the BSNL.

18.2 JOINTING/SPLICING:

The OFC cable drums are usually of 2 Kms in length hence optical fiber joints will be approx. at every 2 Kms. The 6/12/24 fibers are to be spliced at every 2 Kms. and at both ends (Terminations) in the equipment room as directed by the Engineer -in-charge. The Infrastructure required for cable splicing i.e.

- * Splicing machine
- * Air Conditioned Van
- * OTDR
- * Optical talk set
- * Tool kit etc.

will be arranged by the bidder at his own cost and also any additional accessories e.g. engine etc.

required at site for splicing will also be arranged by the bidder at his own cost.

The optical fiber cable thus jointed end -to-end will be tested by an officer of A/T unit for splice losses and transmission parameters as specified by TCHQ and prevalent at that time. The OF cable should meet all the parameters, specified and no relaxation will be granted. It should also be ensured that during jointing no fibers are interchanged or broken. The number of joints should not be more than 10% of the theoretical value calculated by the department.

Note: The OTDR printout of each fiber indicating trace and losses and RID in four copies should be attached along with the bill claimed.

- 19 Construction of Jointing Chamber: The joint chambers are provided at every joint to keep the O.F.C. joint well protected and also to keep extra length of cable, which may be required to attend the faults at a later date. Jointing chambers are to be prepared normally at a distance of every 2 Kms. Actual location of jointing chamber depends on length of cable drum and appropriateness of location for carrying out jointing work. The location is finalized by Engineer-in-charge. The jointing chambers are constructed either of brick masonry work at site & pre cast RCC slabs for covers or by way of fixing pre-cast RCC chambers and covers as per the instructions from engineer-in-charge.

20. Documentation: The documentation, consisting of the following shall be prepared exchange to exchange for intra SSA OFC links and for each section in case of inter SSA/National long distance routes.

i) Route Index Diagrams – General: This diagram shall consist of Cable Route Details on Geographical Map drawn to scale the prominent land marks and alignment of cable with reference to road. This shall be prepared on A -3 sheets of 80 GSM.

ii) Route Index Diagrams – Profile: These diagrams will contain:

- * Make and size of the cable.
- * Offset of cable from center of the road at every 10 meters
- * Depth profile of Cable at every 10 meters
- * Details of protection with type of protection depicted on it
- * Location of culvert and bridges with their lengths and scheme of laying of HDPE pipe/PLB Blowing Type/Pre-installed ropes thereon.
- * Important landmarks to facilitated locating the cable in future
- * Location of joints and pulling manholes. These diagrams shall be prepared on A-4 sheets of 80 GMS. On one sheet profile of maximum 400 meters shall be given to ensure clarity.

iii) Joint location Diagram: This diagram will show:

- * Geographical location of all the joints.
- * Depth of Joint Chamber covers from ground level
- * Type of chamber (Brick/Pre-cast)
- * Length of O.F. Cable kept inside the joint chamber from either direction.

This shall be prepared on A-4 sheets of 80 GSM.

All the diagrams (i), (ii) & (iii) shall bear the signatures of the contractor, the Engineer-in-charge as a proof of accuracy of the details. The diagrams shall be bound in A -4 size book with cover. The cover sheets shall be of 110 GSM and laminated. The front cover shall have the following details.

- 1 Name of the SSA/Project Organization.
- 2 Name of the OFC Link
- 3 Name of the Contractor
- 4 Date of commencement of work
- 5 Date of completion of work

For each route/section 6 sets of above-mentioned document shall be submitted.

21. SAFETY PRECAUTIONS:

21.1 Safety Precautions when excavating or working in excavations close to electric cables
The Engineer-in-Charge of the work should get full information from Electricity undertaking regarding any electric cables, which are known or suspected to exist near the proposed excavation and unless this is done, excavation should not be carried out in the section concerned. The electricity undertaking should be asked to send a representative and work should be proceeded with close consultation with them.

Only wooden handled hand tools should be used until the electric cables have been completely exposed. Power Cables, not laid in conduits, are usually protected from above by a cover slab of concrete, brick or stone. They may or may not be protected on the sides. It is safer, therefore, always to drive the point of the pickaxe downwards then uncovering

a cable, so that there is less chance of missing such warning slabs. No workman should be permitted to work alone where there are electric cables involved. At least one more man should be working nearby so that help can be given quickly in case of an accident. If disconnection of power could be arranged in that section it will be better. No electric cables shall be moved or altered without the consent of the Electric Authority and they should be contacted to do the needful. If an electric cable is damaged even slightly, it should be reported to the Electric Authority and any warning bricks disturbed during excavation should be replaced while back filling the trench. Before driving a spike into the ground, the presence of other underground properties should be checked. Information on plans regarding the location of power cables needs not to be assumed as wholly accurate. Full precautions should be taken in the vicinity until the power cable is uncovered. All electric cables should be regarded as being live and consequently dangerous. Any power is generally dangerous, even low voltage proving fatal in several cases.

21.1.1 Electric shock-Action and treatment: Free the victim from the contact as quickly as possible. He should be jerked away from the live conductors by dry timber, dry rope or dry clothing. Care should be taken not to touch with bare hands as his body may be energized while in contact. Artificial respiration should begin immediately to restore breathing even if life appears to be extinct. Every moment of delay is serious, so, in the meanwhile, a doctor should be called for.

21.2 Safety precautions while working in Public Street and along railway lines where a road or footpath is to be opened up in the course of work, special care should be taken to see that proper protection is provided to prevent any accidents from occurring. Excavation work should be done in such a manner that it will not unduly cause inconvenience to pedestrians or occupants of buildings or obstruct road traffic. Suitable bridges over open trenches should be so planned that these are required for the minimum possible time. Where bridges are constructed to accommodate vehicular traffic and is done near or on railway property, it should be with the full consent and knowledge of the competent railway authorities.

21.2.1 Danger from falling material: Care should be taken to see that apparatus, tools or other excavating implements or excavated materials are not left in a dangerous or insecure position so as to fall or be knocked into the trench thereby injuring any workman who may be working inside the trench.

22. Care when working in Excavations: Jumping into a trench is dangerous. If it is deep, workmen should be encouraged to lower themselves. Workers should work at safe distance so as to avoid striking each other accidentally with tools. If the walls of the trench contain glass bits, corroded wire or sharp objects they should be removed carefully. If an obstruction is encountered, it should be carefully uncovered and protected if necessary. Care must be taken to see that excavated material is not left in such a position that it is likely to cause any accident or obstruction to a roadway or waterway. If possible the excavated material should be put between the workmen and the traffic without encroaching too much on the road.

22.1.1 Danger of cave in: When working in deep trenches in loose soil, timbering up/shoring the sides will prevent soil subsidence. The excavated material should be kept at sufficient distance from the edge of the trench or pit. Vehicles or heavy equipment must not be permitted to approach too close to the excavation. When making tunneled opening, it would be ensured that the soil is compact enough to prevent cave in even under adverse conditions of traffic. Extra care should be taken while excavating near the foundations of buildings or retaining walls. In such cases, excavation should be done gradually and as far as possible in the presence of the owners of the property.

- 22.2 Protection of Excavations: Excavations in populated areas, which are not likely to be filled up on the same day should be protected by barriers or other effective means of preventing accidents and the location of all such openings must in any event be indicated by red flags or other suitable warning signs. During the hours from dusk to dawn, adequate number of red warning lamps should be displayed. Supervisory officers should ensure that all excavations are adequately protected in this manner as serious risk and responsibility is involved. Notwithstanding adoption of the above-mentioned precautions, works involving excavations should be so arranged as to keep the extent of opened ground and the time to open it to a minimum.
- 22.3 Precautions while working on roads: The period between half an hour after sunset and half an hour before sunrise, and any period of fog or abnormal darkness may also be considered as night for the purpose of these instructions, for the purpose of providing the warning signs. Excavation liable to cause danger to vehicles or the public must at all times be protected with fencing of rope tied to strong uprights or bamboo poles at a suitable height or by some other effective means. Any such temporary erection which is likely to cause obstructions and which is not readily visible should be marked by posts carrying red flags or boards with a red background by day and by continuously lighted lamps at night.

The flags and the lamps should be placed in conspicuous positions so as to indicate the pedestrians and drivers of vehicles the full expanse i.e. both width and length of the obstruction. The distance between lamps or between floors should not generally exceed 1.25m along the width and 6m along length of the obstruction in non-congested areas, but 4 meters along the length in congested areas. If the excavation is extensive, sufficient notice to give adequate warning of the danger should be displayed conspicuously not less than 1.25m above the ground and close to the excavation. Where any excavation is not clearly visible for a distance of 25m to traffic approaching from any direction or any part of the carriage way of the road in which the excavation exists, a warning notice should be placed on the kerb or edge of all such roads from which the excavation or as near the distance as is practicable but not less than 10m from the junction of an entering or intersecting road in which the excavation exists. All warnings, in these should have a red background and should be clearly visible and legible. All warning lamps should exhibit a red light, but white lights may be used in addition to facilitate working at night. Wherever required a passage for pedestrians with footbridge should be provided. At excavations, cable drums, tools and all materials likely to offer obstructions should be properly folded round and protected. This applies to jointer's tents as well. Leads, hoses etc. stretched and across the carriageway should be guarded adequately for their own protection and also that of the public.

23. Traffic Control: The police authorities are normally responsible for the control of traffic and may require the setting up of traffic controls to reduce the inconvenience occasioned by establishment of a single line of traffic due to restriction in road width or any other form of obstruction caused by the work. As far as possible, such arrangements should be settled in advance. If there are any specific regulations imposed by the local authorities, these should be followed.
24. Work along Railway Lines: Normally all works at Railway crossing is to be done under supervision of the railway authorities concerned, but it is to be borne in mind that use of white, red or green flags by the BSNL staff is positively forbidden to be used when working along a railway line as this practice may cause an accident through drivers mistaking them for railway signals. When working along a double line of railway, the men should be warned

to keep a sharp look on both the “UP” and “DOWN” lines to avoid the possibility of any accident when trains pass or happen to cross one another near the work spot.

25. Procedure and Safety precautions for use of explosives during blasting for trenching: In areas where the cable trench cannot be done manually on account of boulders and rocks, it is necessary to blast the rocks by using suitable explosives. The quality of explosive to be used depends on the nature of the rocks and the kind of boulders. A few types of explosive fuses and detonators normally used for making trenches for cable works are detailed below:

- i) Gun power
- ii) Nitrate Mixture
- iii) Gelatin
- iv) Safety fuse
- v) Electric Detonator
- vi) Ordinary Detonator

25.1 Procedure:

A detailed survey of the route is to be done to assess the length of the section where trenching is to be done with the help of blasting. A route diagram of the rocky section may be prepared indicating the length of the route where the explosives are to be used. For the purpose of obtaining license, a longer length of route should be given in the application as in many cases, after digging, rocks appear where blasting was not initially anticipated.

Next a license will have to be obtained for use and storing of explosive in that section. If the area falls under a police commissioner, the authority for granting such license is the police commissioner of the concerned area. When the route does not fall in the jurisdiction of a police commissioner, the authority for issuing license is the District Magistrate.

The concerned authority should be applied in prescribed form with a route map. The concerned authority will make an enquiry and issue a license for using / storing explosives for cables trenching work. Such license will be valid for 15 days only. The license should be got renewed if the blasting operation needs to be extended. Once the license is granted, it is the responsibility of the holders of the license for the proper use of explosives, its transportation and storing

25.2 Method of using:

The safest explosive is the gelatin and electric detonator. Gelatin is in the form of a stick. Electric detonator is a type of fuse used for firing the explosive electrically. Holes are made at suitable intervals on rocky terrain or boulders either by air compressor or by manual chipping. The depth of the holes should be 2 to 3 ft. Fill up the holes with small quantity of sand for about 6”. First the electric detonator is to be inserted into the gelatin and the gelatin is to be inserted into the holders keeping the + ve and – ve wirings of electric detonators outside the holes. Again refill the holes with sand. These + ve and –ve insulated wires or detonator are then extended and finally connected to an EXPLODER kept at a distance of not less than 100m.

Now the explosive is ready for blasting. But, before connecting wires to exploder for blasting, all necessary precautions for stopping the traffic use of red flags, exchange of caution signals, etc. should be completed and only then Exploder should be connected and operated.

- 25.3 Operation of exploder (IDL shuffler type 350 type exploder): The type 350 blasting machine consists of a bearing block with blasting machine system and the explosion proof light – alloy injection moulded housing. The exploder is held with the left hand. The twist handle is applied to the drive pin, clapped with the right hand turned in the clockwise direction in continuous measurements at the highest speed from the initial position until it reached to a stop. At this stage an indication lamp will glow. When the indication lamp glows, “press button switch” should be pressed. This will extend the electric current to detonator and gelatin will be detonated. The rock will be blasted out of the trench. Number of holes can be blasted in a single stroke by connecting all such detonators in series connection and finally to the exploder. After blasting, again mazdoors are engaged on the work of clear the debris. If th e result of the first blasting is not satisfactory, it should be repeated again on the same place.
- 25.4. Warning: There may be two reasons for unsatisfactory results of the blasting: a) Misfire of gelatin due to leakage of current from detonator. b) Over loading because of overburdens.

Never pull the broken wire pieces from the holes in such cases. Attempt should not be made to re -blast the misfired gelatin. The safest way is to make a fresh hole by its side and put fresh gelatin in that hole and blast it.

- 25.5. Precautions:

The abstract of Explosives Rules 1983 which are relevant to our work is given below:

Restriction of delivery and dispatch of explosives:

No person shall deliver or dispatch any explosives to anyone other than a person who.

- a) is the holder of a license to possess the explosives or against of a holder of which a license duly authorised by him in writing on his behalf.

OR

- b) is entitled under these rules to possess the explosives without a license.

The explosives so delivered or dispatched shall in no case exceed the quantity, which the person to whom they are delivered or dispatched is authorised to possess with or without a license under these rules.

No person shall receive explosives from any person other than the holder of a license granted under these rules. No person shall receive from or transfer explosives to any person for a temporary storage or safe custody in a licensed premise unless prior approval is obtained from the Chief Controller.

A person holding license for possession of explosives granted under these rules shall store the explosives only in premises specified in the license.

Protection from Lightning During Storing: Every magazine shall have attached there to one or more efficient lightening conductors designed and erected in accordance with the specifications laid down in Indian Standard Specifications No.2309 as amended from time to time. The connections to various parts of earth resistance of the lightening conductor terminal on the building to the earth shall be tested at least once in every year by a qualified electrical engineer or any other competent person holding a certificate of competency in this behalf from the State Electricity Department. A certificate showing the results of such tests and the date of the last test shall be hung up in conspicuous place in the building.

Precautions during thunder-storm: When a thunder – storm appears to be imminent in the vicinity of a magazine or store house every person engaged in or around such magazine and stores house shall be withdrawn to a safe distance from such magazine or store house and the magazine and store house shall be kept closed and locked until the thunder storm has ceased or the threat of it has passed.

Maintenance of records: Every person holding a license granted under these rules for possession, sale or use of explosives shall maintain records in the prescribed forms and shall produce such record on demand to an Inspection Officer.

Explosives not to be kept in damaged boxes: The licensee of every magazine or storehouse shall ensure that, the explosives are always kept in their original outer package. In case, the outer package gets damaged so that the explosive contained therein cannot be stored or transported, such explosives shall be repacked only after the same are examined by controller of explosives.

Storage of explosives in excess of the licensed quantity: The quantity of any kind of explosives kept in any licensed magazine or storehouse shall not exceed the quantity entered in the license against such kind of explosives. No explosives in excess of the licensed quantity shall be stored in the magazine or storehouse unless a permit in this behalf is obtained from the licensing authority by a letter or telegram.

26 Precautions to be observed at Site: The electric power at the blasting site shall be discontinued as far as practicable before charging the explosives. No work other than that associated with the charging operations shall be carried out within 10 meters of the holes unless otherwise specified to the contrary by the licensing authority.

When charging is completed, the surplus explosive detonators and fuses shall be removed from the vicinity of the hole and stored at a distance which should prevent accidental detonation in the event of a charge detonating prematurely in any hole. The holes, which have been charged with explosives, shall not be left unattended till the blasting is completed. Care shall be taken to ensure that fuse or wires connections to the detonation are not damaged during the placing of stemming material and tamping.

Suitable warning procedure to be maintained:

The licensee or a person appointed by the licensee to be in charge of the use of explosives at the site shall lay down a clear warning procedure consisting of warning signs and suitable signals and all persons employed in the area shall be made fully conversant with such signs and signals.

Precautions to be observed while firing:

The end of the safety fuse (if used in place of a detonator should be freshly cut before being lighted. The exploders shall be regularly tested and maintained in a fit condition for use in firing. An exploder shall not be used for firing a circuit above its rated capacity. The electric circuits shall be tested for continuity before firing. All persons other than the shot-firer and his assistant, if any, shall be withdrawn from the site before testing the continuity.

For the purpose of jointing, the ends of all wires and cables should have the insulation removed for a maximum length of 5 cms and should, then be made clear and bright for a minimum length of 2.5 cms and the ends to be joined should be twisted together so as to have a positive metal contact. Then these should be taped with insulation to avoid leakage when in contact with earth.

In case of blasting with dynamite or any other high explosive, the position of all the boreholes to be drilled shall be marked in circles with white paint. These shall be inspected by the Contractor's agent. Bore holes shall be of a size that the cartridge can easily pass down. After the drilling operation, the agent shall inspect the holes to ensure that drilling has been done only at the marked locations and no extra hole has been drilled. The agent shall then prepare the necessary charge separately for each borehole. The boreholes shall be thoroughly cleaned before a cartridge is inserted. Only cylindrical wooden tamping rods shall be used for tamping. Metal rods or rods having pointed ends shall never be used for tamping. One cartridge shall be placed in the borehole and gently pressed but not rammed down. Other cartridges shall then be added as may be required to make up the necessary charge for the borehole. The top most cartridge shall be connected to the detonator that shall in turn be connected to the safety fuses of required length. All fuses shall be cut to the length required before being inserted into the holes. Joints in fuses shall be avoided. Where joints are unavoidable, a semi -circular niche shall be cut in one piece inserted into the niche. The two pieces shall then be wrapped together with string. All joints exposed to dampness shall be wrapped with rubber tape.

The maximum of eight boreholes shall be loaded and fired at once occasion. The charges shall be fired successively and not simultaneously. Immediately before firing, warning shall be given and the agent shall see that all persons have retired to a place of safety. The safety fuses of the charged holes shall be ignited in the presence of the agent, who shall see that all the fuses are properly ignited.

Careful count shall be kept by the agent and others of each blast as it explodes. In case all the charged bore holes have exploded, the agent shall inspect the site soon after the blast but in case of misfire the agent shall inspect the site after half an hour and mark red crosses (X) over the holes which have not exploded. During his interval of half an hour, nobody shall approach the misfired holes. No driller shall work near such bore until either of the following operations has been done by the agent for the misfired boreholes.

- a) The contractor's agent shall very carefully (when the tamping is damp clay) extract the tamping with a wooden scrapper and withdraw the primer and detonator.
- b) The holes shall be cleaned for 30 cm of tamping and its direction ascertained by placing a stick in the hole. Another hole shall then be drilled 15cm away and parallel to it. This hole shall be charged and fired. The misfired holes shall also explode along with the new one.

Before leaving the site of work, the agent of one shift shall inform the another agent relieving him for the next shift, of any case of misfire and each such location shall be jointly inspected and the action to be taken in the matter shall be explained to the relieving agent.

The Engineer-in-Charge shall also be informed by the agent of all cases of misfire, their causes and steps taken in that connection.

27 General Precautions:

For the safety of persons red flags shall be prominently displayed around the area where blasting operations are to be carried out. All the workers at site, except those who actually ignite the fuse, shall withdraw to a safe distance of at least 200 meters from the blasting site. Audio warning by blowing whistle shall be given before igniting the fuse.

Blasting work shall be done under careful supervision and trained personnel shall be employed. Blasting shall not be done within 200 meters of an existing structure, unless specifically permitted by the Engineer-in-Charge in writing.

Precautions against misfire:

The safety fuse shall be cut in an oblique direction with a knife. All saw dust should be

cleared from inside of the detonator. This can be done by blowing down the detonator and tapping the open end. No tools shall be inserted into the detonator for this purpose.

If there is water present or if the borehole is damp, the junction of the fuse and detonator shall be made water tight by means of tough grease or any other suitable materials. The detonator shall be inserted into the cartridge so that about one third of the copper tube is left exposed outside the explosive. The safety fuse just above the detonator shall be securely tied in position in the cartridge. Waterproof fuse only shall be used in the damp borehole or when water is present in the borehole.

If a misfire has been found to be due to defective fuse, detonator or dynamite, the entire consignment from which the fuse, detonator or dynamite was taken shall be got inspected by the Engineer -in-Charge or his authorised representative before resuming the blasting or returning the consignment.

28. Precautions against stray currents: Where electrically operated equipments are used in locations having conductive ground or continuous metal objects, tests shall be made for stray current to ensure that electrical firing can proceed safely.

SECTION – VIII

SAFETY PRECAUTIONS

1. Safety Precautions when excavating or working in excavations close to electric cables :
The Engineer-in-charge of the work should get full information from Electricity undertaking regarding any electric cables, which are known or suspected to exist near the proposed excavation and unless this is done, excavation should not be carried out in the section concerned. The electricity undertaking should be asked to send a representative and work should be preceded with close consultation with them.
Only wooden handled hand tools should be used until the electric cables have been completely exposed. Power Cables not laid in conduits are usually protected from above by a cover slab of concrete, brick or stone. They may or may not be protected on the sides. It is safer, therefore, always to drive the point of the pickaxe downwards then uncovering a cable, so that there is less chance of missing such warning slabs. No workman should be permitted to work al one where there are electric cables involved. At least one more man should be working nearby so that help can be given quickly in case of an accident. If disconnection of power could be arranged in that section it will be better. No electric cables shall be moved or altered without the consent of the Electric Authority and they should be reported to the Electric Authority and any warning bricks disturbed during excavation should be replaced while back filling the trench. Before driving a spike into the ground, the presence of other underground properties should be checked. Information on plans regarding the location of power cables need not to be assumed as wholly accurate. Full precautions should be taken in the vicinity until the power cable is uncovered. All electric cables should be regarded as being live and consequently dangerous. Any power is generally dangerous, even low voltage proving fatal in several cases.
 - 3.1 Electric Shock-Action and treatment: Free the victim from the contract as quickly as possible. He should be jerked away from the live conductors by dry timber, dry rope or dry clothing. Care should be taken not to touch with bare hands as his body may be energized while in contact. Artificial respiration should begin immediately to restore breathing even if life appears to be extinct. Every moment of delay is serious, so, in the meanwhile, a doctor should be called for.
 - 2.2 . Safety precautions while working in Public Street and along railway lines: Where a road or footpath is to be opened up in the course of work, special care should be taken to see that proper protection is provided to prevent any accidents from occurring. Excavation work should be done in such a manner that it would not unduly cause inconvenience to pedestrians or occupants of buildings or obstruct road traffic.Suitable bridges over open trenches should be so planned that these are required for the minimum possible time. Where bridges are constructed to accommodate vehicular traffic and is done near or on railway property, it should be with the full consent and knowledge of the competent railway authorities.

Danger from falling material: Care should be taken to see that apparatus, tools or other excavating implements or excavated materials are not left in a dangerous or insecure position so as to fall or be knocked into the trench thereby injuring any workman who may be working inside the trench.

Care when working in Excavations: Jumping into a trench is dangerous. If it is deep, workmen should be encouraged to lower themselves. Workers should work at safe distance so as to avoid striking each other accidentally with tools. If the walls of the trench contain glass bits, corroded wire or sharp objects they should be removed carefully. If an obstruction is encountered, it should be carefully uncovered and protected

if necessary. Care must be taken to see that excavated material is not left in such a position that it is likely to cause any accident or obstruction to a roadway or waterway. If possible the excavated material should be put between the workmen and the traffic without encroaching too much on the road.

3. Danger of cave in: When working in deep trenches in loose soil, timbering up/shoring the sides will prevent soil subsidence, The excavated material should be kept at sufficient distance from the edge of the trench or pit. Vehicles or heavy equipment must not be permitted to approach too close to the excavation. When making tunneled opening, it should be ensured that the soil is compact enough to prevent cave in even under adverse conditions of traffic. Extra care should be taken while excavating near the foundations of buildings or retaining walls. In such cases, excavation should be done gradually and as far as possible in the presence of the owners of the property.
4. Protection of Excavations: Excavations in populated areas, which are not likely to be filled up on the same day should be protected by barriers or other effective means of preventing accidents and the location of all such openings must in any event be indicated by red flags or other suitable warning signs. During the hours from dusk to dawn, adequate number of red warning lamps should be displayed. Supervisory officers should ensure that all excavations are adequately protected in this manner as serious risk and responsibility is involved. Notwithstanding adoption of the above mentioned precautions, works involving excavations should be so arranged as to keep the extent of opened ground and the time to open it to a minimum.
5. Precautions while working on roads: The period between half an hour after sun-set and half an hour before sunrise, and any period of fog or abnormal darkness may also be considered as night for the purpose of these instructions, for the purpose of providing the warning signs. Excavation liable to cause danger to vehicles or the public must at all times be protected with fencing of rope tied to strong uprights or bamboo poles at a suitable height or by some other effective means. Any such temporary erection which is likely to cause obstructions and which is not readily visible should be marked by posts carrying red flags or boards with a red background by day and by continuously lighted lamps at night.
The flags and the lamps should be placed in conspicuous positions so as to indicate the pedestrians and drivers of vehicles the full expanse i.e. both width and length of the obstruction. The distance between lamps or between floors should not generally exceed 1.25 mtrs. Along the width and 6 mtrs. Along length of the obstruction in non-congested areas, but 4 meters along the length in congested areas. If the excavation is extensive sufficient notice to give adequate warning of the danger, should be displayed conspicuously not less than 1.25 mtrs. Above the ground and close to the excavation. Where any excavation is not clearly visible for a distance of 25 mtrs. To traffic approaching from any direction or any part of the carriage way of the road in which the excavation exists, a warning notice should be placed on the kerb or edge of all such roads from which the excavation or as near the distance as is practicable but not less than 10 mtrs. From the junction of an entering or intersecting road in which the excavation exists. All warnings, in these should exhibit a red light, but white lights may be used in addition to facilitate working at night. Wherever required a passage for pedestrians with footbridge should be provided. At excavations, cable drums, tools and all materials likely to offer obstructions should be properly folded round and protected. This applies to jointer's tents as well. Leads, hoses etc. stretched and across the carriage way should be guarded adequately for their own protection and also that of the public.

6. **Traffic Control:** The police authorities are normally responsible for the control of traffic and may require the setting up of traffic controls to reduce the inconvenience occasioned by establishment of a single line of traffic due to restriction in road width or any other form of obstruction caused by the work. As far as possible, such arrangements should be settled in advance. If there are any specific regulations imposed by the local authorities, these should be followed.
7. **Work along Railway Lines:** Normally all works at Railway crossing is to be done under supervision of the railway authorities concerned, but it is to be borne in mind that use of white, red or green flags by the Departmental staff is positively forbidden to be used when working along a railway line as this practice may cause an accident through engine drivers mistaking them for railway signals. When working along a double line of railway, the men should be warned to keep a sharp look on both the "UP" and "DOWN" lines to avoid the possibility of any accident when trains pass or happen to cross one another near the work spot.
8. **Procedure and Safety precautions for use of explosives during blasting for Trenching:** In areas where the cable trench cannot be done manually on account of boulders and rocks, it is necessary to blast the rocks by using suitable explosives. The quality of explosive to be used depends on the nature of the rocks and the kind of boulders. A few types of explosive fuses and detonators normally used for making trenches for cable works are detailed below: i) Gun power ii) Nitrate Mixture iii) Gelatin iv) Safety fuse v) Electric Detonator vi) Ordinary Detonator
9. **Procedure:** A detailed survey of the route is to be done to assess the length of the section where trenching is to be done with the help of blasting. A route diagram of the rocky section may be prepared indicating the length of the route where the explosive is to be used.

commissioner, the authority for issuing license is the district magistrate. For the purpose of obtaining license, longer length of route should be given the application as in many cases, after digging, rocks appear where blasting was not initially anticipated. Next a license will have to be obtained for use and storing of explosive in that section. If the area falls under a police commissioner, the authority for granting such license is the police

The concerned authority should be applied in prescribed form with the route map. The concerned authority will make an inquiry and issue a license for using/storing explosives for cable trenching works. Such license will be valid for 15 days only. The license should be renewed if the blasting operations need to be extended. Once the license is granted, it is the responsibility of the holder of the license for the proper use of explosive, its transportation and storing.

Method of using: The safest explosive is the Gelatin and electric detonator. Gelatin is in the form of a stick. Electric detonator is a type of fuse used for firing the explosive electrically. Holes are made at suitable intervals on rocky terrain boulders both by air compressor and by manual chipping. The depth of the hole should be 2 to 3 ft. Fill up the hole with small quantity of sand for about 6". First the electric detonator is to be inserted into the hole and the Gelatin is to be inserted into the hole keeping the +ve and -ve wiring of electric detonator outside the holes. Again refill the hole by sand. These +ve and -ve insulated wires of detonator are then extended and finally connected to an exploder kept at a distance of not less than 100mtrs. Now the explosive is ready for blasting. But before connecting wires to exploder for blasting, all necessary precautions for stopping the traffic, use of red flags, exchange of caution

signals, etc., should be completed and only then Exploder should be connected and operated. Operation of exploder (IDL Schaffer type 350 type exploder): The type 350 blasting machine consists of a bearing block with blasting machine system and the explosion proof light – alloy injected molded housing. The exploder is held with the left hand. The twist handle is applied to the drive pin, dapped with the right hand turned in the clock wise direction in continued measurement at the height speed from the initial position until it reached to a stop. At the stage an indication lamp will glow. When the indication lamp glow, “pres s button switch” should be pressed. This will extend the electric current to detonator and Gelatin will be detonated. The rock will be blasted out of the trench. Number of holes can be blasted in a single stroke by connecting all such detonator in series connection and finally to the exploder. After blasting, again mazdoors are engaged on the work to clear the debris. If the result of the first blasting is not satisfactory, it should be repeated again on the same place.

Warning There may be two reasons for unsatisfactory result of the blasting: Misfire of Gelatin due to leakage of current from detonator. Over loading because of overburdens.

Never pull the broken wire pieces from the holes in such cases, Attempts should not be made to re -blast the misfired Gelatin. The safest way is to make a fresh hole but its side and put fresh Gelatin in those holes and blast it.

Precautions

The abstract of explosives Rules 1983 that are relevant to our work is given below:

Restriction of delivery and dispatch of explosives:

No person shall deliver or dispatch any explosives to anyone other than a person who is the holder of a license to possess the explosives or the agent of a holder of such a license duly authorized by him in writing on his behalf.

OR

is entitled under these rules to possess the explosive without the license.

The explosive so delivered or dispatched shall in no case exceed the quality, which the person to whom they are delivered or dispatched is authorized to possess with or without a license under these rules.

No person shall receive explosive from any person other than the holder of a license granted under these rules. No person shall receive from or transfer explosives to any person for a temporary storage or safe custody in a license premise unless prior approval is obtained from the chief controller.

A person holding license for possession of explosives granted under these rules shall store the explosives only in premises specified in the license.

Protection from Lightening during Storing: Every magazine shall have attached there to one or more efficient lightening conductors designed and erected in accordance with the specification laid down in Indian standard specification No. 2309 as amended from time to time. The connection to various parts of earth resistance of the lightening conductor terminal on the building to the earth shall be tested at least once in every year by a qualified electrical; engineer or any other competent person holding a certificate of competency in this behalf from the state electricity Department. A certificate showing the results of such tests and the date of the last test shall be hung up in conspicuous place in the building.

Precautions during thunder-storm: When a thunder-storm appears to be imminent in the vicinity of a magazine or store house every person engaged in or around such magazine and store house shall be withdrawn to a safe distance from such magazine and store house and the magazine and store house shall be closed or locked until the thunder storm has ceased or the threat of it has passed.

Maintenance of records: Every person holding a license granted under these rules for possession, sale or use of explosives shall maintain records in the prescribed forms and shall produce such record on demand to an inspection Officers.

Explosives not to be kept in damaged boxes: The licensee of every magazine or store house shall ensure that, the explosives are always kept in their original outer package. In case, the outer package gets damaged so that the explosive contained therein cannot be stored or transported, such explosive shall be repackaged only after the same are examined by controller of explosives.

Stored of explosives in excess of the licensed quantity:

The quantity of any kind of explosives kept in any licensed magazine or store house shall not exceed the quantity entered in the license against such kind of explosives. No explosives in excess of the licensed quantity shall be stored in the magazine or store house unless a permit in this behalf is obtained from the licensing authority by a letter or telegram.

10. Precautions to be observed at site:

The electric power at the blasting site shall be discontinued as far as practicable before charging the explosives. No work other than associated with the charging operations shall be carried out within 10 meters of the holes unless otherwise specified to the contrary by the licensing authority. When charging is completed, any surplus explosive detonators and fuses shall be removed from the vicinity of the hole and stored. At a distance which should prevent accidental detonation in the event of a charge detonating prematurely in any hole. The holes which have been charged with explosives shall not be left unattended till the blasting is completed. Care shall be taken to ensure that fuse or wires connected to the detonation are not damaged during the placing of stemming materials and tamping.

* Suitable warning procedure to be maintained: The licensee or a person appointed by the licensee to be in charge of the use of explosives at the site shall lay down a clear warning procedure consisting of warning signs and suitable signals and all persons employed in the area shall be made fully conversant with such signs and signals.

* Precautions to be observed while firing: The end of the safety fuse if used in place of a detonator should be freshly cut before being lighted. The exploders shall be regularly tested and maintained in a fit condition for use in firing. An exploder shall not be used for firing a circuit above its rated capacity. The electric circuits shall be tested for continuity before firing. All persons other than the shot-firer and his assistant, if any shall be withdrawn from the site before testing the continuity. In case of blasting with dynamite or any other high explosive, the position of all the bore holes to be drilled shall be marked in circles with white paint. These shall be inspected by the contractor's agent. Bore holes shall be of a size that the cartridge can easily pass down. After the drilling operation, the agent shall inspect the holes to ensure that drilling has been done only at the marked location and no extra hole has been drilled.

The agent shall then prepare the necessary charge separately for each bore hole. The bore holes shall be thoroughly cleaned before a cartridge is inserted. Only cylindrical wooden tamping rods shall be used for tamping. Metal rods or rods having pointed ends shall never be used for tamping. One cartridge shall be placed in the bore hole and gently

pressed but not rammed down. Other cartridges shall then be added as may be required to make up the necessary charge for the bore Hole. The top most cartridges shall be connected to the detonator which shall in turn be connected to the safety fuses for required length. All fuses shall be cut to the length required before being inserted into the holes. Joints in fuses shall be avoided. Where joints are unavoidable, a semi-circular niche shall be cut in one piece inserted into the niche. The two pieces shall then be wrapped together with string. All joints exposed to dampness shall be wrapped with rubber tape. The maximum of eight bore holes shall be loaded and fired at one occasion. The charges shall be fired successively and not simultaneously. Immediately before firing, warning shall be given and the agent shall see that all persons have retired to a place of safety. The safety fuses of the charged holes shall be ignited in the presence of the agent, who shall see that all the fuses are properly ignited. Careful count shall be kept by the agent and others of each blast as it explodes. In case all the charged bore holes have exploded, the agent shall inspect the site soon after the blast but in case of misfire the agent shall inspect the site after half an hour and mark red crosses (X) over the holes which have not exploded. During his interval of half an hour, nobody shall approach the misfired holes. No dealer shall work near such bore until either of the following operations have been done by the agent for the misfired bore holes.

- a) The contractor's agent shall very carefully (when the tamping is a damp day) extract the tamping with a wooden scraper and withdraw the primer and detonator.
- b) The holes shall be cleaned for 30 cm of tamping and its direction ascertained by placing a stick in the hole. Another hole shall then be drilled 15 cm away and parallel to it. This hole shall be charged and fired. The misfired holes shall also explode along with the new one.

Before leaving the site of work, the agent of one shift shall inform another agent relieving him for the next shift, of any case of misfire and each such location shall be jointly inspected and the action to be taken in the matter shall be explained to the relieving agent. The Engineer-in-Charge shall also be informed by the agent of all cases of misfire, their causes and steps taken in that connection.

11. General Precautions:

For the safety of persons red flags shall be prominently displayed around the area where blasting operations are to be carried out. All the workers at site, except those who actually ignite the fuse, shall withdraw to a safe distance of at least 200 meter from the blasting site. Audio warning by blowing whistle shall be given before igniting the fuse. Blasting work shall be done under careful supervision and trained personnel shall be employed. Blasting shall not be done within 200 meters of an existing structure, unless specifically permitted by the Engineer-in-Charge in writing.

Precautions against misfire:

The safety fuse shall be cut in an oblique direction with a knife. All saw dust shall be cleared from inside of the detonator. This can be done by blowing down the detonator and tapping the open end. No tools shall be inserted into the detonator for this purpose. If there is water present or if the borehole is damp, the junction of the fuse and detonator shall be made water tight by means of tough grease or any other suitable material. The

detonator shall be inserted into the cartridge so that about one -third of the copper tube is left exposed outside the explosive. The safety fuse just above the detonator shall be securely tied in position in the cartridge. Waster proof fuse only shall be used in the damp borehole or when water is present in the borehole. If a misfire has been found to be due to defective fuse, detonator or dynamite, the entire consignment form which the fuse, detonator or dynamite was taken shall be got inspected by the Engineer -in- Charge or his authorized representative before resuming the blasting or resuming the consignment.

12. Precautions against stray currents:

Where electrically operated equipment's is used in locations having conductive ground or continuous metal objects, tested shall be made for stray current to ensure that electrical firing can proceed safely.

SECTION – IX

FORMAT OF AGREEMENT

This agreement made on this _____ day of (month) _____ (year) _
_____ between M/s _____, herein after called "The
Contractor" (Which expression shall unless
excluded by or repugnant to the context, include its successors, heir, executors, administrative
representative and assignee) of the one part & the BHARAT SANCHAR NIGAM LIMITED
here in after referred to as the BSNL , of other part Where as the contractor has offered
to enter into contract: with the said BSNL for the execution of work of OPTICAL FIBRE cable laying
and associated works in GMTD Raipur under AM (City/Rural) on the terms and conditions
herein contained and the rates approved by the BSNL (copy of Rates annexed) have been duly
accepted and where as the necessary security deposits have been furnished in accordance with the
provisions of the tender document and whereas no interest will be claimed on the security deposits.

Now these presents witness and it is hereby agreed and declared by and between
the parties to these presents as follows.

- 1) The contractor shall, during the period of this contract: that is to say from _____
to _____ or completion of work for Rs. _____ (In
words) _____ whichever is earlier or until this contract: shall
be determined by such notice as is hereinafter mentioned, safely carryout, by means of
labourers employed at his own expenses and by means of tools, implements and
equipment etc. to be
supplied by him to his labour at his own expenses, all trenching, cable laying other associated
works as described in documents (annexed to the agreement), when the BSNL or DE (RNP)
or any other persons authorized by DE (RNP) in that behalf require. It is understood by
the contractor that the quantity of work mentioned on the schedule is likely to change as per
actual requirements as demanded by exigencies of service.
- 2) The Bid documents (Qualifying and Financial), letter of intent, approved rates, annexed
hereto and such other additional particulars, Instructions, drawings, work orders as may
be found requisite to be given during execution of the work shall be deemed and taken to
be an integral part of the contract and shall also be deemed to be included in the
expression "The Agreement" or "The Contract" wherever herein used.
- 3) The contractor shall also supply the requisite number of workmen with means & materials
as well as tools, appliances, machines, implements, vehicles for transportation, cartage etc.
required for the proper execution of work within the time prescribed in the work orders.
- 4) The contractor hereby declares that nobody connected with or in the employment of the
BSNL of Telecommunications/DTS is not/shall not ever be admitted as partner in the contract:.
- 5) The contractor shall abide by the terms and conditions, rules, guidelines,
construction practices, safety precautions etc. stipulated in the tender document
including
any correspondence between the contractor and the BSNL having bearing on execution
of work and payments of work to be done under the contract.

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

- 6) The Contractor will solely be responsible for getting the Right of Way permission from other agencies like Road authorities, Forest Authorities, Corporations, Panchayats ETC. The compensation amount to these authorities will be paid by BSNL. The contractor will have no claim on BSNL in terms of time and Money for any delay in permission from these authorities.
- 7) Copies of authenticated documents of payments of EPF contribution paid for the last month should be attached along with the bill.

In witness whereof the parties presents have here into set their respective hands and seals the clay and year in _____.

Above written :

Signed sealed & Delivered by
the above named Contractor in
the presence of.

Witness :

- 1.
- 2.

Signed & Delivered on behalf
of the BSNL

Witness :

- 1.
- 2.

SECTION – X

LETTER OF AUTHORISATION FOR ATTENDING BID OPENING

No. – W-1-18/TENDER-30/OFC,TRENCHING(HDD&OT)/Zone-I&II/2012-13/5 , DATE 17- 05-2012.

Subject: Authorization for attending bid opening on _____(date) in
the tender of _____

The following persons are hereby authorized to attend the bid opening for the tender mentioned above
on behalf of (Bidder) in order of preference given below.

Order of Preference	Name	Specimen Signatures
I		
II		
Alternate		
Representative		

Signatures of bidder

or

Officer authorized to sign the bid

documents on behalf of the bidder.

No.

- 1 Maximum of two representatives will be permitted to attend bid opening. In cases where it is restricted to one, first preference will be allowed. Alternate representative will be permitted when regular representatives are not able to attend.
2. Permission for entry to the hall where bids are opened may be refused in case authorization as prescribed above is not recovered.

SECTION: XI PART – A

MATERIAL SECURITY BOND FORM

Whereas (hereinafter called "the Contractor") has been awarded the contract of construction work, as per tender number _____ KNOW ALLMEN by these Presents that WE.....OF.....having our registered office At _____(hereinafter called the "the Contractor") are bound unto(hereinafter called "the BSNL ") in the sum of for which payment will and truly to be made of the said BSNL , the Bank binds itself, its successors and assign by these presents .

THE CONDITIONS of the obligation are:

- 1 If the Contractor is unable to keep stores issued to him, property, i.e. the store provided to the contractor, by the BSNL are damaged

OR

- 2 The stores issued to the contractor by the BSNL are stolen

OR

- 3 The Contractor is not able to provide proper amount of the stores issued to him/her/them by the BSNL .

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

This guarantee will remain in force up to and including One hundred and eighty (180) days after the Period of Contract validity, and any demand in respect thereof should reach the Bank not later than the above date. Signature of the Bank

Signature of the *Witness*

Name of Witness :-----

Address of Witness:-----

SECTION: XI PART – B

DECLARATION

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

Note: The near relatives for this purpose are defined as:

- 1 Members of a Hindu Undivided family,
- 2 They are husband and wife,
- 3 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).

Station:

Name of the contractor

(Capacity in which signing)

Date:

SECTION: XI

PART – C

WORK ORDER

To,

No. ___ Dated at _____ the _____

1. The following work / works is /are awarded to you for execution.

2. Name / Details of the work (s) : _____

3. Estimate No. : _____

4. Specification / Detailed: As per latest Departmental Engineering Specification instruction / Instructions of contract.

5. Terms & Conditions : As agreed upon vide letter no. _____
dated _____ with _____

6. Maximum Time limit for : _____
execution / completion w. e. f. Date _____
of Issue of this work order _____

a) Time for 25% of work : _____

b) Time for 50% of work : _____

c) Time for 75% of work : _____

d) Time for 100% of work: _____

Note:- Liquidated Damages shall be imposed as per clause No.2 schedule III of Tender Document.

It is requested that the work / works be executed strictly as per latest Departmental Engineering Instruction within the stipulated period. Intimation regarding completion of work may be given to work – ordering authority as soon as the work is completed for arranging the Acceptance Testing.

DE (OFC).

Copy to 1.:The DGM (Rural)/AM (Raipur) RAIPUR for information, Please.

2 DE (RNP) % GMTD Raipur

Shri _____ Junior Telecom Officer/SDOT () _____
with instruction to supervise and get the work / works executed as per departmental
instructions / standards & sanctioned estimate. Concerned file _____.

SECTION: XI

PART – D

Form no..6 see rules 154(5)

Application for grant of license to possess explosive for own use

I hereby apply for a license to possess explosive as mentioned below for my own use for removal of tree stumps/leveling of ground/digging or new well/deepening of existing well/the use of.....a certificateDtd.....required under sub - rule(8) of rule of 155 of the explosive rules 1983 is enclosed. Replies to be given in this column.

- 1 Name of the applicant
- 2 Age of the applicant
- 3 Residential Address of the applicant
- 4 Location of the premises which shall be used
- 5 Survey No. Address
- 6 Mode of storage.
- 7 Location of the premises where the explosive..... shall be stored.
- 8. Quantity of explosive proposed to be stored

 - ° a. Gun powder
 - ° b. Nitrate Mixture
 - ° c. Nitro compound
 - ° d. Safety Fuse
 - ° e. Electric Detonator
 - ° f. Ordinary Detonator

- 9. Particulars of the license obtained by the applicant during two years.
 - a) Has the applicant been convicted under any law or ordered to execute bond under Chapter VII of code of Criminal Procedure 1973 during the last ten years.
 - b) If yes. Give details
- 10. a) Particulars of license held by the applicant under Explosive Act. 1884, during the last ten years.
 - b) Was any license canceled/not renewed?
 - c) If yes give details.
- 11. Any other information

I certify that the information given to me above is correct.

Place:

Signature of the applicant: Date:

- Note: (1) The applicant should attach site plan and construction plan of the premises where the explosives shall be stored.
- (2) Delete whichever is not applicable

\

SECTION: XI

PART – E

CHECK LIST FOR TENDERS

This check list is part of TENDER document and should be submitted with TENDER document. All documents are to be assigned S.No. and document serial no is to be shown in check list. One Item particular may contain more than one document and all must be assigned separate serial number. Please note that ALL DOCUMENTS MUST BE ATTESTED, by Gazzeted Officer / Notary

Write YES or NO. Do not put check mark or cross mark in Box provided below.

S.No.	Item particular	YES/NO	Documents .NO.
01	Bid Security in accordance with the tender document.		
02	Tender document(s), in original, duly filled in and signed by tenderer or his authorized representative along with seal on each page. All corrections and overwriting must be initialed with date by the tenderer or his authorized representative.		
03	Bid Form, duly filled ,		
04	Tender profile, duly filled		
05	Registration of firm/company.		
06	Proprietor ship / Partnership / Private Limited / Public Limited company.		
07	Partnership deed document, incase of partnership firms.		
08	NOC from other partners, in case of partnership firm.		
09	Authority letter to sign the tender if Limited Company.		
10	Service tax registration certificate (PAN based)		
11	PAN no. & Latest Income-tax Return filed copy		
12	ESI registraci3n N o		
13	EPF registraci3n No		
14	Valid Registrarían with Central Labour Comisionar under Contract Labour Act 1970 (R&A) Or Undertaking to get it before commencement of work.		
15	Declaration regarding compliance of the EPF Act. 1952 along with the ESI Scheme .		
16	Original "Power of Attorney" in case person other than the bidder has signed the tender documents		
17	Near relative certificate as affidavit in non judicial Stamp paper of ` 10/- issued specifically for this NIT.		
18	Experience certificate of UG/OFC laying and associated works as mentioned in as per NIT (Section wise)		
19	List of qualified experienced personnel, who are working for the tenderer, who will be deployed for the work		
20	Solvency Certificate from the banker is to be submitted as per NIT by the bidder. The solvency certificate shall not be older than the date of issue of NIT.		

**BHARAT SANCHAR NIGAM LIMITED
TELECOM DISTRICT**

**BID DOCUMENT
FINANCIAL**

**TENDER FOR TRENCHING (HDD&OT), PLB PIPE
LAYING , OF CABLE PULLING AND OTHER
ASSOCIATED WORKS FOR GPON (FTTH) IN
RAIPUR CITY AREA UNDER GMTD RAIPUR
(Zone-I&II)**

NO. W-1-18/TENDER-30/OFC, TRENCHING(HDD&OT)/Zone-I&II/2012-13/5 , DATE 17-05-2012

**OFFICE OF THE GENERAL MANAGER TELECOM DISTRICT
RAIPUR**

SECTION XII

ANNEXURE - A

RATES TO BE OFFERED FOR TRENCHING (HDD&OT),PLB PIPE LAYING , OF CABLE PULLING AND OTHER ASSOCIATED WORKS FOR GPON IN RAIPUR CITY AREA UNDER GMTD RAIPUR (Zone-I&II)

No. – W-1-18/TENDER-30/OFC,TRENCHING (HDD&OT)/ Zoni&II/2012-13/ 5 , DATE 17 - 05-2012

SUB: OUR FINANCIAL BID FOR TRENCHING (HDD&OT),PLB PIPE LAYING , OF CABLE PULLING AND OTHER ASSOCIATED WORKS FOR GPON IN RAIPUR CITY AREA UNDER GMTD RAIPUR (Zone I&II) ----

DESCRIPTION OF SECTION -----

The Materials will be made available at SSA RAIPUR Store Depot

Zone -1

S.N	DESCRIPTION OF ITEM	UNIT	QTY	RATE IN FIGURE	RATE IN WORDS
1.	Through rate for excavating Trenches up to a depth of 165 cms. And back filling the excavated trenches after laying the HDPE pipe with or without protection	Mtr	1375	Rs...../-	Rs...../-
2	Horizontal boring by HDD method with bore 225 mm dia , inserting maximum 3 HDPE/3 PLB pipes	Mtr.	3575	Rs...../-	Rs...../-
3	Laying of HDPE/PLB pipes /Coils, coupled with HDPE sockets and drawing 6 mm PP rope.	Mtr.	6500	Rs...../-	Rs...../-
4	Road/Rail crossing through horizontal boring method and inserting 65/40 dia GI pipes and pushing upto 2HDPE/PLB pipes/coils inside and drawing 6 mm PP rope	Mtr.	1550	Rs...../-	Rs...../-
5	Road/Rail crossing through horizontal boring method and inserting 75mm above GI pipes and pushing upto 8 Nos. of HDPE/PLB pipes/coils inside and drawing 6mm PP rope.	Mtr.	0	Rs...../-	Rs...../-
6	Laying and fixing of 65mm/40mm GI Pipes /DWC in trenches with HDPE/PLB pipes/Coils inside and drawing 6mm PP rope.	Mtr.	0	Rs...../-	Rs...../-
7	Laying and fixing of 65mm/40mm GI Pipes /DWC on Bridges and Culverts with HDPE/PLB pipes/Coils inside and drawing PP rope	Mtr.	0	Rs...../-	Rs...../-
8	Laying full round RCC Pipes/DWC in trenches with HDPE /PLB pipes / coils inside and drawing PP rope	Mtr.	0	Rs...../-	Rs...../-
9	Laying half round RCC Pipes/DWC in trenches with HDPE /PLB pipes / coils inside and drawing PP rope	Mtr.	1375	Rs...../-	Rs...../-
10	Providing RCC protection at Site to HDPE/PLB or GI pipes /DWC reinforced by Weld mesh & Drawing of PP rope.	Mtr.	0	Rs...../-	Rs...../-
11	Installation of FRP manhole , excavation of FRP manhole pit (1.5M*1.5M*1.5*)CC base for FRP manhole 6 inch thick , transportation of FRP manhole from store , fixing FRP manhole in pit and refilling of pit upto road level with cementing and removing dug soil from the site.	Mtr.	0	Rs...../-	Rs...../-
12	Digging of pit for jointing chamber, fixing of pre- cast RCC chamber, filling of RCC chamber with clean sand, placing of Pre-cast RCC slabs on RCC chamber, and back filling of jointing pit.	Nos.	4	Rs...../-	Rs...../-
13	Digging of pit 1 meter towards jungle side on each manhole/joint chamber of fixing of route/joint indicator , fixing and concreting of routes/joints indicator. Painting and sign writing of route/joint indicators.	Nos.	10	Rs...../-	Rs...../-
14	Excavation/Opening of manhole , DIT Ducts , 12/24 F cable blowing de-blowing in the prelaid 40/33 dia. PLB ducts/coil, refilling of excavated manhole, excavation of manhole , placing and fixing of prefabricated RCC/FRP joint manholes,cable entry in the manholes and sand filling , joint indicator fixing and concreting ,including transportation of materials.	Mtr.	6500	Rs...../-	Rs...../-

Signature of the bidder with seal

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

15	Excavation/Opening of manholes,DIT Ducts, 48/96F cable blowing /de-blowing in the prelaid 40/33 dia PLB ducts/coil , refilling of excavated manholes,excavation of manhole,placing and fixing of prefabricated RCC/FRP joint manholes, Cable entry in the manholes and sand filling , joint indicator fixing and concreting , including transportation of materials.	Mtr.	0	Rs...../-	Rs./-
16	Excavation/Opening of manholes,DIT Ducts, 288F cable blowing /de-blowing in the prelaid 40/33 dia PLB ducts/coil , refilling of excavated manholes,excavation of manhole,placing and fixing of prefabricated RCC/FRP joint manholes, Cable entry in the manholes and sand filling , joint indicator fixing and concreting , including transportation of materials.	Mtr.	0	Rs...../-	. Rs./-
17	Pulling and fixing of OF cable inside building	Mtr.	2675	Rs...../-	Rs./-
18	Splicing and termination of optical fiber cable of all sizes when department will supply jointing material , and contractor will supply splicing machine , vehicle and labour.	No.	69	Rs...../-	Rs./-

Note: - Service Tax will be paid Extra, if applicable.

Having examined the Bid documents, terms and conditions stipulated therein, specifications of work etc., we the under signed offer to execute the Cable Construction Works in conformity with the said specifications and conditions of contract at the rates as mentioned above.

IF OUR BID IS ACCEPTED, WE SHALL SUBMIT THE SECURITIES AS PER THE CONDITIONS MENTIONED IN THE CONTRACT.

WE AGREE TO ABIDE BY THIS BID FOR A PERIOD OF 180 DAYS FROM THE DATE OF OPENING OF QUALIFYING BID AND IT SHALL REMAIN BINDING UPON US AND MAY BE ACCEPTED AT ANY TIME BEFORE THE EXPIRY OF THAT PERIOD.

DATED:-...../...../

SIGNATURE OF THE BIDDER
NAME OF BIDDER

SECTION XII

ANNEXURE - A

RATES TO BE OFFERED FOR TRENCHING (HDD&OT), PLB PIPE LAYING , OF CABLE PULLING AND OTHER ASSOCIATED WORKS FOR GPON IN RAIPUR CITY AREA UNDER GMTD RAIPUR (Zone I&II)

No. – W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/ Zone I&II/2012-13/ 5 , DATE 17- 05-2012

SUB: OUR FINANCIAL BID FOR TRENCHING (HDD&OT), PLB PIPE LAYING , OF CABLE PULLING AND OTHER ASSOCIATED WORKS FOR GPON IN RAIPUR CITY AREA UNDER GMTD RAIPUR (Zone-I&II) ----

DESCRIPTION OF SECTION -----

The Materials will be made available at SSA RAIPUR Store Depot

Zone -2

S.N	DESCRIPTION OF ITEM	UNIT	QTY	RATE IN FIGURE	RATE IN WORDS
1.	Through rate for excavating Trenches up to a depth of 165 cms. And back filling the excavated trenches after laying the HDPE pipe with or without protection	Mtr	500	Rs...../-	Rs...../-
2	Horizontal boring by HDD method with bore 225 mm dia , inserting maximum 3 HDPE/3 PLB pipes	Mtr.	4150	Rs...../-	Rs...../-
3	Laying of HDPE/PLB pipes /Coils, coupled with HDPE sockets and drawing 6 mm PP rope.	Mtr.	5100	Rs...../-	Rs...../-
4	Road/Rail crossing through horizontal boring method and inserting 65/40 dia GI pipes and pushing upto 2HDPE/PLB pipes/coils inside and drawing 6 mm PP rope	Mtr.	450	Rs...../-	Rs./-
5	Road/Rail crossing through horizontal boring method and inserting 75mm above GI pipes and pushing upto 8 Nos. of HDPE/PLB pipes/coils inside and drawing 6mm PP rope.	Mtr.	0	Rs...../-	Rs./-
6	Laying and fixing of 65mm/40mm GI Pipes /DWC in trenches with HDPE/PLB pipes/Coils inside and drawing 6mm PP rope.	Mtr.	0	Rs...../-	Rs./-
7	Laying and fixing of 65mm/40mm GI Pipes /DWC on Bridges and Culverts with HDPE/PLB pipes/Coils inside and drawing PP rope	Mtr.	0	Rs...../-	Rs.
8	Laying full round RCC Pipes/DWC in trenches with HDPE /PLB pipes / coils inside and drawing PP rope	Mtr.	0	Rs...../-	Rs./-
9	Laying half round RCC Pipes/DWC in trenches with HDPE /PLB pipes / coils inside and drawing PP rope	Mtr.	500	Rs...../-	Rs./-
10	Providing RCC protection at Site to HDPE/PLB or GI pipes /DWC reinforced by Weld mesh & Drawing of PP rope.	Mtr.	0	Rs...../-	Rs./-
11	Installation of FRP manhole , excavation of FRP manhole pit (1.5M*1.5M*1.5*)CC base for FRP manhole 6 inch thick , transportation of FRP manhole from store , fixing FRP manhole in pit and refilling of pit upto road level with cementing and removing dug soil from the site.	Mtr.	0	Rs...../-	Rs./-
12	Digging of pit for jointing chamber, fixing of pre- cast RCC chamber, filling of RCC chamber with clean sand, placing of Pre-cast RCC slabs on RCC chamber, and back filling of jointing pit.	Nos.	3	Rs...../-	Rs./-
13	Digging of pit 1 meter towards jungle side on each manhole/joint chamber of fixing of route/joint indicator , fixing and concreting of routes/joints indicator. Painting and sign writing of route/joint indicators.	Nos.	5	Rs...../-	Rs./-
14	Excavation/Opening of manhole , DIT Ducts , 12/24 F cable blowing de-blowing in the pre-laid 40/33 dia. PLB ducts/coil, refilling of excavated manhole, excavation of manhole , placing and fixing of prefabricated RCC/FRP joint manholes, cable entry in the manholes and sand filling , joint indicator fixing and concreting ,including transportation of materials.	Mtr.	5100	Rs...../-	. Rs./-

Signature of the bidder with seal

W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13

15	Excavation/Opening of manholes,DIT Ducts, 48/96F cable blowing /de-blowing in the prelaid 40/33 dia PLB ducts/coil , refilling of excavated manholes,excavation of manhole,placing and fixing of prefabricated RCC/FRP joint manholes, Cable entry in the manholes and sand filling , joint indicator fixing and concreting , including transportation of materials.	Mtr.	0	Rs...../-	Rs./-
16	Excavation/Opening of manholes,DIT Ducts, 288F cable blowing /de-blowing in the prelaid 40/33 dia PLB ducts/coil , refilling of excavated manholes,excavation of manhole,placing and fixing of prefabricated RCC/FRP joint manholes, Cable entry in the manholes and sand filling , joint indicator fixing and concreting , including transportation of materials.	Mtr.	0	Rs...../-	. Rs./-
17	Pulling and fixing of OF cable inside building	Mtr.	1375	Rs...../-	Rs./-
18	Splicing and termination of optical fiber cable of all sizes when department will supply jointing material , and contractor will supply splicing machine , vehicle and labour.	No.	54	Rs...../-	Rs./-

Note: - Service Tax will be paid Extra, if applicable.

Having examined the Bid documents, terms and conditions stipulated therein, specifications of work etc., we the under signed offer to execute the Cable Construction Works in conformity with the said specifications and conditions of contract at the rates as mentioned above.

IF OUR BID IS ACCEPTED, WE SHALL SUBMIT THE SECURITIES AS PER THE CONDITIONS MENTIONED IN THE CONTRACT.

WE AGREE TO ABIDE BY THIS BID FOR A PERIOD OF 180 DAYS FROM THE DATE OF OPENING OF QUALIFYING BID AND IT SHALL REMAIN BINDING UPON US AND MAY BE ACCEPTED AT ANY TIME BEFORE THE EXPIRY OF THAT PERIOD.

DATED:-...../...../

SIGNATURE OF THE BIDDER
NAME OF BIDDER

SECTION XIII

Form XIII

{ See rule 75 }

Register of Workmen Employed by Contractor

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

Name 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 workman (Village and Tehsil/Tauk and Distt.)	Local address.	Date of commencement of employment	Signature or thumb impression of workman	Date of termination of employment	Reasons for termination	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

Form XVI
 [See rule 78 (1) (a) (i)]
Muster Roll

Name and address of Contractor.....Name and address of Establishment in/under which contract is carried on.....

Nature and location of work..... Name and address of Principal employer.....

For the month of.....

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

Form XVII

[See Rule 78(1) (a) (i)]

Register of wages

Name and address of contractor..... Name and address of Establishment in/under which contract is carried on.....

Nature and location of work..... Name and address of principal employer.....

Wage Period: Monthly.....

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	Amount of wages earned					Deductions, if any, (Indicate nature)	Net amount paid	Signature/Thumb impression of workman	Initial of contractor or his representative
							Basic wages	Dearness Allowances	Overtime	Other cash payments (Nature of payment to be indicated)	Total				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Signature of the bidder with seal

Form XVIII

[See Rule 78 (1) (a) (i)]

Form of Register of Wages-cum-Muster roll

Name and address of Contractor.....Name and address of Establishment in/under which contract is carried on.....

Nature and location of work..... Name and address of Principal Employer.....

Wage period: Weekly/fortnightly

From.....to.....

Sl No.	S.No. in Regis ter of work man	Name of Emplo yee	Design ation/n ature of work	Daily attend ance/ units worked 12:15	Total attend ance/ Units of work done	Daily rate of wages / Piece rate	Amount of wages earned					Deduct ions, if any, (Indicat e nature)	Net amo unt paid	Signature /Thum impressi on of workman	Initial of contr actor or his repre sentative
							Basic wages	Dear ness Allo wanc es	Over time	Other cash payments (nature of payments to be indicated)	Total				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Signature of the bidder with seal

**W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13
Form XIX**

[See Rule 78(1)(b)]

Wage Slip

Name and address of contractor..... Name and father's/Husband's name of the 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. Deductions, if any.....
7. Net amount of wages paid.....

Initials of the contractor or his representative

Signature of the bidder with seal

**W-1-18/TENDER-30/OFC, TRENCHING (HDD&OT)/Zone I&II /2012-13
Form XX**

[See rule 78 (1)(a)(ii)]

Register of deductions for Damage or Loss

Name and address of contractor..... Name and address of Establishment in/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	Whether workman showed cause against deduction	Name of person in whose presence employee's explanation was heard	Amount of deduction imposed	No. of instal ments	Date of recovery		Remarks
										Final instal ment	Last instal ment	
1	2	3	4	5	6	7	8	9	10	11	12	13

Signature of the bidder with seal

Form XXI

[See rule 78 (1) (a) (ii)]

Register of fines

Name and address of contractor.....Name and address of Establishment in/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//Omissi on for which fine imposed	Date of offence	Whether workman showed cause against fine	Name of person in whose presence employee's explanation was heard	Wage periods &wages payable	Amount of fine imposed	Date on which fine realized	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

Signature of the bidder with seal

Form XXII
[See rule 78 (1) (a) (ii)]

Register of Advances

Name and address of contractor.....Name and address of Establishment in/under which contract is carried on.....

Nature and location of work..... Name and address of Principal employer.....

Sl. No.	Name	Father's/ Husband's name	Nature of employment Designation	Wage period and wages payable	Date & amount of advance given	Purpose(s) for which advance made	No. of instalments by which advance to be repaid	Date & amount of each instalment re-paid	Date on which last instalment was repaid	Remarks
1	2	3	4	5	6	7	8	9	10	11

Signature of the bidder with seal

Form XXIII
[See rule 78 (1) (a) (iii)]

Register of Overtime

Name and address of contractor.....Name and address of Establishment in/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 in case of piece-rated	Normal rate of wages	Overtime rate of wages	Overtime earnings	Date on which overtime wages paid	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

Signature of the bidder with seal

Register of accidents –

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