



BID DOCUMENT

BHARAT SANCHAR INGAM LIMITED
O/o the General Manager, Telecom District, Hazaribag

BID DOCUMENT

Tender For Optical Fibre Cable Construction Works

Tender No. & Date : GMTD/HZB/Tender/OFC-CMTS/Phase III/07-08/02
Dated at Hazaribag: 01.05.2007

Sl. No. & Name of Work/Route-Section (as per the NIT):

Sl No	Route	Route Length (m)
1	.Relaying of OF cable between Bagodar and Aura	3000
2	Relaying of OF cable between Bagodar to Atka	4500
Total		7500

Name and Address to whom tender document sold:

.....
.....
.....

Cost for Tender Document - Rs. 500 (Rs. Five hundred) only paid vide

Issued by

(on behalf of GMTD, Hazaribag)

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BHARAT SANCHAR NIGAM LIMITED
(A Government of India Enterprise)
OFFICE OF THE GENERAL MANAGER, TELECOM DISTRICT,
HAZARIBAG.

NOTICE INVITING TENDER
Tender for O.F. Cable construction work

NIT NO:-GMTD/HZB/Tender/OFC-CMTS/Phase III/07-08/02

Dated at Hazaribag: 01.05.2007

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

Sl. No.	Route	Route Length(m)	Estimated cost (Rs)	Bid security (Rs)	Cost of Bid document
1	Relaying of OF cable between Bagodar and Aura	3000	1.25 lakhs	Rs. 7,500/-	Rs. 500/-
2	Relaying of OF cable between Bagodar to Atka	4500	1.75 lakhs		
Total		7500	3 lakhs		

1. Name of the work: (A) Optical Fibre Cable construction work: The work includes excavation of trenches, laying HDPE pipes/Coils, laying protective pipes, reinstatement of trenches, cable pulling and associated works and fixing route indicators and all other associated works as per specification laid down in the Tender documents,
2. Eligibility of contractors:-
Contractor should have experience of HDPE/PLB pipe laying and OF cable/U.G. cable laying in BSNL/MTNL/DOT/RAILWAY/CPWD/PSU or any Govt Orgn. of at least Rs.1 lakhs in any two years. The experience certificate should be issued by the officer of the rank of at least STS/DDO.
3. Mode of receipt of tender document:-
 - (i) Tender document can be purchased by paying cost of bid document as applicable in cash or D/D drawn in favour of Sr. Accounts Officer (Cash), O/o GMTD, BSNL, Hazaribag payable at Hazaribag.
Or
Tender form can also be downloaded from the Hazaribag BSNL website www.jharkhand.bsnl.co.in The D/D for applicable amount as mentioned below in favour of Sr. Accounts Officer (Cash), O/o GMTD, BSNL, Hazaribag payable at Hazaribag should be enclosed with the tender either in bid security envelop or qualifying bid envelope in such a case as a cost of bid document.
 - (ii) Tender paper will be issued to those contractors after producing following documents: -
 - (a) Valid Registration of firm (b) Work experience certificate of one years in U.G./OF cable from not below the rank of STS officer (c) Payment certificate from D.D.O. concern for Rs. 1 Lakhs in any two years in the field of U.G./OF cable works. (d) Income Tax PAN Number.
 - (iii) No tender document will be issued to those contractors whose solvency certificate has been found false/bid security has been forfeited earlier in the department and black listed at any other offices/PSUs. They will not be allowed to participate in the tender also.
4. Bid security (EMD):- Bid security could be paid in the form of Demand Draft issued by a scheduled bank, drawn in favour of Sr. Account Officer (Cash), O/o GMTD BSNL Hazaribag payable at Hazaribag.

5. Tender document containing detailed description of work & terms and conditions can be had from office of SDE (Plg), O/o GMTD BSNL Hazaribag or from website as stated above at Sr. no 3.
6. Sale of tender documents: between 11.00 hours to 15.00 hours from 03.05.2007 to 26.05.2007 on all working days.
7. Time and last date of submission of bid: Upto 15.00 hours on or before 28.05.2007 in the sealed tender box kept in the chamber of DE (A&P) Hazaribag.
8. Date and Time of opening of qualifying bid At 15:30 hours on 28.05.2007 in the chamber of DE (A&P), O/o GMTD, Hazaribag.
9. The tender, which is not accompanied by the requisite bid security, shall be summarily rejected. Tender will not be accepted/ received after expiry date and time.
10. Only one tender paper shall be given to one tenderer.
11. The cost of tender document is not refundable and the tender document is non transferable.
12. Conditional tender will not be accepted.
13. Period of contract: One year from date of agreement. However, it may be extended for a further period of one year unilaterally as per discretion of GMTD, Hazaribag.
14. The G.M.T.D. Hazaribag reserves the right to reject any or all tenders without assigning any reason whatsoever. He also reserves the right to award work to more than one contractor according to norms and to increase/ decrease the quantum of work as per requirements.
15. Other terms & conditions are available in Bid Document.

Divisional Engineer (A&P)
O/o GMTD, Hazaribag

Copy to: --

- (1) The C.G.M.T., Ranchi for kind information.
- (2) All D.Es of Hazaribag SSA for kind information & necessary action.
- (3) The CAO/IFA, O/o GMTD, Hazaribag.
- (4) The Sr. A. O. (Cash)/ A.O. (SBP), O/o GMTD, Hazaribag.
- (5) The J.A.O. (Cash), O/o GMTD, Hazaribag.
- (6) Notice Board of GMTD office, all offices of D.Es/SDEs in Hazaribag SSA.
- (7) Notice boards of all exchanges in Hazaribag SSA.
- (8) Website of Hazaribag SSA and Jharkhand Circle, Ranchi.

D. E. (A&P)
O/o G.M.T.D., Hazaribag

SECTION: II
BID FORM

Tender NO:-GMTD/HZB/Tender/OFC-CMTS/Phase III/07-08/02 Dated at Hazaribag: 01.05.2007.

To

The GMTD,
BSNL, Hazaribag.

Dear Sir,

Having examined the conditions of contract and specifications including Tender No. The receipt of which is hereby duly acknowledged, we, undersigned, offer to execute the work of Optical Fibre Cable Construction Work (Sl. No. & Name of the work) in conformity with said drawings, conditions of contract and specifications as may be ascertained in accordance with the schedule of prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, we will execute the work in accordance with specifications, time limits & terms and conditions stipulated in the tender document failing which my security deposit may be forfeited.

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 240 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.

Until a format Agreement is prepared and executed, this Bid together with our written acceptance thereof in your notification of award shall constitute a binding contract between us.

Bid submitted by us is properly sealed and prepared so as to prevent any subsequent alteration and replacement.

Dated this day of (the year)

Signature of Authorised Signatory

In capacity of

Duly authorised to sign the bid for and on behalf of

Witness

Address

Signature

SECTION III
TENDERER'S PROFILE

Tender NO:-GMTD/HZB/Tender/OFC-CMTS/Phase III/07-08/02 Dated at Hazaribag: 01.05.2007.

*Passport size
photograph of the
tenderer/authorised
signatory holding
power of Attorney
duly signed*

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.....
5. Tel.No. (with STD code)
.....(O).....(FAX).....®
6. Registration and 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.....
.....
8. Tender's Registration Certificate details (if any available with the tenderer) :
 - a) Category _____
 - b) Number _____
 - c) Issuing Authority _____
 - d) Issued on _____
 - e) Valid up to _____

Signature of Bidder

(An attested copy of the Enlistment Certificate may please be enclosed)

9. Tender's Bank, its address and his current account number

.....
.....

10. Permanent Income Tax number, Income Tax Circle

.....
.....

(Please attach a copy of last income tax return)

11. Infrastructural capabilities:

a. Capacity of trenching per day (in meters)

b. Capacity of pipe laying per day (in meters)

.....

c. Capacity of engaging Mazdoors per day

d. Particulars of vehicles available with the tenders :

Type of Vehicle(s)

Registration Number

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

.....
.....

12. Details of Technical and supervisory Staff :

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

Place :

Date :

Signature of tenderer/Authorised Signatory

Name of the tenderer

Seal of the tenderer

Section IV Instruction to Bidders

A. INTRODUCTION:

1. DEFINITIONS:

- a. **President of India:** The President of India means the President of India and his successors.
- b. **Government of India :** The Government of India shall mean the President of India.
- c. **Department:** The Department means the GMTD Hazaribag, BSNL under the Ministry of Communications, which invites the tenders on behalf of the BSNL. All references of:

Department
CMD
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
Junior Accounts Officer.

including other officers 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 BSNL (A Government of India Enterprise) under the Ministry of Communications, Government of India.

- d. (The SSA Head) means the Head of SSA (GMTD Hazaribag) and his successors.
- e. **The jurisdiction of (the SSA Head):** The jurisdiction of GMTD Hazaribag means geographical area of Koderma, Hazaribag, Giridih and Chatra revenue Districts.
- f. **Representative of (the SSA Head):** Representative of GMTD means Officer and staff for the time being in Hazaribag deputed by the GMTD Hazaribag for inspecting of supervising the work or testing etc.
- g. **Engineer – in – charge:** The Engineer-in-charge means the Engineering Officer nominated by the GMTD to supervise the work, under the contract. (Minimum Divisional Engineer level officer).

- h. **Site Engineer:** Site Engineer shall mean as SDE of the Department who may be placed by GMTD Hazaribag 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 Department.
- j. **A/T Officer:** An Officer authorised by (the SSA Head) 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 president of India and the contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time, by the engineers 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 mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.
- l. **Contractor:** The contractor shall mean the individual, firm or company, having similar experience of (U.C. Cable/OF Cable laying works) with DOT/BSNL/MTNL/Railway/PSUs 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 of company.
- m. **Work:** The expression "Works" shall unless there be something either in the subject or context repugnant to such construction be construct and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent and whether original altered, substituted or additional.
- 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 to Time:** Extension of Time means the time granted by the Department to complete the work beyond the normal time or stipulated time. Extension will be granted only by the GMTD, Hazaribag where needs necessary on production of application by the contractor and duly recommended by work-order issuing officer.
- 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 are risks due to war (whether declared or not), invasion act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Government damages from aircraft, acts of God, such as earthquake, lightening 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 government 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 Enlisted contractors as per their eligibility mentioned in NIT of this tender document.

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:**

- 3.1.1.1. Notice Inviting Tender
- 3.1.1.2. Bid Form
- 3.1.1.3. Tenderer's profile
- 3.1.1.4. Instruction to Bidders
- 3.1.1.5. General (Commercial) conditions of the contract
- 3.1.1.6. Special conditions of contract
- 3.1.1.7. Scope of work and jurisdiction of the contract
- 3.1.1.8. OF cable construction specifications.
- 3.1.1.9. Agreement (Sample)
- 3.1.1.10 Letter of authorization for attending bid opening
- 3.1.1.11 List of documents to be submitted alongwith the qualifying Bid
- 3.1.1.12 Rates of empty cable drums
- 3.1.1.13 Work experience certificate of one years in U.G./OF cable from not below the rank of STS Officer.
- 3.1.1.14 Payment certificate from DDO concern for Rs.1 Lacs. in any two years (taken together) in field of U.G./OF Cable works.
- 3.1.1.15 Income Tax PAN no.

3.1.2 **Financial Bid.**

- 3.1.2.1 Schedule of rates – for construction.

3.2 The Bidder is expected to examine all instructions, forms, terms and specifications 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 Department in writing or by fax or Cable at the department's mailing address indicated in the invitation of Bids. The department 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 from the opening of the bids. Copies of the query (without identifying the source) and the clarifications by the department shall be sent to all the prospective bidders who have purchased the bid documents and all such clarifications issued by the Department will form part of the bid documents.

5. **AMENDMENT OF BID DOCUMENTS:**

5.1 At any time, prior to the date for submission of bids, the department may, for any 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 telex or FAX to all prospective bidders on the address intimated at the time of purchase of bid document from the department 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 department may, at its discretion, extend the deadline for the submission/opening of bids suitably.

C. **PREPARATION OF BIDS**

6. **Cost of Bidding:**

The bidder shall bear all costs associated with the preparation and submission of the bid. The department, 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 document:

- i.) Bid security in accordance to clause no. 8
- ii.) Tender documents (s), in original, duly filled in and signed by tenderer or his authorized representative alongwith seal on each page. All corrections and overwriting must be initialed with date by the tenderer or his authorized representative.
- iii.) Work experience certificate of one years in U.G./OF cable from not below the rank of STS officer.
- iv.) Payment certificate from DDO concern for Rs. 1 Lac in one year in field of U.G./OF Cable works.
- v.) The registration of the firm. Authenticated copy of partnership deed in cases of partnership firm.

- vi.) Bid Form, duly filled in, as per section II.
- vii.) Tenderer's profile duly filled in, as per section III of the tender document.
- viii.) Original "Power of Attorney" in case person other than the tenderer has signed the tender documents.
- ix.) List of qualified experienced personnel, having detail as name and address, who are working for the tenderer, who will be deployed for the work.
- x.) Income Tax PAN no.

8. BID SECURITY:

The bidder shall furnish, as part of his bid, a bid security (EMD) for an amount of Rs. 7,500/- (Seven thousand five hundred) only through D.D. issued by any scheduled bank in favour of Sr. AO (Cash), O/o GMTD, BSNL, Hazaribag payable at Hazaribag.

No interest shall be paid by the department on the bid security for any period, what so ever.

- 8.1 The bid security is required to protect the Department against the risk of bidders conduct, which would warrant the security's forfeiture, pursuant to para 8.7
- 8.2 Bid Security shall be paid in the form of Crossed Demand Draft issued by a scheduled bank, drawn in favour of Sr. Accounts Officer (Cash), BSNL, O/o GMTD Hazaribag , payable at Hazaribag.
- 8.3 A bid not secured in accordance with para 8.1 & 8.3 shall be rejected by the Department as non responsive.
- 8.4 The bid security of the unsuccessful bidder will be refunded as promptly as possible.
- 8.5 The successful bidder's bid security (EMD) will compulsorily be converted to part of security deposit money.
- 8.6 The bid security shall be forfeited ;
 - 8.6.1 If the bidder withdraws his bid during the period of bid validity specified in the bid document or
 - 8.6.2 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 department or
 - 8.6.3 If all tender documents as required in Section XI are not submitted along with the tender
 - 8.6.4 In case of a successful bidder, if the bidder fails;
 - (i) To sign the agreement in accordance with clause 25
 - (ii) To deposit S.D. money within 10 days of receipt of letter of intent.
 - (iii) EPF number and E-payment account number as stated on Sl. No. 25.3.

9. BID PRICES:

- 9.1 The bidder shall give the total composite price inclusive of all levies and taxes, packing, forwarding, freight and insurance in case of materials to be supplied and inclusive of all taxes and levies in case of works to be executed. The contractor shall be responsible for transporting the materials from Divisional

store, Hazaribag to their respective site, to be supplied by the department (At the district Telecom Store) or otherwise to execute the work under the contract, to site at his/their own cost. The costs of transportation are subsumed in the standard Schedule Rates and therefore no separate charges are payable on this account. The offer shall be firm in Indian Rupees.

- 9.2 Prices shall be quoted by the bidder as percentage below/ above/ at par the schedule of rates given in schedule of rates (Financial Bid). Prices quoted at any other place shall not be considered.
- 9.3 The price quoted by the bidder shall remain fixed during the entire period of contract and shall not be subject to variation on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.
- 9.4 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 240 day from date of opening of the bid (Qualifying Bid). A BID VALID FOR A SHORTER PERIOD SHALL BE REJECTED BY THE DEPARTMENT AS NON-RESPONSIVE.
- 10.2 The department 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 inter-lineation, 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 cover. These envelopes should contain the following;

Envelope	Marked on the Cover	Contents of Envelope
First	Bid Security	EMD amount
Second	Qualifying Bid	Containing documents as per clause 7
Third	Financial Bid	Rate duly quoted by the tenderer in the prescribed format.

On all these envelopes the name of the firm and whether "Bid Security" OR "Qualifying" 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 should be summarily rejected.

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

Tender for OF Cable Construction in Hazaribag SSA against Tender no: GMTD/HZB/Tender/OFC-CMTS/Phase III/07-08/02 dated 01.05.2007.

12.3 The tenderer will be bound by all terms, 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 up to 15.00 hrs on or before 28.05.2007 placed in the chamber of DE (A&P), O/o GMTD Hazaribag

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 DE (A&P), O/o GMTD, Hazaribag.

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 for postponing the tender shall be received in writing. Such notice of extension of date of opening shall also be put-up on the notice board and also published in the newspapers in which original NITs have been published. If the date of opening of bids is declared as holiday, the bids will be opened on the next working date at the same time and venue.

13.3 The BSNL, 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:**

14.1 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. OPENING OF BIDS BY THE DEPARTMENT:

16. OPENING OF BIDS BY THE DEPARTMENT:

16.1 The Department shall open the bids in the presence of bidders or his authorized representatives who choose to attend, at 15.30 Hrs on due date i.e. on 28.05.2007 in the chamber of D.E. (A&P), O/o G.M.T.D., Hazaribag. 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 (A format is given in section – X).

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, if 10 tenders have been received, the bids shall be numbered as 1 of 10, 2 of 10 etc. All the members of TOC shall initial on the outer envelopes of all the bids.

16.3.2 The envelopes containing the tender offer and not properly sealed, as required vide para 12.1 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 envelop containing the three inner envelopes be opened. The bid opening committee shall initial on all three inner envelopes with date.

16.3.4 Amongst these three envelopes, the envelope marked “Bid Security” shall be opened first and on receipt of necessary amount in shape of D.D. then after “Qualifying Bid” will be opened and examined.

16.3.5 After opening the qualifying bid, all the documents contained therein shall be serially numbered and signed by the bid opening committee members.

16.3.6 (After recording of the "Qualifying Bid" the TOC will place all the Financials bids submitted by the bidder in an envelope and will seal it with a wax for keeping in safe custody)

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 and time of opening of "Financial bid" shall be conveyed to all the bidders who have qualified in qualifying Bid and their representative shall be allowed to attend the financial bid opening.

16.4.3 After opening the "Financial Bid" the bidders name, bid prices, modifications, bid withdrawals and such other details as the Department, 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 BY THE DEPARTMENT:

To assist in examination, evaluation and comparison of bids, the department 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 Department 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 bids shall be rejected.
- 18.3 Prior to the detailed evaluation, pursuant to clause 22, the Department 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 Department's determination of bid's 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 department and shall not subsequent to the bid opening be made responsive by the bidder by correction of the non-conformity.
- 18.5 The department may waive any minor infirmity or non-conformity or irregularity in a bid that does not constitute a material deviation, provided such waiver does not prejudice or affect a relative ranking of the bidder.

19. **EVALUATION AND COMPARISON OF SUBSTANTIALLY RESPONSIVE BIDS:**

- 19.1 The department 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 shall be on the percentage deviation (above/below/at par) offered and indicated in schedule of rates of the bid documents.

20. **CONTACTING THE DEPARTMENT:**

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

21. **AWARD OF CONTRACT:**

- 21.1 The department 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 department and the contractor.

22. **DEPARTMENT'S RIGHT TO VARY QUANTUM OF WORK:**

The department, 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 specified in the schedule of requirements without any change in the rates of other terms and conditions.

23. **DEPARTMENT'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS:**

The department reserves the right to accept or reject any bid and to annul the bidding 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 department's action.

24. **ISSUE OF LETTER OF INTENT:**
- 24.1 The issue of letter of intent shall constitute the intention of the department to enter in to the contract with the bidder. Letter of intent will be issued as offer to the successful bidder.
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 department with in a week of submission of S.D. money i.e. 10% of awarded work value.
- 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 security deposit, which will be held by the department till the completion of warranty period.
- 25.3 After execution of agreement the tenderer will have to submit the following papers within 15 (fifteen) days.
- (1) Valid Registration of EPF from Regional Provident Fund Commissioner.
 - (2) Personal A/C no. of E-Payment.
 - (3) Labour license issued competent authority of Labour department. (Central)
26. **ANNULMENT OF AWARD:**
Failure of the successful bidder to comply with the requirement of BSNL as per tender document shall constitute sufficient ground for the annulment of the ward and forfeiture of the bid security, in which event, the BSNL may make the award to any other bidder at the discretion of the BSNL or call for new bids.
27. **JURISDICTION OF WORK :** **Hazaribag SSA.**
The entire work may be assigned to more than one contractor as per norms and requirements.
28. **Period of contract:-**
The normal period of contract will be for one year from the date of signing of agreement. However, it may be extended for further period of one year unilaterally as per discretion of GMTD, Hazaribag.
29. **Payment of Bill:-**
- (A) Payment will be done after completion of work in all respect i.e. cable becomes operational, A/T done, GMTD Hazaribag fully satisfied with the works. In case of non-satisfaction with the works:-
 - I. The G.M.T.D. Hazaribag may form a committee to inspect the work of O. F. cable before payment of bills.
 - II. Decision of GMTD will be final to accept the report of SDE/AT or committee.
 - (B) If contractor consider abnormal delay in payment of his bill, the contractor shall make correspondence with any concerned officer of GMTD office Hazaribag through Central Registry of this office.
 - (C) During the course of release of payment contractor should not approach to any officer/official of GMTD office Hazaribag untill called in writing. In such visit the contractor should came with original copy of calling letter and not with photo-copy.
32. **Labour welfare measures and workman compensation:-**
The contractor should must obey all the contract labour regulation as mentioned in tender document and circulated by the authorities of Labour Department during the contract period.
- 31 **Security Deposit will be forfeited if;**
- a. In case of any document submitted by the tenderer is found false/forged at any stage.
 - b. The contractor does not execute the work within the time limit as prescribed in work order. Plus extension of time granted, if any by GMTD, Hazaribag
 - c. The contractor fails to rectify the defects occurred during the work.

d. If, GMTD is satisfied that the contractor is deliberately or negligently has left the work incomplete or not completed the work, the S.D. money will be forfeited.

32 Black listing of contractors:- The contractor shall be blacklisted for a specific period under any of the following circumstances;

(a) If the contractor fails to execute the contract or execute it unsatisfactorily or is proved to be responsible for constructional defects.

(b) If the contractor is no longer in possession of adequate equipments, technical personnel or financial resources.

(c) If the contractor persistently violets the labour regulations and other contract laws.

If the contractor has been found adopting wrongful means to influence the departmental authorities.

SECTION V
GENERAL (COMMERCIAL) CONDITIONS OF THE CONTRACT

1. APPLICATION:

The General conditions shall apply in contracts made by the department for the execution of OF Cable construction works.

2. STANDARDS:

The works to be executed under the contract shall conform to the standards prescribed in the OF 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:

(a) The successful tenderer will have to deposit security as mentioned in the Scope of Work, subject to a maximum of 10 % of work value including bid security already submitted with bid document in the form of Crossed Demand Draft drawn in favour of Accounts Officer (Cash) ,BSNL , O/o GMTD, Hazaribag , issued by a schedule bank and payable at Hazaribag .

(ii) PERFORMANCE SECURITY :

(a) The contractor shall permit the Department, at the time of making any payment to him for work 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 7.5% of bill.

(b) The proceeds of the performance security shall be payable to the department 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 six month period since date of completion of the work 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.

6. ISSUE OF WORK ORDERS AND TIME LIMIT:

6.1 The work order shall be issued so as to include all terms of works for the section allotted to the contractor as put in the NIT.

- 6.2 The work orders shall be issued by the Divisional Engineer (A&P), O/o GMTD, Hazaribag of OF cable construction works 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 an officer not below the rank of Deputy General Manager.
- 6.4 The Divisional Engineer shall mention the time limit to execute the work in the work order.
- 6.5 The department 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 or the GMTD, Hazaribag, the contractor is not executing the work at the required pace.

7. EXTENSION OF THE TIME LIMIT:

7.1 General

- 7.1.1. When the work is started, intimation in this regard must be submitted in GMTD office Hazaribag through Central Registry of GMTD Office HZB by the work In-charge officer.
- 7.1.2. 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.
- 7.1.3. 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 in the prescribed Form (Part – A) 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 competent authority with his detailed report. 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 to the contractor, but such extension of time shall be with LD charges as per clause dealing with penalty for delays in execution of works. The extension of time with LD charges shall be issued under the signature of

- the competent authority. Extension will be applied to DET with copy to Central Registry of GMTD failing which assumed that extension has not been applied.
- 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 :
- 7.3.1. 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 department. In such cases, the Engineer-in-charge with the approval of competent authority to sanction EOT, may issue extension of time *suo moto* without waiting for contractor to make an application for EOT. Entry of hindrances shall be made in the Hindrance Register. The Department will, however, not be liable to the contractor for any losses of damages, costs, charges, or expenses that the contractor may in any way sustain/suffer due to delay in making the above available.
- 7.4 Completion of Work:- After completion of work the contractor must submit intimation about completion of awarded work to GMTD, Hazaribag through Central Registry of GMTD office Hazaribag.
8. MEASUREMENT, INSPECTION, TESTING AND ACCEPTANCE TESTING:
- 8.1 Measurement :
- 8.1.1 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. 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.
- 8.1.2 Responsibility of taking and recording measurements : The measurement 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 in his own writing a. The measurement book should be prepare in two copies- one for bill record and other for contractor's record. 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.
- 8.1.3 Method of recording of nomenclature of items : Complete nomenclature of items, as given in the agreement need not be reproduced in the measurement book for recording the measurements but corresponding Item Code as provided, shall be used.
- 8.1.4 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 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 75 meters, the POMs shall be at 0M, 10M, 20 M, 30 M, 40 M, 50 M, 60 M , 70 M. The last POM shall be at 75th 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 between	Reduction in rate
<165 Cms. to \geq 150 Cms.	5%
<150 Cms. to \geq 130 Cms.	12.5 % of approved rates.
<130 Cms. to \geq 100 Cms.	25% of approved rates
Below 100 Cms.	40% of approved rates.

- Measurement of Lengths and profiles of strata and protection

The measurements of length of trenches are on running meter basis, irrespective of type of soil encountered while digging.

- The type of protection provided (item code-wise) in a segment shall be recorded in the measurement book in the sheet provided for this purpose.
- Measurement of other items : The measurement /numerical details of other items shall be recorded in the sheets provided for respective items viz.
 - Fixing, painting and Sign writing of route indicators

8.1.5 The contractor shall sign all the measurement 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, than in any such events the measurements taken by Engineer-in-charge or by the 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.

8.1.6 The Divisional Engineer 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 as specified in document ‘procedures for underground 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 contractor for excavation of such test checks, however such test pits shall not be more than 10% of the cable laying work.

8.2 Inspection and Quality Control :

8.2.1 The Quality of Works : The importance of quality of Optical Fibre Cable Construction works cannot be over-emphasized. The quality and availability of long

- distance media and efficiency of the reliable media connectivity to exchanges depends up on quality of laying of Optical Fibre Cable. Further, the OF Cables are vulnerable to damages due to work of other agencies. Any damage to local cable, power cable and to human/animals will be responsibility of the contractor till completion of work.
- 8.2.2. The quality of O.F. Cable Plant depends upon the quality of individual items of work involved viz. depth of cables laid, care while paying & laying, protection, jointing of cables and termination in equipment room and at last but not the least on documentation of cable network. In order to ensure quality in Cable Construction Work, each component of work needs attention. The works shall be carried out strictly in accordance with specifications laid down to achieve the requisite quality aim.
- 8.2.3. 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.
- 8.2.4. 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).
- 8.2.5. 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 department. The contractors shall be bound, if called upon to do so, to offer the works for inspection without any extra payment.
- 8.3 Testing and Acceptance Testing:
- 8.3.1 After completion the work from the contractor side, the contractor shall intimate about the completion of work in writing to concerned SDE as well as to GMTD, Hazaribag through central registry i.e. Receipt & Dispatch Section of this office.
- 8.3.2 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.
- 8.3.3 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 measurement for the purpose of billing and contractual obligations. However, if the Measurements taking 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. Office 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 department.
- 8.3.4 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. The work shall be offered for A.T. as soon as the work is complete in all respects. The work against any work order can be offered for A.T. in a number of stages.

- 8.3.5 The contractor shall provide labour, if demanded by the A/T officer for digging of test pits and other necessary infrastructure for carrying out the A/T 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 Department who shall state in writing in what respect the stores are faulty.
This warranty shall survive inspection or payment for, and acceptance of goods, but shall expire except in respect of complaints notified prior to such date, twelve months after the acceptance testing.
- 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 department, the Department may proceed to do the work at the contractor's risk and costs, but without prejudice to any other rights which the Department 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.
- 9.4 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 The Department 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 been overpaid in respect of any work done by the 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 the Department 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 the Department to the contractor.
- 10.2 Provided that the Department 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 D.G.M. 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 appropriated by the Department for the

payment of a sum of money arising out or under any other contract made by the contractor with the Department.

11. PAYMENT TERMS:

11.1 Procedure for Preparation and settlement of bills :

11.1.1 All items of work involved in the work order shall be completed in all respects before preferring the bills for the work.

11.1.2 No payment will be made before OF Cable becomes operational and it is through end to end.

11.1.2.1 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 in record and record it in the estimate file maintained in his office and send first and second copies with all documents to relevant higher office for processing of bills and release of payment.

11.1.2 Procedure for preparation, processing and payment of final bill: The contractor shall prepare the final bill in triplicate & acceptance and testing of all the works and submit the same to S.D.E. in-charge of work within 30 days of acceptance and testing. The bill shall be prepared for all the measurements of all items involved in execution of complete work order. The contractor shall prepare the final bill containing the following details:

- ❑ The bill for all the quantities as per Measurements at the approved rates.
- ❑ Store reconciliation statement furnishing account of stores received against the work order and returned to the designated Store godown 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.
- ❑ Route Index diagram.
- ❑ M.B. duly filled.
- ❑ The contractor within 30 days after completion of work in triplicate and intimate to GMTD office immediately through Central Registry of this office. The date of commencement and completion of work, tender no. and estimate no. must be mentioned on bill/MB.
- ❑ The contractor will intimate immediately to GMTD office in the central registry that he has submitted the bills to the concerned SDE.
- ❑ Any bill submitted after stipulated period will not be entertained for payment.
- ❑ One copy of MB duly filled in the handwriting of Officer In-charge for execution of the work will be kept by the contractor for raising any dispute after completion of work and payment of bill. No dispute will be entertained without above record in future. In no case this copy should be submitted.

11.1.2.1 The S.D.E. 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 (and also A/T reports in case of any deviations noted by A/T Officer). The S.D.E. in-charge of work shall submit the final bills, along with other documents

mentioned above, with the documents as mentioned hereunder to the Divisional Engineer, in-charge of work.

- ◆ Bill prepared by the contractor.
- ◆ Material reconciliation statement.
- ◆ Measurement Book.
- ◆ A/T Certificates.
- ◆ Details of recoveries/penalties for delays, damages to Departmental/third party properties as per provisions of the contract. In case no recovery is to be made, NIL report needs to be submitted.
- ◆ Details of empty cable drums cost which needs to be recovered from the bill.

11.1.2.2. 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 alongwith 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. alongwith the bills as above to the higher office for processing and final payment.

11.1.2.3. The office cell dealing with OFC bills shall process the bills in the estimate file of the concerned work and scrutinize the bills vis-à-vis work order issued, sanctioned provisions in the estimate etc. The office cell shall also scrutinize the bill to recover all the liabilities of the Contractor and statutory taxes besides 7.5% payments against security deposit. The bill shall be passed, after necessary scrutiny by concerned Section, by the officer competent to pass the final bill.

- 11.1.2.4
- * The bill will be processed for payment by this office only after receipt of proper A/T report by the competent officer of BSNL.
 - * Still in case of any dispute GMTD will constitute a committee for verification of the work.
 - * GMTD will have full power to decide the basis of payment as mentioned above.
 - * Decision of GMTD will be final to accept the report of SDE/AT or committee.

11.2 Procedure for Payment for sub standard works :

11.2.1 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.

11.2.2 Timely action by Construction Officers (i.e. JTO / SDE-in-Charge of the work) : 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. 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 the contractor fails to rectify/replace/remove the sub standard items, the defects shall be got rectified/replaced/removed departmentally or through some other agency at the risk and cost of the contractor.

11.2.3 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 the 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.

11.2.4 Authority and Procedure to accept sub standard work and payment thereof :

There may be certain items of work pointed out as sub standard which may be difficult to rectify and in the opinion of the Head of SSA/GM (Projects), the items in question will not materially deteriorate the quality of service provided by the construction, the head of SSA/GM (Projects) 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 Cable Construction involving sub standard items of work, as Chairman and one SDE 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.

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

12. PENALTY CLAUSE : AS IN CLAUSE 13

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 Department. 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 0.25 percent of the estimated amount per day 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 instruction 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.

13.1.4 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 DET 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.

13.1.5 The DET reserves the right of cancel the contract and forfeit the security deposit if the contractor fails to commence the work within 7 days after issue of the work order.

13.2 Penalty for causing inconvenience to the Public :

13.2.1 To ensure progress during the execution of work and to cause minimum inconvenience to the public, the contractor shall not dig a trench of more than 200 meters at a stretch in a route at a time. He shall cause to lay cable and close such trenches expeditiously. Under any circumstances a stretch of trench of maximum 200 meters shall not be kept open for more than 4 days in case of cable laying by digging paved surfaces. In the event of contractor falling to comply with, these conditions, a penalty of recovery upto Rs. 300/- per day the trench is kept open beyond the time limit allowed may be imposed by the department. This penalty will be in addition to that payable for delay or slow work. However , the DET may make relaxation beyond this 200m length if he arrives at the conclusion that this relaxation will not adversely affect the progress during the execution of work and that this relaxation will not cause inconvenience to the public

13.2.2 The contractor shall not be allowed to dump the empty cable drums/waste materials in Govt./Public place, which may cause inconvenience to Govt/Public. If the contractor does not dispose off the empty cable drums/waste materials within 3 days of becoming empty, the department is at liberty to dispose off the drum in any manner deemed fit and also recover the amount fixed in this contract for empty cable drums/waste materials from the bill/security deposit/along with the costs incurred by the department in disposing off such materials. The Department may also levy a penalty upto Rs. One thousand for each such default.

13.2.3 If any such penalty is levied on a contractor for more than 2 occasions, then his her contract could be terminated. In this regard the decision of the DET of any higher officer shall be final and binding.

13.3 Penalty for cutting/damaging the old cable :

13.3.1 During excavation of trench utmost 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 ;

<i>Size of existing UG/OF Cables cut/damaged</i>	<i>Amount of penalty per cut/damage</i>
Up to 100 pairs cable	Rs. 500.00 (Five Hundred)
Above 100 pairs & up to 400 pairs	Rs. 1,000.00 (One thousand)
Above 400 pairs	Rs. 2,000.00 (Two thousand)
OF Cable of any size	Rs. 5,000.00 (Five thousand)

Besides the above penalty, the contractor shall carry out such repairs for restoration of the damaged cable free of charge and at his/their own cost . 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.

13.4 Penalty to damage stores/materials supplied by the department while laying :

13.4.1 The contractor while taking delivery of materials supplied by the Department 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 payment/securities.

13.4.2 However, contractor will not be penalised 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 that work could not be completed by due date for completion or the contractor had already failed to complete the work by that date.

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 Department as under :

14.2.1. Measurement of Works executed since the date of last measurement and upto 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 authorised shall be final and no further request for joint measurement shall be entertained.

- 14.2.2. The unused material (supplied by the Department) available at site, shall be transported back by the department 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 department shall get the unexecuted work completed through any other contractor approved by the GMTD, Hazaribag at the approved rates of that particular section or to execute the work departmentally, as is convenient or expedient to the Department at the risk and cost of the contractor. In such a event no compensation shall be payable by the department to the contractor towards any inconvenience/loss that he may be subjected to as a result or such an action by the department. In this regard the decision of GMTD, Hazaribag 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 department under the contract or any other account whatsoever any where in the department 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.
- 14.3 Termination for Insolvency :
- 14.3.1 The Department may at any time terminate the Contract by giving written notice to the Contractor, without compensation to the 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 Department.
- 14.4 Optional Termination by department (Other than due default of the Contractor) :
- 14.4.1 The department may, at any time, at its option cancel and terminate this contract by written notice to the contractor, in which even the contractor shall be entitled to payment for the 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 while of material, machinery and other equipment for use in or in respect of the work. 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 department or as the department may direct.
- 14.4.2 The department 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.

14.5 Issuance of Notice :

14.5.1 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 alongwith a detailed report to the competent authority who had accepted the contract.

14.5.2 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 safe guards 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 department.
- 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 departmental 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.

15. Blacklisting of contractor:

The contractor shall be blacklisted for a specific period under any of the following circumstances:

- (a) If the contractor fails to execute the contract or executes it unsatisfactorily or is proved to be responsible for constructional defects.
- (b) If the two contracts awarded to the contractor, anywhere in the department, have been rescinded.
- (c) If the contractor is no longer in possession of adequate equipments, technical personnel or financial resources.
- (d) If the contractor is litigious by nature or has violated any important condition of the contract.
- (e) If the contractor is found to have given false information at the time of enlistment or is declared or is in the process of being declared bankrupt/insolvent winding-up, dissolved or partitioned.
- (f) If the contractor persistently violates the labour regulations and other contract laws.
- (g) If the contractor has been found involved in unethical business practices.
- (h) If the contractor has been found adopting wrongful means to influence the departmental authorities.

The blacklisted contractor shall neither be allowed to participate in the tenders nor shall be allowed to apply for fresh enlistment anywhere in the BSNL during the specified period of blacklisting.

15.1 Procedure to remove/black-list the contractors & competent authorities

The Divisional Engineer in-charge of works or any higher officers shall submit performance report of the contractors on completion of each work order to the authority that has approved the contract. The authority which has approved the contract shall regularly review the performance of the contractor's vis-à-vis terms & conditions of the contract.

If the contract approving authority observes that any of the conditions justifying removal/black-listing of contractor from the enlistment, such authority shall immediately submit report to the enlisting authority giving details of lapses/violation justifying removal/black-listing of the contractor.

Upon receipt of recommendations of the committee for black-listing the contractor the competent authority will issue a registered show cause notice to the said contractor giving him/her at least two weeks time to reply. Upon receipt of reply the enlisting authority shall decide about removal/black-listing of the contractor. If the contractor does not reply to the registered notice then the enlisting authority is free to take decision based up on committee's recommendation after expiry of notice period. The decision about blacklisting shall expressly mention duration for which the contractor of blacklisted debarring him from participating in the tenders and also from applying for fresh enlistment in the BSNL during the period of blacklisting.

16. INDEMNITIES :

15.1 The contractor shall at all times hold the department 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 department , its officers and employees and forthwith upon demand and without protect or demur to pay to the department 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 department 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 department or pay to the department forthwith on demand without protect or demur all cost, charges and expenses and losses and damages otherwise incurred by it in consequences of any claim, damages and actions which may be brought against the department arising out of or incidental to or in connection with the operation covered by the contractor.

15.2 The contractor shall at his own cost at the department'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 department.

17. FORCE MAJEURE :

16.1 If any time, during the continuance of this contract, the performance in whole or in part by either party or any obligation under this contract shall be prevented or delayed by reason of any war, or hostility, civil commotion sabotage, explosions, or act of God (Herein after referred to as events) provided notice of happenings, of any such eventuality is given by either party to the other within 21 days from the date of occurrence thereof, neither party shall by reason of such event be entitled to terminate this contract nor shall either party have any such claim for damages against the other in respect of such non-performance and work under the contract shall be resumed as soon

as practicable after such event may come to an end or cease to exist, and the decision of the Department as to whether the work have been so resumed or not shall be final and conclusive, provided further that if the performance, in whole or part of any obligation under this contract is prevented or delayed by reason of any such even for a period exceeding as fixed by the department either party may, at his option terminate the contract.

16.2 Provided also that if the contract is terminated under this clause, the Department shall be at liberty to take over from the contractor at a price to be fixed by the Department, which shall be final, all unused, undamaged and acceptable materials, bought out components and stores in the course of execution of the contract, in possession of the contractor at the time of such termination of such portions thereof as the Department may deem fit excepting such materials bought out components and stores as the contracts may with the concurrence of the Department elect to retain.

18. ARBITRATION :

17.1 In the event of any question, dispute or difference arising under this agreement or in connection there-with except as to matter the decision of which is specifically provided under this agreement, the same shall be referred to sole arbitration of the Chief General Manager, Jharkhand telecom Circle ,BSNL , Ranchi or in case his designation is changed or his office is abolished them in such case to the sole arbitration of the officer for the time being entrusted whether in addition to the functions of the Chief General Manager , Jharkhand telecom Circle ,BSNL , Ranchi or by whatever designation such officers may be called (hereinafter referred to as the said officer) and if the Chief General Manager , Jharkhand telecom Circle ,BSNL , Ranchi or the said officer is unable or unwilling to act as such to the sole arbitration or some other person appointed by the Chief General Manager, BSNL , Jharkhand telecom Circle ,BSNL , Ranchi or the said officer. The agreement to appoint an arbitration will be in accordance with the Arbitration and Conciliation Act, 1996. There will be no objection to any such appointment that the arbitrator is Government Servant/employee of the BSNL or that he has to deal with the matter to which the agreement relates or that in the course of his duties as Government Servant/BSNL employee he has expressed views on all or any other matter under dispute. The award of the arbitrator shall be final and binding on the parties. In the event of such arbitrator to whom the matter is originally referred, being transferred or vacating his office or being unable to act for any reasons whatsoever such Chief General Manager or the said officer shall appoint another person to act as arbitrator in accordance with terms of the agreement and the person so appointed shall be entitled to proceed from the stage at which it was left out by his predecessors.

17.2 The arbitrator may from time to time with the consent of parties enlarge the time for making and publishing the award, Subject to aforesaid Indian Arbitration and Conciliation Act 1996 and the Rules made there under, any modification thereof for the time being in force shall be deemed to apply to the arbitration proceeding under this clause.

17.3 The venue of the arbitration proceeding shall be the office of the Chief General Manager, BSNL , Jharkhand telecom Circle ,BSNL , Ranchi or such other places as the arbitrator may decide. The following procedure shall be followed :

17.3.1. In case parties are unable to reach a settlement by themselves, the dispute should be submitted or arbitration in accordance with contract agreement.

17.3.2. There should not be a joint submission with the contractor to the sole Arbitrator.

- 17.3.3. Each party should submit its own claim severally and may oppose the claim put forward by the other party.
- 17.3.4. The onus of establishing his claims will be left to the contractor.
- 17.3.5. Once a claim has been included in the submission by the contractor, a reiteration or modification thereof will be opposed.
- 17.3.6. The 'points of defence' will be based on actual conditions of the contract.
- 17.3.7. Claims in the nature of ex-gratia payments shall not be entertained by the Arbitrator as these are not contractual.
- 17.3.8. The question whether these conditions are equitable shall not receive any consideration in the preparation of 'points of defence'.
- 17.3.9. If the contractor includes such claims in his submission, the fact that they are not contractual will be prominently placed before the Arbitrator.

The award of the sole Arbitrator shall be final and binding on all the parties to the dispute.

18. SET OFF :

- 18.1 Any sum of money due and payable to the contractor (including security deposit refundable to him) under this contract may be appropriated by the Department or any other person or persons contracting through the department or such other person or persons for payment of a sum of money arising out of this contract made by the contractor with Department or such person or persons contracting through department .

SECTION: VI

SPECIAL CONDITIONS OF CONTRACT

1. GENERAL:

- 1.1 The work shall be accepted only after Acceptance Testing carried out by the team, designated by the Department, as per prescribed schedule and work/material passing the test successfully.
- 1.2 The Department reserves the right to disqualify such bidders who have a record of not meeting contractual obligations against earlier contracts entered into with the Department.
- 1.3 The Department 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 Department reserves the right to counter offer price(s) against price(s) quoted by any bidder.
- 1.5 Any clarification issued by Department, 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 may be split up between two or more contractors or accept any tender in part and not entirely if considered expedient by the GMTD, Hazaribag..
- 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 GMTD, Hazaribag shall be final.
- 1.10 If any time after the commencement of the work, the Department may feel that execution of whole or part of work, as specified in the tender is not required to be carried out, then the Department 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 had any claim for compensation by reason of any alternations having been made in the original specifications, drawings, designs and instructions which shall involve any curtailment of the work as originally contemplated.
- 1.11 Whenever any claims against the contractor for the payment of a sum of money arises out of or under the contract, the Department shall be entitled to recover such sum by appropriating in part or whole the security deposit of the contractor, and to sell any government promissory notes etc., forming the whole or part of such security or running/final bill pending against any contract with the department. 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 department. Should this sum be not sufficient to cover the

- full amount recoverable the contract or shall pay to Department 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 Department/BSNL or any other Department of the Government of India/BSNL is allowed to work as a contractor for a period of two years after his retirement from Government service/BSNL service without the previous permission of Government of India/BSNL as the case may be. This contract is liable to be cancelled if either the contractor or any of his employee is found at any time to be such a person who hadn't obtained the permission of Government of India /BSNL 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 GMTD, Hazaribag 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, Hazaribag on behalf of the BSNL can terminate the contract without compensation to the contractor. However, the GMTD, Hazaribag, 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 the GMTD, Hazaribag 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 GMTD, Hazaribag and the contractor shall in so far as possible by mutual consultation, try to decide upon the meaning and intent of the contract document. In case of disagreement the matter shall be referred to the GMTD, Hazaribag 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 this supervisory personnel with the contents of all the contract documents.
- 1.2 Notification:
- 1.2.1 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/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 through out the performance of the work and/or with such other information and/or supporting figure and data as may from time to time as director or required.

- 1.3 Shut down on account of weather conditions :
- 1.3.1. 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 department or deemed advisable on account of bad weather conditions or other Force major conditions.
2. STORES SUPPLIED BY THE DEPARTMENT:
- 2.1 At no point of time the contractor shall be issued stores of value more than the contractor's material security as per clause number 5(i) of section III. If at all the work required more amount of materials to issued to the contractor, then the security shall suitably be revised before the issue of the store and the contractor will not have any objection to it.
- 2.2 The contractor shall transport (including loading and unloading) all stores issued to him from the Divisional Store , GMTD, Hazaribag or any other store of GMTD, Hazaribag , to the site of work at his own cost. The Department shall not pay any transportation charges to the contractor.
- 2.3 All materials supplied to the contractor by the Department shall remain the absolute property of Department and shall not be removed from site of the work except for use in the work and shall be at all times open to inspection by the representative of the GMTD, Hazaribag. In-case the materials like cable and accessories are taken delivery of by the contractor and stored at the site office/store of the contractor such site office/store will also be treated "as site" for this purpose. Any such materials remaining unused at the time of the abandonment, completion or determination of the contract shall be returned to the Department at a place informed to him by the Department, failing which the cost of the unused materials shall be deducted from the contractor's material security or any of his pending bills or from any other security.
- 2.4 The contractor shall be responsible for the transportation of store, storage and safe custody of all material supplied to him by the Department, which in the contractor's custody whether, or not installed in the work. The contractor shall satisfy himself regularly the quantity and quality of the materials supplied to him and he will be responsible for any subsequent deterioration and discrepancy (inclusive of theft) in the quantity/quality of the materials.
- 2.5 The contractor shall submit a proper account every month of all the materials supplied to him by the Department and those consumed for items of work any discrepancy of difference between the materials issued to the contractor and those consumed in the work as per the "Department's calculation" (which shall be final) will be charged to the contractor or deducted from his bills at 1.5 times of prevailing standard price including freight, handling charges, storage charges etc.
- 2.6 The contractor shall ensure that only the required materials are issued to him. Upon completion of work, the contractor shall return to the Department at the later designated store in good condition, free of charges, any unused materials that were supplied by the Department.
3. EASEMENTS, PERMITS, LICENCES AND OTHER FACILITIES :
- 3.1 The contractor shall obtain/provide at his own cost all easements, permits and licence necessary to do its work except for the following which shall be provided by the Department,
- (i) "Right of User" easements and permits.
 - (j) Railway and Highway crossing permits including bridge.
 - (k) Canal / Stream crossing permits.

- 3.2 The contractor shall be fully responsible for angling and obtaining all necessary easement, permits and licences, 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.
- 3.3 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 breach and claim and shall be entitled with a copy to the Divisional Engineer.
- 3.4 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 which 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.
- 3.5 At location where the OF Cable trench is routed across or 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 government or local agencies having jurisdiction.
- 3.6 If the department is not able to provide above mentioned permits etc. as per clause 3.1 above in time then the extension of time limit shall be provided as per EOT clause given in tender document.
4. QUALITY OF WORK :
- 4.1 The Department shall be the final judge of the quality of the work and the satisfaction of the department in respect thereof set forth in the contract documents. Laxity or failure to enforce compliance with the contract documents by the Department 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 the GMTD, Hazaribag has the right to prohibit the use of men and any tools, materials and equipment which in his opinion do not produce work or performance meet the requirement of the contract documents.
5. TAXES AND DUTIES :
- 5.1 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 Department from and against the same or any default by the contractor in the payment thereof.
6. PROTECTION OF LIFE AND PROPERTY AND EXISTING FACILITIES :
- 6.1 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 the disturbance and inconvenience to the public.
- 6.2 If the excavation of trench alters the contours of the ground around road and highway crossing in such locations dangerous to traffic, the contractor shall at his own cost, take

- all necessary precautions to protect public and shall comply with all the Department regulations as to placing of warning boards (Minimum size 3' x 2'), traffic signals, barricades, flags etc., at such location. If the contractor does not put the warning signal as per above directions, then a penalty of Rs. 500/- per day shall be levied on the contractor, till the directions are complied by the contractor. The contractor shall take due precautions to avoid damages to other pipe lines, water mains, sewers, telephones, telegraphs and power conduits, laid wires poles and guy wires, railways, highways, bridges or other underground or above ground structure and/or property crossing or adjacent to the cable trench being excavated.
- 6.3 Attention of the contractor is drawn to the rules regarding the works at road crossing, along Railways Bridges, Highways safety precautions while working in public street. The contractor in writing shall obtain the detailed engineering instructions from the Divisional Engineer of the area.
- 6.4 The contractor shall be solely responsible for location through approved non-destructive means and ensuring the safety of all existing underground pipeline, electrical cables, and or other structures.
- 6.5 The contractor shall be solely liable for all expense for and in respect of repairs and/or damage occasioned by injury of or damage to such underground and above structures or other properties and under take to indemnify the Department from and against all actions, cause of actions, damages, claims and demands what-so-ever, either in law or in equity and all losses and damages and costs (inclusive between attorney and client), charges and expenses in connection therewith and/or incidental thereto. The contractor shall take all responsibilities and risk in crossing other pipelines and cables and shall be responsible for protecting all such existing pipelines, poles, electric lines, sewers, cables or other facilities from damage by the contractor's operation in connection with the work. The contractor without cost of the Department shall promptly repair any damage incurred.
- 6.6 The current market value of any commodities lost as a result of any damage to the aforesaid existing facilities shall be paid by the contractor together with such additional sums necessary to liquidate the personal of property damages, resulting there from.
7. LABOUR WELFARE MEASURES AND WORKMAN COMPENSATION :
- 7.1 Obtaining Licence before commencement of work :
The contractor shall obtain a valid labour licence 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 licence 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 fulfil this requirement shall attract the penal provisions of this contact arising out of the resultant non-execution of work.
- 7.2 Contractors Labour Regulations:
- 7.2.1. Working Hours :
- 7.2.1.1. 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.
- 7.2.1.2. 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.

- 7.2.1.3. Every worker shall be given a weekly holiday normally on a Sunday, in accordance with the provisions of Minimum Wages (Central) Rules 1960, as amended from time to time, irrespective of whether such worker is governed by the Minimum Wages Act or not.
- 7.2.1.4. Where the minimum wages prescribed by the Government, under the Minimum Wages Act, are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages, at the rate applicable to the next preceding day, provided he has worked under the same contractor for a continuous period of not less than 6 days.
- 7.2.1.5. 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 at the overtime rate.
- 7.2.2. Display of Notice Regarding Wages Etc.
The contractor shall, before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain, in a clear and legible condition in conspicuous places on the work, notices in English and in local Indian languages spoken by the majority of the workers, giving the minimum rates of the wages fixed under Minimum Wages Act the actual wages being paid, the hours of work which such wage are earned, wages periods, dates of payments of wages and other relevant information.
- 7.2.3 Payment of Wages
- 7.2.3.1 The contractor shall fix wage periods in respect of which wages shall be payable.
- 7.2.3.2 No wage period shall exceed one month.
- 7.2.3.3 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.
- 7.2.3.4 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.
- 7.2.3.5 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.
- 7.2.3.6 Wages due to every worker shall be paid to him direct or to other person authorised by him in this behalf.
- 7.2.3.7 All wages shall be paid in current coin or currency or in both.
- 7.2.3.8 Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.
- 7.2.3.9 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.
- 7.2.3.10 It shall be the duty of the contractor to ensure the disbursement of wages in presence of the site Engineer or any other authorised representative of the Engineer-in-Charge who will be required to be present at the place and time of the disbursement of wages by the contractor to workmen.

7.2.3.11 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 this 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 onat..... “

7.2.4 Fines and deductions which may be made from wages

7.2.4.1 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 custody, or for loss of money or any other deductions which he is required to account, where such damage or loss is directly attributable to his neglect or default.

(l) Deduction for recovery of advances or for adjustment of overpayment of wages, advances granted shall be entered in a register.

(m) Any other deduction, which the Central Government/department may from time to time, allow.

7.2.4.2. 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.

7.2.4.3. 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.

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

7.2.5 Labour records

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

7.2.5.2 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 CL (R&A) Rules 1971.

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

7.2.5.4 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.
- 7.2.5.5. The contractor shall maintain a Register of Fines in the Form XII of the CL (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 omission for which fines can be imposed.
- 7.2.5.6. The contractor shall maintain a Register of deductions for damage or loss in Form XX of the CL (R&A) Rules 1971.
- 7.2.5.7. The contractor shall maintain a Register of Advances in Form XXIII of the CL (R&A) Rules 1971.
- 7.2.5.8. The contractor shall maintain a Register of Overtime in Form XXIII of the CL (R&A) Rules 1971.
- 7.2.6 Attendance card-cum wage slip
- 7.2.6.1 The contractor shall issue an Attendance card cum wage slip to each workman employed by him.
- 7.2.6.2 The card shall be valid for each wage period.
- 7.2.6.3 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.
- 7.2.6.4 The card shall remain in possession of the worker during the wage period under reference.
- 7.2.6.5 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.
- 7.2.6.6 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.
- 7.2.7. Employment card:
The contractor shall issue an employment Card in the Form XIV of CL (R&A) Central Rules 1971 to each worker within three days of the employment of the worker.
- 7.2.8. 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 CL (R&A) Central Rules 1971.
- 7.2.9 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 authorised by the Ministry of Communication/BSNL in this behalf.

- 7.3 Power of labour officer to make investigations or enquiry
The labour officer or any person authorised by the Central Government on their behalf shall have power to make enquiries with a view to ascertaining and enforcing due and proper observance of Fair Wage Clauses and provisions of these Regulations. He shall investigate into any complaint regarding the default made by the contractor in regard to such provision.
- 7.4 Report of Investigating officer and action thereon
The Labour Officer or other persons authorised as aforesaid shall submit a report of result of his investigation or enquiry 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 authorised officer as the case may be.
- 7.5 The contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour Officer or any other person, authorised by the Central Government on his behalf.
- 7.6 Submission of Returns
The contractor shall submit periodical returns as may be specified from time to time.
- 7.7 Amendments
The Central Government 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.
- 8.0 INSURANCE:
- 8.1 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 undertake to indemnify and keep indemnified the department 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 department 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 department 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 department may require.
9. COMPLIANCE WITH LAWS AND REGULATIONS :
- 9.1 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 Government, Governmental agency or department, municipal board, government or other regulator or authorised 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 sub-contracted to comply with the provisions of the clause and in this connection the contractor agrees as to undertake to save and hold the department 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.

10. TOOLS AND PLANTS

The contractor shall provide at his own cost all tools, plants appliances, implements, measuring instruments 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 or 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

SCOPE OF WORK AND JURISDICTION OF CONTRACT

1. SCOPE OF WORK

1.1 The Optical Fibre Cable is laid through HDPE Pipes buried at a nominal depth of 165 cms. The steps involved in OF Cable construction are as under :

- i) Excavation of trench upto a 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.
- ii) Laying of HDPE Pipes/coils coupled by HDPE sockets in excavated trenches, on bridges and culverts, drawing of 6 mm Polypropylene para pro rope (P.P.Rope) through the HDPE Pipes/coils as per Construction Specifications and sealing of HDPE pipe ends at every manhole by HDPE end caps of suitable size.
- iii) Providing of mechanical protection by R.C.C. Pipes/GI pipes and/or concreting/chambering according to construction specifications, wherever required.
- iv) Fixing of GI Pipes / troughs with clamps at culverts/bridges and/or chambering or concreting of G.I. Pipes/troughs, wherever necessary.
- v) Back filling and dressing of the excavated trenches according to construction specifications.
- vi) Digging of pits 1 meter towards jungle side at every manhole chamber to a depth of 60 cms. fixing or route indicator, concreting and back filling of pits. Painting of route indicators with yellow colour and sign writing denoting route, as per construction specifications.
- vii) Documentation.

1.2 ALLIED ACTIVITIES :

1.2.1 Transportation of Materials : The materials required for executing the work entrusted to the contractors against a work order shall be made available at Divisional Store , GMTD, Hazaribag. Or any other store of GMTD, Hazaribag. In some cases the materials may be available at sub-divisional store godown. The contractor shall be responsible for transporting the materials, to be supplied by the department or otherwise to execute the work under the contract, to site at his/their own cost. The costs of transportation are subsumed in the standard Schedule Rates and therefore no separate charges are payable on this account.

1.2.2 Supply of Materials : There are some materials required to be supplied by the contractor for execution of works under this contract like Bricks, Cement, Wire Mesh and Steel for protection, etc., besides using other consumables which do/don't become the part of the asset. The contractor shall ensure that the materials supplied are of best quality and workmanship and shall be strictly in accordance with the specifications.

2. COST OF WORK : The estimated cost of work is as mentioned in the Notice Inviting Tenders which has been worked out based on standard scheduled rates mentioned in this tender document. The actual value of work may vary based on the actual requirement but generally being limited to +/- 25% of the indicated value.

Section: VIII

Optical Fibre Cable Construction Specifications

The Detailed Optical Fibre construction Specifications are given in document titled as “Optical Fibre Cable Construction Practices – Manual” issued as a part of tender document. The bidders are advised to go through the Manual before quoting for bid.

SECTION: IX

AGREEMENT

The successful tenderer shall have to execute the following agreement ;

This agreement made on this _____ day of (month) _____
(year) _____ between M/s. _____
_____ hereinafter 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 , BSNL (A GOVERNMENT OF INDIA ENTERPRISE) here
in after referred to as the "department" of other part.

Where as the contractor has offered to enter into contract with the said department for the execution of work of trenching & pipe laying, , fixing , painting and sign writing of route indicators and other associated works in the jurisdiction of GMTD, Hazaribag on the terms and conditions herein contained and the rates approved by the department (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 contact that is to say from
Tofor Rs. _____ (in words)
_____ - or until this contact shall be determined by such notice as is hereinafter mentioned, safely carryout, by means of labours 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, pipe laying , fixing painting and sign writing of route indicators and other associated works as described in tender documents & NIT (annexed to the agreement), when the GMTD, Hazaribag or any other persons authorised by the GMTD, Hazaribag in that behalf required. 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. The department may extend, if it consider necessary, this agreement unilaterally for a further period of two months beyond the time as indicated above in this clause and thereafter for a period of two more months if mutually agreed upon by both the parties.
- 2) The NIT (Notice Inviting Tender), 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 Department of Telecommunications/BSNL 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 Department having bearing on execution of work and payments of work to be done under the contract.

In witness whereof parties presents have here into set their respective hands and seals the day 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 by the

Witness :

1.

2.

SECTION X

LETTER OF AUTHORISATION FOR ATTENDING BID OPENING

Tender NO:-GMTD/HZB/Tender/OFC-CMTS/Phase III/07-08/02

Dated at Hazaribag: 01.05.2007.

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

Following persons are hereby authorised 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 authorised 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

LIST OF THE DOCUMENTS TO BE SUBMITTED ALONG WITH BID

The tenderer will have to submit the following documents/deposits with the Bid. Any bid not accompanying the below mentioned documents/deposits will be liable to be rejected;

1. Bid Security in accordance with the tender document.
2. Tender document(s), in original, duly filled in and signed by tender or his authorised representative along with seal on each page. All corrections and overwriting must be initialed with date by the tenderer or his authorised representative.
3. Income Tax PAN no.
4. The registration of firm. Authenticated copy of partnership deed in cases of partnership firm.
5. Bid Form, duly filled in, as per section II.
6. Tenderers profile, duly filled in, as per section III of the tender document.
7. Original "Power of Attorney" in case person other than the tenderer has signed the tender documents.
8. List of qualified experienced personnel, who are working for the tenderer, who will be deployed for the work.
9. Work experience certificate of one year in UG/OF cable from not below the rank of STS officer.
10. Payment certificate from DDO concern for Rs. 1 Lac in any two years (taken together) in field of UG/OF cable works.
11. Any other document to be submitted as mentioned in the relevant clause of this Tender Document & NIT

SECTION: XII OPTICAL FIBER CABLE CONSTRUCTION PRACTICES

The guidelines in the form of Engineering Instructions (E.Is.) on Construction practices of Optical Fiber Cables are issued by T& D wing of the Department, from time to 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. This document will need revision as and when practices undergo any revision.

1.0 General

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

- 1) Minimum possible route length vis-à-vis route having maximum number of towns with potential telecom growth.
- 2) Linking of small exchanges off 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 be recorded in the detailed survey register. The probable locations of joints, termination and re-generators may also be decided and marked on the route map.

On the basis of surveys, general permission from road and rail 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 road at a minimum distance of 15 meters from the centerline of the road or in accordance with the permission from the concerned road authority in view of their road-widening plan. As the O.F.C carries high capacity traffic and is planned for 40 years of life, it is imperative that the cable is laid after obtaining due permission from all the concerned authority to avoid any damage/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 meter below the roads surface.

The Optical Fiber Cable is laid through HDPE Pipes, buried at a nominal depth of 165 cms. The steps involved in OF Cable construction are as under:

- 1) Excavation of trench up to a 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.
- 2) Laying of HDPE pipes/coils coupled by HDPE sockets in excavated trenches, on bridges and culverts, drawing of 6mm Polypropylene Para pro rope(P.P. rope) through the HDPE pipe/coils as per construction Specifications and sealing of HDPE pipe ends at every manhole by HDPE end caps of suitable size.
- 3) Providing of mechanical protection by R.C.C Pipes/ GI pipes and /or concreting / chambering according to construction specifications, wherever required.
- 4) Fixing of GI pipes/troughs with clamps at culverts/bridges and /or chambering or concreting of G.I Pipes/troughs, wherever necessary.

- 5) Back filling and dressing of the excavated trenches according to construction specifications.
- 6) Opening of manholes (of size 3meters x 1 meters x 1.65 meters depth), replacing exiting 6mm P.P ropes by 8mm P.P rope (from manhole to manhole) for ensuring smooth passage for pulling the cable. Pulling of Optical Fiber cable with proper tools and accessories as per constructions specifications. Sealing of both ends of the manholes be hard rubber bush of suitable size to avoid entry of rodents into the HDPE pipes, putting split HDPE pipes and split RCC pipes with proper fixtures over cable in the manhole to protect the bare cable in the pulling manhole. Back filling and dressing of manholes.
- 7) Digging of pit of size 2 meter x 2 meter x 1.8meter (depth) for construction of joining chamber at approximately every two kilometers of internal size of 1.5 meter x 1.5 meter x 1.2 meter using bricks and mortar or fixing pre-cast jointing chamber of internal diameter of 1.2 meter filling of jointing chamber with clean sand, placing either per-cast RCC cover or stone of suitable size on jointing chamber to protect the joint and back filling of jointing chamber with excavated soil.
- 8) Digging of pits 1 meter towards jungle side at every manhole and jointing chamber to a depth of 60 cms., fixing of route indicator/joint indicator, concreting and back filling of Pits. Painting of route indicators with yellow co lour and joint indicator by red co lour and sign writing denoting route/joint indicator number, as per construction specifications.
- 9) Documentation.

2.0 Specifications of Materials used:

HDPE PIPE / COILS

The Optical Fiber Cable is pulled through 50mm outer diameter HDPE Pipes/Coil having strength of 10-kg/sq. cm.50mm HDPE pipes of 5 meters length or 50 meters coil, should meet the specification as given in GR no. G/CDS-OS/01 Dated December 1994 and revised up to date.

HDPE Socket

For coupling HPE Pipes/ Coils, HPE sockets as per IS 4984 –1995 ('O 'ring types) made of High Density Polyethylene 5010 or equivalent injection grade material should be used. The HDPE sockets should be black in co lour and should be fitted with hard rubber rings at both ends and should confirm to GR No. G / CDS -05/01 dated December 1994 and revised up to date. 5mm x 5mm projectections inside at the center of the socket should be provided to prevent the pipes from passing through. It should weigh 150gms.(with a tolerance of +/- 5%) and should be able to withstand a pressure of 10 kg per sq. cms. Without any damaged / deterioration in performance. (See figure '1' for details)

- **PP ROPE**

6mm PP rope is drawn through the HDPE Pipes / Coils and safety tied to the end caps at either ends with hooks to facilitated pulling of the OF Cables at a later stage. The PP rope used is 3 strand Polypropylene Para pro rope having yellow co lour and shall be of 6mm diameter and it should have a minimum breaking strength of 550 kgs. The length of each coil of rope should be 205 meters and it should conform to (i) BS 4928 Part – II of 1974 (ii) IS 5175 of 1982 (iii) It should be of special grade and should have ISI certificate mark (iv) It should be manufactured out of industrial quality Polypropylene.

- **HDPE en caps**

For pulling the cable through the pipes, it is necessary to have suitable manholes at every 200M length and also at bends and corners suitably located. The pipes are laid for 200M or less at a time for the distance between two manholes. The ends of the HDPE

pipes/coils are closed with HDPE End Caps. The End caps used should be suitable for closing 50mm outer diameter class V HDPE pipes. The end cap should be manufactured from High Density Polyethylene, should withstand internal pressure of 10 kg per sq. cms. Should be black in colour, should have a weight of 100 gms.(with a tolerance of +/- 5%) and should conform to G/CDS-05/01 dated December,1994 and revised upto date. (See figure 'Z' for details). A suitable arrangement should be provided in the End Cap to tie PP Rope.

- MATERIALS FOR MECHANICAL PROTECTION

For lesser depths requiring mechanical protection as per specification and in built up areas, in towns and cities falling within the municipal limits, suitable mechanical protection is provided to HDPE pipes/coil using RCC full round pipes or GI pipes or concreting of size 25 cms x 25 cms reinforced with MS weld mesh or a combination of any of these as per the written instructions of the Engineer – in – charge.

- i) RCC FULL ROUND PIPES

Reinforced cement concrete pipes (spun type) coupled with RCC collars sealed with cement mortar are to provide mechanical protection to HDPE pipes/coils. The RCC pipes/collars should be of NP-2 class for 100 mm/ 150mm (internal diameter) full round, conforming to IS standard 458-1988 revised up to date. The pipe should have a nominal length of 2 meters.

The RCC collars should be properly sealed using cement mortar 1:3 (1:53 grade cement of reputed brand, 3: fine sand without impurities). If the mechanical protection is provided by RCC pipes, every third joint will be embedded in a concrete block of size 60 cms (L) x 40 cms (W) x 25 cms (H) of 1:2:4 cement concrete mix 1:2:4 (1: cement, 2: Coarse sand, 4: stone aggregate of 20 mm nominal size) so that the alignment of RCC pipes remain firm and intact. Both ends of RCC/ GI pipes will be sealed by providing concrete block of size 40 cm (L) x 40 cm (W) x 25 cm(H) of 1:2:4 cement concrete mix to avoid entry of rodents.

- ii) G.I PIPES

G.I Pipes should be of medium duty class having diameter of 65mm./40mm. The G.I Pipes should conform to IS 554/1985 (revised up to date) IS 1989(Part-I), 1900 Socket (revised up to date) & IS 1239 (Part-II) 1992 (revised up to date). Wherever protection by G.I pipe is provided, it is preferable to use HDPE coils. As space on parapet wall on Bridges/culverts is limited, 40mm GI pipes may be used with 32mm HDPE coil drawn inside.

- iii) M.S. WELD MESH

The HDPE pipes can also be protected by embedding it in concrete of size of 25cms x 25 cms reinforced with MS weld mesh. The MS weld mesh used should be of 50 mm x 100mm size, 12SWG, 120 Cms in width in rolls of 50 m each. One meter of MS weld mesh caters to approx. 3 meter of concreting. (See figure '3' for details)

The strength of RCC/CC is dependent on proper curing; therefore, it is imperative that water content of CC/RCC mix does not drain out into the surrounding soil. In order to ensure this, the RCC/CC work should be carried out by covering all the sides by yellow PVC sheets of weight of not less than 1 kg per 8 sq.m. to avoid seepage of water into the soil.

- 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.

i) Construction of brick chamber at site

For construction 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 40 mm nominal size) of size of 1.7 m x 1.7m x 0.15m (thickness). Wall of brick chamber having internal dimensional of 1.2m 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 sound when struck. The joint chamber should be so constructed that HDPE pipe 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), 12 mm thick finished with a floating coat of complete cement as per standard. Pre-cast RCC slab with two handles to facilities 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. The 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.

ii) 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 140 cm and thickness of 5cm (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 center and word ‘OFC’ engraved on it. (See figure ‘4’). 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.

• RUBBER BUSH

To prevent entry of rodents into HDPE pipes, the ends of HDPE pipes are sealed at every manhole and joint using rodent resistant hard rubber bush (cap) after optical fiber cable is pulled. The rubber bush should be manufactured from hard rubber with grooves and holes to fit into 50 mm HDPE pipe (class V), so that it should be able to prevent the entry of insects, rodents, mud, and rainwater into the HDPE pipe. It should weigh 150 gms (with a tolerance of +/- 5%). It should conform to specification No. G/CDS-05/01 dated December, 1994 and revised upto date.(Please see Figure No.5).

ROUTE/JOINT INDICATOR

The route/ joint indicators are co-located with each manhole/ joint chamber. In addition route indicator are also to be placed where route changes direction like road crossings etc. The route/joint indicators made of pre-cast RCC should have the following dimensions:

Base	-	250 mm x 150 mm
Top	-	200 mm x 75 mm
Height	-	1250 mm

The word 'DOT OFC' should be engraved on the route/joint indicators.

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 'DOT OFC' should be painted in white, on route as well as joint indicators. Numbering of route indicators 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 N./ 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 proceeding 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 exiting route/joint indicator should not be disturbed on account of additional joints. Enamel paints of reputed brand should be used for painting and sign writing of route as well joint indicators.

3.0 EXCAVATION OF TRENCHES

3.1 Trenching

Location and Alignment of the Trench:

In city areas, the trench will normally follow the foot-path of the expect where it may have to come to the edge of the carriage way when cutting across road with specific permissions shall be obtained by the department). Outside the city limits the trench will normally follow the boundary of the roadside land. However, where the road side land is full of burrow pits or afforestation or, when the cable has to cross culverts/bridges or steams, the trench may come closer to the road edge or in some cases, over the embankment as well as shoulder of the road shall be obtained by the department).

The alignment of the trench will be decided by a responsible department official, not below the rank of junior Telecom Officer. Once the alignment is marked, no deviation from 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. The Contractor shall provide all necessary assistance and labour, at his own cost for marking the alignment. Contractor shall remove all bushes, undergrowth, stumps, rocks and other obstacles to facilitate marking the center line without any extra charges. It is to be ensured that minimum amount of bushes and shrubs shall be removed to clear the way and the contractor shall give all, consideration to the preservation of the preservation of the trees.

The line up of the trench must be such that HDPE pipe(s) shall be laid in a straight line, both laterally as well as vertically 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 else where.

Line- UP:

The line-up of the trench must be such that HDPE pipe(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.

Method of Excavation:

In city limits as well as in built up areas, the contractor shall resort to use of manual labour only to ensure no damaged is caused t any underground or surface installations belonging to other public utility services and/or private parties.

However, along the Highway and cross country there shall be no objection to the contractor resorting to mechanical means of excavation, provided that no underground installations exist in the path of excavation, if any, are damaged.

There shall be no objections to resort to horizontal boring to bore a hole of required size and to push through G.I pipe (65mm/40mm dia) through horizontal bore at road crossing or rall crossing or small hillocks etc.

All excavation operations shall include excavation and 'getting out'.' Getting out' Shall include throwing the excavated materials at a distance of at least one meter or half the depth of excavation, whichever is more, clear off the edge of excavation. In all other cases' getting out' shall include depositing the excavated materials as specified.

In Rocky strata excavation shall be carried out by use of electro mechanical means like breakers or by blasting wherever permissible with express permission from the competent authority. If blasting operations are prohibited or not practicable, excavation in hard rock shall be done by chiseling.

Trenching shall as far as possible be kept ahead of the laying of pipes. Contractor shall exercise due care that the soil from trenching intended to be loose for back filling is not mixed with loose debris. While trenching, the contractor should not cause damage to any underground installations belonging to other agencies and any damaged caused should be made good at his own cost an expense.

Necessary barricades, night lamps, warning boards and required watchman shall be provided by the contractor to prevent any accident to pedestrians or vehicles. While carrying out the blasting operations, the contractor shall ensure adequate safety by cautioning the vehicular and other traffic. The contractor shall employ sufficient manpower for this with caution boards, flags, sign writings etc.

The contractor should provide sufficient width at the trench at all such places, where it is likely to cave in due to soil conditions without any extra payment. A minimum free clearance of 15 cms. Should be maintained above or below any existing underground installations. No extra payment will be made towards this.

In order to prevent damage to HDPE pipes over a period of time, due to the growth of trees, roots, bushes, etc., the contractor shall cut them when encountered in the path of alignment of trench without any additional charges.

In large burrow pits, excavation may be required to be carried out for more than 165 cms in depth to keep gradient of bed less than 15 degrees with horizontal. If not possible as stated above, alignment of trench shall be changed to avoid burrow pit completely.

Depth and size of the Trench:

The depth of the trench from top of the surface shall not be less than 165 cms unless otherwise relaxation is granted by competent authority under genuine circumstances. In rocky terrain, the depth of the trench may be restricted to depth of 100 to 140 cms. However, Engineer-in-charge in exceptional cases due to adverse site conditions encountered, may allow to lay HDPE pipes at a lesser depth with additional protection. In all cases, the slope of the trench shall not be less than 15 degrees with the horizontal surface. The width of the trench shall normally be 45 cms. At the top and 30 cms. At the bottom. In cases, additional pipes (HDPE/GI/RCC Pipes) are to be laid in some stretches; the same shall be accommodated in this normal size trench.

When trench are excavated in slopes, uneven ground, inclined portion, the lower edge shall be treated, as top surface of land and depth of trench will be measured accordingly. In 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 165cms. To keep the gradient less than 15 degree with horizontal. For additional depth in excess of 165 cms., additional payment of pro rata basis shall be applicable.

If excavation is not possible to the minimum depth of 165 cms., as detailed above, full facts shall be brought to the notice of the Engineer in charge in writing giving details of location and reason for not being able to excavate that particular portion to the minimum depth. Approval shall be granted by the competent authority in writing under genuine circumstances. The decision of the competent authority shall be final and binding on the contractor.

Dewatering:

The Contractor shall be responsible for all necessary arrangements to remove or pump out water from trench. The contractor should survey the soil conditions encountered in the section and make his own assessment about dewatering arrangements that may be necessary. No extra payment shall be admissible for this .

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.

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 licence 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 explosive 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 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 damaged 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 authorized 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.

Trenching Near Culverts/ Bridges:

The HDPE pipes shall be laid in the bed of culvert at the depth not less than 165 cms protected by G.I pipes and concreting as decided by Engineer-in-charge.

Both ends of culverts shall be excavated more than 165 cms.in depths to keep the gradient of not less than 15 degree with horizontal. The bed of trench should be as smooth as possible.

While carrying out the work on bridges a culvert, adequate arrangement for cautioning the traffic by way of caution boards during daytime and danger lights at night shall be provided.

In case of small bridges and culverts, where there is a like hood of their subsequent expansion an remodeling, the cable should be laid with some curve on both sides of the culvert or the bridge to make some extra length available for readjustment of the cable at the time of reconstruction of culvert or the bridge.

4.0 LAYING OF H.D.P.E. PIPES:

After the trench is excavated to the specified depth, the bottom of the trench has to be cleared of all stones or pieces of rock and leveled up properly. A layer of sort soil/or sand (in case the excavated material contains sharp pieces of rock/stones) of not less than 5 cms is required for leveling the trench to ensure that the cable when laid will follow a straight alignment. Adequate care shall be exercised while laying so that the OF Cable are not put to undue tension/pressure after being laid as this may adversely affect the optical characterized of cables with passage of time.

The contractor shall ensure that trenching and pipe laying activities are continuous, without leaving patches or portion incomplete in between. In case intermediate patches are left, measurement of the completed portions will be taken only after work in such left over patches are also completed in all respects.

Preparatory to aligning the pipe for jointing, each length of the HDPE pipe shall be thoroughly cleaned to remove all sand, dust or any other debris that may clog, disturb or damage the optical fiber cable when it is pulled at a later stage. The ends of each pipe and inside of each HDPE socket shall be thoroughly cleaned of any dirt or other foreign materials.

After the trench is cleaned the HDPE Pipes/Coil shall be laid in the cleaned trench, jointed with "O" ring type HDPE Sockets & 6 mm PP rope should be drawn through the HDPE Pipes at the time of laying the pipes to facilitate cable pulling at a later stage. At every manhole approximately at every 200m or at bends or turns the PP rope will be tied to the HDPE end caps used for sealing the HDPE pipes, to avoid entry of rodents/Mud etc.

At the end of each day work, the open ends of the pipes sections shall be tightly closed with end caps to prevent the entry of dirt/mud, water or any foreign matter into HDPE pipes until the work is resumed.

In city, Town, Urban area falling within Municipal/ Corporation limits, the HDPE Pipes shall be laid with protection using RCC/G.I. Pipes/Concreting reinforced with weld mesh. Moreover, in cross country routes, if depth is less than 1.2 meters, protection by using RCC/G.I. Pipe/Concreting reinforced with weld mesh shall be provided. Engineer-in-charge shall decide about such stretches and type of protection to be

provided in view of the site requirements. Normally 100mm RCC Pipe is to be laid and protected, RCC Pipe of suitable size to accommodate the required number of HDPE Pipes shall be used.

The HDPE Pipes shall be laid in RCC full Round Spun Pipes/GI pipes as required at road crossings. The RCC Pipes/GI pipes shall extend at least 3 meters on either side of the road crossings. As road crossings, extra GI/HDPE Pipes may be laid as per the direction of the Engineer-in-charge. On Rail bridges and crossings, the HDPE pipes shall be encased in suitable cast iron as prescribed by the Railway Authorities.

Wherever RCC pipes are used for protection, the gaps between the RCC collars and the RCC pipes shall be sealed using cement mortar 1:3 (1:53 grade cement of reputed brand, 3: fine sand without impurities) to bar entry of rodents. Every third collar of RCC pipes (normally of 2 meters length) and also both ends of RCC pipes will be embedded in a concrete block of size 40 cms (L) X 40 cms (W) x 25 cms (H) of 1:2:4 cement concrete mix (1: 53 grade cement of reputed brand, 2: coarse sand, 3: stone aggregate of nominal size of 20mm) so that the alignment of RCC pipes remain firm and intact and to avoid entry of rodents.

Wherever GI Pipes are used, special care should be taken to ensure that G.I Pipes are copied with the sockets so as to avoid damage to HDPE Pipe and eventually the OF Cable in the event of pressure coming on the joint and G.I. Pipe joint giving its way. Rubber bushes shall be used at either end of the GI Pipes to protect HDPE Pipe. Both the ends of G.I Pipe will be embedded in a concrete mix (1:53 grade cement of reputed brand, 2: coarse sand, 3: stone aggregate of nominal size of 20mm) so that the alignment of G.I pipes remain firm and intact and to avoid entry of rodents.

In case of protection by concreting at site, the nominal dimension of concreting shall be 250mm x 250mm section. Cement concrete mixture used shall be of 1:2:4 composition i.e 1:53 grade cement of a reputed company, 2: Coarse Sand, 4: Graded Coarse Stone aggregate of 20 mm nominal size, reinforced with MS weld mesh. As the RCC is cast at site, it is imperative to ensure that special care is taken to see that proper curing arrangements are made with adequate supply of water. The contractor shall invariably use mechanical mixer at site for providing RCC protection, to ensure consistency of the mix.

For carrying out concreting work in trenches, yellow PVC sheets of width not less than 1.0 M and of weight not less than 1 kg. Per 8 sq. meters shall be spread and nailed on sides of the trench to form trapezoidal section for concreting in the cleaned trench, to avoid seepages of water into the soil. A bed of cement concrete mixture of appropriate width and 75 mm thickness shall be laid on the PVC sheet, before laying HDPE pipes. The HDPE pipes shall then be laid above this bed of concrete. After laying the HDPE pipes, MS weld mesh is wrapped around and tied and concrete mix is poured to form the cross sectional dimensions as instruction by the Engineer-in-charge. The strength of RCC mix does not drain out into the surrounding soil. Portions where cement concreting have been carried out shall be cured with sufficient amount of water for reasonable time to harden the surface. After curing, refilling of the balance depth of the trench has to be carried out with excavated soil.

The HDPE Pipes/RCC/GI Pipes shall be laid only in trenches accepted by Engineer-in-Charge or his representative. The contractor shall exercise due care to ensure that the HDPE Pipes are not subjected to any damage or strain.

Water present in the trench at the time of laying the HDPE Pipes shall be pumped out by the contractor before laying the pipes in the trench to ensure that no mud or water gets into the pipes, thus choking it.

In case of mullahs, which are dry for nine months in a year, the HDPE Pipes shall be laid inside the RCC Pipes or GI Pipes and concrete laid at a minimum depth of 165 cms. As instructed by the Engineer-in-charge. The mechanical protection shall extend at least 5 meters beyond the bed of mullah on either side.

Notwithstanding anything contained in clauses referred above, the Engineer-in-charge may order, based on special site requirement, that the HDPE Pipes may be encased in reinforced cement concrete, as detailed, *ibid*.

While laying the pipes, a gap of 2M is kept at convenient locations approx. 200 m apart and at the bends and turns, which will be used as manholes during OF Cable pulling. Ends of the HDPE pipes at the manholes shall be sealed using HDPE end caps after tying the PP rope to the end caps to avoid choking of the pipes. In a similar manner, manholes shall be kept while approaching bridges, road crossings etc., as instructed by the Engineer-in-charge. The location of the manholes will be decided by the Engineer-in-charge.

Laying Protection Pipes on Bridges And Culverts:

In case trenching and pipe laying is not possible in the beds of the culverts, the pipes shall be laid over the culverts/bridges after getting due permission from the competent authority. Of late the bridge construction authorities are providing ducts below the footpaths on the bridges for various services. The telecom officers need to maintain good liaison with the concerned authority to get one side of the duct allotted for Telecom Cables. It would be pertinent to mention here that close liaison with bridge construction authorities would be of immense advantage in ensuring provision of ducts on one or both the sides of the bridges as per future requirements. However, for laying cables on existing bridges, where duct arrangement does not exist, one of the following methods may be adopted.

Normally in the Bridges/Culvert, where there are no ducts and where the cushion on the top of the Arch is 50 cm to 100 cm or more, G.I Pipe (Carrying HDPE pipe and cable) may be buried on the top of the Arch adjoining the parapet wall, by digging close to the wheel guards. Every precaution shall be taken to see that no damage occurs to the arch of the culvert. After burying the GI pipe, the excavated surface on the arch shall be restored.

Where the thickness of the Arch is less than 50 cms, the pipe must be buried under the wheel guard masonry and the wheel guard rebuilt.

If neither of the method is possible, the G.I pipes/ GI Troughs must be clamped outside the parapet wall with the clamps supplied by the department. If necessary, the pipe may be taken through the parapet wall diverges away from the road.

In case where the methods explained in clauses referred above are not possible, the G.I Pipes/ GI 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 raw plugs and wood screws or small diameter bolts, without damaging the concrete and limiting the external diameter bolts to 7.5mm. The permission for carrying out this work will be obtained from the Road Authorities by the department.

Methods cited in above clause should be carried out under close supervision of road authorities.

The surface to be concreted should be thoroughly cleaned and leveled before concreting. At both ends of the Bridges/Culverts, Where the GI pipes/ GI Troughs slope down and get buried, the concreting should be extended to ensure that no portion of the GI Pipe/GI Trough is exposed as ordered by the Engineer-in-charge to protect the Pipe/Trough from any possible damage externally caused.

Where white wash/co lour wash is existing on the Bridges /Culverts, the same should also be carried out on the concreted portion to ensure uniformity.

5.0 Back Filling and Dressing of the Trench:

The earth used for filling shall be free from all roots, grass, shrubs vegetation, trees, saplings and rubbish. Provided that the HDPE Pipes 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 so as to provide firm support under and above the pipes and to avoid bend or deformation of the HDPE pipes when the HDPE pipes get loaded with the back filled earth.

At location where the back filled materials contains stones/sharp objects which may cause injury to the HDPE pipes and where the excavated of 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 derocked loose earth of not less than 10 cms above the pipes.

Back filling on public, private roads, railway crossings, and footpaths in city areas shall be performed immediately after laying the HDPE pipes. Back filling at such locations shall be thoroughly rammed, so as to ensure original condition and made safe for traffic. All excess soil/material left out on road/footpath/railway crossing shall be removed by contractor. However, along the high ways and cross-country, the dug up material left out should be kept as heap above the trench while refilling.

In city limits, no part of the trench should be kept open for more than 50 meter 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.

6.0 CABLE PULLING AND JOINING/SPLICING:

- 6.1 Manholes marked during HDPE pipe laying of approx. size of 3m lengths 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 reason, to facilitate smooth pulling of cable. Excavation of additional manholes will be carried out without any extra costs. De-watering of the manholes, if required, will be carried out without any extra costs. 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 are cleaned for pulling the cable without exerting undue tension on the OF Cable. While clearing, excessive pressure should not be put which may result in breaking of P.P rope and thus require opening of additional manholes. However, in case the cleaning rope gets stuck up during pulling, the location of clogging of HDPE Pipe should be measured and located accurately. The trench at that location should be opened and the HDPE Pipe should be cleaned properly or if not possible it should be changed by a clean new HDPE Pipe to facilitate easy cable pulling at a later stage without any breakage. If clogging of HDPE Pipe is in the location where the pipes are protected either by RCC Pipe 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, RCC pipes required for this purpose will be supplied by the Department.

The optical fibre cables are available in drums in lengths of approx. 2kms. The cables shall be manually pulled through already laid HDPE Pipes by using the 8 mm PP rope. This work to be carried out under the strict supervision of site in-charge. At a time, maximum three persons at every manhole should be deployed to pull the cable as more tension to cable may lead to breaking of fibres. Cost of such damages will be recovered from the contractor.

After pulling of the drum is completed, both ends of the HDPE Pipes in each manhole should be sealed by hard rodent resistant rubber bush, to avoid entry of rodents/mud into HDPE Pipes.

The manholes are prepared by providing 65mm split HDPE pipe of 2.5 to 3m length and closing the split HDPE pipes by providing necessary clamps/adhesive tape as per the directions of Engineer-in-charge. Afterwards, the split/cut HDPE pipe are covered with 100mm split Rcc pipe of 2m lengths and sealing the ends of RCC Pipe with lean cement solution for protecting bare cable in the manhole. After fixing of HDPE/RCC split Pipes necessary back filling/reinstatement and dressing of manholes should be carried out as referred under trenching. The location of the pulling manholes should be recorded for preparation of documentation.

6.2 Jointing/Splicing

The OFC cable drums are usually of 2 km in length hence optical fibre joints will be approx. at every 2 kms. The 6/12/24 fibres 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 fibre 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 fibres are interchanged or broken. The number of joints should not be more than 10 % of the theoretical value calculated by the department.

Note : The jointing/splicing of optical fibre cable is an optional item. The DTS units which are equipped for this works should preferably carry out this work departmentally.

7.0 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 cables, 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 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.

7.1 Construction of brick chamber at site

For constructing brick chamber, first a pit of size 2 m 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 1.7m x1.7m x 0.15m (thickness). Walls of brick chamber having interval 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” x 4.5 x 3”, best quality available and should have smooth rectangular shape with sharp corners and shall be uniform in colour and emit clear ringing sound when struck. The joint chamber should be so constructed that HDPE pipe ends remain protruding minimum 5 cms inside the chamber on completion of plant ring. 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) 12 mm thick finished with a floating coat of complete as per standard. Pre-cast RCC slab with two handles to facilities easy lifting, of size 0.7 m x 1.4m 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 should be carried out up to normal ground level and compacted.

7.2 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 center and word ‘ OFC’ engraved on it. (See figure ‘4’. Pre cast RCC chamber (which is coming in part) should be placed in the pit and parts should be fixed by applying cement mortar. The pre cast RCC chamber will be supplied by the department. 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 should be carried out up to normal level and compacted.

The work of cable pulling includes the work of cable pulling up to exchange termination point and has to be carried out as per the directions of Engineer-in- charge.

8.0 Fixing of Route Indicators/Joint Indicators:

Pits shall be dug 1 m . Towards jungle side at every manhole and jointing chamber for fixing of Route/Joint Indicator .In addition, Route Indicators are also required to be placed where O.F. cable changes direction like road crossing etc.

The pits for fixing the indicator shall be dug for a size of 60cms. X 60 cms. And 75 cms.(depth). The indicator shall be secured in upright position by ramming with stone and murmur up to a depth of 60cms. And concreting in the ratio of 1:2:4(1: cement, 2: coarse sand, 4 stone aggregate 20mm nominal size) for the remaining portion of 15cms. Necessary curing out for the concreted structure with sufficient amount of water for reasonable time to harden the structure.

The route and joint indicator shall be painted with primer before painting with oil paint. The material used should bear ISI mark. The size of each written letter should be at least 3.5 cms. The colour of painting and sign writing is as under:

- (1) For Joint Indicator Red.
- (2) For Route indicator Yellow.
- (3) For letters White.

The numbering scheme for route indicators will be Joint No./ Route indicators No. for that joint . For example 2/6-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, and D for example sign writing 2A on a joint indicator means, additional joint between joint No. 2 and 3. The numbering existing route/joint indicator should not be disturbed on account of additional joints.

9.0. 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: - The diagram shall consist of Cable Route Details on Geographical Map drawn to scale with prominent landmarks and alignment of cable with reference to road. This shall be prepared on A-3 sheets of 80 GSM.
- ii) Route Index Diagram – Profile: These diagrams will contain:
 - * Make and Size of the cable;
 - * Offset of cable from canter 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 thereon; *
 - Important landmarks to facilitated locating cable in future.
 - * Location of Joints and pulling manholes.

This diagrams shall be prepared on A-4 Sheets of 80 GSM. On one sheet profile of maximum 400 meters shall be given to ensure clarify.

- iii) Joints 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 mentioned documents should be submitted.

10.0 SAFETY Precautions:

- 10.1 Safety Precautions when excavating or working in excavations close to electric cables.

The Engineer-in-charge of the work should get full information from Electric 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 handled hand tools should be used until the electric cables have been completely exposed. Poser 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 kissing 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 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 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.

10.1.1 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.

10.2 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 authority.

10.2.1 Danger from falling material:

Care should be taken to see that apparatus, 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.

10.2.2 Care when working in Excavations:

Jumping into a trench is dangerous. If it is deep, workmen should be encouraged to tower 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.

10.2.3. 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.

10.2.4 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 opening 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.

10.2.5 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 or vehicles the full expanse i.e. both width and length of the obstruction. The distance between lamps or between flags 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 request a passage for pedestrians with footbridge should be provided. At excavation, cable drums, tools and all materials likely to offer obstruction should be properly folded round and protected. This applies to jointer's tents as well. Leads, hoses etc. stretched across the carriageway should be guarded adequately for their own protection and also that of the public.

10.2.6 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.

10.2.7 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 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.

10.3 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 fuels and detonators normally used for making for cable works are detailed below:

1. Gun Powder
2. Nitrate Mixture.
3. Gelatine
4. Safety fuse
5. Electric Detonator
6. Ordinary Detonator.

10.3.1 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 licence, 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 licence 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 licence 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 licence 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 licence for using/storing explosives for cables trenching work. Such licence will be valid for 15 days only. The licence should be got renewed if the blasting operation need to be extended. Once the licence is granted, it is the responsibility of the holders of the licence for the proper use of explosives, its transportation and storing.

10.3.2 Method of using:

The safest explosive is the gelatine and electric detonator. Gelatine 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 of 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 gelatine and the gelatine is to be inserted into the holes keeping the positive and negative wirings of electric detonators outside the holes. Again refill the holes with

sand. These positive and negative insulated wires of detonator are than 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.

10.3.3 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 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 clock wise 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 indications lamp glows, “ press button switch” should be pressed. This will extend the electric current to detonator and gelatine 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 to clear the debris. If the result of the first blasting is not satisfactory, it should be repeated again on the same place.

10.3.4 Warning:

There may be two reasons for unsatisfactory results of the blasting:

- (a) Misfire of gelatine due to leakage of current from detonator.
- (b) Over loading because of overburdens.

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

10.3.5 Precaution

The abstract of Explosive 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 explosive to any one other than a person who:-

- (a) Is the holder of a license to posses the explosive or the agent of a holder of such a license duly authorized by him in writing on his behalf.

OR

- (b) Is entitled under these rules to posses 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 authorized to posses with or without a license under theses rules.

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

* Protection from Lightening During Storing:

Every magazine shall have attached there to one or more efficient lightening conductor designed and erected in accordance with the specification 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 thunderstorm:

- When a thunder-storm appears to be imminent in the vicinity of a magazine or store house every person engaged in or such magazine and store 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 its has passed.
- * Maintenance of records:
Every person holding a licence granted under these rules for possession, sale or use of explosive 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 license 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 there in 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.

10.3.6 Precautions to be observed at site:

- 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 that 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 fit conditions 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-fiber 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 circle with white paint. The Contractor agent shall inspect these. Bore holes shall be of a size that the cartridge can easily pass down. After the drilling operations, 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 bore hole. The boreholes shall be thoroughly cleaned before a cartridge is inserted. Only cylindrical wooden 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 which 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 be wrapped with rubber tape.

The maximum of eight boreholes 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 lignite in the presence of the agent, who shall see that all the fuses are properly ignited.

Carefully count shall be kept by the agent and other 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 crossed (X) over the holes which have not exploded. During his interval of half an hour, nobody shall approach the misfired holes. No drilling shall work near such bore until either of the following operations have been done by the agent for the misfired boreholes.

- a) The contractor's agent shall very carefully (When the tamping is a damp clay) 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 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 explained to the relieving.

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

10.3.7 General Precautions:

For the safety of persons red flags shall be prominently is played 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 distances 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 an trained personnel shall be employed. Blasting shall not be done within 200 meter 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. Water 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 from 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 returning the consignment.

10.3.8 Precaution against stray currents:

Where electrically operated equipments is 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 - XIII

These are the rates of the empty cable drums, which have to be deducted from contractor's bills as per tender document.

Sl. No	Size of drum	Rate of disposal
1	OF cable drum (6F/12F/24F)	Rs. 90/= per drum

Section XIV

Tender NO:-GMTD/HZB/Tender/OFC-CMTS/Phase III/07-08/02

Dated at Hazaribag: 01.05.2007.

STANDARD SCHEDULE OF RATES FOR O.F. CABLE CONSTRUCTION WORKS
The Materials will be made available at the Divisional Stores, GMTD, Hazaribag or any other store of GMTD, Hazaribag.

Item No.	Item Name	Basic Rate in Rs.
1	Name of route & Rate of trenching with refilling	Route Length (m)
	.Relaying of OF cable between Bagodar and Aura	3000
	Relaying of OF cable between Bagodar to Atka	4500
2	Rate for HDPE Pipe laying coupled with HDPE sockets and drawing of PP Nylone rope through it	Rs. 01.39 per meter
3	Rate for Horizontal Boring at a depth of 1.65 m for crossing roads/railway tracks inserting 65/40 mm dia G.I. Pipes and pushing HDPE pipes/coils inside and drawing rope	Rs. 189.00 per meter
4	Laying and fixing of 65/40 mm GI Pipes in trenches with HDPE pipe coils inside and drawing PP Nylone Rope	Rs. 05.05 per meter
5	Laying and fixing of G.I. Pipes on bridges and culverts with HDPE pipes/coils inside and drawing PP Nylone Rope	
	a>GI Pipe laying by hanging along bridges and culverts with clamps.	Rs. 12.11 per meter
	b>GI Pipe laying along parapet wall of bridges and culverts with PCC of 250 mm x 250 mm x 1000 mm with MS weld mesh	Rs. 167.27 per meter
6	Laying, fixing and sealing of Full Round RCC Pipes with HDPE Pipe coiled inside and drawing PP Nylone Rope.	Rs. 22.59 per meter
7	a>Rate for providing RCC Protection at site	Rs. 1873.20 per cu meter
	b>Weld Mesh (50x100 sq mm of 12 SWG) & 120 cm in width	Rs. 45.50 per sq meter
	c>PCC Rate with wild mesh at sire	Rs. 162.22 per sq meter
8	Laying of RCC split pipes for mechanical Protection of HDPE Pipes in trenches	Rs. 05.64 per meter
9	Opening of manholes, pulling of OF cable, sealing of HDPE pipe in manholes by rubber bushes and backfilling of manholes	Rs. 02.10 per meter
10	Digging of pits for jointing chamber, construction of brick chamber, filling of brick chamber with clean sand, supply and placing of pre-cast RCC slab on brick chamber and back filling of jointing pit	Not in practice

Item No.	Item Name	Basic Rate in Rs.
11	Digging of pits for jointing chamber, fixing of pre-cast RCC chamber, filling of chamber with clean sand, supply and placing of pre-cast slabs on joint chamber and back filling of jointing chamber	Rs. 840.00 per joint chamber
12	Digging of pits 1 m towards jungle side on each manhole/joint chamber for fixing of route/joint indicator, fixing and concreting of route/joint indicator, painting and sign writing of route/joint indicator.	Rs. 184.80 per indicator
13	Documentation (Six sets of Bound Document)	Rs. 630.00
14	Rate of recovery of empty cable drums (6F/12F/24F)	Rs. 90.00 per drum

Section XV

Financial Bid

To

The GMTD, Hazaribag.

Subject : Our / My Financial Bid for Cable Construction Works on Optical Fibre Route

Ref : GMTD/HZB/Tender/OFC-CMTS/Phase III/07-08/02

Dated at Hazaribag: 01.05.2007.

Route Name:

Dear Sir,

Having examined the tender documents, terms and conditions stipulated therein, specifications of work etc., I / we the under signed offer to execute the Cable Construction Works in conformity with the said specifications and conditions of contract at the percentage (Below/at par/above) on standard schedule rates quoted as under :

Route	Length Mtr.	Rate Quoted					
		Below %		At par		Above	
		In Figure	In wards	In Figure	In wards	In Figure	In wards
.Relaying of OF cable between Bagodar and Aura	3000						
Relaying of OF cable between Bagodar to Atka	4500						

If our / my Bid is accepted, we shall submit the securities as per the conditions mentioned in the contract.

I / We agree to abide by this Bid for a period of 240 days from the date of opening of financial bid and it shall remain binding upon us / we and may be accepted at any time before the expiry of that period.

Dated/...../.....

Signature of the tenderer.....

Name of the tenderer.....